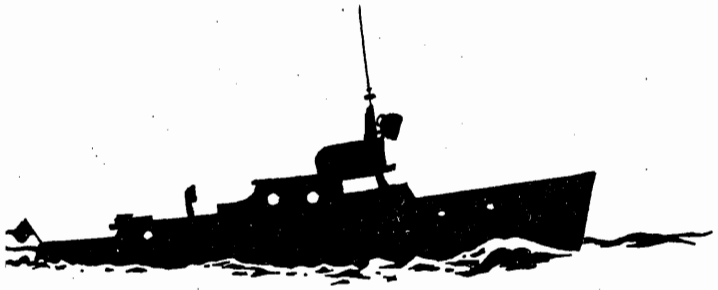
REPUBLICA DE EL SALVADOR EN LA AMERICA CENTRAL

DIOS UNION Y LIBERTAD

INTERNAL SECURITY FORCES

EL SALVADOR

COMMUNICATIONS STUDY



UNITED STATES SOUTHERN COMMAND
QUARRY HEIGHTS, CANAL ZONE 09826

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
Office of Public Safety - Department of State - WASHINGTON D. C. 20523

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DEPARTMENT OF DEFENSE
UNITED STATES SOUTHERN COMMAND
APO NEW YORK 09826

SC(G)

25 JAN 1968

SUBJECT: Letter of Promulgation

TO: See Distribution

1. The accompanying Joint USSOUTHCOM/OPS-AID "El Salvador Internal Security Forces Communications Study" is transmitted for use in planning the security communications system in El Salvador. The study includes official information developed by representatives of United States Southern Command (USSOUTHCOM) and the Office of Public Safety, Agency for International Development (OPS-AID) in collaboration with officials of the Government of El Salvador (GOES). Therefore, the study is classified CONFIDENTIAL Special Handling Required, Not Releasable to Nationals other than of the United States and El Salvador.

2. COMUSMILGP El Salvador is requested to update this study by submitting appropriate change information and recommendations prior to the annual Military Assistance Program review, beginning with February 1969.

3. This transmittal has been concurred in by OPS-AID.

FOR THE COMMANDER IN CHIEF:

H E LeFebvre

H. E. LeFEBVRE
Colonel, USA
Secretary Joint Staff

1 Incl
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JOINT USSOUTHCOM/AID COMMUNICATIONS STUDY

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FOREWORD

1. Representatives of the United States Southern Command and the Office of Public Safety, Agency for International Development (OPS/AID) visited El Salvador during July, 1967, to complete a survey of internal security forces communications. This resulting report reflects extensive studies and field observations of the principal internal security forces of El Salvador, plus discussions with their officers and men and with various governmental officials, military and security force personnel, and representatives of the United States Embassy, the United States Military Group (USMILGP), and the USAID Mission in El Salvador. The study is for the official use of the governments concerned in determining action required for improved coordinated communications programs of the Government of El Salvador (GOES), the USMILGP and USAID El Salvador.

2. This report identifies certain deficiencies of communications systems of the armed forces and other internal security forces of El Salvador, and it proposes recommendations for corrective action and subsequent coordinated development. It is not intended to be critical of any person or group; while existing internal security communications systems are far from optimum in their capabilities, it must be recognized that they do reflect considerable effort and ingenuity by GOES officials concerned to provide essential communications in support of their missions. The internal security communications organizations include a number of qualified, intelligent, highly motivated individuals dedicated to the security of their country.

3. The open identification of communications problems and frank discussions of ideas for improvement on the part of officials of the GOES substantially assisted the work of the joint team. The study reflects many deficiencies which El Salvador authorities had recognized before, and it incorporates a number of corrective courses of action already initiated by the GOES.

FOREWORD (continued)

4. The excellent cooperation accorded by responsible personnel at all levels -- both United States and host country representatives -- not only facilitated completion of this communications study but also permitted a realistic inspection of communications facilities in operation. The survey team is particularly appreciative to Minister of Defense Colonel Fidel Torres, Director General Colonel Jose Medrano of the National Guard, Director General Colonel Oscar Rank of the National Police and Chief of Staff Colonel Carlos Guzman Aguilar of the Armed Force General Staff.

5. Our special thanks are expressed to Lt. Col. Mario Rosales y Rosales, Chief Signal Officer, and Mr. Joaquin T. Guzman, Chief of the Department of Communications of the National Police, who furnished needed information and accompanied the team to all locations visited.

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GLOSSARY

Advanced Landing Field	An airfield usually having minimum facilities, in or near an objective area (forward airstrip).
AIS	Salvador Intelligence Agency.
AM	Amplitude Modulation.
ANTEL	Administracion Nacional de Telecomunicaciones: El Salvador government telephone company.
Auxiliary Power	Emergency back up power source, usually locally fueled engine generators.
Call Director	Cordless switchboard used for directing incoming and outgoing trunk calls.
Channel	An electrical path for transmission from one station to another, one way (radio channel: a band of frequencies wide enough for radio communications).
CITFA	Centro de Instrucciones de Telecomunicaciones de la Fuerza Armada: Salvadoran Signal Center.
Circuit	Communication link between two points, both ways.
Communications Network	An organization of stations capable of intercommunication but not necessarily on the same channel.
CW	Continuous Wave, interrupting the carrier at precise intervals permits the use of morse code, a telegraphic alphabet or code consisting of dots, dashes, or spaces.

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GLOSSARY (continued)

Controlled Forces	Military or paramilitary forces under effective and sustained political and military direction.
Cuartel	Combination of Headquarters and barracks, like the French caserne.
Dipole	A half wave antenna, center fed.
EMGFA	Estado Mayor General de la Fuerza Armada: Armed Force General Staff (HQ).
FAC	Forward Air Controller: An officer (aviator) with a tactical air control party/air control team who, from a forward position, controls aircraft engaged in close air support of ground troops.
FAS	Fuerza Aerea Salvadorana: El Salvadoran Air Force.
FM	Frequency Modulation.
GN	Guardia Nacional: National Guard.
HF	High Frequency (3 to 30 MHz).
Hz	Hertz (cycles per second).
Inshore Patrol	A naval defense patrol comprising all elements of harbor defense, the coastal lookout system, patrol craft, supporting bases, aircraft and coast guard stations (as opposed to offshore patrol in the outer areas of navigable coastal waters).
JOC	Joint Operations Center.
KHz	Kilohertz (1000 cycles per second).
KW	Kilowatt.

GLOSSARY (continued)

MCW	Modulated Continuous Wave.
MHz	Megahertz (10^6 cycles per second).
NMCC	National Military Command Center.
PBX	Private Branch Exchange: A telephone exchange serving a single organization and having connections to a public telephone exchange.
PH	Policia Hacienda: Treasury Police.
PN	Policia Nacional: National Police.
RECIM	Red Comunicacion Interamerica Militar.
SIMCATEL	Sistema Militar Centro America de Telecomunicaciones.
SITFA	Sistema de Telecomunicaciones de Fuerzas Aereas.
SECAT	Sistema Especial Centro Americana de Telecomunicaciones (CAP International Security Telecommunications Net).
SSB	Single Sideband: That method of communications in which the frequencies produced by the process of amplitude modulation on one side of the carrier are transmitted and those on the other side are suppressed. The carrier frequency may be either transmitted or suppressed.
ST	Territorial Services.
TOC	Tactical Operations Center.
VHF	Very High Frequency (30 MHz to 300 MHz)/

GLOSSARY (continued)

Log	A chronological record of station events (that is, entries relating to message handling, equipment difficulties, personnel, etc.).
Maintenance Float	Spare equipment on hand which may be substituted for faulty equipment until such equipment is repaired or replaced.
Net	An organization of stations capable of direct communications on a common channel.
Repeater	Equipment which permits reception and automatic retransmission of communications signals.
Tactical Communications	Pertains to the employment of communications equipment in a portable or field environment.
Traffic	All transmitted and received messages.

SUMMARY

1. (U) Internal security forces of El Salvador consist of an Army, Navy, and Air Force unified into a single Armed Force; the National Guard; the National Police and the Treasury Police--all under the Defense Ministry--plus the Custom Police under the Treasury Ministry and the Immigration Service under the Interior Ministry. Their strength totals approximately 8,000.

2. (U) The Armed Force General Staff (EMGFA) directs the military services. Its Chief of Staff and the Directors General of the National Guard, the National Police and the Treasury Police report to the Minister of Defense.

3. (U) The security establishment is served by messenger, commercial telephone and telegraph, and organic radio systems. Although commercial services in the government controlled and operated system (ANTEL) can be used, when available, as a secondary means of administrative communication, radio is the primary means of communication for security forces.

4. (U) Two country-wide radio systems are responsive to security requirements. The Army operates the military HF/SSB radio network (in which the National Guard mans one station). The National Police operates an HF and FM system. Its country-wide VHF/FM network uses El Boqueron Volcano as a mountain-top relay. The National Guard has access to one channel of the VHF/FM network and operates three command stations and National Guard mobile radios may communicate via the National Police system--which also serves National Police mobile units in cities and on the highways. In addition, the National Police operates several HF/SSB radios as a back-up to the VHF/FM system.

5. (U) The Army and National Police radio systems are not terminated at a single communications center in San Salvador. Defense authorities of El Salvador recognize

the requirement for a joint operations center to act as a focal point for coordinated actions among the internal security forces in emergency or tactical operations. The Chief of Staff is expected to locate a joint center in the EMGFA. Such a focal point is badly needed.

6. (FOUO) During emergencies radios in the two systems should be capable of netting together when it is directed. Both the Army and National Police use four channel HF/SSB transceivers which would permit establishment of a common emergency channel between the security services, but no action has been taken to achieve this goal.

7. (C) During emergencies chiefs of various security forces should be capable of direct intercommunications. Presently their direct contact is by personal meetings, commercial telephone, or the use of messengers (unless they use cars equipped with National Police radios). There is a need for a back-up direct radio capability to permit immediate high level coordination among the ranking government officials.

8. (U) Any additional radios will increase demands on the security forces electronic maintenance capability. The National Police has an established maintenance organization, employing four qualified radio technicians and two trainees. The National Guard has a single technician and limited maintenance facilities that are incapable of timely servicing of present National Guard radios. Therefore, additional equipment for the National Guard cannot be justified until the maintenance problem is solved. A solution is to integrate the National Guard and National Police communications maintenance capabilities including facilities, personnel, and repair parts.

9. (FOUO) Additional radios are needed, especially in the National Guard, which has no communications for its foot patrols in the rural areas. During emergencies, the National Guard must be capable of effective deployment in the countryside; recent experience revealed numerous difficulties in National Guard operations for lack of tactical communications. National Police capabilities are also limited by the number of portable radios available for tactical use. This need can be satisfied for both the National Guard and the National Police by jeeps equipped with radios capable of quick removal from the jeeps when necessary for use as tactical portable units. Assistance

SECTION I - ARMY

A. (C) Mission and Organization

1. The primary mission of the Army is to assure the maintenance of internal security and the defense of the nation. In addition to its land security mission, the Army is also responsible for troop participation in civic action projects. The Chief of Staff of the EMGFA is the Commander of the Army.

2. The present organization of the Army is in three territorial divisions and includes units as indicated on the attached illustration (Figure 1). Major maneuver elements have been controlled by the EMGFA, but this arrangement may be modified following completion of a study by Army organization, which is expected to result in brigade tactical areas rather than divisions.

3. Active Army strength totals approximately 3,700 (including conscripts).

4. The Territorial Services (ST), a "reserve" structure involving departmental commandants for each of the 14 political departments are controlled by and under the command of the Chief of Staff, EMGFA (D-5). The principal active Army commander in the department has usually served as Departmental Commandant.

B. (U) Army Non-Tactical Communications

1. Observations

(a) The Chief of the Signal Center (CITFA) is responsible for communications, communications training, and maintenance of communications equipment for the entire Armed Force. His command includes the Signal Company (CATFA) which has a strength of approximately 120.

(b) The Signal Center (CITFA) has limited resources for carrying out four separate responsibilities:

(1) Operation and maintenance of the country-wide Armed Force non-tactical communications system.

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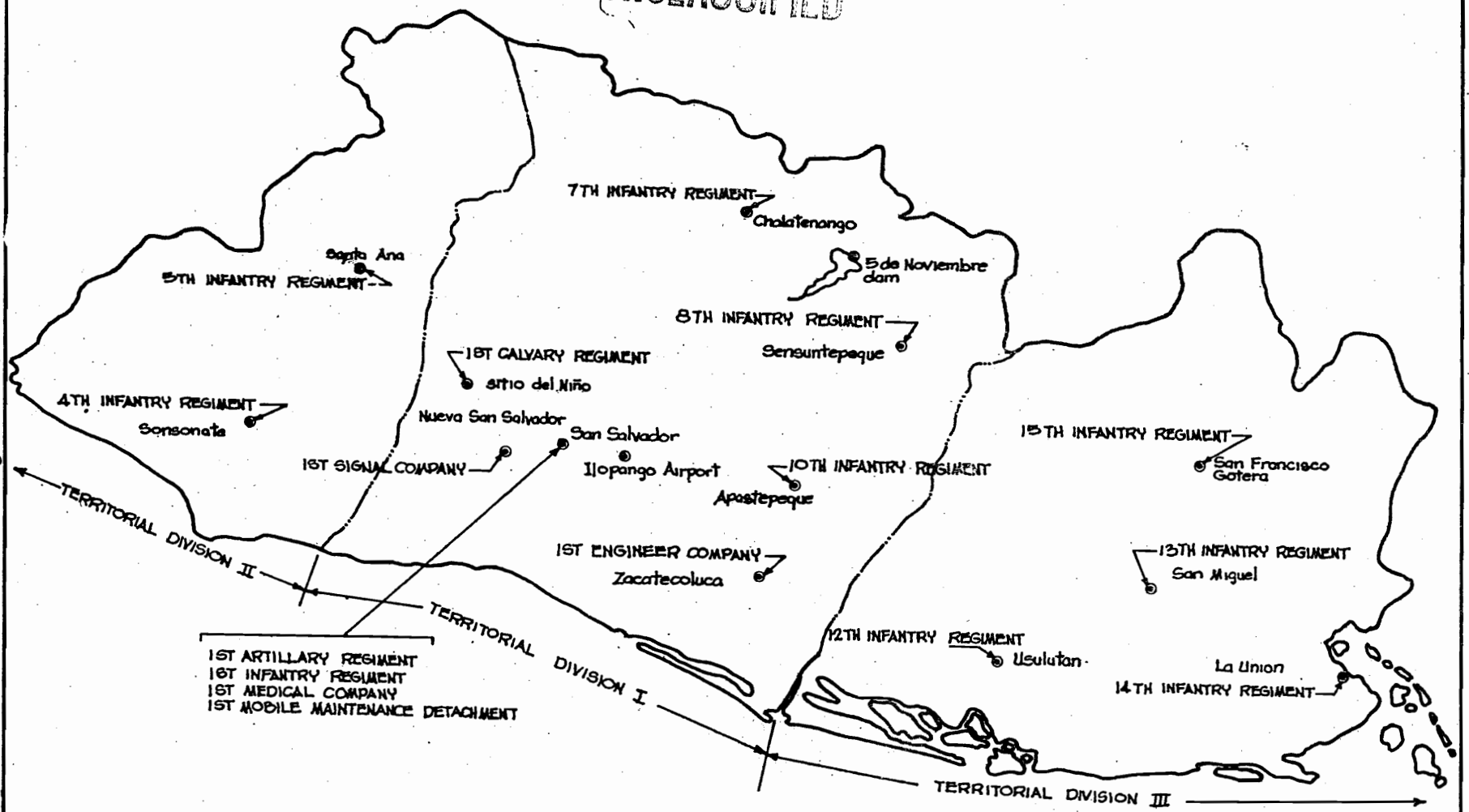
ARMY DISTRIBUTION IN 3 TERRITORIAL DIVISIONS — FIGURE No.-1



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(2) Tactical communications support for major maneuver elements of the Army (e.g. battalions and separate companies). Note: Army organization plan is to provide brigades, battalions, and separate companies with organic communications units and/or sections--including personnel, equipment, and maintenance capability before the end of 1968.

(3) Professional and technical signal training.

(4) Basic training of conscripts.

(c) For all his staff communication-electronics, command, administrative, and troop leading functions, the Chief of the CITFA has only six junior officers. There are no Navy or Air Force officers in the CITFA. In consequence, the organizing, staffing and planning for the Armed Force communication system and directing and controlling of operation and maintenance resources are severely limited.

(d) The Army utilizes a HF/SSB radio network for command and control and coordination among all principal security forces. The capability for communications from the EMGFA is illustrated in the attached diagram (Figure 2). The net is normally operated in International Morse Code (CW keying). It is capable of voice operation. In the past, top officials have been prepared to go into the HF/SSB network with voice operation when necessary. The Director General of the National Guard keeps a mobile mount KWM-2 HF/SSB radio in his car.

(e) The net control station for the Army HF/SSB network is at the Signal Center (CITFA) in Santa Tecla. While the EMGFA is closed at night, the Santa Tecla CITFA station guards the net frequency 24 hours a day. Over 20 stations operate in the net, but the traffic load in the past normally has not exceeded 100 messages per day. Service has been at the cuartel level rather than following any chain of command arrangement. The First Medical Company has no station in the net; it is located in the EMGFA building in San Salvador and is served by the EMGFA station. It has not required a separate radio.

(f) Reliance on high frequency radio makes the Army HF/SSB network subject to atmospheric and propagation problems. The USMILGP has initiated a series of inspections to insure that antennas are properly oriented, cut to frequency, and terminated in order to insure maximum performance under actual operating conditions. The Army has no fixed station

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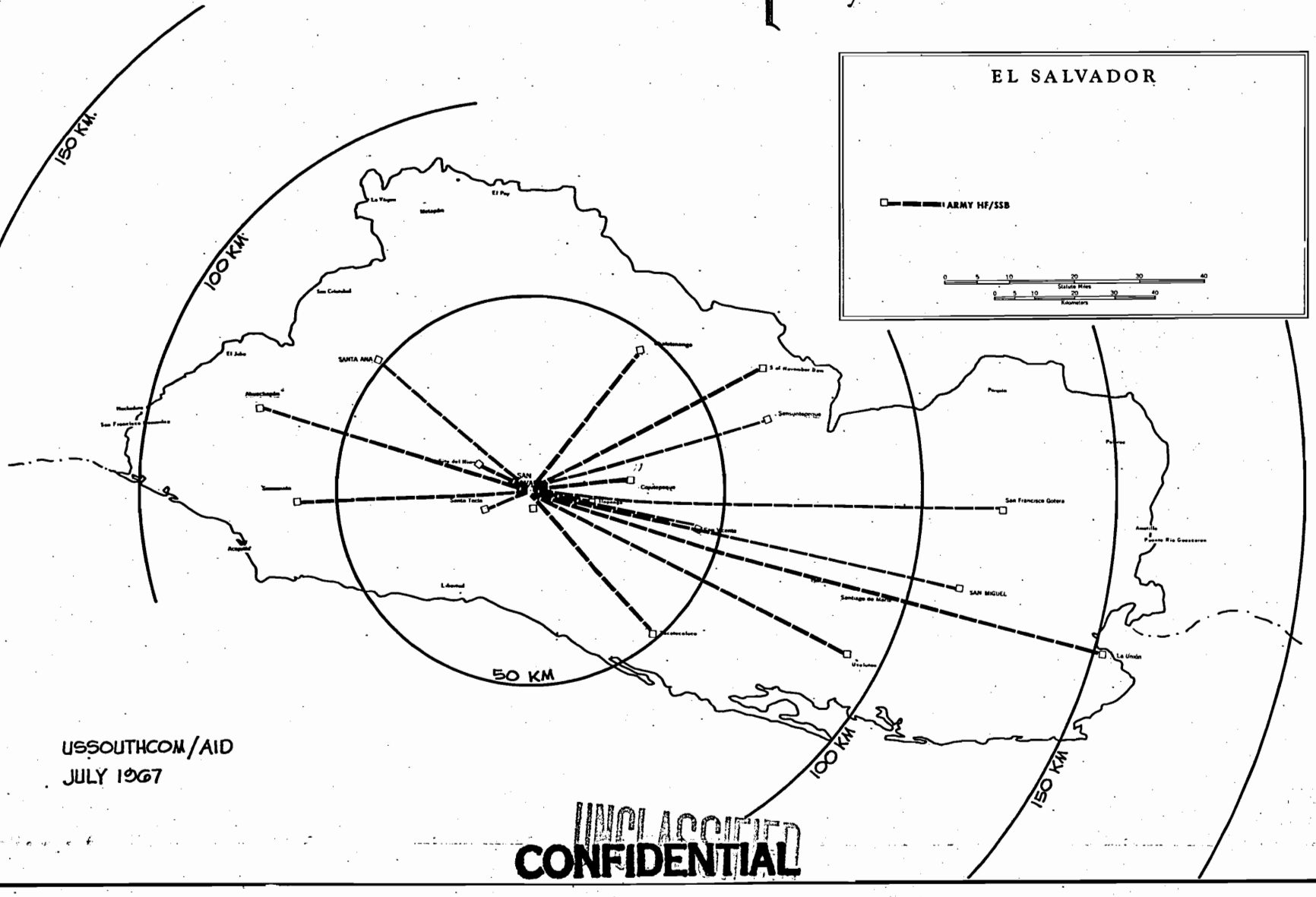
FIGURE No. 2

COMMUNICATIONS NETWORK - Army



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VHF, radio relay, or microwave systems; HF radio is used within San Salvador as well as country-wide, and service has been adequate. There is no separate communications system to serve the Territorial Services (ST).

