

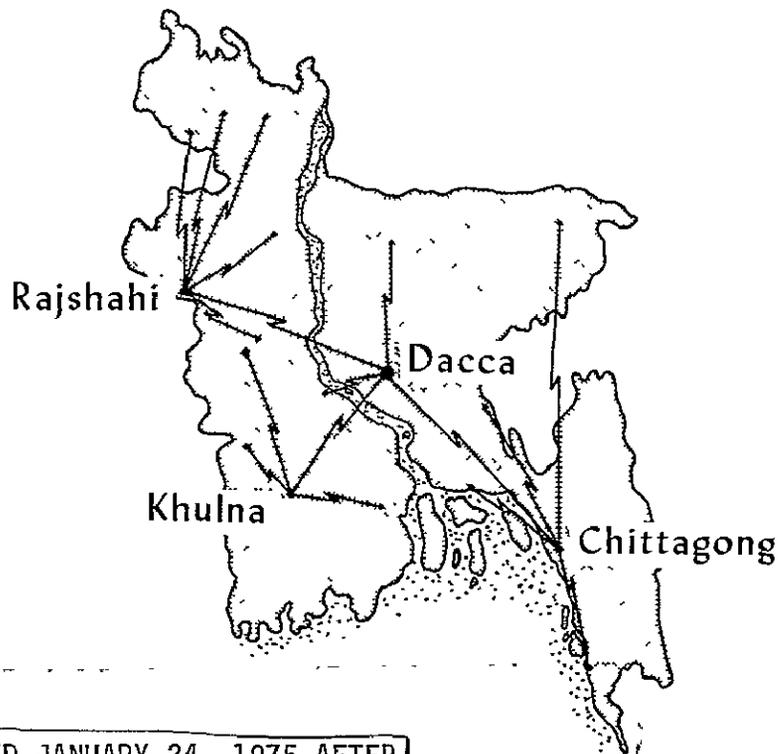
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PAKISTAN POLICE COMMUNICATIONS SURVEY REPORT

DECEMBER 1963

PART I EAST PAKISTAN PROVINCIAL POLICE



DECONTROLLED JANUARY 24, 1975 AFTER
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PAKISTAN PROVINCIAL POLICE TELECOMMUNICATIONS
SURVEY REPORT

Part 1
East Pakistan Provincial Police

Paul Katz
Telecommunications Engineer

Office of Public Safety
Technical Services Division
Agency For International Development

December 1963

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FOREWORD

In response to a request from USAID/Pakistan, and with the concurrence of the Government of Pakistan (GOP), a communications survey of the Pakistan Intelligence Bureau (PIB), the West Pakistan Provincial Police (WPP), West Pakistan Rangers (WPR), Frontier Constabulary (FC), the East Pakistan Rifles (EPR), and the East Pakistan Provincial Police (EPP) was conducted by a representative of the Office of Public Safety (OPS), Agency for International Development, Washington (AID/W) from September 6 to October 2, 1963.

The communications survey disclosed that while the communication needs of both East and West Pakistan civil internal security forces are great, those of the East Pakistan Provincial Police (EPP) are considered to be of a higher priority as no police communication system exists in this area. For this reason, and to expedite follow up action on the section of the survey report dealing with the East Pakistan Provincial Police, this report will be presented in two parts. Part 1, East Pakistan Provincial Police, is contained in this presentation. Part 2, covering the other civil internal security forces, will be published separately.

Meetings were held with Brigadier Azar Khan, Joint Director of the Pakistan Intelligence Bureau and the Acting Public Safety Project Director for Pakistan. At this time Brigadier Khan suggested that priority be given East Pakistan due to the serious lack of police communications in that area.

During the period spent in East Pakistan, the OPS representative, a telecommunications engineer, discussed the public safety communication program on several occasions with the East Pakistan Provincial Director of USAID/Pakistan and his staff. In addition, daily discussions were held with the Chief of Public Safety Division, USAID/Pakistan and his staff.

The Acting Inspector General of the EPP, Mr. Idris, assisted with the travel plans and necessary arrangements for a comprehensive field survey.

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Mr. Salahuddin Ahmed, Assistant Inspector General, furnished valuable information and accompanied the AID/W representative to all of the locations visited. A meeting was also held with the Inspector General of the EPP, Mr. A. M. A. Kabir, who returned to Dacca from the U.S. shortly before the completion of the survey.

In addition to the above, meetings took place with M. S. K. Durrani, General Manager of the East Pakistan Telephone and Telegraph (EPTT), and with Lt. Colonel S. Zahidali, Signals Officer of the EPR. Details regarding these meetings are contained in this report.

In order to evaluate the EPP communications requirements, the AID/W representative traveled extensively throughout East Pakistan and visited EPP facilities at Dacca, Narayangang, Barisal, Kuhlna, and Jessore.

In this report, a detailed discussion is made of the following topics:

1. An evaluation of the existing communications facilities in East Pakistan in the light of police needs to fulfill their missions;
2. The identification of areas therein where existing communication facilities (such as government systems, EPTT, EPR, etc.) are adequate and can be utilized by the EPP in preference to creating parallel and duplicate systems;
3. The identification of immediate and future communications requirements for equipment, personnel, training and logistic support, to form a basis for joint GOEP and USAID planning.

- AM - Amplitude Modulation
Modulation of the amplitude of the transmitting wave. The transmitting wave contains a fixed carrier with no intelligence (speech or a signal) and two sidebands both above and below the carrier signal. Each sideband produced by the process of modulation has the same intelligence.
- CW - Continuous Wave - Radio Telegraph
Interrupting the transmitted carrier at precise intervals permits the use of Morse Code, a telegraphic alphabet or code consisting of dots, dashes, and spaces. The transmitting wave contains a fixed carrier with no intelligence and no sidebands.
- FM - Frequency Modulation
Modulation of the frequency of the transmitting wave in accordance with speech or a signal. The transmitting wave contains a variable carrier with the intelligence and no sidebands.
- HF - High Frequency
Frequencies from 3 - 30 megacycles
Used for long distance point-to-point communications.
- SSB - Single Sideband
The energy normally contained in the carrier and two sidebands of AM transmission are concentrated in one sideband. The selected sideband may be either the upper or the lower and contains the same capabilities as that obtained in AM transmission.
- VHF - Very High Frequencies
Frequencies from 30 - 300 megacycles
Used for line of sight communications.

INTRODUCTION

Geographically, Pakistan is divided into two provinces, West Pakistan and East Pakistan. Between these two provinces, separating them by nearly a thousand miles, lies the country of India.

East Pakistan covers an area of 55,126 square miles and is bordered by India on the west, north and east, Burma along its southeastern boundary, and to the south by the Bay of Bengal.

East Pakistan is criss-crossed by rivers and low-lying areas with scattered off-shore islets in the coastal area. The economy of East Pakistan is largely dependent on the water transport system. There are approximately 2,700 miles of perennial navigable waterways which extend to 4,000 miles during the monsoon season. An estimated 1500 registered craft ply the rivers in East Pakistan in addition to approximately 300,000 non-registered "country boats".

Due to the difficulties arising from recurring floods, East Pakistan has limited and fragmented road and rail transport. Of 42,380 miles of road in East Pakistan, 40,000 miles are passable only in the dry season.

The East Pakistan railway has a total route mileage of 1,712 miles. Many areas are connected partly by train and partly by ferry boat service. The coastal islands in East Pakistan pose further problems, as the means of communication are mainly the sea-going country boats and the use of these depends entirely on weather conditions.

The total population of East Pakistan in 1961 was approximately 50,840,325 of which 556,712 are in Dacca, the capital. Chittagong, with a population of 362,205 is the principal seaport of East Pakistan and is situated on the west bank of the Karnafuli river, just inland from where the river enters the Bay of Bengal.

Communication facilities of the civil government are limited and in most cases unreliable. Communication with many of the rural areas is virtually non-existent.

The three major problems of internal security in East Pakistan are:

1. Urban crime
2. Rural banditry (Dacoity)
3. Civil disturbances

The East Pakistan Provincial Police with personnel totaling approximately 25,000 has the primary responsibility for maintenance of law and order. It functions in all cities and towns of any size throughout the country.

SUMMARY

The problem facing the East Pakistan Provincial Police (EPP) can be appreciated if one realizes that virtually without communications capability, a 25,000 man police force is responsible for effective control of crime, maintenance of law and order, checking of subversive activities, prevention and control of civil disturbances in a country with a population of over 50 million people, covering an area more than 55,000 square miles.

A requirement exists for a point-to-point, self-sustaining provincial security telecommunication system which is effective 24 hours a day and which is controlled by the EPP.

The civil security and police problems generated by the modern activities within Pakistan necessitates the adoption of modern, effective police methods, and one of the principal tools which should be available to the police is a suitable and reliable telecommunications system. Without dependable and effective telecommunications, the police force cannot develop into a competent law enforcement agency to meet its responsibility.

An independent police security telecommunications system would be the backbone and main artery of the EPP. It would permit a command control from the EPP Secretariat in Dacca to their various subordinate range and district headquarters.

In the city of Dacca, a dependable and flexible Municipal police telecommunication system is urgently required in addition to that recommended above. At present the EPP are unable to respond quickly to emergencies within the Dacca-Narayanganj area because of their lack of communication capability. This is an industrial area having a population of over one million people without any facilities for speedily dispatching or requesting police assistance. Further, enormous traffic problems caused by the increase in all-weather highways and the number of motor vehicles (Dacca has an estimated 14,000 motor vehicles) on the roads require the EPP to have an effective radio patrol car system.

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In recommending an independent police security telecommunication system, all existing and proposed communication systems of the GOEP were examined to prevent recommending duplicate or parallel systems. In this regard, these steps were taken:

1. The availability of the EPR communications facilities to the EPP was explored and found to be severely limited. In many areas of the country where police communications requirements exist, EPR facilities are non-existent,

2. A study was made of the existing and proposed expansion of the East Pakistan Telephone and Telegraph (EPTT) network. The almost complete police dependency on the EPTT was found to be unsatisfactory and to seriously handicap the EPP in carrying out their assigned mission. The proposed expansion of the EPTT VHF Relay system would in no way alleviate the requirements for a separate EPP security telecommunications system.

3. At a meeting with the General Manager of the EPTT, M. S. K. Durrani, the AID, ^{NY} representative proposed the utilization of EPTT leased lines by the EPP. Mr. Durrani stated that the EPTT could supply leased lines to three range headquarters from the EPP headquarters in Dacca, however, it was improbable that EPTT could supply the needed teletype equipment.

4. The EPTT facilities, however, should be considered as available supporting elements to a proposed tactical system and which can be utilized to alleviate heavy administrative traffic. The EPTT system does not provide direct tactical or operational support for efficient operations of the EPP forces nor provide the required traffic security. Therefore, it cannot be construed that the EPTT system would be a duplicate or parallel element of the proposed EPP security communication system, and should not be so classified.

