SHORE BASED COMMUNICATIONS

PREPARED BY

BUREAU OF NAVAL PERSONNEL

NAVPERS 10891

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PREFACE

This publication is designed primarily to familiarize the inactive reservist with the communication establishment at naval shore activities. It contains a general discussion of naval communications ashore. Two types of shore activities—the Naval Communication Station, and the advanced base—serve as the basis for discussion.

Shore Based Communications is not intended as a substitute for official communication publications (DNC's, ACP's, NWP's, etc.), and officers assigned to communication duties should refer to those publications. Procedures described or suggested in this text are not intended to conflict in any way with naval policy as promulgated by higher authority.

Before studying this book it is recommended that the officer concerned read *Deck Officer Communications*, NavPers 10807A, and *Shipboard Communications*, NavPers, 10806A. Those who wish further study may continue with *Merchant Ship Communications*, NavPers 10875.

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CONTENTS

CHAPTER 1

INTRODUCTION

Naval Communications

In view of the great number of personnel and the large amount of equipment assigned to naval communications, it seems surprising that prior to the present century this communication establishment was comparatively nonexistent. Not until radio was introduced into the Navy in 1901 did naval communications begin to take on its present organization, size, and complexity.

Today, nearly forty activities of the Navy, employing thousands of persons, are devoted entirely to communications. In addition, many persons are engaged in communication work at other naval activities. The Navy has millions of dollars invested in communication equipment and facilities.

In fifty years, communications has become a large and important operation within the Navy.

Whenever orders, instructions, requests, or information are transmitted by telecommunications between or within naval commands, naval communications is at work. Naval communications includes all personnel, facilities, and equipment engaged in conducting rapid communications for the Navy. Its mission is primarily to serve the voice of command and secondarily to facilitate administration. To accomplish this, it furnishes rapid communications in the general sense, including (where necessary) related requirements such as encrypting and decrypting, routing, reproduction, distribution, and record-keeping.

Several ancillary functions are performed by naval communications. It undertakes special communication tasks and experimental assignments. Naval communications operates the Registered Publication System and the Navy Postal Service.

ELEMENTS OF NAVAL COMMUNICATIONS

Naval communications is composed of four elements. These are (1) Office of the Director, Naval Communications (DNC), (2) the Naval Communication System, (3) communication departments of shore establishment activities, and (4) communication organization of the operating forces. As shore communications are furnished by the second and third of these elements, the remaining two elements are treated only briefly below.

OFFICE OF DNC

The Office of DNC serves as the headquarters for naval communications, over which it exercises technical control. It establishes long-term objectives and prepares plans, regulations, and procedures for naval communications. The Office of DNC supervises the Navy Postal Service. It studies communications-electronics trends and developments and determines the requirements for the improvement of communication facilities.

The Office of DNC represents the Navy in the discussion and resolution of joint and combined communication problems and procedures. It works with other military services, Federal agencies, and certain civilian organizations in connection with communication and postal matters.

COMMUNICATION ORGANIZATIONS OF THE OPERATING FORCES

The communication organizations of the operating forces provide the communication services essential to the effective control and employment of those forces in their assigned missions and tasks. The primary purpose of these communication organizations is to meet tactical and operational command communication requirements, but they also handle essential administrative traffic. They transmit and receive commands, orders, instructions, and reports by means of ship-shore, ship-ship, air-ground, and air-surface communications.

At the level of the operating forces, communications is the voice of command in a visible and tangible way.

NAVAL COMMUNICATION SYSTEM

The "backbone" of naval communications is the Naval Communication System. It is the integrated network which provides rapid communication service on a worldwide scale for the Navy. The Naval Communication System also conducts special ancillary operations.

Under the direction of CNO (DNC), this system furnishes the essential communication support for the operating forces, the Navy Department, and the shore establishment. It provides the means of transmission for CNO directives and instructions to the principal fleet, area, and force commanders, and for the reception of intelligence from these commanders.

It was previously noted that naval communications performs special communication tasks, experimental assignments, and ancillary functions. Most of this work is done by the Naval Communication System.

Ancillary functions performed by this system include the distribution of registered publications,

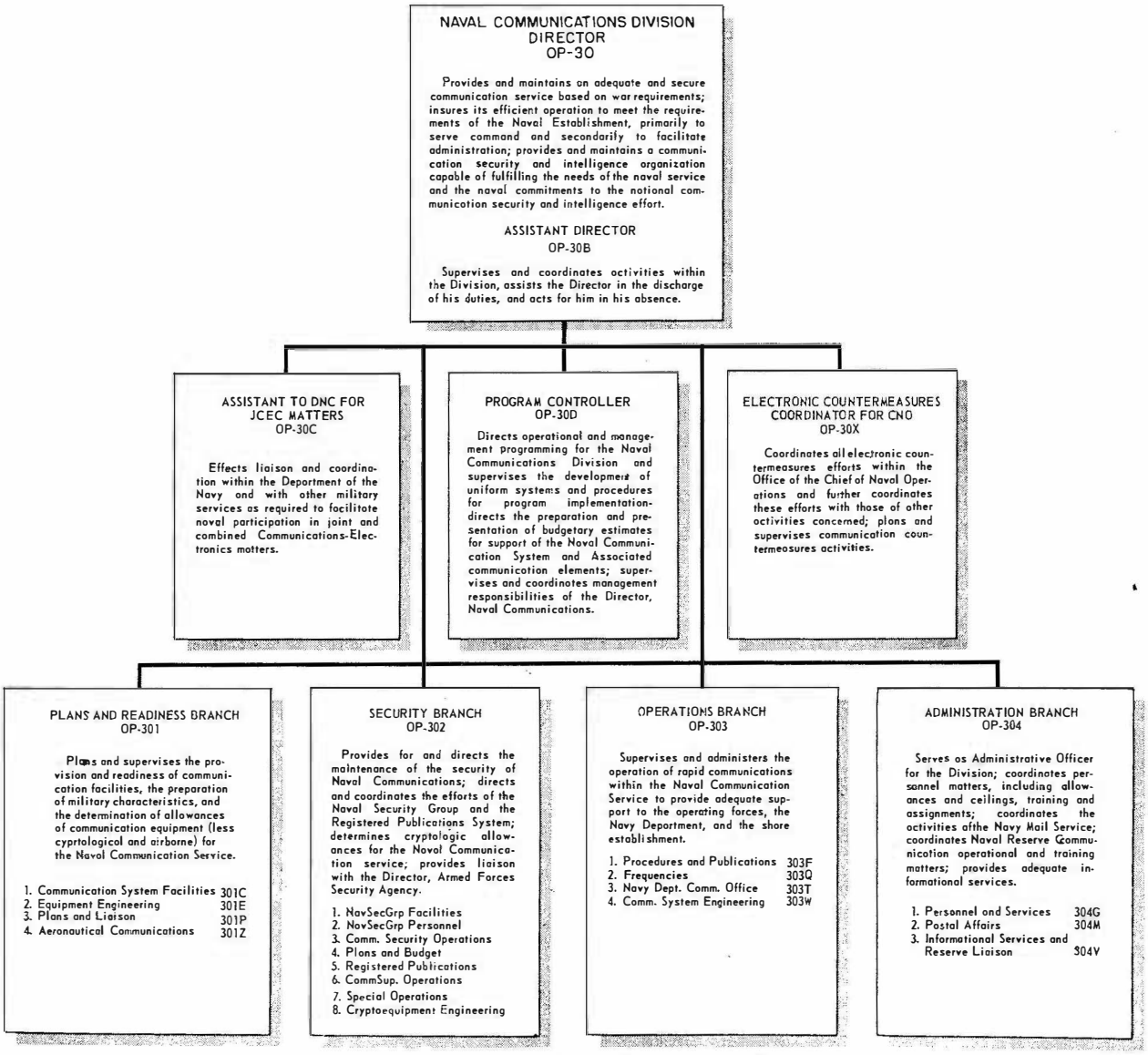

Figure 1–1.—Organization of the Office of DNC.

interarea dispatch of officer messenger, courier, and United States mail, and the provision of postal services to forces afloat.

Not much may be said here concerning the special tasks and experimental assignments other than the Naval Communication System does perform these as may be prescribed or directed, as well as specified communication security functions. It also provides assistance or special communication service to other Government agencies.

Composition

There are five types of activities included in the Naval Communication System. These are:

1. Naval Communication Stations. When located on foreign (not United States owned) territory, the title "facility" is substituted for "station".
2. Registered Publication Issuing Offices (RPIO's) which are not part of a Naval Communication Station or Facility.
3. Fleet Post Offices (FPO's) at New York and San Francisco.
4. Naval Communication Units.
5. Naval Security Group.

COMMUNICATION DEPARTMENTS OF SHORE ACTIVITIES

The communication department facilities element of naval communications is composed of the communication departments of naval bases, stations, air stations and facilities, ammunition depots, supply depots, etc., but does not include any of the activities of the Naval Communications System. These departments primarily provide local (intra-area or intra-activity) communication support for base, station, depot, etc., of which they are an organic component. They provide fleet support facilities, air operational support facilities, and such extra-local service as may be required. They disseminate information and convey reports, progress data, current status information, and similar intelligence to the command or activity.

In addition to providing local communication support, a communication department serves as a link with the worldwide network of the Naval Communication System. Teletypewriter tape relay, secondary fleet and general broadcasts, etc., are functions which may be performed by communication departments.

A communication department facility normally consists of the following:

1. A communication center (including wire and/or radio transmitting and receiving equipment, associated control equipment, visual signaling equipment, message center, cryptocenter, and such other ancillary equipment as local circumstances and requirements may dictate).
2. A Navy Post Office (when required to provide local postal service).

Command and Control of Communication Activities

In considering naval communications, particularly the elements ashore, it is important to bear in mind the four components of command within the Navy. These are military command, coordination control, management control, and technical control. Another matter to consider is that of financial responsibility.

MILITARY COMMAND

Military command is the authoritative direction exercised over activities of the naval establishment in military matters, together with the power to exercise authoritative direction in all matters when circumstances dictate.

The terms *military command* and *management control* do not apply with respect to shore activities assigned to the operating forces. Command over such activities and over communication organizations within the operating forces is exercised by the responsible commander of the operating forces.

Military command and coordination control over shore activities not assigned to the operating forces is exercised by one of the following, as appropriate:

1. Sea Frontier Commander.
2. District or River Command Commandant.
3. Base or Station Commander.

COORDINATION CONTROL

Coordination control is the necessary direction of separate units of the naval establishment to

ensure adequately integrated relationships between all of these units. As was previously indicated, coordination control over shore activities not assigned to the operating forces is exercised by the Sea Frontier Commander, District or River Command Commandant, or Base or Station Commander.

MANAGEMENT CONTROL

Management control is the direction exercised, in other than military matters, by an authority of the naval establishment over a unit of the naval shore establishment in the administration of its local operating functions.

In the case of activities of the Naval Communication System located within the geographic limits of Naval Districts, management control is exercised by CNO (DNC). Management control over communication departments of shore activities not assigned to the operating forces is exercised, with some exceptions, by the bureau or office of the Department of the Navy which has management control of the parent activity.

As has been indicated, management control does not apply to shore activities assigned to operating forces.

TECHNICAL CONTROL

Technical control is the specialized or professional guidance and direction exercised by an authority of the naval establishment in technical matters.

CNO (DNC) exercises technical control of such communication matters as methods, procedure, military characteristics, and operational requirements. Technical control of communication equipment and material (other than airborne) is exercised by BuShips. BuAer exercises the technical control of airborne communication equipment and material. The public works aspects of communication installations is under the technical control of BuDocks. Technical control of personnel is exercised by BuPers.

FINANCIAL RESPONSIBILITY

Financial responsibility envisages the control of allotted funds, civilian personnel ceilings, and plant facilities and equipment.

Financial responsibility for Naval Communication System activities not within the limits of a Naval District is exercised by CNO (DNC). Exceptions to this are the equipment installations in ships or aircraft of the operating forces which are used by Naval Security Group detachments and special teams. In such cases, the financial responsibility rests with BuShips or BuAer, respectively.

For communication departments of shore activities assigned to the operating forces, financial responsibility is exercised by the cognizant bureau or office of the Department of the Navy. BuShips, BuAer, or Headquarters, USMC, as appropriate, have the financial responsibility for communication organizations of the operating forces.

CHAPTER 2

THE NAVAL COMMUNICATION SYSTEM

As was seen in the preceding chapter, the two elements which are principally concerned with shore communications are the Naval Communication System and the communication departments of shore activities. In actual operation, the two are closely tied together. Interarea and intra-area communications are primarily the functions of the Naval Communication System. Shore activity communication departments are essentially for local communications. The remainder of this chapter and the following three chapters will deal mainly with the Naval Communication System and its component activities.

The Naval Communication System provides a major activity for nearly all strategic areas of the world. The primary function of this activity, which is a communication station or facility, is communication support.

As seen in figure 2–2, the major communication activity of each area shown in figure 2–1 is linked to the major communication activity of adjacent areas by fixed multichannel radio circuits. Each major activity is linked to other communication activities in its area by radio circuits, except within the United States, where landline circuits carry most of the traffic.

The Naval Communication Station or Facility

A Naval Communication Station (or Facility when on foreign territory) (NAVCOMMSTA or NAVCOMMFAC) is an activity established by SecNav or CNO. It includes all communication facilities and ancillary equipment, regardless of physical location, which are required to provide essential intercommunication services for a specific area. The term NAVCOMMSTA will be used in this text when referring to this type of activity.

COMPONENTS

A NAVCOMMSTA normally includes a communication center, naval radio station(s) or facility(ies) as required, a Registered Publication Issuing Office, and a Navy Post Office (if located outside the continental United States).

A *communication center* (COMMCEN) is a communication agency charged with the responsibility for receipt, transmission, and delivery of messages. It normally includes a message center, a cryptographic center, and transmitting and receiving facilities. Transmitting, receiving, and relay stations are not necessarily located in the communication center, but facilities for their remote control must terminate in it.

A *naval radio station or facility* (NAVRADSTA or NAVRADFAC) is an activity established by SecNav or CNO, usually for administrative or logistic support reasons, to perform radio transmitting, receiving, or link relay functions (or any combination of these) at a location geographically distant from the COMMCEN of a NAVCOMMSTA. A type-designating letter (T or R) is added in parentheses to indicate the functions which a NAVRADSTA performs. Radio transmitting and/or receiving facilities located adjacent to, or in close proximity to, the controlling components of the COMMCEN of a NAVCOMM-

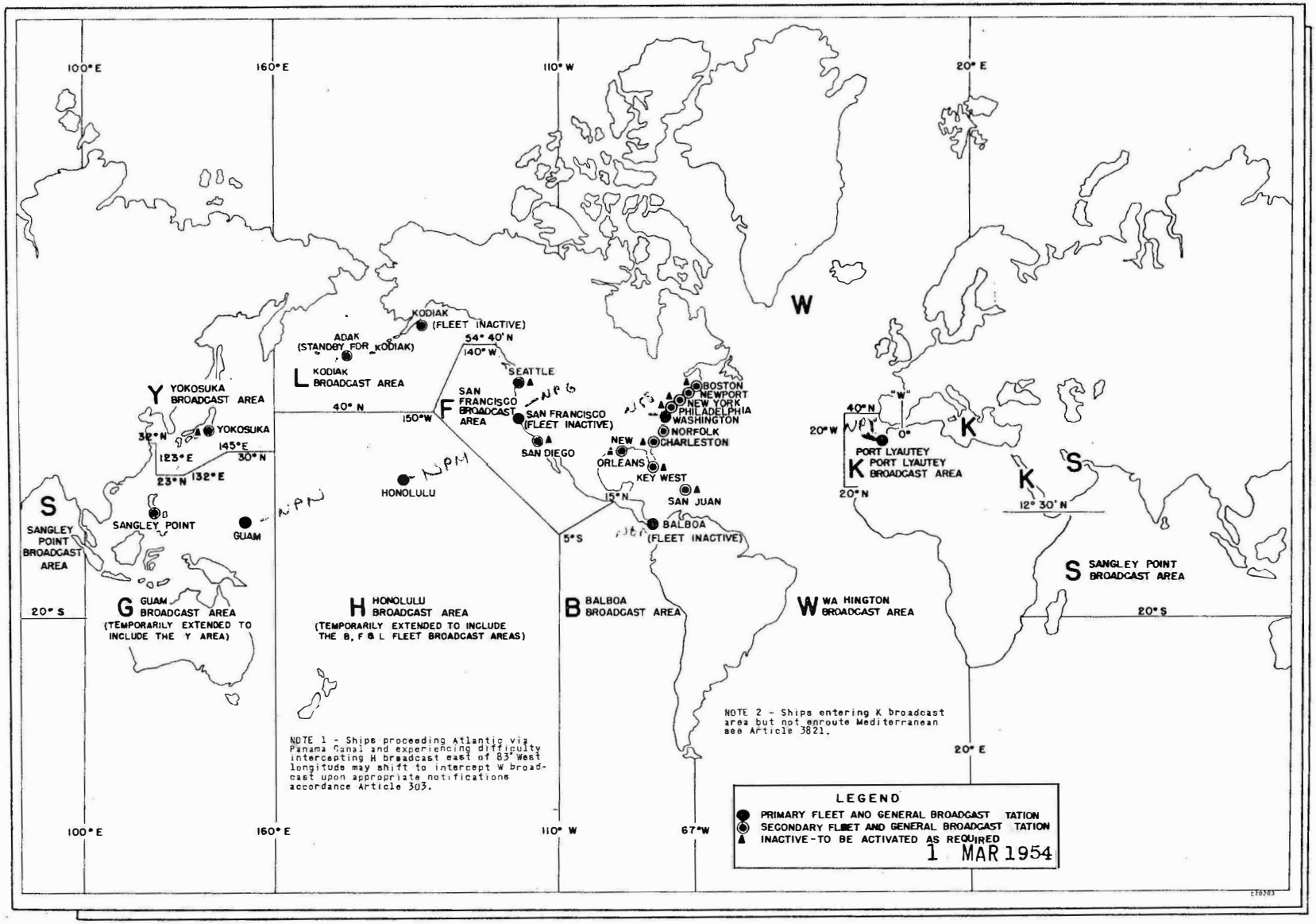

Figure 2–1.—Fleet broadcast areas.

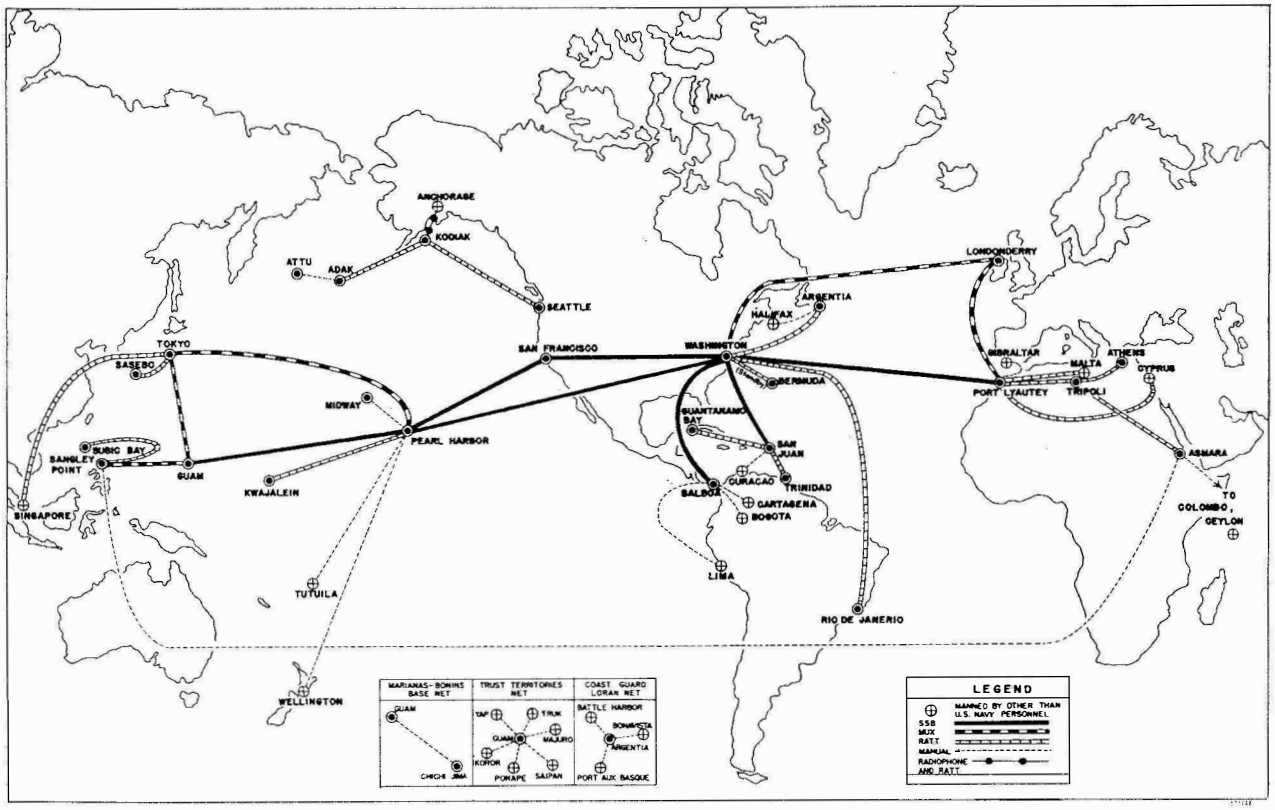

Figure 2–2.—General Service fixed radio circuits.

STA are considered organic components of the COMMCEN.

A *Registered Publication Issuing Office* (RPIO) is an activity established by authorization of CNO to provide for distribution of publications incorporated within the Registered Publication System.

A *Navy Post Office* (NPO) is a postal activity established by the Post Office Department at the request of the Department of the Navy. They are staffed by military personnel.

NPO's which are components of NAVCOMMSTA's outside the continental limits of the United States usually are designated by CNO as terminal offices for the distribution and dispatch of inter-area and intra-area mail. NAVCOMMSTA NPO's are under an OIC. They provide postal service to military units and other activities or persons that are authorized to use naval postal services.

Other NPO's are under Navy postal clerks. They provide mail service to the activity to which they are assigned. These NPO's may provide service to other military activities or act as transfer offices for mail, and may, if necessary, function as distributing and dispatching offices for inter-area or intra-area mail.

ORGANIZATION

Before discussing the facilities which may be found at a NAVCOMMSTA, it will be well to examine briefly its organization. Figure 2–3 presents the organization of a typical NAVCOMMSTA. There is no standard organization for these establishments, as the size and scope of their operations vary to a considerable degree, and no two are exactly alike.

The typical NAVCOMMSTA has a personnel complement of approximately 500 officers, enlisted men, and civilians. In addition to communication and electronics personnel required for the proper functioning of its communication services and facilities, there are also personnel for administrative, supply, financial, transportation, maintenance, and other supporting services.

Commanding Officer

The commanding officer of a NAVCOMMSTA is usually a captain or commander. He is respon-

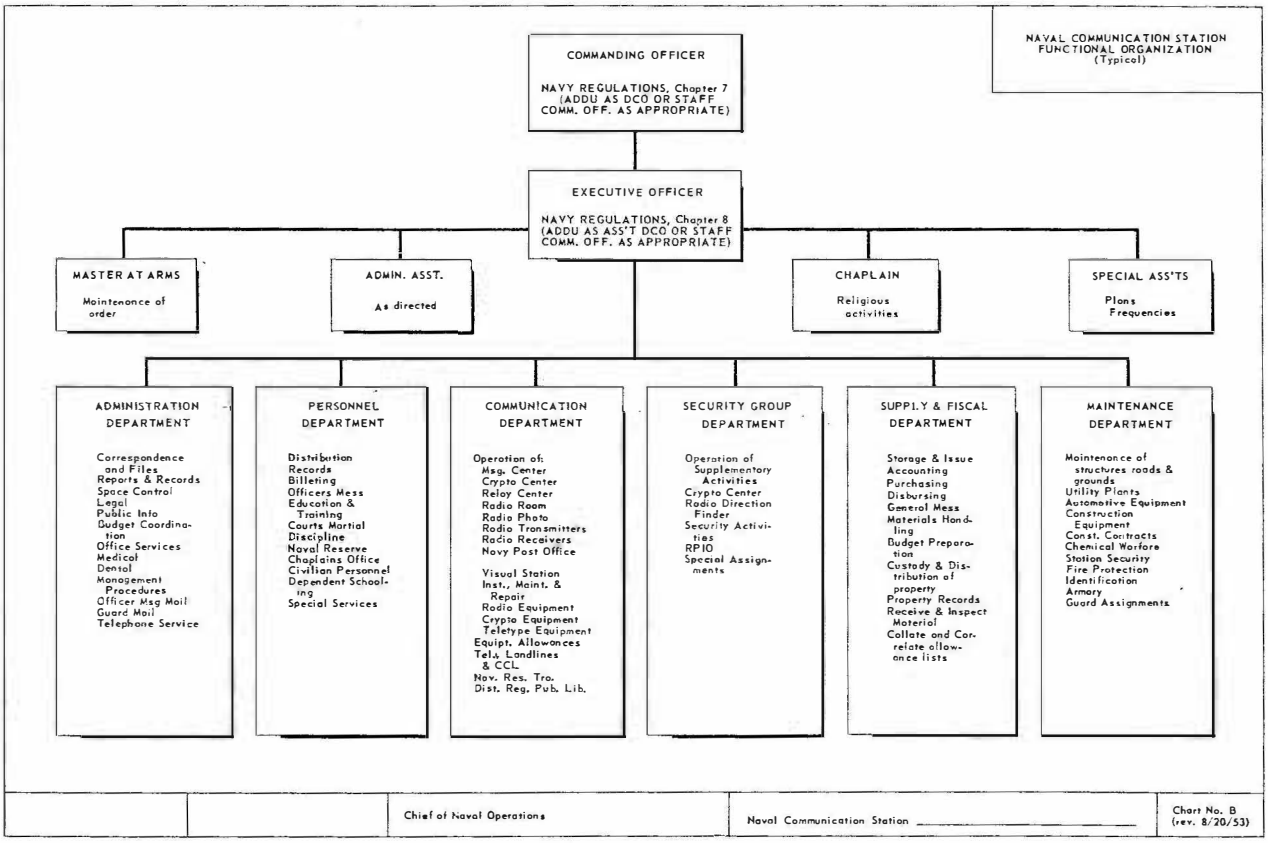

Figure 2–3.—Functional organization of a NAVCOMMSTA.

sible for the station's successful fulfillment of its mission. To this end he establishes policies and procedures for its operations, and initiates and enforces local directives for its upkeep and security.

At naval shore stations, the responsibility of the CO includes functions which are of a management nature. Budget requirements must be determined, fiscal control exercised, and measures of performance developed and applied to ensure the most effective use of available manpower and funds. The efficient and economical operation of the station are his responsibility.

In addition to his station command, the CO of a NAVCOMMSTA normally is the staff communication officer for the commandant or force commander of the Naval District or area in which the NAVCOMMSTA is located. As such he is responsible to the commandant or force commander for the coordination of naval communications within the district or area.

As aboard ship, the CO is assisted in the discharge of his responsibilities by an executive officer. The XO is the direct representative of the CO. He coordinates the activities of the department heads in accordance with the general policies promulgated by the CO. The XO organizes the activities of the station, plans details and procedures for training and disciplining of personnel, and prepares and issues operating orders, directives, and notices as directed. The XO directs emergency and routine fire, battle, air-raid, and other drills.

When the CO of the station is also the district or area communication officer, the XO is the assistant comm officer for the district or area.

Station Departments

The typical NAVCOMMSTA is organized into six departments: administration, personnel, communications, supply and fiscal, security group, and maintenance. These are headed by the administrative, personnel, communication, supply, and security officers, and the first lieutenant, respectively.

Of the departments, communications is by far the largest. About 75 percent of the station's personnel are in this department.

Communication Officer

The communication officer is usually of the rank of lieutenant commander. He organizes, supervises, and coordinates the many communication activities of the station. He serves as manager of the local communication program and determines its budgetary requirements. In addition, the comm officer is responsible to the CO for:

1. Formulating communication plans and directives.
2. Establishing an internal routing and filing system.
3. Providing for the physical security of messages, and maintaining a follow-up system.
4. Providing for the proper handling of RPS-distributed publications, both those issued to the station (custodian) and by the station (RPIO).
5. Supervising the training of communication personnel and cryptoboard members.
6. Supervising the postal activities.
7. Ensuring the proper operation and maintenance of visual and exterior electronics communication equipment.
8. Conducting materiel inspections and inventories.
9. Maintaining records and forwarding abstracts and statements of Naval Communication funds.

Communication Department Billets

Within the communication department of the typical NAVCOMMSTA are four divisions: radio, traffic, material, and facilities. These normally are headed by a radio officer, a traffic and circuit officer, an electronics repair officer, and either the postal or visual officer. Other officers within the department may include the following: radio station officer(s), CWO, cryptoboard officer, relay center officer, custodian of registered publications, radiophoto officer, radio repair officer, landline officer, naval reserve training officer, postal officer, officer messenger mail officer, and signal officer.

MISSION

A NAVCOMMSTA may be assigned several major communication missions. The specific com-

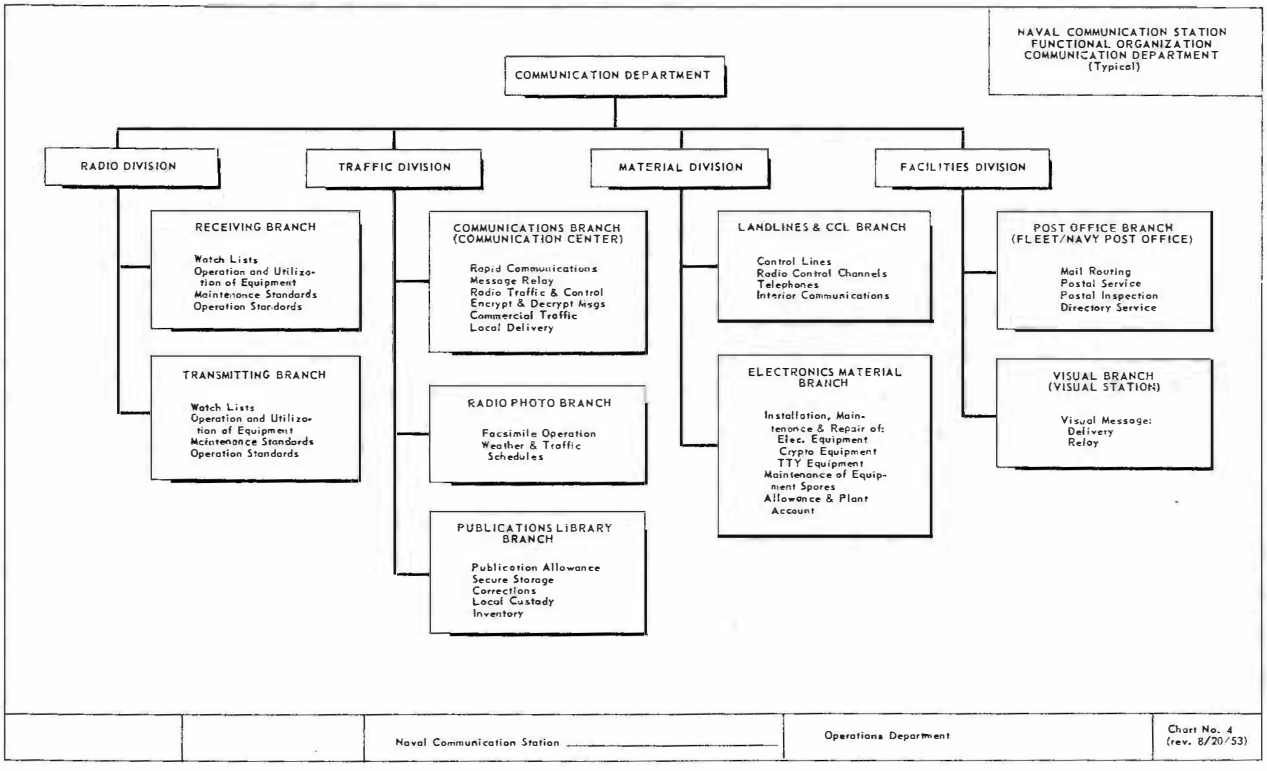

Figure 2—4.—Communication department organization of a NAVCOMMSTA.

bination of missions depends upon the station's role in the Naval Communication System.

At present, all NAVCOMMSTA's have three missions in common. These are the operation and maintenance of:

1. Teletypewriter tape relay facilities.
2. Radio transmitting and receiving facilities for a communication center.
3. Primary, secondary, or limited fleet support facilities.

In addition, most NAVCOMMSTA's provide communication support facilities for Naval Districts or River Command commandants, the commanders of naval bases, stations, or shipyards, and Marine Corps supporting establishment commanders. Most NAVCOMMSTA's provide facilities for issuing Registered Publication System publications.

Other missions assigned to certain NAVCOMMSTA's are the operation and maintenance of one or more of the following: Navy post offices, special communication facilities, visual communication facilities, radio link relay facilities, radiophoto/facsimile facilities, and communication support facilities for the Headquarters of a specific major command. A NAVCOMMSTA may have the additional mission of operating and maintaining primary or secondary air operational support facilities.

Fleet Support

When a NAVCOMMSTA provides facilities for primary fleet support, they may include:

1. A primary fleet broadcast.
2. A primary general broadcast.
3. A primary ship-shore high frequency (HF) manual CW circuit.
4. A ship-shore medium frequency (MF) manual CW circuit as required.
5. A ship-shore very high frequency (VHF) radioteletypewriter (RATT) harbor circuit as required.
6. A ship-shore ultra-high frequency (UHF) duplex RATT harbor circuit as required.
7. Ship-shore high command high frequency (HF) RATT circuit as required.
8. A ship-shore HF radiotelephone circuit as required.
9. A ship-shore MF radiotelephone circuit as required.
10. A ship-shore VHF radiotelephone harbor circuit as required.
11. A ship-shore UHF radiotelephone harbor circuit as required.
12. Point-to-point wire and radio circuits for external or interarea communication as required.
13. Local wire and radio circuits as necessary for local and casualty communication.
14. Monitoring of distress frequencies and handling of distress traffic as required.
15. Interconnection with commercial communication systems as required.
16. Interconnection with Army, Air Force, or other Federal agency communication systems or networks as required.

The facilities for secondary fleet support are quite similar. The chief difference is that secondary fleet and general broadcasts are provided, as required, instead of primary broadcasts.

Limited fleet support facilities may include 4, 5, 9, 10, 12, and 13 above.

Air Operational Support

When facilities for primary air operational support are operated and maintained, they may include:

1. Primary point-to-point CW, RATT, or landwire circuits as required.
2. Secondary point-to-point CW, RATT, or landwire circuits as required.
3. Air-ground manual CW circuit.
4. Air-ground radiotelephone circuit.
5. Air-ground HF CW and voice tactical circuits as required.
6. Air-ground VHF/UHF voice tactical circuits as required.
7. Air-ground voice circuits (HF or VHF/UHF) as required for Approach Control.
8. Air-ground voice circuits (HF or VHF/UHF) as required for air traffic control.
9. Air-ground voice circuits (HF or VHF/UHF) as required for Ground Controlled Approach.

10. Monitor circuits for navigational aids and associated voice channels.
11. Keying and control circuits as required for remote control of radio transmitting and receiving equipment.
12. Weather intercept or reception facilities as required.
13. Fleet broadcast intercept facilities.
14. Radio or landwire circuits to air traffic control agencies (CAA or USAF) as required.

Secondary air operational support facilities may include point-to-point CW, RATT, or landwire circuits as required, air-ground VHF/UHF voice circuits for local communication, teletypewriter circuits for external and local communication as required, and 3, 4, 5, 12, 13, and 14 above.

Teletypewriter and Tape Relay Network

For point-to-point communications ashore, the Naval Communication System uses both radio and landline circuits. Certain channels of the radio trunk circuits, particularly overseas circuits, and practically all landline circuits are included in the Naval Teletypewriter and Tape Relay Network.

The stations comprising the network are designated as primary, major or minor relay stations, and tributary stations. Relay stations are integral parts of their respective communication centers.

Traffic is handled in the network by tape relay. Messages are received and routed in tape form to their destinations by means of automatic and semiautomatic equipment. Tapes are routed according to routing indicators which are directional in character. Routing indicators are constructed and assigned in accordance with the plan outlined in the ACP 121 series.

ROUTING INDICATORS

It will be noted that in figure 2–5 stations are designated by letter combinations of varying length, beginning with the letter R. These combinations are the routing indicators mentioned in the preceding paragraph.

A routing indicator is a group of letters engineered and assigned to identify a station within a teletypewriter network.

Routing indicators used in any worldwide tape relay network are combinations of four or more letters beginning with the letter R. Theater tape relay and manual teletypewriter networks (localized networks) employ routing indicators of four or more letters beginning with the letter U.

Letter Meanings

The letter R, the first letter of a routing indicator, identifies it as a worldwide tape relay network routing indicator, and distinguishes it from a call sign, address group, or theater routing indicator.

The second letter of a routing indicator identifies a communication system of a military service, or of a designated nation or facility. The assigned routing indicator does not, in all cases, identify the nationality or service of a particular station, since a second letter may be assigned to more than one nation, or a station may be served by or be a tributary to facilities of another nation or service. Second letters assigned to military services of the United States are: B-Navy, U-Army, J-Air Force.

The geographical area in which a station is located, or from which it is served, is indicated by the third letter. The letters and the areas they represent are: A-Eastern Asia, D-Great Britain and Iceland, E-Eastern North America, F-Europe, H-Central Pacific, K-Alaska and Aleutians, L-Caribbean and South America, M-Malaya, East Indies, Philippines and South Pacific, Q-Middle East, S-Western Asia, T-Northwestern Africa, V-South Africa, W-Western North America, and Z-Australia and New Zealand.

Fourth and subsequent letters of a routing indicator indicate relay and tributary stations as determined by assignment requirements. A four-letter routing indicator denotes a major relay station. A tape relay station is normally designated as a major tape relay station either when two or more trunk circuits connected to it provide an alternate route for traffic, or when necessary to meet command requirements.

When the letter P appears in the fourth position, this normally identifies a major relay station of primary status. This facilitates the identification of tape relay stations having primary influence over traffic routing in designated geographical areas for a service network. When this

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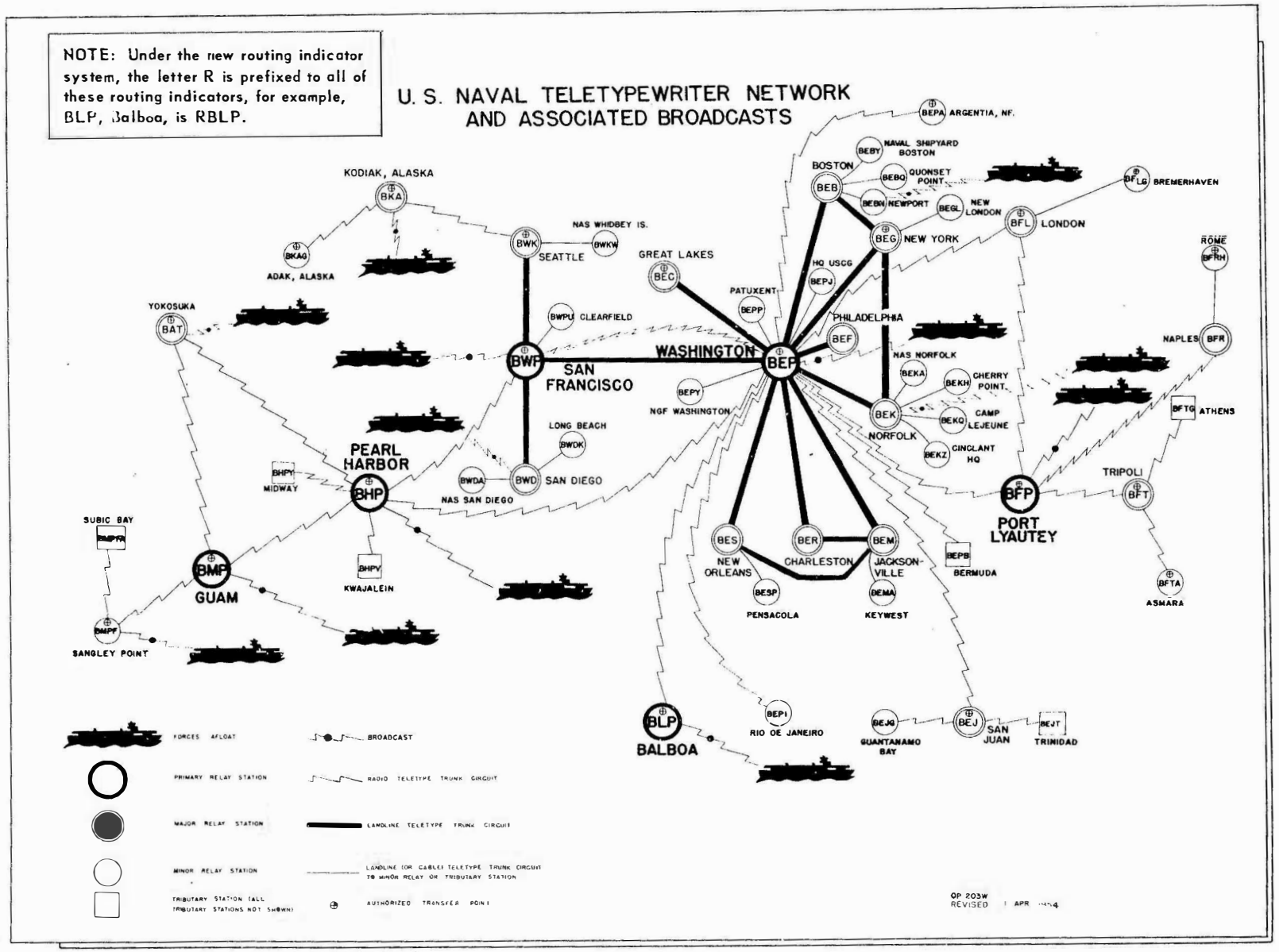


Figure 2–5.—The Naval Teletypewriter and Tape Relay Network.

is the case, the station is listed as a primary relay station.