(g) According to the procedure taught at the CITFA, radio stations keep a detailed log of station operations. Messages are normally typed up on message forms after receipt in the radio station and delivered to the commander or his adjutant. File copies are not normally retained in the radio room.

(h) There is no permanent Joint Operations Center for full time coordination of day-to-day or emergency security force operations. Therefore, only Army radio communications are terminated at the EMGFA, which is served by a radio room in which one operator uses a telegraph key for CW operation of the RCA SSB-1 Mark IV transceiver and a typewriter for copying incoming messages. A second operator uses a telephone call director for telephone service to the EMGFA.

(i) El Salvador participates in the Central American Military Communications System (SIMCATEL), which is illustrated on the attached diagram (Figure 3). Member countries of the Central American Defense Council (CONDECA) planned a HF/SSB voice and CW network linking the Permanent Commission of the Central American Defense Council (COPECODECA) at Guatemala City with their national capitals using KWM-2A type radios. The network began partial operation in 1966. As of July 1967, the El Salvador station at the Signal Center (CITFA) was capable of phone patch voice services to San Salvador defense officials for contact with COPECODECA, the Guatemala JOC communication center, and the JOC in Tegucigalpa, Honduras.

(j) If the Inter-American Military Communications Network (RECIM) is set up according to the concept adopted by the 1966 Conference of Army Signal Officers at Caracas, Venezuela, the El Salvadoran Army will be capable of teletype termination of a channel of the US-operated Latin American Military Communications System (LAMCS) transmission facility to connect with other armies similarly equipped. No countries were linked by RECIM as of July 1967.

2. Areas for Improvement

(a) Defense authorities of El Salvador recognize the requirement for controlled forces in emergency or tactical

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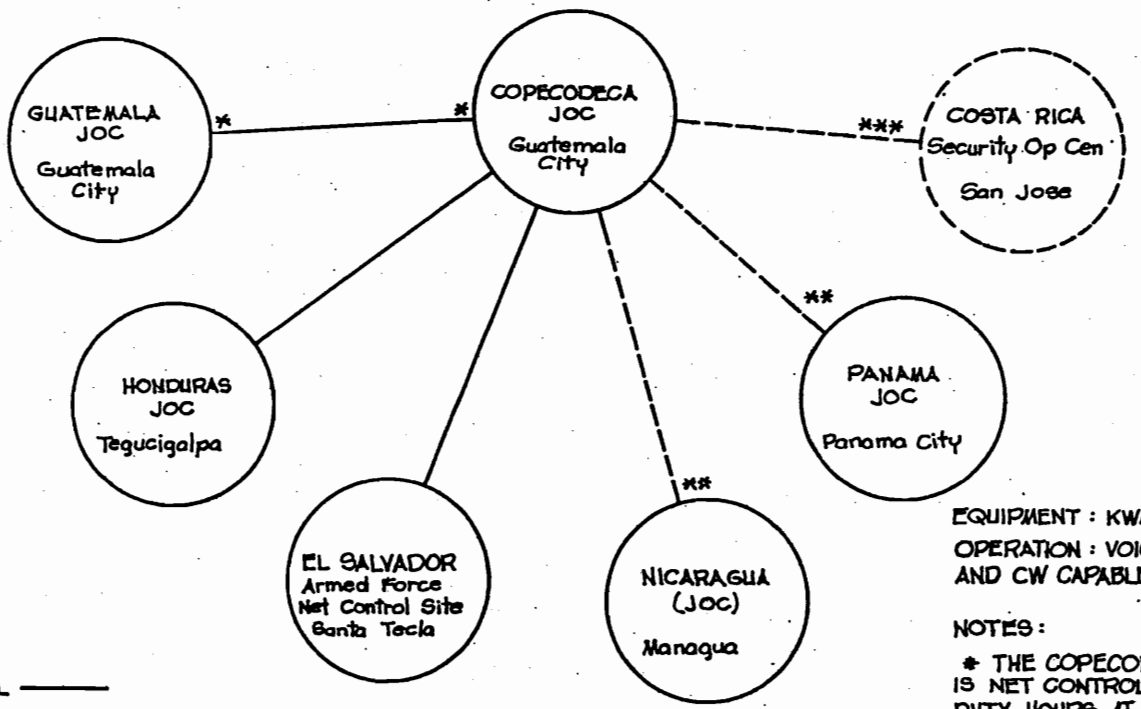
CENTRAL AMERICAN MILITARY TELECOMMUNICATIONS SYSTEM (SIMCATEL) FIGURE No. 3



LEGEND

OPERATIONAL ———

PLANNED - - - - -

EQUIPMENT : KWM-2A RADIO

OPERATION : VOICE (PHONE-PATCH AND CW CAPABLE) HF-SSB (KH2)

NOTES :

* THE COPECODECA STATION IS NET CONTROL STATION (NCS) DURING ITS DUTY HOURS. AT OTHER TIMES (NIGHTS ETC.) THE GUATEMALA ARMED FORCES PRINCIPAL COMMUNICATION CENTER (ADJOINING) JOC GUARDS AND ACTS AS NCS.

** NOT INSTALLED AND OPERATING AS OF JULY 1967.

*** NOT INTENDING TO PARTICIPATE AS OF JULY 1967.

USSOUTHCOM, QUARRY HEIGHTS (JOC) CAN ENTER BY PHONE PATCH VIA USAFSO MISSION RADIO TERMINAL .

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operations. Presently there is no permanent National Military Command Center or Joint Operations Center which could act as a focal point for coordinated actions among the internal security forces of El Salvador. Such a focal point is badly needed. The JOC concept has been exercised to good effect in the past and is recognized and concurred in by high level officials of the various internal security agencies including the Army. Designated members from each agency would be assigned to the JOC in the event of emergencies or special operations. Preliminary suggestions for establishment of a Centro de Operaciones Tacticas for the Salvadoran Armed Force and security forces, prepared at the request of the Chief of Staff of EMGFA, are included as an annex to this study.

(b) The SIMCATEL and other terminals for out-of-country systems are located away from the EMGFA. Procedures need to be established for access to those systems upon organization of a JOC or equivalent command and control center.

(c) The Army HF/SSB radio net is organized on the basis that the San Salvador authorities, such as the President, the Minister of Defense, or the EMGFA, can send messages directly to the cuartel level. It does not reflect the chain of command from the EMGFA to territorial divisions and then to the regimental cuartels. The EMGFA has initiated a study on organizing the divisional Army forces for effective command and control. Successful adoption of the resulting chain of command would require reorganization of the Army HF/SSB net into an Armed Force Net going from EMGFA to the three territorial divisions, the Navy, the Air Force, and separate Army units directly under the EMGFA; and three territorial division nets going from the Division Headquarters to major subordinate units--including cuartels directly under the division. The major subordinate units of the Army could then exercise control in nets corresponding to the tactical communications required for field operations. Net reorganization would permit application of VHF/FM radios to links where appropriate and concentration of HF/SSB radios on the long distance links. Meanwhile the assignment of one channel for emergency use would permit any unit equipped with an HF/SSB radio to communicate directly with the EMGFA when so directed and provide for controlled forces in emergency operations.

(d) Although the country-wide Armed Force non-tactical communications system is based on fixed station net radios, the system has inadequate provisions for diversified, alternate means of communication. The dedicated and skillful personnel in charge of its operation have provided for standard-

ization, efficiency, and coordinated operating practices and procedures. Except for personal contact, Army Chiefs have access to a single axis, single means system only for command, control, coordination, exchange of information, administration and logistics. In the past, the system has been reliable and adequate for all demands placed on it by the users. There has been no need for message center traffic control to dispose of peak traffic loads.

(e) The responsibility for unified direction of Armed Force communications-electronics needs explicit recognition. The Chief of CITFA coordinates with high officials of the Ministry of Defense, the EMGFA, the Navy and the Air Force from his present position. The EMGFA study of Army organization should recognize the staff communications-electronics responsibility of the Chief Signal Officer to the MOD and the Chief of Staff of the EMGFA as well as the operating responsibility for tactical and country-wide communications. The Chief of CITFA should be relieved of responsibility for basic training of conscripts which can result from implementation of the plan to establish a national recruit training center. He should be made responsible for school training of infantry communications personnel as required and directed by the EMGFA. Definition of his relationships with other Armed Force officials by regulation should facilitate improved administration of communications.

(f) The Army HF/SSB network requires periodic on site inspections to provide for optimum station performance and effective procedures for message handling and service to the user.

3. Recommendations (Figure 4)

(a) It is recommended that a JOC or equivalent be established and provided with appropriate communications terminals.

(b) It is recommended that out-of-country communications such as SIMCATEL, RECAT (the CAP Security Telecommunications Network), SITFA and RECIM (if set up) be linked with the proposed JOC so as to attain alternate communication capabilities.

(c) It is recommended that the Army reorganization study be accompanied by a communications plan based on the effective chain of command. Every commander should be made responsible for communications within his command and be provided

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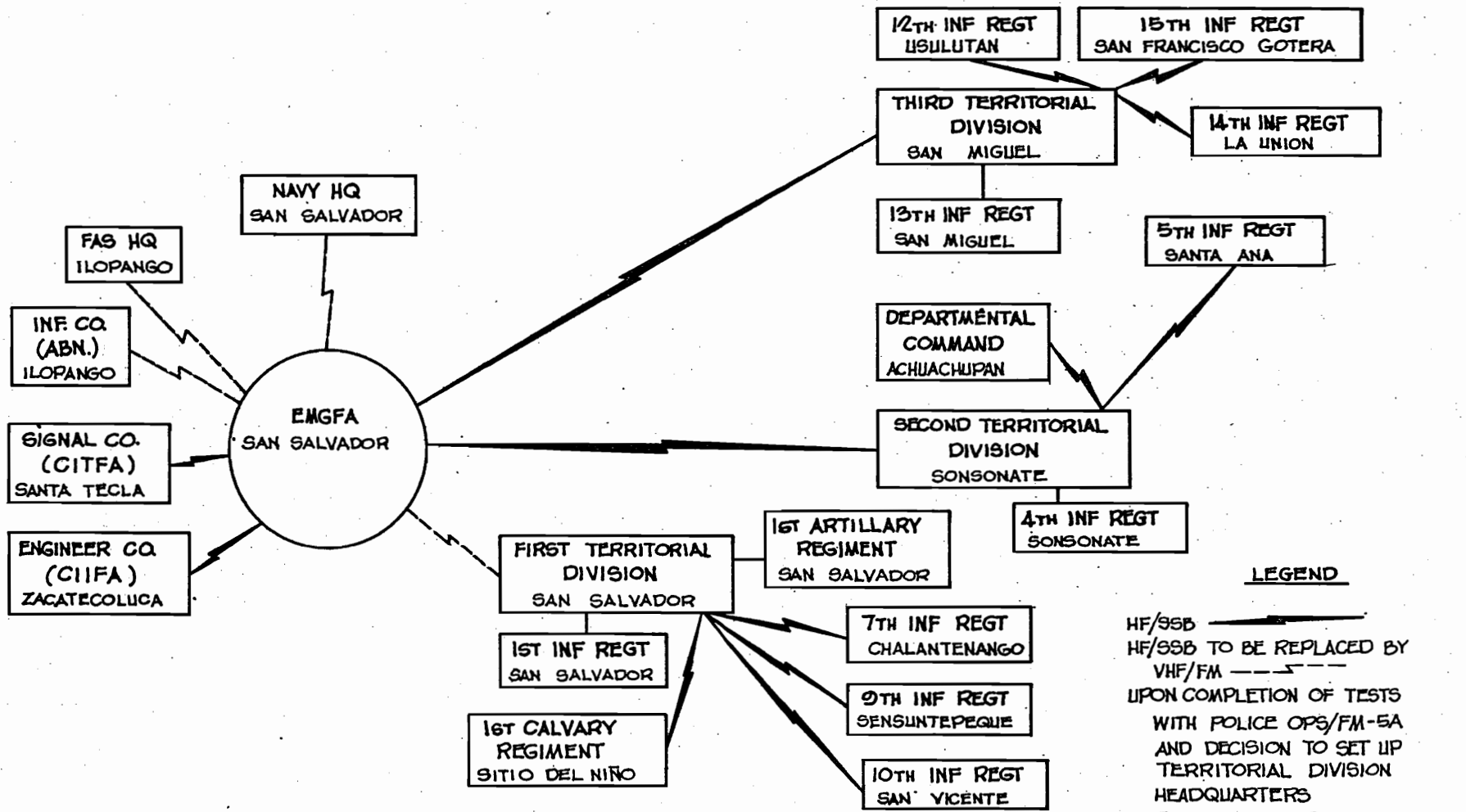
ARMED FORCE AND ARMY RADIO NETS (PROPOSED)

(UPON ARMY REORGANIZATION)

FIGURE No. 4



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with signal troops or training quotas for his own troops sufficient to carry out that responsibility.

(d) It is recommended that the plan for reorganizing Army radio nets take into consideration the characteristics of radio sets (e.g. HF/SSB is advantageous for long distance and VHF/FM can be effective for local communications). Meanwhile a frequency for a common emergency HF/SSB channel should be designated to permit exclusive use of one channel (HF/SSB) for coordination purposes among the various security forces; radios of the Army HF/SSB network should be crystallized for the designated frequency, and exercises should be conducted to determine the capability of all other security forces to enter the joint network from their own communications centers on the "common channel."

C. (C) Army Tactical Communications (Figure 5)

1. Observations

(a) Tactical communications for the El Salvadoran Army must depend primarily on the following MAP furnished radio sets: 70 AN/PRC-10, 60 AN/PRC-6, and 30 AN/GRC-87. At the present time, this equipment is stored and used almost exclusively for training purposes in the Signal Center at Santa Tecla.

(b) The Signal Company located at the Signal Center in Santa Tecla has two organic forward support platoons. These platoons are designed for tactical employment as direct support elements of the two MAP battalions. In the past it has been impractical to leave the MAP equipment in the infantry battalions without the Signal Platoon readily available to instruct and to maintain the equipment. For this reason, the equipment and the platoon have remained, with the exception of brief training periods, in the Santa Tecla area. In reality, the infantry battalions (MAP) have no organic communication capability and their communication support is mostly on an "as required" basis.

2. Areas for Improvement

(a) An austere tactical communications system does exist but the Signal Center at Santa Tecla cannot supply the day-to-day communications support that is required by the MAP infantry battalions. The infantry battalions need to train constantly using communications equipment in exercises even as low as at the squad level. Under the current system of

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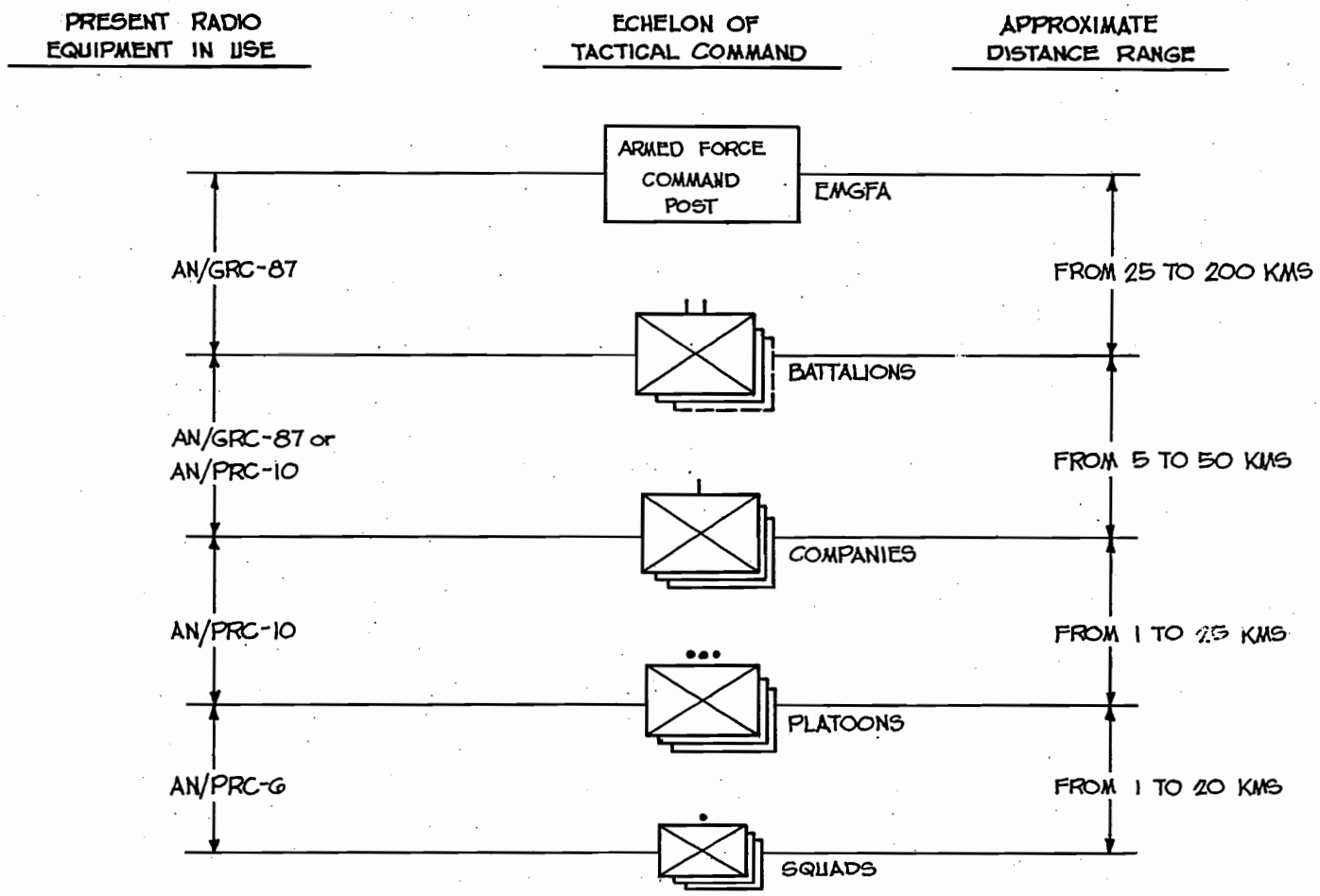
FIGURE No. 5

ARMY TACTICAL COMMUNICATIONS (EXISTING)



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NOTE: See Figure 5a for list of Army Communications Equipment Available.