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CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

An EPP communications network did exist at one time and a brief summary of its disposition follows:

In 1945 the police started a communications network; it was headed by a Superintendent of police (SP) under the direct control of the IG of police. At the time of independence the EPR was the central reserve force of the police. Their headquarters and that of the police communication section were in the same premises, and the EPP communication section was integrated into the Signal Wing of the EPR for reasons of economy and also to ensure better discipline in the police communication staff. In 1957 there were 158 police communication stations in operation.

In September 1958 the EPR was made an independent organization under the Home Department. Since the EPP communication section was now a part of the EPR, the police were left without any independent means of communications.

1. East Pakistan Rifles (EPR) Communications Facilities Extended the EPP

The EPR is a tactical organization having the responsibility for border patrol operations. Their communications network by necessity is a field type operation with their stations frequently changing locations. Because of their limited communications facilities and operational requirements; severe limitations have been imposed by the EPR on transmittal of other governmental agencies' messages over their system.

The EPR communication facilities are not located in many areas of the country where police communication needs exist.

In times of emergency, when the police are dependent upon a reliable secure means of communications, even the limited facilities the EPR could possibly extend to the police are no longer available because of EPR tactical commitments.

2. East Pakistan Telephone and Telegraph (EPTT) Facilities
Extended the EPP

There has been no definite determination of the EPTT system reliability, but the following facts should be considered:

Alternate routing while proposed is not yet in existence. (Figures 1 and 2.)

Occasional equipment breakdown or power failure at any EPTT relay station could isolate an entire area from Dacca for hours. An example of this was the recent failure of one of three relay stations comprising the EPTT link between Chittagong and Dacca. This failure caused by a cyclone disrupted all EPTT communications to the Chittagong area for over eight hours.

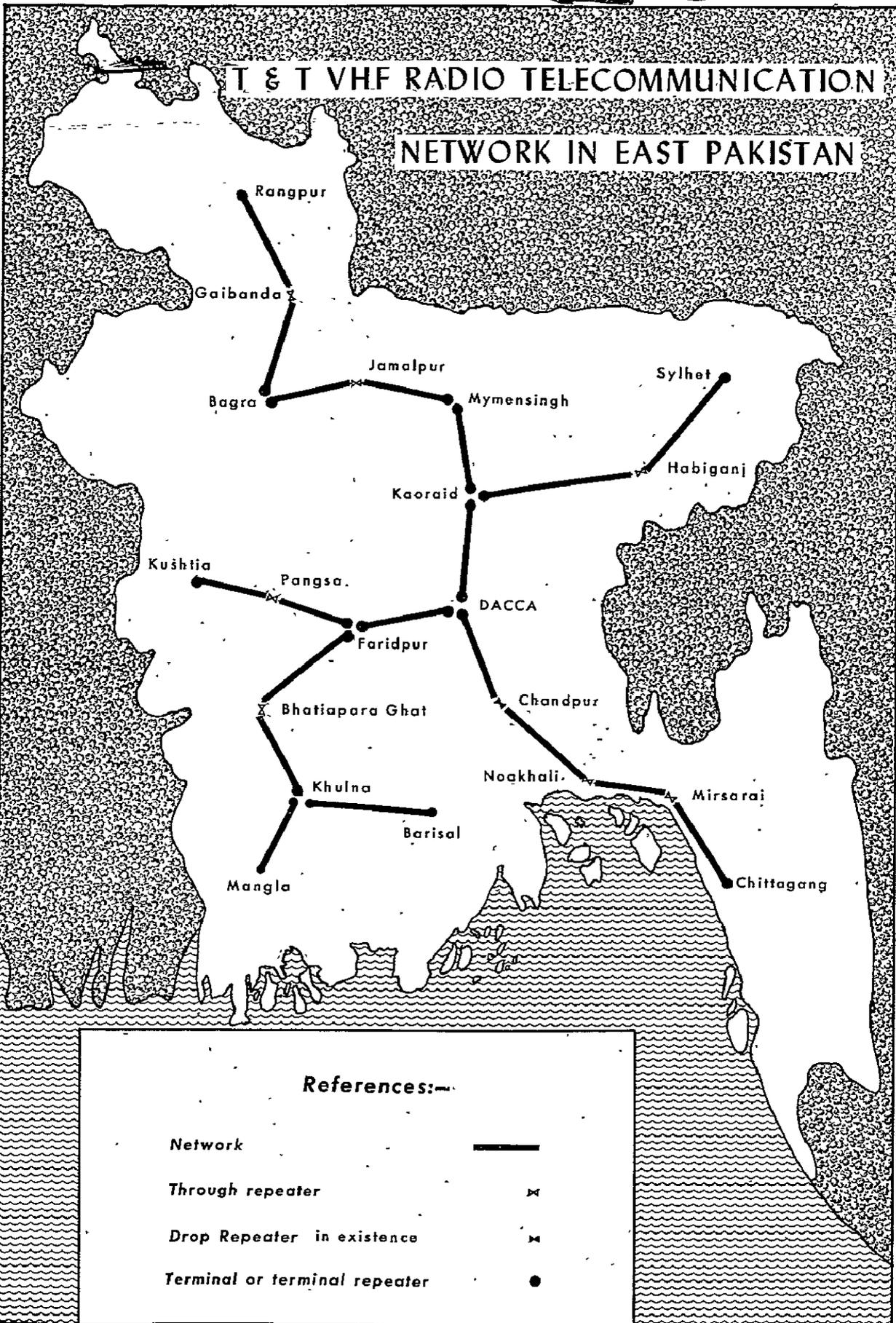
In addition, VHF-UHF relay communications systems being used by EPTT are extremely vulnerable to sabotage.

Further, civil communications systems are notoriously subject to strikes and ensuing disruption of service. The recent threat of strike by the Pakistan Postal and Telephone Departments, which was fortunately averted, further demonstrates the paramount need for a self-sustaining police security telecommunications network.

In most internal security operations, it is also imperative that communications be secure from interception and compromise. Therefore, a means of sending coded messages is needed. This feature is not presently obtainable over the EPTT telephone system.

There are many recorded instances of the transmission of unauthorized orders designed to subvert or undermine control in internal security agencies. This danger would be minimized were EPP to have physical and operational control over their system.

T & T VHF RADIO TELECOMMUNICATION NETWORK IN EAST PAKISTAN



References:—

- Network —————
- Through repeater — X —
- Drop Repeater in existence — XX —
- Terminal or terminal repeater ●

Figure 2

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If an alternate point-to-point independent EPP security telecommunications system existed, rapid emergency communications could be provided to the GOEP and GOP if communications over the EPTT system were to be disrupted for any reason.

3. Comparison of West Pakistan Police (WPP) Communications Capability

In contrast to the EPP the WPP is not faced with the problem of a lack of communications capability. The WPP security telecommunication system (Figure 3) has been in operation for many years and augments the WPTT facilities. Although WPP has been provided teletype circuits to their ranges via WPTT leased lines, to fulfill its police mission it is still required to maintain a point-to-point police security telecommunication system to the ranges and other strategic areas as a back-up in case of emergencies. When communications are disrupted over the WPTT system, the WPP must and do provide the necessary communications to most areas within West Pakistan. At present many GOP and GOWP agencies are utilizing the WPP telecommunications network to pass their emergency traffic.

4. EPP Security Telecommunications System

A study was made of the immediate and future communications requirements of the EPP. In this regard Figure 4 was prepared showing the air line distances between the various range headquarters and subordinate district offices down to the sub-divisions to assist in the original telecommunications planning. As discussed with the EPP and USAID, for the initial phase, a complete telecommunications system to provide adequate service from the provincial headquarters in Dacca to the range headquarters at Chittagong, Khulna and Rajshahi and to the 18 districts would be required. Figures 5 and 6 outline the proposed strategic locations of the EPP security telecommunications system. Since a large part of the police problems are in the maintenance of law and order in the flooded areas and outlying islands, provisions should be made to provide the 10 police boats being procured with USAID funds with a communications capability.