A routing indicator of five or more letters denotes a minor relay or tributary station. A tape relay station is designated as a minor relay station when it has tape relay responsibility, but does not provide an alternate tape relay route. A tributary station does not relay traffic by the tape method. It is the terminus of a line from a relay station.

Suffix Letters

The letter C and all two-letter combinations CA through CZ are reserved for suffixes to routing indicators. There is a prescribed meaning for each authorized suffix. Suffixes are intended to aid the routing of tapes for processing purposes or localized action by the relay station or any of its supplementary sections and facilities. The use of these suffixes for intra-service messages is optional, but they are not used in Joint or Combined messages unless they appear in the routing columns of the encode sections of the combined worldwide routing indicator book. The meanings of authorized suffixes are:

1. C —Local delivery or refile in page form is required.
2. CF—Section which accomplishes delivery by broadcast methods.
3. CI —Section which coordinates routing information.
4. CN—Electrical conference facility or section.
5. CR—Cryptocenter.
6. CS—Section dealing with service messages.
7. CT—Section which accomplishes delivery of traffic by telephone.
8. CU—Section which uses tape relay methods for delivery of traffic to commercial carriers.
9. CX—Section which uses tape relay methods for delivery of traffic to activities served by commercial teletypewriter exchange system, such as TWX.

Examples of Routing Indicators

Here are some routing indicators and their meanings.

The primary tape relay station in the NAVCOMMSTA at San Francisco is RBWP. The meaning of each letter is:

R—Worldwide network.
B—Navy.
W—Western North America.
P—Primary.

The cryptocenter of the NAVCOMMSTA, San Francisco, has the routing indicator RBWPCR. The addition of CR to RBWP would indicate: Worldwide network, U. S. Navy, Western North America, primary, cryptocenter.

When a minor relay station is on a direct trunk line to a major relay station, it has a five-letter indicator. For example, Long Beach, RBWDK, is a minor relay station on a direct circuit from a major station, San Diego, RBWD. Clearfield, RBWPU, is a minor station from San Francisco, RBWP, a major (primary) station.

When a minor relay station receives its traffic from the major station through another minor relay station, a six-letter routing indicator is assigned. For example, Whidbey Island was formerly connected with Seattle, RBWK, via NAS Seattle, RBWKP. It then had the six-letter indicator RBWKPA. It now has a direct line to RBWK and so has the five-letter indicator RBWKW.

Tributary Stations

A tributary station which is on a direct line from a major relay station may have as few as five letters in its routing indicator. When its traffic must go through one or more minor relay stations it will have a longer indicator, as is also the case when it is one of several stations on a line from a major station. For example, Dahlgren, Quantico, and Indian Head are tributaries on the same circuit from Washington, RBEP. Their routing indicators are RBEPQD, RBEPQM, and RBEPQI, respectively.

A tributary station of a minor relay station has at least six letters. For example, Subic Bay, RBMPFA, is a tributary of Sangley Point, RBMPF, a minor relay station. The breakdown of RBMPFA is as follows:

R—Worldwide network.
B—U. S. Navy.
M—Southwest Pacific, Philippines, Malaya, East Indies.
P—Primary (Guam).
F—Minor relay (Sangley Point).
A—Tributary (Subic Bay).

Speeds Teletypewriter Relay

The routing indicator system greatly simplifies and speeds the relay of traffic handled over teletypewriter facilities. Operating personnel at the originating station need only to know the first four letters of an indicator to place it on the appropriate circuit. For example, take a message to Subic Bay, RBMPFA, originated at Pearl Harbor. An operator in the relay station at Pearl, seeing the letters RBMP, knows that the message goes to Guam. When received at Guam, RBMP, the operator knows from the fifth letter, F, that the message goes to Sangley Point. At Sangley Point the operator knows that the sixth letter A means Subic Bay and relays it to that tributary station.

There is at least one major relay station within each naval district. Major stations in the eastern United States are linked with RBEP, Washington; major stations in the western United States are linked with RBWP, San Francisco. A trunk line connects Washington and San Francisco. Traffic from an east coast activity to a west coast activity goes to Washington, from there to San Francisco, and then to the adee. For example, NAS Norfolk has a message addressed to NAS San Diego. The message passes from RBEKA (NAS Norfolk) to RBEK (Norfolk). RBEK relays it to RBEP. RBEP relays it to RBWP, who further relays it to RBWD (San Diego). RBWD relays, in turn, to RBWDA (NAS San Diego).

Theater Routing Indicators

Theater teletypewriter network routing indicators are identified by the letter U as the first letter. The second letter identifies the nation, military service, or international command (when special identification is specifically authorized) having primary interest in that particular theater network. The meanings of the subsequent letters are generally the same as for a worldwide routing indicator. Theater routing indicators are never used in the headings of messages transmitted over worldwide networks.

Teletypewriter Exchange Service

Commercial teletypewriter exchange service (TWX) is employed by the Naval Communication System for communication with activities for which there is insufficient traffic to justify a leased teletypewriter line.

TWX is a service supplied by the telephone company. The equipment used is owned, installed, and maintained by the company. Teletypewriter communications are available with any other subscriber to TWX. Subscribers and their TWX numbers are listed in a TWX directory. Connections for TWX communications are made by the telephone company TWX operator, in a manner similar to a long-distance telephone call. The company is paid for the time used in actual communication with another station.

Traffic for naval activities served by TWX is normally routed via the nearest naval tape relay station, rather than transmitted directly to the addressee by TWX. This results in a considerable saving because the long-haul portion of the traffic travels over Navy-leased lines. The only cost is for the short distance transmission between the nearest relay station and the addressee.

Relay of TWX messages to naval activities is facilitated by the assignment of routing indicators to activities served by TWX. Activities equipped only with TWX facilities are identified by a routing indicator ending with the letter X. The letters preceding X in the indicator identify the relay station which transfers traffic routed via the tape relay network to and from the TWX-served activity. As a particular routing indicator ending with X may apply to several TWX-served activities, messages (including service messages) to TWX-served activities must bear a complete address. The X at the end of the indicator only routes the message to the TWX section of a COMMCEN, where the operator must read the address portion of the tape to determine the destination.

An example of a routing indicator ending with X is RBWPUX. This indicator is shared by the Naval Recruiting Station, Butte, Montana; the Naval Ordnance Plant, Pocatello, Idaho; the Naval Air Station, Denver; and several other TWX-served activities. Traffic to and from the Tape Relay System for these activities is handled by the minor relay station at Clearfield, RBWPU.

CW And Voice Radio Traffic

While RATT is carrying an increasing share of radio traffic, CW is still very much in use. Most fleet broadcasts are still automatically keyed CW, and many point-to-point circuits carrying moderate or light traffic utilize manually keyed CW. Radiotelephone circuits are also available between the primary naval communication stations.

RADIOTELEGRAPH TRANSMISSIONS TO THE FLEET

There are three principal methods used for radiotelegraph transmission of naval messages to the fleet; broadcasts, intercept, and receipt. When either of the first two methods is used, fleet units copy all transmissions but do not answer, thus avoiding the disclosure of their positions as in the case when the receipt method is used. The broadcast and intercept methods have one common disadvantage in that there is no positive assurance that the message, as transmitted, has been received by the station called. This disadvantage is overcome by the use of transmitters of adequate power, careful choice of frequencies, good operating technique, monitoring transmissions for accuracy, and the use of sequential serial numbers.

Intercept

By the intercept method, the transmitting shore station sends to a second shore station. The latter obtains any necessary repetitions to ensure correct reception and repeats back if directed to by the first station, or if so prescribed. This method has an advantage over broadcast method in that necessary verifications can be pointed out and corrections obtained. In addition, the fleet unit has two opportunities to copy the same transmission. Despite these advantages, however, the broadcast method is superior in that greater amounts of traffic can be handled in a given period. The broadcast method is the primary method of delivering traffic to the fleet.

Broadcasts

In the broadcast method, information transmitted by naval communication stations is contained in sequentially numbered messages addressed to the ships. The messages are copied by the fleet units, who check the serial numbers to ensure that they have a complete file. Serial numbers of the messages are composed of the letter designating the broadcast station (see fig. 2–5) followed by a number, and appear as the first item in the procedure component of the message. The first message of the month is numbered 1, and succeeding messages are numbered sequentially until midnight of the last day of the month, at which time a new series is begun.

Broadcasts follow regular schedules. No changes are made in these schedules without prior notification to the fleet. Messages are placed on the schedules in order of precedence. If an EMERGENCY message is given to the transmitting station while a message of lower precedence is being broadcast, the low precedence message is interrupted to transmit the EMERGENCY. It is possible that the interrupted low precedence message will not be completed until the next schedule. Messages are not usually repeated on subsequent schedules. All ships copy schedules, and maintain complete files of broadcast messages but only the adee takes action upon any message.

Primary Broadcasts

To ensure reception by all units of these very important broadcasts, the primary stations employ several transmitters simultaneously. Broadcasts normally employ one very low frequency (VLF) or low frequency (LF) transmissions, and as many as five high frequencies (HF). Most ships copying a broadcast, tune to a LF and a HF, or to two HF's. Because VLF or LF transmissions require high power to attain any distance, most primary stations are in the 500-kw class.

Broadcasts employ automatically keyed radiotelegraphy, radioteletypewriter, and radiofacsimile. The first named is the most commonly used. Messages are punched in tape and fed into a machine which keys them at a speed no faster than 25 words per minute. RATT is less commonly used, however, several of the primary broadcasts use RATT equipment for this purpose, in addition to their regular CW schedules. Ships which have RATT equipment copy the RATT broadcast and normally do not copy CW schedules. Facsimile broadcasts are normally limited to weather maps and similar material.

The primary stations, in addition to the fleet broadcasts, also transmit general broadcasts. The general broadcasts include hydrographic warnings, notices to mariners, merchant ship traffic (MERCAST), and weather reports. In some areas, general broadcasts also include press and time signals.

Secondary Broadcasts

To provide local coverage for units operating in a limited area, secondary fleet and general broadcasts may be activated by local authorities when authorized. The broadcasts may be by CW, RATT, or Facsimile (FAX.). At present, there are only a few active secondary broadcasts. These are operated by NAVCOMMSTA's at Newport, Norfolk, San Diego, and Yokosuka.

In secondary broadcast areas, ships which guard the secondary fleet broadcasts receive all traffic by these schedules and do not copy the primary fleet broadcast.

SHIP-TO-SHORE RADIO

In addition to their responsibilities for operating primary and secondary fleet and general broadcasts, NAVCOMMSTA's serve as the principal means of receiving radio traffic from the fleet. Certain NAVCOMMSTA's maintain a continuous guard on the primary fleet ship-shore circuit. They may also maintain continuous guard on RATT and facsimile primary ship-shore circuits. Stations which do not guard the primary ship-shore circuits normally guard instead the special area ship-to-shore circuits. At many communication stations, guard is also maintained on secondary ship-to-shore and harbor common frequencies.

FIXED RADIO CIRCUITS

Figure 2–2 shows all fixed radio circuits, including those in the Naval Teletypewriter and Tape Relay Network. While the greater share of the traffic between points in the network is carried by that system, there is other radio traffic between those points. Not all channels of the sideband (six channel) or multiplex (four channel) circuits are allotted to the teletypewriter and tape relay network.

Note that only a few of the radio circuits are manually operated. Manual circuits are maintained where the volume of traffic does not justify RATT. An example of a manual circuit between communication facilities operated by the Naval Communication System is the circuit between Asmara, Eritrea and Sangley Point, Philippines. Small stations operated by local commands, other government agencies, and foreign nations are worked manually by NAVCOMMSTA's, notably Guam and Balboa. Examples of the stations operated by foreign nations are Lima, Peru; Colombo, Ceylon; and Halifax, Nova Scotia. Some of the manual nets could be shifted to RATT operation, should a large increase in the volume of traffic make it advisable.

In discussing circuits, it should be noted that the word has a different meaning when employed as a communication term than when used as an engineering term. When employed in the latter sense, it refers to a number of components connected together electrically for the purpose of performing some desired function. As a communication term, a circuit is an electronic path between two or more points capable of providing one or more channels.

Simplex, Half-Duplex, and Duplex

A simplex circuit is a radio circuit which is capable of transmissions in both directions, but not simultaneously. Its landwire counterpart is the half-duplex circuit, which also is capable of transmissions in both directions but not simultaneously.

A duplex circuit is a method by which all transmissions on a circuit between stations takes place in both directions simultaneously. It may be either a radio or a landwire circuit.

Multiplex

In Mux operation, four teletypewriter messages can be transmitted and four teletypewriter messages received simultaneously. Each of the four messages is placed on a separate channel. The four channels are combined, by using time division, on a single carrier frequency.

Single Sideband

When a carrier (radio) frequency is modulated in any way, sideband frequencies are always produced. It is these sideband frequencies which contain the intelligence transmitted. The sidebands are frequencies which are the sum and difference of the radio frequency and the modulating frequency. For example, if a carrier frequency of

1,000 kcs is modulated by an audio signal of 1 kc, there will be resultant sideband frequencies of 1,001 and 999 kcs.

When the term single sideband is used to describe a communication circuit it indicates that following the modulation of a carrier frequency, some means is used to eliminate one of the two sideband frequencies that appear in the output. The carrier frequency is partly suppressed. Only one sideband frequency is required at the receiving end of the circuit for heterodyning with the same carrier frequency in order to produce the signal intelligence. By this method the frequency bandwidth is halved and most of the power that would have gone into the carrier may now be used for the single sideband frequency. By modulating the same carrier frequency a second time with another signal, and suppressing the opposite sideband from the one suppressed above, a second circuit is obtained within the same frequency bandwidth.

As used in the Naval Communication System, six teletypewriter channels are transmitted on one sideband of each SSB circuit. A telephone channel is transmitted on the other sideband.

CONFERENCE CALLS

The telephone channel of a SSB circuit makes possible the telephone conference call, whereby official conversations may be held through the Naval Communication System. Telephone conference calls may be made between Washington and Port Lyautey, San Juan, Balboa, and Pearl Harbor. They have little or no security, although they pass through the speech privacy device, a voice scrambling mechanism. Calls may be put through in a comparatively short time, usually in about one hour.

FACSIMILE

In addition to the facsimile broadcasts to the fleet, there are facsimile point-to-point circuits. Facsimile circuits connect Guam, Pearl Harbor, San Francisco, Washington, Kodiak, Balboa, Yokosuka, and Port Lyautey. Facsimile point-to-point transmissions follow definite schedules.

Security Group Department

It was earlier noted that the Naval Communication System performs special communication functions. These operations are for the most part handled by the security group departments of the NAVCOMMSTA's, although some of the operations may be performed by special teams or detachments assigned to the fleet or to other activities of the Navy. Some of the special communication functions are of a nature which cannot be covered within the security classification of this text.

The security group department is headed by the communication supplementary activity officer. Under him are the communication security officer and the registered publication issuing officer. The department is divided into four branches—direction finder, supplementary, security activity, and registered publications.

REGISTERED PUBLICATIONS SYSTEM

Another of the ancillary services performed by the Naval Communication System is the distribution of registered and certain other publications to naval units. This work is done by the Registered Publication System (RPS). It is responsible for the shipping, storage, issuing and accounting functions with regard to cryptographic and other publications, both registered and nonregistered, which are assigned to its cognizance.

In addition to the RPIO which is a branch of the security group department of a NAVCOMMSTA, the RPS organization includes the Registered Publication Section of OPNAV (Op-302R), a central shipping and accounting office in Washington, D. C., certain RPIO's not components of NAVCOMMSTA's, and shipboard Registered Publication Mobile Issuing Offices (RPMIO's).

RPIO's and Sub-RPIO's

Although RPIO's are normally components of NAVCOMMSTA's, an RPIO may be established as a separate activity of the Navy when it is geographically isolated from a NAVCOMMSTA. New London and Guantanamo Bay are examples of RPIO's which are separate activities.

Where the local situation makes it advisable, a Sub-RPIO may be established. For example, the RPIO at San Diego operates a Sub-RPIO at Long Beach.

Armed Forces Courier System (ARFCOS)

With the establishment of the Armed Forces Courier System, the Navy officer messenger mail system was discontinued. Officer messenger mail centers formerly operated within RPIO's have been designated as Courier Transfer Stations. Although OMM facilities frequently are located in RPIO's and operated by RPIO personnel, this is not an assigned mission of the Naval Communication System. The establishment and maintenance of facilities for local handling of OMM is the responsibility of sea frontier, area, fleet, force, type and base commanders, and naval district commandants.

The Navy does not maintain a permanently assigned officer courier system during peacetime but the services of commissioned officers may be used for the transportation of mail which requires officer handling to meet security requirements.

Navy Postal Service

The routing and dispatch of mail to and from Navy units overseas is another of the responsibilities of the Naval Communication System. This function is handled by two Fleet Post Offices (FPO's) and at certain overseas NAVCOMMSTA's and NAVCOMMFAC's.

FLEET POST OFFICES

The FPO's are located in New York and San Francisco. They serve in peacetime to furnish dispatching instructions to the local civilian post offices or postal concentration centers. Mail bound for naval units overseas is sorted, pouched, and labeled by the civilian postal service. It is then shipped to the overseas destination by the most direct available transportation.

New York and San Francisco are the sites for this work because of their superior transportation service in comparison with other points. The post office department organizations at these two cities are well equipped for processing the great volume of mail.

FPO New York and FPO San Francisco are not components of NAVCOMMSTA's. They are maintained and operated under COMEASEAFRON and COMWESEAFRON respectively.

DISTRIBUTING AND DISPATCHING NPO'S

NAVCOMMSTA NPO's usually handle the bulk distribution and dispatch in and between areas overseas. Distributing and dispatching NPO's in the Atlantic receive mail from the United States via New York; those in the Pacific receive mail from the United States via San Francisco. The mail is then distributed to the local NPO's. Mail bound from Navy units overseas proceeds in a reverse fashion. The local NPO's deliver to the distributing and dispatching NPO. From there it is sent by appropriate transportation to San Francisco (if from the Pacific) or New York (if from the Atlantic) where it enters civilian postal channels.

Balboa and Adak are the only communication stations outside the continental United States which do not have NPO's performing bulk distribution and dispatch functions.

Naval Communications Units

Although much of the work of the Naval Communications System is done by the 21 NAVCOMMSTA's or NAVCOMMFAC's, important functions are performed by Naval Communication Units (NAVCOMMU's). These are activities established by CNO to perform limited support and/or special communication functions at locations outside the United States. They usually are established at locations remote from a naval shore activity. There are fifteen NAVCOMMU's at present.

A NAVCOMMU is much smaller in terms of personnel and facilities than a NAVCOMMSTA. It is under an OIC instead of a commanding officer, and performs fewer functions. NAVCOMMU's are designated by numbers, such as NAVCOMMU No. 8, instead of by geographic location.

NAVCOMMU's operate ship-shore communication facilities at Tripoli, Asmara, Dhahran, and Bremerhaven for ships' traffic in the Mediterranean, Persian Gulf, Arabian Sea, and Northeast Atlantic respectively.

CHAPTER 3

ORIGINATORS AND ADDRESSEES

The *originator* of a message is the command by whose authority a message is sent and the *addressees* are those commands designated by the originator to take either action or cognizance of the content matter of his *message*.

The originator and the addressee depend upon the communication officer to furnish information and guidance to the people who have authority to draft or release messages.

In order to adequately and efficiently perform this service, the communication officer must have a thorough knowledge of the basic communication instructions contained in effective editions of the JANAP, ACP, and DNC series, plus a thorough understanding of the communication problems peculiar to the activities and commands served by the communication office to which he is attached.

This chapter is based on the instruction which governs the use of Naval communication facilities at Washington, D. C.

Outgoing Messages

A naval activity which must communicate with another activity has three general categories of communication available to it: letters, reports, and messages.

Letters are written or printed communications, generally expressed in some detail and transmitted by mail or messenger. They are rarely encrypted.

Reports are official statements in written or printed form, presenting detailed facts regarding a particular operation, condition, or procedure.

A message is any thought or idea expressed concisely in plain or secret language prepared in a suitable form for transmission by any means of communication.

ORIGINATOR'S RESPONSIBILITIES

When the subject matter or situation appears to require a message, its originator assumes definite responsibilities. He must:

1. Determine whether the message is necessary.
2. Select the addressees by proper title and command.
3. Determine security classification.
4. Assign required precedence.
5. Draft the text in proper form.
6. Check references.
7. Designate local distribution.
8. Obtain proper release.
9. Deliver it to the appropriate agency for transmission.

IS A MESSAGE NECESSARY?

Before he prepares a message, an originator at a shore activity should ask himself:

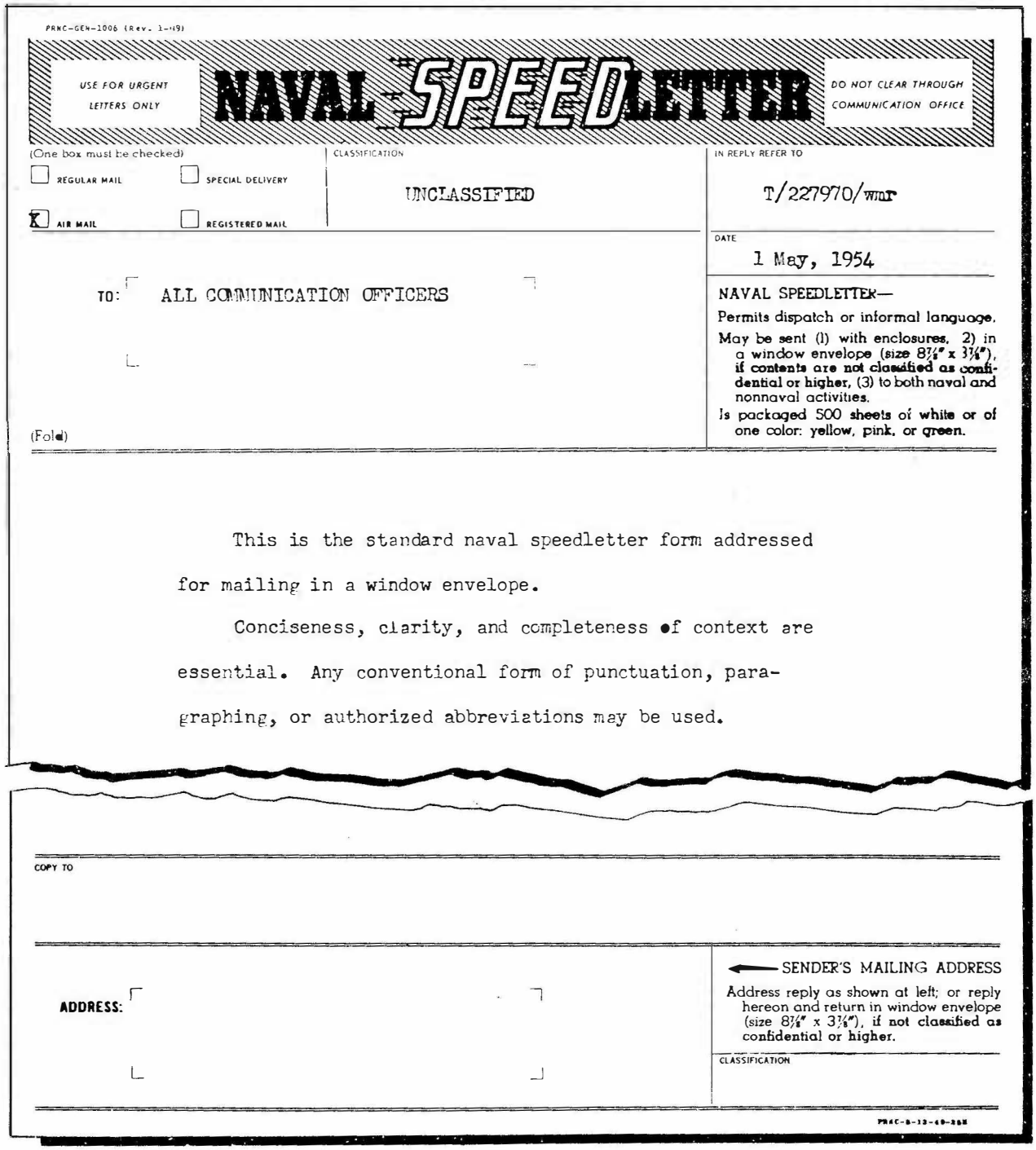
1. Will a concrete and constructive objective be attained if this message is transmitted?
2. Will a letter or speedletter (see following section) perform the same mission as well?

Since mail service, both regular and airmail, offers shore activities a reliable, cheap, and comparatively rapid means of communication, only important matters needing immediate attention should be released as messages. At a shore activity, messages should be used mainly to carry traffic to the forces afloat, although the same two questions should still be asked concerning each message.

Speedletters

The naval speedletter is an excellent means of communication. Although not sent via the communication office, every communicator should be

familiar enough with the speedletter to explain and urge its use. The use of message or informal language is permitted in a speedletter, allowing it to be quickly prepared and concise. Conventional punctuation, paragraphing, symbols and authorized abbreviations may be used. A speedletter is dispatched via airmail, special delivery, or first class mail, depending upon the urgency of the situation. It is mailed in a window envelope and is given prompt attention at its destination.



PRNC-GEN-1006 (Rev. 1-49)

USE FOR URGENT LETTERS ONLY

NAVAL SPEEDLETTER

DO NOT CLEAR THROUGH COMMUNICATION OFFICE

(One box must be checked)

☐ REGULAR MAIL ☐ SPECIAL DELIVERY

☒ AIR MAIL ☐ REGISTERED MAIL

CLASSIFICATION: UNCLASSIFIED

IN REPLY REFER TO: T/227970/wmr

DATE: 1 May, 1954

TO: ALL COMMUNICATION OFFICERS

(Fold)

NAVAL SPEEDLETTER—

Permits dispatch or informal language.

May be sent (1) with enclosures, 2) in a window envelope (size 8⅞" x 3⅞"), if contents are not classified as confidential or higher, (3) to both naval and nonnaval activities.

Is packaged 500 sheets of white or of one color: yellow, pink, or green.

This is the standard naval speedletter form addressed for mailing in a window envelope.

Conciseness, clarity, and completeness of context are essential. Any conventional form of punctuation, paragraphing, or authorized abbreviations may be used.

COPY TO

ADDRESS:

← SENDER'S MAILING ADDRESS

Address reply as shown at left; or reply hereon and return in window envelope (size 8⅞" x 3⅞"), if not classified as confidential or higher.

CLASSIFICATION

PRNC-8-13-49-25M

Figure 3–1.—Naval speedletter.

Mail

Bureaus and offices of the Navy Department are required to use first class or airmail in all cases where addressees are within the continental United States and action is not required within 72 hours. The originating bureau or office may exercise its discretion in selecting the means of communication to be used when an addressee is overseas or afloat. However, a message, if used, is subject to post-transmittal review.

Bureaus and offices of the Navy Department do not use messages to communicate with each other unless adees outside the Department are included.

In some instances it may be advisable to use rapid means of delivery to some adees, mail to others. Adees receiving copies by mail are indicated by a slant sign following the adee, and the words "By mail." Delivery of mail copies is the responsibility of the originating activity, not the COMMCENTER.

ADDRESSEES

The addressees of a message must be carefully selected by the originator. It is very important to include all the activities that need the information; failure to do so may result in reencryption of the message in a different cipher, thus endangering crypto systems and placing an additional burden on the cryptocenter. On the other hand, unnecessary adees lengthen the text or the heading to no good purpose, and frequently cause the message to be relayed over more circuits than would otherwise be necessary.

Here is an actual example of an originator's failure to make certain that a message was necessary,and to exercise good judgment in the selection of adees.

A supply office at a large activity sent a message to seventy addressees requesting instructions for shipment of household goods. The originator, incidentally, was not the coordinating activity for such matters, but just one of many that handled household goods. The message, which could have gone adequately by speedletter, was relayed over the entire continental section of the Naval Communication System.

This was only the beginning. Fourteen activities sent messages in reply which contained 69 information adees each. Twenty-three activities sent single address messages, containing the requested information, to all of the adees of the first message.

It was the second consecutive year that the same originator had sent such a message with similar results.

There are several lessons to be learned from this incident:

1. Don't send a message when mail will suffice
2. Don't commit errors in a reply just because the original message was in error.
3. Communication officers must advise message originators on correct message drafting procedures.
4. Learn from past mistakes.

CLASSIFICATION

Classification establishes a standard of care in handling, storage, and dissemination of matter (information or material) in each of the three classification grades: Confidential, Secret, and Top Secret.

A message must be classified according to its own content and in keeping with the instructions contained in the *U. S. Navy Security Manual for Classified Matter*. A message does not necessarily have to bear the same classification as messages or letters referenced therein.

An unclassified message may quote the date-time group (DTG) and/or the originator's reference number of a classified message if the referenced message bears a notation that paraphrasing is not required. The text of the referenced message must not be quoted. An unclassified message may *not* contain a reference to a message which bears the warning that paraphrasing is required, nor may it quote the DTG of a classified message bearing the warning "No unclassified reply or reference if the date-time is quoted."

PRECEDENCE

Precedence indicates to communication personnel the relative order in which a message should be handled and delivered, and, to the addressee, the relative order in which he should note its contents. Precedence is assigned by the originator on the basis of message content and how soon the adee must have it. Because precedence begins as soon as the message is drafted, the

originator and releasing officer should handle the message with the same speed they expect from communication personnel.

No message should be given higher precedence than is necessary to reach all adees in time for appropriate action. Unfortunately for communications efficiency, this rule is disregarded all too often. Originators should be reminded by communicators that misuse of precedence tends to destroy the value of all precedence designations.

PRECEDENCE TABLE

Prosign	Designation	Definition and use	Handling requirements
Z	FLASH	Reserved for initial enemy contact reports or special emergency operational-combat traffic originated by specifically designated high commanders or by operational commanders of units directly affected. This traffic to be SHORT reports of emergency situations of vital proportions.	FLASH messages will be hand carried, processed, transmitted and delivered in the order received and ahead of all other messages. Messages of lower precedence will be interrupted on all circuits involved until handling of the FLASH message is completed.
Y	EMERGENCY	Reserved for amplifying reports of initial enemy contact, for messages required in situations of emergency which affect the current implementation of a tactical action, and in situations which gravely affect the national security, or concerning distress, which demand immediate delivery to the addressee.	EMERGENCY messages are processed, transmitted and delivered in the order received and ahead of all messages of lower precedence, even to the extent of interrupting processing and transmission of lower precedence messages already in progress.
O	OPERATIONAL IMMEDIATE.	Reserved for important tactical messages pertaining to the operations in progress, or for important administrative messages having an immediate bearing on tactical operations; and when necessary, those messages concerning the immediate movements of ships, aircraft or ground forces. This precedence is only to be used when the value of a message is dependent upon expeditious delivery to the addressee.	OPERATIONAL IMMEDIATE messages are processed, transmitted and delivered in the order received and ahead of all messages of lower precedence, even to the extent of interrupting processing and transmission of lower precedence messages already in progress.
P	PRIORITY	Reserved for important messages which must have precedence over routine traffic. *This is the highest precedence which normally may be assigned to messages of an administrative nature.*	PRIORITY messages are processed, transmitted and delivered in the order received and ahead of all messages of lower precedence. ROUTINE messages being transmitted should not be interrupted unless they are extra long.
R	ROUTINE	Reserved for all types of messages which are not of sufficient urgency to justify a higher precedence, but must be delivered to the addressee without delay.	ROUTINE messages are processed, transmitted and delivered in the order received and after all messages of higher precedence.
M	DEFERRED	To be employed for all types of messages which justify transmission by rapid means, but which will admit of the delay necessary for prior transmission of messages of higher precedence.	DEFERRED messages are processed and transmitted in such order as will clear traffic with due regard for messages of a higher precedence.

Figure 3–2.—Precedence table.

Administrative Traffic

Administrative messages are normally given Deferred precedence. When it is necessary to assign higher precedence, it should not be above Priority. In the assignment of precedence to administrative traffic for shore activities, time zone differences and the office hours of the addressee must be considered. It is pointless to assign a precedence which results in delivery during the night when no action is necessary until the following morning.

Some originators hesitate to use Deferred precedence because they feel it means indefinite delay. This is a mistake. Deferred simply means that due to the adee's local time, delivery may not be made today, but the message will be delivered at the beginning of office hours tomorrow.

RADMAIL Messages

The term RADMAIL is used to designate messages for which a combination of radio and mail may be employed to accomplish delivery to forces afloat. RADMAIL messages are transmitted from the point of origin over existing high-speed, high-capacity point-to-point circuits to commands and activities ashore and to the radio station where they may be placed on the broadcast, or in the mail, as conditions prevailing on the broadcast station dictate.

Originators use RADMAIL for adees in forces afloat in the Pacific for whom delivery by mail is satisfactory. When one or more commands afloat must have the message by rapid means and others may receive it by mail, the originator applies the RADMAIL designation to the adees who may receive by mail.

DRAFTING THE TEXT

A message text must be clear, accurate, and brief. Since messages, after release, are transmitted exactly as received, it is the privilege and responsibility of the originator to use wording that expresses the thought he wishes to convey. A good drafter eliminates unnecessary punctuation and uses authorized abbreviations.

Repetition

Repetition for emphasis is a common but vicious habit. A word may be repeated to prevent error, but it is not to be repeated solely for the purpose of emphasis.

Numerals

Numerals in message texts may be written as digits or may be spelled out. Digits are preferable when giving reference numbers. When spelled out, numbers must not be ambiguous. For example, the number 546, spelled out five four six, is unmistakable; but, as five forty six, could mean 5406.

Phonetic Equivalents

Alphabet letters in the text should be expressed phonetically *only* when an error in one of them might cause serious misunderstanding. Phonetic equivalents are not to be used when—

1. Names are included in the text. Example: J. C. Porter or John Cook Porter.
2. The actual word might be better used; for example, 26 degrees West instead of 26 degrees William.
3. The abbreviation is readily recognizable, such as USS, CNO, ETA, CVL.

Phonetic equivalents are desirable in such expressions as "Point Baker" in transmitting letter coordinates, in operation orders, or ordering equipment by letter or number.

The expression of time, day, month, and year should be governed by the following rules:

1. The day, month, and year are always expressed in that order.
2. The month is abbreviated by using the *first three letters* of the month.
3. All times in the text are expressed with a zone suffix letter. Example: 041400B. When the DTG and zone suffix appear repeatedly in the text, a covering expression, such as "all times Baker," may be used in lieu of a zone letter with each.

Tabulation

Tabulation is used whenever appropriate and indicated by suitable phraseology, such as "read in three columns from left to right." Such phraseology is essential for proper handling over manual radio circuits, and should be carefully worded to avoid ambiguity.

Typing the Message

The text of a message is typed in capital letters, and is double spaced between the lines. An additional line is left between the paragraphs and subparagraphs. Subparagraphs are employed where appropriate and are indicated by suitable phraseology and form. The end of each paragraph is indicated by the abbreviation "para" in the text.

Acknowledgments

An originator may ask for an acknowledgment from the action adee of his message when it is very important for him to know that the adee has received and understands the message. A request for an acknowledgment may be made by placing "acknowledge" in the text. When there is more than one action adee, the request must indicate which one is to acknowledge. A second method of requesting an acknowledgment is to send a separate, short message "MY (*DTG*) ACKNOWLEDGE".

Time of Delivery or Receipt

When an originator wishes to be sure that his message has reached an adee, but an acknowledgment is not necessary, he requests the communication center to ascertain the time of delivery (TOD) to the action adee(s).

Even when no request has been made by the originator, the CWO at the communication center may, when the text of the message appears to be extremely important, include a request that the adees advise the communication center of the time of receipt (TOR).

REFERENCES

References to previous messages, letters, orders, or other documents are to be avoided in drafting a message text, unless they are essential for brevity and clarity.

When used, references normally consist of YOUR, MY, or the authorized abbreviated title of a third party, followed by the reference number (date-time group) of the message, or the serial numbers of a letter, order, or other document. A reference to a message which has both a date-time group and internal reference number should include both. If reference is made to a re-addressed message which carries two DTG's, the original DTG is the reference.

A reference to a DTG or reference number, if for other than the current month or year, must include the month, or month and year, such as 161431Z FEB 52. It is advisable to add the date when referring to correspondence which is not of recent issue or when the subject cannot readily be identified from the context of the message, such as Your Ser 11689 JUL 52.

When referring to a joint or allied message, the DTG must be quoted in addition to the originator's reference number, except when it is definitely known that none of the adees require reference to the DTG. In such instances, reference need only be made to the originator's reference number.

References Not Held by Adees

When one of the adees of a multiple address message does not hold the referenced message and it is essential that he have it, the following procedure is used at the Washington COMMCEN.

The officer who is about to release the multiple address message requests the message center or cryptocenter, in writing, to pass the referenced message to the adee not holding it. The request is prepared as an outgoing message addressed to the message center or cryptocenter for action. It bears a new date-time group and is classified the same as the referenced message. The text should contain only an appropriate statement such as:

Pass CINCPACFLT 032152Z to CINCNELM for action and COMSIXFLT FOR Info

When there are adees who do not hold or need the reference, NOTAL (not to, nor needed, by all) is used following a reference in the text.

DISTRIBUTION OF COPIES

Whenever other bureaus or offices in the Navy Department are to be furnished copies of unclassified messages (without including such activities in the transmitted address), these offices are shown near the bottom of the message form under a notation "Copies to ----------." The originator delivers these copies through his mail room. If the originator wants the message center to ef-

fect local distribution, he furnishes sufficient copies to the message center. Beside each activity in the "Copies to _____" notation the words "by Message Center" are added.

RELEASING MESSAGES

Before the drafted message will be accepted for transmission at the message center, it must be properly released. Every command designates its releasing officers in writing.

In the Navy Department, requests for the authorization of individuals to release messages to forces afloat are submitted to CNO for approval. Generally, CNO restricts this authority to chiefs and assistant chiefs of bureaus, directors and assistant directors of divisions, and such other officials as necessary. For messages to shore activities, chiefs of bureaus and directors of divisions are authorized to grant releasing authority to officials within their bureaus or offices.

Approved lists of authorized releasing personnel for messages both to forces afloat and to shore activities, and their sample signatures, are maintained at the message center and cryptocenter. Messages are not transmitted unless they bear a releasing officer's signature.

The releasing officer determines that the message is necessary, that it satisfies the ABC's of communication (accuracy, brevity, clarity), and that it is properly classified before he releases it for transmission. The name of the releasing officer should be typewritten in the appropriate space on the message form so that he can sign above it.

Date-Time Group

In Navy Department bureaus and offices the Greenwich Mean Time of the preparation of the message by the originator determines the date-time group of the message. An exception to this occurs when there is an appreciable delay (over 20 minutes) between the time of origination and the time of delivery to the message center. In this case the DTG is omitted by the originator and later assigned by the message center.

Number of Copies Prepared

The number of copies of a message prepared for transmission by the Washington COMMCEN depends upon the classification, the number of mail adees, and the distribution desired.

Unclassified messages are prepared with an original pink, an originator's green, and one white transmission copy for each adee, not to exceed seven white copies in all. The originator may make as many additional copies as required for his own use. An original pink and an originator's green copy are prepared for Confidential and Secret messages. Only the original pink copy is prepared for Top Secret.

The above procedure does not apply to the activities which use the "MAT" for reproduction, in which case the original is prepared on the MAT and delivered to the appropriate center for processing, transmission, and distribution.

DELIVERY TO TRANSMITTING AGENCY

After release, the message is sent by authorized messenger to either the message center or cryptocenter, as appropriate. The pink copy and as many white copies as needed are retained there. The green copy is time stamped as received and, with the exception of Top Secret messages, returned for the originator's file. When a MAT is used, the originating office receives one or more MAT distribution copies prepared by the appropriate center.

Copies of messages handled by the cryptocenter are returned to the originator with a notation typed at the bottom of the first page to indicate the message is Category A (no paraphrasing of plain language text required) or Category B (paraphrasing of plain language text required). Only the cryptocenter may make additional copies of Category B messages.

As was noted earlier, info adees receiving delivery by mail are indicated by a slant sign and the notation "By mail." The mail room of the originator makes local delivery of plain language messages and the cryptocenter makes local delivery of messages which have been encrypted. Distribution is indicated at the bottom of the page.

Copies of Secret and Confidential messages may be mailed by the originator's office *only* after the originator's copy has been returned from the cryptocenter and it is determined that the message is Category A. Such copies must be stamped Category A before mailing.

Copies of Top Secret or Category B Secret and Confidential messages may not be mailed. Paraphrased versions of Category B Secret and Confi-

NAVAL MESSAGE **NAVY DEPARTMENT**

DRAFTED BY	FILE NR.	ROOM NR.	EXT. NR.
J. E. DAVIS	A6-1/201P	4C686	53439
RELEASED BY	CODE/SEC. NR.	DATE	
CDR. W. M. ROBERTS	DNC(201P)	1 MAY, 1954	

FROM: CNO

012222Z
(DATE/TIME GROUP) (GCT)

TO: COM FOURTEEN

INFO: CINCPACFLT

PRECEDENCE (ACT)
- ☐ FLASH
- ☐ EMERGENCY
- ☐ OPERATIONAL IMMEDIATE
- ☐ PRIORITY
- ☒ ROUTINE
- ☐ DEFERRED

PRECEDENCE (INFO)
- ☐ FLASH
- ☐ EMERGENCY
- ☐ OPERATIONAL IMMEDIATE
- ☐ PRIORITY
- ☐ ROUTINE
- ☒ DEFERRED

Unless otherwise indicated, this Message will be transmitted with Deferred Precedence

STRIVE FOR ACCURACY BREVITY AND CLARITY X USE AUTHORIZED ABBREVIATIONS WHEREVER POSSIBLE X KEEP ADDRESSEES TO A MINIMUM X USE MAIL FOR INFO ADEES IF POSSIBLE

201P . . ORIG

203W . . 04 . . 40 . .04c . .03(33)

UNCLASSIFIED

OPNAV FORM-2110-3A1 (REV. 1-1-54)
DEPT USE ONLY

E-45793

012222Z
DTG

Figure 3–3.—Plain language message.

dential messages may be mailed, provided they are marked "This is a paraphrase."