El Salvador

Figure No. 5a

Army Communications Equipment Available

RADIO

120 AN/PRC-6 (including 60 purchased by GOES)
(with 6 crystal sets CK-6 on hand and 4 due in)
70 AN/PRC-10 (with antennas RC-292 including 3 purchased by GOES and 13 amplifiers AM-598/U)
30 AN/GRC-87 (1 RT-77 extra due in)
37 RCA SSB-1 (including 31 purchased by GOES)
(16 DYNAIR TRV-128 or substitutes due in)
(16 STONER PMC-12 or substitutes due in)

SWITCHBOARDS

1 SB-86
12 SB-22

POWER

Generators
10 PE-210
3 1.5 KW
(1 PU-564 10 KW due in)

Dynamotors
10 DY-88

TEST EQUIPMENT

1 Test Set TS-183
2 Audio Oscillator TS-382
(2 Test Sets TS-505/U due in)
2 Indicators ID-292
2 Tube Testers TV-7
(1 Signal Generator AN/URM-103 due in)
1 Multimeter TS-352
1 Multimeter AN/URM-105
(1 Oscilloscope O-58 due in)
1 Test Meter ME-77
1 Frequency Meter AN/USM-159 (plus 1 due in)

NOTE: All Army communications equipment is held by the 1st Signal Support Company (CATFA) regardless of location. Listing does not include test equipment purchased by the GOES.

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training the infantry troops do not develop an awareness for communications support which should be inherent to all operations. Training teams from Santa Tecla visit the MAP infantry battalions normally twice each year; however, the teams and all of the equipment are always returned to the Signal Center at Santa Tecla. In consequence, there is a certain lack of experience among the officers and non-commissioned officers of the Armed Force of El Salvador as to the employment of tactical communication equipment. For this reason, in the past it has been necessary to concentrate all of the school trained personnel in the Signal Center at Santa Tecla. The concentration of communications talent at the Signal Center provides an excellent source of instructors for the signal training center; however, conversely the infantry units suffer proportionately and continue to conduct training without organic communications support.

(b) The infantry lacks sufficient communications support. It is essential that the infantry have tactical communications equipment on site with the battalion and this equipment be used while the infantry units are going through their various phases of training. Due to the limited amount of tactical equipment available to the Armed Force of El Salvador it would be impossible to organize their communications strictly in accordance with US doctrine. However, where practical, US doctrine can be employed to provide them a framework of tactical communications which will link their major headquarters.

(c) Insufficient mobile/portable radio equipment exists to support tactical training and operations. Regardless of the specific communication support organization that is devised, the following comments are considered pertinent. Although the AN/GRC-87 provides long-range high frequency radio capability it would appear there is a requirement for a portable, lightweight, single sideband transceiver of approximately 20 watts output power. A radio of this capacity would provide not only compatibility with the Army cuartel networks and with other internal security forces; but most important, a radio of this type would provide reliable communications for:

(1) Long-range patrols in mountainous terrain.

(2) Links between battalions and higher tactical headquarters.

(3) Links between separately employed companies and their parent organization.

The exact method of employment would depend on the organization adopted by the GOES.

(d) Insufficient field exercises have been conducted to test the reliability of communications equipment and to test the adequacy of the training for the personnel operating the equipment, although the conduct of field exercises and emphasis on tactical training increased after July 1967. (Experience during 1967 led to the conclusion that communication is still a major weakness with respect to operational capability and combat effectiveness of units.) In the past, lack of gasoline for vehicles at the Signal Center has prevented dispersing tactical communication equipment for training exercises. Lack of radio batteries has also been a deterrent to adequate field training. (Note: The Government of El Salvador purchases all dry batteries which are used in MAP furnished radios.)

3. Recommendations

(a) That portable SSB radios of approximately 20 watts output power be obtained for use by the Armed Force of El Salvador. Specific quantities will depend on the organizations adopted by the host government; however, two radios (SSB) per company would be considered a minimum requirement, i.e., a total of ten radios per MAP type battalion. Typical employment is illustrated by the diagram shown in Figure 6.

(b) That an organic communications platoon, complete with equipment, be devised for each MAP type battalion. Platoon numbers could be trained and retrained as required at the Signal Center at Santa Tecla, but they would be assigned to the MAP type battalion and would train with the infantry units. The training exercises of such units should be planned to include Air Force support missions, so that FAS VHF/AM pack radios which will be prepositioned with major units as soon as feasible can be exercised for ground/air coordination.

(c) That organizations adopted by the GOES following completion of the Army organization study include troop allocations and minimum signal equipment sufficient to facilitate command and control and permit logistic coordination. The provisions of radio and wire equipment need not be strictly in accordance with US doctrine; they should satisfy tactical force needs for exchanging necessary information and orders, be as mobile as units supported, and be easily operable and maintainable by organization and personnel. If the tactical communications recommendations are implemented to meet those objectives, the Army will have the equipment it needs until field exercise traffic experience demonstrates the requirement to restudy organization of tactical communications.

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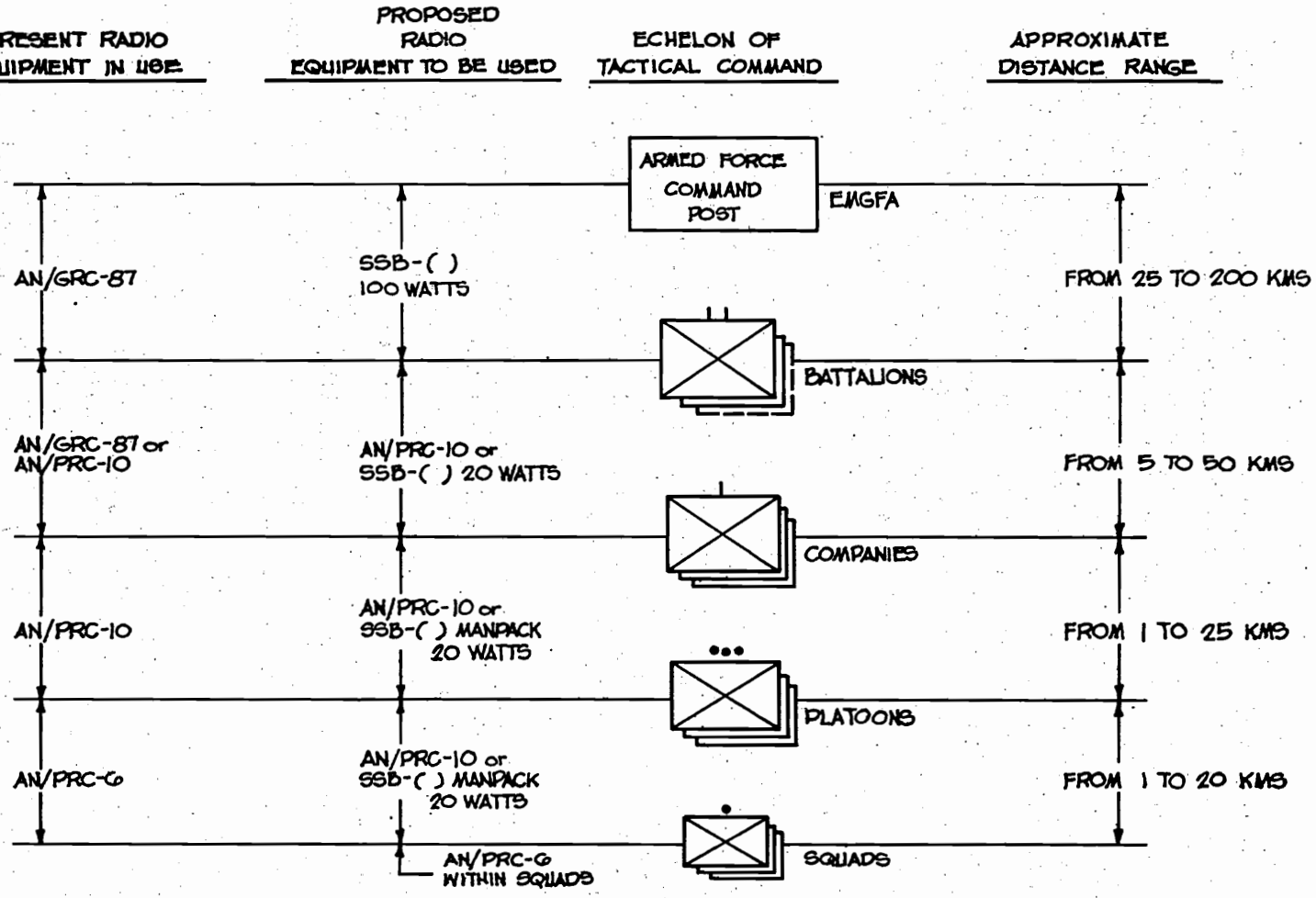
ARMY TACTICAL COMMUNICATIONS (PROPOSED)

FIGURE No. 6



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NOTE: TACTICAL RADIOS IN INFANTRY UNITS TO BE OPERATED BY COMMUNICATIONS TROOPS ORGANIC TO THOSE INFANTRY UNITS.

D. (U) Maintenance

1. Observation: Armed Force equipment maintenance repair service (except avionics) is consolidated at the Signal Center at Santa Tecla. Although shop space is rather limited, the facility is well organized, and thus far the technicians have adequately handled the required equipment repairs. A contact maintenance van is adequately stocked with spare parts and necessary tools. A mobile generator (an undelivered MAP item) is required to assure field repair capability. The Government of El Salvador purchases repair parts, supplies and batteries. There has been no distribution of maintenance supplies to the outlying area because signal equipment has been stored (and used for training) in the Signal Center. There has been no time-phased program for training maintenance personnel at commercial (ANTEL) or US Canal Zone schools. Although the Chief of the Signal Center is responsible for maintenance of communications equipment for the entire Armed Force, the Air Force at Ilopango Air Base has assumed responsibility for avionics within its limited capability.

2. Recommendations

(a) That Armed Force communications equipment (except avionics and VHF/AM) continue to be the repair responsibility of the Signal Center at Santa Tecla.

(b) That a schedule be established for a contact maintenance team to visit units in the outlying area. Scheduled visits are essential if procedures for mobile maintenance are to be effectively developed. Periodic visits should be made not only to the various cuartels of the Army and the Air Force but also to the Navy SSB radio stations at the country's ports.

(c) That spare parts and batteries be replenished on an orderly basis by GOES central purchases. Logistic planning is required to insure sufficient consumable items to support field training exercises by joint forces, infantry and signal troops.

(d) That the US Army School of the Americas in the Canal Zone be used where possible to augment the in-country technical training facilities. Within El Salvador commercial (ANTEL) school facilities should be used, especially for maintenance skills not included in Signal Center courses.

E. (U) Training

1. Observations

(a) The Signal Center at Santa Tecla (CITFA) can effectively train communications personnel for the Armed Force if a permanent instructor group is organized. At the present time, personnel from the Signal Center must serve as instructors and also perform operational communication support missions for the Armed Force. A definite improvement would result in both operations and instruction if they could be performed by separate staffs.

(b) No Navy or Air Force personnel are assigned to the Signal Center as instructors. There is no established program for training or retraining infantry, Navy or Air Force personnel at the Signal Center--even though all elements of the Armed Force have fixed and tactical equipment comparable to signal equipment taught at CITFA.

(c) The commercial communications system of El Salvador (ANTEL) is modernizing telephone and related services throughout the country. Accordingly it established a National School of Telecommunications (ENTEL) which produces trained technicians and operators in several telecommunications specialities. Although ANTEL training is geared mostly to the telephone and teletype equipment operated and maintained by ANTEL, much of the instruction is of such a nature that it would be appropriate for electronics maintenance repairmen of the internal security forces. There has been no time-phased program for training Armed Force maintenance personnel at the commercial communications school facility (ENTEL). No police agency has ENTEL trained technicians. For selected specialities it should be practical to augment Armed Force and Police training with appropriately arranged ANTEL technical training.

(d) The Armed Force (including the Navy and Air Force) has personnel who have completed schooling in U.S. military facilities. The Signal Center at Santa Tecla does not cover all technical fields to the same extent as Canal Zone and CONUS schools of the U.S. Army, Navy, and Air Force. By projecting requirements for trained communications personnel and planning use of local technical training facilities, security force staffs should be able to demonstrate the requirement for GOES support of out-of-country training. Selection and necessary language training of candidates for such schooling should contribute to a more intense technical training program.

(e) El Salvador has a well developed professional schooling system for military officers. In the past, however, command and staff supervision over communications equipment maintenance has not stressed preventive maintenance routines. Security forces have kept radios, for example, in use until they need repair. There is a requirement for supervisory interest in operator maintenance practices, even during on-the-job training. Troop leading and logistic instruction can incorporate techniques of inspection (such as preventive maintenance "indicators") and supervisory objectives concerning operator maintenance; much of the training emphasis can be taught as collateral subjects in tactical and administrative schooling.

2. Recommendations

(a) That a separate instructor group be organized at the Signal Center.

(b) That the Armed Force and police forces use ANTEL technical training wherever practical to augment their own training programs.

(c) That the Armed Force continue to select personnel qualified to take advantage of Canal Zone and CONUS school courses.

(d) That all government agencies stress preventive and operator maintenance in their various training programs.

SECTION II - NAVY

A. (FOUO) Mission and Organization

1. The mission of the Navy is to assure defense of the coast and sea territory of El Salvador, enforce navigation laws, guard against illegal landing or contraband or subversive agents, enforce local immigration laws and regulate the safety measures on major lakes and inland beaches of the country. The EMGFA exercises control over the Navy.

2. The distribution of the Navy is as follows:

(a) San Salvador--Naval Headquarters.

(b) La Union--Naval School, Coast Guard Headquarters, and Port Captaincy.

(c) La Libertad--Port Captaincy.

(d) Acajutla--Port Captaincy.

3. The Navy is authorized four vessels. Three are operational with limited radio equipment. The fourth, a 65-foot Sewart aluminum hull boat, is being delivered in September 1967, with radar and a KWM-2A.

4. Navy strength totals approximately 120. There is one trained communications/radar maintenance non-commissioned officer. Operators have sufficient on-the-job training to participate in nets.

B. (FOUO) Observations

1. Naval Communications (Figure 7). The Navy operates a station in the Army SSB radio net. The Navy has a command net of its own based on single sideband radios which are installed in Naval Headquarters in San Salvador, the Port Captaincies at Acajutla, La Libertad, Port El Triunfo and La Union and a net control station at the CITFA in Santa Tecla. Pending receipt

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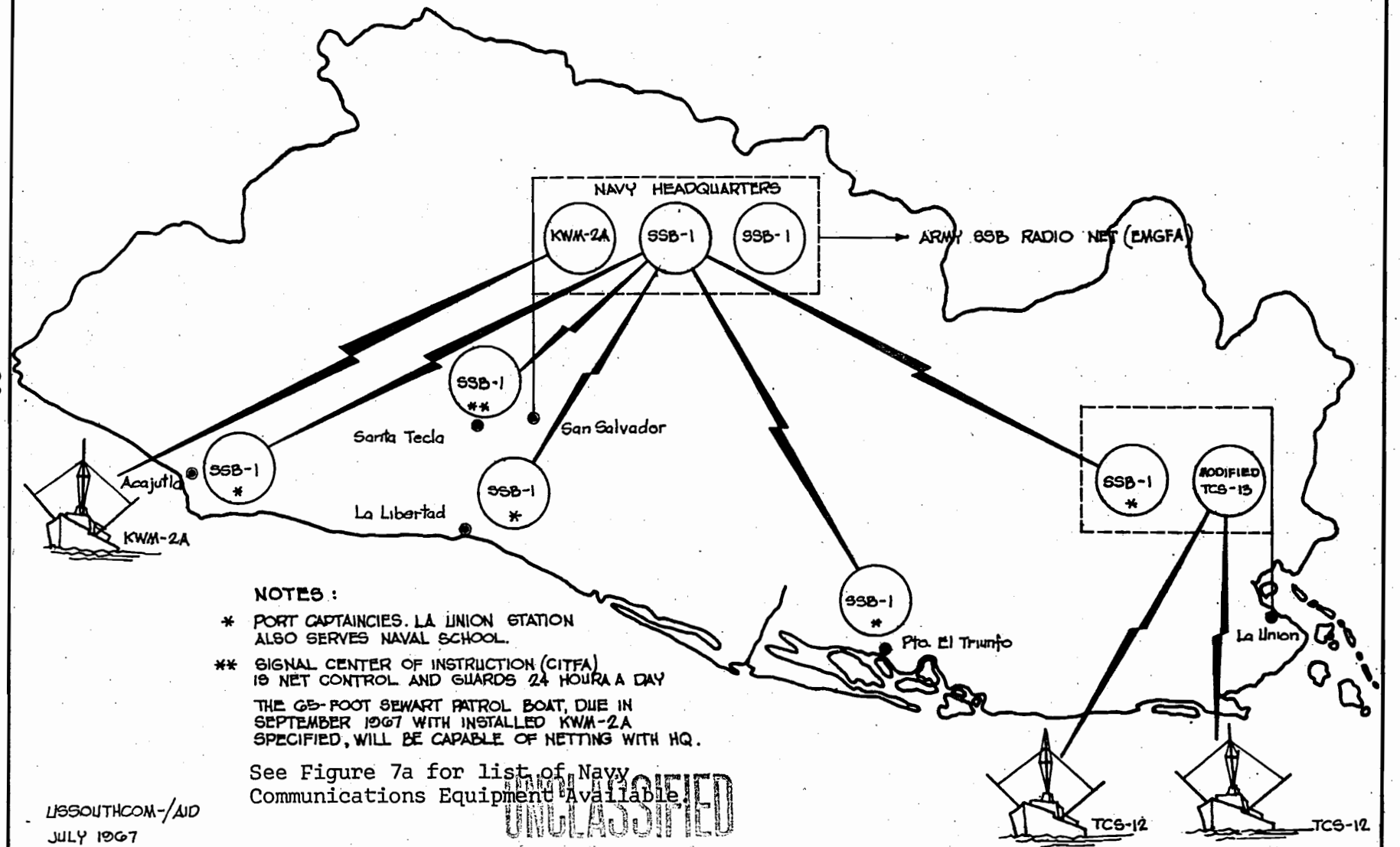
NAVY COMMUNICATIONS (EXISTING)

FIGURE No. 7



NOTES :

* PORT CAPTAINCIES. LA UNION STATION ALSO SERVES NAVAL SCHOOL.

** SIGNAL CENTER OF INSTRUCTION (CITFA) IS NET CONTROL AND GUARDS 24 HOURS A DAY

THE 65-FOOT SEWART PATROL BOAT, DUE IN SEPTEMBER 1967 WITH INSTALLED KWM-2A SPECIFIED, WILL BE CAPABLE OF NETTING WITH HQ.

See Figure 7a for list of Navy Communications Equipment Available.

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Figure No. 7a

El Salvador

Navy Communications Equipment Available

RADIO	TEST EQUIPMENT
2 Collins KWM-2A (plus 2 additional due in - to be provided by GOES)	None indicated

NOTE: Listing does not include HF/AM equipment afloat and ashore. The KWM-2A installed on the 65-foot Sewart patrol boat is also not included.

of installation items, the two KWM-2A radios intended for boat operation with shore stations are not installed in boats; one is simply carried in a boat for use netted with the second which is set-up in Naval Headquarters. The KWM-2 in the boat is stored in a cabinet when not in use. Two other boats have TCS-12 HF/AM radios. The TCS-12 radios were rehabilitated in 1966 but are in poor condition because of maintenance problems. The TCS-12 radio provides a capability for contact with the tactical ground units using the AN/GRC-87 HF/AM radio.