WEST PAKISTAN PROVINCIAL POLICE TELECOMMUNICATIONS NETWORK

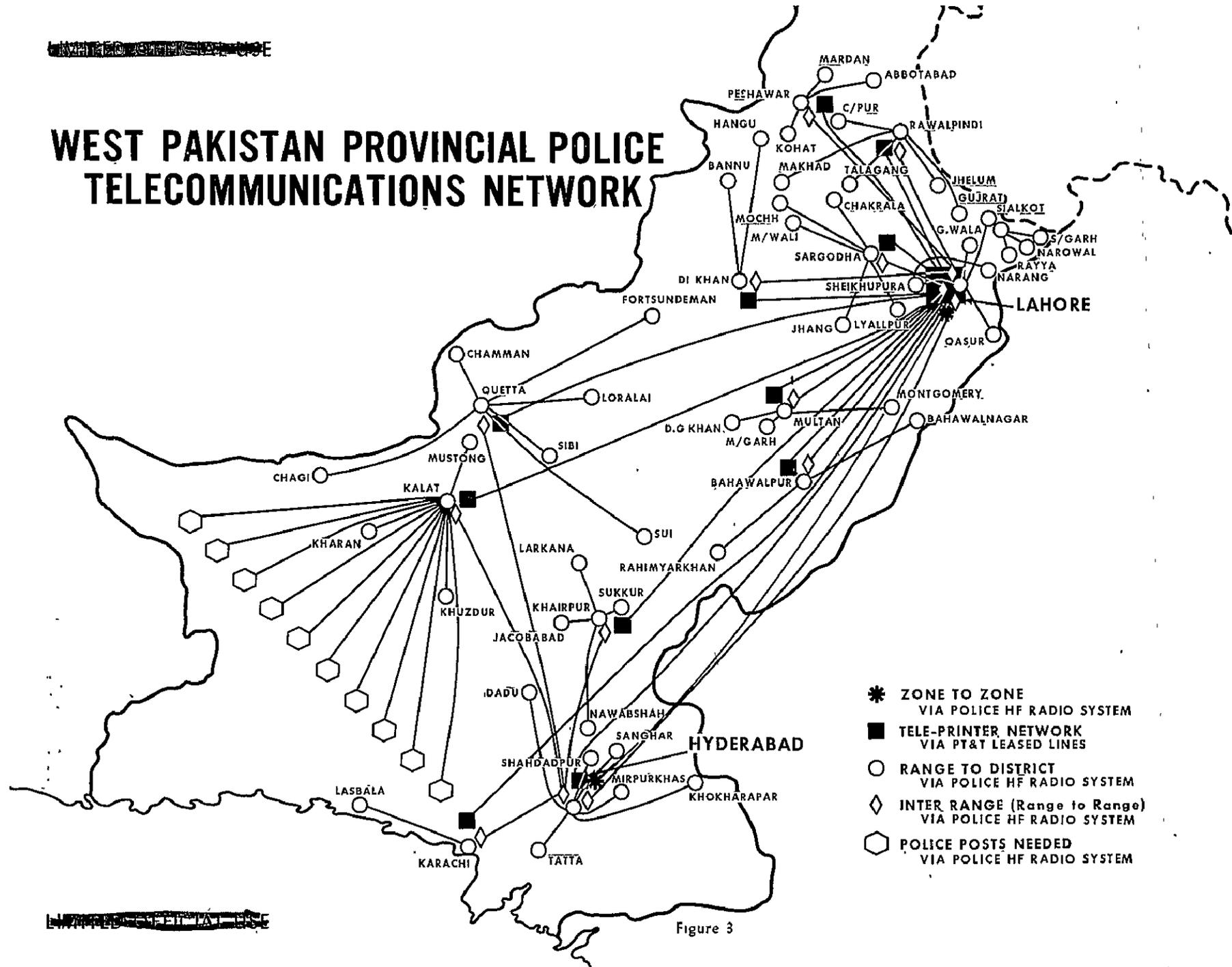
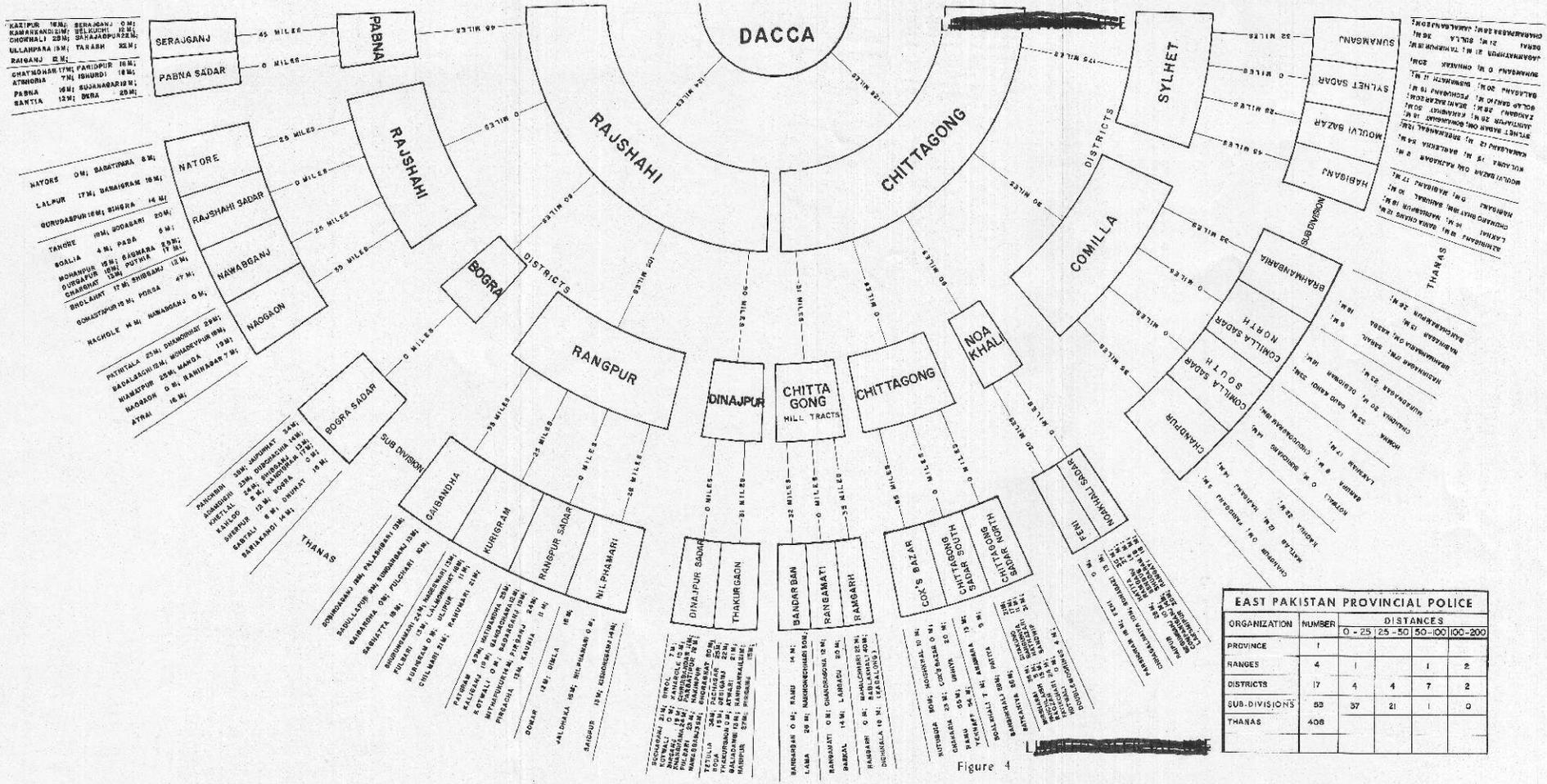
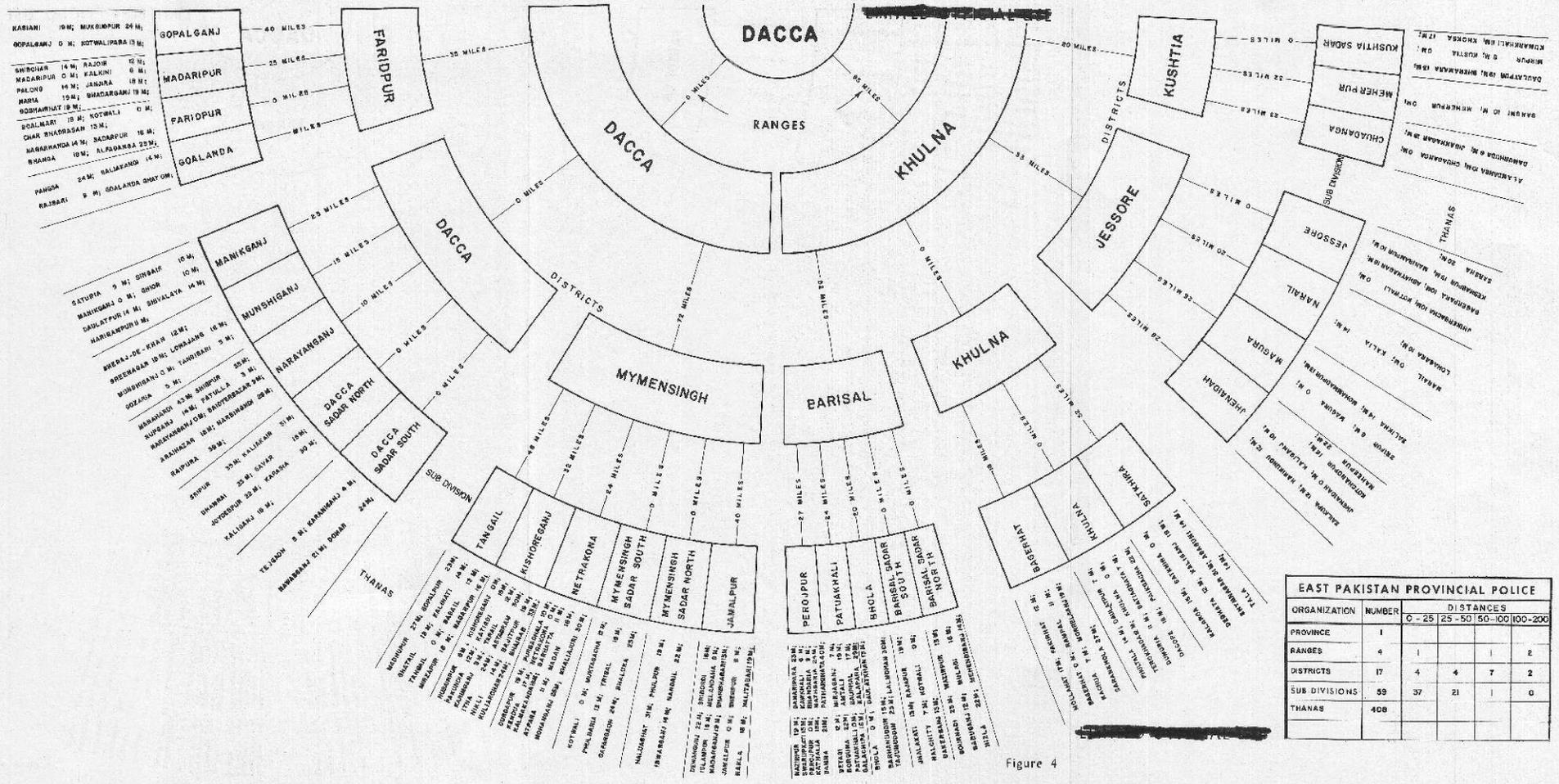


Figure 3



EAST PAKISTAN PROVINCIAL POLICE		
ORGANIZATION	NUMBER	DISTANCES
		0-25 25-50 50-100 100-200
PROVINCE	1	
RANGES	4	1 1 2
DISTRICTS	17	4 4 7 2
SUB-DIVISIONS	58	37 21 1 0
THANAS	408	