Copies of Category A or paraphrased Category B messages mailed to activities outside the Defense Department may retain the date-time group but all other means of linkage to other classified messages, such as references by DTG, are deleted.

Provisions of the *U. S. Navy Security Manual for Classified Matter* must always be complied with in mailing copies of messages.

General Messages

General messages are messages which have a wide standard distribution. The rapid and widespread dissemination of information by general messages is reserved for subject matter warranting such service. They are assigned an identifying title and usually a serial number, in a sequence which covers the calendar year. In the Navy Department the serial number, except for ALMAR's and NAVOP's is assigned by the message center watch officer.

General messages are drafted in the same manner as other outgoing messages, except that the originator must correspond to the originator for the particular type of message. Only he may release it. (That is, the originator and releasing authority for an ALNAV would be SECNAV.)

Deferred precedence is ordinarily assigned to general messages, with delivery made by mail to activities not reached by military communication facilities. When the originator determines that delivery of a general message to all activities by rapid means is essential, he so specifies in the message blank and assigns appropriate precedence. General messages not requiring immediate delivery to forces afloat in the Pacific are designated BASEGRAMS, and the originator inserts the word BASEGRAM at the beginning of the message text.

The originating officer is responsible for canceling each general message as soon as practicable.

Incoming Messages

Incoming messages intended for activities served by NAVCOMMSTA, Washington, are routed by the message center or cryptocenter and delivered to messengers of the individual bureaus and offices, with the exception of activities which have tape relay network terminals and receive their traffic through the relay center.

ROUTING

In routing incoming messages, the communication center makes every effort to assign action or cognizance to the correct bureau or office as indicated by the text, and to include for information all other interested activities. Distribution is indicated on the bottom or right-hand margin of each copy, each activity indicated receiving a copy of the message.

Once an activity has received a message, the routing within its organization is its responsibility.

Routing Cards

The communication center keeps a file of routing cards arranged according to subject matter. Each card shows which activities are primarily interested in that subject and also activities which need such messages for information. When an activity no longer is interested in messages on a certain subject, it notifies the communication center.

Action Adees

Ordinarily only one activity is assigned a message for action. An activity erroneously routed a message for action should immediately inform the communication center and, if possible, advise the center of the correct routing.

Messages occasionally are received indicating more than one activity as action adee. These activities appear in the distribution, and each adee takes appropriate action.

Delivering Incoming Traffic

Some activities and offices served by NAVCOMMSTA, Washington, receive unclassified traffic by local teletypewriter from the message center. Messages for other activities are picked up by their messengers at the message center delivery desk.

304615 ●—55——3

NAVAL MESSAGE — **NAVY DEPARTMENT**

DRAFTER J. DOAKES EXTENSION NUMBER 52030

FROM CNO J. Doe

RELEASED BY CAPT J. DOE

DATE TYPED 25 May 1953

TOR CRYPTOCENTER

TYPED BY

ROUTED BY

CHECKED BY

	ADDRESSES	PRECEDENCE
FOR ACTION	COMELEVEN	☐ FLASH ☐ EMERGENCY ☐ OPERATIONAL IMMEDIATE ☐ PRIORITY ☐ ROUTINE ☒ DEFERRED
INFORMATION	COMTWELVE COMTHIRTEEN CINCPACFLT COMTEN COMFIFTEEN	☐ FLASH ☐ EMERGENCY ☐ OPERATIONAL IMMEDIATE ☐ PRIORITY ☐ ROUTINE ☒ DEFERRED

Unless otherwise indicated, this message will be transmitted with deferred Precedence.

2514372 (DATE/TIME GROUP (OCT)) NCC/MNCC NO.

IS THIS MESSAGE NECESSARY X WILL AN AIRMAIL SPEEDLETTER OR LETTER SERVE THE PURPOSE

201C...ORIG

40...04...201...50...05...006...BUORD...BUSHIPS...BUSANDA...

CONFIDENTIAL

OPNAV FORM-2110-4 (REV. C-31)
DEPT. USE ONLY

2514372 DTG

Paraphrase Required Consult Cryptocenter before declassifying

Figure 3—4.—Classified message.

CARRIER AUTHORIZATION CARDS

Classified messages are picked up at the cryptocenter by messengers from the activities or offices. A properly signed carrier authorization card for each messenger is submitted to the cryptocenter where it is retained on file. These carrier authorization cards bear the signature of the messenger for whom issued, the signature of the authorizing officer of the activity, and the highest classification of messages that the messenger is permitted to handle. The authorizing officer is responsible for determining that a person designated as a messenger has the security clearance to handle messages of the classification for which authorized. Such clearance ordinarily is for no less than Secret. The number of messengers authorized to pick up Top Secret messages is kept to an absolute minimum.

Identification

Military personnel serving as messengers present their standard I. D. cards as identification when picking up messages. Civilian messengers present building passes or other suitable identification.

Duty Officers

An activity whose duty officer is required to pick up messages is furnished with a carrier authorization card by the crypto security officer. The duty officer presents this card and his I. D. card when picking up messages at the cryptocenter.

Activities using such authorization cards must make arrangements for passing the card from one duty officer to the next; provide for safekeeping of the card; determine that each duty officer is cleared to handle the highest classification indicated on the card; and provide the cryptocenter with its duty officer watch list.

Quarterly Listing

Each quarter, activities using authorization cards list the names and other pertinent data concerning their authorized carriers on a form furnished them by the cryptocenter. These forms are made in duplicate, the activity retaining a copy for its own files. Activities must notify the cryptocenter at any time a carrier's authorization is withdrawn.

RECEIPTS

Messengers are not required to sign receipts for unclassified messages picked up at the message center. Individual receipts are required, however, for unclassified messages when delivered by message center personnel to action adees.

Receipts must be signed for the number of copies received of all Category A Secret messages, and for each copy of a Category B message. Individual receipts are required for Category A messages delivered to action adees.

Top Secret messages are delivered only to Top Secret control officers or their alternates, who sign a receipt which shows the serial number of the copy.

DISTRIBUTION

Distribution of copies of classified messages is limited to activities which require the message in the performance of their duties. The cryptocenter maintains a permanent list of the minimum number of copies of a message each bureau or office requires. In the case of Top Secret messages, only one copy is issued to each activity routed. If, for any reason, additional copies of Top Secret messages are necessary, they are made and issued only by the cryptocenter.

ACCOUNTABILITY

Quarterly, the cryptocenter submits an accountability list to activities retaining copies of Top Secret messages. A Top Secret message is not destroyed by its holder. When no longer needed, it is returned to the cryptocenter and exchanged for its receipt.

Copies of Category B classified messages, when no longer needed, are destroyed by the activity holding them and a destruction report executed and maintained on file at the activity.

As was noted previously, Secret messages unless Category B are not numbered but the activity's messenger signs a receipt indicating the number of copies received. The activity is then responsible for the accounting and disposition of these messages, as it is for other classified messages, although no receipt was signed for each copy.

When of no further use, classified messages other than Top Secret and Category B messages are placed in burn bags and destroyed by the activity holding them. No accounting is made of these messages when so destroyed.

CHAPTER 4

COMMCEN—PART ONE

As was indicated in chapter 2, there are six primary communication centers in the Naval Communication System—Port Lyautey, Guam, Pearl Harbor, Balboa, San Francisco, and Washington. The largest of these, which is in the Naval Communication Station, Washington, is an excellent example of a COMMCEN in operation, and is used for explanation purposes in this chapter. This Communication Center includes a message center, a cryptocenter, a radio central, a radiophoto branch, a classified conference room, a routing section, and a relay station.

Radio central includes the personnel and the control and monitoring equipment which are usually a part of the control center as shown in figure 4–1. There is no control center as a separate component.

The message center includes a teletypewriter section which is composed of the terminal facilities for naval teletypewriter and tape relay network and TWX wire circuits, as well as lines to commercial companies. The routing section maintains records of the locations of all activities of the Navy.

For the purposes of this text, the organization of a typical communication center will be used in considering the equipment and arrangement of the Washington COMMCEN. That is, it will be considered as having a control center instead of radio central, and the routing section will be considered as part of the message center.

This chapter will cover the operation of the message center, cryptocenter, control center, conference room, and radiophoto branch.

NAVCOMMSTA, Washington, serves the offices of SecNav, CNO, certain bureaus and naval activities located at Washington, and a number of Federal agencies in that area. It also performs some services for certain agencies of allied governments.

Included in its functions are the operation of the following broadcasts: primary fleet, primary general, submarine, merchant ship (MERCAST), and facsimile. It receives ship-to-shore traffic. For point-to-point communications, this COMMCEN maintains single sideband and electronic multiplex circuits, special purpose circuits, and telephone and teletypewriter conference circuits.

To get a picture of the volume of traffic handled by such a COMMCEN, here are some figures for the month of August 1950.

Sheets of blank paper used to reproduce copies of messages for local distribution	2,450,000
Code groups handled by cryptocenter	2,374,000
Messages handled by relay center (BEP)	620,000
Classified messages processed by cryptocenter	15,714
Copies of Top Secret messages delivered locally	6,572
Daily average of classified messages handled	430

Here is an example of the amount of work in processing one general message, ALNAV 124, 4 November 1950.

Group count	3,550
Routing indicators in heading	31
Length of transmission tape (in feet)	150
Copies made for local distribution	2,450
Sheets of paper required to reproduce local copies	14,000
Copies mailed in lieu of rapid delivery	400

As shown in figure 4–1, the message center, relay center, cryptocenter, radiophoto unit, and conference room are connected by lines into the main frame in the control center. There are connections from there by landline to Radio Arlington, which is a VHF link relay to Annapolis (transmitting) and Cheltenham (receiving). There are also landlines direct to Annapolis and Cheltenham, as well as certain other COMMCEN's, and to commercial communication companies.

The above COMMCEN components, with the exception of the relay center, will be discussed in this chapter.

Message Center

At smaller activities, either ashore or afloat, the processing of an outgoing message in the message center may be done by one or two persons who take each message through the various stages required, such as logging, making additional copies, routing, transmitting, and filing. The same is true concerning incoming messages. A message center such as at Washington, however, must employ what amounts to an assembly line procedure with different personnel handling a message at each stage of processing. The operating positions in this message center are the delivery and incoming desk; outgoing routing desk; incoming routing desk; internal routing desk; teletypewriter section; radio room; and file room. In addition, there are positions which perform special functions such as routing section, service desk, and the traffic checkers.

The organization and practices which will be described here may vary somewhat from that employed by other COMMCEN's, where the situation is somewhat different.

ROUTING ROOM

Routing room personnel maintain circuit routing records for all activities of the Navy, records for the control of message accountability, and microfilm records of the message center files. They also make corrections to nonregistered publications held by the message center.

Circuit routing records are kept in cardex files. The name of each activity or ship is typed on a card, and the tape relay network routing indicator is entered in pencil. The record card for a ship shows the routing indicator of the COMMCEN

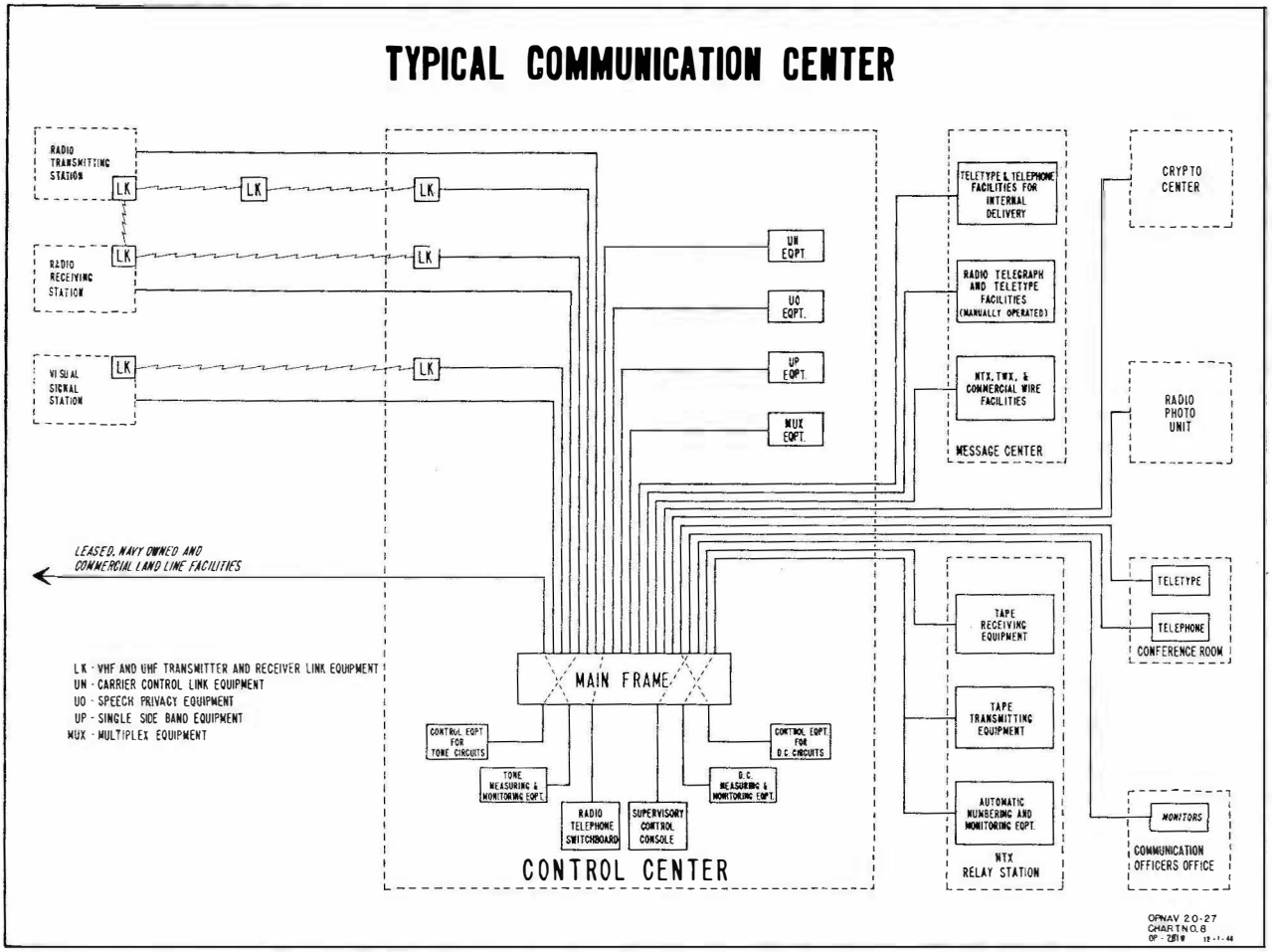


Figure 4–1.—Typical communication center.

whose fleet broadcast the ship copies. The notation W or WR is entered on the card of a ship in the Washington broadcast area, indicating whether it copies CW or RATT broadcasts. No routing indicator is entered for a ship with this notation.

There are several different types of card files. One type lists naval activities alphabetically by name, another type by call signs, and still another by hull numbers.

To keep cards current, there is a teletypewriter drop on a line to the Movement Report Control Center. This drop furnishes the routing room with copies of plain language movement reports. Encrypted movement reports go directly into the cryptocenter where they are decrypted. Cryptocenter delivers a copy of these reports to routing room by hand.

DELIVERY AND INCOMING DESK

The delivery and incoming desk effects delivery and receives messages for transmission to and from certain sections of CNO, Executive Office of the Secretary (EXOS), and other Government agencies, as well as some agencies of allied governments. Most messages for delivery to activities served by the message center are picked up by messengers from those activities.

Messages for transmission are received at this desk. The signature of the releasing officer is checked against his sample signature which is kept on file. If the message has no date-time group or if the DTG is found to be incorrect, one is assigned. The originating office is always notified in case such a change is made at the incoming desk.

The originating office furnishes work copies for transmission, check, and date-time group files. Messages are not refused if insufficient copies are furnished.

Message Stamping

After the initial check, a message is time-stamped on the back, and a copy returned to the messenger. The original copy is stamped with the precedence and a group count made, if required. The proper accounting symbol is added to messages as appropriate. Classified messages are given to the crypto center watch officer (CCWO).

Delivery Desk

The delivery desk receives messages from the distribution desk. Each message is numbered successively on the top copy of the message. The numbered copies are placed on file. The delivery desk file is used as a check on missing messages, to ensure important message delivery, and for preparation of daily reports.

The heading, text, and internal routing of messages for delivery are inspected to ascertain whether an interested activity has been omitted or a disinterested office added. Any discrepancy is called to the attention of the desk responsible and correction made prior to delivery of the message. An adee of an important message is notified by phone so that the message may be picked up at once.

FILE ROOM

As can be imagined, a COMMCEN such as this maintains large files of messages. Three types of files are maintained—outgoing, incoming, and flimsy (DTG). At the end of the day (local time), and workload permitting, messages are placed in transfer cases. The flimsies are filed by DTG and the outgoing and incoming messages by circuit numbers. After 60 days, the flimsies are microfilmed and stored for an indefinite period. Outgoing and incoming circuit files are retained for six months.

Incoming and outgoing messages, including those received for relay, are given a thorough check for correctness of complete delivery prior to filing. This check is made as soon as a message has cleared its circuit. The check includes a call sign breakdown, and a check for precedence, group count, legible station serial numbers, time-stamping, the inclusion of times and dates necessary, operators' signs where required, circuit routing, and when applicable, the internal routing. The TOR and TOD are inspected to discover if there has been an excessive delay. The message is also checked for the observation of security requirements.

A message that is incorrect is turned over to the service desk for correction.

INCOMING ROUTING

The bulk of the incoming traffic is received either from Naval Teletypewriter and Tape Relay

Network circuits or by a direct teletypewriter line from the radio receiving station at Cheltenham. The latter brings in ship-to-shore traffic. Other traffic is received from the TWX and commercial facilities circuits in the teletypewriter section.

Incoming messages are time-stamped on the front top-center as received, and handled in order of precedence. Teletypewriter machines make an original and two copies of each message received. The original is used as a check copy. One copy is used as a transmission copy when relays or refiles are necessary, and the other carbon is placed in the flimsy (DTG) file. A ditto machine at this position supplies additional copies as needed. The routing given to messages (internal or circuit) is placed on the lower right corner above the routing clerk's sign. Messages are relayed to activities for which the message center guards, whether or not the activities are indicated in the transmission instructions. Texts are checked for buried addresses, garbles, and irregularities.

INTERNAL ROUTING

The distribution of messages received by the message center for delivery to Navy Department activities in the area, Government agencies, or individuals, is made at the internal routing desk.

Messages are handled according to precedence. Those which contain call signs are broken down at this position.

Upon receiving the message, the internal router notes the adee(s), determines if the message was received for action or cognizance as indicated by the originator, looks up references (if included), and decides on the routing. Standard routing cards for categorized functions and special projects are available for his reference. After he determines the routing, it is written on the message with ditto pencil. CNO operations are indicated by numbers, SecNav offices by letter or letter-number combination, and bureaus are named and their tape relay network routing indicators given. The message is then placed in the ditto baskets according to precedence.

Navy and commercial messages to individuals are routed to the appropriate room number, operation, or bureau for delivery. Messages to related Navy activities in the area are sent via the tape relay network to their communication offices.

OUTGOING ROUTING

Circuit routing of traffic from the message center, including incoming messages received for relay, is made at the outgoing routing desk. Outgoing routing checks the message for completeness of address and code indicators, and ensures that there is no classified material in plain text. The circuit routing is placed in the lower right-hand corner, underscored, and inscribed with the sign of the clerk. Complete check copies are prepared. General message routing cards are used for routing general messages.

After a message has been routed, an outgoing traffic checker reviews the heading, the circuit routing, the precedence, the classification, and the class and type of message. This is also done for service messages.

TELETYPEWRITER SECTION

With the exception of the receiving positions from primary relay RBEP and the direct circuit with Radio Cheltenham, teletype operations for the message center are carried on in the teletypewriter section. This room includes transmitting positions for four tape relay network channels, for TWX service, and wires to certain Government departments, some agencies of allied governments, the Red Cross, and commercial communication companies.

Much of the traffic is outgoing messages to primary relay RBEP; however, a considerable amount of traffic is handled on the other circuits. Traffic received or transmitted by the teletypewriter section is processed through the routing desks of the message center.

Terminology

There are some terms and symbols which will be encountered in discussing teletypewriter operations and in the subsequent discussion (Chapter 5) of the primary relaying station. They are:

Called Station.—The station to which a message is routed or a transmission is directed.

Calling Station.—The station preparing a tape for transmission.

Channel Number.—A combination of letters and figures identifying a station, a channel, and transmission.

Channel Designation.—One or more letters used to identify a station in conjunction with a channel number.

Channel Letter.—A letter assigned to a channel when two or more channels are maintained between two stations.

Misrouted Message.—A message bearing an incorrect routing indicator.

Missent Message.—A message bearing a correct routing indicator, but which has been transmitted to a station other than the one indicated.

Open Number.—A sequential channel number on the received numbers sheet for which a transmission bearing a corresponding number has not been received.

Pilot.—Instructions appearing in Line One relative to the transmission or handling of a message.

Station Serial Number.—A message reference number assigned within a communication center (Navy), or signal center (Army, Air Force).

Sign (or Sine).—A two-letter indicator used by an operator or supervisor when endorsing station records or messages. Each operator or supervisor in a station is given a sign. It normally is composed of his initials, except when it would conflict with a channel designation, a prosign, or with another sign in the same station.

(CR), (LF), (LTRS), etc., which appear in illustrations of teletypewriter messages, are symbols representing certain necessary functions to be performed in typing out the message. CR indicates the carriage return key, LF the line feed key, and LTRS the letters key which corresponds roughly to the shift key of a typewriter. They normally do not appear on the actual teletypewriter copy.

Outgoing Messages

Outgoing messages are delivered to the teletypewriter section from the outgoing routing desk. When received in the wire room they are time-stamped and placed in baskets at the appropriate transmitting positions. Operators remove messages in the order of precedence and TOR.

Teletypewriter and Tape Relay Network Traffic

Messages to be transmitted on tape relay channels to primary relay RBEP are serial-numbered with a stamp. After giving the message a quick check, the operator types the message on a Model 19 teletypewriter, which makes both a page copy and perforated (chad) tape. The operator enters the time at which the typing of the message was completed (time on tape), and his sign on the transmission copy. The transmission copy is returned to the file room for checking and filing, and the page copy placed in the section file. The tape is fed into a transmitter-distributor (T–D) to make the actual transmission. These channels operate at 75 w. p. m.

Figure 4–2.—Teletype Model 19 Set.

Outgoing routing notifies the teletypewriter section when there is high precedence traffic. An operator from the section picks it up at the routing desk, time-stamps it, and transmits it at once.

RBEPC exchanges numbers comparisons with RBEP every other hour. Numbers comparisons are requests sent from one station to another for an indication of the number of the last message transmitted on that channel. Numbers comparisons, opening and closing notices for channels, and closing out are discussed in more detail in the next chapter.

The Teletype Model 19 set combines facilities for:

(1) Direct interchange of typewritten telegraph messages.

(2) Perforation of tape for subsequent transmission.

(3) Automatic transmission of printing telegraph messages under control of perforated tape. The perforator transmitter keyboard which serves for direct sending may also be operated independently (whether or not an incoming message is being received) as a high speed perforator in the preparation of tape for subsequent transmission. Or if desired, tape may be perforated simultaneously with direct transmission. Incoming messages are received in printed page form on either continuous roll or multifold paper.

TWX Traffic

TWX is a service supplied by the telephone company. The equipment used is company equipment and maintained by it. The company is paid for the time used in actual communication with another station, rates being similar to long distance phone calls.

The TWX positions at RBEPC (message center) serve naval and other activities for which there is not enough traffic to justify a Navy leased-line circuit. From these positions, messages may be sent to and received from any office which is also a TWX subscriber.

To send a message by TWX, the number of the desired station must first be obtained from the TWX directory. The control switch of the teletypewriter machine is then turned to the ON position, which causes a signal to be sent to the telephone company TWX operator. The telephone company operator responds by sending OPR. As soon as these letters appear on the page copy in the machine, the calling station types the TWX number of the called station. The company TWX operator then makes the connections in the same manner as for a long distance phone call. When the connection has been made, the called station identifies itself on the page copy; for example, NAVAL ORDNANCE PLANT SOUTH CHARLESTON WVA. Transmission of traffic begins immediately upon receipt of the called station's response, and service is paid for from this time on a time-meter basis.

Messages sent by TWX are assigned a channel number as well as a station serial number. In general, the same procedures are used for messages on TWX circuits with naval activities as on Naval Teletypewriter and Tape Relay Network circuits. At RBEPC, TWX transmission copies are marked and filed in the same manner as tape relay network messages. The page copies from the machine are filed in the wire room files. When the message or messages have been sent and receipted for, and incoming messages receipted for, the control switch of the machine is turned off, breaking the connection.

If necessary to make a tape of the transmission, a reperforator can be connected to the machine by a control switch.

Commercial Traffic

Because traffic over the lines to commercial communication companies is in either domestic or cable form, operators and supervisors in the wire room must know the various commercial procedures. Supervisors must be able to maintain accurate accounts for these messages.

A complete set of domestic and cable tariffs is maintained in the typewriter section. (Messages to any part of the world serviced by commercial companies can be handled in this section.) In sending commercial traffic, the section uses the cheapest method consistent with traffic precedence and communication procedure. Regulations for handling commercial traffic are found in the DNC 26 series.

There are three classes of Government messages (A, B, and C) and two classes of private messages (D and E).

Class A are official messages originated by the Armed Forces and replies to them.

Class B are official messages of the United States Government departments and agencies other than the Armed Forces.

Class C are broadcast messages in special arbitrary forms available to ships of all nationalities with data consisting of special services such as hydrographic, weather, and time.

Class D are private commercial messages (including press and radiophoto). These normally are radiograms.

Class E are private (personal) messages to or from naval personnel, handled free of charge over naval communication circuits.

RADIO ROOM

The radio room includes the transmitting positions for the primary fleet (including submarine component) and general broadcasts. In addition, there are positions for transmitting and receiving on special RATT when needed. Actual receiving in the radio room is limited to the special RATT circuits and monitoring of broadcasts. Broadcasts are always carefully monitored to ensure accurate transmission. Receivers are available for other circuits if necessary.

Transmitting positions are connected by wire to Radio Arlington and from there to the radio transmitters at Annapolis by VHF radio link.

Messages to forces afloat in the Washington primary fleet broadcast area (designator "W") are sent to the radio desk by the outgoing routing clerk of the message center. When received in the radio room, they are time-stamped and inspected for accuracy of routing, headings, and texts. They are delivered to the correct circuit, where they are placed in the appropriate baskets with respect to precedence and TOR in the radio room. When there is a high precedence message it is passed by hand.

CW and RATT broadcast operators handle messages on circuits in their order of precedence and TOR and punch them out in tape form. Messages which are to be broadcast by CW are typed on a Wheatstone perforator, which is a device for punching Morse code characters on tape. The station serial number is added by the operator as he types out the message, checking it off from a number list as he does. Message tapes are then run through a Boehme keying head, a device by which the tape automatically keys the transmitter. Tapes are run through the keying head at a speed of 23 Paris groups per minute. A Paris group is the test word Paris, or a group of characters having equivalent content, followed by an interword space. The transmitting speed is indicated by a tachometer on the Boehme equipment. Operators check the speed prior to each schedule.

Messages containing more than 100 groups are normally transmitted in blocks of 100 groups. Each block of groups is followed by the prosign B, the number indicating the number of groups transmitted thus far, and the prosign AS to indicate a short pause. When sending is resumed, the first transmission is a number indicating the next text group to be sent.

Broadcast messages are numbered serially by the month. In addition, Washington primary broadcast messages are identified by the letter W, prefixed to the station serial number. For example, Washington's forty-fifth message of the month would be transmitted as W NR45.

At present, the submarine broadcast is a component of the Washington primary fleet broadcast and is transmitted on even-hour schedules as a dual transmission. There is no separate submarine broadcast. Submarine messages are indicated by the letter S, followed by the submarine message number suffixed to the station serial number, and are transmitted as one group. For example, if the eleventh message of the month for submarines is the thirty-third message of the fleet broadcast it would appear as W NR33/S11.

The Washington primary fleet broadcast begins every hour on the hour and is keyed continuously for 50 minutes, with the exceptions of the 0200 submarine recap schedule and the 0600 general message schedule, which may run for 1 hour 50 minutes. During periods when there is no traffic, a standby tape is run which consists of:

VVV VVV VVV DE NSS NSS NSS (12 blanks)
—W—(12 blanks)—W—(12 blanks)
—W—(12 blanks).

Fifty minutes after the hour, except at 0200 and 0600, the following is transmitted:

NERK NERK NERK (and/or) NIMK NIMK NIMK DE NSS NSS NSS QRU AR

During the next 5 minutes there is no transmitting, while the transmitting station at Annapolis makes adjustments. Following this, the call tape is run for 5 minutes (except at 0155Z and 0555Z). It consists of

VVV VVV VVV DE NSS NSS NSS W W W

At the beginning of the hour, traffic is resumed.

Monitoring and Logging

A radio receiver mounted at the transmitting position is tuned to the NSS transmitting station (Annapolis) to monitor the broadcast. The monitor operator maintains a 5-column log as follows:

Time—Time of starting transmission of each message.
NR—The assigned W number.
Heading—The heading of the message as indicated on transmission copy.
TOD—Time of completion of each message.
OPR—Sign of transmitting operator followed by slant and sign of monitor operator.

The monitor operator checks the transmitted heading and text against the original message copy. When he notes an error in the transmission, he stops the tape and sends by hand the error sign and the correction. If the error sign is not sent within three groups of the error, the correction is made by using prosign C at the end of the message and prior to the AR.

Upon completion of transmission, each message is time-stamped on the front near the W number, and sent to the filing room.

Message tapes are wound automatically on a reel immediately after clearing the keying head. When the reel is full, it is removed, marked according to the month and the first and last serial numbers of the messages on the reel, and stored for six months.

General Broadcasts

Boehme keying is used for general broadcasts, except for press and some weather schedules, which are transmitted by RATT. NSS transmits four daily schedules each of weather and Mercast, and two daily schedules each of hydro and press. Time signals are transmitted the last 5 minutes of each odd hour.

Weather traffic is received by teletypewriter from an office of the Weather Bureau. It is punched on tape in numbered parts of one hundred groups, and transmitted at a speed of 27 Paris groups per minute for weather (WX) numeral code, and 20 Paris groups per minute for WX plain text. Transmissions are monitored. When the transmission is completed, the tape is removed and stored in a box according to the month.

Messages transmitted on the Mercast schedules carry the appropriate area broadcast designating letter, suffixed with the letter M. NSS Mercast designator is "WM" followed by the serial number, except for messages originated by a nongovernment agency for a commercial vessel. A second serial number prefixed by the letter A is added to the normal serial number for messages for one-operator schedules, such as WM NR195/A32. Form and procedure prescribed by ACP 124 are used for MSTS traffic. Mercast is transmitted at a speed of 20 Paris groups per minute.

Time Signals

Time signals are keyed at the Naval Observatory and carried over a tone (telephone) line to the control center, where they are amplified in the time signal panel. The keyed output of the time signal panel is passed via a radio carrier or a tone transmission line to Radio Annapolis, where it is rectified and applied to transmitter keying circuits.

The radio room has nothing to do with the transmission of time signals, other than that the weather operator monitors them.

RATT BROADCASTS

The Washington Primary Fleet RATT Broadcast schedules (designator WILLIAM ROGER) transmit traffic to ships in the Washington primary fleet broadcast area which are equipped to copy RATT. Ships copying WILLIAM ROGER do not copy WILLIAM, except during the former's maintenance period, or whenever it is closed down due to equipment failure.

Messages to be broadcast by RATT are delivered by the outgoing traffic desk to the WILLIAM ROGER position, except in the case of high precedence traffic, when the same procedure is followed as was noted for WILLIAM high precedence traffic. The RATT operator time-stamps messages upon receipt and inspects them for accuracy of routing, heading, and text. He then transmits them in order of precedence and TOR. He types them on a Model 19 teletypewriter, which produces a page copy and a chad (completely perforated) tape. Page copies are retained for files and the tape fed into a T–D at a speed of 60 w.p.m.

A guard list consisting of the call signs and delivery groups of ships and commands copying WILLIAM ROGER is transmitted once each day.

The OPSIG ZIA is used to denote high precedence traffic transmitted out of numerical se-

quence. Transmission of a short low precedence message is not interrupted for a high precedence message. The high precedence message is inserted upon completion of the short message as follows:

(FIGS) (3BELLS) (2LTRS)	
NERK DE NSS	(2CR) (8LF)
ZUJ ZUJ O O AS	(2CR) (8LF)
ZIA WR NR1096	(2CR) (8LF)
Etc . . .	(2CR) (8LF)

Corrections normally are made before transmission. When an error is made in typing the heading, the incorrect portion is cut out of the tape and the heading is retyped. When an error made in the text is noted at once by the operator, he can make the correction by using the erase sign. If not noted at once, the prosign C, followed by the correction, is used prior to the AR at the end of the message.

RATT broadcast operators never use "BUST THIS." Service messages giving portions of messages or correcting messages are considered as new business and are transmitted according to precedence. Complete retransmissions may be sent at any time during the schedule, depending upon precedence and circuit conditions. The original WILLIAM ROGER number of the message is used, preceded by the OPSIG ZFG. A complete callup is seldom used for retransmis sions.

When there is no traffic for transmission during a scheduled period or during a time of transmission difficulty, the operator puts on an idle (call) tape consisting of:

NERK NERK NERK DE NSS NSS NSS RYRYRYRYRYRYRYR	(1CR1LF)
RY (4LTRS) RY (4LTRS) RY (4LTRS)	(CR)
RY (4LTRS) RY (4LTRS) RY (4LTRS)	(CR)
RY (4LTRS) RY (4LTRS) RY (4LTRS)	(CR LF)

Logging

The RATT broadcast operator maintains a log consisting of five columns: Time, NR, ORIG, TOD, and OPR. The Time column is used to make entries pertaining to frequency shifts, transmitter shifts, and transmitter and other equipment failures. The assigned WILLIAM ROGER number is entered in the NR column. In case of retransmitted messages, this is preceded by the OPSIG ZFG. The originator of the message and the date-time group are entered under ORIG. TOD is time of completion of the transmission. The operator's sign is placed in the OPR column.

WILLIAM ROGER is monitored off the air in the radio room by means of a receiver (RBA–3), a URR converter, and a Model 15 (page printer) teletypewriter. This provides a monitor roll of page copy. If the signal received here falls below QRK5, the operator notifies the control center but continues transmission. If the source of the difficulty is discovered to be in the receiver, transmission is continued; if it is in the transmitting equipment, traffic is stopped at once and a call tape transmitted.

SERVICE DESK

Requests for service on traffic going through the message center are handled by the service desk. Its task is to clear up message errors.

Messages received for servicing are checked thoroughly for any other errors in addition to the one noted for which the message was originally referred to the service desk. In this way, all errors can be cleared up with one service. Service clerks usually can clear up such errors as incorrect call signs and misroutes by checking routing spindles. Messages in upper case can be corrected by checking the teletypewriter keyboard. Garbles usually can be cleared up by the clerks.

The DTG (flimsy) file is used to locate any message which the service clerk needs in his work. Having located the message in the DTG file, the clerk then goes to the appropriate incoming or outgoing file and removes the message. He leaves a dummy check with complete identification (channel number, date, DTG, his name, and where the message is) to replace the removed message. If it is necessary to send a message requesting a reference not held in the message center files, the request goes as an official message and is released by the CWO. This message center sends such requests only when they are desired by activities which are action adees and which do not have a communication office.

Unanswered service requests over 24 hours old are referred to the CWO, as are messages and services of Priority precedence or higher. A service message normally carries the same precedence as the message to which it refers, except that Deferred messages receive Routine service.

The Control Center

The control center may be called the nerve center of the Naval Communication Station for through this area pass all radio circuits to and from the overseas activities as well as landline facilities with continental activities. In outward appearance, the area resembles a telephone exchange. The control of landline circuits is, in fact, very similar to the operation of a telephone exchange. Circuits are made normal (balanced, compensated or matched) throughout their entire length on a continuous basis except when landline casualties occur. In such cases, substitute radio facilities are provided.

The communication equipment which is controlled from this area covers a rather wide range of telegraph and telephone application. The teletypewriter is the primary unit of telegraph equipment used at present on both radio and landline circuits. Manual radio (CW) operating facilities are available when needed.

Continuity of communications on the circuits to and from the COMMCEN is the responsibility of the control center personnel. They patch (connect) circuits to the appropriate terminal equipment. Circuit signals are monitored in the control center, and adjustments made to keep the signals of maximum quality. Operators keep informed as to the conditions on the circuits. Whenever frequency shifts are necessary they inform the transmitting and receiving stations, and the distant stations. Control center operators make the connections for the teletypewriter and telephone conference calls. They monitor the latter.

The equipment in the control center includes a supervisory control console, radiotelephone switchboard, and devices for the control, measuring, and monitoring of both direct current and tone circuits. In addition there are the single sideband and multiplex equipments used for high speed communications, the carrier control equipment used with the radio link to the transmitting and receiving stations, and the speech privacy gear for telephone conference calls.

POINT-TO-POINT COMMUNICATIONS EQUIPMENT

As was noted in chapter 2, single sideband and multiplex circuits are employed extensively by the Naval Communication System for point-to-point radio communications. In the NAVCOMMSTA, Washington, control center there are five sets of UP or single sideband equipment used for this purpose. Each of these sets provides six duplex RATT channels, a CW order wire, and a duplex radiotelephone channel. The six teletypewriter channels are transmitted on one sideband and a telephone channel on the other sideband of each SSB circuit. Separate lines are necessary for each sideband circuit to the radio transmitter, and from the radio receiver to the sideband terminal equipment. Telephone lines equalized over a frequency band from 400 to 5,000 cycles are used for the telegraph tones. VHF radio channels are used, in most cases, for the telephone circuits.

While SSB is the primary means of point-to-point radio communications from Washington, multiplex is more often used in naval shore communications. Five AN/FGC-5 Time Diversity Electronic Multiplex sets are available in the control center in Washington, where they normally are used as standby for the SSB equipment. Each set provides four duplex RATT channels.

Conventional single channel RATT equipment is also used on several radio circuits.

SPEECH PRIVACY EQUIPMENT

For use in conjunction with the telephone channel of the UP equipment there is a speech privacy or voice scrambler device. This is designated UO equipment. When used, the frequencies of the spoken voice are rearranged in a manner to produce unintelligible sounds which are then transmitted over the voice circuit. As these scrambled sounds are received, the UO equipment rearranges the component frequencies to produce intelligible words.

MULTIPLEX

A multiplex (Mux) circuit utilizes a system of time division. This is in contrast with the sideband circuits which, as was seen, use a system of frequency division. Broadly stated, in time division the amount of time used for a normal telegraph signal is reduced to a much smaller period,

thus permitting the transmission of signals from several telegraph channels in the same period of time normally required for one signal.

For Mux operation, the Naval Communication System uses the AN/FGC–5 telegraph terminal set. As seen in figure 4–3, the equipment is composed of a telegraph transmitting group and a telegraph receiving group.

The telegraph transmitting group accepts on-off direct current start-stop signals from transmitting circuits. Adequate samples are taken of each signal and applied channel by channel to the Mux circuit, which is connected by landwire or radio link to the radio transmitting station.

The incoming signals from the radio receiving station are carried either by wire or radio link to the telegraph receiving group, which converts the Mux signals (signal samples) to on-off direct current signals and passes them to the local teletypewriter equipment.

During the periods when Mux replaces SSB there is no voice telephone service on the circuit affected and the number of telegraph channels is reduced from six to four. When it is necessary for control center personnel to communicate with control personnel at other COMMCEN's, procedure messages are sent on one of the telegraph channels.

UN Carrier Control System

To eliminate the need for many landlines between a COMMCEN and the radio transmitting and receiving stations, a VHF radio link is used between these facilities. Communications over this link are handled through the UN carrier control system and VHF transmitters and receivers. The UN employs a system of frequency division similar to SSB. Any number of noninterfering services within the range of its frequency band (300 to 10,300 cycles) may be simultaneously transmitted in a single system. The frequency band of the UN is approximately 2 kcs narrower than the UP equipment.