C. (FOUO) Areas for Improvement

1. The Navy SSB net is adequate for present traffic loads in shore-to-shore communications. Frequency assignments must be re-examined upon installation of KWM-2A type radios in boats to insure compatibility of shore stations with the boat transceivers. Operators at Port Captaincies and in the SSB equipped boats will require practice through communications exercises and actual use of SSB when boats are on patrol. Operators on boats will require similar practice in netting their TCS-12 radios with Army AN/GRC-87 stations; communications exercises will have to be coordinated at the EMGFA level. There are no VHF/AM radios available to the Navy at this time. When the Armed Force procures enough VHF/AM pack radios for issue to the boats, communications exercises with inshore patrol aircraft will have to be coordinated at the EMGFA level. The Port Captaincies do not have any training in inshore patrol operations involving aircraft. Should sufficient VHF/AM become available for prepositioning at Port Captaincies, Armed Force air-ground operation procedures will have to be extended to Port Captaincies; and Navy personnel at each Port Captaincy will have to be trained in such procedures as well as in VHF/AM radio operation and user maintenance.

D. (FOUO) Recommendations

1. It is recommended that the El Salvadoran Armed Force:

(a) Equip each boat with an HF/SSB radio set of suitable type. (This is being accomplished through MAP support.)

(b) Equip each boat with a VHF/AM ground-to-air radio of a suitable type. (This will be accomplished upon receipt of model radios requisitioned through MAP.)

(c) Plan for training exercises in HF/AM boat-to-ground communications; in VHF/AM boat-to-aircraft communications; and, contingent upon equipping Port Captaincies with VHF/AM radios, in air-ground procedures and VHF/AM ground-to-aircraft communications for inshore patrol operations. (Figure 8)

(d) Insure that CITFA training or an adequate substitute be given to all Navy personnel engaged in electronic maintenance.

(e) Provide and fill personnel authorizations for adequate manning of Navy boat and shore radio stations.

(f) Insure that assigned shore station frequencies are compatible with equipment used in boats.

(g) Insure that SSB radios of the Navy are capable of switching to the emergency coordination channel.

2. When the recommendations are implemented, the Navy will have complete and adequate radio communications sufficient to make the necessary contribution to the overall internal security capability in El Salvador.

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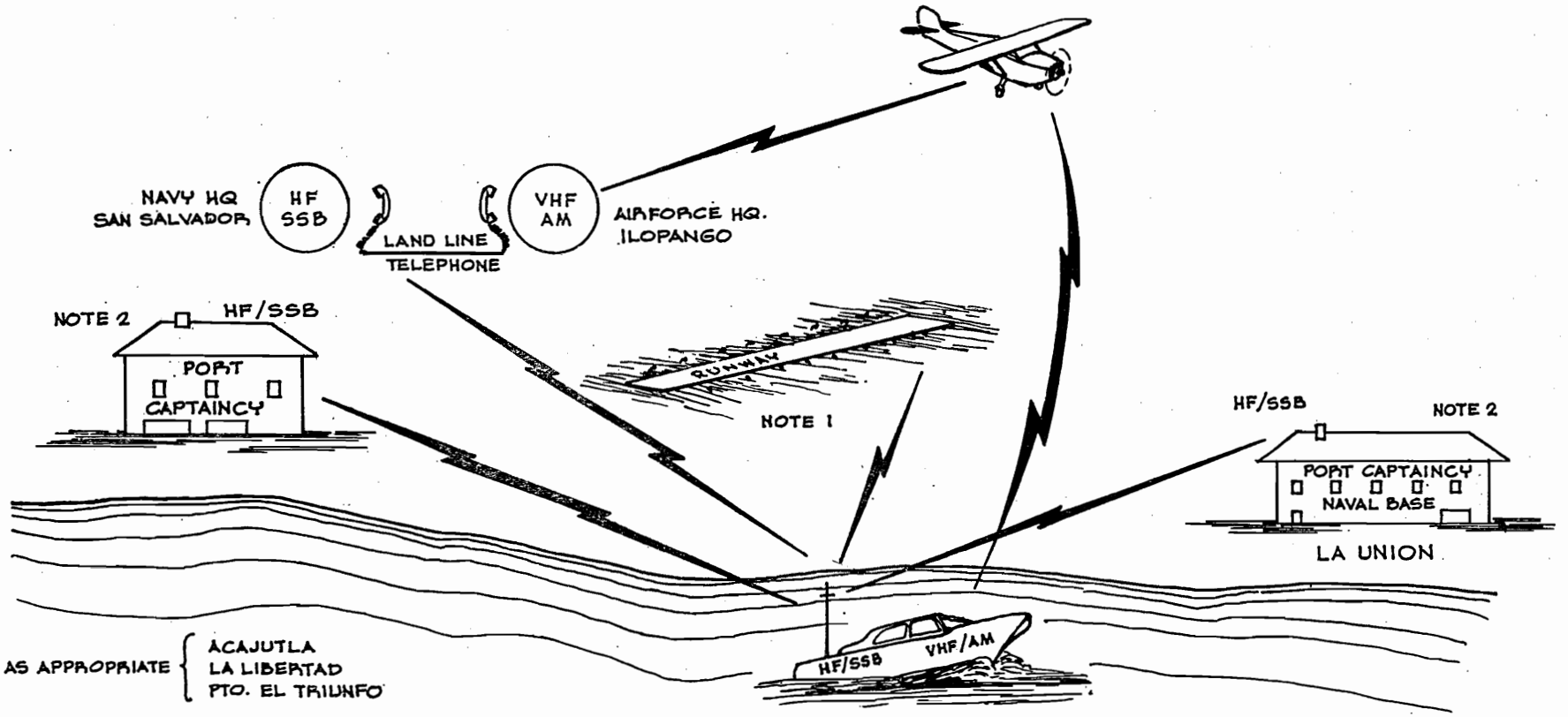
FIGURE No. 8

NAVY - FAS INSHORE PATROL (PROPOSED)



NOTES:

1. AIRFORCE FLYAWAY PACKAGE AND CONTROL TEAM MAY BE DEPLOYED TO COASTAL AREA IF DIRECTED BY FAS HQ.

2. SPECIAL TRAINING REQUIRED FOR NAVY PERSONNEL AT PORT CAPTAINCIES IF VHF/AM RADIOS ARE KEPT AT PORT CAPTAINCIES.

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SECTION III - AIR FORCE

A. (FOUO) Mission and Organization

1. The mission of the El Salvador Air Force (FAS) is to assist in maintaining internal order, furnish transportation for government officials, and provide airlift for an airborne infantry company. The EMGFA exercises control over the FAS.

2. The FAS headquarters cuartel is located at Ilopango International Airport outside San Salvador. FAS forces are concentrated at Ilopango Air Base and include in one composite flying organization the following inventory of aircraft:

(a) 5 Corsairs

(b) 3 C-47s

(c) 2 T-6s

(d) 1 T-34

(e) 5 U-17As

(f) 2 Cessna 180s

3. FAS strength totals approximately 500, including the security guard and the Army Infantry Company (Airborne).

4. FAS communications is a responsibility of the FAS maintenance officer. A sergeant specializes in communications both ground and avionics. The five specialists in the maintenance shop of the Maintenance, Supply, Communication and Transportation Group are capable of minimum maintenance services on avionics.

B. (FOUO) Observations

1. Communications between FAS headquarters and the EMGFA thirteen kilometers away is maintained by ANTEL land line telephone and by an RCA SSB-1 radio operating 24 hours a day in the Army SSB radio net. The radio operator normally

uses a telegraph key (CW), and he is required to provide a typewritten hard copy of all transmission--retaining a record copy of each message in the station.

2. All FAS aircraft are equipped with VHF/AM radios for air to ground communications, which permit contact with the tower at Ilopango International Airport and FAS Operations. All aircraft have low frequency (LF) homing radios for navigation use. The three C-47s are equipped with HF/AM equipment in addition. (Figure 9)

3. Communications between FAS and other country air forces is provided 0700 to 1700 Monday through Friday each week by an Eldico SSB radio in the Sistema Inter-Americana de Telecomunicaciones de Fuerzas Aereas (SITFA). The system was set up for closer coordination between Chiefs of American Air Forces to achieve greater solidarity and capability for hemispheric defense as a result of the fifth Annual Conference of Air Force Chiefs and Chiefs of Staff in Washington, D. C., May 1965. It is operated voice in Spanish and passes aircraft clearance traffic, aircraft movement, weather, NOTAM and search and rescue information.

C. (C) Areas for Improvement

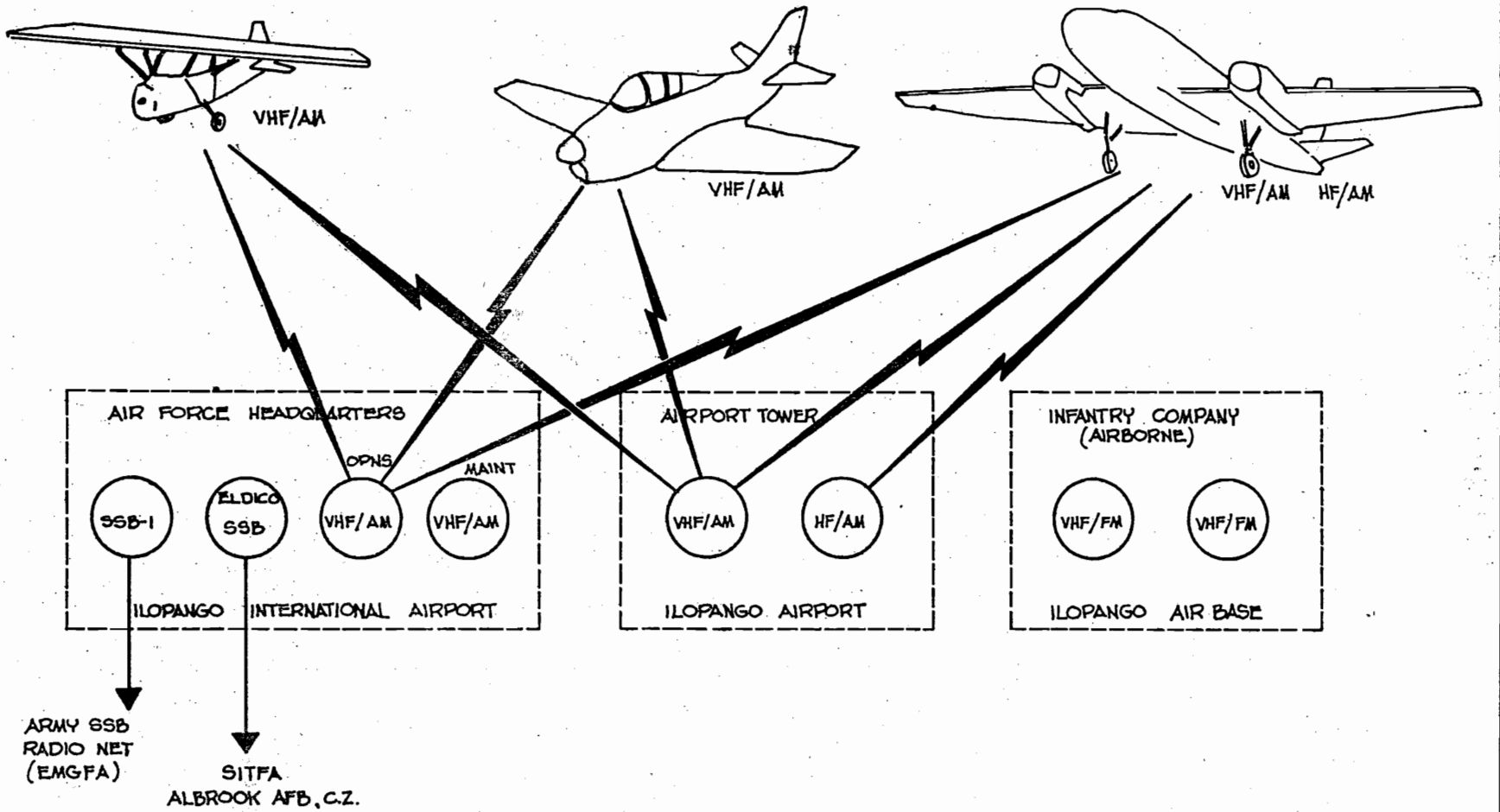
1. Communications between the Chief of FAS and the other internal security force chiefs depends on ANTEL land lines, which are subject to interruption by accident or sabotage. FAS headquarters at Ilopango Air Base is within VHF/FM range of the offices of other chiefs in San Salvador. To establish a voice link with the proposed JOC and for coordination with other top internal security authorities, the chief of FAS should be included in the recommended High Command Coordination VHF/FM Network.

2. Hard copy communications between FAS and EMGFA results from current procedures for operation of the Army SSB Radio Net (CW). As long as traffic is limited, the existing provision is adequate to the requirement for written messages to the proposed JOC. When the situation requires consideration of teletype in the future, the FAS requirement should be included in the integrated GOES study of the problem.

3. The FAS does not have the capability to deploy and operate from any airfield other than Ilopango or provide any type of forward air control operation talking from ground to air in the field. The requirement for air/ground communications

FIGURE No. 9

AIR FORCE COMMUNICATIONS (EXISTING)



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NOTE: See Figure 9a for list of Air Force Communications Equipment Available.

El Salvador

Figure No. 9a

Air Force Communications Equipment Available

RADIO

1 Oscillator ART-13A
1 Control Receiver BC-732A
1 Reel, antenna
1 Reel Control BC-461
1 Control Transmitter C87 ART-13
1 Control Radio Set C-404A/A
1 Radio Receiver BC-348R
1 Indicator 5826-149-1451
1 Antenna

NAVAID

1 Control Indicator LD-851 ARN-14
1 Control Receiver C-996A
1 Indicator Course ID 250A/ARN
1 Indicator Course ID 351A/ARN
1 Control Receiver C-403A/A
1 Amplifier, AF type BC-347-C

TEST EQUIPMENT

1 Test Set AN/ARM-1
1 Signal Generator MD-83A
1 Signal Generator SG-13/ARN
1 Test Set AN/ARM-10
1 Oscillator OS-8U
1 Signal Generator USM-44A
1 RF Wattmeter AN/URM-43
2 Signal Generator ARN/SG-1
1 Multimeter TS-585
1 Multimeter TS-297
1 Signal Generator AN/URM-25
1 Multimeter AN/PSM-6
1 Oscilliscope TS-382/U
1 Oscilliscope
1 Test Set AN/PRM-7
1 Test Set, Electron Tube
2 Frequency Meter AN/URM-79
1 Test Set Transistor
1 Multimeter ME-26/U

NOTE: Listing does not include installed aircraft avionics. The ELDICO radio assigned to the SITFA net is also not included

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outside the Ilopango area of control is paramount in attaining effective tactical air support. Al El Salvador aircraft have a VHF/AM capability, so the logical solution is to equip the ground element--whether FAS or Army--with a portable VHF/AM set. The Army has an immediate requirement for air/ground communications for use with the 1st Infantry Company (Airborne), its paratroop unit. The pack portable VHF/AM radio can be jumped into the objective area by a parachute qualified Army operator; it is light enough to be carried by one man. To insure an equivalent air/ground communications capability for the Air Force itself, a flyaway communications package has been designed using equipment light enough to be transported in the U-17A (Cessna 185).

4. The flyaway communications package is designed to provide a "bare base" operational capability for point-to-point, air-to-ground, and navigational aid communications at any advance landing field. It is suitable for ground employment for FAS missions. It consists of three separate units (Figure 10):

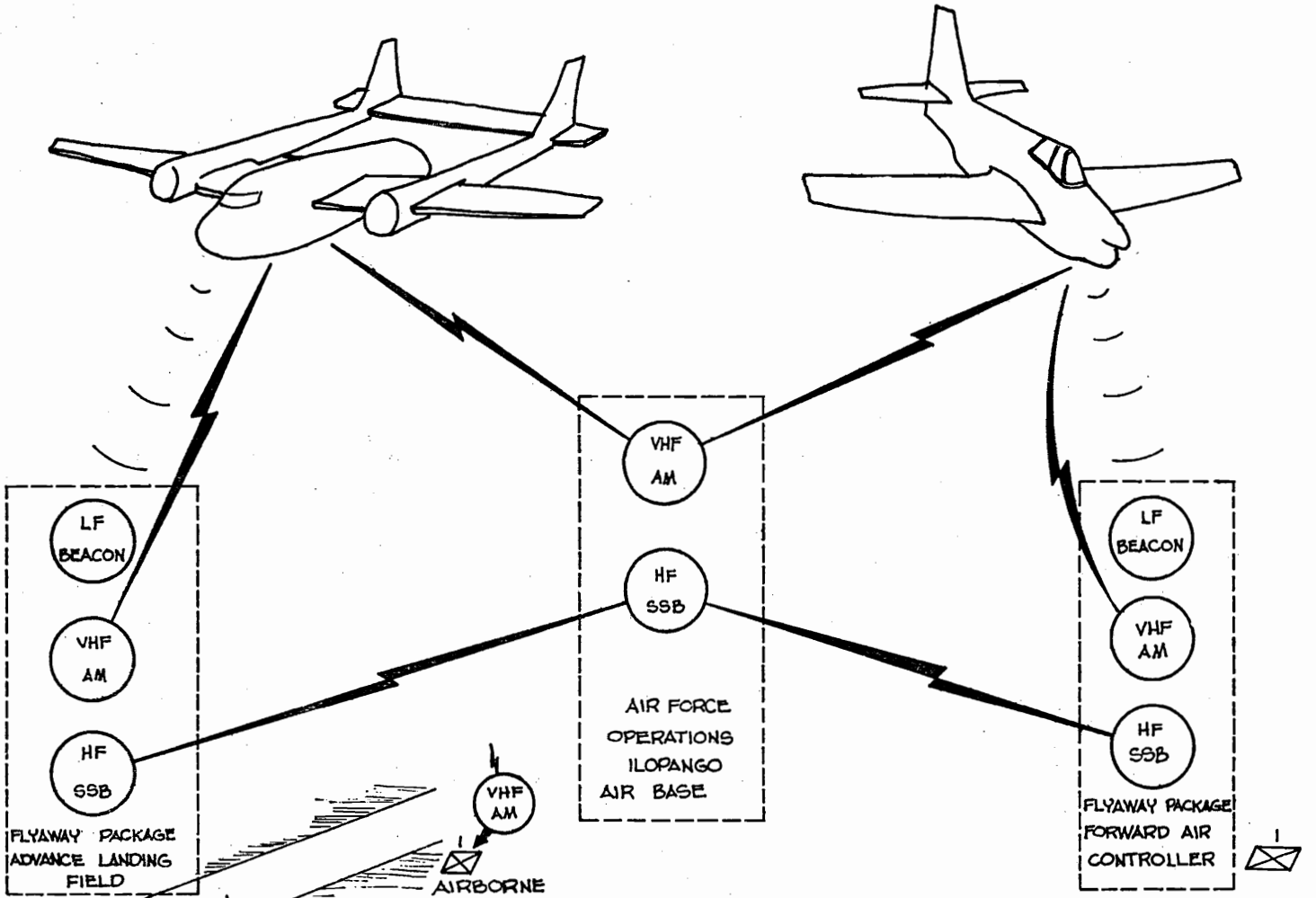
(a) One pack portable HF/SSB radio for point-to-point contact with the home base (Ilopango Air Base) or for entry into the Command Net for specific instructions while operating in the field or a forward operating location. A light commercial substitute for the AN/PRC-47 or AN/PRC-74 such as the Stoner PMC-12 is battery powered and can be maintained on the air for an indefinite period as long as batteries can be recharged and flown in or hand carried to the operational site.

(b) Three pack portable VHF/AM radios for ground-to-air contact with FAS aircraft approaching or in the area and for local ground-to-ground short distance coverage in connection with air operations. A light commercial substitute for the AN/PRC-65 such as the DYNAIR SKY-515 MWP is battery powered and capable of 5 watt operation up to 30 hours under normal operating conditions without battery recharge. Three radios are used to permit short moves from the landing strip while maintaining both the air-to-ground capability and ground contact with the site at the strip plus a set in reserve to preclude outages.

(c) One portable low frequency (LF) homing beacon. The HRT-2A beacon, for example, is compatible with all FAS and most US aircraft. Its location, selection of ground plane, and battery life limit the distance within which it is effective as a navigational aid, for homing and pin-pointing the operational site.