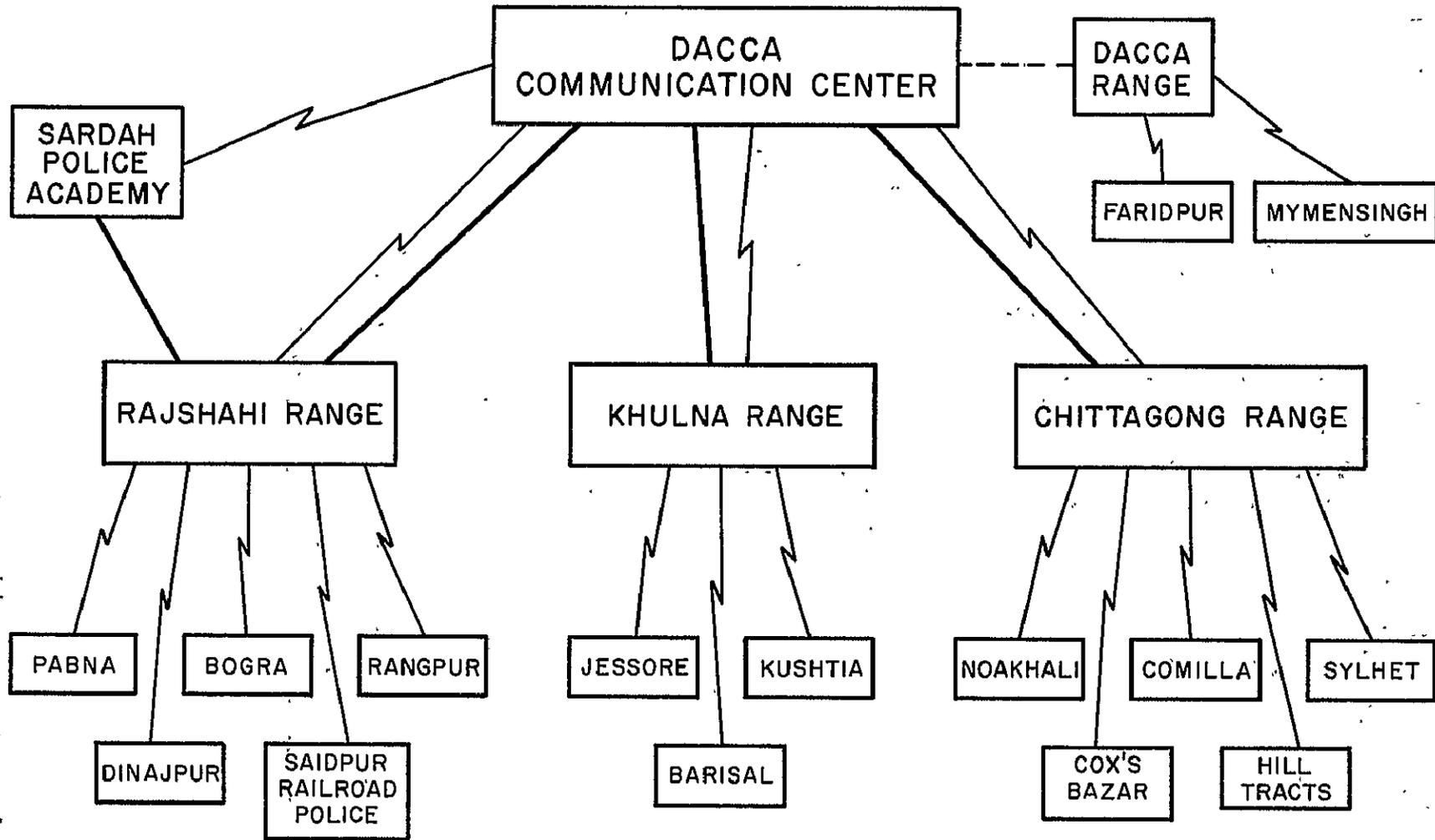
Figure 4



ORGANIZATION	NUMBER	DISTANCES			
		0-25	25-50	50-100	100-200
PROVINCE	1				
RANGES	4	1		1	2
DISTRICTS	17	4	4	7	2
SUB DIVISIONS	59	37	21	1	0
THANAS	408				

Figure 4

PROPOSED EAST PAKISTAN PROVINCIAL POLICE SECURITY TELECOMMUNICATION SYSTEM



— TTY VIA LEASED LINES
⚡ VIA POLICE SSB RADIO SYSTEM

Figure 5

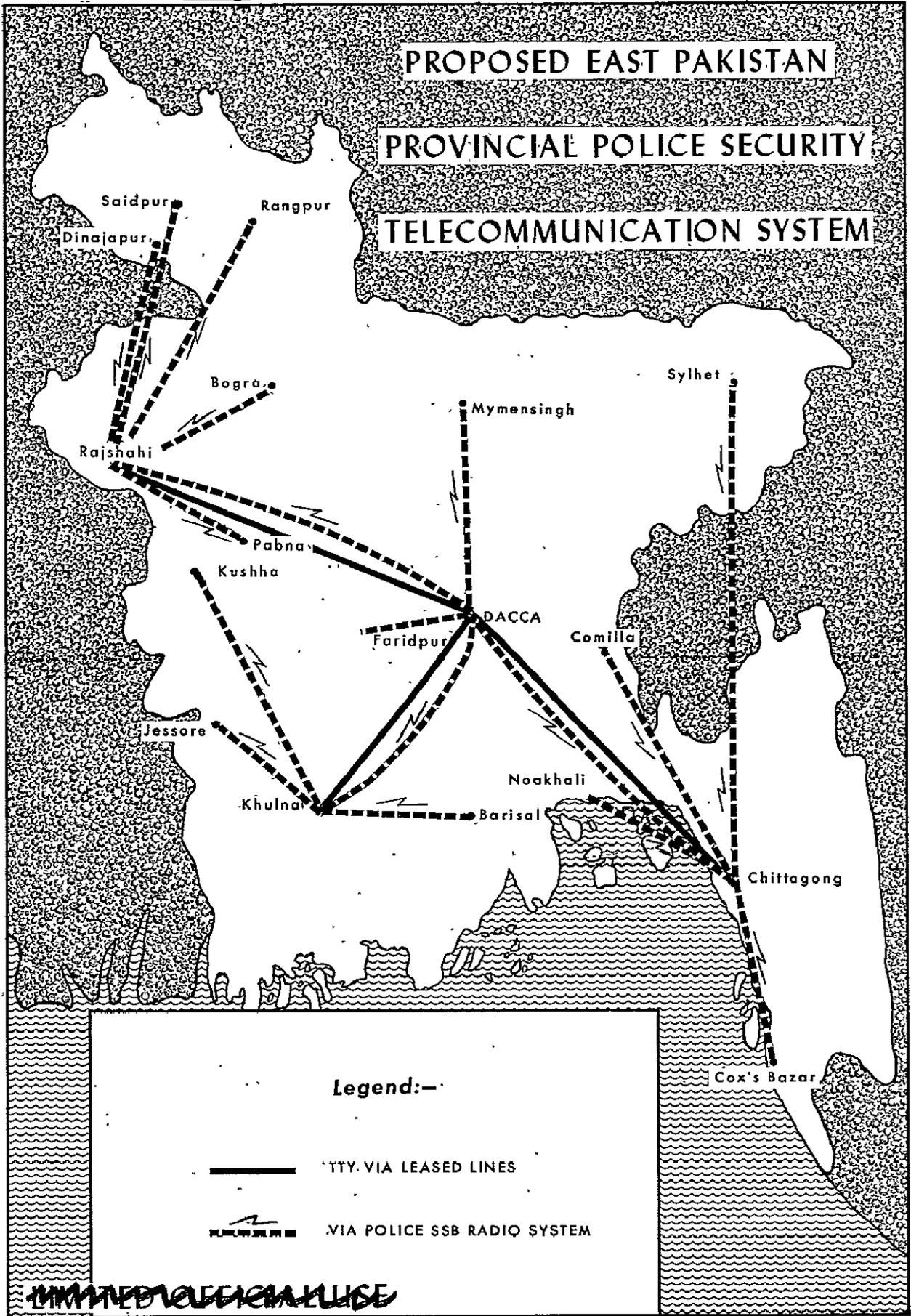


Figure 6

A police security telecommunications system must be self-sustaining, particularly in times of civil strife. Routine police operations, as well as police security and intelligence functions, require rapid communications for effectiveness and command control. Police organizations throughout the world have separate communication systems because experience has shown the unfeasibility of trying to move police traffic rapidly through a commercial or government communication system preoccupied with making money or serving other interests. Communications failures or delays deprive the police command of prompt service from all or part of the force and thus jeopardize deployment of its effective strength. Should an emergency occur during any communication interruption or delay, however brief, the ability of the police to respond to this emergency would be seriously affected.

It is noted that in the United States, with its high degree of commercial communications development, separate communication systems are maintained by each of the armed forces, civil police, and the Federal Bureau of Investigation.

5. Municipal Police and Highway Patrol Telecommunication System

The city of Dacca and the surrounding area are growing by leaps and bounds, and the police force needs a flexible communications system to quickly respond when trouble occurs on the highways or in the newly developing industrial areas.

Provisions for a Municipal police and highway patrol telecommunications system to include fixed control stations, mobile and portable equipment for the greater Dacca area are needed. Figures 7 and 8 outline the proposed strategic locations of the police control stations.

EPTT telephone facilities are of a fixed and permanent nature, and consequently do not meet the complete requirements of the EPP city police force for flexible communications. Although city telephone services are normally dependable and the most frequent means of communications available to the public and the police, the changing conditions prevailing in the Dacca area demand the introduction of flexible police communications.