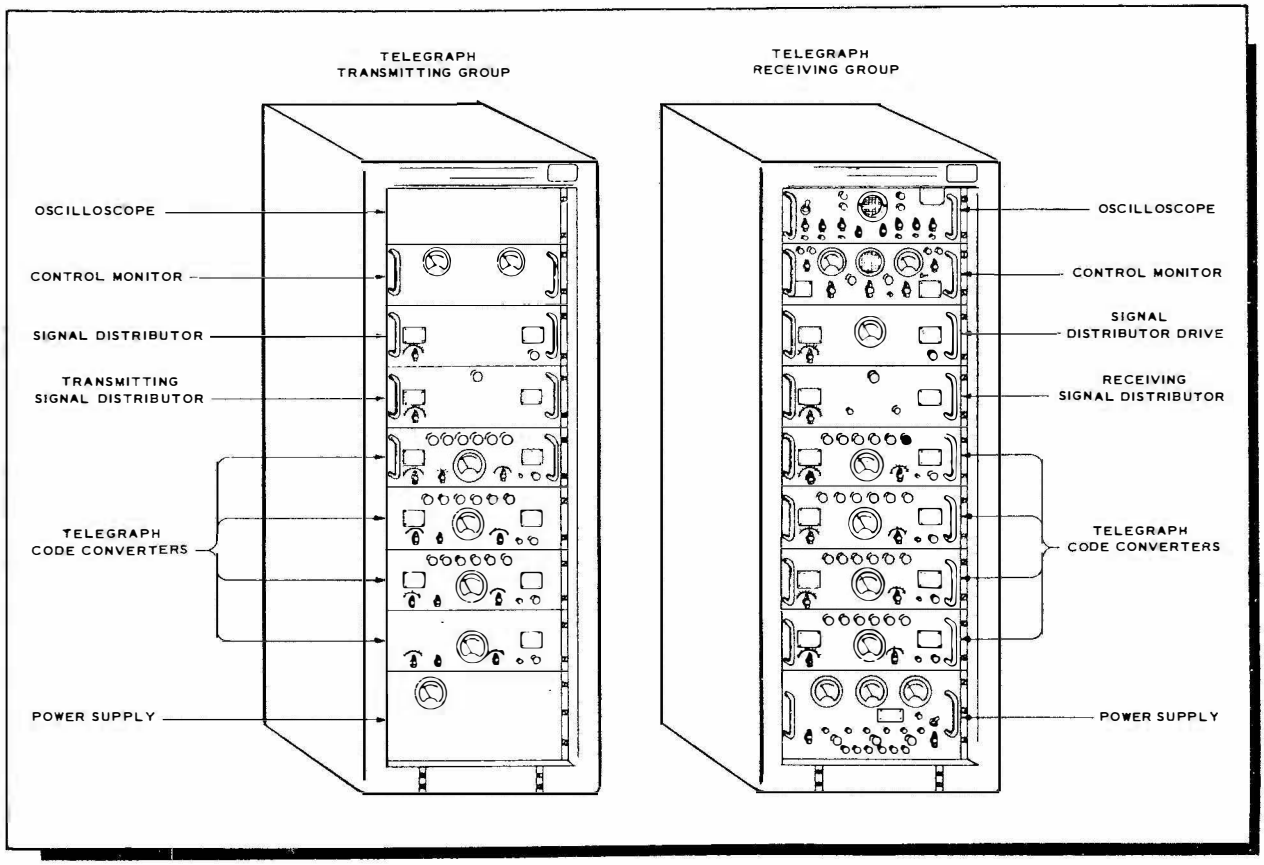


Figure 4–3.—Multiplex equipment (AN/FGC–5).

CONTROL, MEASURING, AND MONITORING

The supervisory control console is the device used for patching the circuits, lines, and equipment required to establish the communication circuits.

The radiotelephone switchboard serves two purposes. It is used to connect the office of the originator of a telephone conference call (or the control center operator in the case of a procedure message call) with the telephone channel of the appropriate SSB circuit. It is also used to connect the control center operator to the voice channel of the UN system for procedure calls to the radio transmitting and receiving station(s).

Both tone circuits and direct current circuits are monitored and measured by equipment in the control center to ensure that the best possible signal is being transmitted.

Cryptocenter

The cryptocenter is generally located adjacent to the message center. This is not true at NAVCOMMSTA Washington, where direct and close connection between the two is maintained by means of pneumatic tubes, teletypewriter, and an intercomm system.

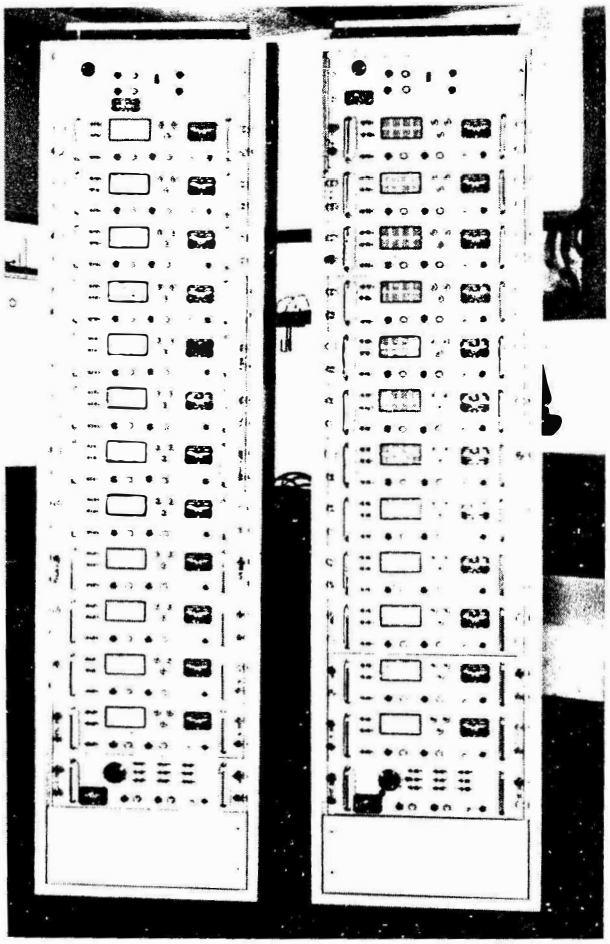


Figure 4–4.—ANFCC–3 Telegraph carrier terminal.

The cryptocenter is a Naval Teletypewriter and Tape Relay Network tributary station of primary relay station RBEP. All of the cryptocenter's encrypted traffic, incoming and outgoing, is transmitted over tape relay network lines. The message center has a teletypewriter drop on the cryptocenter's outgoing lines which provides a monitor copy of outgoing encrypted traffic to the crypto-traffic checker.

HEADINGS

When a message is received for encryption, the cryptocenter prepares it for encryption and transmission. The correct heading is prepared by the message center from a heading chit made up in the cryptocenter. After call signs, routing indicators, etc., are prepared, the message center returns the completed heading chit via pneumatic tube. The cryptocenter circuit operator then consolidates it with the text of the message.

RADIO TRAFFIC

Encrypted messages which must be routed to the message center for radio transmission on the "W", "WR", submarine or general broadcasts go via tape relay network channels to RBEP where they are relayed to RBEPC, the message center. Encrypted traffic received in the message center from the ship-to-shore circuit is relayed to the cryptocenter via RBEP.

ROUTING AND DELIVERY

A card file, arranged according to subject matter, is maintained as a guide to routing decrypted traffic from the cryptocenter. Each card lists

those activities interested in a particular subject, and from this list is designated the activity which is to take action. The remaining activities appear in the routing as activities interested for information only. A message is routed only to those activities which require it for their proper functioning. The number of copies made of a message of any classification is governed by the number of copies required by the activities to which it is routed.

Authorized messengers from the activities served by the cryptocenter pick up copies of messages routed to their activities at the classified delivery desk. Carrier authorization cards for messengers are retained on file at this desk. After presenting suitable identification, a messenger signs for and receives the messages for his activity. A messenger must sign a receipt indicating the number of copies of a Secret message he has received. A receipt is required for each copy of a Category B or Top Secret message received.

Top Secret messages are delivered to the Top Secret Control Officer of the activity and a receipt is obtained showing the serial number of his copy of the message. When the message is returned for destruction, this receipt is returned to him. A quarterly inventory is made of all unreturned copies of Top Secret messages.

OUTGOING MESSAGES

In the case of outgoing messages requiring encryption, the originating office sends a single copy, signed by the releasing officer, to the crytocenter. The originator's copy is time-stamped at the time it is received and retained in the cryptocenter as evidence of authorization to transmit the message. After the message has been processed by the cryptocenter and encrypted, a copy is returned to the originating office, and other copies, as necessary, routed to local adees. Local distribution is indicated by the originator at the bottom of the last page of the message.

All copies delivered by the cryptocenter show either the notation "Paraphrase not required. Consult cryptocenter before declassifying," or "Paraphrase is required. Consult cryptocenter before declassifying."

Conferences

A number of the NAVCOMMSTA's have facilities for telephone and/or teletypewriter conferences. Figure 4–1 shows a conference room which contains both teletypewriter and telephone facilities. NAVCOMMSTA Washington maintains a conference room for teletypewriter conferences but not telephone conferences. A release must be obtained for a conference call just as for a message.

TELEPHONE CONFERENCES

At Washington, telephone conference calls are made from the office of the originator much as a regular telephone call is made. After obtaining a release for a conference call, the CWO is notified, and he in turn notifies the control center operator. For example, if the Chief of the Bureau of Ships wishes to confer with the CO of the Navy Yard at Pearl Harbor, he notifies the local CWO. The CWO passes the information to the control center operator, who handles the call much the same as a telephone company long distance operator. When he is in contact with the called party, he connects the telephone of the Chief of BuShips to the sideband voice channel by means of the control center telephone switchboard.

Telephone conference calls may be made from Washington to any COMMCEN outside the United States with which Washington has a single sideband channel. No classified information may be discussed on these calls. The speech privacy equipment used in conjunction with telephone conference calls has no positive security.

TELETYPE CONFERENCES

In contrast to the lack of security of a telephone conference call, the teletype conference circuit affords security up to and including Top Secret. At Washington, teletype conference circuits are available to naval activities at London, San Francisco, San Diego, Pearl Harbor, Guam, Yokosuka, Balboa, San Juan, Naples, Key West, and CINCLANTFLT Headquarters at Norfolk.

Usually, one officer and two enlisted men are detailed from the cryptocenter to operate the teletypewriter and cryptographic equipment installed in the conference room.

The originator of a teletypewriter conference notifies the other party via message, usually 24 hours in advance of the desired time. The message indicates the time of the conference and other details. The action adee's COMMCEN as well as any intermediate relay station is an info adee of the message. Arrangements are made in the COMMCEN's concerned. Each CWO notifies his cryptocenter, in order that personnel may be detailed to operate conference room equipment. Each control center is responsible for patching the conference room equipment to the appropriate circuit.

Radiophoto Branch

The radiophoto Branch of the Washington COMMCEN operates the primary fleet facsimile broadcast for the Washington area. It also works point-to-point facsimile circuits and receives ship-to-shore facsimile traffic. The radiophoto Branch has a drop on the national facsimile network, which is a joint facility of the Weather Bureau, Navy, and Air Force.

The equipment used by a radiophoto Branch includes receiver converters, such as the FRA or FRB, and facsimile transmitter-receivers (transceivers), such as the FOA or FOC. In addition the radiophoto Branch has complete darkroom facilities. Photographic equipment and material are furnished by BuAer. The radiophoto Branch of a COMMCEN holds a BuAer Class M photographic allowance.

FACSIMILE BROADCASTS

Facsimile is the established system of telecommunication for the transmission of fixed images with a view to their reception in a permanent form. Facsimile transmission consists of sending pictorial-graphic intelligence by wire and/or radio. The Washington primary fleet Facsimile Broadcast (designator "WP") is transmitted simultaneously on three frequencies. It is composed for the most part of weather maps. Other traffic transmitted may include photos, blueprints, drawings, charts, and other graphic material. At present, messages are not transmitted on facsimile circuits. Facsimile transmissions do not include classified material.

Weather maps on "WP" originate in Navy weather central. Transmissions from Navy weather central are carried by wire to the radio transmitting station. A line monitor transceiver in radiophoto copies weather central transmissions, and one of the three broadcast frequencies is monitored "off the air" by another transceiver in radiophoto.

IDENTIFICATION BLOCKS

Each piece of facsimile carries an identification block in its lower left corner. The identification block contains the standard message heading format, modified as indicated below, and other lines as may be necessary:

Element	Line No.	Explanation
WP NR 115 NM 101516Z	3 and 5	Station or broadcast identifying letters, station serial number, precedence prosign, DTG.
FM	6	Prosign FM: Originator's designation (address group, call sign plain language).
TO	7	Prosign TO: Action address designation (address group, call sign plain language).
INFO	8	Prosign INFO: Information address designation (address group, call sign plain language).
XMT	9	Prosign XMT: Exempted address designation (address group, call sign plain language).

The standard message format for facsimile is not used when the transmission is material which is introduced into the Naval Communication System but which is not processed by a naval communication center. For example, the direct retransmission of material from the National Facsimile Network. When such material has been transmitted, the radiophoto transmits a daily recapitulation sheet containing a list of the day's transmissions. The list indicates the time of each transmission and the associated serial number.

Weather central adds the headings for the weather maps which it originates. Headings for other traffic are prepared at the message center.

304615 O—55——4

INCOMING TRAFFIC

Incoming point-to-point and ship-to-shore facsimile signals are received at Cheltenham and carried by landwire to the COMMCEN. Weather traffic goes to weather central, with a line monitor making a copy in radiophoto. Material intended for activities served by the COMMCEN is sent by radiophoto to the incoming routing desk of the message center. Facsimile traffic is handled there in the same manner as other incoming traffic.

CHAPTER 5

COMMCEN—PART 2

Tape Relay Station

As a component of the COMMCEN, the tape relay station has an officer-in-charge who is responsible for its operation to the communication officer of the NAVCOMMSTA.

The function of the primary relay station is, as its name implies, the relaying of teletypewriter messages by tape. To do this, a semiautomatic system is employed. Incoming circuits terminate in typing reperforators which automatically perforate and print the messages on chadless tapes. The tapes are transferred manually to outgoing circuit transmitters which are keyed automatically by the tapes.

Assisting the OIC of RBEP (Washington) in the performance of his duties are the relay section chief (civilian administrative assistant), the relay station watch officer, and these supervisors: relay station, sending, service and monitor, and tape factory.

The relay station watch officer, who is a Chief Teleman, is directly under the OIC. He exercises military control of the relay room during the OIC's absence. In addition, he is the receiving supervisor.

RBEP relays over one million messages per month, and to do this successfully requires many highly trained specialists. There are approximately 30 persons on each watch, plus additional personnel during peak load periods, to operate approximately 140 incoming and outgoing circuits together with their automatic numbering and monitoring equipments.

EQUIPMENT

There are several types of equipment in use at RBEP. The principal types are: (1) equipment leased from A. T. & T., (2) the ex-Postal equipment, and (3) the package units. Some Model 15 and 19 teletypewriters are employed for page copy monitors and for the preparation of service messages.

The A. T. & T. leased equipment generally is used on trunk circuits. It operates at a speed of 75 w. p. m. Ex-Postal equipment is Navy-owned equipment found only at a few large relay stations. It operates at three speeds:

1. 60 w. p. m. for radio circuits.
2. 65 w. p. m. for landline circuits to distant stations.
3. 75 w. p. m. for local tape factory and tape patching units.

RECEIVING TAPE FOR RELAY

Messages are received in the relay station on typing reperforators mounted in receiving consoles which reproduce them on chadless tape. There are eight reperforators in a receiving console. Chadless tape is tape which is partially perforated and carries the printed text.

Message tapes are removed by hand from the receiving consoles. When semiautomatic equipment is used, the operator removes the tape from a console by creasing the tape and tearing it evenly at the last LTRS perforation of the message. He checks the tape quickly for legible routing indicators and station serial numbers. He also scans the remainder of the tape quickly for garbles and mutilations.

If the tape is correct, the operator crosses off the proper number on the received numbers sheet for the circuit and enters his personal sign in the S–T (sign-time) column. Each operator and supervisor at a teletype station is assigned a two-letter sign, usually his initials. No two persons at a sta-

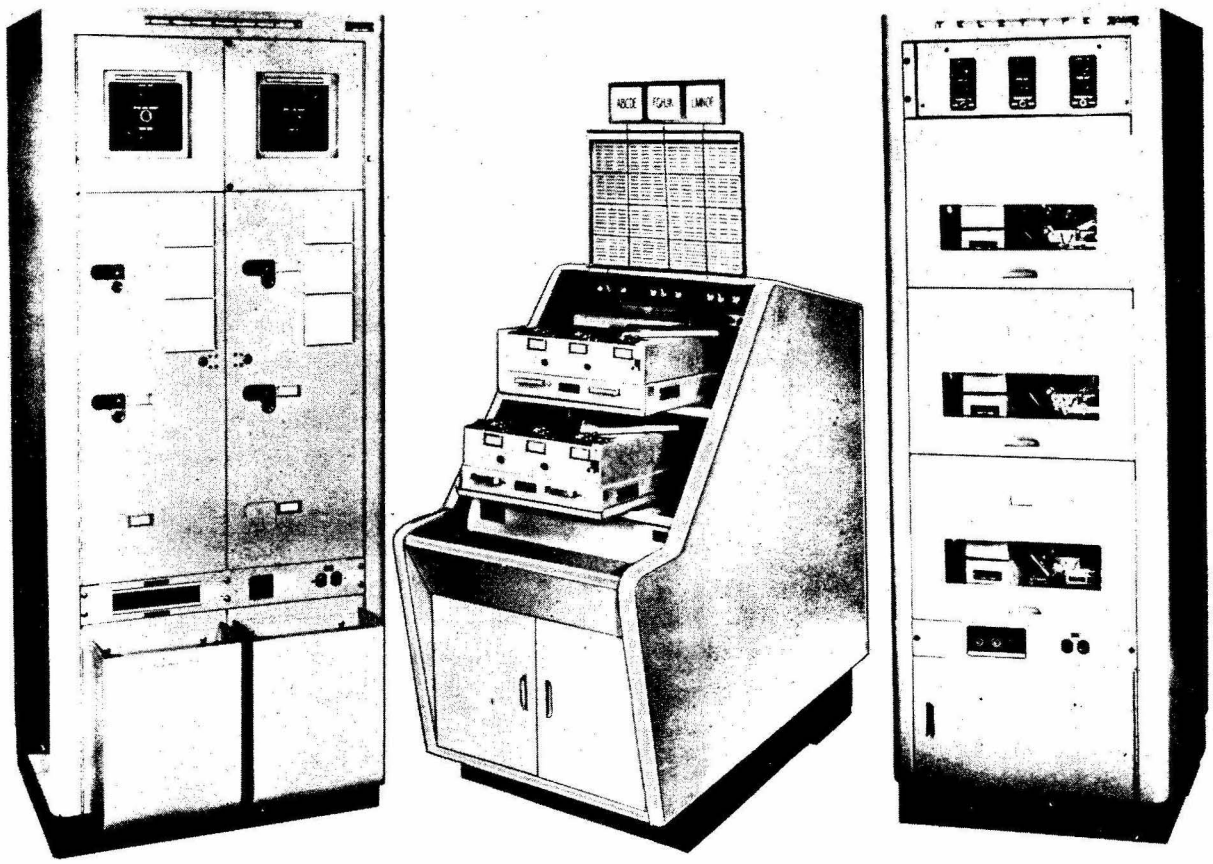


Figure 5–1.—Teletypewriter sets AN/FGC–38, 38X, 39.

tion are given the same sign, nor can the sign conflict with channel designators or prosigns.

When the tape is mutilated, garbled, without a channel number, or has been missent or misrouted, or is in any way not correct for relay, the message is passed to the service desk. Opening and closing notices, STOP and GO AHEAD (GA) notices, and other service or procedure messages, are called to the supervisor's attention after check off. The receiving operator furnishes sufficient identifying data for each tape referred to the supervisor. Operators do not question the text portion of a tape containing nongroup cipher (scrambled) text.

During normal hours of operation, after the receiving operator has removed the tape from the console, checked it, and made the proper entries in the numbers sheet, he delivers it to a tape screening position immediately ahead of the tape factory. From this point, single-address tapes are by-passed around the tape factory to a tape distribution position, where they are looped around pegs labeled for the various positions. A separate peg is provided for PRIORITY traffic. OP's and higher are handled hand-to-hand, as at any station. This procedure is necessary due to the large size and complexness of RBEP relay operations.

A multiple address message goes from the tape screening position to a tape factory. Nearly all large relay stations have tape factories. RBEP has two tape factories. No. 1 has two banks of six T-D's each, associated with two receiving con-

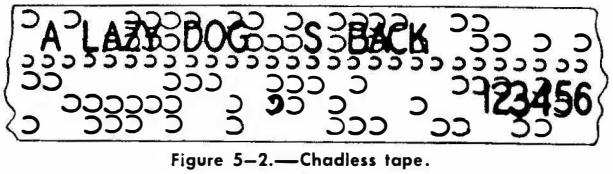


Figure 5–2.—Chadless tape.

soles containing 16 typing reperforators. No. 2 has the same arrangement of T-D's, but has one receiving console of eight typing reperforators. Either one of the tape factories can reproduce as many tapes as necessary to effect delivery of a multiple address message.

TAPE FACTORY

Tapes taken to the RBEP tape factory are logged in by running off a page copy of the heading down to and including line 3 (originator and station serial number) making a record of the channel number, station serial number, routing indicators appearing in the routing line, and the specific routing pilot when employed.

The tape factory operator determines the number of additional tapes needed and runs them off. He then encircles on each tape the routing indicator of the station to which it is to be transmitted and draws a line through the corresponding routing indicator in the log. An up-to-date channel routing guide is posted near the tape factory operator for his reference.

Figure 5–3 shows the page copy of a multiple address message originating in the COMMCEN, Guam (RBMPC). When the receiving operator in primary relay RBMP notes that it is a multiple address message, he transfers it to the tape factory operator, who determines what additional tapes are needed.

First, an explanation of the heading of the message itself. The first line that appears in the message is actually Line 2 in teletypewriter procedure. There is no Line 1 in this message as there is no specific routing pilot. Line 2 is the basic routing line and consists of the precedence prosign (Deferred) and the routing indicators of the stations that are to effect refile or delivery of the message.

In Line 3, DE is the prosign which means that this transmission is from the station which follows. RBMPC 98 is the routing indicator and the station serial number of the station (COMMCEN, Guam) originating the message tape.

NPM ZON3, NPG T NALK, and NDT T NESP are transmission instructions (Line 4) indicating that NPM (RBHPC) is to place the message on the NPM primary broadcast (RBMPC has determined that the message can be delivered to NAPN, NARL, NELT, and NORL via NPM

```
                (5SPACES) (2CR) (LF)
(LINE 2)    MM RBATC RBEPC RBHPC RBWPC                    (2CR)(LF)
(LINE 3)    DE RBMPC 98                                   (2CR)(LF)
(LINE 4)    NPM ZON3                                      (2CR)(LF)
            NPG T NALK                                    (2CR)(LF)
            NDT T NESP                                    (2CR)(LF)
(LINE 5)    M 101400Z                                     (2CR)(LF)
(LINE 6)    FM NFDR                                       (2CR)(LF)
(LINE 7)    TO NALK                                       (2CR)(LF)
            NAPN                                          (2CR)(LF)
            NARL                                          (2CR)(LF)
            NELT                                          (2CR)(LF)
            NESP                                          (2CR)(LF)
            NORL                                          (2CR)(LF)
            NUSX                                          (2CR)(LF)
(LINE 8)    INFO MUSK                                     (2CR)(LF)
(LINE 10)   GR 75                                         (2CR)(LF)
(LINE 11)   BT                                            (2CR)(LF)
(LINE 12)   TEXT                                          (2CR)(LF)
(LINE 13)   BT                                            (2CR)(LF)
(LINE 15)   10/1430Z JAN.                                 (2CR)(8LF)(4N)(12LTRS)
```

Figure 5–3.—Multiple address message.

broadcast). NFDR has already delivered to NUSX, NPG (RBWPC) is to transmit to NALK, and NDT (RBATC) is to transmit to NESP. RBEPC is the guard for MUSK, therefore neither transmission instructions nor delivery responsibility need be indicated.

RBMP relays for RBMPC, RBAT for RBATC, RBEP for RBEPC, RBHP for RBHPC, and RBWP for RBWPC. Of the four relay stations, Guam has direct circuits with Tokyo and Pearl Harbor (see fig. 2–1). The latter serves as a further relay for traffic from Guam to San Francisco and Washington. Since the master tape can be used for one of the two circuits, one additional tape is needed.

A page copy of the heading through line 3 is first run off on a page printer and associated T–D, and then the additional tape is made. With a colored pencil, the factory operator encircles RBATC on the tape to be transmitted on the RBAT circuit, and then draws a line through RBATC on the page copy. RBHPC is encircled on the other tape and lined through in the log.

When he inspects the multiple log, the factory supervisor places his sign after every routing line in which the routing was done correctly.

TRANSMITTING

The transmitting operator selects tapes from the tape holder at the transmitting position in order of their precedence. Tapes of the same precedence are selected in the order of their arrival or receipt. Tape grids are divided into three sections: red (priority), blue (routine), and gray (deferred). After selecting the tape, the operator inspects the routing indicator to ensure that the tape will be inserted in the correct transmitter.

A large relay station may employ several different types of transmitting equipment. One type is a sending bank (ex-Postal) of 12 T–D's arranged in two banks of six. A. T. & T. leased equipment has six transmitters in two banks of three. Package units have only one bank of three T–D's, two of which are normally used as tandem transmitters, and the third for automatic numbering. Tandem operation is used on circuits which normally have a heavy traffic load, that is, two T–D's are used on the same circuit. The operator loads one while the other is transmitting. The second machine automatically begins transmitting as soon as the first one completes its message transmission.

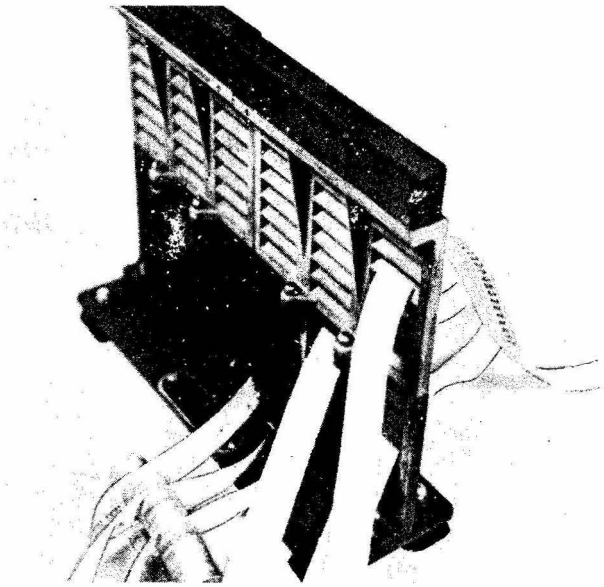


Figure 5–4.—Tape holder.

An automatic numbering machine is a T–D which carries a reel of tape which has been punched with the circuit designation and the proper consecutive channel numbers. At the start of each message the tape transmitter automatically shifts to this machine which sends the proper circuit designation and the message serial number, and then switches the keying circuit back to the message tape transmitter.

When automatic numbering equipment is used, as at RBEP, the operator begins the first tape transmission by depressing the start lever. This disengages the transmitter feed wheel. The tape is inserted under the transmitter lid, typed side up, and slid forward until the printed (2CR) (LF) at the lead end are visible in the slot on the tape gate. The operator marks an "X" on the leader end to indicate the tape has been transmitted. The start lever is released, reengaging the feed wheel and activating the automatic numbering T–D. After this T–D has sent the channel designator and serial number, the line transmitter begins sending the message.

Should the tape be worn or mutilated along the upper edge, the sixth sensing pin automatically stops the transmitter at the break in the tape. When this occurs, the supervisor is notified and

the partial transmission canceled. The tape is then retrieved, corrected, and re-sent. High precedence traffic is transmitted at once, lower precedence messages being removed from a transmitter if necessary. The TOD is penciled on the front end of FLASH and EMERGENCY tapes, which are recovered after transmission and passed to the supervisor's desk.

As a transmission is completed on a semiautomatic channel, the sixth sensing pin rises and stops the transmitter. Sending banks are equipped with tape bins which accept the sent tapes after they clear the transmitter. The bins are emptied as necessary and tapes placed in burn bags to be removed and collected at the end of the watch. On circuits where monitors are not used, tapes are rolled into a tight wad and left in the bottom of the bin until the midwatch cleanup.

MONITORING TRAFFIC

RBEP and other stations which employ monitor equipment retain a record of sent traffic on reels of chadless tape. A typing reperforator is associated with each circuit, recording each word and character transmitted. The time and date are automatically stamped on the tape at frequent intervals. This furnishes the time of transmission for traffic. Monitor tapes are used for reruns when necessary and for conducting tracer procedure.

Where monitor equipment is not used, a record of outgoing traffic is kept on sent number sheets. The transmitting operator crosses off the number on the sent sheet corresponding to the channel number assigned to the transmission. He enters the station serial number and the incoming channel number of the tape opposite the number crossed off, and his sign.

CORRECTIONS

Corrections to messages transmitted on teletypewriter circuits are obtained by means of procedure or service messages. Either type may be used by communication personnel when the subject concerns traffic handling, but only service messages are used for matters relating to communication facilities or circuit conditions. All questions concerning a message which contains more than one error are incorporated into one service or procedure message.

Procedure and Service Messages

A procedure message is one in which the text contains only prosigns, operating signals, address designations, identification of messages, parts of messages, and amplifying data as required. It always has a precedence prosign, transmission identification, and filing time.

Service messages are prepared and transmitted in plaindress, abbreviated plaindress, or codress procedure. They generally concern messages originated at, destined to, or refiled by, the station originating the service message. They normally are assigned a precedence equal to that of the message to which they refer.

SERVICE AND MONITOR OPERATIONS

As was noted earlier, at RBEP a received message which is incorrect in any respect for relay is referred to service and monitor personnel. The same is true of any message addressed to RBEP concerning corrections to a message relayed by it.

Service operations of the relay station are under the direction of the service and monitor supervisor. He is responsible for the disposition of procedure and service messages, for service investigations, and for the operation of the automatic numbering systems.

The service which is given to an incorrect incoming message depends on the type of error it contains. Every effort is made at the desk to eliminate the difficulty without sending a request for a correction; for example, clearing up garbled or overlined tapes; inserting line feeds and carriage returns, or eliminating false carriage returns and line feeds.

CORRECTION REQUESTS

When the tape cannot be corrected locally, a correction request is prepared by the service operator. When it is a matter of omitted portions, incorrect group counts, nonmechanical errors, incorrect multiple call indicators, etc., a service or procedure message is addressed to the station which originated the message. If the message has a discrepancy in channel numbers, unintelligible serial numbers, mutilations or garbles caused by mechanical difficulties, or is incomplete, a correction request is sent to the station from which the transmission was received, or to the originating station.

A correction request sent to a relay station refers to the channel number and further identifying or explanatory data as needed. When sent to an originating station, the request always refers to the station serial number and further data as necessary. In the event that both the channel number and the station serial number are in error, the message is identified by quoting its heading and, if necessary, a portion of the text.

Page copies are prepared for outgoing correction requests and replies.

CORRECTION REPLIES

If possible, a correction which has been requested by another station is made by means of a service or procedure message, otherwise the message is serviced and retransmitted. The filing time (for example, 16/1307Z JUN/RBEP) is placed at the end of a procedure message, except when it is the pilot for a retransmitted message. Pilots preceding a retransmitted message are separated from it by three carriage returns (3CR) and 3 line feeds (3LF).

Retransmissions

The procedure for handling retransmissions depends on whether the channel over which the original message was sent is monitored, and on the arrangement of the monitor equipment. If the circuit is monitored, the initial steps are the same, regardless of the equipment's arrangement. The monitor tape is examined for completeness and correctness, and if found to be complete and correct a pilot is prepared for the retransmission. From there on, the procedure varies.

At stations where there are line transmitters at the monitor reel position, the tape is left on the reel. The transmitter is stopped at the completion of its present transmission, and a cross marked on the tape immediately following the message to indicate where transmission is to be resumed. The pilot is then transmitted through the monitor position line transmitter, followed by the message tape to be retransmitted. Regular transmission is then resumed at the place marked by the cross. The service operator enters the channel number and the reason for the retransmission, the time, and his sign in the service and monitor log. RBEP employs portable transmitters, which are rolled up to the monitor positions when re-runs are necessary.

When a station has no fixed or portable transmitter at the monitor reel position, the message tape is removed from the reel and transferred to a bank transmitter. The message pilot is placed in the bank transmitter immediately ahead of the message.

After the retransmission, the tape is returned to the reel spliced back in its original position. The operator makes a log entry which includes the number of the retransmitted message, the reason, the channel number of the pilot, the time, and his sign.

CANCELING TRANSMISSIONS

Messages may be canceled only by the originator, but transmissions may be canceled by stations under certain conditions. A relay station may cancel an incomplete transmission resulting from mechanical difficulties. This is done by a procedure message quoting the channel number and station serial number appearing in the transmission canceled. The same channel number is not used on a succeeding transmission. When it is necessary to inform a station to take no forwarding action on a completed transmission which has been questioned, the transmission is canceled the same way as indicated above.

It is the responsibility of the station canceling a transmission to ensure further handling of the message, and to keep a record of cancellations.

SUBJECT TO CORRECTION

Corrections are requested for garbled or mutilated tapes which the service desk cannot correct. Messages awaiting corrections are not delayed more than a reasonable period (normally one hour) consistent with backlog and circuit conditions. If excessive delay is encountered in obtaining a correction, the tape is forwarded "subject to correction." Lower precedence tapes are not relayed if garbled or mutilated to the extent that their information is apparently valueless, nor is a message forwarded which has garbles or mutilations in the heading which will cause misroutes or nondeliveries.

After forwarding a message which is subject to correction, the relay station requests the preceding station to send the correction directly to the station to which the message was relayed subject to correction. If the preceding station is unable to furnish the correction it either passes the request to the next station in the line or directly to the station originating the tape.

When corrections are not immediately available, tapes which have a precedence of ● or higher are relayed without delay to the called station "subject to correction."

Although tapes subject to correction are not normally forwarded between service networks, at times this is necessary. In such cases, the transfer station of the service network making the transfer is responsible for furnishing corrections to the other service network at the point of transfer. For example, RBEP has a circuit with RUEP, the Army command and administrative network primary relay station in Washington. This is a transfer point between the Naval Teletypewriter and Tape Relay Network and the Army system. If RBEP forwards a message subject to correction to RUEP, RBEP is responsible for obtaining and furnishing RUEP with the correction.

MISSENTS, MISROUTES, AND SUSDUPES

Missent messages are messages with correct routing indicators but placed on wrong channels. Here is an example of how a missent is handled. RBEP receives word that RBEPH has received a message intended for RBEPY. The service operator obtains the monitor tape of the referenced message and sends a "cancel the transmission" to RBEPH. He then has the tape retransmitted over the correct circuit to RBEPY. When RBEP receives a missent message, it relays the message to the correct station over the most direct route. If it is a multiple address message, the sending station is notified to protect its local deliveries.

A misrouted message is one which bears incorrect routing indicators. Usually this is an error made at the originating stations. The station discovering the error prepares a pilot consisting of the appropriate precedence, the routing indicator of the station to effect delivery, the operating signal ZOV, the routing indicators of the station preparing the pilot, and appropriate transmission instructions (if a multiple address message). The station rerouting the message notifies the station originating the error of the action taken and the correct routing.

When the relay station has no conclusive evidence that a message was previously transmitted, but suspects that it has been, the message is transmitted with a pilot indicating it is a suspected duplicate (SUSDUPE). A typical SUSDUPE is a tape found on the floor marked with an X for which there is no record on the sent number sheets or a copy on the monitor reel. The station which receives a message with a SUSDUPE pilot is responsible for preventing duplicate delivery.

DISCREPANCIES IN CHANNEL NUMBERS

Discrepancies in channel and station serial numbers are reported, with sufficient message identifying data, to the preceding station.

Tapes With the Same Channel Number

When the relay station receives a report from another station that two transmissions were received with the same channel number, an examination is made of the monitor reel. If two tapes are found bearing the same channel number, a correction message is sent indicating the proper number for the second tape.

Tapes With Two Channel Numbers

The procedure for correcting a message tape sent with two channel numbers depends on where the numbers appear on the tape. If both numbers are at the leader end of the tape, a check is made to see if any transmission has been lost. If none has been lost, the other station is advised to release the message under the higher of the two numbers and to blank the lower number. If, however, a transmission has been lost, it is retransmitted immediately.

When there are two channel numbers, separated by portions of the message, the other station is advised to cancel the transmission under the lower number and to blank the higher number. The message tape is corrected and resent under a new channel number.

NUMBERS ARE BLANKED, NEVER CANCELED; TRANSMISSIONS ARE CANCELED, NEVER BLANKED.

No Channel Number

When the relay station receives a report that it has transmitted a message without a channel number, an examination is made of the monitor reel. A correction message is sent, either indicating the proper number for the tape or canceling the transmission.

Open Numbers

In the event that the relay station receives a report of an open number (a number not crossed off on the received number sheet) from another station, the service operator obtains the transmission made under that number and retransmits it, preceding it with a pilot. If the monitor reel indicates that no transmission was made under the reported "open number," he sends a wire blanking the number. Should a number appear on the monitor reel, followed by a portion of unperforated tape, the original transmitted tapes are retrieved and compared with the monitor reel. When a message tape is found which does not appear on the monitor tape, the number reported as open is blanked. The message tape is sent under a new channel number as a suspected duplicate.

OPENING AND CLOSING CHANNELS

The method of opening or reestablishing communications on a channel can best be explained with an example, say a channel from RBEP to RBEK. RBEP sends an opening notice to RBEK. Traffic is not transmitted until a Go Ahead (GA) notice is received. If such a notice is not received in five minutes, another opening notice is sent. If no GA notice is received in response to the second opening notice, the calling station supervisor contacts the called station by other means to discover the difficulty. GA notices are transmitted via the channel being opened.

When for some reason the station (RBEP) wishes another station (RBEK) to stop sending on a channel, the supervisor has a stop notice transmitted. In the meantime he prepares and gives to the transmitting operator a GA notice containing the next number with which RBEK should resume transmission on that channel. This GA notice is transmitted as soon as the channel is ready for service. At RBEK the supervisor has the tape pulled back to the number indicated in the GA notice, if automatic numbers and line transmitters are employed. He then sends a pilot to precede the rerun tape.

A closing notice is initiated by the closing station when a channel is to be shut down. When both sending and receiving channels are being shut down, closing notices are exchanged. Each such notice is preceded by a channel number which is the final number for that channel. The reply to the closing notice is sent after the number sheet is in order and the number comparison tallies with it.

SUPERVISORS

Supervisory duties may be handled by one man, as is the case at many relay stations, or by several men, as at RBEP. At RBEP the relay station supervisor is assisted by several supervisors: sending, receiving, service and monitor, radio, and tape factory. Here is how supervisory duties are assigned at RBEP.

RELAY STATION SUPERVISOR

The relay station supervisor works in close coordination with the radio station watch officer, and is charged with the operation of all circuits and equipment and the movement of traffic through the station. He assigns personnel to sending and receiving positions. The relay supervisor keeps informed of current operating instructions and changes to them. When any unusual event occurs he notifies, in turn, the OIC, the radio station watch officer, and the section chief, making reports as required. He maintains the station log.

He records in the station log the opening and closing of circuits, and any pertinent information regarding the relay supervisor's watch such as defective circuits, equipment casualties, or abnormal delays to traffic.

Personnel Assignments

When making personnel assignments the relay supervisor must consider the necessity for rotating personnel between sending and receiving positions, and the variations in the traffic load. Because it is most important that incoming tapes be removed, separated, and distributed to sending grids, assignments to receiving positions take precedence. Qualified operators are normally rotated between

sending and receiving positions at least every 2 hours. During heavy load periods when more operators are assigned to receiving than sending positions, the rotation is made every hour.

The relay station supervisor oversees when they are opened or closed. He also supervises the closing out of channel numbers and the preparation of the Traffic Load Study Report at 2400 GMT daily.

Number Sheets

When a received number sheet has been completed, it is replaced by another sheet with the headings properly filled in. The completed sheet is inspected for irregularities, which are corrected. The supervisor then enters his sign and the time in the space provided. It is then held at the supervisor's position.

New number sheets for receiving positions are furnished not later than 2345 GMT. Open numbers appearing in the sheets are accounted for, if possible, prior to 2345. At 2400 GMT the supervisor records the last number sent from each channel on a form number tabulation sheet. The numbers are set back to 1 and traffic is resumed immediately. The received number sheets are inspected by the supervisor for open numbers. If none are found and the other station has begun a new sequence, the last old number is entered on the number tabulation sheet. All receiving channels are checked in this manner.

RECEIVED MESSAGE RECORD OPNAV FORM-5216-17 (REV. 11-51)

14 Feb 1949 (DATE) BWKD (CIRCUIT)

NR	S - T	NR	S - T	NR	S - T	NR	S - T
1	1WP comp 00	16	C.W.	31		46	
2	W.P.	17	C.W.	32		47	
3	W.P.	18	1630	33		48	
4	W.P.	19	W.X.	34		49	
5	W.P.	20	W.X.	35		50	
6	1755 30	21	J.P.	36		51	
7	O.E.	22	W.X.	37		52	
8	O.E.	23	W.X.	38		53	
9	O.E.	24	comp W.X.	39		54	
10	O.E.	25	Final	40		55	
11	O.E.	26		41		56	
12	1800	27		42		57	
13	C.W.	28		43		58	
14	C.W.	29		44		59	
15	C.W.	30		45		60	

Figure 5–5.—Received number sheets.

When there is an open number, a rerun or transmission cancellation notice is obtained before the number comparison is transmitted. The received number sheets and the number tabulation sheets are retained at the supervisor's position until the final number comparison wire has been received from the other station. This notice is verified by checking against the numbers on the tabulation sheet. If the received comparison notice does not tally with the tabulation sheet, supervisory wires are exchanged until it does.

Received number sheets are stapled to corresponding comparison notices and filed with the tabulation sheet.

SENDING SUPERVISOR

Supervision of the sending operations of the relay station is the responsibility of the sending supervisor. He instructs operators in the correct method of inserting tapes and the operation of the start-lock lever and the numbers release button.