FIGURE No. 10

AIR FORCE ADVANCED LANDING FIELD CONTROL (PROPOSED)



5. The applications of the flyaway package are many and variable. Use of one or more would provide FAS with mobility and flexibility throughout El Salvador. Two packages could be airlifted in one aircraft, or a package could be transported by truck to any airfield or remote point in the country.

(a) There are airfields within 20 kilometers of 14 of the principal troop garrisons. If scene-of-action operations nearby are to take advantage of airborne reinforcement or close air support, a package of essential communications must be available in the area.

(b) If a communications-navaid flyaway package is made available, minimum communications could be landed in a light aircraft. For other locations such as Chalatenango, Sensuntepeque, San Vicente, or Cojutepeque, the communications could be introduced by truck in coordination with troop movements. Similarly FAS participation in inshore patrol operations could employ a flyaway package capability at any suitable coastal location.

(c) Effective use of a flyaway package requires the assignment, training, and exercise or civic action employment of a forward air controller and two technicians for each package. Necessary decisions are needed within the Armed Force and by the GOES to devote sufficient resources to the air-ground role to properly demonstrate the FAS capability in being. Simply acquiring one portable LF homing beacon, one portable HF/SSB point-to-point radio, and three portable VHF/AM ground-to-air radios for each flyaway package and building a case to contain them will not satisfy the requirement for the Air Force operational concept of a flyaway package.

6. Communications between the FAS and the Army Infantry Company (Airborne) presently must rely on messengers and the local telephone system within the FAS cuartel. FAS does not have the capability to maintain communications with paratroopers after delivering them by air. The ten pack radios AN/PRC-10 in the hands of the Infantry Company (Airborne) are incompatible with the radios in all FAS aircraft and are required for ground operations of the paratroopers. The flyaway package proposed could be rigged for parachute delivery but the FAS personnel assigned to it need not necessarily be parachute qualified. The VHF/AM pack radio, on the other hand, could be jumped into the objective area by a parachute qualified operator from the Infantry Company (Airborne). Using voice relay techniques, aircraft supporting an airborne operation could provide minimum communications either with the FAS advance landing field control team or directly with FAS Operations,

depending on the location of the objective. The paratrooper using the VHF/AM pack radio would have to be trained in FAS ground-to-air procedures. The VHF/AM radio could be used as back-up communications between the Infantry Company (Airborne) and FAS Operations in garrison.

7. The HF/AM capability of the C-47s has not been adequately exercised. It is not known whether it could in fact operate with HF/AM radios in boats of the Navy or with radios AN/GRC-87 of the Army tactical units. Whether the HF/AM receivers could monitor any SSB net has not been established.

8. There is no HF/SSB capability in the C-47 or the Cessna aircraft. Flights outside the Ilopango area of control lack continuous radio communications with FAS headquarters. Such communications are necessary for effective search and rescue missions, border patrol, inshore patrol operations, and working with US forces on combined exercises.

9. The limited avionics maintenance capability should be of immediate concern. A consolidated communications maintenance capability should be established at Ilopango Air Base utilizing Air Force personnel, concentrating all spare parts and test equipment, and combining the skills of available technicians. To take advantage of technician training in the Canal Zone and in the CONUS (Keesler AFB), a constant group of standby students should be continually preparing to be eligible for out-of-country training classes.

D. (C) Recommendations

1. It is recommended that the El Salvadoran Armed Force:

(a) Include the Chief of FAS in the recommended High Command Coordination VHF/FM Network.

(b) Incorporate the hard copy communications requirement between the FAS Ilopango headquarters and the EMGFA in the integrated GOES study of any future teletype net for the JOC complex when the situation requires consideration of teletype.

(c) Take immediate action to develop an effective air-to-ground communications capability. Assembling two of the flyaway communications packages outlined earlier will be an excellent start. These packages can be used in a

multipurpose role: First, as a forward air control point at any airstrip or area that requires immediate action; second, as a civic action package to be used to direct operations in support of disaster areas; and third, as an operational point for search and rescue missions. These packages are needed for support of Air Force missions where navigation aids and air-ground communications are unavailable.

(d) Select and train at least two teams of three FAS personnel each for assignment to flyaway communications packages. It is desirable to have a rated Air Force officer as primary member of each flyaway package team; however, ground officers can use the air-to-ground equipment to good advantage with a minimum amount of training. The other two members of each team should be qualified FAS operator/maintenance technicians to be trained to operate the equipment first and provide field maintenance as required.

(e) Establish a program for training Army officers in forward air guide techniques and FAS capabilities for tactical air support of ground troops in joint operations. The flyaway communications package team could be used in such training.

(f) As soon as feasible, have strategically placed portable battery powered VHF/AM radio sets with major military units kept in readiness for air/ground operations. The training exercises of such units should be planned to include FAS support missions so as to exercise the capabilities of troops using the VHF/AM radio to aircraft. Any repair of VHF/AM pack radios should be accomplished in the FAS consolidated communications maintenance facility at Ilopango rather than attempted at outlying unit locations.

(g) Equip the 1st Infantry Company (Airborne) with its VHF/AM pack radios as a priority requirement. Insure that paratrooper operators are selected, trained, and assigned to the radios. Develop techniques for use of the radios in Drop Zone contacts with aircraft in joint airborne operations. Use the radios while under charge as back-up communications between the Infantry Company (Airborne) and FAS operations in garrison.

(h) Conduct sufficient tests to establish whether the HF/AM capability in the C-47s can net with boats of the Navy and AN/GRC-87 radios of Army tactical units. Plan for training exercises to utilize the established capability.

(i) Determine whether HF/AM receivers can monitor FAS SSB transmissions. Incorporate the requirement for SSB equipment in C-47s and Cessna in any aircraft modernization plans. Insure that FAS technicians are capable of maintaining SSB avionics equipment.

2. It is recommended that the El Salvador Air Force (FAS):

(a) Establish a consolidated communications maintenance capability based on the skills of available technicians in the existing maintenance shop. Coordinate with the Army to assure responsibility for all avionics and related equipment (such as VHF/AM pack portable radios) and insure Army support on ground type equipment (such as RCA SSB-1s and AN/PRC-10s).

(b) Obtain USMILGP advice on preparing a group of standby students to be eligible for out-of-country training in communications technical skills; on handling spare parts, test equipment and actual maintenance on a consolidated basis; and on utilizing in-country schooling, joint exercises, and combined exercises as a basis for upgrading the training of communications, maintenance, and air-ground operations specialists.

(c) Develop and coordinate with the Navy and the Army air-ground (air/boat) procedures for tactical air support and inshore patrol operations. Participate in training exercises to test the procedures in operations.

(d) Insure that SSB radios in in-country nets are capable of switching to the emergency coordination channel.

SECTION IV - NATIONAL POLICE

A. (FOUO) Mission and Organization: The National Police of El Salvador is a uniformed police force with an authorized strength of 2,170; actual strength is approximately 1,890 officers, agents and civilians. Its basic responsibilities are the maintenance of law and order in the urban areas, the control of traffic and the investigation of crime and subversion throughout the country. The Directorate of the National Police is composed of regular Army officers; however, the National Police is not subordinate to the Army nor to the Chief of Staff of the Armed Force (EMGFA). It is directly responsible to the Minister of Defense.

B. (FOUO) Observations and Conclusions

1. VHF/FM Administrative Communications Network (Figure 11)

(a) By use of a repeater station situated on Volcano El Boqueron, combined with voice relay techniques, the National Police have exploited the El Salvador topography to establish a VHF/FM Administrative Communications Network interconnecting the National Police Directorate in San Salvador with twenty-two subordinate police stations located throughout the country. (Refer to the attached illustration on the National Police Communications Network station distribution.) This network currently satisfies the police need for reliable 24-hour-a-day communications to provide the National Police and other internal security agencies with a country-wide communications capability.

(b) The traffic loading presently handled over this system is minimal with most stations averaging seven to eight messages a day. Existing equipment is less than five years old; has been properly maintained; and, therefore, has a fairly high degree of reliability.

2. HF/SSB Administrative Communications Network (Figure 11)

(a) The National Police point-to-point HF/SSB Administrative Communications Network consists of five stations. These interconnect the San Salvador National Police Directorate with subordinate police headquarters in Acajutla, Sonsonate, Santa Ana and San Miguel. Refer to the attached illustration on the National Police communication Network station distribution (Figure 11).

(b) The HF/SSB network provides a backup capability to the VHF/FM administrative network. The exception is Acajutla where it is proposed to replace the HF/SSB transceiver now in use with a VHF/FM base station unit presently in the country. The HF/SSB equipment thus released will be relocated to an appropriate remote rural site now lacking communications with National Police Headquarters.

(c) Unlike the VHF/FM network, which is reliable 24 hours a day, the HF/SSB network operation requires frequency selection to nullify changing atmospheric conditions in order to achieve reasonably dependable communications.

(d) Although the HF/SSB equipment of the National Police, National Guard, and the Army networks are compatible, the choice of a suitable common frequency allowing reliable communications between these three security groups has yet to be accomplished.

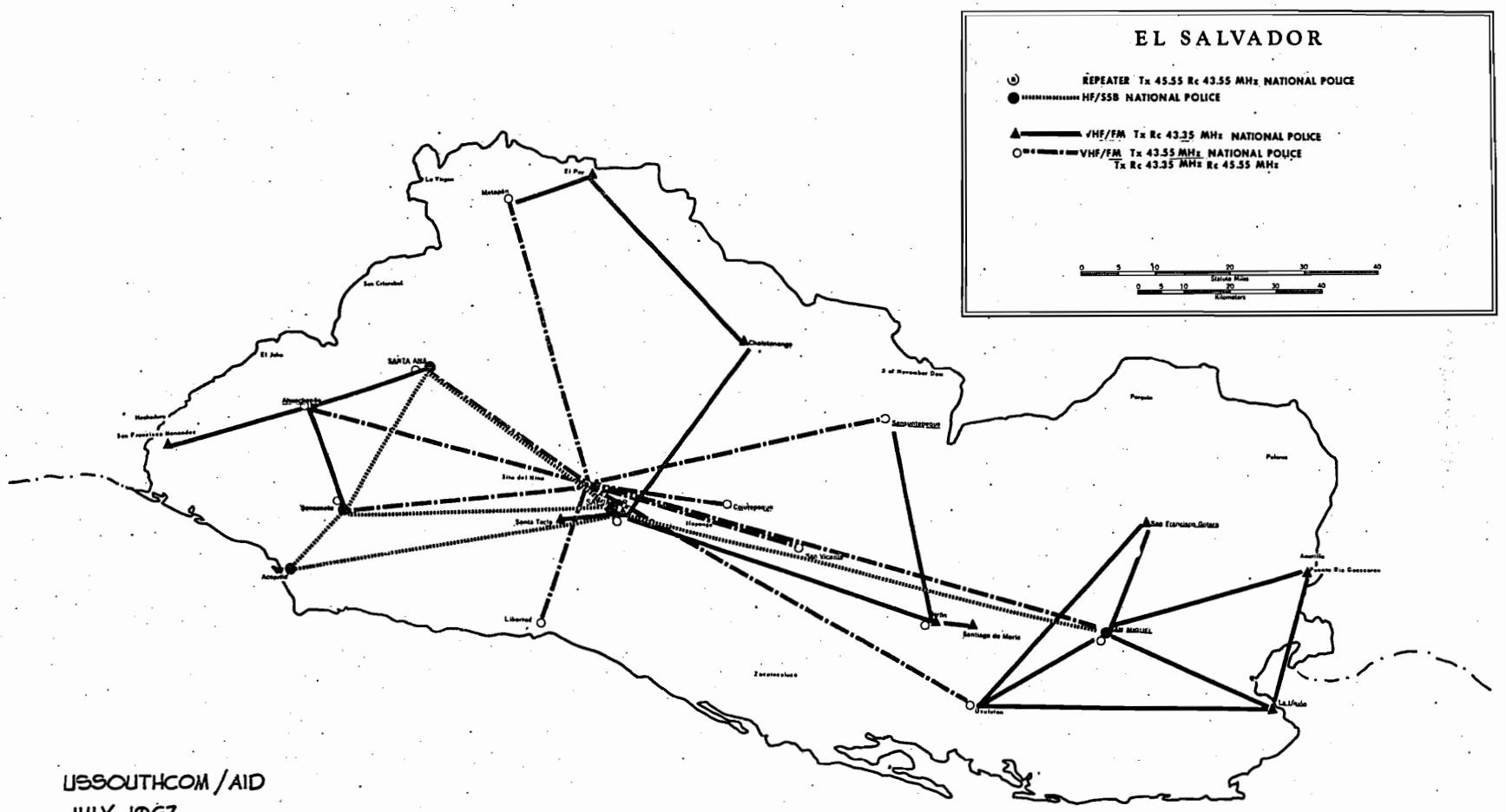
3. Tactical VHF/FM Network

(a) In order to meet the threat of insurgency or dissident activity both in the cities and along the borders of El Salvador, some form of tactical and vehicular communications capability for the security forces is required. Presently, there is a shortage of such suitable vehicles for transportation of both the National Police and National Guard forces. No suitable means of tactical communications exists to support these groups in the vulnerable rural areas.

(b) A situation analysis by the USAID Public Safety Division in El Salvador recognizes this deficiency and proposes to resolve this need by utilizing an estimated total of ninty-seven radio-equipped vehicles distributed between both internal security groups. The establishment of a tactical VHF/FM radio network is strongly urged if the National Police and the National Guard are expected to fully meet their respective internal security missions.

FIGURE No. 11

National Police COMMUNICATIONS NETWORK -



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NOTE: See Figure 11a for list of National Police Communications Equipment Available.

El Salvador

Figure No. 11a

National Police Communications Equipment Available

RADIO

25 Mobile Radio VHF/FM RCA CMF-55B1
42 Mobile Radio VHF/FM RCA CMF-T50-LD
5 Mobile Radio VHF/FM RCA 100W CMFT-100B
24 Motorcycle Radio VHF/FM Motorola T31BAD
8 Portable Radio Motorola P 31DDN-1030A
3 Base Station RCA Carfone 250W CSF-250
1 Base Station RCA Carfone 350W CSF-350
4 Base Station RCA Carfone 100W CFF-100A1
6 Base Station RCA Fleetline 100W CFFE-100A4U
14 Remote Control Console RCA CC12A-110CA
3 Receiver 2 frequency LD-50 B4U-DR
7 Receiver RCA CHFE-DR
6 Transceiver HF/SSB 100W RCA

RADIOTELETYPE

1 HF/SSB Transmitter TMC GPT-750
1 HF/SSB Receiver Collins 51S1
1 Teleprinter Teletype Model 28ASR
1 Tone Keyer/Converter - Telesignal 102/109

NOTE

Listing does not include significant inventory of test equipment.

Listing does not include installed local telephone system and associated tools and test equipment.

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4. City Radio Patrol Car Systems

(a) San Salvador is the only major city in the country to have sufficient radio patrol cars to support police operations. The operational capability of this radio patrol car system is currently adequate to fulfill police needs.

(b) Although there are 80 radio equipped mobile units operating in San Salvador, only 8 to 12 are normally on actual patrol duty at any one time. Many of the other radio units are assigned to officials of the National Police Directorate and officials of other internal security agencies.

(c) The patrol car system operates on a primary frequency of 43.45 mc within the capital and can switch to 43.35 mc to net with the VHF/FM Administrative and National Guard equipment during emergencies or joint operations.

5. CAP Security Telecommunications Network (Figure 12)

(a) In response to a formal request in the early part of 1964 by the various Ministers of Security and Government of Central America and Panama, a high-frequency security radio network has been developed and installed to facilitate the exchange of all types of police and security information among the Central American Republics and Panama. This network, which interconnects all CAP countries using identical radio equipments, was provided on a grant basis by AID Public Safety for control and operation by the top-level government security agency within each country. All internal security groups (police, intelligence, military, customs, immigration, etc.) are freely allowed to participate in official information exchange with like security groups in other CAP countries through their respective CAP Security Telecommunications Stations.

(b) Communications consists of information on movements and activities of subversives and criminals coordinated among these security groups along with a standardized identification records system. Messages are promptly delivered to the designated agency for action with a detailed log kept of all incoming/outgoing traffic. Standard message forms are used for message traffic over the net.

Figure No. 12

CAP Security Telecommunications Network (RECAT)

SIX MAJOR
TELECOMMUNICATIONS FUNCTIONS

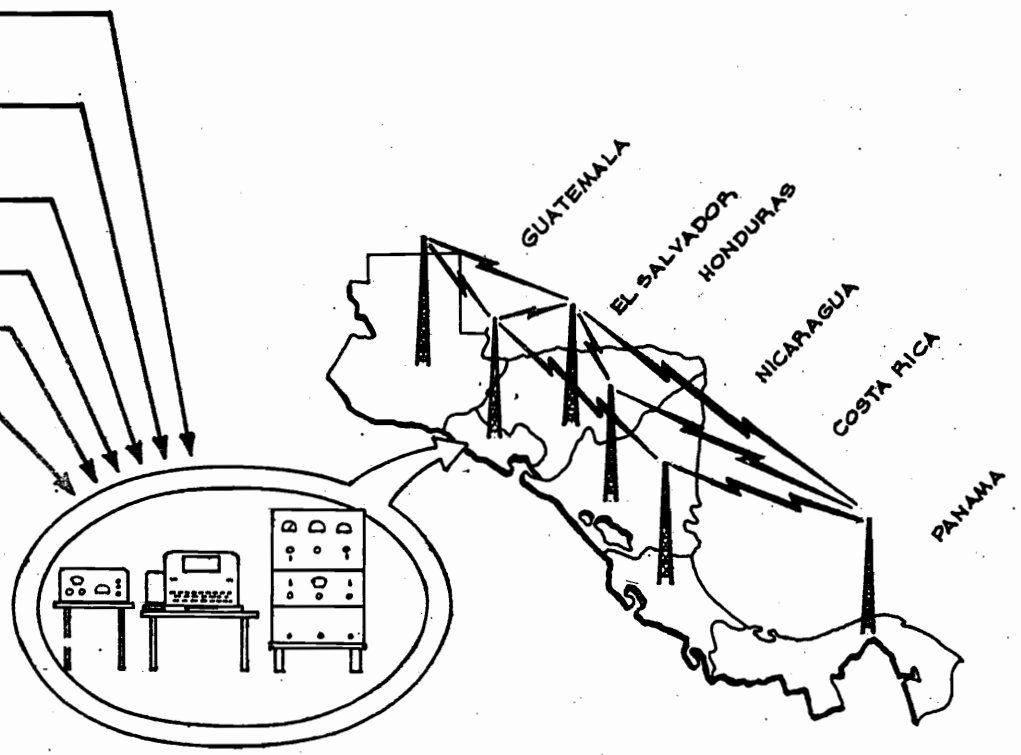
COMMUNICATING INFORMATION ON MOVEMENTS AND ACTIVITIES OF SUBVERSIVES AND CRIMINALS

CITY POLICE AND HIGHWAY PATROL TELECOMMUNICATIONS SYSTEMS

COASTAL PATROL TELECOMMUNICATION

BORDER PATROL TELECOMMUNICATIONS

STANDARDIZED IDENTIFICATION RECORDS TO FACILITATE INFORMATION FLOW



CENTRAL AMERICAN INTERNATIONAL
SECURITY TELECOMMUNICATIONS NETWORK

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(c) The El Salvador CAP station is located in the National Police headquarters building. The station is well maintained technically, and the operators designated to operate the teletype equipment are skilled in their duties.

(d) The National Police serve as the focal point for all other security agencies in El Salvador who participate in usage of the network. Maintenance support for the station, when required, has been fully provided by the National Police through their own budget and technical personnel. By virtue of its experience, technical and operational ability, and better resources in communications matters over other security groups, the selection of this agency for local supervision and control of the station has been a proper choice.