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PROPOSED MUNICIPAL POLICE & HIGHWAY PATROL TELECOMMUNICATION SYSTEM

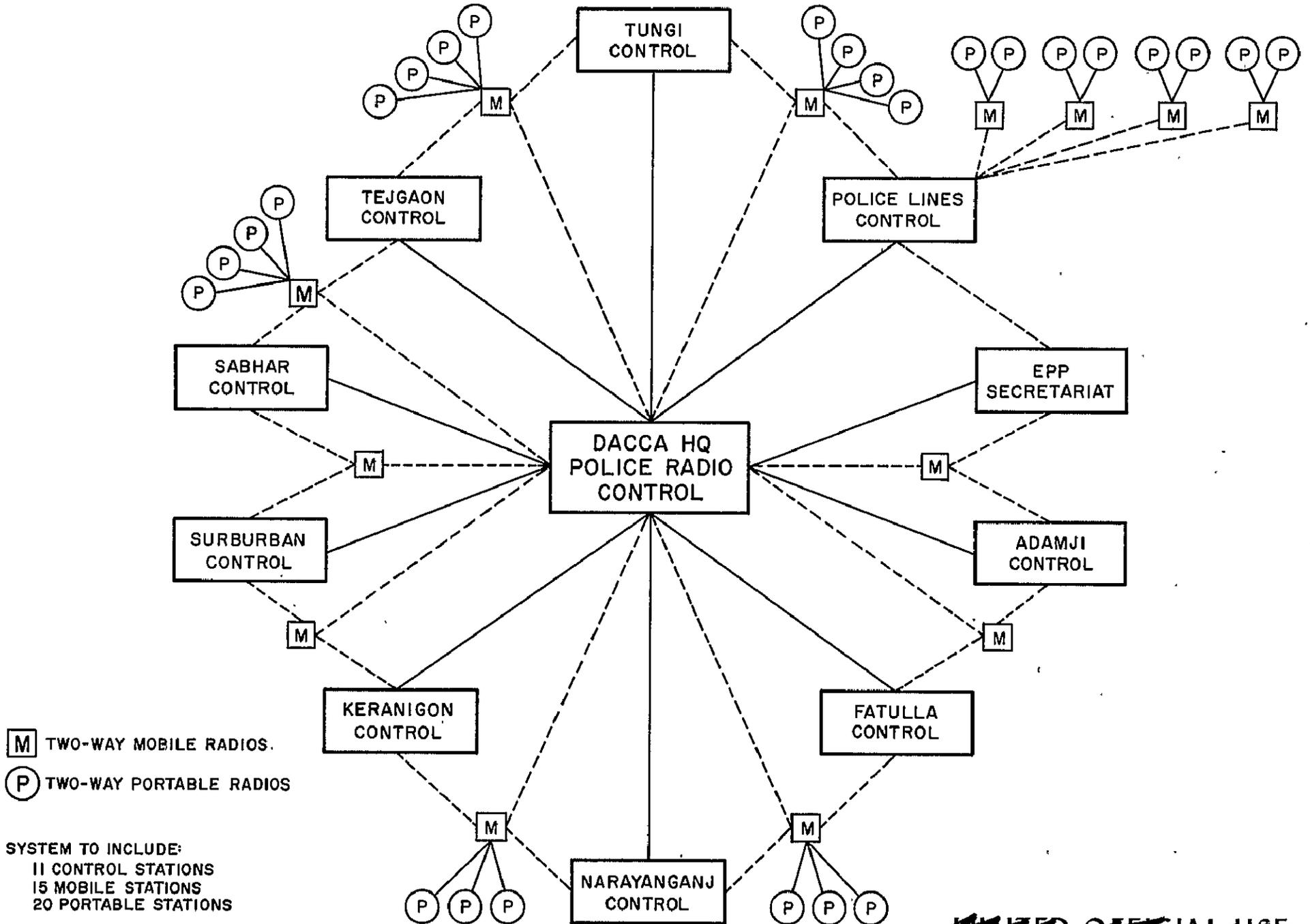


Figure 7

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CITY OF DACCA

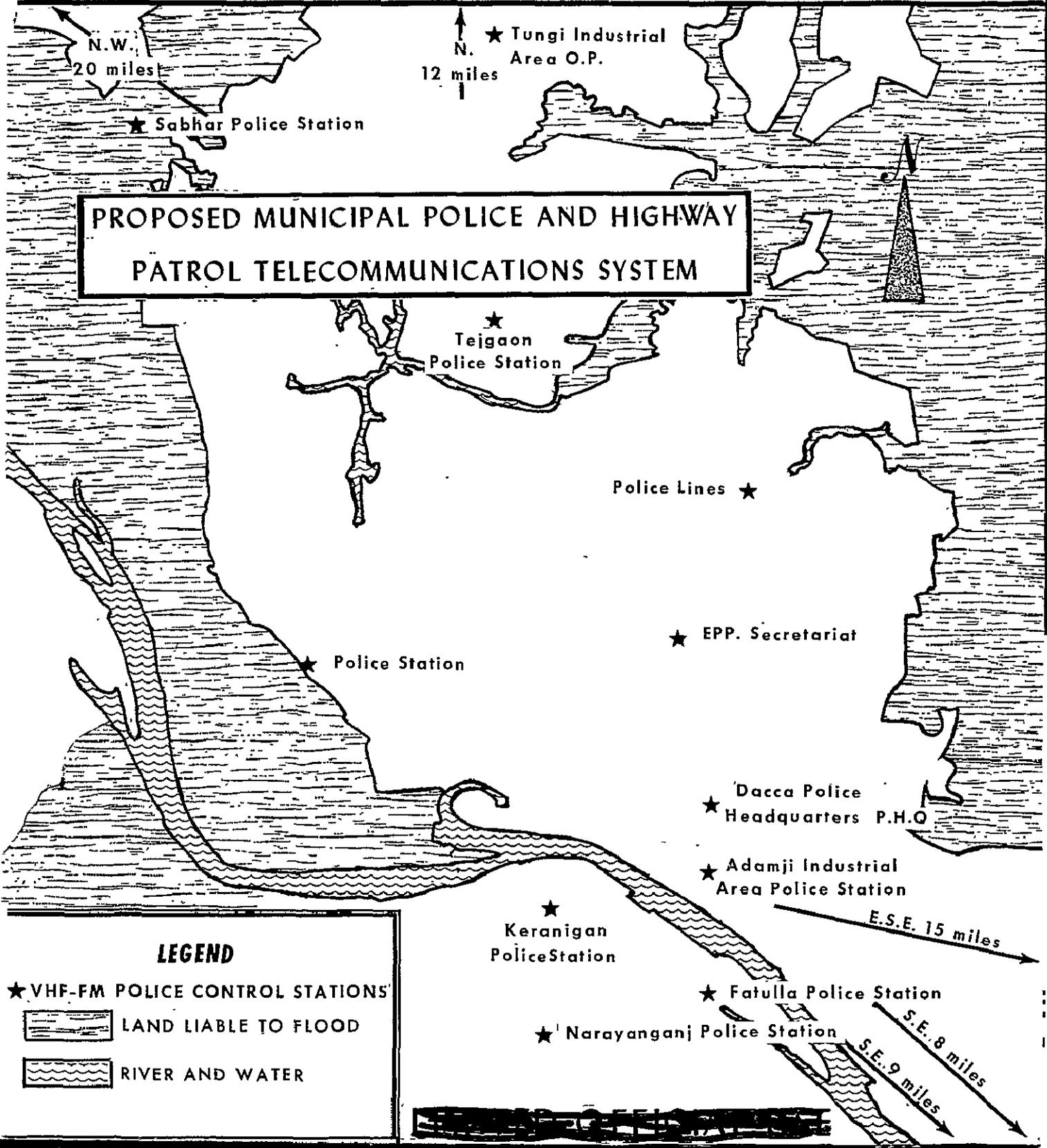


Figure 8

Mobile and portable radio equipment provides the flexible communication necessary for the control of police vehicles and personnel, by enabling the personnel on foot and in vehicles to maintain continuous contact with the police headquarters.

6. GOEP Requirements

The establishment of an extensive provincial police security telecommunication system, and the establishment of a municipal police telecommunications system, will place a considerable requirement on the EPP for the organization of a telecommunication service with suitable staff and technical personnel, the requirement for space in buildings for the radio stations, the development of logistics and budgetary support for the service and system; and the formation of an extensive training and recruitment program.

Personnel staffing is a GOEP activity and to be accomplished without USAID funds; however, to assist the EPP in formulating personnel requirements to staff the initial phase of the proposed EPP security telecommunications systems, a proposed personnel staffing pattern is provided in Annex 1 of this report.

In considering the support of this type of project, it should be recognized that once the project is approved by the GOP and USAID and funds are available, it will require approximately two years to establish the provincial and municipal police security telecommunications system, order and receive the equipment and equip the individual radio stations.

B. RECOMMENDATIONS

Public Safety project planning should be directed toward the establishment of an urgently needed provincial and municipal police telecommunication system. Since this planning and subsequent implementation efforts represent the initial phase of U.S. support in the establishment of a provincial police communications capability, the GOP must fully assess its requirements in concept with U.S. and Pakistan resources.

1. General

a. It is recommended that the EPP operate, control and maintain an independent police security telecommunication system for operational and tactical use embodying proper security capabilities as shown in Figure 9.

b. It is recommended that the EPP operate, control and maintain a municipal police and highway patrol telecommunication system as shown in Figure 10.

c. EPTT facilities should be utilized where-ever possible, not from the viewpoint of trying to limit the police communication system but for the purpose of further expanding its coverage. Adequate coordination of the independent EPP telecommunications system and the EPTT system will assure maximum backup capability in time of emergency.

2. Technical Services

a. In reviewing the proposed Public Safety communications project, it is recognized that technical assistance for the successful and prompt implementation of the system will be necessary. It is recommended that a Public Safety Communications Advisor be provided to assist the EPP establish the required organization, staff and training effort as well as to supervise the installation and eventual operation of the system:

(1) The Public Safety Communications Advisor should be responsible for the necessary USAID administrative procedures to support the telecommunications project and the overall coordination and planning with the EPP staff. In addition, this technician should be concerned with actual engineering and installation phases of the project.

(2) It is recommended that this technician should arrive in East Pakistan several months before the equipment arrives to assist the EPP in establishing the required telecommunications and organization staff. Training should be conducted before the equipment is installed to assure effective operation and utilization of the system.

(3) Depending upon the extent to which the U.S. resources are programmed by USAID for FY 64 and FY 65, it may be necessary to provide

EAST PAKISTAN POLICE SECURITY TELECOMMUNICATION SYSTEM

SIX MAJOR TELECOMMUNICATION FUNCTIONS

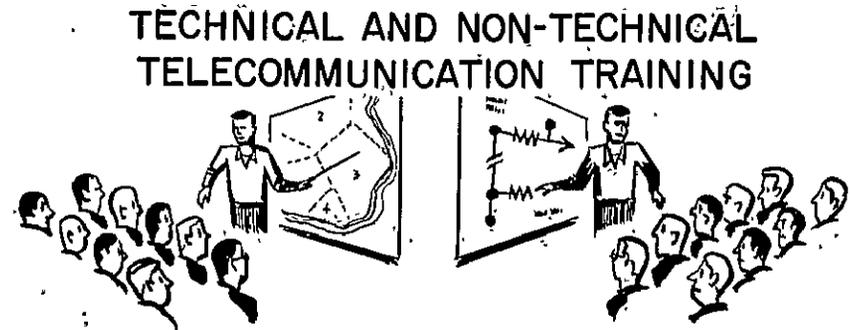
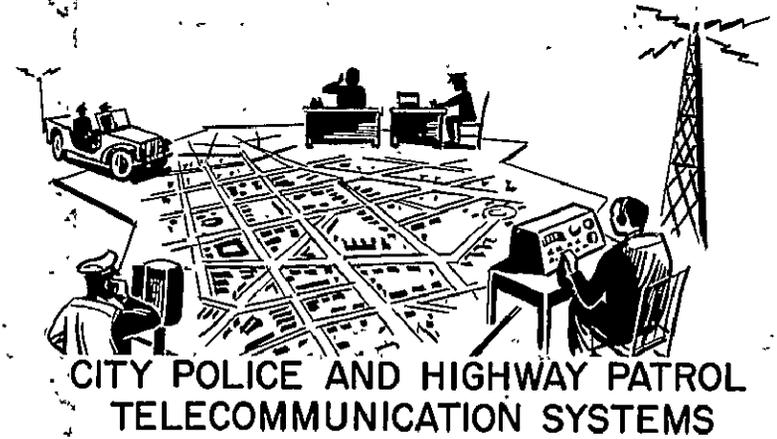


Figure 9

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MUNICIPAL POLICE AND HIGHWAY PATROL TELECOMMUNICATION SYSTEM

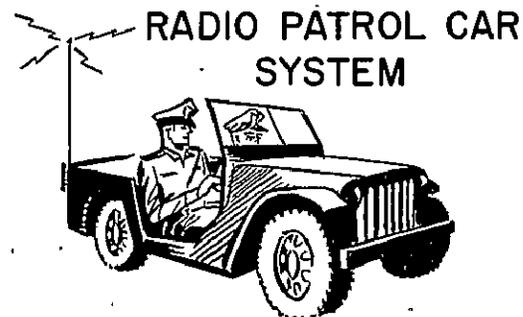
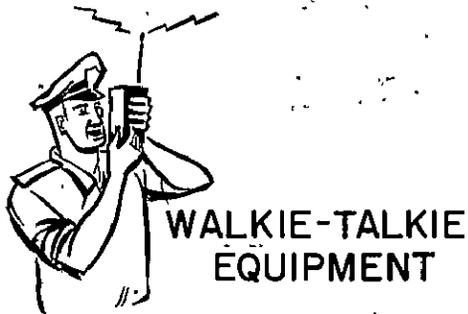
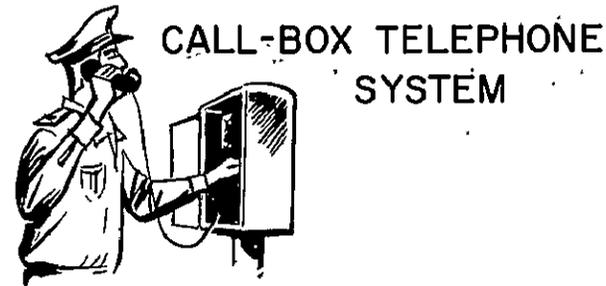


Figure 10

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an additional Public Safety technician to assist in training and coordination of the many telecommunications sub-projects.