The sending supervisor sees that number comparisons are sent at the designated times, that "stop" and "go" messages are complied with, that sent message cards for circuits not equipped with monitors are correctly and legibly logged, that test tapes (standard type) are sent out on all continuous circuits daily between 0800 and 1200 local time, and that retransmitted messages do not pick up a new number. He watches for faulty operation of sending, automatic numbering, and monitoring equipment. If such occurs, he reports it to the relay supervisor and the maintenance man.

He assists the relay supervisor in the preparation of general message check-off sheets, and of page copies of messages destinated for certain bureaus. He also assists him in the preparation of the Traffic Load Study Report, in closing out channel numbers, and in the opening and closing of over-flow and part-time circuits.

Number Comparisons

Number comparisons are sent as a check for possible circuit interruption when no traffic has been received over a circuit or channel for a period of 30 minutes. An example of a number comparison follows:

(5 SPACES) (2CR) (LF)
RR RBER (2CR) (LF)

TRAFFIC LOAD STUDY REPORT

NTX RELAY CENTER--BEP DATE: 16 JAN. 1949

TRUNK CIRCUITS

CIRCUIT	CKT NR.	SENT	RECD.
BEC	7905	67	38
BEF A	7903	42	31
B	7921	—	—
BEG A	7900	186	181
B	7914	—	—
BEJ	RADIO	67	153
BEK A	7901	195	138
B	7915	—	—
BER	7909	112	150
BFM A	RADIO	109	134
B	"	—	—
BLP	"	67	52
BHP A	"	0	0
B	"	76	100
C	"	0	74
BWP A	7907	107	216
C	RADIO	—	—
D	"	—	—
BEPA	"	33	58
BEPB	"	—	—
BEPI	"	18	21
BEPM	7906	—	—
BEPS	7925	—	—
BEFD		—	—
JEP	AAF	56	69
UEP	ARMY	69	85
WWD	WUTELCO	12	14
	TOTAL	1216	1514

LOCAL CIRCUITS

CIRCUIT	LOCATION	SENT	RECD.
BEPC A	ROOM CKT	202	133
B	" "	46	75
C	" "	153	23
D	" "	—	14
BEPD	BUSHIPS	—	—
BEPE	BUAER	—	—
BEPG	BUDOCKS	—	—
BEPH A	BUPERS	—	—
B	"	—	—
BEPF	MRC	147	48
BEPK	SPEC. UNIT	12	13
BEPL A	BUSANDA	—	—
B	"	—	—
BEPN	COMM ANX	125	24
BEPO	BUORD	—	—
BEPP	PAX RIV.	87	33
BEPO	MARCORPS	63	13
BEPT	BUMED	—	—
BEPW	PENTAGON	50	13
BEPX	TWX	18	17
BEPY	GUN FACT	35	46
BEPJ	COAST GD.	63	22
BEPRS	STATE DEPT	47	36
BEPRU	ED. UNIT	—	13
BEPUA	TRSY	—	—
BEPUB	FED. SUP.	—	—
BEPV	AC. ANPL.	15	16
BEPRB	BUMED RC	—	—
	TOTAL	1063	539

GRAND TOTAL: 4,332

TOTAL SENT: 2279

TOTAL RECD: 2053

Figure 5–6.—Traffic load study report.

DE RBEM (2CR) (LF)
ZID (1) 151 (2CR) (LF)
03/1605Z (2CR) (8LF) (4N's) (12 LTR)

Reply

(5 SPACES) (2CR) (LF)
RR RBEM (2CR) (LF)
DE RBER (2CR) (LF)
ZIC (1) 151 (2CR) (LF)
03/1605Z (2CR) (8LF) (4N's) (12 LTR)

Test Tapes

Test tapes are transmitted on a circuit or channel which has just been opened and prior to transmission of traffic. Here is an example of the use of the standard test tape:

(5 SPACES) (2CR) (LF)
RR RBWP (2CR) (LF)
DE RBWD (2CR) (LF)

TEST THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG 1234567890 (2CR) (LF)

RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY

INT ZHN K (2CR) (8LF) (4N's) (12LTRS)

When RBWP determines that operation is satisfactory for the reception of traffic, it makes the following transmission:

(5 SPACES) (2CR) (LF)
RR RBWD (2CR) (LF)
DE RBWP (2CR) (LF)
ZHN 1 K (2CR) (8LF) (4N's) (12 LTRS)

Stop and GA Notices

When it is necessary for a station to interrupt a transmission, a stop notice is sent. As soon as the reason for the interruption has been remedied, the station sends a go ahead (GA) notice. The GA notice contains the number of the message with which the distant station is to resume transmission. The number release button on the transmitter is used whenever stop and GA notices are sent, to prevent the transmission from picking up an automatic channel number. This is also done whenever a message is retransmitted.

Sending positions which are not equipped with monitor equipment are provided with sent message cards. For each message transmitted from the position, the sending operator enters on this card the outgoing number, the incoming channel number, and his sign.

[1] Channel designation, when required.

SERVICE AND MONITOR SUPERVISOR

Service operations of the relay room are under the direction of the service and monitor supervisor. Service operations include:

1. Locating missent, misrouted, or lost messages and transmitting them correctly.
2. Retransmitting messages which were not delivered to the adee due to equipment failures.
3. Preparing new message tapes when existing tapes result in faulty transmission.
4. Clearing up garbled and overlined message tapes.
5. Investigating claims of delay and nondelivery of messages handled by RBEP.
6. Making and checking numbering tapes.
7. Investigating and correcting failures of automatic numbering equipment.
8. Directing the recording and identification of monitor records, including tape file boxes.

TAPE FACTORY SUPERVISOR

In addition to the responsibility for the operation of the tape factory, the tape factory supervisor also operates, or supervises the operation of, the joint circuits to the Army and Air Force. To perform his duties the tape factory supervisor must have a complete knowledge of the circuits which comprise the NTX and joint tape relay systems, of changes to the organization of those systems, and of routing doctrine and procedure.

The tape factory supervisor ensures that tests are run on factory channels every two hours, that a page copy of every multiple call routing line is run off on the multiple log, and that the actual number of routing indicators in the routing line corresponds with the multiple indicator. He inspects the multiple log, corrects tapes with garbled, doubtful, or duplicated routing indicators, and routes them. When necessary, such tapes are retrieved and passed to the service desk.

The test tape which is run on tape factory channels is the same standard type as described previously. Tests are necessary as a check on tape factory equipment operation.

RECEIVING SUPERVISOR

As receiving supervisor, the Relay Station Watch Officer is responsible for operation of the receiving positions. He sees that tapes are removed from the consoles as rapidly as possible. He checks the received message cards for completeness of required data, such as circuit designation and date, and inspects and endorses the cards every half hour, encircling any open numbers. He reports open numbers to the service desk. If a circuit is temporarily secured, he places the card upside down in the card holder until the circuit is reopened. He supervises the handling of stop and GA notices, and sees that numbers comparisons are sent.

The receiving supervisor also instructs personnel in the correct handling of tapes, the checking of channel numbers, identification of TWX tapes and their routing, the special handling given O or higher precedence messages, and the routing of messages.

Associated Communication Facilities

The radio transmitting and receiving stations which support a primary or major communication center are normally separate and independent from it, as is the Registered Publication Issuing Office (RPIO) and, where established, a Navy Post Office for bulk distribution and dispatch of Navy mail.

Most of the billets at these facilities require specialized personnel. For that reason, the RPIO will not be discussed in this text. Details concerning the operation of an RPIO will be found in the effective edition of the *Registered Publication Manual*. The radio stations are treated briefly in this section. Bulk distribution and dispatch mail is discussed in chapter 9.

TRANSMITTING STATION

The transmitting station for a large COMMCEN may have 60 or more transmitters, varying in size from less than 1-kw output to 500-kw output. The number of officers and men at a transmitting station varies greatly, even between those which serve primary COMMCEN's. The number of personnel is normally not as large as that for a receiving station, or at the COMMCEN itself. A transmitting station's personnel do not handle traffic. Their primary function is the operation and maintenance of the transmitters.

In discussing the COMMCEN it was noted that circuits requiring radio transmission go to the radio stations either by landline or VHF radio link. Instructions concerning transmitting frequencies are passed from the control center by telephone to the transmitter personnel. A log listing the circuits, frequencies, transmitters in use, changes in any of these, outages, and other pertinent data is maintained at the transmitting station. The COMMCEN is notified by telephone of an outage, its expected duration, the reason for it, and other necessary information.

EQUIPMENT

To handle high power low frequency broadcasts, and other high power broadcasts or point-to-point transmissions, there are a number of equipments designed for shore radio stations. Some of these are the RBQ link receiver, the TEF single sideband transmitter, the FSB and FSD frequency shift keyers, and the TEC high frequency, high power transmitters for shore radiotelegraph communication. There is also a low frequency, high power transmitter of special design for low frequency broadcasts.

The RBQ is the receiver used in conjunction with the TDG transmitter. The frequency range of these equipments is in the VHF band. At the transmitting station the RBQ is used to receive signals originating in the COMMCEN and transmitted by a TDG located either at a radio link station or at the COMMCEN. The signals may be multichannel telegraph signals using voice frequency tones, voice signals, or a combination of voice and telegraph signals. As the audio frequency range of the TDG–RBQ channel (300–10,000 cycles) is approximately the same as that of the UN carrier control system, it is frequently used with the UN.

The TEF is a high frequency transmitter used for long distance (primarily transoceanic) point-to-point multichannel tone communications. It is the equipment used to transmit signals from the UP (single sideband) equipment in the COMMCEN. The TEF provides for two transmission bands extending from 100–6,000 cycles on the opposite sides of a reduced carrier frequency.

The FSB is a frequency shift keyer unit for shore radio installations. A frequency shift keyer shifts a constant amplitude carrier between two extreme fixed frequencies representing the marking and spacing conditions of the telegraph code, or in the case of radio facsimile, by a chosen variation of frequencies between two fixed frequency points. Another type of frequency shift keyer which may be found at a shore station is the FSD keyer for facsimile.

Both the TEB and TEC are high frequency high power transmitters for radiotelegraph transmission for shore-to-ship or point-to-point communications. Of the two, the TEC has a greater power output, 40 kw. The equipment has an internal water-cooling unit as well as ventilating motors and blowers, and weighs 37,000 pounds. A frequency shift keyer or a single sideband transmitter may be used in conjunction with it.

NEW RADIO STATION

As large as the TEC is, the space and the antenna arrangement which it requires are relatively small and simple when compared to the 500-kw and 1,000-kw VLF transmitters. An example of the establishment required by the latter is the new Navy radio station in the Jim Creek Valley, Arlington, Washington, which employs a 1,000-kw (dual 500-kw) transmitter.

The transmitter at the Jim Creek Station is housed in an air conditioned, windowless, two-story building of reenforced concrete. The building is both roofed and lined with copper sheet.

The transmitter room is on the top deck, with the equipment arranged in a horseshoe formation. On each side is a 500-kw transmitter, and across the base are the control panel and meters for switchgear, water temperature and flow, pressure pumps, and other auxiliary equipment. In the center of the horseshoe are control console, master oscillator monitor, tone-keying equipment, and the operator's desk.

On the bottom deck are the power transformers, pumps, distilled water tanks, heat exchangers, switchgear, telephone cable terminals, and shops.

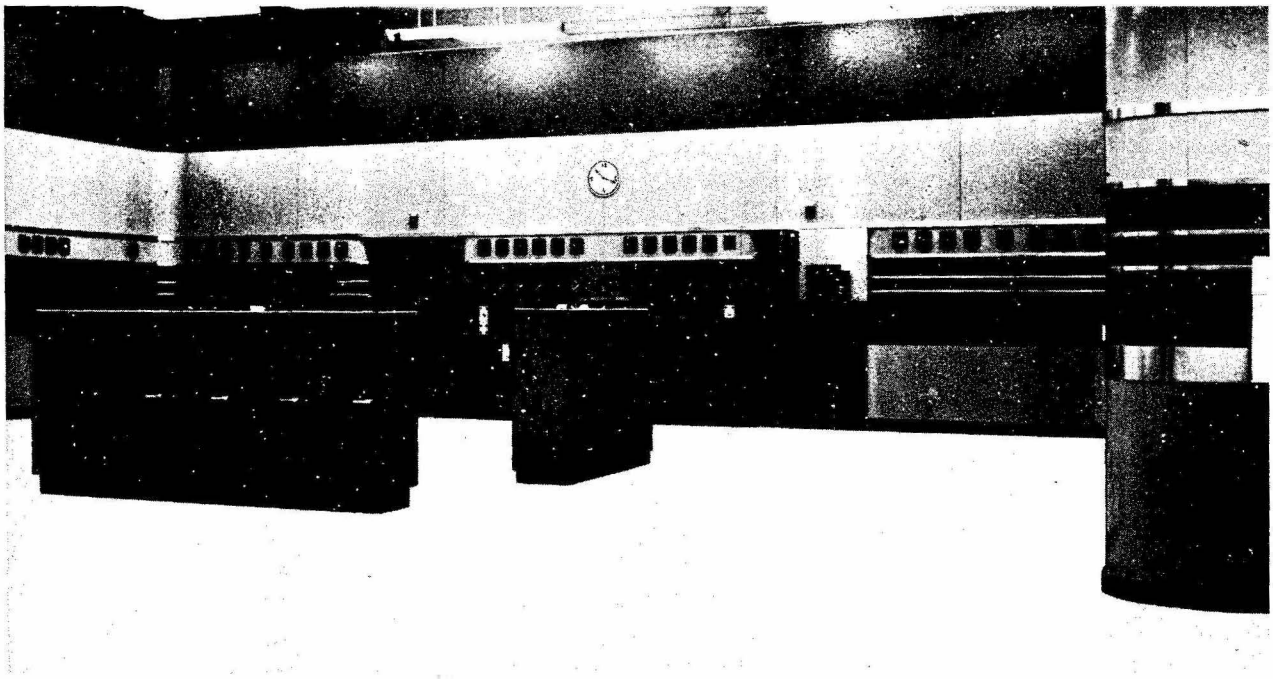


Figure 5–7.—Transmitting station, Arlington, Washington.

To the rear of the transmitter and machinery spaces are two rooms (helix houses) 75 feet square and 60 feet high which house the antenna tuning apparatus.

The antenna for this transmitter is composed of ten catenary spans strung back and forth across the Jim Creek Valley between twelve support towers. The support towers are placed along two mountain ridges, six towers to a ridge. The length of the catenaries varies from 5,640 feet to 8,700 feet, with the radiating portion being approximately 5,000 feet. Radiators of the T types have vertical cables averaging 1,200 feet in length suspended from the midpoints of each span. To furnish the proper ground for this system there are copper wires radiating out 2,700 feet from the transmitter building.

An antenna feed bus, 26 inches in diameter, runs from each helix house, connecting one half of the transmitter to five down leads through feeder spans. In this way, each half of the transmitter drives five spans.

Radio Receiving Station

Radio receiving stations normally are located at some distance from the COMMCEN and from the radio transmitting station. They are placed where there will be a minimum of electronic interference.

HANDLING TRAFFIC

In general, incoming traffic is handled either by copying and relaying to the COMMCEN, as in the case of the ship-to-shore CW or RATT circuits, or by piping directly from the receiver to the COMMCEN, as in the case of the high-speed point-to-point radio circuits.

Primary Ship-To-Shore Circuit

The radio receiving stations of most primary COMMCEN's maintain a continuous guard on the primary ship-to-shore circuit frequencies. Operators at the shore stations answer calls on the calling frequency, keying transmitters at the transmitting station by means of remote control.

Ship-Shore RATT

The shore station guards ship-to-shore RATT circuits during the required periods or when requested. When the ship is to transmit a message during the regular RATT period, it first puts on a call tape for 30 seconds, followed by its message. At times other than the assigned RATT period, the ship calls the shore station on the primary ship-shore CW circuit and the shore station designates a frequency to be used.

At the shore station, ship-to-shore RATT is usually received on a Model 19 teletypewriter. The page copy made by this equipment is kept for the station file, and the tape is fed into a T–D to relay the message by direct wire to the COMMCEN. A typing reperforator is used to make a tape at CW ship-to-shore traffic from the receiving operator's copy and the tape is fed into a T–D.

Messages forwarded to the COMMCEN are relayed exactly as they are received, with the exception that they are preceded by a station serial number assigned by the radio station. As each message is received at the COMMCEN, the number is checked out on a received numbers sheet.

The radio receiving station for a primary COMMCEN receives the point-to-point radio signals and pipes them directly to the COMMCEN, either by landline or by UN carrier control system. This is also done for both point-to-point and ship-to-shore radio facsimile traffic. The COMMCEN notifies the radio receiving station by a UN voice channel whenever frequencies are to be shifted on point-to-point circuits.

SPECIAL FUNCTIONS

Many of the radio receiving stations have facilities for special operations such as communication security. A radio receiving station performing communication security functions may do any or all of the following:

1. Circuit monitoring for transmission security.
2. Cryptomonitoring for crypto security.
3. Radio frequency measuring for detecting spurious emissions and off-frequency interference to or from adjacent channels.
4. Study and analysis to aid in detecting and correcting security weaknesses in naval communications.
5. Initiation of measures leading to improvement.

6. Furnishing data on circuit loads, traffic, and circuit conditions to OPNAV and appropriate commands, as the basis for corrective action.
7. Implementing special communication measures as directed by CNO.
8. Making communication security training visits to naval commands and activities.

EQUIPMENT

It requires over a hundred receivers to cover all the circuits which a large radio receiving station works. Some of these are types found only at shore stations, for example, the AN/FRR radio teletype receiver, the RDM diversity communication receiver, the REA single sideband receiver, the RBP and RCP point-to-point diversity radio receivers, and the TDG and RBQ radio communication control link VHF equipment. In addition, there are many of the same types of receivers that are found aboard ship, such as the RBA, RBB, and RBC.

Here's a brief description of some of the shore receivers.

The *AN/FRR-3* (4-23 mcs) employs two identical receivers operating from separate antennas. The audio output of both receivers is combined into one audio output which actuates the teletype terminal equipment.

An *RDM* diversity communication receiver, which has a frequency range of 535-32,000 kcs, includes three complete radio receivers. The RDM uses an arrangement of three antennas erected at the vertices of an equilateral triangle, in what is known as the space diversity system of reception. Signals induced in antennas which are separated by several wave lengths, preferably 1,000 feet, do not fade simultaneously. Each antenna is connected to one of the RDM's receivers. A tone keyer electronically selects the strongest output signal and suppresses the output of the other two. The signal selected has the best signal to noise ratio for any combination of operating conditions.

The *REA* is a complete single sideband reduced carrier, HF receiver of the triple detection type, capable of twin-channel operation. The receivers have beat oscillators which convert the "mark" and "space" incoming signals to two audio frequencies. These tones are amplified and fed into the teletypewriter terminal (UP) equipment which filters, amplifies, limits, and rectifies the individual tones. The rectified direct current pulses energize the mark or space windings in a polar relay which in turn operates the teletype unit.

The *RBP* is another receiver using the space diversity system of antennas but which operates in a somewhat different manner than the RDM. It contains two separate identical receivers.

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CHAPTER 6

ADVANCED BASE COMMUNICATIONS

Most advanced bases are joint activities of the Army, Navy, and Air Force, or any two of these services, operated under a single base commander. The base commander usually represents the service which has the dominant interest in the base activity. Located outside the zone of the interior, and in or near forward areas, the primary mission of the advanced base is to support the various wartime operations of the armed forces. Advanced bases are established for direct support of combat units after declaration of an emergency, or upon mobilization.

There are several general types of these bases, the type being determined by the reason for which the base is established. Advanced bases are established (1) to hold threatened strategic areas; (2) as a part of, or to protect, a line of communication or supply; or (3) to mount or support direct offensive operations. Some bases may be established as the result of a combination of the above reasons.

The mission of the advanced naval base is to support naval units operating in advanced areas. It is usually a unit within a system of bases in an area. The bases are mutually supporting and are under the jurisdiction of a theater or area commander, who is responsible for coordinating operations within his area or theater.

Planning a Base

When the Joint Chiefs of Staff decide upon a military operation, or a series of operations, specific missions leading to the accomplishment of the over-all objective are assigned to the respective area or theater commanders concerned. In turn, these commanders translate their missions in terms of ground, naval, and air forces, and of the means necessary for the support of such forces.

With these matters in mind, the area, theater, or (in some cases) fleet commander decides the type of base required. If he is a naval commander, he will consult the Catalog of Advanced Base Functional Components (OPNAV Instruction 04040.23) and other publications when planning the base.

FUNCTIONAL COMPONENTS

The functional component is a grouping of personnel and/or material designed to perform one of the specific tasks of an advanced base. Such a component contains the technical personnel and technical equipment necessary for the performance of its task, including (as pertinent): workshops, housing, vehicles, boats, office equipment, and a 30–90 day supply of parts for equipment. An advanced base is a unit which consists of 50 or 60 functional components.

Code Numbers

A functional component is given a name which indicates its function, and an unclassified code number, consisting of a letter and number combination. The code numbers for communication components begin with the letter C.

Logistic Estimate

From the Advanced Base Initial Outfitting List (abridged), which contains a list of men and material for each functional component, the commander will make a logistic estimate and submit it to the Chief of Naval Operations. This estimate will include the components required and the dates upon which they will be needed. CNO will have been planning the base independently of the planning of the area or theater commander. On the basis of this planning, and in conjunction with the logistic estimate submitted by the area or theater commander, CNO issues directives for the

assembly of the type of advanced base required. Bases are assembled as units having identifying type names. For example, medium size bases are LIONS, small bases are CUBS, air stations are ACORNS.

On the basis of a CNO directive, the chiefs of the interested technical bureaus issue their assembly directives to the branches responsible for assembling components. Such directives include the information necessary to assemble the personnel and material at a port of embarkation for a specific shipping date.

Component's OIC

The officer-in-charge of an advanced base functional component is selected by BuPers. Once an officer has been notified by BuPers of his selection as an OIC of a component, he will have no spare time if he is to perform his duties adequately. There is a mass of detail with which he must become thoroughly familiar. This includes such information as (1) the mission of his component, (2) the features of the area in which the base is to be established, (3) the capabilities and limitations of the men assigned to the component, and (4) the material which belongs to the component.

Usually, component OIC's will not be told the exact destination of the unit. They probably will know the general area in which the base will be established. The OIC should study maps and reports on the region, and interview anyone from whom information may be obtained. He should know all that he can about the area's climate, and topography, and the languages and customs of the people. The more he knows about these conditions, the better off he will be when he arrives there.

Personnel

Although the OIC of a component will be given the personnel records of the men assigned to him, he should become acquainted with them personally. Personnel should be screened and organized according to experience and temperament.

Mission

The CO of an advanced naval base unit gives the OIC's a thorough briefing on the missions of the components. However, the OIC's should exercise initiative in obtaining further information. Each OIC should ask for copies of all plans affecting utilization of the materiel assigned to him. He should check every point about which he has the slightest uncertainty. He should endeavor to have the lines of the responsibility defined as sharply as possible. These lines are not always clear-cut in an advanced base organization because of its dynamic character.

Materiel

As soon as an officer has received notification of his selection as OIC, he should obtain a list of the materiel which is scheduled to be shipped with his component. He should ensure, insofar as he is able, that equipment and supplies which appear on the list are obtained. Copies of Initial Outfitting List (Detailed), called "DIOL", shipping orders, invoices, letters of intent to furnish, and other documents relating to the equipment should be obtained. Every means should be used to follow up each step in the procurement of the material and to make certain that everything needed will arrive at the base. The list should be carefully studied to make sure that nothing is omitted. Anything that has been omitted that is necessary for the performance of the component's mission should be obtained, if possible. If the missing item is on the DIOL and should have been supplied, it may be possible to obtain it from the appropriate officer at the assembly activity.

Radio Station

Assuming that one of the components of a proposed advance naval base is a small radio station, the following section is devoted to outlining its development and the problems which face its OIC. The small radio station will provide facilities for local communications at a small advanced naval base and for the control and limited support of small units of mobile forces operating in the local area. BuShips (Electronics Shore Division) is the dominant bureau for this functional component.

The OIC of the radio station is under the base communications officer, who is responsible for the over-all supervision and routine maintenance of communication facilities at the advanced base. The base comm officer is a member of the base

commander's staff. The OIC of the primary communication component is usually the assistant comm officer for the base.

Training at the Assembly Point

The OIC will find that the personnel will have had some experience in the operation of electronic equipment; however, such training may not have been with the types of gear to be used at the advanced base. In all probability, additional training will be necessary before the men will be able to handle their duties competently. In addition to becoming familiar with the equipment, the men must also learn how to function as a part of a base unit.

Component training should be started at the assembly point, if the time and facilities are available. Access should be obtained to the same types of equipment as will be used at the advanced base, and the men allowed to dismantle and reinstall it. The men should be familiar not only with the installation of specific pieces of equipment, but also with the complete systems of the equipment which will be used.

Instruction Books

There is an instruction book for each unit of equipment assigned to the radio station. Two copies of each book are packed with the equipment. This book gives detailed directions for the installation, operation, and maintenance of the unit. It is obtainable from Code 990, BuShips, and will be delivered to any point in the continental United States within two weeks after the receipt of a request. An electronics installation component helps install the radio station when the component arrives at an advanced base. As these experts will be concerned with other electronic installations as well as the radio station, the OIC can depend upon them for little else than the supervision of the installation. This fact makes the training of the radio station crew in the installation of the gear an absolute necessity.

After the men have received their technical training for the equipment with which they will be working, and component training to teach them their function within the radio station group, there remains a third step. This is the tactical training to prepare them to function as a part of an advanced base unit.

Tactical Training

Tactical training will be given in a large tactical training center, probably at a tidewater base where amphibious combat operations can be simulated. The crew will go through actual landings, and will operate their equipment under field conditions.

The CO of the training activity is responsible for the processing and tactical training of advanced base personnel during this period. OIC's of the functional components are given separate courses of instruction and also assigned certain responsibilities in connection with the training of their own component personnel.

Cognizant Bureaus

The radio station equipment is under the cognizance of BuShips, as are the various items of terminal and testing equipment. miscellaneous cabinets, and maintenance parts which are issued to the small radio station. Equipment required but not on the list must be requested from BuShips through CNO, with the request including a complete justification for the equipment.

Included in the radio station's list of material are various types of electrical equipment for power facilities for communication and lights in the area, two jeeps and two 2½-ton trucks, and seven buildings to house equipment. This material is under the cognizance of BuDocks.

Office supplies and equipment for the component are under the cognizance of BuSandA. The initial packing or marking of material is also a function of BuSandA, not of the personnel of the advanced base functional components. Advanced base personnel should familiarize themselves with the manner in which containers are marked, as such knowledge aids the personnel assigned to guard the material at dockside and to accompany it in transit. It is especially helpful to personnel at the staging area and the unloading point.

Under ideal conditions, shipments are divided according to components at the unloading point, but such conditions are seldom encountered at the advanced base. It is more likely that the shipment will be scattered in several different piles along the beach. For this reason it is well for personnel of functional components to be able to spot the needed material quickly and accurately.

IDENTIFYING MARKS

Every box or container shipped to an advanced base functional component bears standard identifying marks painted or stenciled on its sides and top. These markings are set forth in the Navy Shipment Marking Handbook, NavSandA publication No. 9. Markings are covered with a transparent waterproofing material.

Articles which are shipped loose have two or more cloth, metal, or waterproof shipping tags containing identification marks, or have the marks stenciled directly on the article itself.

Green Ball

Containers consigned to naval units in a combined Army-Navy operation are marked with black corners. A container in which electronics equipment is packed is identified by a stenciled green ball. The green ball used alone indicates that the gear is radar. A single green bar beneath the ball indicates that the gear is radio. Two green bars beneath the green ball means sonar, three green bars is harbor detection, and four green bars is radiac.

The nomenclature of the article within the container is usually stenciled on the side of the container. When a box contains maintenance spare parts, the marking also shows the prime equipment to which they belong.

It is possible that despite waterproofing precautions, some of the markings may become obliterated in transit. A look at all sides of a container should reveal a legible marking.

Shipping Papers

While the external markings of a container in an advanced base shipment are sufficient for a quick identification of its contents in general, it is necessary to consult the accompanying shipping papers to obtain a detailed list of the contents, unless the box contains only one piece of equipment. Shipping papers may be of any one of the following types, or may include two or more of them.

Packing Lists are detailed lists of every item, with the quantity of each item in the box or container. One copy will be attached to the outside of the container in a waterproof envelope, and a duplicate copy will be inside the container.

Invoices are furnished in two copies. One is attached to the outside of the container, the other is placed inside. Invoices are similar to packing lists, but in addition to number and quantity, the price of the item is also shown. When the invoice serves as a packing list, no separate packing list is included.

Material inspection reports are prepared on shipments from Navy contractors. A copy is attached to the outside of one container of each ship-

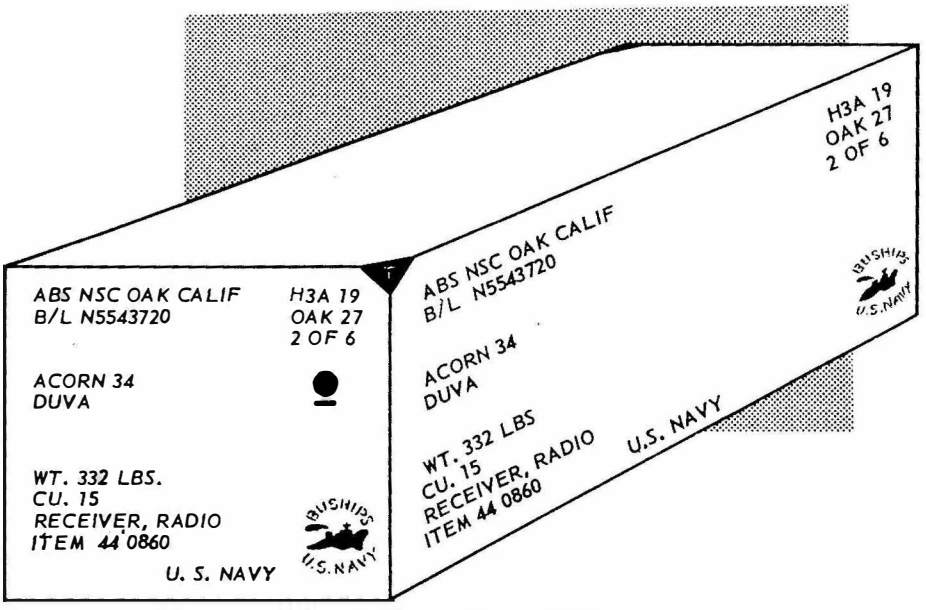

Figure 6–1.—Identifying markings.

ment. When the material inspection report serves as a packing list, no separate packing list is attached to the outside of the container, but one is placed inside the box.

When necessary, special assembly instructions or warnings will accompany the shipments to which they pertain. These instructions or warnings will be indicated conspicuously.

LOADING THE EQUIPMENT

The advanced base unit movement is usually staged; that is, it pauses at some point between the port of embarkation and its ultimate destination for refueling, regrouping of ships, exercise, inspection, advanced base training, and possible redistribution of ships and materiel. In a staged movement, the cargo is usually commercial-loaded and stowed aboard ship on the basis of its shape, weight, and cube, and with regard to the trim of the ship. The relative order in which the contents of the containers will be required at the destination is not considered in commercial loading.

Staging Area

At the staging area, vehicles are broken out of their boxes and issued to the components. Cargoes are redistributed on the basis of tactical effectiveness load. By this loading method, equipment needed first at the advance base is loaded last and will be more easily accessible upon arrival at the objective. If possible, men should be further trained in setting up equipment similar to that which they will use at the advanced base, and they should become familiar with its operation under field conditions.

OIC's of components have no responsibility for the loading of cargo, but there is much that they can do to ensure that the materiel is placed aboard properly, particularly when loading at the staging point. The OIC, or a designated assistant, should observe the loading operation to see that major equipment goes aboard in accordance with the assigned unloading priority. Any oversight in following the priority should be called to the attention of the officer in charge of the operation, who is the first mate if the ship is a merchant vessel, or the first lieutenant if it is a naval transport.

Loading Plan

To learn where the equipment is stowed in the cargo hold, a copy of the loading plan should be obtained just prior to embarkation from the Naval Port Control Officer or from the supply officer aboard the vessel. The loading plan purports to show exactly where each container is stowed. Actually, the stowage may have but little relationship to the plan; so it is advisable for the OIC of a component to become well acquainted with the first mate or first lieutenant.

A copy of the manifest may be obtained from the supply officer aboard the transport. Manifests expedite the job of tallying the equipment at the destination.

TRAINING EN ROUTE

A training program should be established and carried out while the unit is en route to its destination. Included in the subjects of instruction should be area information, the unit's mission, security precautions, and technical training.

Personnel should be briefed as far as possible on the mission of the advance base unit and the radio station component. They should be impressed with the importance of the station in accomplishing the mission of the unit. They should be instructed as to the geography, climate, and natives of the area in which the base will be located. A résumé of the military situation in the area should be given to them, if such information is available.

Classes on security precautions should be held. Personnel must know when and how to destroy classified publications, papers, and equipment.

There will be little, if any, equipment available for practical training while aboard ship. By exercising foresight before sailing, the OIC can obtain buzzers for code practice and some visual signaling equipment. These should be kept available for use while en route. Instruction books for the equipment can be used as a basis for classroom work. A study of the process of installation should be the main topic, as this will be the first problem facing the radio station component upon landing.

LANDING

Few advance base units are disembarked until the area has been made reasonably secure from attack by ground or naval forces. If the landing is in a combat situation, components should be ready to provide whatever service is required of them during the landing and unloading operation.

When the landing is an amphibious operation, the plan of communications will have been worked out in detail by the amphibious command, but the advanced base radio station may be called upon to furnish emergency communications such as air warning, air control, surface search, radar beacons, etc. Teletypewriter links between command ships and shore, and voice amplifying systems for beach parties are frequently needed soon after landing.

Even when the landing is unopposed it will not necessarily be an easy situation. The component will usually be placed on the beach with a minimum of facilities for shelter, eating, and sleeping. It is quite likely that the men of the component will be placed in a labor pool to assist in the construction of facilities with a higher priority than that given to the radio station.

UNLOADING

The safety of a convoy diminishes with each succeeding day that its vessels lie at anchor in a forward area. It is imperative that the vessels be unloaded as quickly as possible.

Beach Often a Bottleneck

One of the bottlenecks in unloading is the point on the beach where the material is brought ashore. The capacity of the beach is dependent to a large extent upon moving the material away from this point to make room for succeeding loads. The first job of an OIC is to see that his component's material is moved off the beach and into its own dumps. The faster this is done, the easier it is to keep track of equipment and supplies.

The OIC of the radio station should make arrangements with the beachmaster, if possible, to unload the "green ball" boxes in one location. The exception to this is when there is possible enemy action, in which case dispersal of the material may be necessary. If it can be arranged, material should be left on ships until ready for handling at the radio station dumps.

Dump Points Plan

It is as important to know where the material is after it leaves the ship as it is to see that all material leaves the ship. If the cargo is unloaded on a dock, the problem is relatively simple. A man should be assigned to stay at the dock and provided with a copy, if available, of the Dump Points Plan. He should check the routing of every piece of equipment for the complement.

When the transfer is made from the ship to the beach by landing craft or amphibian tractors, keeping track of the shipment is much more difficult. A man should be assigned to every unloading point and equipped with a copy of the Dump Points Plan. These men will have to search for the green ball boxes, as the loads are usually dumped in huge piles, regardless of the various destinations of the containers. It often will take first rate detective work to find the radio station's material.

If the radio station is to be housed at two or more locations, an attempt should be made to route each container to the site at which that particular equipment is to be used, thus avoiding time-consuming rehandling of the material.

SELECTION OF THE SITE

The OIC of a functional component of an advance base usually has little voice in the determination of the location of his facility within the base area. The layout will have been planned in advance by the base commander, who usually relies upon the advice of an advance survey party, which may or may not have included qualified electronics personnel.

In selecting the site for the radio station, the area commander and his technical advisers take into consideration the following:

1. Conductivity of the soil.
2. Lack of obstructions in the principal operation direction.
3. Accessibility of the buildings to other base activities.
4. Ease with which the site can be camouflaged.
5. Adaptability of the terrain to the required antenna field.
6. Elevation.
7. Noise-free area for antenna system.
8. Site is as level as possible, although rolling country with elevation differences of ten feet or less over short distances is suitable.
9. Site is as near the water's edge as possible. (Tests have shown that a station so located transmits 8 to 10 times as strong a signal as the same station placed 1 mile inland.)

ELECTRONIC INSTALLATION COMPONENT

After the advanced base unit is landed, the electronic installation component checks the sites of all electronic facilities and makes recommendations to the base commander and his staff whenever it is felt that operational efficiency can be improved by relocating.

This component consists of two officers and three enlisted men, equipped with the necessary tools and test equipment. They furnish supervision whenever it is necessary for the installation of electronic equipment. After the installation, they remain at the base for a limited period to iron out initial operating difficulties and to make certain that the equipment is functioning efficiently.

RADIO INSTALLATION PRACTICES

After the material has been unloaded from the ship and routed to the site of the installation, the next step is to sort and assemble in groups the boxes that pertain to the same equipment. This may be accomplished by reference to associated box numbers.

Uncrating

Material should be uncrated only when needed for the installation or, if composed of spares, when storage bins are ready. Material which will not be used at once should be left in the containers, unless the boxes are damaged to the point where the contents are exposed to grit, moisture, or other deteriorating conditions. It is better left in its original packing, which is waterproof and designed especially for overseas shipment.

A detailed tally of the material should be made as the boxes are opened. The packing list should be checked against the contents of the box to which it is attached. Shortages should be reported immediately to the nearest electronics officer.

When uncrating equipment, care must be exercised not to destroy valuable packing materials unnecessarily. Lumber and other material salvaged should be stowed so that they will be available for future use. These materials are very useful for the construction of duckboards for dugouts, shelving, stock bins, partitions, and many other facilities.

Housing

Permanent housing for the radio station is normally constructed by a Construction Battalion unit. It is quite likely that the radio station personnel, if not already in a labor pool, will have to help with the construction of housing for the equipment. If the housing is not already up when the component arrives in the area, it may prove to be somewhat of an advantage, as the OIC will have an opportunity to exercise some choice in the selection of the site.

Even when housing for the radio station already has been constructed, it probably will be necessary to store a large amount of equipment and supplies outside while the equipment is being installed in the huts or tents. This material should be placed in tents or lean-tos, or covered by tarpaulins. No matter which of these methods of protection is used, the material should be elevated from the ground with dunnage.

Separation of Facilities

The primary consideration in planning a radio installation is the separation of the transmitting facilities from the receiving facilities. At a small land station which will operate duplex circuits, a distance of a quarter of a mile is the minimum for separation of these two facilities.

As the radio station probably will be located with one or more other activities, care should be exercised to ensure that the antenna field is not used for a parking lot, or that a road is not laid under the antennas. Ammo dumps should be kept well away from them.

It was noted previously that the site for the radio installation should be as level and as near the water's edge as possible. An area of from 100 to 200 acres should be used for an antenna field if there are a half dozen rhombic antennas. Receiving stations require more antenna field space than transmitting stations, as there are more receiving antennas. There should be a noise-free "guard-area" around the perimeter of the receiving antenna field.

A transmitter or receiver will operate no better than the antenna installation permits. With exactly the same equipment, the installation efficiency can range all the way from zero to maximum. It depends upon how well the installation is made.

Rhombic Antennas

The rhombic antenna is an excellent form of directional antenna. Its directivity depends upon its height above the ground, the length of its legs, and the angle included between the legs. Other factors, such as the resistivity of the ground, may affect its directivity.

When one end of a rhombic antenna is terminated in a resisted load, the antenna is unidirectional. If the end is not terminated, the antenna is bidirectional. Since rhombics are directional, a number of them would normally be required to cover a full 360 degrees. There are several different methods by which the antenna performance may be controlled, each method being aimed at obtaining special results.

By connecting transmission lines to both ends of each rhombic antenna, it is possible to achieve the results of a 360 degree rhombic rosette with only half the number of antennas normally required. Using this system, each line and receiver is made to act reciprocally as a terminating resistor for the other, and each antenna gives bidirectional non-resonant reception.

To use a rhombic antenna for transmitting to a point 20 or more degrees off dead ahead, an inductance coil may be inserted between one side of the transmission line and one side of the antenna. By adjusting the tap of the coil, the proper phase lag can be arranged to deflect the beam pattern the desired amount.

A rhombic can be rigged to rotate by means of remote control. With this rigging it functions like a limited rotatable beam. It is then rigged by using selsyn indicators and two remote-controlled, continuously revolving tapped coils.

Publications

There are a number of publications which contain information helpful for the installation of a radio station. These are:

1. *Electrical Communication Systems Engineering* (*TM 11-486*).
2. *NWP 39.*
3. *Routes of Communication* (*FM 5-10*).
4. *Installation and Maintenance of Transmission Lines, Waveguides, and Fittings* (*NavShips 900, 081*).
5. *Instruction for Installation and Maintenance of Submarine Cables and Sea Units for Harbor Detection Equipment* (*NavShips 900,093*).
6. *Advance Base Teletype Installation and Maintenance Practices* (*NavShips 900,031*).