(e) An extension teletype machine originally furnished as part of the basic station equipment remains to be installed by the Salvadoran authorities. A determination of the most appropriate sister security agency to have a tie-in to the National Police station is presently underway to add to the further effectiveness of this station's services.

6. Police Communications Center

(a) National Police Radio and Telephone Communications functions are centralized and coordinated in the National Police headquarters building. In proximity to the main entrance of the building, one room of each of three floors contains the various communications equipment. The radio dispatch and basic communications center is located on the main floor.

(b) The dispatch center contains remote control consoles for the VHF/FM city radio patrol car and the VHF/FM Administrative Network. City display maps and various radio records pertinent to the control of these two networks are also available here. This dispatch center is manned by two police agents. One agent attends the radio units and dispatches the radio patrol cars while the other makes a record in the radio log of all incoming and outgoing radio traffic. The second floor contains a narrow room for the radio maintenance center,

the office of the Chief of Communications and the VHF/FM base stations which are remotely controlled from the Radio Dispatch Center below. The third radio room is reached by a series of steps from inside the maintenance shop. This topmost area contains the HF/SSB radio equipment as well as the CAP Security Telecommunications Station.

(c) A locally fabricated 45 extension private automatic branch exchange (PABX) switchboard serves the police headquarters building on the main floor. A separate manual-type 16-trunk switchboard provides access to the government-owned telephone company (ANTEL). Both switchboards operate across a wet-cell storage battery supply which serves as emergency standby power during commercial electric power interruptions until the building motor-generator starts to take up the load. Local and ANTEL telephone lines are located in the Police Dispatch Center.

(d) Present space limitations in each of the existing radio rooms prevent optimum efficiency of these facilities. A more ample area is necessary if progress is to be made in establishing a centralized facility capable of responding to and uniformly controlling radio traffic on all police networks.

(e) While the proposed Joint Operations Center will normally serve combined police, military and civil security communications needs during emergency periods, the National Police require their own localized communications control room for receiving, analyzing and transferring information among their various VHF/FM and HF/SSB networks.

7. Maintenance

(a) The National Police of El Salvador have a civilian chief for the Department of Communications who is responsible for all communications operations, technical services and administration. The Department of Communications is organized as a staff function responsible to the Sub-Director of the National Police in the headquarters building.

(b) The Chief of Communications is an experienced and capable individual who is the principal person responsible for communication advancements in the National Police. There are four qualified radio technicians and two trainees to perform adequate and timely repair services under his supervision. The Department of Communications is composed entirely of civilians. There are no serious defects in the present maintenance capability of the National Police.

8. Logistics: An adequate inventory of spare parts and related accessories is kept available for necessary repairs of the equipment. The Department of Communications has an adequate budget for making local purchases of any spare parts needed to fulfill radio maintenance responsibilities.

9. Personnel: The Department of Communications consists of people encompassing radio operators, maintenance technicians, and telephone operators. The maintenance technicians comprise the major category of personnel. They basically understand how to service the existing tube type equipment and have some familiarity with repairing the newer transistorized type of equipment.

10. Training: Technical training for all radio maintenance technicians is on-job-training (OJT) performed under the supervision of the Chief of Communications. Formal participant training in the U.S. is envisioned for local technicians as more modern and sophisticated equipment is employed for the National Police.

C. (FOUO) Recommendations

1. To consolidate the various command center units of the HF/SSB and VHF/FM network of the National Police to improve efficiency and control, all police command radio units should be located in one unified area. This is designed to replace the present distribution of different command radio units on different floor levels of the National Police Building. Future space should be allocated in one area for all communications networks to include additional base stations on the contemplated Immigration Services Network and Tactical VHF/FM Network. In this basic manner, a professional and complete police communications operations center can be developed to meet the expanding needs of the National Police.

2. Joint Operations Center (JOC)

(a) To meet an immediate need, a Joint Operations Center (JOC) should be created/established to unify radio communication information exchange among police/military/security agencies. At present, there is no area for central coordination of the country's internal security forces.

(b) The JOC concept is recognized and concurred in by high level officials of the various internal security agencies which include the Director General of the National Police, Director General of the National Guard and Minister of Defense. Designated members from each agency would be assigned to the JOC in the event of emergency situations or special operations.

3. A frequency for a "common emergency (HF/SSB) channel" should be designated by the El Salvador Security Forces which will permit the exclusive use of one channel (HF/SSB) for coordination purposes among the various security forces consisting of the National Police, National Guard, Immigration Service, Treasury Police, Army, Navy and Air Force. The establishment of a common emergency frequency would provide each security organization with a capability of entering a joint network from its own agency communications center. The existing network of all forces utilizing three other channels of the four-channel equipment would not be affected. When an emergency occurs, a directive from each of the responsible headquarters would permit appropriate security force stations to immediately monitor the common emergency frequency and respond as required. In the existing army systems, the designated frequency may be selected so that crystals are on hand. To permit full compatibility, other organizations would be required to purchase crystals cut to the "common channel" frequency. In future plans which may involve the introduction of new radios for any of the security forces, the "common channel" can be programmed as a position requirement to ensure that maximum coordination is maintained among these forces.

4. A high command coordination (VHF/FM) radio network should be established for coordination purposes among the highest ranking government officials. These radios would be portable base type VHF/FM transceivers in the 150-170 mc band. One transceiver would be designated for use in the JOC to further strengthen the responsive capability of this proposed facility. This net should include the following:

(a) President.

(b) MOD.

(c) CofS of Armed Force.

(d) Director General of National Police.

(e) Director General of National Guard.

(f) Director General of Hacienda Police.

(g) Chief, Air Force.

(h) Chief, Navy.

(i) Director General of Immigration.

(j) Spare (used as required).

5. A tactical VHF/FM network using radio equipped jeeps in the rural areas should be established to be operated by the National Guard and National Police in the coordination and control of their respective field operations.

SECTION V - NATIONAL GUARD

A. (FOUO) Mission and Organization

1. The National Guard is responsible for maintaining public order in the rural areas as well as providing guard services for government buildings.

2. The 14 companies of the National Guard are grouped into five command centers (Comandancias) (Figure 13). These National Guard companies are dispersed throughout the country in smaller functional outposts (Puestos). The National Guard strength totals approximately 1,936 with almost half stationed in the capital, San Salvador.

B. (FOUO) Observations and Conclusions

1. The basic National Guard Network (Figure 14) consists of three VHF/FM fixed base stations at the Santa Ana and San Miguel Comandancias and the Director General's office in San Salvador. Refer to the attached illustration on the National Guard Communication Network station distribution. The National Guard also has 56 VHF/FM mobile units for cars and motorcycles available. This VHF/FM network operates on the same frequency as the National Police voice relay network.

2. The National Guard also has access to the Army HF/SSB network through the operations of an Army HF/SSB radio at the Fifth of November station. The National Guard can also request the National Police to pass messages for them in those locations where the National Guard does not have its own station.

3. Over the years a depletion of vehicles has resulted in the accumulation of VHF/FM mobile transceivers by the National Guard. Replacement vehicles have not been available and serviceable radios have been allowed to remain on the shelf. By the use of simple storage batteries and antennas these mobile sets can be employed effectively as fixed stations in many critical areas.

Figure No.13

National Guard Commands: Territorial Responsibilities

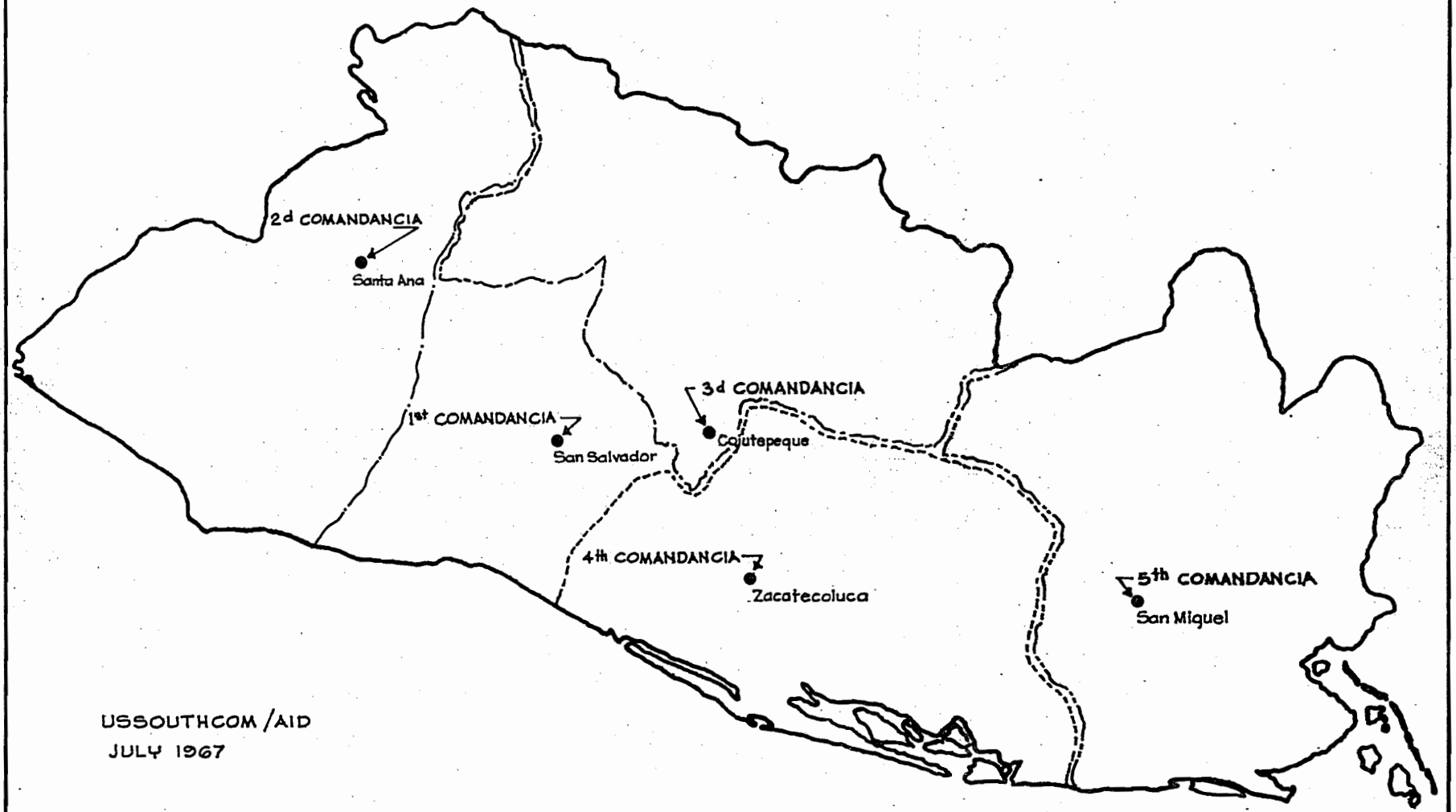
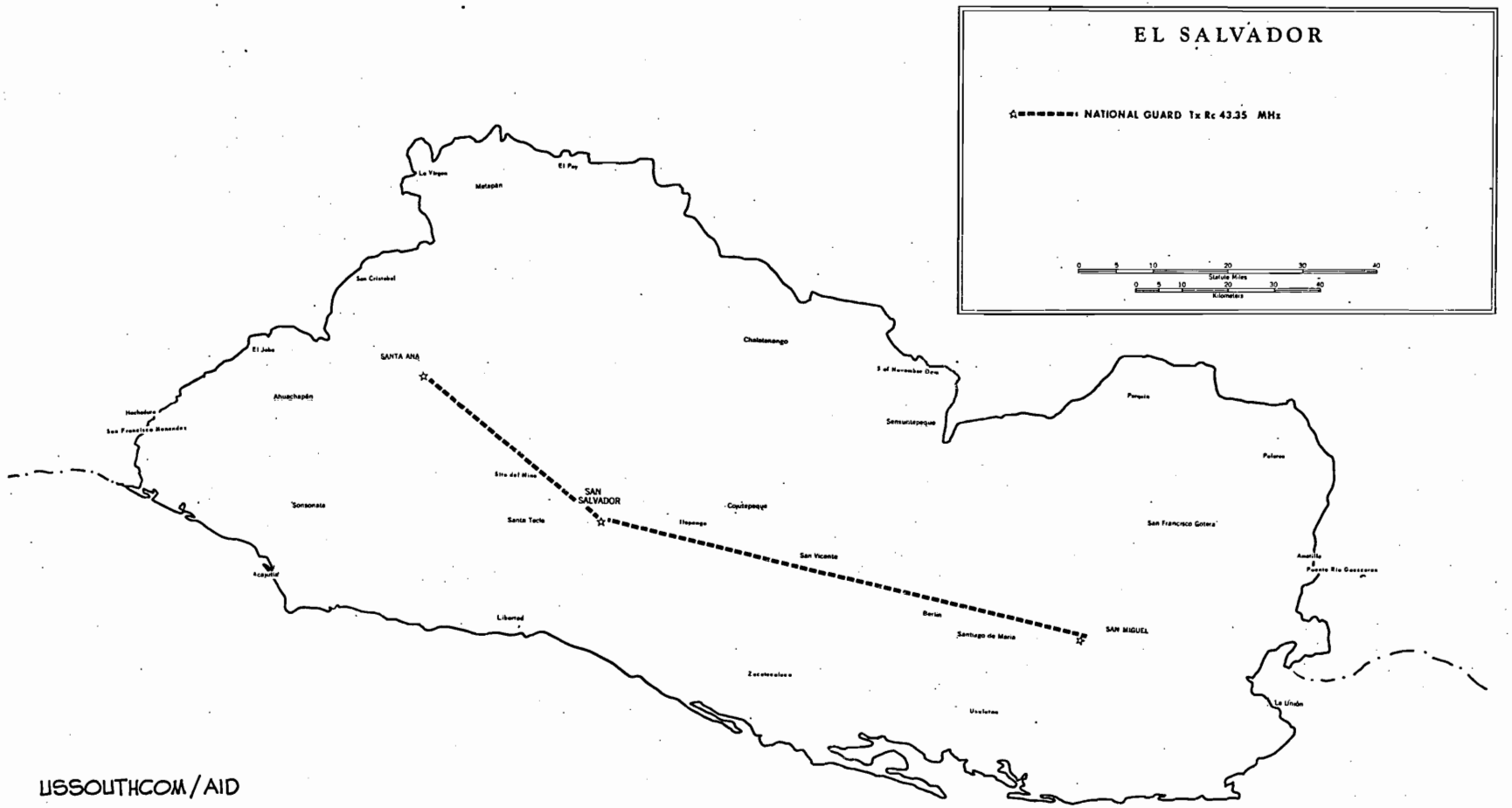


FIGURE No. 14

COMMUNICATIONS NETWORK - National Guard



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NOTE: See Figure 14a for list of National Guard Communications Equipment Available.

El Salvador

Figure No. 14a

National Guard Communications Equipment Available

RADIO

20 Mobile Radio VHF/FM RCA CMF-55B1
20 Mobile Radio VHF/FM RCA CMF-T50-LD
8 Portable Radio Motorola P 31DDN-1030A
3 Base Station RCA Carfone 100W CFF-100A1

NOTE

Listing does not include modest inventory of test equipment.

Listing does not include SSB sets operated in Army network.

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4. As described in the section for the National Police, a joint participation in the tactical VHF/FM network should be undertaken by the National Guard to meet the threats of rural insurgency along the border areas.

5. The National Guard radio maintenance services are performed by one technician who is capable of light maintenance on a limited amount of equipment. It is considered that any increase in communications equipment for the National Guard under the existing maintenance capabilities would not be warranted, inasmuch as the equipment would not be properly maintained. To avoid increased expenditures for additional technicians, test equipment and spare parts budget support; a consolidation of the National Guard and the National Police maintenance sections would be the most practical solution. Through such a consolidation, the National Police and National Guard can receive communications maintenance support on a country-wide basis through a single technical service facility. The present Chief of Communications for the National Police and his technical staff are logically qualified to accept additional responsibility for controlling and coordinating the communications requirements of both organizations.

C. (FOUO) Recommendations

1. To achieve greater efficiency in equipment maintenance and organizational cooperation in communications systems use, the communications maintenance facilities of the National Police and National Guard should be consolidated into the National Police Department of Communications. The present National Police Communications Chief should be responsible for management of this maintenance facility to assure dependable communications and maintenance services for both security agencies.

2. The withdrawal from storage of all serviceable National Guard VHF/FM transceivers which have been sidelined for lack of vehicles and by the use of storage batteries the employment of these transceivers in critical locations as fixed stations.

3. The initiation and establishment of a tactical VHF/FM network using radio equipped jeeps in the rural areas to be operated by the National Guard and the National Police in the coordination and control of their respective field operations.

SECTION VI - IMMIGRATION SERVICE

A. (FOUO) Mission and Organization

1. The Immigration Service is charged with the supervision and control of all persons entering and leaving the Republic of El Salvador. Its principal mission is to prevent the illegal entry of undesirable individuals into the country.

2. The Immigration Service is organized under a Director of Immigration who is responsible to the Minister of Interior. The present strength of this group is about 100 persons. It maintains immigration control points at principal border crossing posts into its neighboring republics of Guatemala and Honduras. Immigration stations exist at principal seaports as well as the Ilopango Airport for the capital city, San Salvador.

B. (FOUO) Observations and Conclusions

1. A functional communications system appropriate to the needs of the Immigration Service is now undergoing early stage implementation. Commodity programming is now in progress to provide HF/SSB radio transceivers for ten immigration posts along key frontier and port entry/exit areas. Refer to the attached illustration on the projected Immigration Communications Network station distribution (Figure 15). Two additional radio units are scheduled for command functions from San Salvador under the jurisdiction of the Director of Immigration and the Minister of Interior for a total of twelve stations in the Immigration Service Network. A HF/SSB radio unit is also necessary within the radio operations center of the National Police which will provide a 24-hour liaison with those stations where other types of police/security messages may be generated. The National Police are proposed to perform the necessary maintenance of this network by virtue of their singular experience and technical capability in communications system support over the other civil security group.

2. Future potential also exists to utilize the Immigration Service Network for the Customs Police matters

wherever possible at border check stations common to both groups. The Customs Police is under the Ministry of Treasury. Further advancements in this area depend upon operational and support agreements between the Minister of Treasury and the Minister of Interior.

3. Four HF/SSB radio transceivers (Hallicrafters type SBT-20) have already been received in-country and are awaiting installation. Additional HF/SSB units and radio accessories would be required to fulfill the requirements of this security network.