3. Commodity Support

A detailed description and itemized list of material recommended for the proposed EPP telecommunications systems is provided as Annex 2 of this report. A total cost of approximately \$200,000 will be required for the initial phase of the proposed EPP telecommunications systems.

a. Factors and information bearing on the development of a commodity plan to implement a basic provincial police security telecommunications system are:

(1) Reliable point-to-point communications equipment to connect the EPP headquarters with their ranges and districts is required and because of the particular type of terrain and distances involved, 30 Single Sideband (SSB) transceivers are recommended. The SSB equipment, emergency power generators, antenna towers, necessary hardware and spare parts to install and maintain the EPP provincial security telecommunications system will cost approximately \$ 93,000.

(2) It is recognized that greater communication coverage and reliability is required for the rural areas in East Pakistan. Since the EPP boats are presently the main method of passing messages to many flooded and outlying areas, it is obvious that these boats should be provided a communications capability. It is recommended that 10 marine type SSB transceivers be provided which are fully compatible with the SSB equipment recommended for the range-district network. This equipment would cost approximately \$20,000.

(3) It is recommended that 10 send-receive teletypes with a two year supply of tape and paper be provided. The proposed teletypes are to be used over the EPTT leased lines to provide the EPP headquarters an administrative channel to their subordinate ranges, as well as interconnect the EPP Secretariat with the provincial police communications center. The teletype equipment will cost approximately \$23,000.

b. Of equal importance is the establishment of a Municipal police and highway patrol telecommunication system. This system should be

implemented in the first phase of the commodity support plan to establish an effective municipal communications capability for the EPP.

(1) It is recommended that a Municipal police and highway patrol telecommunication system be established for the greater Dacca area. This system utilizing VHF-FM equipment would directly connect 10 fixed control stations, 19 mobile and 20 portable units. It is also recommended that eleven 3-kilowatt-diesel generators be provided as standby units in event of electrical power failure. The VHF-FM equipment, emergency power generators, antennas and towers, necessary hardware and spare parts to install and maintain the EPP Municipal police and highway patrol telecommunication system will cost approximately \$58,000.

(2) The fixed control stations recommended above will act as independent communications control points for traffic control, mobile operations and portable operations within their respective area unless special mission control is required from Dacca headquarters.

c. To support the EPP provincial and municipal telecommunication systems it is necessary to establish an effective maintenance capability. Optimum performance of communications equipment can only be obtained if proper test equipment, tools and trained personnel are available (see paragraph 6, below).

(1) It is recommended that test equipment and tools be provided to establish an EPP maintenance capability.

(2) The initial test equipment and tools required to establish EPP maintenance facilities in Dacca and the three range headquarters will cost approximately \$6,000.

4. Emergency Funds

a. Funds should be made available for emergency procurement of miscellaneous items where the need for these items cannot be anticipated. These items will be required for the maintenance and repair of the equipment proposed for procurement under the Public Safety project. It is recommended that an "Open-End" type of PIO/C be issued, providing up to \$5,000 for the procurement of such miscellaneous items over a period of one year. USAID

should be designated the authorized agent. An additional \$5,000 should be provided in local currency to allow the purchase of locally-available material and services which may be required to support the implementation of the Public Safety communication project.

5. Participant Training

a. It is recommended that USAID sponsor several participants for Telecommunication Officer Management Course in the U.S. for a period of 10 to 12 months. This course should be similar to the one conducted at Pasadena City College, California.¹ Since no telecommunication organization exists within the EPP, this recommendation is of primary importance to the successful implementation of the Public Safety communication project.

b. USAID should send one telecommunication officer to the U.S. for Junior Radio Engineering training for a period of 18 months. This would help provide needed technical support of the police telecommunication system.

c. It is recommended that the chief of the EPP telecommunication service be sent on an observation tour for three months of U.S. Police, Border Patrol and Military communication facilities.

d. USAID should sponsor one participant for Municipal Police Operations Course in the U.S. for a period of 6 months. Participant should be the Municipal Police operations officer who will be responsible for coordinating the utilization of the radio patrol car system.

6. Local Training

a. Technician training should be established locally so that technicians can effectively maintain the equipment proposed by USAID Public Safety communication project.

b. While some training will be conducted by the proposed USAID Public Safety Communication Advisor when he arrives, the police should initiate a program for basic and advanced training for new recruited technicians. This can be done in cooperation with a local manufacturer or on a contractual arrangement with Pakistan technical institutes.

¹ AIDTO circular X 1165, June 21, 1963, Police Telecommunications Management Program.

c. Approximately 100 radio telegraph (CW) operators will be required for the initial phase of the EPP provincial security telecommunication system. The East Pakistan Rifles (EPR) have CW operator training facilities and are willing to extend these facilities to the police. They would accept 20 EPP constables for CW operator training. The West Pakistan Provincial Police (WPP) also have CW operator training facilities and would accept 30 EPP constables for CW operator training.

7. Future Communications Requirements

A detailed study of the future communications requirements has not been accomplished to date; however, the following are some of the possibilities which should be considered by USAID and the EPP.

a. EPP Field Operational Requirements

(1) While the need to extend the EPP provincial security telecommunication system to the sub-divisions is recognized, it is believed that any additional expansion within the first two years of the provincial security telecommunication system would seriously hamper its operational effectiveness. Once the EPP have established an effective telecommunication system with trained personnel, adequate repair facilities and sufficient budgetary support to sustain its operations properly, extensions to the sub-divisions could be implemented. The installation of the sub-divisions would of course be dependent upon the extent of USAID Public Safety support, and the resources of the GOEP.

b. EPP Municipal Communication Requirement

(1) VHF-FM mobile and portable communications equipment should be considered for the city of Chittagong, the major sea port of East Pakistan. The police need a flexible communications system to allow quick response when trouble occurs in this rapidly developing area.

(2) Consideration should be given to the installation of a Police Call-Box Telephone System for the Dacca area, dependent upon USAID support and GOEP resources. Leased lines from EPTT would be required. A Call-Box system provides three types of services:

(a) It enables the policeman on foot to call the municipal police headquarters periodically to make routine reports, etc.

(b) It provides a means for the public to call the police in cases of emergency.

(c) It enables the municipal police headquarters, by means of a controlled flashing light installed on the Call-Box, to attract the attention of the area police patrolman in order to give him instructions.

ANNEX 1

EAST PAKISTAN PROVINCIAL POLICE TELECOMMUNICATION
PERSONNEL STAFFING PATTERN

The following information is provided to assist the EPP in formulating personnel requirements to staff the initial phase of the proposed Provincial Security Telecommunication System and the Municipal Police and Highway Patrol Telecommunication System. In this regard, charts 1, 2 and 3 are presented, showing the recommended organizational structure.

A. EPP PROVINCIAL POLICE SECURITY TELECOMMUNICATION SYSTEM

1. Staff Telecommunications Officer - AIG.

This officer will serve as the police telecommunications commanding officer for the EPP Security Communications System. He will be responsible to the Inspector General for all telecommunications matters.

2. Deputy Telecommunications Officer for Technical Operations - SP.

This officer will be responsible to the Chief of Telecommunications for all operations, installation, maintenance, crypto and training required to sustain the system in its day to day operation.

3. Deputy Telecommunications Officer for Administrative Operations - DSP.

This officer will be responsible for the accounting, personnel, procurement, supply, transportation and records section required for the overall communications system. He will perform the administrative supervisory

E.P.P. PROVINCIAL HEADQUARTERS TELECOMMUNICATION PERSONNEL STAFFING PATTERN

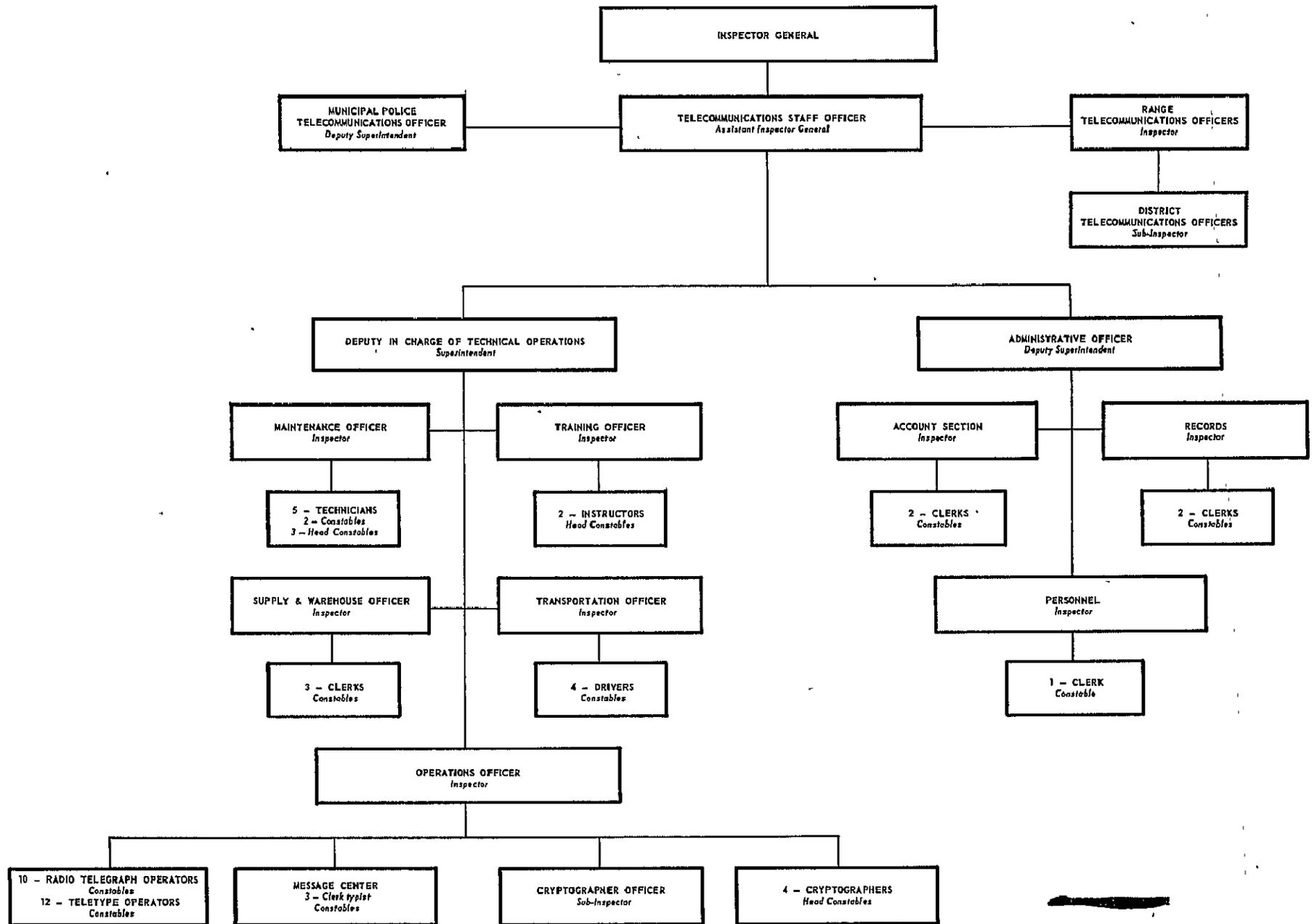
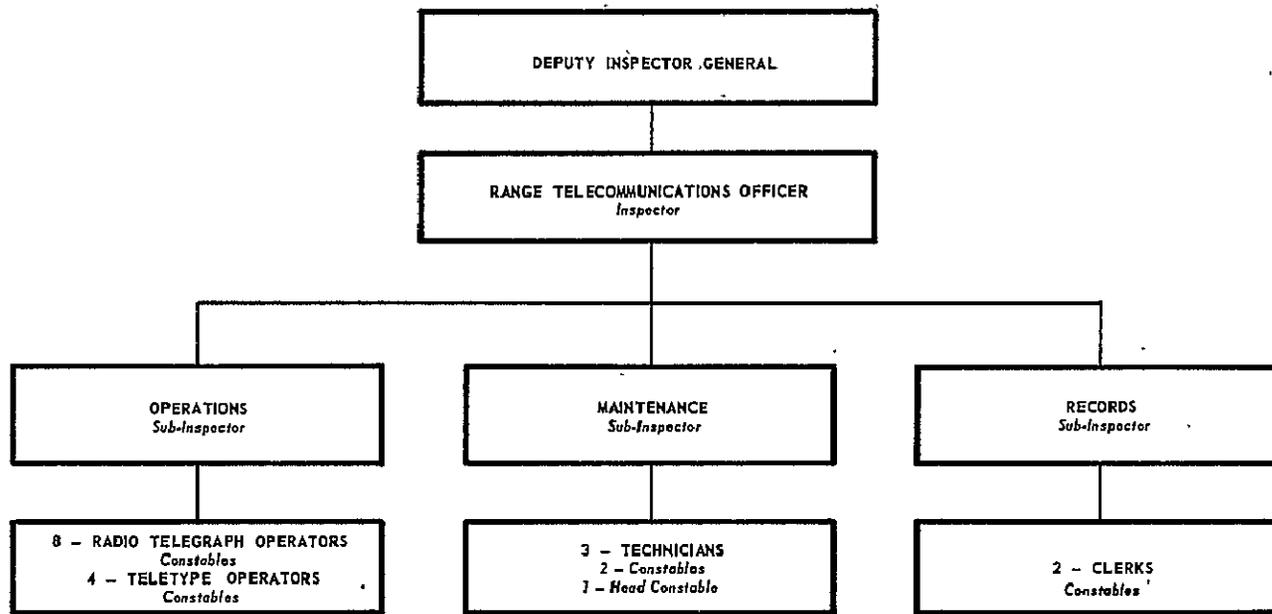
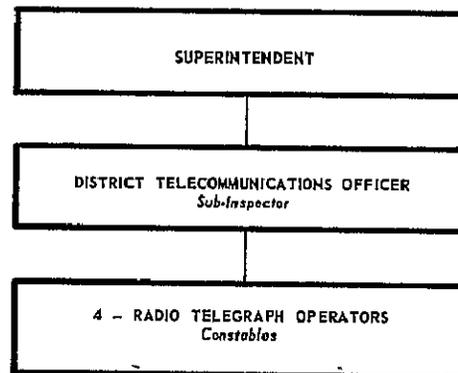