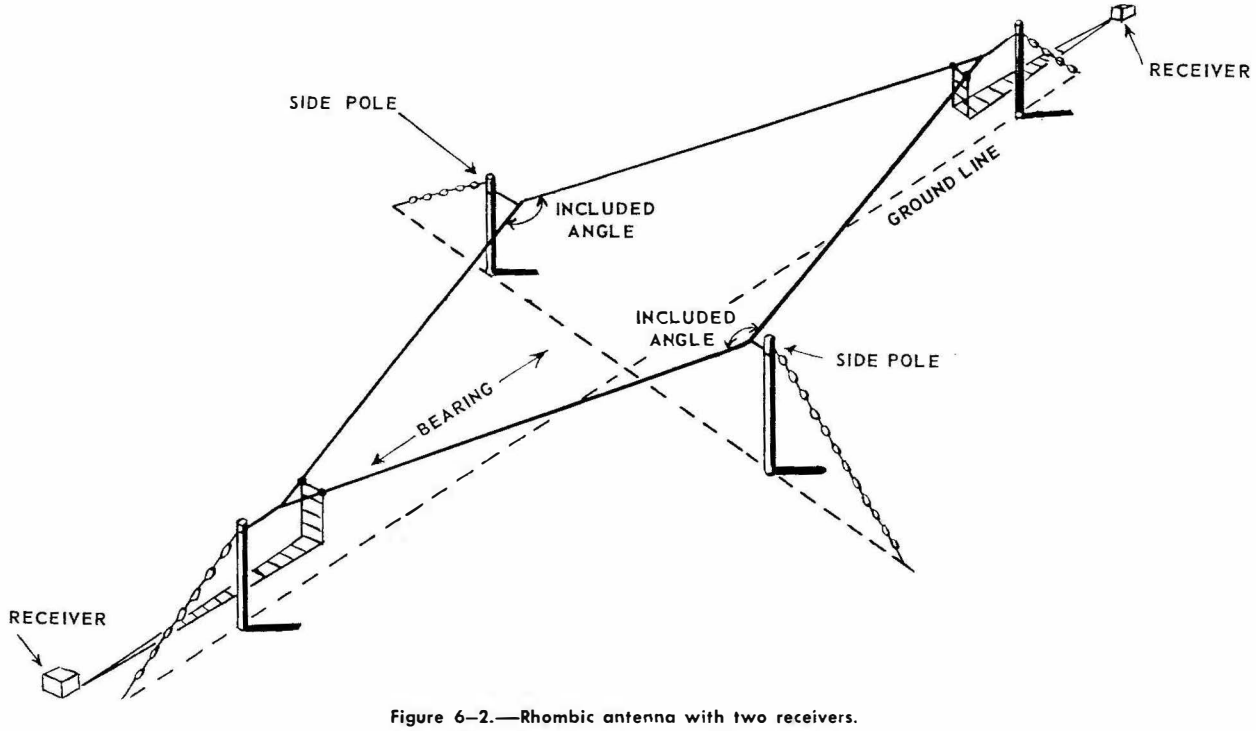

Figure 6–2.—Rhombic antenna with two receivers.

MAINTENANCE

There is a limited period following the installation of the radio equipment during which the electronics installation component remains at the advanced base and ensures that the equipment is functioning properly. After this component leaves the base, the radio station is dependent for proper operation and maintenance upon its own personnel and the electronics shop of the E1 (large) or E3 (medium) ship repair component. The OIC of this electronics repair facility is usually the base electronics officer.

Electronics Shop

The electronics shop of ship repair has a dual responsibility. Primarily it must support the fleet to any degree required, from the smallest repair job to a major project such as the installation of a complete new electronics system on an aircraft carrier. The needs of the fleet always take priority. Secondly, the electronics shop maintains and repairs shore electronics equipment which is beyond the capacity of the component normally charged with the operation of the equipment.

As the electronics shop's responsibility to the base components comes second to the fleet, the more maintenance work that radio personnel can handle themselves, the better off the radio station is.

Failure Reports

A failure report Form NAVGEN 1025 must be filled out for every tube or part failure, whether the failure was caused by a defect in the part, a worn part, improper operation, external influences, or any other reason. This form may be obtained from the electronics officer and must be filled out to justify replenishment of parts or modification of electronics or associated equipment. The radio station OIC is responsible for ensuring that the form is completed and sent to BuShips.

SOURCES OF SUPPLY

The supply needs of a radio station component generally fall into two broad classes: general supplies and electronics parts.

General supplies are supplies of all kinds except electronic equipment and parts. They are requisitioned from the base supply officer and are issued by the base supply depot. Electronics supplies, including both whole equipment and parts, are requisitioned from the base electronics officer and normally are supplied by the base supply depot. In some cases the electronics facility operates an electronics supply activity, which is the issuing agency for this class of equipment.

Replacement and Maintenance Parts

Electronics parts needed for replacement may be obtainable from at least one of the following:

1. The base supply activity.
2. The electronics shop (ship repair component).
3. The electronics pool (if one has been established by the base commander).
4. Electronics activities of other services at the base.

Stub Requisition

All requisitioning of replacements is done on a stub requisition (S & A Form 129), pads of which are furnished by the electronics officer or base supply activity. A stub may have more than one item on it, but only if such items are of the same stock class. In addition to the original stub, there must be seven carbon copies prepared. These are signed by the OIC or his authorized representative. Each stub will show the following:

1. Requesting activity.
2. Place of delivery.
3. Stub serial number and date.
4. Object of the expenditure.
5. Appropriation and account chargeable.
6. Allotment of project order number.
7. Full description of item or service desired, including stock number, nomenclature, quantity and unit of issue.
8. Job order number in correct pattern, according to the system in use at the supplying activity.

If the item requested is not in stock at the supplying activity, every effort should be made to find another source of supply.

Shortages

Although advanced base components usually have everything required for operation in the early development stages of the advanced base, few ad-

CONTROL NO.

DATE OF FAILURE	REPORT NO.	REPORTING ACTIVITY
6 MAY 1954	357-54	USS ROBERT F. KELLER DE-419
EQUIPMENT INSTALLED IN (TYPE AND NO.)		REPAIRED OR REPORTED BY (NAME)
USS ROBERT F. KELLER DE-419		PATERSON, R. C. ET-2

	MODEL DESIGNATION AND MOD. NO.	SERIAL NO.	CONTRACTOR	CONTR. OR ORDER NO.
EQUIPMENT	SU-1	163	SUB.SIG.CO.	NXSS-26593
COMPONENT (Major Unit)	CBM-50AEV MODULATOR	658	SUB.SIG.CO.	NXSS-26593
ASSEMBLY OR SUBASSEMBLY	ASSEMBLY AND MOD. NO. - - - - - - - - - - - - - -	SERIAL NO.	MANUFACTURER	(LEAVE BLANK)

PART DATA	PART NAME OR TUBE TYPE	STOCK NO. (FAILED ITEM)	PART REF. DESIG. (V-101, R-101, ETC.)
	TUBE- JAN-CRP-72	N16-T-60720	V-207

HOURS IN SERVICE	MANUFACTURER	SERIAL	REPAIR TIME (MAN-HOURS)
4,370	RAYTHEON MFG.	AF4481	2

FIRST INDICATION OF TROUBLE		CHECK TYPE(S) OF PART FAILURE								FAILED IN OR DUE TO	
1	X INOPERATIVE	007	ARCING	001	GASSY	790	OUT OF ADJUST.	2	FAULTY PACKAGING
2	INTERMITTENT	710	BEARING FAILURE	300	GROUNDED	006	SHORTED	5	HANDLING
3	LOW PERFORMANCE	780	BENT	380	LEAKAGE	770	SLIP RING OR COMMUTATOR FAILURE	6	INSPECTION OR TEST
4	NOISY	040	BINDING	730	LOOSE			1	X NORMAL OPERATION
5	OFF FREQUENCY	070	BROKEN	004	LOW GM OR EMMISSION	018	TESTED OK - DID NOT WORK	3	STORAGE
6	OUT OF ADJUSTMENT	720	BRUSH FAILURE	750	MISSING			7	ASSOCIATED FAILURE-EXPLAIN
7	OVERHEATING	080	BURNED OUT	008	NOISY	020	WORN EXCESSIVELY	4	OTHER
8	UNSTABLE	130	CHANGED VALUE	450	X OPEN			WAS THE PART REPLACED AS PERIODIC MAINTENANCE ?	
9	OTHER	170	CORRODED	099	OTHER				YES X NO

REMARKS (Continue on reverse if necessary)

OPEN FILAMENT CAUSED TUBE TO BE INOPERATIVE.

ELECTRONIC FAILURE REPORT NAVGEN 1025 (11-53) - SUPERSEDES NAVSHIPS 383 AND NAVAER 4112 A (REV 6-52) E-30034

Figure 6–3.—Failure report.

vanced base units may expect to leave the continental United States without some shortages of equipment and material. For example, oscillator crystals are not furnished in most equipments because frequencies to be used are not known at the time of component assembly. As soon as frequency assignments are known, these crystals must be ordered in the quantity and type desired by message to BuShips.

Items which are short are designated either *late* or *delinquent* on the lists supplied to the component OIC by BuSandA. Late items are material which it is estimated can reach the assembly point within 90 days after the departure of the movement. If the material is regarded as essential, it will go forward to the advanced base when it becomes available. Delinquent items are material which it is estimated will be received by the assembly activity later than 90 days after the departure of the last echelon of the movement. If classed as essential, late and delinquent items will be forwarded.

OPERATION

Advanced bases may be located in climates ranging from arctic to tropical. Each climate brings certain operational and maintenance difficulties for electronics equipment. Extreme heat, extreme cold, moisture, and dust affect the performance of the gear. In addition to climatic difficulties, enemy action is often a factor.

At any electronics installation safety precautions are a necessity. The OIC of the radio station must impress on all concerned that all voltages are dangerous and may be fatal. Safety warnings and first aid for electric shock posters should be displayed in each radio space.

Arctic Conditions

The special problems which arise from operating electronics equipment in extremely low temperatures include icing of the elements, lubrication problems, breakage due to low temperatures, electrical instability, and installation and maintenance difficulties. If foreseen and prepared for, these problems need not seriously interfere with the efficiency of the equipment. Some precautions are plain common sense, such as wearing gloves while installing and working equipment outdoors in freezing weather to prevent the skin from sticking to metal parts.

Here are some precautions which operating personnel should take to minimize these difficulties. They should:

1. Allow for a long warm-up period under no-load or light-load conditions when placing electronics equipment in operation.
2. Provide snow covers for equipment. Remove snow from equipment with a blower bellows or vacuum cleaner, but not with a brush.
3. Remove moisture from equipment which has been brought into a warm room from the cold, as it will accumulate moisture rapidly and then corrode.
4. Check the specific gravity of storage batteries at frequent intervals, to make sure that they are well charged so as to prevent freezing of the electrolyte and damage to the cells and case.
5. Use thin covers of nylon, polythylene, or vinylite over microphones to prevent the accumulation of breath moisture which will cause equipment failure, and keep on hand plenty of spares for each type of microphone.
6. Clean existing lubricants from rotating points, rotary machines, rotating shafts, etc., by use of fluids, then lubricate with cold weather lubricants or graphite.
7. Keep the connecting points of telescoping and sectional antennas ice free by maintaining a film of light oil over the joints.
8. Construct antennas strong enough to carry the added weight of ice formations.

Tropics

Dampness is one of the greatest causes of operating difficulties in the tropics, although heat and wildlife may also cause trouble in some locations.

Moisture can be eliminated by periodically firing up idle equipment and by use of silica gel salvaged from packing cases.

At temperatures of 125° F. electronics gear is subject to a high failure rate. As the equipment in operation may raise the temperature in huts to 100 degrees or more, it is vital to maintain as good a ventilating system as local conditions will permit. Forced air blowers are an absolute must in the huts, and it may be necessary to provide additional ventilation for the equipment itself.

Heavy dust and grit may be encountered during the dry season. This is especially true if the radio station is near a heavily traveled road, or near an aircraft taxi strip. Periodic cleaning, use of equipment covers if possible, and other preventive measures should be taken.

In many tropical countries, insects and other small specimens of wildlife can be a distinct detriment to the operation of equipment. For example, a 50 kw transmitter on Guam was disabled when a 14-inch centipede crawled into it and caused a flashover. Precaution should be taken to prevent the access of animal life to equipment.

ENEMY ACTION

Because the advanced base may be close to enemy forces, there arise certain problems not normally present at other shore-based communication facilities. Protecting the facilities and personnel from enemy fire is one of these problems, and radio interception or interference is another.

Protection

In combat zones the radio receiving station should be dug well into the ground, the actual depth being determined by the capabilities of enemy ordnance. The roof should be shored up and covered with dirt or sandbags. Similar protective facilities should be provided for men not on watch. Protection for the transmitting station comes last. Transmitting equipment need not be underground, but blast walls should be constructed around it. Approaches to the transmitter hut should not lead in directly, but at right angles.

Blast walls can be sandbag revetments, oil drums filled with sand or coral, stacks of tundra grass squares, or it may be possible to tunnel into a hillside. Best protection is gained by dispersion of equipment. Receivers and transmitters should be separated. The main radio transmitting station can be placed in two shelters spaced 200 to 300 feet apart and still permit the use of the same set of antenna masts.

Camouflage

Camouflage is an absolute necessity if the base is close to, or in, a combat zone; or if it is subject to aerial observation and attack. Camouflage may be accomplished by one or more of the following methods:

1. *Hiding* is completely concealing the installation by constructing overhead covers, lateral

screening, or both. The use of native thatched huts for sheltering and concealing equipment when in the tropics is effective in the early base development plan.

2. *Blending* is making the installation indistinguishable from its surroundings by breaking up its form and shadow.

3. *Deceiving* is making the installation appear to be something else, or using dummies to draw the attention of the enemy from the actual installation. Camouflage materials should match the surrounding terrain in color and texture and should be easy to maintain throughout the length of time the site will be used. They should be erected in such a manner that the installation has an irregular form and casts neither a regular nor well-defined shadow.

Interception and Interference

While the enemy may not be near enough to the advanced base to force the protection or camouflage of the installations, he may be near enough to intercept radio traffic or interfere with it. Any radio transmission is subject to enemy interception. Several measures may be taken to make interception difficult for the enemy and at the same time reduce the possibility of interference with the reception of friendly signals. Some of these measures include the following:

1. Lowering the elevation of the transmitting antenna, when transmitted signals are well above the power requirement, will impair reception by the enemy. Lowering the antenna should not appreciably affect the performance on circuits operating on a considerable margin of transmission power.
2. Locating the transmission station so that hills will intervene in the direction of the enemy, but not in the desired path of transmission.
3. Using directional transmitting antennas, as this ordinarily provides higher signal intensities in the forward direction than would be obtained by nondirectional types.
4. Monitoring of transmitted signals.

Base Communication System

The radio station is but one part of the communication system of the advanced base command. Both external and internal communication facilities are furnished by the base communication system.

External communications are communications between activities not under the same local command. External communications at an advanced base may be either traffic between a base activity and an activity outside the base command, or traffic between activities neither of which is under the base command, but handled by its communication system. An example of the latter is traffic between a transient force and the theater commander.

In addition to the radio station, external communication facilities may include an airways communication establishment, a tactical air control center, and an Officer Messenger Mail Center.

The bulk of internal communications is carried by wire (telephone and teletypewriter) systems, although messenger schedules are maintained by either the Base Communication Center or the Joint Communication Center.

WIRE SYSTEMS

On a small base, the wire system is usually centralized, with subordinate commands and major installations serviced by one large switching central. When the base is large, a number of centrals are established. If the base is established following an amphibious assault, adaptation of the landing force telephone system to garrison force use is only a temporary expedient, pending permanent construction, but this landing force installation should be incorporated as much as possible with the permanent wire system.

Telephone System

The base telephone system must have a minimum of two trunk lines from the base central to the major subordinate commands and operational centers. In addition, it is desirable that the system have the following:

1. Lateral lines between major units of the same type and between adjacent units.
2. Trunk lines between a major unit and other units with which it is concerned operationally.

3. A party line connecting major commands and operation centers for commanders' conferences and emergency warnings.

Teletypewriter Service

The base usually has a teletypewriter service which provides a minimum of one teletypewriter local line to major units and activities. These lines operate through a teletypewriter switching central.

LANDLINE INSTALLATION

Although landlines usually are installed by the CB's or, in some situations, by the Signal Corps, the base communication officer, or his assistant in charge of landlines, should keep a close check on the installation. He should do this both when the installation is made, and periodically thereafter for maintenance purposes.

The communicator should ensure that the lines

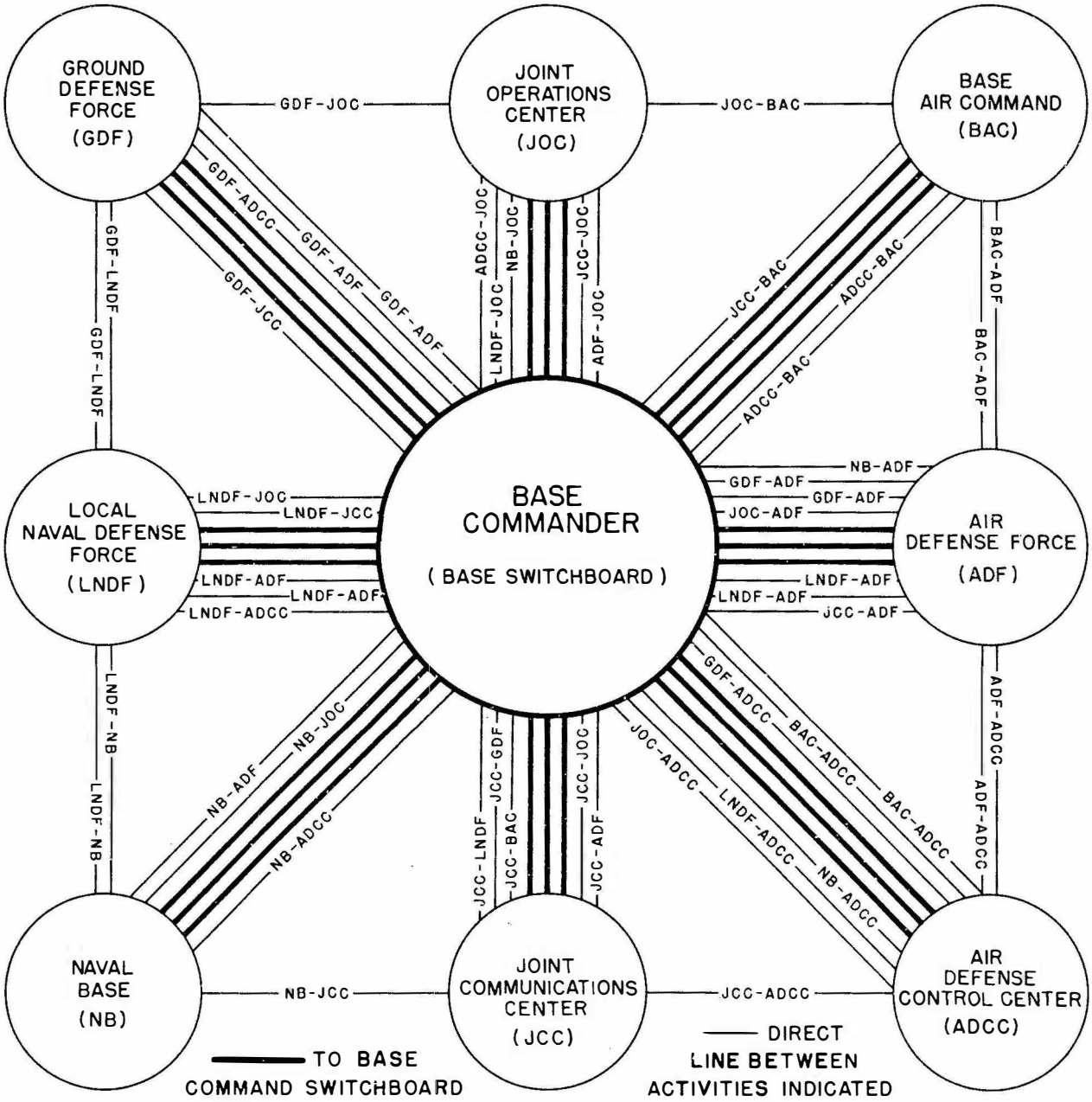

Figure 6–4.—A typical advanced base wire system.

are free from grounds, even high resistance grounds, and from "crosses" or effects (both audio and d. c.) between disassociated telephone pairs. There should be reasonably low and uniform audio and d. c. attenuation on the lines, and the telephone signal should have reasonably good audio quality and fidelity. The communicator should also see that there is a connection from terminal to terminal in the locations shown on the layout plans, and that there is provision for an adequate number of working lines and spare lines.

When the overhead type (soft-sheathed) cable is laid in rocky or coral trenches, it should be provided with an adequate padding of sand.

There may be occasions when the CB's have projects with higher priority than the installation of landlines, and the base communication crew must make the installation. The following four paragraphs indicate some of the practices and precautions to be followed.

When installing field wire, it is normally best to run it beside a road, even if doing so somewhat increases its length. This facilitates repair in the event of breakage, and discourages tampering or sabotage. Routing landlines along a road makes motor patrolling possible when necessary, and the presence of normal motor traffic discourages tampering.

Field wire should be strung on poles (even bamboo rods) if at all possible or, as an expedient, on houses, fences, or topped trees. Makeshift supports should be well guyed. If none of the foregoing are available, wire can be laid directly on the ground for distances of five miles or more, with fair results. The most serious problem arising from wire laid along the ground is breakage of the line. Another problem with such an installation is the wire's tendency to ground, which will usually put the line out of service in wet weather.

Overhead lines should be installed high enough to give clearance to the tallest vehicle which may operate beneath them. Although drivers are not to take vehicles underneath the lines, there are usually some that will do so. Overhead lines should have a supporting messenger wire. After lines for overhead installation are pulled tight, the tension should be checked with a dynometer, if one is available. Lines should never be pulled taut with a tractor or motor vehicle.

Field wire should never be "cabled" (bunched together) for more than a few inches. Cabling field wire introduces the likelihood of cross-talk troubles in dry weather, and of complete line failure in wet weather. When a number of field wire pairs are run along the same route, they should be separated by as large an air space as feasible. They should be tagged at junction boxes so that all of them won't have to be rung out in the event of line failure. If a line does fail, it is frequently expedient to string a new line rather than to find the fault and make repairs.

Signal Corps or Marine units are possible sources of supply for field wire when base communications has a shortage.

Joint Communication System

At an advanced base at which more than one of the United States military services is present, the rapid communication facilities may be consolidated into a Joint Communication System. The term "joint", as used in this connection refers to joint installation and operation of the service required, not to joint responsibility by two or more commanders for establishment and operation of the system. That responsibility rests solely with the advanced base commander. Under the commander, the advanced base communication officer is responsible for the over-all operation and integration of the Joint Communication System.

JOINT COMMUNICATION CENTER

Under a Joint Communication System, external communications for activities and units at the advanced base are handled by a Joint Communication Center (JCC). Some external communication facilities are not included in the JCC, such as airways and convoy and routing communications, radar telling and certain air tactical circuits, and other circuits as may be specifically exempted.

A JCC normally includes a message center, a cryptocenter, and transmitting and receiving facilities. It is under an OIC who is directly responsible to the advanced base communication

officer for the operation of all of the elements of the JCC. An officer from each of the other services served by the JCC assist and advise him in meeting the requirements of their respective services.

CWO of the Watch

There is an officer for each watch or section, known as the CWO of the watch, who is responsible to the OIC for operations during his watch. Each duty section or watch normally includes sufficient officers and enlisted men to provide adequate external communications. Officers and men at the JCC are subordinate for operational purposes to the CWO of the watch.

Traffic Responsibility

Messages originated by activities directly served by the JCC and addressed to activities not directly served by it are delivered to it for transmission after release or authentication by the originating commander or his specifically designated agent. Date-time groups on these outgoing messages are assigned in the originator's signal center or communication office, except when he desires the advanced base commander may direct the CWO at

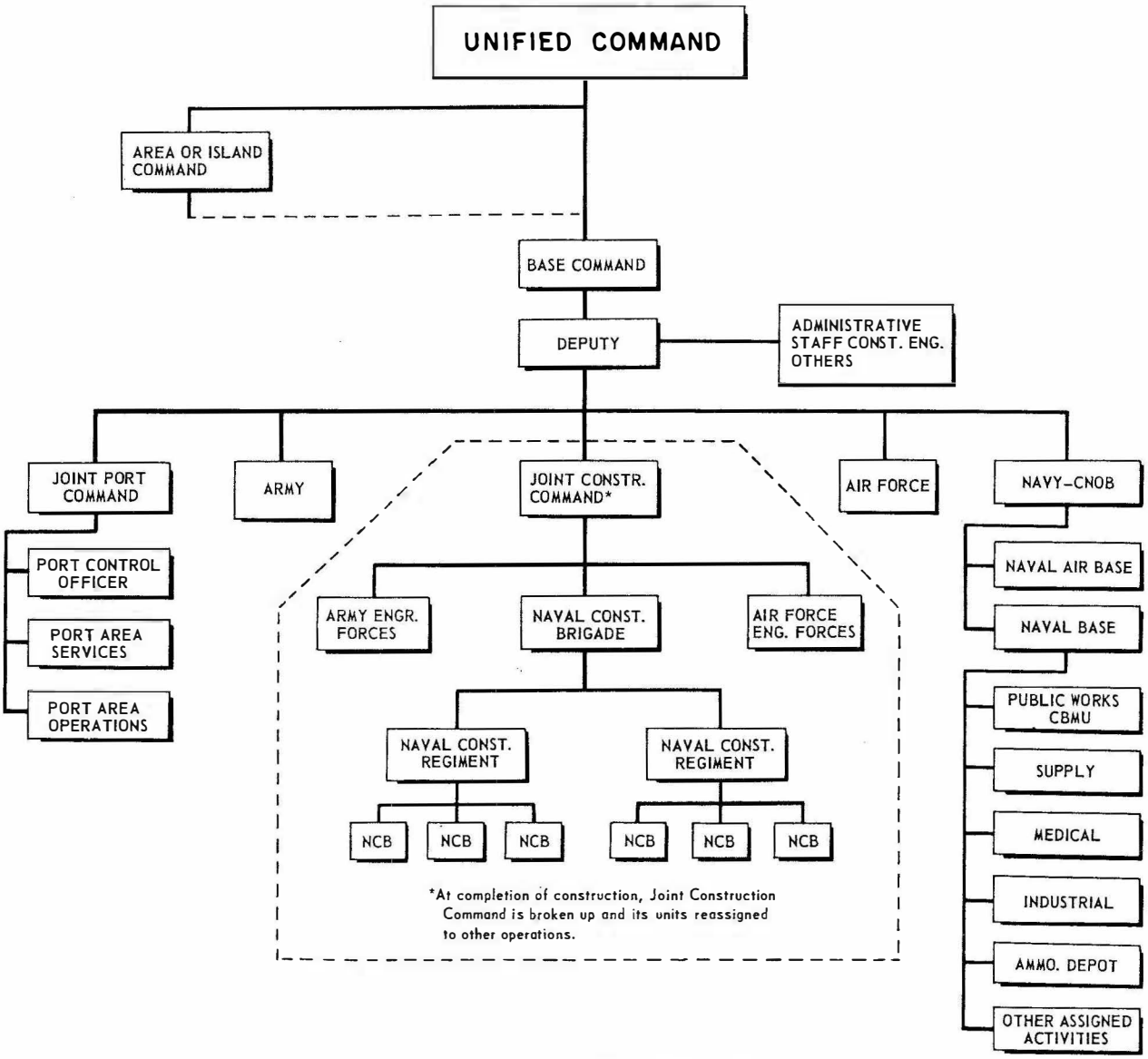

Figure 6–5.—Command relationships, advanced bases (Operations Phase).

JCC to assign date-time groups. In such cases, the CWO informs originators of the DTG's assigned. The JCC is responsible for an outgoing message from the time it is delivered to JCC by the originating activity until it has been encrypted, if required, and transmitted to the appropriate station or activity for delivery or relay. When there is a command present at the base which holds a higher cryptographic class than that of the advanced base commander, the higher command is responsible for cryptographic processing of its message in the higher class.

Messages received by JCC from activities not directly served by it for delivery or relay become its responsibility when received. JCC responsibility for an incoming message ends when it has delivered the message or message translation to the adee, or when it has forwarded the message to another station for delivery.

JCC has no responsibility for local messages exchanged between two or more activities served directly by it, unless acting as a relay station. Local messages are normally passed directly between the activities concerned. Guard mail is not a function of JCC.

OTHER ELEMENTS OF THE JOINT COMMUNICATION SYSTEM

In addition to the JCC, Joint Communication System is composed of several facilities essential to communications at an advanced base. It usually includes these communication systems: wire, local, airways, airfield, seaplane base, and convoy and routing. It also includes the basegram delivery authority or subauthority, RPIO or sub-issuing office, an Army or Navy post office for mail distribution and dispatch, a Signal depot, an electronics organization, and a cryptographic repair facility. The latter is included under the RPIO or subissuing office.

Wire Communication System

The wire communication system is for internal communications (communications exchanged between activities under the same local command) at the advanced base. The system is under a wire officer who is responsible to the advanced base comm officer for its installation, operation, and maintenance.

Specialized Air Tactical Communications

Under a Joint Communication System, the command which installs specialized air tactical communications appoints an officer who is responsible for the installation, operation, and maintenance of these facilities. This officer assists the base comm officer in integrating air tactical communications into the Joint Communication System.

Airways, Airfield, and Seaplane Base Communications

Airways communication facilities are normally installed, operated, and maintained by designated airways communication personnel. Airfield (tower) communication facilities are installed, operated, and maintained by AACS at Air Force fields, by the Navy at Navy fields, and by Marines at Marine fields. Seaplane base control communications are operated and maintained by the Navy.

Convoy and Routing

The Convoy and Routing communication system is established as a component of the Naval Control of Shipping Officer (NCSO) organization. It uses insofar as possible, the various facilities of the Joint Communication System.

Armed Forces Courier Service

The Armed Forces Courier Service is normally located adjacent to or near the base communications office, with an annex at the airfield at which transport aircraft land. It normally is under the cognizance of the base communication officer.

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CHAPTER 7

THE NAVY POSTAL SERVICE

An officer assigned to postal duties at a shore station may find postal operations there somewhat different from shipboard postal operations. The differences are most pronounced at either a Navy Post Office which distributes and dispatches mail within and between areas or a station which has a civilian post office.

Except at large establishments, the billet of postal officer is normally a collateral duty of the comm officer or one of his assistants. It is a billet which requires an understanding of the Navy Postal Service and its methods of operation. The postal officer should know what is done, how it is done, and the sources of information on postal operations.

This chapter discusses the mission, organization, administration, and certain special functions of the Navy Postal Service. The operations of Navy Post Offices will be dealt with in subsequent chapters.

The Navy Postal Service is an extension of the United States Postal Service, and provides for the delivery and dispatch of mail to and from naval commands not having ready access to a United States civilian post office. It operates in accordance with the agreement of August 21, 1950, between the Department of Defense and the Post Office Department. (See Appendix I.) The Navy Postal Service is governed by the regulations of the Department of Defense and *Postal Laws and Regulations.*

The essential postal services furnished by the civilian post offices are also furnished by the Navy Postal Service. It carries all classes of mail and maintains the financial operations necessary for postal service.

Responsibilities of Commands

Each command, afloat and ashore, is responsible for the Navy Postal Service under its jurisdiction. A commanding officer must provide for mail service within his command, either by the establishment of a Navy Post Office or by the use of a mail orderly system. Provision for mail service includes the furnishing of qualified personnel and the transportation and stowage facilities needed to speed the handling of local mail. Personnel handling mail are supervised closely. The inviolability and security of official and personal mail are maintained.

When an NPO is established within his command, a CO is responsible for providing for the security of postal funds and effects, and for supervising and inspecting the NPO in accordance with the provisions of United States Navy Postal Instructions.

No matter what type of mail service is employed by the activity, a CO must ensure that a complete directory service is maintained. Personnel are furnished with their correct mail address during duty under the command and at the time of transfer from it. Current operational information is furnished to postal personnel so that mail may be forwarded to the correct destination. Communication plans and orders include correct mail addresses and provision for proper postal facilities in order to ensure current and advance logistics of mail. Appropriate authorities are notified regarding changes in naval units or activities which require changes in mail addresses.

When censorship is in effect, the CO must ensure the security of Navy numbers and classified mail addresses in mail originated within the command.

POSTAL SERVICE A COMMUNICATION FUNCTION

Because postal operation in the Navy is a communication function, DNC is responsible for the

over-all administration of the postal service. DNC has delegated this responsibility to the Head of the Postal Affairs Section (OP 304M). OP 304M represents the Navy in postal matters which may arise with the Post Office Department, and postal matters which concern administration operations, and general policy. It also maintains liaison with the Department of Defense, Army, and Air Force in order to coordinate the handling of military mail.

FLEETS, AREAS, AND DISTRICTS

CINCLANTFLT and CINCPACFLT have on their staffs Fleet Postal Officers who are responsible for planning, organization, operation, inspection, supervision, and coordination of the Navy Postal Service within their respective fleets. On the staffs of COMEASEAFRON and COMWESSEAFRON, and of the commanders of principal areas are area postal officers who perform the same functions within those commands as the fleet postal officers.

Within naval districts, the district communication officer is charged with the organization and operation of postal services. The district comm officer maintains liaison with the local postmaster of the city in which the district headquarters are located.

Mail Routing and Handling

Mail is divided into four classes by the Post Office Department. First class mail includes all hand-written and typewritten matter sealed against inspection, postal cards, and post cards. Second class mail includes newspapers and other periodicals meeting the requirements for second class entry. Third class mail includes all miscellaneous printed matter, not exceeding eight ounces, which is not first or second class mail. Fourth class mail (domestic parcel post) is mail matter of the third class which exceeds 8 ounces in weight. The maximum weight for a domestic parcel post package is 70 pounds. In certain cases, the maximum weight is less than 70 pounds, but these exceptions do not apply to packages in the Navy Postal Service. Navy mail is divided into these same four classes.

ROUTING

General directives regarding the routing of mail are issued to the Navy by CNO, but area and fleet commanders are responsible for establishing within their commands a common *Mail Routing Guide* to cover air, water, and surface transportation. The Guide must keep mail routing changes up-to-date.

Routing Instructions

The name of each ship or mobile shore-based unit within the particular area is listed in the *Mail Routing Guide*, which indicates the location to which mail for each ship or unit should be dispatched. The actual location of a ship or unit is not given in the *Mail Routing Guide*—only the instructions as to where the mail should be forwarded. When there is a time limitation on forwarding instructions for a ship, this is included. For security reasons, a line (code) number for each ship or unit is provided so that the ship or unit may be referred to by a number rather than by name.

During wartime, the *Mail Routing Guide* and changes thereto are classified *Secret*. Mail for ships of the fleet and other mobile units should never be dispatched or forwarded in any manner that discloses the geographical location of the ship or unit. When necessary, CNO issues detailed instructions concerning the handling of Navy mail.

FOREIGN MAIL

In peacetime, mail originating in the Navy for delivery in foreign countries is routed through the United States postal system for transmission through exchange offices, in accordance with the International Postal Convention.

In time of war or national emergency, special arrangements are effected with the country concerned for the direct exchange of mail for ships and units operating in, or contiguous to, the foreign country. Proposals for establishing mail exchanges and NPO's are submitted to CNO for his approval and clearance with the Post Office Department. Registered and insured mail are usually included in these mail exchanges. An adequate system of receipts is necessary for determining the responsibility and disposition of registered and insured mail.

TRANSPORTATION

When mail is to be moved by ocean transportation other than fleet units, The Military Sea Transportation Service (MSTS) provides the transportation. Space may also be obtained to transport mail in commercial vessels, including vessels of foreign registry.

When Navy mail is to be moved by ocean transportation in other than fleet units, it is presented to the local shipper service port representative for the purpose of booking and movement by the MSTS. The transportation furnished by MSTS may, in some instances, include space in vessels of foreign registry. As the transportation of mail containing official matter via vessels of foreign registry is forbidden, agencies dispatching mail must maintain close liaison with the local cargo component of MSTS to prevent this. Liaison with the local MSTS component is also necessary to ensure the full use of available transportation.

The Military Air Transport Service (MATS) and the Fleet Logistic Air Wings are the principal sources of air transportation for mail. When the frequency of military airlift is inadequate, commercial airlines may be used. In such cases, prior approval must be obtained from the Chief of Naval Operations.

STORAGE AND DISCHARGE

In some situations it may be necessary to use personnel not connected with the Navy Postal Service in order to stow or discharge Navy mail

Figure 7–1.—Mail call.

from a vessel. Sentries or guards should be posted as necessary, to prevent tampering with the mail. The handling of the mail to and from a vessel should be supervised by Navy personnel. When Navy personnel are not supervising the loading or delivery, a check of the mail as to quantity and condition should be made at the point where it is turned over to the loading agency or delivered to a representative of the Navy postal service.

Stowage

When stowed on a vessel, mail should be given top stowage in order to make it available for immediate discharge at the designated points of delivery. Mail should not be loaded in holds under heavy cargo, or covered by deck cargo. When mail for several destinations is loaded in the same hold of the ship, it should be stowed so that the mail for each destination is successively accessible. When large shipments of mail are sent to one overseas point for transshipment, mail for the transshipping post office should be loaded so as to be available for unloading first. Pouch mail (first class mail and airmail) should be loaded so as to be readily available for unloading prior to sack mail (parcel post and second and third class mail). Whenever possible, registered mail should be given special stowage. On a Navy ship, mail should be stowed in the most secure space available, consistent with the mission of the ship.

Figure 7–2.—Unloading Navy mail.

Merchant Ships

On board merchant ships, the senior supercargo officer should have complete information on the stowage of mail, in order that prompt arrangement for its discharge may be made at each destination. The Naval Control of Shipping Officer (NCSO) is advised of the type and volume of mail by destination, in order that this information may be included in his sailing dispatches.

When registered mail is to be carried by a vessel, its captain or master should be advised of his responsibility for its protection. It is recommended that the communication officer or postal officer make an inspection of the space allocated for the stowage of mail. This inspection is important in order to prevent any undue exposure to damage by water, cargo, or depredation.

Financial Operations

In addition to dispatching, transporting, and delivering Navy mail, the Navy Postal Service maintains the financial operations necessary for adequate postal service. NPO's not only sell stamps and stamped envelopes, but they also register and insure mail, and issue and redeem postal money orders.

The registry system provides special safeguards for the transmission of money and other valuable mail by means of records and receipts which facilitate their tracing.

Insurance is available for domestic third and fourth class matter mailed at, or addressed to, any post office in the United States or its possessions, naval vessels, or overseas bases. This insurance provides protection against loss, rifling, or damage in an amount equivalent to its value, up to a maximum of $200.

Postal money orders are a common medium for the remittance of money. Individual orders are issued in amounts up to $100. This system was modernized in 1951 to utilize electrical sorting and tabulating machines. Money orders are acceptable at any post office or bank within one year after purchase, are cleared through the Federal Reserve System, and channeled for accounting purposes to twelve regional postal areas which coincide with the Federal Reserve Districts.

Naval Addresses

It is essential that communication and postal officers have complete information concerning naval addresses. Lists of Navy mail address numbers are disseminated at frequent intervals, and are found in the *Standard Navy Distribution List* Part I and Part II and special instructions from SecNav and CNO. Instructions concerning the use of official addresses are contained in *U. S. Navy Postal Instructions.*

NAVY NUMBERS

The use of Navy numbers for the handling of mail has several advantages, and it results in security, speed, and simplicity. Some of the advantages are:

1. Navy numbers provide adequate security when a classified movement, operation, or establishment of a base is being planned.

2. Navy numbers aid in separating Navy from civilian, domestic, and international mails.

3. A change in the routing of the mail may be made without confusion any time there has been a change in the meaning of the Navy number.

4. The number system provides an easy method of identification of Navy mail by postal personnel handling mail in the United States. This permits naval personnel and their correspondents to utilize the domestic postal rates for their overseas mail.

Requests for Navy Numbers

Requests for the assignment of Navy mail address numbers are forwarded to CNO. The meaning of the number, the routing of mail for it, the names of local activities that will use it, and the desirability of adding any of these activities to the *Standard Navy Distribution List* are included in the request. When this information is not known, the request will state that no activities will be served by that number until further notice. CNO makes the assignment of the Navy numbers.

Classified Addresses

When a classified activity or unit is to be located long as a shore address is used, it will apply to

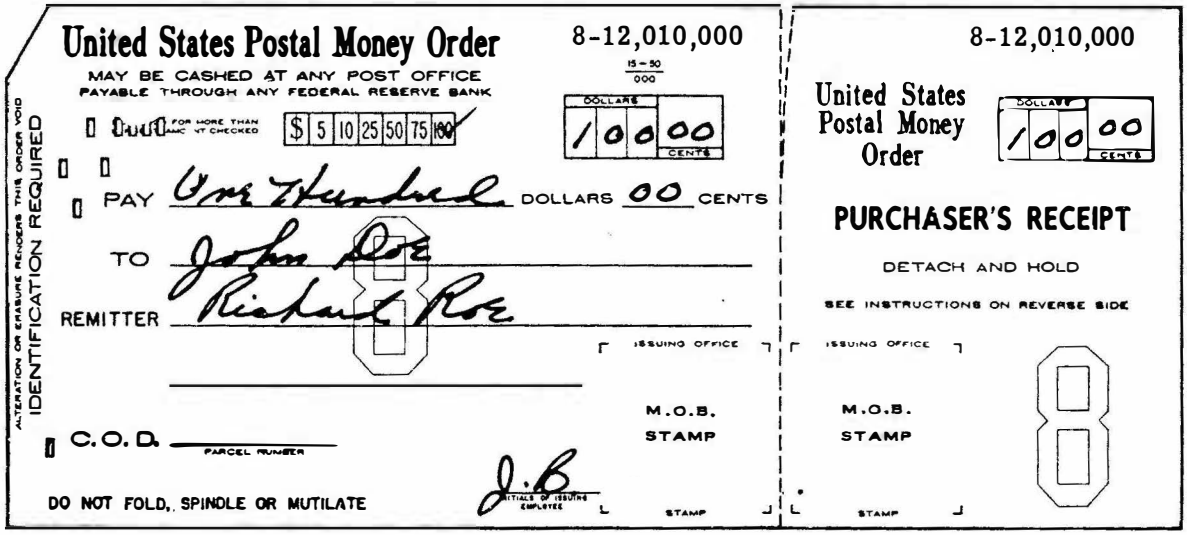


Figure 7–3.—Postal money order form.

quests CNO to assign a Navy mail address number to it. After assignment of the number, CNO issues instructions to the appropriate FPO concerning the area for which mail for the newly assigned number will be forwarded. The area commander is responsible for the routing of the mail within his area.