C. (FOUO) Recommendations

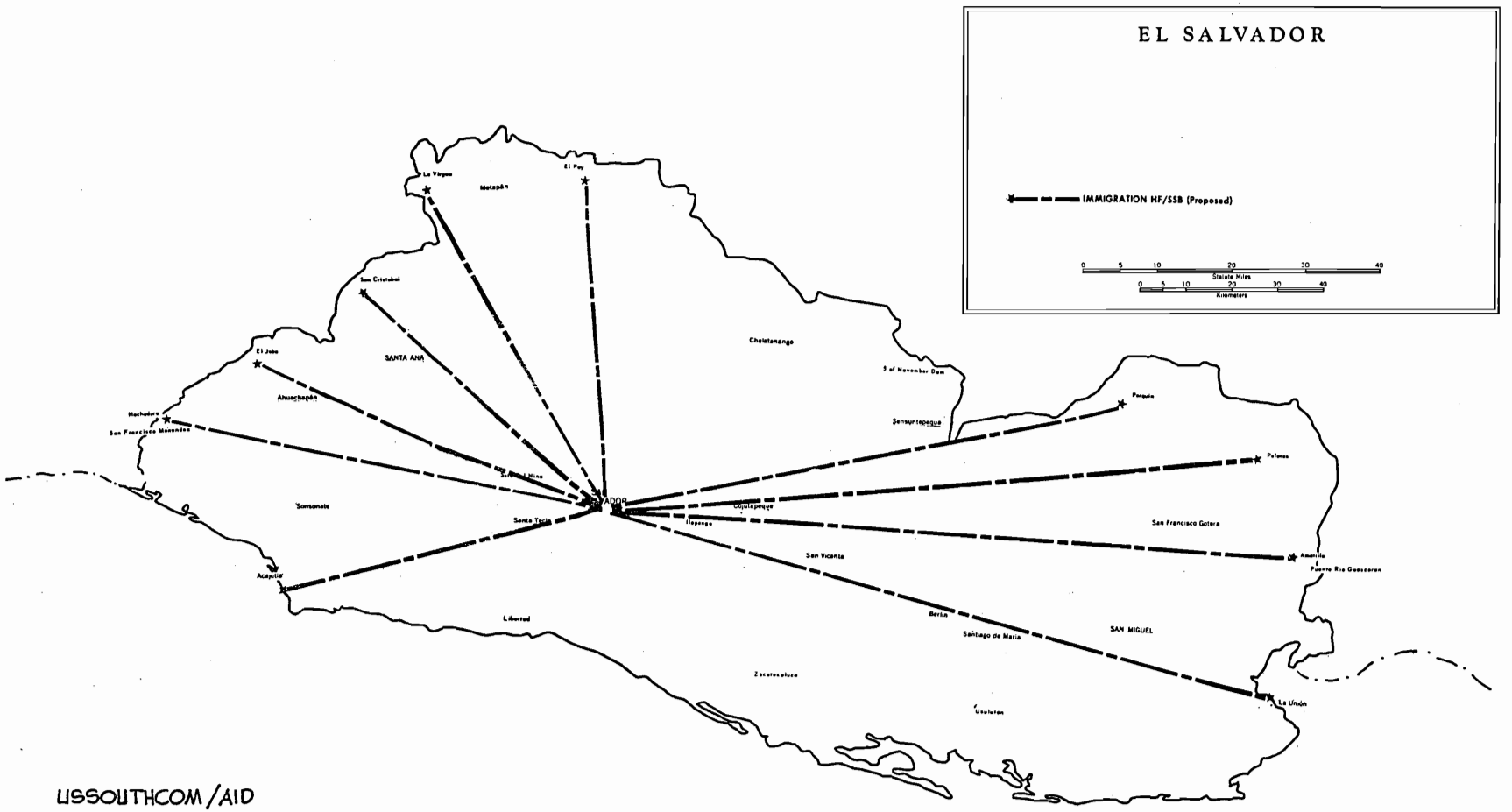
1. The equipment procurement and installation of the Immigration Service HF/SSB Network should be completed to allow expanded communications in areas previously not serviced. The Customs Police and Treasury Police should be provided access to this network wherever required.

2. A HF/SSB base unit should be made available to the National Police Radio Operations Center for liaison with the Immigration Service and the other security services who may require occasional use of the proposed Immigration Service Network.

3. The installation and long-term maintenance of the Immigration Network should be assigned to the National Police Department of Communications. Sufficient budget support for parts and maintenance of this system should be furnished to the National Police by the Immigration Service to assure continued dependable performance of their network.

FIGURE No. 15

COMMUNICATIONS NETWORK - Immigration



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SECTION VII - TREASURY POLICE

A. (U) Mission and Organization: The mission of the Treasury Police is to prevent the movement of contraband arms, ammunition and other illegal merchandise within the country. The Treasury Police perform services more applicable to the Ministry of the Treasury although the Director General of the Treasury Police and his organization are directly responsible to the Minister of Defense. This organization actively cooperates with the Immigration Services and Customs Police in areas of mutual interest. The Treasury Police are an armed and uniformed force of about 545 men who are located in 42 guard posts situated throughout the country. There are approximately 12 men in each guard post.

B. (U) Observations and Conclusions

1. The Treasury Police do not have any radio equipment or communication network nor do they necessarily require their own full-time system. Any communication requirement that may be periodically needed by the Treasury Police could be provided by use of the available radio networks of the National Police, Immigration Service (when completed), or the National Guard.

2. This approach is suggested due to the proximity of Treasury Police posts to the radio equipped security posts of other security forces. Further, the actual need of the Treasury Police to operate and control their own network, based on anticipated traffic loading, makes it difficult to justify the provision of such a network at this time.

3. The need to establish another maintenance organization, operators and budget support would therefore be eliminated by using the closest security type communication facility in the locale of the Treasury Police post. Mutual support efforts among the different security groups (National Police, Immigration, Customs and Treasury) could be further strengthened through the development of such cooperative measures by those agencies presently lacking their own communications system.

C. (U) Recommendation: It is recommended that the Treasury Police undertake to establish collaborative agreements and procedural measures to facilitate use of the radio communications stations of other security forces who have extensive communications links already established throughout the country.

SECTION VIII. CUSTOMS POLICE (ADUANA)

A. (U) Mission and Organization

1. The mission of the Customs Police is to protect the immediate locale of areas and ports of entry through which pass the various commercial goods into the country. They serve to control the passage of contraband and to provide the enforcement arm for Customs personnel that perform the inspection services at customs stations throughout the country.

2. The Customs Police are under the administration of the Director General of the Customs Police who, in turn, is responsible to the Minister of the Treasury. Customs Police personnel number about 350.

B. (U) Observations and Conclusions

1. The Customs Police, like the Treasury Police, do not operate or maintain any communication network in connection with their specialized security functions. Under their present organizational structure, the Customs Police are in a similar situation as the Treasury Police with respect to an anticipated infrequent usage and a low message traffic requirement. The proximity of the Customs Police to civilian customs inspection and/or Immigration checkpoints offers one means of radio network access should a particular situation require it.

2. As in the case of the Treasury Police, the use of such accessible communication facilities belonging to other security agencies would adequately serve the Customs Police.

3. The establishment of a separate communication system for the Customs Police would be highly impractical at this time based upon their present organizational demands.

C. (U) Recommendation It is recommended that the Customs Police, like the Treasury Police, undertake to establish collaborative agreements and procedural measures to facilitate use of the radio communications stations of other security forces who have extensive communication links already established throughout the country.

SECTION IX - COMMERCIAL COMMUNICATIONS

A. (U) Administracion Nacional de Telecomunicaciones (ANTEL) (Figure 16)

1. A government controlled communications organization (ANTEL) furnishes commercial telephone and teletype service country-wide. Switching service for international voice and teletype traffic is available through ANTEL facilities in San Salvador. Renovation of the national commercial telephone and teletype systems have been under way for several years. Many new telephone centrals have been activated in San Salvador and the other population centers of the country. Most of the new "inside plant" facilities have been installed under the supervision of contract technicians from Sweden, while the "outside plant" installations have been supervised by German contractors. Telephone service, especially in the capital city, has vastly improved.

2. The renovation plan for the national communication system includes:

(a) New telephone centrals in all major population centers.

(b) Replacement of many open wire line circuits with either cable or microwave links.

(c) Establishment of teletype centers with TELEX type service available to local subscribers.

(d) Integration of the Salvadoran commercial system with other worldwide long distance systems.

(e) Establishment of training centers for the purpose of maintaining qualified technicians for the national communications system.

3. Much of the above plan has been carried out, and new facilities are in operation throughout the country. The outlook for effective commercial communication facilities in El Salvador is extremely promising.

B. (U) Observation The commercial communication system is expanding and undergoing renovation in consonance with a study prepared under the sponsorship of the United Nations; financial support for expansion is through loans by the World Bank. Although much of the installation is being accomplished under the supervision of foreign technicians, the ANTEL technical staff of Salvadorans is expanding rapidly through on-the-job training and through external training opportunities. ANTEL will soon have the capability of training and maintaining all of its own work force of technicians. ANTEL is currently acting as national frequency manager for all radio frequencies used for commercial purposes. Currently this management is more of a statistical accounting system and does not involve monitoring and controlling the various frequencies. The Ministry of Interior still maintains overall legislative jurisdiction for national frequency control, although the Ministry also is handicapped in its ability to monitor and control civil and military use of the frequency spectrum.

C. (U) Area for Improvement Neither the Ministry of Interior nor ANTEL have sufficient procedures and equipment to operate an effective radio frequency coordination and assignment office.

D. (U) Recommendations

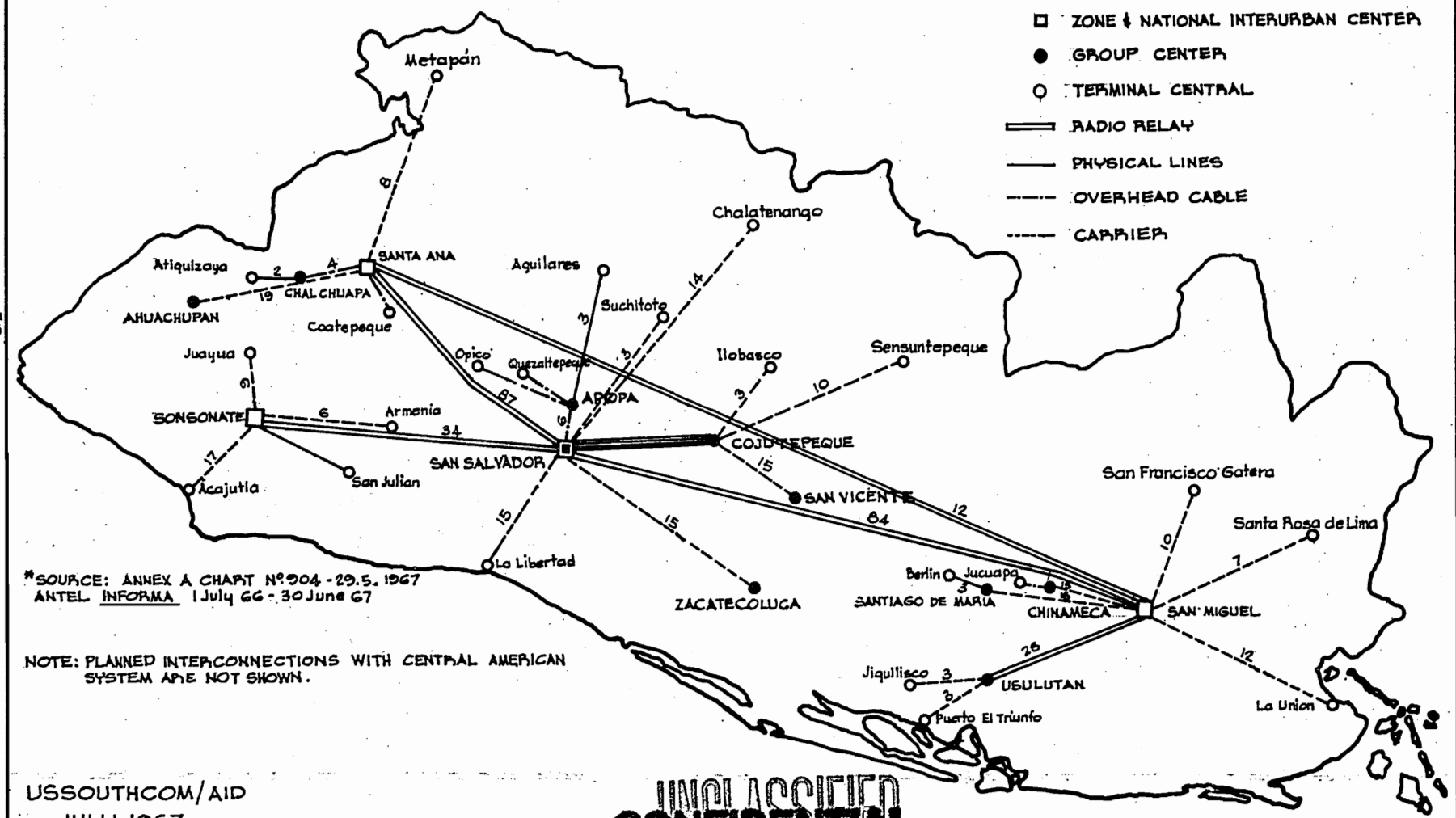
1. That the Defense Ministry consider making more extensive use of the ANTEL communication system. Although commercial telephones are used now by all security forces, the use of private long haul circuits via the commercial system has not been exploited. The commercial communications system of El Salvador is a valuable national asset which can be profitably used to increase the responsiveness of its internal security forces. By making maximum use of the commercial circuitry the defense forces will be receiving economical quality communications support which provides augmentation and backup to the main defense communication system.

2. That a national frequency utilization board be established in San Salvador. This board should include under its control all frequencies used in-country, both civilian and military.

EL SALVADOR

Figure No. 16

ANTEL National Telecommunications Plan (Revised)*



*SOURCE: ANNEX A CHART Nº 904 - 29.5.1967
ANTEL INFORMA 1 July 66 - 30 June 67

NOTE: PLANNED INTERCONNECTIONS WITH CENTRAL AMERICAN SYSTEM ARE NOT SHOWN.

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SECTION X - JOINT SERVICES/HIGH COMMAND

A. (FOUO) Mission and Organization

1. Executive power in the Government of El Salvador is the responsibility of the President of the Republic, who is the Chief of State, Head of the Executive Branch of the Central Government, and Commandant General (Supreme Commander) of the Armed Force. His appointing authority extends to all executive agencies from Ministers of State to Departmental Governors. His responsibility to the people includes national security, law enforcement, safeguarding public welfare, keeping the peace, and promoting the progress of the nation under the constitution. The security forces are subordinate to him through his ministers as illustrated in Figure 17.

2. The Ministry of Defense contains the principal security forces and is responsible for their administration and support. The Minister of Defense normally exercises control of the Armed Forces; the Chief of Staff of the EMGFA and the Directors General of the National Guard, the National Police, and the Treasury Police report to the Minister of Defense. The Ministry of Defense finances the salaries of major civilian appointees within the security forces.

3. This report does not include communications requirements or systems for the El Salvadoran Intelligence Agency (AIS), the National Security Agency (ANS), or the Presidential Planning Staff (Plana Mayor) at the central level. It also omits coverage of the Municipal Police and the Fire Department (Bomberos), which have some capability to assist the security forces but have no significant communication capabilities of their own.

B. (FOUO) Observations and Areas for Improvement

1. High executive branch and Ministry of Defense officials use personal contact and ANTEL telephone service for conducting their functions involving security forces. A number of their official vehicles are radio equipped police cars. In addition the Presidential Palace and the Ministry of Defense have HF/SSB radio stations for entry into the Army HF/SSB radio network. The combined radio capability is illustrated in Figure 18.

FIGURE No. 17

SECURITY FORCE ORGANIZATION - MILITARY AND PARAMILITARY FORCES

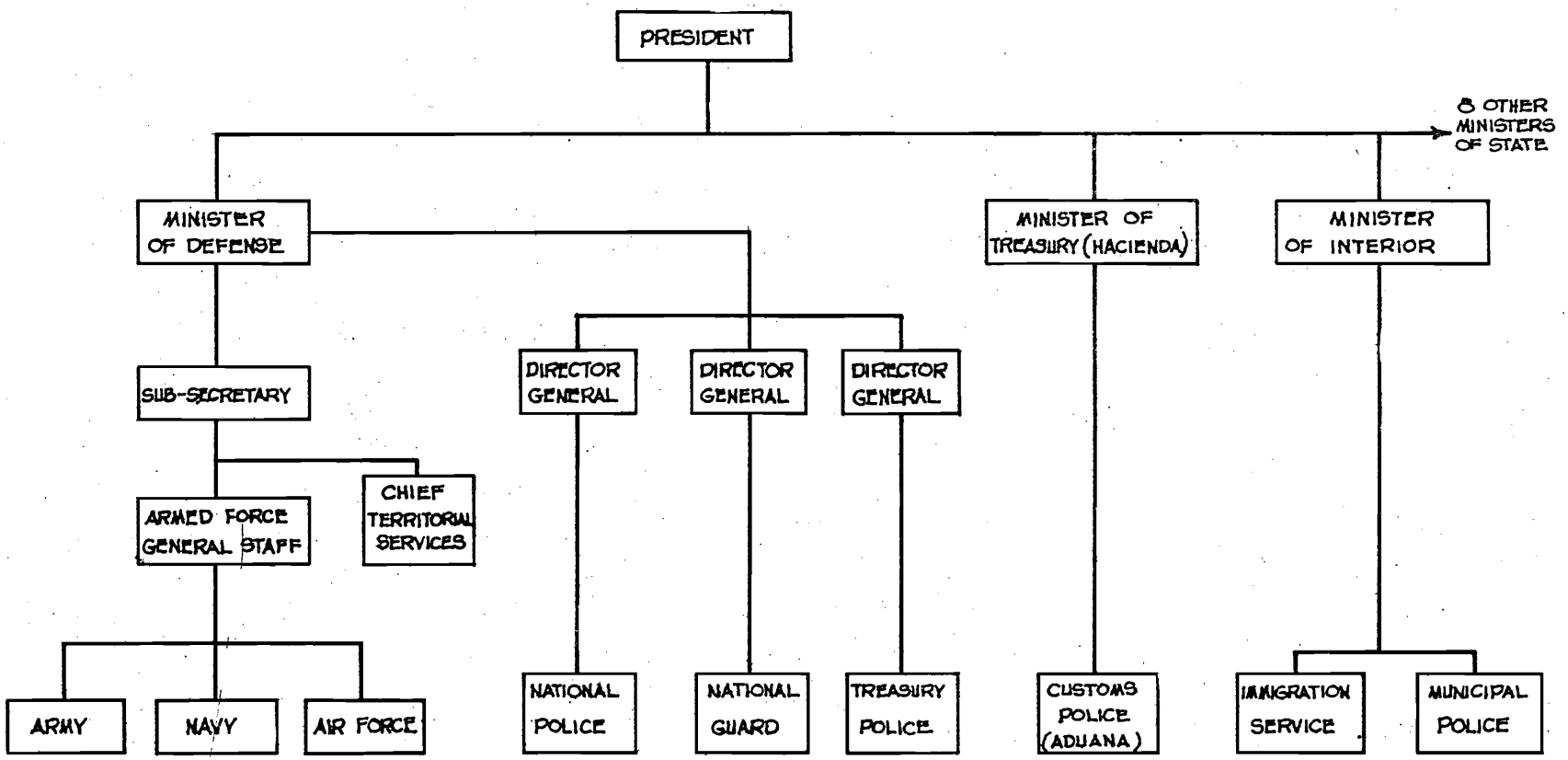

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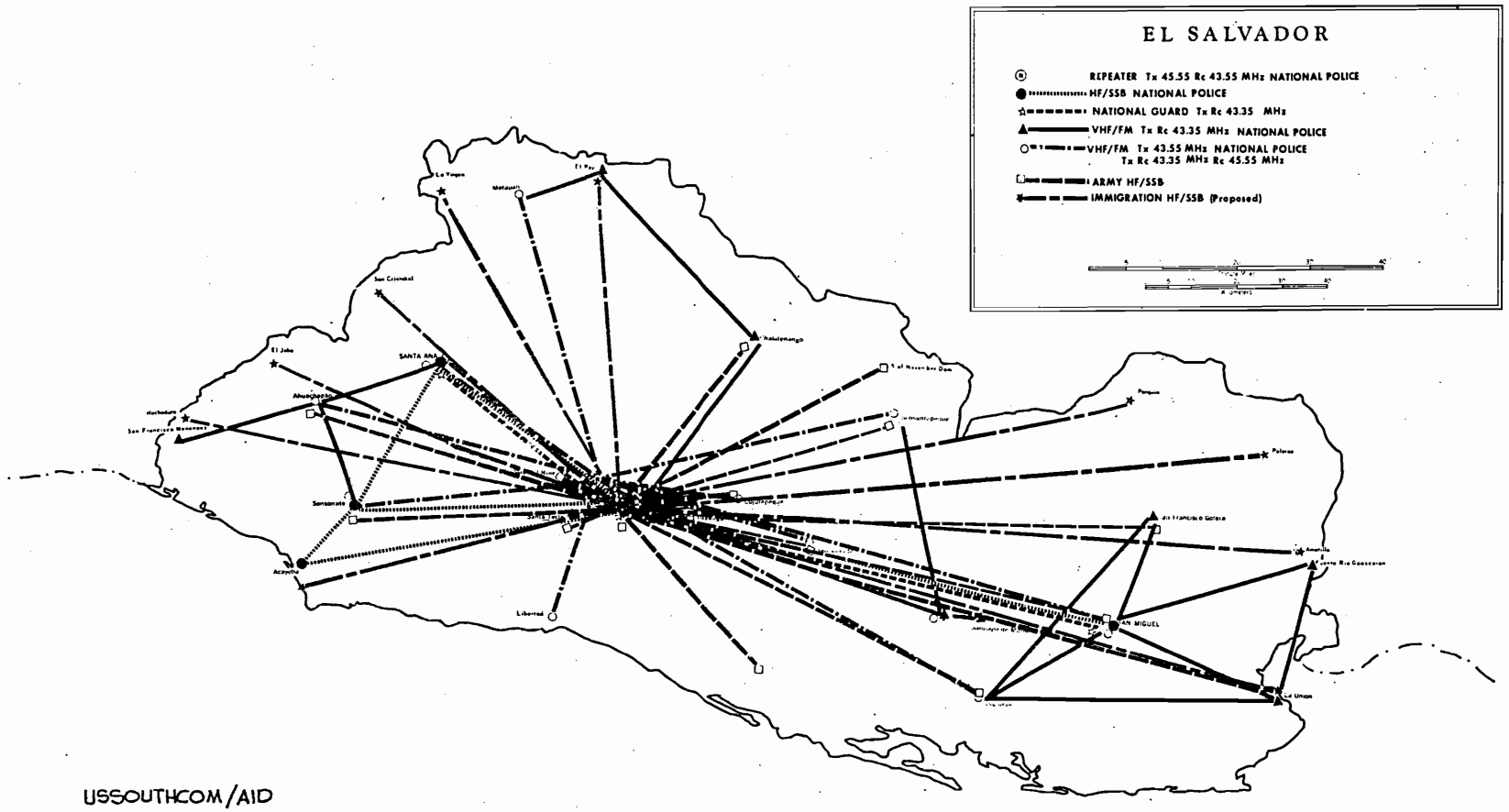
FIGURE No. 18

COMMUNICATIONS NETWORK - { National Police / National Guard / Army / Immigration



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2. The MOD equivalent of a central procurement office is called the Proveeria. Although commanders down to the cuartel level have discretion on local purchase for troop support and limited operation and maintenance, expenditures for all sizable procurements--including communications goods and services--cannot be made without prior approval of the Proveeria.