CHART I

E.P.P. PROVINCIAL RANGE TELECOMMUNICATIONS PERSONNEL STAFFING PATTERN



E.P.P. PROVINCIAL DISTRICT TELECOMMUNICATIONS PERSONNEL STAFFING PATTERN



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functions necessary to assure competent operation and budgetary support, and will also originate reports to the IG regarding his office's activities.

4. Technical Operations.

Under this section, all personnel will be under the immediate supervision of the Deputy Telecommunications Officer for Technical Operations.

a. Operations section - Will be under an operation officer of Inspector rank. This officer will supervise:

- (1) ten constables radio telegraph operators
- (2) twelve constables teletype operators
- (3) one officer and four head constables, crypto men; this group will constitute the crypto section
- (4) three clerk constables for the message section

b. Maintenance - To perform the installation and maintenance of the communications system, as required at the headquarters level, an officer of Inspector rank will be in charge. He will have under his command:

- (1) three head constables technicians
- (2) two constables technicians

c. Training - The training officer, of Inspector rank, should have two instructors under his command, of head constable or higher rank, who will conduct and administer the training facilities of the communications system.

d. Range Telecommunications Officer - This officer, of Inspector rank, should report to the Provincial Telecommunications Staff Officer and act as a communication staff officer for the DIG in charge of a range. He should be responsible for three sections: operations, maintenance, records. Each one of these sections should be under the supervision of a Sub-inspector.

- (1) Range operations - Supervised by a Sub-inspector, in charge of:

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- eight constables radio telegraph operators
 - four constables teletype operators

(2) Range maintenance - Supervised by a Sub-inspector, in charge of:

- one head constable technicians
- two constables technicians

for the maintenance of equipment used at the range and district levels.

(3) Range records - Supervised by a Sub-inspector, assisted by:

- two clerk constables

to maintain a records system for range operations and maintenance.

e. District Telecommunications - Supervised by a Sub-inspector, who would be the telecommunications assistant to the District Superintendent. This Sub-inspector would command a detail of:

- (1) four constables radio telegraph operators

5. Administrative Operations.

Procurement, supply and warehousing shall be under an officer of Inspector rank, assisted by six clerk constables, to procure, control and maintain stocks of radio parts and other items needed to sustain the operations of the communications system.

6. Transportation.

Supervised by an Inspector and assisted by four constable drivers, will operate vehicles, deliver priority messages, transport personnel to various communications facilities, and perform other functions for overall system support.

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B. DACCA MUNICIPAL POLICE AND HIGHWAY PATROL
TELECOMMUNICATION SYSTEM

1. Municipal Police Telecommunications Officer

This position calls for one officer of Inspector grade to act as the administrative commander of all Municipal police communications functions. He will be responsible for the operation of the communications system to the Police Commandant, and will have the additional responsibility of coordinating all municipal operations and joint operations with other governmental agencies in emergency situations. He will also act as the liaison coordinator between Municipal Police and other GOEP agencies communications units.

2. Deputy Municipal Police Telecommunications Officer

This position requires an Inspector to act as an executive administrative assistant to the Municipal Police Telecommunications system Commander, and to assume command of the communications system in the absence of the Commander. All operational functions of the communications system would be controlled administratively by this office.

3. Operations

This section requires the services of an Inspector and four Head Constable assistants, to supervise and control the operations of the communication system. All phases of training, operation, maintenance, supply and records shall be administered and coordinated at this level and affect the day to day operation of the communication system. The Operations Office would be directly subordinated to the Deputy Commander and implement the operational directives which are administratively handed down. The Head Constable would be responsible for the actual operations and supervise the same on an 8 hour tour of duty basis.

4. Maintenance

The maintenance supervisor must be capable of establishing an effective maintenance unit for sustaining communications. His responsibilities are of a technical nature and require the ability to effect the maximum

DACCA MUNICIPAL POLICE AND HIGHWAY PATROL TELECOMMUNICATIONS PERSONNEL STAFFING PATTERN

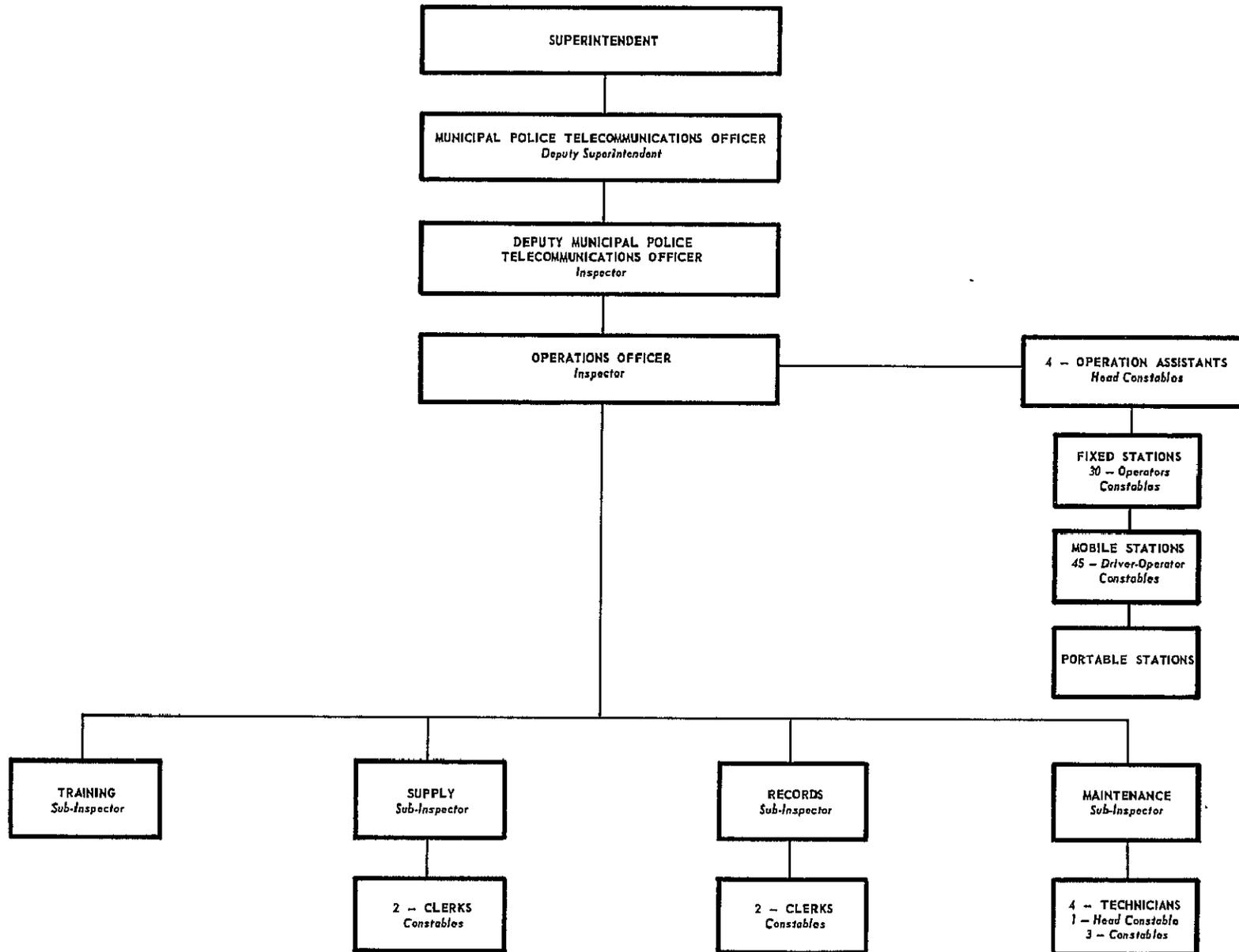


CHART 3

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utilization and service of the equipment. He must have a good technical background in order to supervise and properly direct the maintenance technicians under his supervision. This position should be filled by a Sub-inspector and with 4 subordinate technicians.