After the movement has been completed and the name of the new locations made public, the area commander informs CNO that the classification has been reduced accordingly. The meaning of the number is then released to the Navy by means of a change to the *Navy Number List.* The name of the activity is also added at this time to complete the address, as for example:

Commanding Officer
U. S. Naval Advanced Base
Navy 0000 Fleet Post Office
New York, New York

The activity will then be entered automatically in the *Standard Navy Distribution List.* Mail for a special, classified movement can be expedited by means of the above procedure without disclosing the plans, name, or designation of the movement. It is generally desirable to assign more than one Navy number to a locality.

When a unit with a Navy mail number arrives at a locality where no other Navy number has been assigned, the locality takes the mail address of this unit. If the unit arrives at a permanent overseas location which already has a Navy number, the unit discontinues the use of its special mail number and adopts the mail address of the base, unless the security classification of its address is higher than that of the base. In this case, the original mail address is retained.

Mobile units which consist of fleet units and shore-based units, such as Construction Battalions, do not use a Navy number. They use either FPO San Francisco or FPO New York as an address.

Use of Geographical Locations

When an administrative command of a fleet unit is set up on shore within the continental limits of the United States, a geographical address is permissible, provided authority is obtained from CNO. For example, the address of the command of a unit of seagoing forces:

Commander Service Force
U. S. Atlantic Fleet
% Fleet Post Office
New York, New York

The administrative office of the same command established on shore is:

Commander Service Force
U. S. Atlantic Fleet
Bldg. 142, Naval Base
Norfolk 11, Virginia

In some situations, the actual fleet unit and the administrative unit are the same. However, as long as a shore address is used, it will apply to the administrative title.

Postal Facilities

Postal facilities which are staffed and administered by the Navy Department include FPO's, NPO's, and units of NPO's. Civilian operated post offices at shore stations within the United States are not administered by the Navy. There are no civilian operated post offices at shore stations overseas.

FLEET POST OFFICES

Fleet Post Office is a designation which was formerly applied not only to Navy Postal Service facilities at the postal concentration centers in New York and San Francisco, but also to NPO's outside the continental United States which served as centers for the distribution and dispatch of interarea and intra-area mail. This is no longer done. Since 1952 the designation FPO is used only by the facilities in New York and San Francisco.

In time of peace, the work of the two FPO's is for the most part that of administration, and of liaison with the civilian postal service. Their primary responsibility is to furnish dispatching instructions to the local civilian post office and postal concentration center. Civilian postal employees actually handle the mail.

In time of war or national emergency the FPO may, as it did in World War II, assume the responsibility for handling Navy mail. Navy personnel would then separate, distribute, and dispatch Navy mail to points overseas. If advisable, additional FPO's would be established, but only within the continental United States.

NAVY POST OFFICES

Navy Post Offices, with but few exceptions, are under the charge of a Navy postal clerk. NPO's of this type provide mail service to the activity to which assigned. Although normally they do not function as distributing and dispatching offices for mail within and between areas, they may on occasion have this function for a limited period of time.

As has been noted in a previous chapter, NPO's which are components of NAVCOMMSTA's are under an officer-in-charge although each such NPO has a Navy postal clerk. The primary function of this group of NPO's is to distribute and dispatch mail within and between areas, but they also provide postal service to local activities, including money order service.

Units of NPO's may be established to serve outlying detachments of an activity, except aboard ship. Assistant Navy mail clerks are placed in charge of these units. Stamp stock is issued from the fixed credit of the parent NPO. Units of NPO's usually do not furnish money order service, but if this is desired a request is made to CNO who in turn requests establishment by the Post Office Department.

CIVILIAN POST OFFICES

Almost all post offices at naval activities within the continental United States are manned by civilian personnel. These post offices are usually branches of the nearest civilian post office. They are under the direct jurisdiction of the postmaster of that post office and are administered by him. The principal responsibilities of a commanding officer of a station with a civilian post office are the maintenance of the directory service and the handling of mail for military personnel within the activity.

Requesting a Civilian Post Office

In requesting the establishment of a civilian post office at an activity, as would normally be the case at a shore station within the United States, the following information should be included:

1. Average number of military personnel to be served.
2. Average number of military personnel living on station.
3. Prospective expansion of station personnel.
4. Distance from the boundary of the naval station to the corporate limits of the nearest city or town.
5. Description of present method of providing mail service.
6. Nearest U. S. Post Office and distance from the naval activity.
7. Availability of space for a post office.
8. Views of local postmaster.
9. Local circumstances, such as security considerations, which may preclude employment of civilian postal personnel on the station.

10. Detailed justification for requesting the service.

Mail Handling Order

The CO of the activity will cooperate with the postmaster in issuing a mail handling order for the branch post office. This order will establish the places of deposit for mail, methods and schedule for collecting outgoing mail, methods of distributing incoming mail, hours of business at the stamp and money order window, and the maintenance and use of directory files.

PLANNING AN OVERSEAS NPO

Whenever the forward movement of naval forces is planned in wartime, the establishment of mail routes and NPO's should be made in such a way as to maintain mail service for the forces both before and after the occupation of the forward area. To accomplish this, there are two types of postal components which may be used in advance base planning.

Postal Components

There is an administrative type of component which provides postal clerks, post office equipment, and housing. It serves the particular unit in which it is included when the unit is to be located at a place where postal facilities do not exist, or if existing facilities at the forward location are inadequate to handle additional personnel.

The other type of component also includes postal clerks, post office equipment, and housing. It serves several groups of shore-based personnel, as well as units of the fleet.

Obtaining Postal Effects

Postal effects for components may be received in several ways. When time permits, the Post Office Department (at the request of CNO) forwards them to the mail address of the component being formed, or to a nearby terminal NPO where the effects will be held until the component is ready to receive them. When time does not permit the forwarding of effects to the component before it moves forward, reserve postal effects of the NPO, which performs bulk distribution and dispatch for the area, may be used by the component.

POSTAL PERSONNEL

Enlisted personnel regularly assigned to Navy postal operations are either Navy postal clerks, assistant Navy postal clerks, or mail orderlies. A large amount of responsibility is given to these men, and care must be exercised in their selection. In some situations other personnel may be assigned as working parties to assist them.

NAVY POSTAL CLERKS

The key figure in the operation of a Navy Post Office is the Navy postal clerk. The NPO is in his charge, and he is responsible for the postal effects and financial business.

QUALIFICATIONS

In order to be nominated for designation as Navy postal clerk a man must be trustworthy and have had the equivalent of a grammar school education. Furthermore, he must have a reasonable knowledge of the duties of a Navy postal clerk, or the capacity to acquire such knowledge.

While no specific period of obligated service on his current enlistment or enlistment as extended is required of a nominee, consideration should be given this factor. A reasonable period of performance of duties by the nominee should be ensured, and the turnover of postal clerks in an NPO minimized insofar as practicable.

Ratings of Nominees

Personnel with a TE rating are usually nominated as postal clerks. First, second, and third class petty officers of other general service ratings may also be nominated.

NOMINATION PROCEDURE

After the communication (or postal) officer is satisfied that a man meets the qualifications, he recommends him to the CO of the activity for designation as Navy postal clerk. The nomination is made upon Defense Department Form 523. An original and six copies are prepared. The nominee executes the oath of office included on the form.

In addition to DD Form 523, a covering letter is forwarded to the Chief of Naval Personnel. The letter includes (1) the name of the Navy postal clerk being relieved (when the NPO has already

been established), (2) the number of assistant postal clerks currently on duty, (3) the personnel served by the NPO, and (4) a brief résumé of the nominee's postal experience.

Assistant Postal Clerk

An assistant Navy postal clerk is nominated by the same procedure as above. DD Form 523 is prepared and the oath of office executed. In the letter to the Chief of Naval Personnel, however, the nominee is not included in the total given in (2), and (4) is omitted.

ASSUMING RESPONSIBILITY

After executing the oath of office, the Navy Postal clerk may assume custody of postal effects and conduct postal business on the effective date shown on the form. He is responsible for the functions of the NPO, including financial transactions.

An assistant Navy postal clerk may be employed in any NPO branch, provided it is under the same accountable postmaster from whom he holds his designation, without further reference to the Department of the Navy or the Post Office Department. He may be assigned financial duties. Before his assignment to postal duties, a check should be made in a postal clerk's service jacket to make sure that his designation has not been revoked.

Revocation of the Designation of Navy Postal Clerks

The commanding officer may, at his discretion, recommend that a man's designation as Navy postal clerk or assistant postal clerk be revoked. When there has been a violation of postal laws and regulations, a post office inspector may also recommend revocation. A detailed report is made to the Chief of Naval Personnel regarding the circumstances of such action, and the name of the person having custody of the postal effects. Under no circumstances does a postal clerk perform postal duties beyond the effective date stated in the revocation recommendation submitted to BuPers.

When a postal clerk or assistant clerk has proven untrustworthy, his services are immediately terminated. The Chief of Naval Personnel is notified as stated above, including a statement as to the condition of the postal effects. An appropriate notation is made in the clerk's service record.

MAIL ORDERLIES AND WORKING PARTIES

When an organization has no designated Navy postal clerk or assistant postal clerk, the CO appoints an enlisted man to serve as mail orderly. The chief duty of an orderly consists of receiving mail from the post office. He may sign the receipts for insured mail and registered letters, except those endorsed "Deliver only to addressee." In the latter case, he must have written authorization from the addressee before a letter so endorsed may be given to him. He keeps a record of receipt and delivery of registered and insured mail. The mail orderly is responsible for mail in his custody.

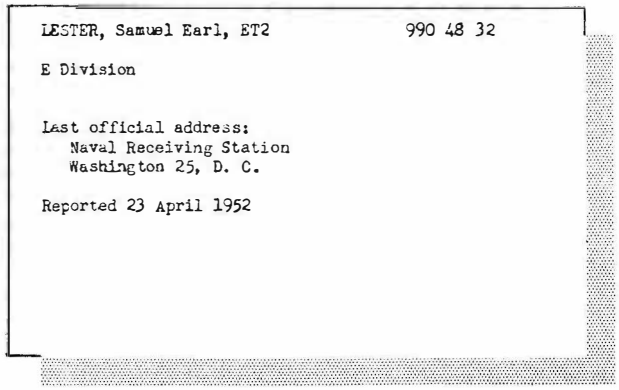
Working parties may be assigned to an NPO to assist in bulk mail handling when large enough quantities are received to require more help than is regularly assigned. Navy postal clerks must give close supervision to working parties to make sure there is no rifling of mail.

Directory Service

Directory service must be maintained by a ship or activity regardless of the type of postal service (NPO, civilian post office, or mail orderly) it receives. The responsibility for the maintenance of directory files rests with the commanding officer of the activity. He should require frequent inspections to ensure that the directory service of his command complies with *United States Navy Postal Instructions*. Good directory service ensures the prompt forwarding or delivery of insufficiently or improperly addressed mail.

MAINTAINING DIRECTORY FILES

Prompt directory service requires a card file of personnel attached, ordered to report, or transferred from the ship or activity. Each card in this file should contain a man's full name, rank or rating, service number, former duty station, division (barracks) assignment, and date of reporting. When a man is transferred, the name and address of his new duty station or other disposition of mail, as well as the date of his transfer,


LESTER, Samuel Earl, ET2 990 48 32

E Division

Last official address:
Naval Receiving Station
Washington 25, D. C.

Reported 23 April 1952

Figure 7–4.—Directory card.

is added to the card. These cards are retained at least six months after his transfer.

With an up-to-date directory file available, undeliverable mail can be given proper service at the activity, regardless of the type of postal service by which it is served. Detailed directions for servicing undeliverable mail are found in *United States Navy Postal Instructions.*

SOURCES OF INFORMATION

Communication officers, postal officers, and other personnel concerned with the administration and operation of the Navy Postal Service should be well acquainted with the Department of Defense, Navy, and Post Office Department sources of pertinent laws, regulations, orders, and instructions.

The primary source of information relative to the establishment and operation of a Navy Post Office is the OPNAV INST 2700.11 (*Joint Military Postal Procedures*), and OPNAV 20–P–20 (B), *United States Navy Postal Instructions.*

NAVY PUBLICATIONS

Department of the Navy instructions relative to the Navy Postal Service are issued in the following publications:

1. *United States Navy Regulations*, 1948, Chapter 7.
2. *Bureau of Naval Personnel Manual.*
3. *Standard Navy Distribution List Part I*, OPNAV P 213–107.
4. *Standard Navy Distribution List Part II*, OPNAV P 213–105.
5. Instructions and notices issued by the Navy Department.

In addition to these publications, much pertinent information will be found in *Navy Mail*, Volume I, NavPers 10221 and *Navy Mail*, Volume II, NavPers 10222, which are training courses written to aid personnel who handle Navy mail.

POST OFFICE PUBLICATIONS

Instructions governing postal affairs issued by the Post Office Department are made available to personnel of the Navy Postal Service through the following Post Office Department publications:

1. *Postal Laws and Regulations*—a compilation of the Acts of Congress relating to the Post Office Department and the postal service, and the regulations governing the operations of that department and service.
2. *United States Official Postal Guide*—Part I covers the operation of the domestic postal service and international money order business, and Part II covers the international postal service.
3. *The Postal Bulletin*—published semiweekly for the information and guidance of officers and employees of the postal service. It includes orders of the Postmaster General and regulations covering all phases of postal operations. Amendments and changes in the *Postal Laws and Regulations* and the United States *Official Postal Guide* are also published in this bulletin.
4. *Post Office Manual*—a reference book concerning the more important duties, responsibilities, and obligations of members of the postal establishment.

CHAPTER 8

NAVY POST OFFICE OPERATION

Navy Post Offices perform the essential services furnished by a civilian post office: selling stamps and stamped envelopes, registering and insuring mail, and receiving and preparing outgoing mail for dispatch. As was noted in the preceding chapter, some NPO's not only furnish these services but also perform bulk distribution and dispatch of interarea and intra-area mail.

As a knowledge of the essential services performed by a civilian post office is essential to understanding the operations of an NPO, this chapter will deal with these services, as well as the procedure for the establishment, operation, and discontinuance of an NPO. Bulk distribution and dispatch of mail will be covered in the next chapter.

Establishing an NPO

To obtain the establishment of an NPO, the commanding officer of an activity must forward a request to CNO. If CNO approves, he requests the Post Office Department to establish the post office.

Information in the Request

Information as to the following is included in a request for an NPO:

1. Name of activity for which intended.
2. Number of personnel to be served by the post office.
3. Amount of fixed stamp credit desired. Approximately $3 per person is considered adequate under normal conditions.
4. Whether a disbursing or supply officer is attached.
5. Date by which postal effects should arrive. The Post Office Department requires one month's notice to assemble and ship the postal effects.

Supplies, Equipment, and Buildings

Supplies and equipment for an NPO are furnished by both the Post Office Department and the Department of the Navy. The former provides the normal operating postal supplies, while the latter provides office fixtures, in addition to the building in which the post office is housed.

Postal Supplies

Normal operating postal supplies provided by the Post Office Department include postal forms, scales, mail locks, keys, postmarking stamps, sacks, and pouches. These are originally furnished without requisition by the post office of which the NPO is a branch at the time of the NPO's establishment. The CO of the ship or activity receipts for the postal effects upon their arrival. They are retained in his custody, or in the custody of a commissioned officer he designates as custodian, until the assumption of duty by the Navy postal clerk.

Although they are obtained from the Post Office Department, blank money order forms, stamps, and stamped paper are not classed as postal supplies. Such items as scales and keys are accountable postal supplies, whereas blank forms, twine, and ink are expendable postal supplies. Postal supplies are requisitioned from postal supply depots or subdepots in commands where such facilities have been established. In other commands these supplies are requisitioned from the accountable postmaster. The procedure for requisition-

ing supplies, stamps, stamped envelopes and money order forms is outlined later in this chapter.

Fixtures and Buildings

In addition to the building or spaces for the NPO, the Navy furnishes furniture, distribution cases, racks, dumping tables, canvas tubs, trucks, safes, and typewriters. The NPO normally obtains these through the local supply officer's requisitions. When the establishment of an NPO requires either the alteration of an existing building or construction of a new building, the request for the alteration or construction goes through the chain of command to the Bureau which has cognizance of the activity, and from the Bureau to CNO.

One requisite for the efficient conduct of postal business is adequate work space. Postal experts recommend 200 square feet of floor space for each postal employee at post offices ashore. At offices ashore, the financial section should be separated from the workroom.

Letter-Drop Boxes

Regular United States mail letter-drop boxes are generally furnished by the Post Office Department. When these boxes are not furnished, special sheet metal boxes should be constructed and installed by the public works officer. Letter-drop boxes should be constructed as to give security to the mail deposited in them.

Figure 8–1.—In a small NPO.

Operating the NPO

Once the NPO is established, the commanding officer issues an order covering its operations. The CO will establish the hours of business at the stamp and money order windows, the places of deposit and the schedule and method for the collection of outgoing mail, and the methods of distribution of incoming mail. In addition the CO's order covers the maintenance and use of directory files, the assignment and supervision of working parties, and the postal clerk's duties in connection with naval communications.

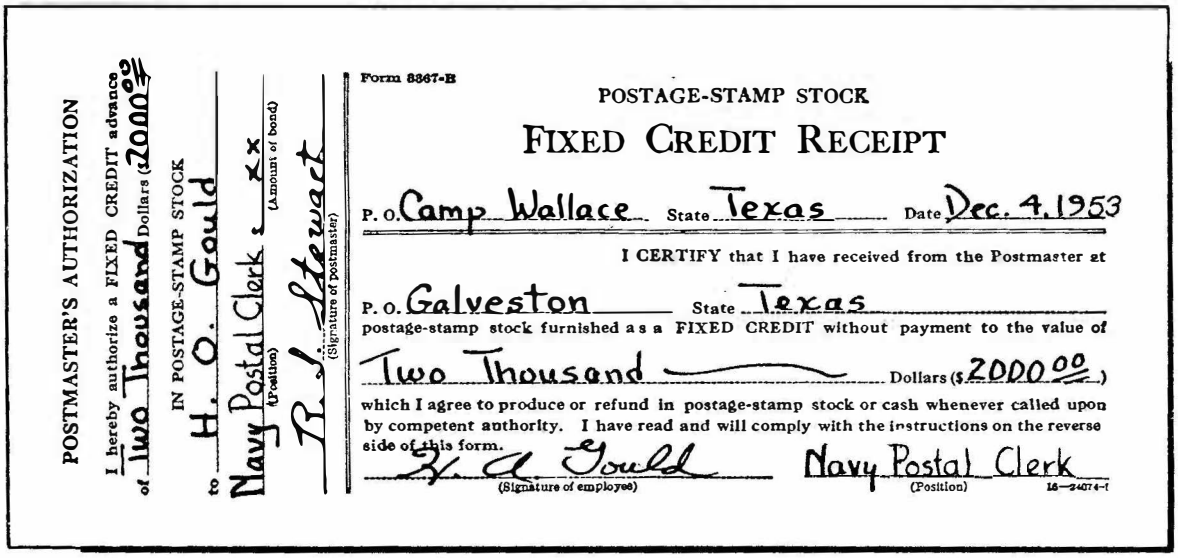
FINANCIAL BUSINESS

The financial transactions of an NPO include not only the sale of stamps and stamped envelopes, the registration and insurance of mail, and the issuance and redemption of money orders, but also in some instances the handling of funds from messages sent through the Naval Communications System. These funds must be kept separate from each other so that they may be audited and balanced separately. A safe is necessary for their protection, and the safeguarding of postal effects of value. Only the above funds and postal effects, and reports and records concerning them, are to be kept in this safe.

Postage Stamps and Stamp Stock

Upon receipt of the initial stamp stock, the CO allots a certain amount to the postal clerk, and turns the remainder over to an officer whom he has

Figure 8–2.—Hours of business are established by the CO.



POSTMASTER'S AUTHORIZATION

I hereby authorize a FIXED CREDIT advance of Two Thousand Dollars ($2000.00)

IN POSTAGE-STAMP STOCK

H. O. Gould
(Amount of bond)

Navy Postal Clerk
(Position)

R. J. Stewart
(Signature of postmaster)

Form 3367-B

POSTAGE-STAMP STOCK

FIXED CREDIT RECEIPT

P. O. Camp Wallace State Texas Date Dec. 4, 1953

I CERTIFY that I have received from the Postmaster at

P. O. Galveston State Texas

postage-stamp stock furnished as a FIXED CREDIT without payment to the value of

Two Thousand Dollars ($2000.00)

which I agree to produce or refund in postage-stamp stock or cash whenever called upon by competent authority. I have read and will comply with the instructions on the reverse side of this form.

H. O. Gould (Signature of employee)

Navy Postal Clerk (Position)

16—24074-1

Figure 8–3.—Form 3367–B fixed credit receipt.

designated as custodial officer. The clerk and the custodial officer sign fixed credit receipts (Form 3367–B) for the supply of stamps they have received from the CO.

The fixed credit allowed a Navy postal clerk seldom exceeds $500. When a commanding officer approves a higher amount, he should state the amount authorized in written orders to the clerk. Copies of these orders are forwarded to CNO and the postmaster of the post office of which the NPO is a branch.

Stamp Sales

Stamps are sold for cash, and the money from stamp sales is not to be used for any purpose but to replenish the stamp supply. When necessary, the clerk replenishes his stamp stock by drawing stamps from the custodial officer and pays cash for them from the stamp funds. The custodial officer should convert this cash into stamps at the earliest opportunity.

When an assistant is issued a part of the postal clerk's stock, the assistant signs Form 3367–B. Individual cash boxes and cash drawers must be provided each clerk who handles stamp stock and funds.

When the Postal Clerk Is Absent

In the event that a Navy postal clerk is absent from his duties for a longer period than liberty, such as for leave or sickness, postal effects in his custody are turned over to the assistant postal clerk. The assistant may be permitted to operate the post office (for a period not to exceed 90 days) until the return of the postal clerk or a new postal clerk has been designated.

When the activity has no designated assistant postal clerk, the postal effects are turned over to an officer designated by the CO, to be held in his temporary custody. Separate itemized receipts are submitted for each of the following classes of effects: stamp funds and stamped paper, money order funds and blanks, other supplies and equipment, and records (except for registry and insurance supplies and records).

No business transactions from the postage or money order accounts are made when the postal effects are in the temporary custody of an officer. He must submit, however, the required monthly report on Form 6019–I (NPO).

Valid Postage and Damaged Stock

Uncanceled postage stamps, stamped envelopes, and postal cards issued by the United States Government since 1860 are valid postage. Damaged stamps or stamped envelopes are forwarded by registered mail for replacement to the postmaster of the post office of which the NPO is attached. The damaged stamp stock should be accompanied by Form 017–FC (fig. 8–4). Form 017–FC is also used for ordering stamps and stamped paper.

Form 017-FC (Rev. 10-50) **Accounting No. 17002**

STAMP REQUISITION

Navy No. 3923, FPO San Francisco

District Post Office, Station, Clerk.

DATE 15 January 1953

	QUANTITY	CENTS	VALUE
ORDINARY POSTAGE STAMPS		½	
	1000	1	10 00
		1½	
		2	
	3000	3	90 00
		4	
		5	
		6	
		7	
		8	
		9	
	100	10	10 00
		11	
		12	
		13	
		14	
		15	
		17	
	100	20	20 00
		25	
AIR MAIL	500	6	30 00
SPECIAL DELIVERY		10	
	100	15	15 00
		20	
SPECIAL HANDLING		10	
		15	
		20	
POSTAGE DUE			
BOOKS OF STAMPS	120	12-3	44 40
COILS		1	
		2	
		3	
POSTAL CARDS	500	2	10 00
ENVELOPES	500 No. 13 · 6 ¢		32 28
	No. , ¢		
	No. , ¢		
	No. , ¢		
	No. , ¢		
	No. , ¢		
Total amount this Invoice,			261 68

Order filled by _____

Examined and found correct _____

DESCRIPTION OF THIS REMITTANCE			
NUMBER OF BILLS	DENOMINATION	AMOUNT	
	$1		
	$2		
	$5		
	$10		
	$20		
	$50		
	$100		
Total currency,			
Gold and silver coin,			
Minor coins (nickeland copper),			
Money Orders paid, (Number)			
Checks and drafts:			
Check No. 43125,			
symbol No. 58977		261	68
Total amount remitted herewith,		261	68
Balance Cash on Hand		37	66

RETURN OF STAMP STOCK FOR REDEMPTION

DISTRICT POSTMASTERS shall send damaged and unsalable stamp stock, together with spoiled postal cards and stamped envelopes redeemed from the public, not less often than once each quarter if the amount thereof is in excess of $5, to the Central Accounting Postmaster in exchange for postage stamps listed on the reverse side of this form.

STAMP CLERKS AND STATION SUPERINTENDENTS shall exchange redeemed stock once each month or more frequently if sufficient amount accumulates.

THE QUANTITY AND VALUE OF THE STOCK RETURNED SHOULD BE LISTED BELOW.

REDEEMED STOCK FOR EXCHANGE

QUANTITY	DESCRIPTION	AMOUNT
	Total,	

Karl C. Klein, TEM

District Postmaster, Superintendent, Clerk.

O.T. Miller TE M 3

Witness:

Date 15 January 1953

GPO 06—16—36927-7

Form 017-FC (Rev. 10-50) **Accounting No. 17002**

STAMP INVOICE

Navy No. 3923, FPO San Francisco

District Post Office, Station, Clerk.

DATE 15 January 1953

	QUANTITY	CENTS	VALUE
ORDINARY POSTAGE STAMPS		½	
	1000	1	10 00
		1½	
		2	
	3000	3	90 00
		4	
		5	
		6	
		7	
		8	
		9	
	100	10	10 00
		11	
		12	
		13	
		14	
		15	
		17	
	100	20	20 00
		25	
AIR MAIL	500	6	30 00
SPECIAL DELIVERY		10	
	100	15	15 00
		20	
SPECIAL HANDLING		10	
		15	
		20	
POSTAGE DUE			
BOOKS OF STAMPS	120	12-3	44 40
COILS		1	
		2	
		3	
POSTAL CARDS	500	2	10 00
ENVELOPES	500 No. 13 · 6 ¢		32 28
	No. , ¢		
	No. , ¢		
	No. , ¢		
	No. , ¢		
	No. , ¢		

The postage-stamp stock described above has this day been received.

Karl C. Klein, TEM

O.T. Miller, TEM 3

Witness to count:

Date 22 January 1953

Figure 8–4.—Form 017–FC.

Reports and Investigations of Losses

When mail or postal effects are damaged by fire, storm, flood, or other catastrophe, the CO immediately makes a message report to CNO with information to the appropriate fleet and service force commanders stating the essential facts. CNO then notifies the Post Office Department. This report is followed by an amplifying letter containing all the facts and circumstances in detail. Subsequent investigation, if warranted, is conducted in accordance with the *Naval Supplement Manual for Courts-Martial*, 1951. This procedure is also followed when a shortage, robbery, or embezzlement is discovered.

When mail is lost or destroyed in transit, the area commander notifies the command which manifested and delivered the mail to the carrier who in turn notifies the NPO from which the mail was received. Commands receiving information regarding lost mail which originated from their Navy post offices submit a complete report to the District Commandant or area commander. They also furnish post offices the registry numbers of all lost registered mail originated by them in order to advise senders of the mail of such loss. Upon receipt of information from all sources, the District Commandant or area commander makes a detailed report to CNO. CNO reports the loss to the Post Office Department.

The commanding officer conducts an informal investigation of such losses and makes an administrative report to CNO via the chain of command. At domestic shore activities, the postmaster of the post office of which the NPO is a branch is notified, in addition to CNO.

REGISTRY SYSTEM

The Registry System provides special safeguards for the transmission of money and other valuable mail by means of records and receipts which facilitate tracing.

Registered mail is kept separate from ordinary mail and carefully protected from accident and theft. Registered mail is numbered consecutively beginning with No. 1 every July first. Details concerning the make-up, handling, and delivery of registered mail are given in the *Joint Military Postal Procedures*.

Registry and insurance records of overseas shore activities must be preserved for one year from the date of the last entry. These records are then transmitted to the postmaster, New York, Registry Section, with a communication in duplicate describing the records being forwarded. The duplicate copy is receipted and returned to the NPO to remain a part of its permanent file. Records for domestic shore stations are transmitted to the postmaster concerned at the close of each month, unless otherwise authorized, along with the monthly statistical reports.

PARCEL POST

Domestic parcel post (fourth class mail) offers a convenient, quick, and efficient means of transporting mailable parcels. This service reaches more places than any other transportation agency. When fixing the rate on a parcel post package with a return address "% FPO New York," the package is considered as being mailed from New York. Similarly, a parcel post package with a return address "% FPO San Francisco" is considered as being mailed from San Francisco. This does not apply to air parcel post, however. Parcel post packages may weigh between eight ounces and 70 pounds, and may be insured for their value up to a limit of $200.

POSTAL MONEY ORDERS

Much careful work is required at the NPO which furnishes postal money order service. At the end of each day, the postal clerk must make a report of the money order business, including an accounting of money order funds, paid money orders, unused money order forms, and remitter's applications.

Money order forms are issued to the NPO by the accountable postmaster. The initial consignment is made by the postmaster when he receives notification from the Post Office Department of the authorization for money order service at the NPO.

Supplying Money Orders

After the initial supply, requisitions are submitted on Form 6055–MPO to the accountable postmaster. Requisitions are made at least 45 days in advance of the time at which the money order forms are needed. NPO's ashore maintain

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a 3-month reserve supply, and shipboard NPO's a 5-month supply. At NPO's which are branches of local post offices, the supply is determined by the accountable postmaster.

Money order forms which have been supplied for use during a particular period but which are still on hand at the close of the period are continued in use until they are exhausted. After these forms have been used up, the forms issued for use in the subsequent period are then used.

Emergency Requisition

If the quantity of money order forms on hand is insufficient for the period for which requisitioned, or in the event of a situation which depletes the supply appreciably, an emergency requisition for additional forms for use during the period in question may be submitted to the source of supply.

Serial Numbers

The serial number of a money order form is in the upper right corner of both the order and the purchaser's receipt. The prefix number indicates in which of the twelve postal regions the issuing post office is located. Blank money order forms are distributed from the plant of the manufacturer to the twelve regional offices. Each regional office has its own series of numbers beginning with the number 1, differentiated by the region prefix number.

Money order forms are issued by the postmaster to the commanding officer, who places the forms in the custody of the disbursing officer for record and issue. The disbursing officer issues the forms in numerical sequence to the postal clerk.

Money Order Procedure

At NPO's, the application for a domestic money order is made out in duplicate and submitted by the remitter. The clerk records on both applications the serial number of the money order being issued. One of the copies of the application is filed numerically in the NPO; the original is submitted with the daily report to the accountable postmaster.

Cashing Money Orders

Domestic money orders are cashed at any United States post office at their face value if they are presented by the payee, remitter, or first endorsee during the period of validity. This is also true of domestic international money orders which were issued in Cuba, Canada, Jamaica, and the Canal Zone. Domestic international money orders issued elsewhere are handled according to instructions in the *Post Office Manual*.

Money orders are valid for one year from the last day of the month in which they were issued.

The *Post Office Manual* contains the instructions for cashing money orders. It should be consulted when, due to irregularities, such as the omission of the remitter's name, discrepancies in the figures, etc., there is a question of whether a money order may be cashed.

Procedure Followed

Postal clerks stand the loss if they pay a money order to the wrong person. Positive identification should be required when an unknown person presents a money order for payment.

Immediately after cashing a money order, the postal clerk backstamps (postmarks the back of the money order with his all-purpose stamp) and initials it to identify the paying office.

Paid money orders are listed and totaled in column 1 of Form 6019–MPO (see fig. 8–5), which the clerk submits to the disbursing officer at the end of each day.

The postal clerk submits to the disbursing officer his money order funds, one set of remitter's money order applications, paid money orders, unused money order forms, and his daily report, Form 6019–MPO, in triplicate. The disbursing officer audits the daily report and checks the money order funds. Following the audit, the disbursing officer issues to the postal clerk a United States Treasury check payable to the accountable postmaster. The clerk forwards by registered mail the original copy of the daily report, remitter's applications, paid money orders, and the Treasury check to the accountable postmaster.

COMMERCIAL TRAFFIC FUNDS

The procedure for handling government (nonmilitary), commercial, and private communications by naval communications is found in *DNC 26* (*Commercial Traffic Regulations*).

When naval communications handles traffic which is subject to toll charges and tax, the resulting financial transactions, accounting, and reports are the responsibility of the ship or station where

Form 6019-MPO
(July 1951)

DAILY MILITARY POST OFFICE (MPO) REPORT OF MONEY ORDER BUSINESS

APO No. _____ NPO No. (or name of ship) U.S.S. Postal UNIT No. _____

BRANCH OF POST OFFICE AT New York, N.Y. FOR BUSINESS OF 16 February, 1952

MAILING ADDRESS: c/o Fleet Post Office, New York, N.Y.

INSTRUCTIONS

Money-order forms are numbered consecutively and each form must be accounted for. When a form is spoiled, the serial number must be entered in this report in its regular sequence and the words "Not Issued" written or stamped across the "Amount" and "Fee" columns, and the same notation made on the order. Spoiled forms must be transmitted with this report.

Each transaction will be recorded on this form. The military postal clerk will record the particulars of each money order in column 4 or 5 on the reverse of this form and transfer the totals to the "Cash Summary." If more space is needed for listing issued or paid orders, additional copies of this form will be used, and the totals combined with those appearing hereon for entry in the "Cash Summary." This report will be prepared in duplicate by MPO's, and in triplicate by a unit of an MPO, and presented to the designated officer for verification, signature, and the issue of a Treasurer's check for the surplus money order cash. In each instance, one signed copy of each MPO and unit report will be retained in the MPO, and one copy of the unit report will be retained in the unit. The original report (by both MPO and unit or units), accompanied by the original money order applications, spoiled orders, remittance check or checks, and paid money orders, will be dispatched by registered mail to the postmaster. The envelope will be marked in the lower left corner "Money Order Funds." The registry number will be entered on the retained copy of Form 6019-MPO. When no business is transacted, this report showing the cash balance on hand at the beginning and end of the day will be completed and forwarded to the postmaster by ordinary mail, unless otherwise authorized.

COLUMN 1 — MONEY ORDERS PAID			COLUMN 2 — CHECKS INCLUDED IN SUMMARY				COLUMN 3 — CASH SUMMARY			
	SERIAL NO.	AMOUNT	SERIAL NO.	SYMBOL NO.	AMOUNT		DEBITS	A/C NO.	AMOUNT	
1	2-95687	30 00	43650	58977	371	00				
2	5-7832	50 00					Balance from item 13 of previous report	1		
3	8-67934	10 00					M. O. issued (14) Spoiled (1)	2	482	45
4	12-10132	25 00					Fees—Domestic money orders issued	3	3	05
5							Other items as follows	4		
6								5		
7							Debit correction per P. M. letter dated 2-8-52	6		50
8							TOTAL DEBIT	7	486	00
9										
10							CREDITS	A/C NO.	AMOUNT	
11										
12										
13							Paid money orders (Total front col. 1)	8	115	00
14							Checks as lis ed (Total front col. 2)	9	371	00
15										
16							Other credits	10		
17								11		
18							Credit correction per P. M. letter dated	12		
19										
20							Balance carried to item 1 of next report	13		
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
	TOTAL (to A/C 8 in Summary)	115 00	TOTAL (to A/C 9 in Summary)		371	00	TOTAL CREDIT	14	486	00

If the balance on hand (A/C 13) includes cash totaling $100 or more, give reason for not remitting: _____

REVIEWED AND VERIFIED:
John L. Busby
John L. Busby LCDR
(Designated Officer) (Rank)

CERTIFIED TO BE CORRECT:
A. C. Jeffries
A. C. Jeffries, TEM1
(Military Postal Clerk)

The MPO number, as well as the unit number when applicable, and the date, must be entered in the spaces provided therefor at the top of the sheet. Place a legible impression of the money order dating stamp in the space at right.

16—64214-1

Figure 8–5.—Form 6019–MPO. Daily money order report.

NAVY DEPARTMENT
NCS Form No. 235
NAVSHIPS (250)
(Rev. 5-32)
Approved by the Comptroller of the Treasury Nov. 4, 1916

NAVY DEPARTMENT

NAVAL COMMUNICATION SERVICE

STATEMENT OF ACCOUNT

READ INSTRUCTIONS ON OTHER SIDE

Radio Station USS EDMONDS (Ship or station), for the month of February, 1954

DR. CR.

RECEIVED		AMOUNT		PAID OUT		AMOUNT	
Charges on messages filed during current month		7	05	*Refunds*			
Collections for Previous Months On messages previously reported on which no charge or a short-charge was made.				Month	Error Notice Ref. No.		
Month	Error Notice Ref. No.						
				R. P. Receipt Nos.			
				Remittance herewith: Check or Money Order No. 23,257			
				Dated 7 March 1954			
				Drawn on Treasurer of U.S.		7	05
TOTAL		$ 7	05	TOTAL		$ 7	05

U.S.S. EDMONDS (Ship or station)

San Francisco, Calif. (Place of forwarding)

7 March (Date of forwarding), 1954

I CERTIFY that the above is a true statement of all moneys received and disbursed by me during the month shown at top of page on account of Naval Communication Service.

There is forwarded herewith the sum of Seven and 5/100 Dollars.

L. W. Collins, U. S. N.;
L. W. Collins, TEM1 Signature of [Purser / Assistant Purser / Navy Mail Clerk].

To DIRECTOR NAVAL COMMUNICATIONS.

16—10650-1

(IN DUPLICATE)

Figure 8–6.—Statement of account.

the messages originated. Funds and reports are sent to CNO (DNC) for every month in which such traffic is handled. At shore stations, these reports are sent in by the 10th day of the following month.

Methods of Remittance

Funds collected for handling commercial traffic are forwarded by an exchange-for-cash Treasury check, postal money order, or American Express money order. A Treasury check is preferable. When a money order is used, the city of the payee is Washington, D. C. One remittance is made for the total of tolls and taxes collected for that month. Stamps, cash, or personal check are never used for this purpose.

Report Forms

The report includes a "Statement of Account" (Form OPNAV 2160–3, formerly OPNAV 20–235) and whichever of the following forms listed below, as necessary:

Three copies are made of the monthly Statement of Account. These are signed by the commanding officer. Two copies are forwarded in the monthly report and one is kept in the office files. On this form the debit side must agree with the credit side. The tax collected on traffic is indicated as a separate item.

Complete copies of each message or picture (except Navy and commercial pictures for general distribution) listed on an abstract are sent with the abstract in the monthly report.

Old form	New form	Title
OPNAV 20–233	OPNAV 2160–1	Abstract of all messages sent.
OPNAV 20–234	OPNAV 2160–2	Abstract of all messages received and delivered on board or relayed.
C. S. 200	OPNAV 2160–4	Abstract of all messages received and sent forward or delivered except "E" messages.
OPNAV 20–672	OPNAV 2130	Report of class "E" messages.

ORDERING GENERAL SUPPLIES

An NPO must maintain a stock of postal supplies sufficient for the conduct of business. Supplies are requisitioned on POD Form 1574–S (Requisition for General Supplies). The requisition is submitted in the manner prescribed by the accountable postmaster or postal supply officer.

Each article ordered must have a form or item number, as well as a description by name of the article. Blanks, books, labels, and tags have form numbers, while office supplies, such as carbon paper, pencils, ink for rubber stamps, twine, and similar supplies have item numbers.

Audits and Inspections

Several checkups on the operation of NPO's must be made periodically. Checkups are on post offices in general throughout the United States postal service, but the timing and certain other details in the case of NPO's is peculiar to the postal establishments of the armed forces. A checkup may be either an *audit* or an *inspection*, the two being conducted jointly on some occasions.

Audits and inspections are for the protection of the government and postal personnel. In a properly operated NPO, these checkups present no problem.

An audit is an inspection of accounts. The figures on reports and records are checked for accuracy. Cash on hand is counted. If an audit is on the money order account, the number of money order forms on hand will be verified. If the audit is on the stamp account, the number and the denominations of stamps on hand will be checked.

An inspection is an examination of post office equipment and supplies and general mail-handling procedures. The condition of equipment on hand, the security afforded postal funds, and the protection given to the mail are factors which are considered.

Frequency of Audits and Inspections

It has already been noted that a daily money order audit is conducted by the disbursing officer. In addition there are other audits and inspections.

Once each month the money order and stamp accounts are inspected and audited by an officer

Form 1574-S

DO NOT DETACH

U. S. POST OFFICE, Washington, D. C.

ORIGINAL

REQUISITION FOR GENERAL SUPPLIES

Required by Station or Section Navy Receiving Station For the Period 1 June, 1954

J. M. Higgins
J. M. HIGGINS
Superintendent or Foreman.

NOTE.—Your requisition must be submitted on the date designated for your station or section. It must be made in Duplicate. Furnish all the information asked for on the blank. Give the Form or Item numbers, arrange in numerical sequence, and furnish the full description of each article requested. Write plainly, and place only one Form or Item on a line.

The Duplicate will be returned to the Station or Section, as an invoice of the quantity allowed. Superintendents or Foremen will promptly verify the quantity received with the amount allowed on requisition, and retain Duplicate as a record.

The column under the heading "Quantity allowed" will be filled in by the Supplies Section, by checking, when the full quantity requested is allowed; and by figures when the quantity allowed differs from that requested.

POSTMASTER.