3. Top military and MOD officials in the current administration are cognizant of the needs for delegation, joint operations, and adequately equipped forces--including communications organizations. There is still some lack of initiative at subordinate levels on overcoming communications deficiencies by imaginative improvisation.

4. There appear to be no "hot line" lease arrangements with ANTEL. There was no indication that the MOD has ordered "engineered circuits" prepared for periods of emergency. There is no single authority at the MOD level responsible for overall communications systems management. The communications systems of the military and police services are operated according to their own procedures; any equipment failure or training deficiency in one service is corrected within that service (excepting that the National Police Communications Department makes repairs on equipment of some other police-type services and the Army CITFA sometimes accepts Navy and Air Force items for electronic repair). There is no detailed planning at the MOD or any other level to forecast system failures and make advance provision for such anticipated failures. The systems, however, are generally kept operational, and the high command officials are generally satisfied with the existing service. If management control is taken to mean authority for the direct supervision, coordination and review of communications systems and, within approved programs, the continuing supervision, review and guidance to achieve system objectives; then it is evident that El Salvador has no single office responsibility for management control of communications systems under the MOD.

5. Limited resources have been applied to improve communications from departmental level to the seat of the government. There have been insufficient trained men and communications equipment to provide for fast submission of information from the patrol level (except police radio cars) up to the decision making level. The recognized requirement for controlled forces in emergency or tactical operations is therefore only partly satisfied.

6. The Interior Ministry control of frequencies lacks effectiveness. Crystal controlled HF/SSB radios of the security forces have encountered radio interference from industrial/commercial systems (e.g. banks). MOD agencies have not been involved in frequency coordination and assignment. Neither the Interior Ministry nor ANTEL have sufficient procedures and equipment to operate an effective radio frequency coordination and assignment office.

7. There is no system for exclusive contact among high command authorities under emergency conditions. The officials must rely on messengers and the local telephone system for the coordination of government matters. The interagency messenger service is reliable, prompt, and effective for administrative documents. However, there is no backup communication (such as VHF/FM radios which are technically feasible) for exclusive use of the ranking officials.

8. There is no permanent Joint Operations Center for full time coordination of day-to-day or emergency security force operations. A Joint Operations Center or equivalent to unify radio communication information exchange among armed services and other principal security forces would involve actual staff representation from each responsible agency in the event of emergency situations or special operations. The JOC concept is recognized and concurred in by high level officials of the various internal security agencies which include the Director General of the National Police, Director General of the National Guard and the Minister of Defense. Preliminary suggestions for establishment of a Centro de Operaciones Tacticas prepared at the request of the Chief of Staff of EMGFA, are included as an annex to this study.

9. Areas for improvement in joint services activities are indicated in earlier sections (e.g. Navy - FAS Patrol in the Navy Section, Air-Ground Operations/Tactical Air Support in the Air Force Section, Common Emergency HF/SSB Channel in the National Police Section, and Consolidated Maintenance in the National Guard Section). For the development of security force capabilities in the future, the communications function needs an equitable share of men, money, and materials in relation to the investment in fire power and mobility. The unified approach to communication requirements will tend to avoid waste and duplication. Joint use of systems will economize on expenses. Even so there will be needs for increased budgetry support for substantial increases in overall communications capabilities. Consequently there will be a need for responsible review of communications requirements in relation to other force requirements and overall economic capability.

10. This study excludes discussion of long range revisions to the security force communications systems, such as teletype, data, or computer systems. El Salvador authorities have adopted a basically sound approach to security communications in the light of resources available and the existing state of applied technology and technical training. In the future, when traffic conditions warrant and when resources available to a MOD communications management control authority make such a course of action feasible, a country wide security communications review can properly examine the applicability of teletype, for example, to the requirements at that time and the capability of ANTEL to furnish required services responsive to the MOD. A step-by-step program, utilizing integrated facilities, will be the most appropriate reflection of the needs--rather than any single service communications modernization project considered in isolation.

C. (FOUO) Recommendations. The degree of adaptability of this study will be constantly influenced by fluctuations in the political situation, the organization of the various security forces, fund limitations, and the economic progress of El Salvador. The basic responsibility for national security and law and order is continually affected by the social and economic situation; improved communications and related staff procedures for better control and greater efficiency of security forces can be considered as economical steps by the GOES in protecting the progress of the people of El Salvador. A number of the following recommendations have already been discussed with the El Salvador authorities who were favorably inclined toward basic communications improvements and suitable corrective action within the limits of the overall GOES situation.

1. The use of all existing radio networks to pass official message traffic between the seat of government and security force elements in the interior, including relay of messages from one network to another.

2. The establishment of a country-wide common emergency HF/SSB channel to facilitate rapid coordination when its use is directed by participating security force authorities (e.g. during disaster relief or scene-of-action operations).

3. The planned use of centralized procurement for communications supplies and equipment to insure economical support of the various security force communication systems. The consolidation of the electronic repair facilities of the National Guard and National Police is expected to provide for more economical computation of spare parts requirements and more effective use

of parts, test equipment, tools and facilities.

4. Maximum utilization of equipment on hand to extend communication capabilities. For example, withdrawal from storage of all serviceable National Guard VHF/FM transceivers which have been sidelined for lack of vehicles, and by the use of storage batteries available within El Salvador, employment of these transceivers in critical locations as fixed stations. Trained technicians in appropriate security force organizations should have channels through their supervisors for suggesting ways to get better results from existing systems.

5. Establishment of a single authority within the MOD for management control of security force communications systems serving the high command officials of El Salvador. Such an authority could negotiate with ANTEL for lease of "hot lines" deemed essential or for preparing "engineered circuits" capable of activation in times of emergency. Such an authority could recommend more extensive use of ANTEL communications and training facilities by the MOD as well as the most efficient procedures for unified use of the main defense communication system, including relay of messages from one network to another.

6. Development of plans for linking security force elements at the patrol level with the country-wide defense communication system, especially during scene-of-action operations. Exercises for training of personnel in joint services activities should be planned, budgeted, and carried out to insure the required capabilities. The establishment of a more intense technical training program, including use of local facilities and GOES support of out-of-country training will contribute to the required capabilities and facilitate normal operation and maintenance of security force networks in the main defense communication system.

7. Establishment of a national frequency utilization board for control of all frequencies used in El Salvador, both civilian and military.

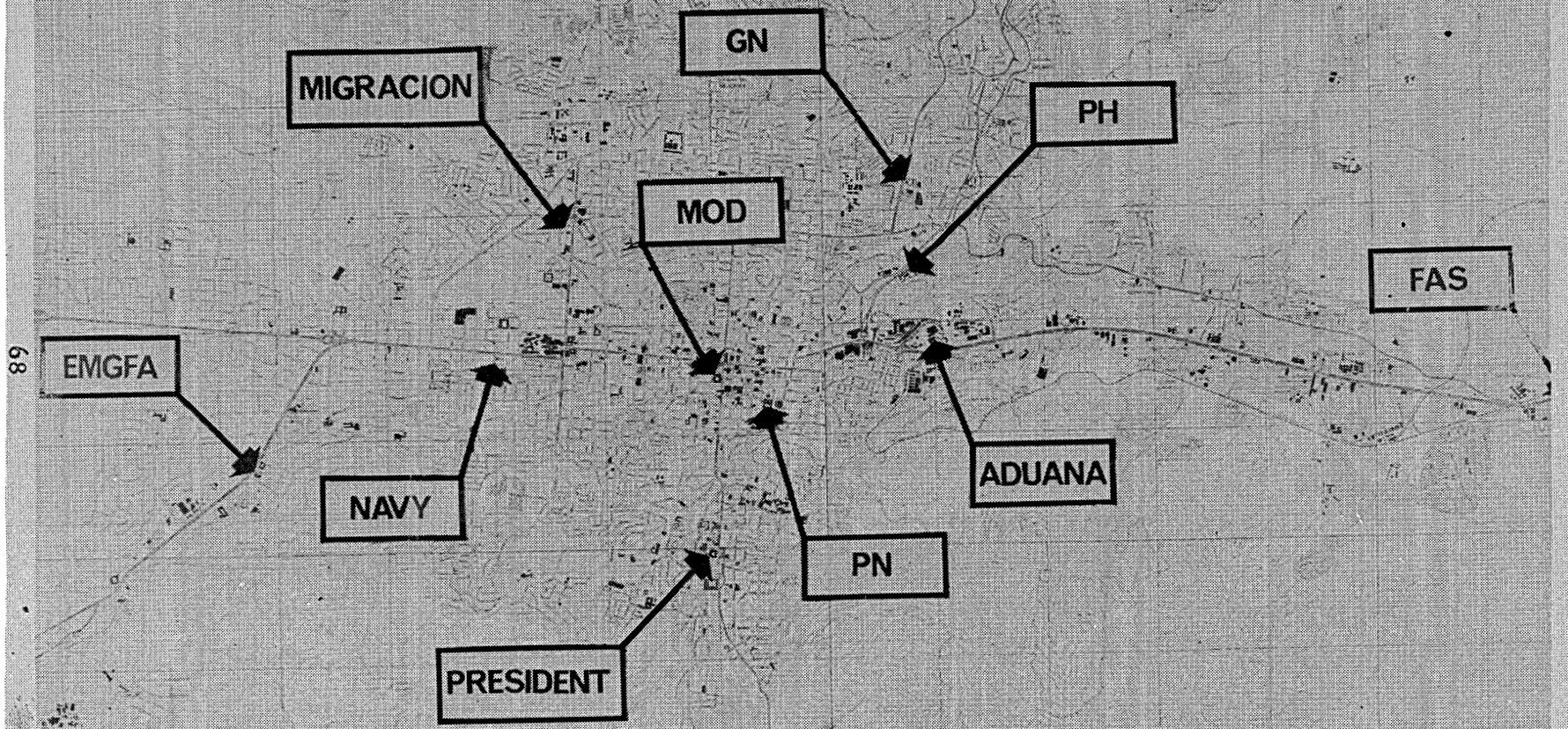
8. The establishment of a High Command Coordination VHF/FM Radio Network within San Salvador linking the top officials in the locations illustrated in Figure 19 (except the Director General of the Aduana, who may be added if required after the Network is installed and exercised). Operating procedures can be developed so that the President can call his security chiefs at any hour anywhere they go in metropolitan San Salvador, although the normal location for the radio of each high command official would be in his executive office or operation center.

9. The establishment of an austere Joint Operations Center (JOC).

The above recommendations for joint services and high command authorities are intended to integrate and unify the detailed recommendations in earlier sections of this study.

Figure 19

HIGH COMMAND COORDINATION NETWORK (PROPOSED)



USSOUTHCOM/AID
JULY 1967

ANNEX A TO

JOINT USSOUTHCOM/AID COMMUNICATIONS STUDY - EL SALVADOR

PRELIMINARY SUGGESTIONS FOR ESTABLISHMENT OF A CENTRO DE OPERACIONES TACTICA (COT) FOR THE SALVADORAN ARMED FORCE AND SECURITY FORCES

1. Scope. These preliminary suggestions are broad in nature and are based on the joint concept of operations. They also take into consideration the fact that the Navy and Air Force are organized as integral parts of the Army.

2. Operational Concept. The COT should be oriented primarily to joint operational functions involving the internal security of El Salvador. The COT should provide for central direction and control of the armed services and security forces while permitting decentralized execution of operations in an efficient and economical manner and in keeping with assigned missions.

3. Manning Concept. The COT should be manned on a daily basis by a joint working staff (Joint Directorate) comprised of designated members of the Army General Staff. The Navy and Air Force should be represented on this Joint Directorate. Directorate members should have the broadest operational experience obtainable in their respective services. The Joint Directorate should be expanded during periods of exercises or national emergencies to include members from the principal Public Security Forces (National Guard, National Police, Treasury Police). The Joint Directorate should be under the direction of a Chief of Joint Operations (Jefe de Operaciones Conjuntas) who reports to the Chief of Staff of the Armed Forces. The Jefe de Operaciones Conjuntas should be a senior member of the General Staff of the Armed Force and should have extensive operational experience.

4. Functional Activities. The Joint Directorate functioning in the COT should perform the following functions:

a. Consolidate and display all information collected pertaining to internal subversion, insurgency, and surveillance/intercept.

b. Produce accurate, timely intelligence and disseminate it to the proper military and security forces and other national agencies.

c. Plan and coordinate all military operations against subversion, insurgency, and all surveillance/intercept activities.

d. Coordinate all civic action activities.

e. Insure unity of effort and conservation of resources by the armed services and security forces.

f. Insure adequate joint communications throughout El Salvador utilizing the common Emergency (HF-SSB) Channel, proposed during the visit by USSOUTHCOM, J-6, Representatives in connection with the Joint USSOUTHCOM/USAID Communications Study, El Salvador, 23-28 July 1967.

g. Provide for net control of the high command (VHF-FM) radio network proposed during the USSOUTHCOM/USAID visit 23-28 July 1967.

5. Organization. The Joint Directorate should be organized along the lines of a joint staff with specific functional responsibilities as follows:

a. J-1 Representative:

(1) Responsible for personnel records of all personnel assigned to the COT.

(2) Responsible for the administration of COT.

(3) Knowledgeable of the personnel manning status of all armed services and security forces.

(4) Aware of trends, weaknesses, and personnel effectiveness throughout the armed services and security forces.

b. J-2 Representative:

(1) Responsible for the collection of information on subversion and insurgency, the compilation of intelligence information from all sources, the evaluation and interpretation of information and the dissemination of intelligence to all interested agencies.

(2) Prepares daily intelligence summaries containing the subversion and insurgency situations and operational intelligence on enemy strength, positions, and activities.

(3) Prepares intelligence briefings as required by the situation.

(4) Determines intelligence requirements for the Joint Directorate.

(5) Provides essential elements of information to field units and guides and coordinates field operational intelligence efforts.

(6) Obtains and disseminates meterological data when required.

(7) Organizes and coordinates an effective counterintelligence effort.

(8) Maintains strict liaison with the Salvadoran Intelligence Agency (AIS) and other governmental intelligence organizations.

c. J-3 Representative:

(1) Responsible for the planning and conduct of operations against subversives and insurgents by maintaining current operational contingency plans, analyzing operational requirements, preparing information and recommendations for operational decisions, and preparing orders for and coordinating counterinsurgency and surveillance/intercept operations.

(2) Maintains current the status of forces.

(3) Maintains current situation maps, charts, graphs, schedules, force status, locator boards, etc., pertaining to both the tactical and strategic situations.

(4) Prepares situation analysis reports for the Directorate in coordination with J-2 as required, to include:

(a) Current operations.

(b) Current capabilities.

(c) Programmed capabilities.

(d) Plans for future operations.

(e) Anticipated requirements.

(f) Problem areas.

d. J-4 Representative:

(1) Responsible for information on the current logistical status of the armed services and security forces as it effects the operational capability and general effectiveness of each.

(2) Maintains familiarity with the logistical status of all units of the armed services and security forces as it affects their operational readiness.

(3) Maintains familiarity with the equipment and supply status of the armed services and security forces.

(4) Monitors the acquisition, storing, supply, and utilization of supplies and equipment.

(5) Prepares logistical estimates and reports for the Joint Directorate, as required, to include:

(a) Problem areas.

(b) Forecast of logistical requirements.

(c) Evaluation of ability to support current operations from a logistical standpoint.

(6) Maintains logistical displays for the Joint Directorate.

e. J-5 Representative: (May be combined with J-3 Functions)

(1) Responsible for psychological warfare operations which divide or induce defection from subversive and insurgent forces, reduces civilian support of subversives and insurgents, wins the support of non-committed civilians, and preserves and strengthens friendly civilian support of national objectives.

(2) Responsible for civic action conducted by the armed services during training and in conjunction with counter-insurgency operations which are designed to better the economic and social status of the civilian population and win approval for the presence of military and security forces in the area.

(3) Plans for the employment of propaganda against:

(a) Guerrilla units.

(b) Underground elements.

(c) Civilians sympathetic to subversive and insurgent movements.

(d) Noncommitted civilians.

(4) Plans for the construction and rehabilitation of schools, hospitals, churches, and public buildings and facilities.

(5) Plans for military assistance in agricultural production.

(6) Plans for emergency relief during disaster, famine or epidemics.

(7) Plans for the conduct of emergency evacuation.

(8) Plans for military reaction to civil disturbance.

f. J-6 Representative:

(1) Responsible for adequate and continuous operational communications between the COT and units of the armed services and security forces and between field units of these forces.

(2) Responsible for adequate and continuous high command communications between the following:

(a) President.

(b) MOD.

(c) Chief of Staff of Armed Force.

(d) Director General of National Police.

(e) Director General of National Guard.

(f) Director of Hacienda Police.

(g) Chief, Air Force.

(h) Chief, Navy.

(i) Director General of Immigration.

(3) Operates a message center and the internal communications of the COT.

(4) Facilitates and coordinates the capability for rapid response by all elements of the armed services and security forces through supervision of communications training, operation, and maintenance.

(5) Monitors all communications nets in the country and records and evaluates all traffic.

(6) Responsible for the custody and control of authentication systems and Standard Operational Procedures for the COT.

6. Physical Layout. The physical layout of the COT will depend upon space and facilities available for this purpose. Generally, the following considerations should obtain in choosing a COT site and planning its functional arrangement.

a. Office space should be provided for government, military, and security officials who can be expected to be involved with joint operations. At the minimum, emergency use office space near the Joint Directorate Command Post or War Room, should be provided for:

(1) MOD.

(2) Chief of Staff of Armed Forces.

(3) Director General of National Police.

(4) Director General of National Guard.