5. Training

There should be one Sub-inspector in charge of the communications training activity. He should be assisted by 2 additional men on a part time basis to instruct trainees. These two additional men can be obtained from other sections of the communications system's administrative and technical staff when needed, until such time as full time training is required. These men will instruct, prepare classroom material for all phases of communications, operational and maintenance techniques.

6. Records

The record section must be operated in such a manner as to provide several categories of material for current and future references. Records of operational costs must be kept in conjunction with a separate set of operational records giving actual operations of the system. These records are frequently used to justify police action taken in past emergencies. It is therefore mandatory that current and accurate statistical and operational information be available. In order to properly assure that these functions are performed, a Sub-inspector should be in charge of the records section. He should be assisted by 2 clerk Constables.

7. Fixed and mobile operators

Personnel assigned these positions will require limited training in order to assure an efficient police communications operation. Fixed control stations operators will have to be trained, in addition to ordinary radio patrol car driver-operators, in the art of car deployment and expeditious transmission of pertinent data to effect the apprehension of criminal elements.

It should be noted that personnel figures given in this section of the report are estimates, and are derived from computations based upon an 8 hour tour of duty for each man to effect 24 hour operational coverage of all units.

[REDACTED]

ANNEX 2

PUBLIC SAFETY COMMUNICATIONS COST ESTIMATE

The following detailed cost estimate sheets are given to provide USAID/Pakistan and the GOEP a summary for budgetary consideration in planning the initial phase for U.S. support in the establishment of an EPP communications capability to meet the current internal security requirements of this host country.

The necessity and recommended utilization of the following equipment specified is explained in detail in the preceding report under the title heading of Recommendations.

A. EAST PAKISTAN PROVINCIAL POLICE SECURITY
TELECOMMUNICATIONS SYSTEM

Note

Spare parts and shipping charges will be covered by the 20% discount the U.S. Government normally receives on the manufacturer's list prices.

1. 30 Single Side Band base stations, 100 watt PEP, upper and lower sidebands operation to be supplied, transmit and receive, 4 channels, 3-15 mc, with provisions for remote line operation, VOX and CW to be an integral part of the equipment. Unit must be capable of operation from a 110/220 volt 50/60 cycle A.C. source. Power supply, transmitter-receiver sections and all components to achieve the above operation to be mounted in a common cabinet with no exterior attachments required operate in the modes described. Each station to be supplied with speech clarifier, crystals, handset, key, transmission line, 75' long wire antenna kit



and all necessary hardware for complete installation. Similar to RCA, CAI, Collins, Westrex, RF Communications or equal.

@ 1,800.00 \$54,000.00

2. 10 Single Side Band mobile stations, 100 watt PEP, upper and lower sidebands operation to be supplied, transmit and receive, 4 channels, 3-15 mc, with provision for CW operation. Unit must be capable of operation from a 12 volt D.C. source. Power supply, transmit-receive sections housed in cabinet for marine type installation. Each unit shall be supplied complete with speech clarifier, crystals, handset, key, automatic antenna tuner, fixed marine type whip antenna, all necessary hardware for complete marine installation. Equipment similar to RCA, CAI, Collins, Westrex, RF Communications or equal.

@ 2,000.00 \$20,000.00

3. 25 Diesel generators, 3 KW, 115/230 volts, 50 cycles, single phase, air-cooled, Onan Model 3DJA-1R or equal.

@ 1,000.00 \$25,000.00

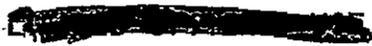
4. 2 10 KW Diesel generators, 115/230 volts 50 cycle, single phase, water cooled, Onan Model 15RDJC-3R or equal.

@ 2,000.00 \$ 4,000.00

5. 4 Teletypes - Automatic teletype machines to be used with EPTT leased lines. Teletype must be capable of operating from 110/220 volt, 50 cycle A.C. source; machine to be complete with tape perforator and automatic send-receive facility. Similar to model 28ASR Teletype Corporation of America.

@ 2,600.00 \$10,400.00

6. 6 Teletypes - Automatic machines to be used with EPTT leased lines. Machines must be capable of operating from 110/220 volts 50 cycles A.C. source. Teletype to be page printer type



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with send-receive facility. Similar to model 28RO Teletype Corporation of America.

			@ 1,800.00	\$10,800.00
7.	-	10% of costs of items 5 & 6, to cover tape and 3-copy paper		\$ 2,120.00
8.	60	40' Towers (2 per location), with gin pole erection kits and all necessary hardware for installation	@ 100.00	\$ 6,000.00
9.	5,000'	#12 stranded antenna wire		\$ 200.00
10.	15,000'	guy wire, stranded		\$ 2,500.00
11.	500	7" strain insulators		\$ 500.00
12.	1,000	guy wire clamps 3/16" #IE1651		\$ 150.00
13.	30	antenna center insulators for transmitter doublet antenna	@ 5.00	\$ 150.00

B. DACCA MUNICIPAL POLICE AND HIGHWAY PATROL TELECOMMUNICATIONS SYSTEM

Note

Spare parts and shipping charges will be covered by the 20% discount the U.S. Government normally receives on the manufacturer's list prices.

- 1. 1 VHF-FM Master base station, 100 watt RF output power. Frequency range* 144-174 mc, transceiver,

* Frequency range and frequency to be determined by EPP based on availability.

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transmitter output impedance 50 ohms; \pm 15 kc deviation and modulation acceptance. Push-to-talk operation. 2 channels. Unit capable of operation from a 110/220 volt 50/60 cycle power supply. Unit shall be supplied complete with 5.5 db gain coaxial skirt antenna with mounting brackets, crystals and all accessories for installation and operation. Equipment shall be of heavy industrial design to provide 24 hour continuous operation. Main unit to connect with desk type remote control console providing essential facilities for operation of a two frequency base station with four wire control line, front mounted speaker, volume control, squelch control, indicator lights, clock, desk type microphone.

\$ 1,500.00

2. 9 Fixed base stations, transceivers, capable of operation from a 110/220 volt 50/60 cycle source, VHF-FM,* 144-174 mc, 50-60 watts RF output power; \pm kc deviation and modulation acceptance; 2 channels; push-to-talk operation. Unit to be desk top type, with front panel controls and speaker; dynamic type desk microphone. Unit shall be supplied complete with 5.5 db gain coaxial skirt antenna with mounting brackets, crystals and all accessories for installation and operation.

@ 1,014.00 \$ 9,126.00

3. 15 Mobile units, transceivers, VHF-FM, 25-30 watts RF output power,* 144-174 mc, 2 channels, \pm 15 kc deviation. Receiver and power supply shall be fully transistorized, capable of operating from a 12 volt D.C. power source with either negative or positive ground; push-to-talk operation. Front panel controls, palm type dynamic microphone. Units shall be designed for 24 hour operation in tropical climate, self-contained in fully enclosed weatherproof case. Unit shall be supplied complete with omnidirectional antenna, whip type, for optional side or bumper mounting. Crystals and all mounting hardware and accessories for complete installation shall be supplied with the units.

@ 950.00 \$14,250.00

* Frequency range and frequency to be determined by EPP based on availability.

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4. 4 VHF-FM motorcycle radiophones, 2 channels, transceivers, 7-12 watts RF output power; completely transistorized receiver, compatible with items 1 and 2 above. Rear fender installation for 2-wheel motorcycles. Units to be supplied complete with antenna, crystals; speaker, microphone and controls only in front of rider; all mounting hardware and accessories for complete installation and operation to be supplied with units.

@ 890.00 \$ 3,560.00

5. 20 VHF-FM Walkie-talkies, portable transceivers, 2 channels, 1 watt RF output power, completely transistorized, compatible with items 1 and 2 above. Units to be supplied with telescopic antenna, crystals; rechargeable nickel-cadmium batteries; leather case; max. weight with batteries 3 lbs.

@ 675.00 \$13,500.00

6. 10 40' Easy-way towers, guyed, complete with guy wires and mounts.

@ 100.00 \$ 1,000.00

7. 5,000' RG8/U coaxial cable and fittings for base station feeders

\$ 500.00

8. 5,000' RG59/U coaxial cable

\$ 200.00

9. 11 3 KW emergency power units with auto start, Diesel engine, 110/220 volts, 50 cycles, single phase, air cooled, Onan model 3DJA-1R or equal

@ 1,000.00 \$11,000.00

10. 1 Frequency and FM deviation monitor, frequency range *150-174 mc. Frequency deviation above or below assigned frequency indicated directly in kc on zero center scale microammeter on

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front panel; provision for 5 channel crystals. Deviation meter scales 15-0-15 kc and 3-0-3 kc. Modulation deviation indicated directly in kc on front panel microammeter having scales 0-20 kc and 0-10 kc. Crystal controlled calibration oscillator. Parts lists, calibration charts to be supplied.

\$ 2,200.00

11. Coaxial connectors, Amphenol PH series, 200 each. Complete sets to include adapters, chassis male couplers, jacks, tees and connector adapters.

\$ 500.00

12. 2 Monitor receivers, designed for aural monitoring. Crystal controlled for operation on 2 channels in the 144-174 mc band.

@ 500.00

\$ 1,000.00

C. MAINTENANCE FACILITY

1. 2 Vacuum Tube voltmeters type RCA Junior Voltohmist or equivalent

\$ 120.00

2. 1 Transistor analyzer complete with all operating data and leads

\$ 50.00

3. 1 Tube Tester for American and Foreign tubes, Hickok Model 752 or equivalent

\$ 300.00

4. 1 FM Signal generator with provision for internal or external modulation of unit. Frequency range* 150 to 500 mcs

* Frequency range and frequency to be determined by EPP based on availability.

with a calibrated adjustable .2 UV to 10,000 UV metered output, to operate on 110/220 volts, 50/60 cycle AC main supply

\$ 900.00

5. 2 Electric Drills (one 1/2", one 1/4") and bits (assorted sizes)

\$ 150.00

6. 6 Simpson Multimeters Model 260 series III with case and test leads, or equivalent

\$ 300.00

7. 1 Byrd Termaline wattmeter

\$ 180.00

8. 2 Field test sets, as recommended by manufacturer of equipment supplied

\$ 300.00

9. 10 Complete sets of communications technicians hand tools packed in metal portable box

\$ 1,500.00

10. 5 Thruline Radio Frequency Wattmeters MC JONES or equivalent for operation 10 to 1000 watts, 2 to 225 mcs with scales for 10 watts, 100 watts and 1000 watts

\$ 450.00

11. 1 Hewlett Packard RF Signal generator, model 606A or equivalent - 2-60 mcs

\$ 1,500.00

- | | | | |
|-----|---|--|-----------|
| 12. | 1 | 5 inch oscilloscope, Dumont 401 or equivalent; to operate from 115 or 220 volt AC, 50/60 cycle | \$ 500.00 |
| 13. | 2 | Battery chargers, ATR or equal, 12 v 10 amps output | \$ 300.00 |