Form or Item number	Quantity used last month	Quantity on hand not in use	Quantity needed for	Quantity allowed	DESCRIPTION
3811	10	60	50		Return receipt card for registered & insured mail
3849	32	70	150		Notice of arrival of, and receipt for, registered mail
3849-B	40	63	210		Notice of arrival of insured mail and receipt for insured mail
3852	15	10	20		Manifold dispatch book record, 10-entry page
6001	250	105	1100		Application for domestic money order

U. S. GOVERNMENT PRINTING OFFICE 16—10975-1

Figure 8–7.—Form 1574–S.

designated by the CO. The daily audit is made by the Postal Officer or designated officer, neither of whom are to make the monthly audit. At the end of each quarter, the postal officer prepares a statistical report which is submitted to CNO. Once a year or whenever the Commanding Officer deems it warranted, NPO's may be given a joint audit and inspection by a civilian post office inspector. Monthly audits are surprise audits. Postal personnel do not know the day on which those audits will be conducted.

Daily Money Order Audit

When the disbursing officer receives the daily report and money for the money order business from the mail clerk, he first checks the previous day's report to see if there is a balance to be carried forward. He then checks the number of money order forms not returned to see that each serial number is accounted for, either by being issued or spoiled (not issued). If there is an entry on the debit correction or credit correction line, he verifies this amount against the figure given on Form 6019–MPO (fig. 8–5). The addition on the report is checked, and the total debit and total credit are compared. They must balance.

The disbursing officer also verifies the serial number of each paid money order which has been entered on the report. Paid money orders are checked to see that each has the signature of the person to whom paid, a backstamp, and the initials of the person making payment.

If the figures on the report are correct, the disbursing officer signs under the line reading REVIEWED AND VERIFIED. When there are any errors or discrepancies, he points them out to the postal clerk, who must make the proper corrections.

MONTHLY INSPECTION AND AUDIT

The monthly surprise audit may occur at any time during the month. It is best that it be performed during the first three weeks of the month in order to inject the element of surprise. If the audit has been performed late in the month, it may be well to make the next month's audit early in the month.

Auditing the stamp stock, particularly the loose stamp stock, usually requires more time and care than the money order audit. Stamp stock and cash which make up the fixed credit must be counted. Requisitioned stamps not yet received must be taken into account. Registry records are checked to determine that the requisition was actually dispatched, and that a check for the amount shown was actually issued by the disbursing officer to the postal clerk.

Tally Sheet Used

Both the clerk and the auditing officer have a tally sheet to mark the number of items or cash. They should count each item. One method is to have the clerk count the cash and envelopes, while the officer counts the stamps and stamp books. When finished, the clerk then starts counting the stamps and the officer starts on the cash and envelopes. When each has listed the necessary information on his tally sheet, the officer asks the clerk to read his figures and compares them with those on his tally sheet. When a discrepancy appears, both must check to see which figure is correct.

Determining the Values

After all quantities have been counted and the lists compared, the two are ready to determine the values to be entered on the right of the tally sheet. This is done by multiplying the basic value of each item by the quantity. Envelopes are audited and accounted for at the actual cost price which is generally carried three decimal places.

Redeemed stock is stamped envelopes, air letter sheets, international-reply coupons, and postal cards which have been turned in by purchasers to the post office in exchange for stamps. Redeemed stock may not be resold to the public but is turned in to the Post Office Department. When such stock is on hand, it must also be considered when the stamp stock account is audited. Only the STAMP VALUE is considered on redeemed envelopes.

Excesses and Shortages

The auditing officer usually finds that the post office has an amount in excess of the fixed credit. This is due to the gaining of a fraction of a cent in most sales of stamped envelopes. The excess is removed from stock and a record is made of the amount.

The postal clerk must make good from his own personal funds any shortage in stock. Such shortages do not necessarily mean that there has been a misuse of funds or embezzlement. However, all shortages must be shown on the report form. When restitution has been made, an appropriate notation is made on Form 6019–I (NPO) (fig. 8–8).

Money Order Audit

The monthly money order audit and the stamp stock audit are conducted at the same time. The auditing officer does the actual tabulating and computing. Starting with the first day since the last daily money order report was submitted, he computes the total value of money orders issued, plus their fees. To this figure he adds the amount of money order reserve, when such funds are provided by the accountable postmaster. Cash on hand and paid orders should equal the sum of issued money orders, fees, and the money order reserve.

A copy of the last daily report of money order business, Form 6019–MPO, is examined by the auditing officer, and the figures are compared with those maintained by the disbursing officer. In addition, the serial numbers of the blank money order forms which both the clerk and the disbursing officer have on hand are checked. The serial numbers are entered on the report of the audit, Form 6019–I (NPO).

This form has separate sections to show the status of stamp and money order accounts. Spaces are also provided for listing certain information pertaining to mail keys and scale equipment, but these spaces are filled out only when an inspection of equipment is conducted in conjunction with the audit.

Two copies are forwarded to the cognizant postmaster, one copy goes to CNO (Postal Affairs Section), one copy is retained by the inspecting officer, and one copy is retained in the NPO files.

Duties of Inspecting Officer

The post office and its equipment should be clean. No personal effects or personal mail should be within the workroom space. The typewriter, adding machine, and postmarking equipment should be in good condition. Typewriter keys should be clean and the ribbon should make a clear impression. The typewriter and adding machine should be covered when not in use.

The all-purpose postmarking stamp, metal postmarking stamp, canceling machine, and all hand stamps must be kept clean. Felt from inked pads tends to stick to rubber or steel. Handstamps should be examined to see that they are free from felt, dirt, or other adhesive substances.

Mail bags are counted to determine the number on hand. Empty bags are examined to see if they contain any mail. The condition and the security of the mail keys, LA keys, and rotary locks are also checked. The number of each LA and rotary lock key is compared with the number of the key assigned to the NPO. The rotary key must be attached to the inside of the safe, and the LA key must be attached to some permanent fixture within the post office. Discrepancies in key numbers and keys not in good condition are reported to the CO. If there is a considerable number of LA and rotary locks on hand, the surplus should be sent to the nearest first-class civilian post office.

Undelivered Mail

Mail not delivered within 24 hours of receipt must be backstamped to show the date of receipt. Such mail should be examined to determine whether it is being properly held awaiting delivery, or whether other disposition should be made. Missent and other mail not entitled to directory service should be checked for prompt and proper disposition. Directory records and mail awaiting directory service should be checked.

Observation of the amount of mail on hand, the postmarks on the correspondence, and the dates on mail bag labels and facing slips are all indicative of the speed with which mail is being handled at the NPO.

Security of Funds and Mail

One of the most important duties of the inspecting officer is to make certain that postal funds, money order forms, and mail are given adequate security. Drawers and cabinets should be examined to make sure that they can be locked when postal personnel are temporarily away from a service window or counter. Each clerk authorized to handle postal funds must have an individual locked drawer or box. If the combination of the post office safe is known to more than one person, it must have separate locked compartments.

Form 6019-I (NPO)
(Rev. 1-48)

POST OFFICE DEPARTMENT
NAVY AND COAST GUARD MAIL SERVICES

REPORT OF INSPECTION OF MAIL CLERK'S ACCOUNTS

Date of inspection 14 June, 1952

PO 24387 (Accounting number) _____ (Office number) USS Postal (Ship or organization) FPO New York, N.Y. (Mailing address)

STAMP ACCOUNT

		Stamps and stamped paper on hand	$ 312.19
		Requisition in transit 9 June, 1952	150.00
Authorized stamp credit	$500.00	Requisition in transit _____, 19____	
*Excess from sale of stamped envelopes	.12	Cash and paid money orders	37.93
*Overage (funds gained from any other source)		Shortage (if any)	
TOTAL to account for	$500.12	TOTAL accounted for	$500.12

MONEY ORDER ACCOUNT

Last report and remittance (Forms ~~6019~~ 6019-MPO and ~~6019-E~~) sent to main office accounted for business of 13 June, 1952, including money order No. 2-999

Money orders issued since that date:
No. 2-1000 to No. 2-1031, inclusive . $1357.87

Fees on same	6.20	Paid money orders on hand	$625.25
Authorized money order reserve	375.00	Due Mail Clerk—Statement of differences dated	
Due Postmaster—Statement of differences dated		Cash on hand	1113.82
*Overage (if any)		Shortage (if any)	
TOTAL	$1739.07	TOTAL	$1739.07

*Remit to Superintendent of Postal Finance with duplicate Form 6019-I (NPO).

Blank money order forms in custody of Mail Clerk: No. 2-1032 to No. 2-1100
Blank money order forms in custody of Disbursing Officer: No. 2-1101 to No. 2-2000

1. Stamps taken from fixed credit for any purpose, including official registry fees, must be paid for when used and full value of stamp credit maintained.
2. For protection of their responsibility, Mail Clerks must hold receipts for stamp stock assigned to Assistants and the Mail Clerks and Assistants should have individual locked compartments to which others do not have access.
3. Postage-due stamps must be in stock and affixed, before delivery, to postage-due mail.
4. Disbursing Officer shall audit money order account daily (Sec. 59, MSM).
5. Any shortage should be replaced immediately. If replaced, no shortage should be shown on the above form. If not replaced, postal business must be suspended forthwith. In the case of any shortage, investigation should be instituted immediately with a view to taking proper corrective and/or disciplinary measures.
6. Mail keys:
   (a) LA key No. 13726 is chained to inside of drawer in post office.
   (b) Rotary lock key No. 4832 is chained to inside of safe in post office.
7. Scale equipment:
   (a) 9-ounce scale No. 72385 is (~~is~~) in good working order.
   (b) 4-pound scale No. 31211 is (~~is~~) in good working order.
   (c) 100-pound scale No. 7432 is (~~is~~) in good working order.

   Additional LA and rotary lock keys as well as scales should be accounted for by number in the space provided below. The capacity and condition of scales should also be indicated.

I CERTIFY that I have counted postal and money-order funds, stamps and stamped paper, blank money orders, checked keys and scale equipment, and that the above audit is correct.

F. G. Neubeck
F. G. NEUBECK, LT, USN
Inspecting Officer.

I CERTIFY that $ 5000.00 worth of stamps, stamped paper and cash, being part of authorized fixed credit shown above, is in my possession.

R. R. Roberts
R. R. ROBERTS, LT, USN
Custodial Officer.

I CERTIFY that the above audit was made in my presence and that it is correct.

L. E. Baker
L. E. BAKER, TM2, USNR
Mail Clerk.

Designation effective 2-1-52
POD letter dated 1-24-52

(Where applicable.)

Countersigned:

W. C. McClellan
W. C. MCCLELLAN, LCDR, USN
Commanding.

Ex-Mail Clerk has this day been relieved of the post-office accounts.

Original: Postmaster, New York. Att. Auditor, Room 3017 (if branch of New York; otherwise to Postmaster to which PO is attached).
Copy: Postmaster, New York. Att. Supt. Postal Finance, Room 3115 (if branch of New York; otherwise to Postmaster to which PO is attached).
CNO (Postal Affairs) or Hdqtrs. U.S.M.C. (Postal Affairs Div.) or Comdt. (OC) U.S.C.G.
Inspecting Officer.
Files of P. O.

16—84388-2 U. S. GOVERNMENT PRINTING OFFICE

Figure 8–8.—Form 6019–I (NPO).

Stamps, stamped paper, money orders, funds and mail should be kept well beyond the reach of persons in the lobby, and nonpostal personnel are never permitted on the workroom floor.

The inspecting officer should determine whether the duties of the postal personnel conflict with their assigned duties at general drills. If there is such a conflict, it should be reported to the commanding officer.

Condition of Scales

The three scales (9-ounce, 4-pound, and 100-pound) in the post office should be inspected. Most of an NPO's mail consists of letters, so it is very important that the 9-ounce scale on which they are weighed is in balance. It can be checked for accuracy by setting the movable balance at zero and noting whether the weight indicator comes to rest exactly even with the line on the right of the scale. If the indicator comes to rest below the line, the scale is weighing light; if it comes to rest above the line, the scale is weighing heavy. The scales may be adjusted by turning the screw at the end of the weight indicator. When the scale is weighing light, the screw should be turned clockwise; when it is weighing heavy, the screw should be turned counterclockwise. A slight turn of the screw is usually sufficient. The 4-pound scale can be brought into balance by the same procedure as above.

Office Records

Office records are inspected during the weekly inspection. Records should be arranged neatly and be readily available. Obsolete records should be destroyed at the end of the specified period, or returned to the postmaster of the post office to which the NPO is attached. The "Files and Records" section of the *Post Office Manual* gives much of the information for this. Registry and insurance records should be kept in a locked drawer or cabinet, or, if space is available, they may be kept in the safe. They must be in numerical sequence and available for reference in case of complaints of loss or non-delivery. All entries must be complete.

QUARTERLY STATISTICAL REPORT

Following the end of each quarter (March 31, June 30, September 30 and December 31) a Quarterly Statistical Report is submitted by commands operating a Navy Post Office to CNO. This report is in letter form and is identified as OPNAV Report 2700.1. It should be prepared by the postal officer.

OPNAV Report 2700.1 contains the following information for the quarter:

1. A list of all personnel who have been employed in the NPO during the quarter, including name, rate, serial number, and effective date of designation. Inclusive dates are shown for personnel not employed the entire quarter.
2. Name of postal officer and date of designation.
3. Average number of persons served by the post office.
4. Monetary value of stamps and stamped paper sold.
5. Date and amount of each stamp requisition submitted and the balance of cash on hand after requisition.
6. Total number of money orders issued, total value, and total of fees.
7. Number of articles accepted for registry.
8. Number of registered articles delivered.
9. Pounds of airmail (a) dispatched (b) received.
10. Pounds of ordinary first-class mail (a) dispatched (b) received.
11. Pounds of second, third, and fourth class mail (a) dispatched (b) received.
12. Normal frequency of receipt and dispatch of mail from and to the continental United States.
13. Normal transit time (taken from facing slips) for receipt of air mail from FPO New York or San Francisco, or Postmaster, Seattle, as appropriate.
14. Number of claims received and processed, and number on hand to be processed.
15. Date of last monthly inspection and name of inspecting officer; date of special inspection (if any) during quarter, and the name of inspecting officer or post office inspector.

OTHER INSPECTIONS

In addition to the inspections previously mentioned, NPO's may be inspected at various times by a civilian post office inspector or by a military postal officer from outside the activity.

Post office inspectors may call on the commanding officer at any time for the purpose of inspecting NPO's conducting money order business. They may also inspect the NPO at the request of the commanding officer. A request for an inspection of an NPO by a civilian post office inspector or by a qualified military postal officer may be made by a commanding officer to the district commandant or area commander, as appropriate. Requests for inspections must specify the reason(s) for the inspection, and state whether the NPO transacts money order business.

Checks Past Record

Before commencing his inspection, the inspector examines the record of previous inspections to see what irregularities were noted. Irregularities should have been corrected immediately after previous inspections. If any irregularities still exist, the inspector makes a special note of this in his report.

Procedures and Publications

The inspector observes the procedures followed at the post office in registering and insuring mail and in operating the money order business. He will want to know if the key to the post office is in the possession of an authorized postal clerk, and if a duplicate is in a sealed container in the executive officer's safe. Most civilian post office inspectors will emphasize the importance of keeping unauthorized personnel, including officers, out of the working spaces of the post office.

In addition to auditing the accounts and investigating the security afforded mail, the inspector may question both the postal clerk and the postal officer about the general conditions of the post office.

Civilian inspectors always look over the postal publications to see if the clerk has entered the latest corrections. Failure to keep postal pubs corrected is one of the most common irregularities at NPO's.

Results and Recommendations

The inspector informs the commanding officer of the results of the inspection and makes any recommendations which he believes would improve service or increase security. He furnishes the CO with a letter report of any discrepancies. When the inspection has been made by a military postal officer, he makes his report in a letter to the CO of the unit inspected, with copies sent to the officer (district commandant or area commander) who ordered the inspection, and to the Post Office Inspector-in-Charge, New York, or the inspection division to which the NPO is attached.

Transfer, Suspension, or Discontinuance

Situations may develop where it is necessary to transfer the location of a shore base NPO. A request for the transfer of an NPO is made to CNO. CNO is authorized to permit such transfers provided the designated Navy postal clerk remains with the post office. The postal effects must remain in the continuous custody of the clerk.

When it appears desirable or necessary to suspend for an indefinite period, or to discontinue, the operation of an NPO, CNO must be informed via channels of the date of suspension or discontinuance, and the reason. If operations are to be suspended CNO must also be furnished with information as to the probable period of suspension and the name of the officer who will be custodian of postal effects. Authority must be obtained from CNO prior to discontinuing the operations of an NPO. Funds and effects are disposed of in accordance with *Navy Postal Instructions.*

When an NPO in the continental United States is discontinued, transferred or suspended, a complete file of directory cards for each individual assigned to the activity is maintained by the activity concerned. When an overseas NPO is discontinued, the administrative commander issues routing instructions for mail for a decommissioned unit, and prescribes the location at which the directory file is maintained.

Post office equipment which has been furnished by the Navy is disposed of in accordance with instructions to supply officers.

CHAPTER 9

BULK DISTRIBUTION AND DISPATCH OF MAIL

Navy Post Offices whose primary function is the bulk distribution and dispatch of mail within and between areas are relatively few in number at present. Most NPO's performing this function have been established expressly for this purpose, as for example, nearly all NPO's at overseas NAVCOMMSTA's. However, a shore based NPO other than the above may acquire this function if the situation demands, as for instance, when there is an increase of fleet units in an area where no NPO has been established to perform bulk distribution and dispatch. In other words, while most NPO's doing bulk distribution and dispatch are components of NAVCOMMSTA's, it is not a function which is exclusive to them.

In time of war or national emergency an NPO to serve as a post office for bulk mail handling will probably be among the communication facilities established in a new or expanded area of naval operations, and a communicator may find himself aiding in the necessary planning. Among the factors which must be considered in such planning are its location, construction, and organization.

Requesting Its Establishment

Where there is need for an NPO to perform bulk distribution and dispatch, the senior officer concerned submits a request to CNO for its establishment. He includes in this request the name of the naval activities to be served, the distance from the nearest United States Post Office to each of their NPO's, and the average volume of mail to be handled by these NPO's. If the request is approved by CNO and the Post Office Department, instructions for the activation of the NPO are issued by CNO.

LOCATION

In establishing an NPO of this type, consideration is given to such factors as a location in relation to various means of transportation and to the buildings and quarters already available.

TRANSPORTATION FACTORS

Transportation factors influence the selection of the location. The proximity to railroad sidings or railheads, main docks or areas where ships are berthed or anchored, airfields, and main roads must be considered. Another factor to be considered is whether there is a civilian post office established and operating, as might be the case in some areas.

SELECTING QUARTERS

When quarters for a distributing and dispatching NPO are to be assigned from buildings already available, an inspection team will probably have the task of determining the building or buildings best suited for postal operations. The criteria applied to the selection of a building include:

1. The desirability of a ground floor location. If more than one floor is desired, adequate elevator space, conveyor belts, and chutes should be available to conserve manpower in the handling of mail pouches and sacks.
2. Adequacy of the floor space for immediate operations as well as for any possible expansion that may be needed.
3. Soundness of construction. Decks must be sufficiently strong to support heavy loads of mail.
4. Adequate passageways for mail trucks and other vehicles.

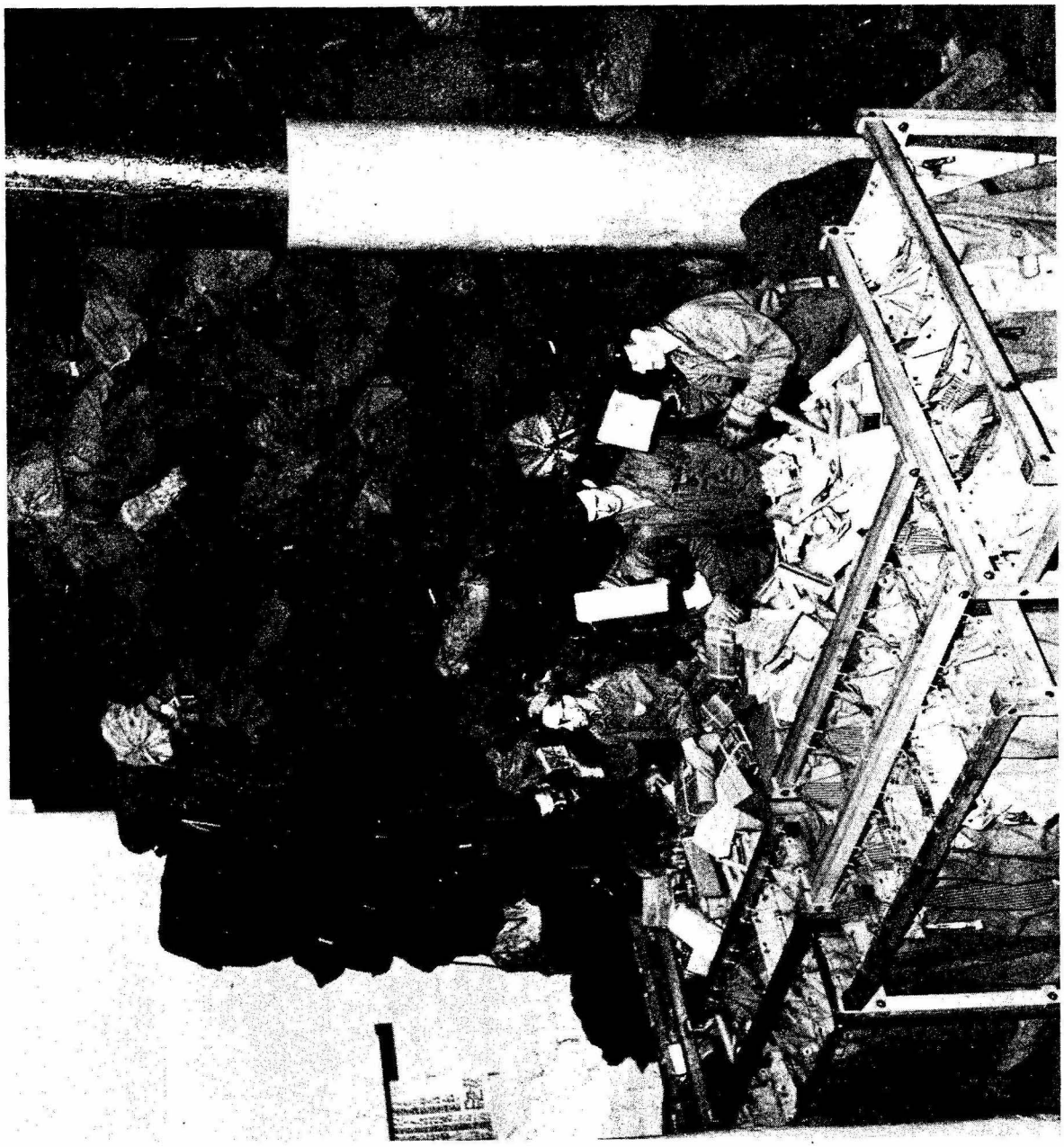


Figure 9—1.—Strong decks are required.

5. Parking facilities for trucks assigned to the post office, as well as for vehicles used by units which will call for mail.
6. Security features of the buildings.
7. The degree to which each building is fireproof.
8. Sanitation, lighting, and ventilating facilities.

BUILDING ALTERATIONS

Alterations are usually required when a building is taken over for use as a terminal post office. Before occupancy, a layout is made to scale. In addition to showing the proposed arrangement, including exits and entrances, and the assignment of space, the diagram should indicate by arrows the flow of mail. Whenever possible, lines of mail flow should not cross each other in an NPO.

To provide better security, alterations undoubtedly will be required. New locks will be installed on the doors; safety wire placed around the locator, registry, and finance sections, as well as on windows which require it. Counters, windows, or other separators will be placed between the lobby and work spaces.

Organization

Most NPO's established for bulk distribution and dispatch are under an officer-in-charge. When the NPO is a component of a NAVCOMMSTA or NAVCOMMFAC, its CO is the OIC's immediate superior.

The OIC is responsible for the over-all organization and general supervision of the NPO, and for the operation of its various sections. At some large offices each of the latter are under an officer. At smaller offices the sections are usually under a petty officer.

Most NPO's of this type are divided into the following sections or units: (1) executive, (2) administrative, (3) transportation, (4) incoming mail, (5) distribution, (6) dispatch, (7) registry, (8) military sea transportation service, (9) directory service, (10) finance, and (11) training.

EXECUTIVE AND ADMINISTRATIVE SECTIONS

Over-all coordination and supervision of the various activities within the post office is the responsibility of the executive section, which operates directly under the OIC. The administrative section handles personnel, records and files, reports, correspondence, procurement of supplies and equipment, and related subjects.

TRANSPORTATION

The transportation section arranges for the dispatch of mail, a duty that requires close liaison with all available air and surface facilities. This section receives a daily inventory of mail on hand for each ship, unit, and activity. When dispatch arrangements are completed it immediately advises the other sections concerned.

Mail Routing Unit

Within the transportation section is the mail routing unit, which maintains current files for the routing of mail of all ships and mobile units in the fleet. This information is received directly from the district or area postal officer by landline teletype if possible. When a direct line cannot be set up, daily changes are forwarded by written communications only. The mail routing unit must be very security-conscious. The information which it has is highly classified, especially in time of war.

Changes Not Issued Verbally

Mail routing has a direct connection with sections which separate and dispatch mail. Information on changes is communicated daily to all sections of the terminal office which maintain mail routing charts. Such information is not given verbally, but as written instructions for which a receipt is obtained from the officer or petty officer in charge of the section.

During wartime or national emergency, the mail routing unit does not give out changes in locations by their geographic names, but rather encodes such changes as routing indicators.

Routing Indicators

Routing indicators are local codes established within a district or area. The code groups may be composed of numbers, letters, or a combination

of both. Each area or naval district is assigned a routing indicator. Each NPO within an area is assigned its own routing indicators. Routing indicators are not used as addresses; they will not appear on mail, mail pouches or mail sacks after these are dispatched or distributed from the terminal post office.

Card File

A set of file cards is maintained by the mail routing unit of transportation. The cards are arranged alphabetically and show the name of the ship, unit, or activity in the upper left corner. When a change is received, the routing indicator, source of authority, date, and geographical location are entered on the appropriate card.

INCOMING MAIL SECTION

The incoming mail section accepts, separates, and routes mail to the proper sections of the terminal office. It maintains current information on all ships and mobile units present or expected to arrive in the area. Pouches and sacks of direct mail (a pouch containing mail for only one ship or unit) for ships and mobile units due to arrive are stored for delivery.

Pouches and sacks of direct mail for the various activities are routed to the base or unit post offices serving these activities, whereas the pouches and sacks of direct mail for transshipment to other terminal offices are routed to the dispatch section. Pouches or sacks containing mixed mail are routed to the distribution section.

Figure 9–2.—Air and first-class mail units of a distribution section.

DISTRIBUTION SECTION

As a rule, the distribution section is divided into four units: first-class, airmail, magazine and newspaper, and parcel post units. The general procedure for working mail of all types is basically the same.

A unit performs primary and secondary separation of mail, as well as routing service.

Processing the Mail

Primary separation is the sorting of mail into large over-all groups. In the secondary separation, the large over-all groups are sorted into groups for individual ships, units, or activities. This mail is made into ties and given to the routing service, where routing charts list all ships and mobile units of the fleet with their proper routing indicators. By reference to these routing charts, the correct routing indicator is written on each tie of mail.

When word is received from the transportation section that dispatch arrangements for a certain location have been completed, pouches and sacks of mail bearing the routing indicator for that location are forwarded to the dispatch section.

In some situations, a direct pouch or sack is made up. It is labeled for the ship, unit, or activity concerned and placed in another pouch or sack. The outside container is labeled to show the routing indicator and sent to the dispatch section.

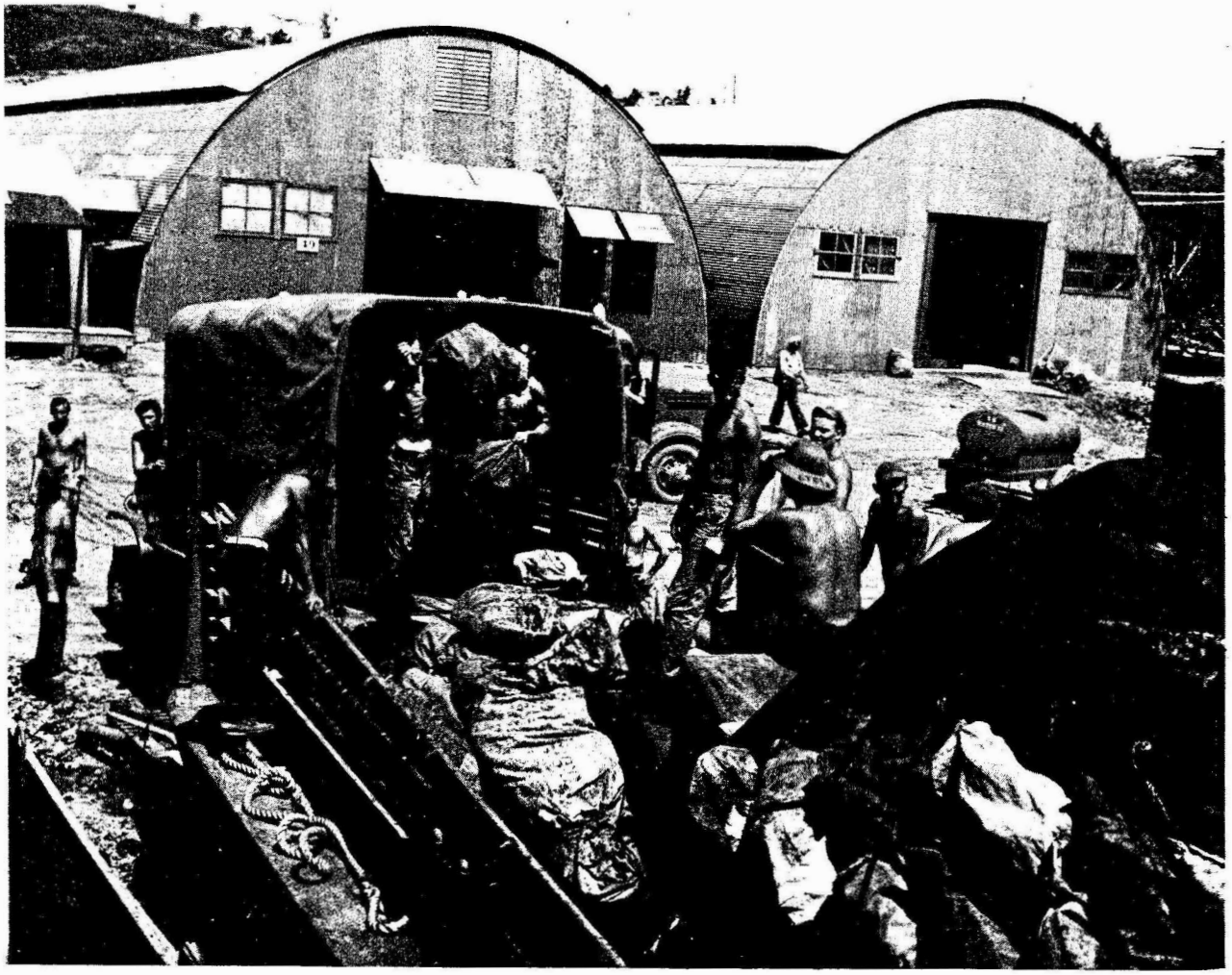


Figure 9–3.—Dispatch section normally has both motor transport and boats assigned to it.

DISPATCH SECTION

When pouches and sacks of mail are received in the dispatch section, the routing indicator labels are removed and replaced with labels "in the clear." The section then takes the mail to the ship, plane, train, or other means of transportation. The dispatch section normally has both motor transport and boats assigned to it to move the mail.

Security Preserved

Retracing the process which the terminal office uses in handling mail demonstrates how the location of ships and mobile units are kept secure. When the mail is worked by routing indicators in the routing service of the distribution section, the men there know that mail for certain ships and mobile units is grouped under a particular routing indicator. They do not know, however, the geographic location which the routing indicator represents. On the other hand, the men in the dispatch section, which receives the sacked and pouched mail from the distribution section, know the Navy number or geographic location which is represented by a particular routing indicator. They do not know the ships or mobile units that are there, as the ties of mail which bear the names of the addressees are within the sealed pouch. Only personnel in the mail routing unit of the transportation section have complete information as to the routing indicator, Navy number, and geographic location of ships or units.

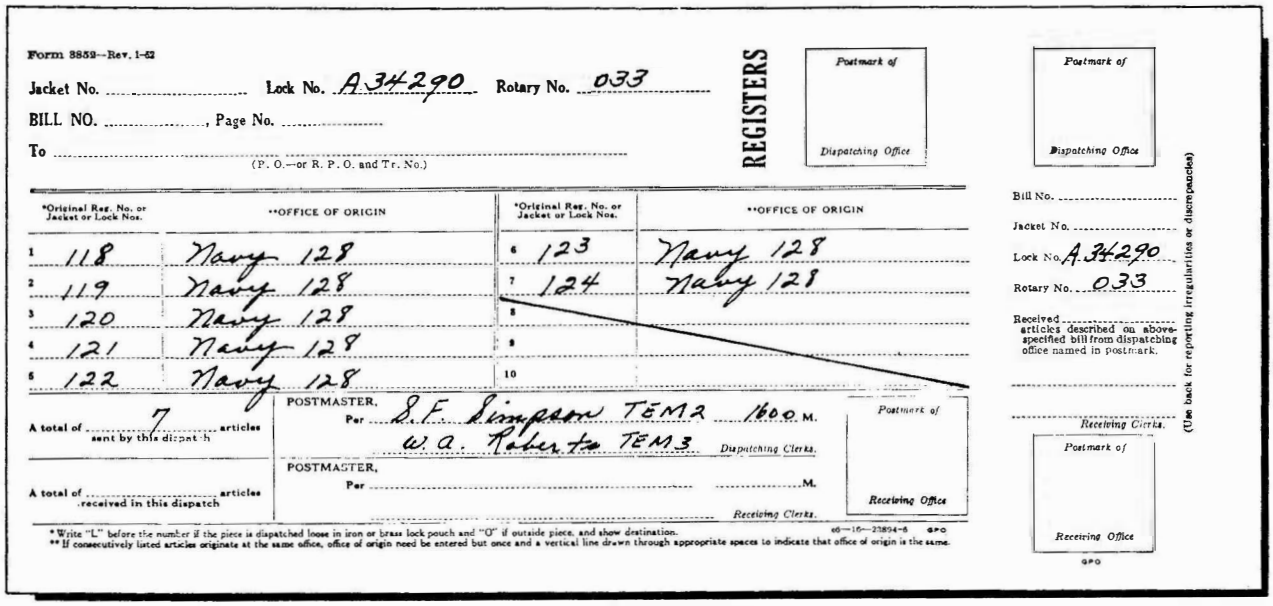
REGISTRY SECTION

The registry section is kept separate from other activities at the terminal post office. Only designated personnel are permitted to enter the registry space. They should sign a log on entering or leaving the space. Registry space is kept locked when registry personnel are not present.

Registered matter made up for dispatch must be accompanied by a manifold bill (see fig. 9-4). Each piece of mail is listed on the bill by registry number and office of origin. A signed copy of the manifold bill serves as a receipt for the records of the dispatching office. *Navy Mail*, Volume I gives details concerning the handling of registered mail.

MILITARY SEA TRANSPORTATION SERVICE

Mail for Military Sea Transportation Service (MSTS) vessels and merchant vessels operated by MSTS is handled in the terminal post office by the MSTS section. Ships under the operational control of MSTS include not only those which are USS and USNS, but also time-chartered ships manned by civilian personnel and operated by com-



Form 3853—Rev. 1-62

Jacket No. ..... Lock No. A34290 Rotary No. 033

BILL NO. ....., Page No. .....

To .....
(P. O.—or R. P. O. and Tr. No.)

REGISTERS

Postmark of Dispatching Office

*Original Reg. No. or Jacket or Lock Nos.	**OFFICE OF ORIGIN	*Original Reg. No. or Jacket or Lock Nos.	**OFFICE OF ORIGIN
1 118	Navy 128	6 123	Navy 128
2 119	Navy 128	7 124	Navy 128
3 120	Navy 128	8	
4 121	Navy 128	9	
5 122	Navy 128	10	

A total of 7 articles sent by this dispatch

POSTMASTER, Per S.F. Simpson TEM2 1600 M.
W.A. Roberts TEM3 Dispatching Clerks.

A total of ..... articles received in this dispatch

POSTMASTER, Per ..... M.
Receiving Clerks.

Postmark of Receiving Office

*Write "L" before the number if the piece is dispatched loose in iron or brass lock pouch and "O" if outside piece, and show destination. 16—21894-6 GPO

** If consecutively listed articles originate at the same office, office of origin need be entered but once and a vertical line drawn through appropriate spaces to indicate that office of origin is the same.

Postmark of Dispatching Office

Bill No. .....
Jacket No. .....
Lock No. A34290
Rotary No. 033

Received ..... articles described on above-specified bill from dispatching office named in postmark.

Receiving Clerks.

(Use back for reporting irregularities or discrepancies)

Postmark of Receiving Office

GPO

Figure 9-4.—Manifold bill.

mercial shipping companies under time charter to the MSTS, and National Shipping Authority (NSA) ships manned by civilian personnel and allocated to the MSTS on a time basis. The latter ships are operated by commercial companies for the Navy under the general agency agreement.

Military Control

Movements of MSTS vessels frequently are classified. In such instances these vessels are under military operational control and proceed to areas under United States military jurisdiction. Shipping companies are then authorized to use the Military Postal Service for handling and delivery of official airmail and first-class mail to their civilian crews. Mail is forwarded by the company under a cover address to the master of the ship, in care of the appropriate FPO. The outer envelope or tag must have one of two endorsements:

1. CONTENTS: MSTS (Merchant Marine) AIRMAIL (PREPARED) forwarded in bulk (authority Bureau of Finance, P. O. Department).
2. CONTENTS: MSTS (Merchant Marine) FIRST-CLASS MAIL forwarded in bulk (authority Bureau of Finance, P. O. Department).

First-Class and Airmail Only

Registered, insured, second-, third-, and fourth-class mail (parcel post) can be delivered only while these ships are in domestic ports. Only first-class mail (including airmail) can be forwarded through the Military Postal Service to civilian crews in advanced areas. Mailable matter originated by civilian crews is accepted by military post offices, where it receives the same handling as other military mail.

FPO New York or San Francisco Used

MSTS mail is handled the same way as other Navy mail. MSTS ships use FPO New York or San Francisco, as appropriate, as their mail address. Mail is delivered through the military or civilian post office nearest the port of call to the local MSTS representative or United States military or consular office.

Routing Instructions

Mail routing instructions, based upon information supplied by officers ordering the movements of MSTS ships, are issued by the Navy to the Navy Postal Service. The exception to this procedure is when a continental United States address will facilitate delivery. In the case of USS and USN vessels, the MSTS Commander authorizes a local address for vessels operating from a continental United States port. In such a situation, arrangements must be made with the local authorities concerned for the handling and expediting of mail using a stateside address. MSTS vessels operated by commercial shipping companies, when in the continental United States, use the address prescribed by their shipping company.

Military Personnel

Military personnel comprising a military department aboard ships operated by commercial shipping companies use the address of the military activity to which the individual is permanently assigned. Mail for such personnel is readdressed when necessary by the military activity and forwarded to the vessel concerned, in care of the appropriate Fleet Post Office. When the movements of their ships are not classified, military personnel may, at their discretion, use domestic and international mails. Use of these mail systems results in shorter delivery time.

DIRECTORY SERVICE AND FINANCE SECTIONS

Like other NPO's terminal offices maintain a directory of personnel attached, ordered to report, or detached from the activity. The finance section handles sales of stamps and stamped envelopes, registration, insurance, and money orders.

TRAINING SECTION

To train new and inexperienced personnel in the handling of mail and finance in the Navy Postal Service, terminal post offices have a training section. Where possible, the instructors for such personnel should be men who have all-round experience in communications, mail, maintenance duties, military duties, and necessary related subjects.

A comprehensive and thorough training program is necessary to provide adequate postal personnel for ships and units of the Navy. Subject matter and courses to be included may be of two

general types—general training in respect to the Navy and specific details concerning postal operations. Included in the former would be classes in typing, naval correspondence, naval orientation and courtesy, and security of classified matter. Courses in the latter should include general information on:

1. the Navy Postal Service and NPO's, such as the establishment, physical facilities, and disestablishment of Navy Post Offices,
2. the classes, collection, preparation, and dispatch of mail,
3. stamp stock and stamp business, registry and insurance services, and money order business,
4. directory service, and
5. inquiries, claims, and complaints.

Wherever possible, space should be obtained in which a mock post office can be established. Postal equipment, forms, reports, and other training aids should be used if available.

APPENDIX I

POSTAL AGREEMENT BETWEEN THE DEPARTMENT OF DEFENSE AND THE POST OFFICE DEPARTMENT

PREFACE

In recognition of the need for providing coordinated and efficient postal services for the Armed Forces in time of war and national emergency, during maneuvers, and in time of peace, the Department of Defense and the U. S. Post Office Department consider it necessary and advisable to enter into the following Agreement setting forth the responsibilities of each department.

Definitions

For the purpose of this Agreement, military and postal terms are defined as follows:

ARMED FORCES.—The Army, Navy (including the U. S. Marine Corps), and Air Force, and the U. S. Coast Guard, when by arrangement, the U. S. Coast Guard uses military postal facilities established by the Army, Navy, or Air Force.

MILITARY PERSONNEL.—Members of the Armed Forces, and, in addition, civilian persons overseas and aboard military vessels who by competent authority are authorized to use military mail addresses.

MILITARY POSTAL CLERK.—A person of the Armed Forces who is officially designated by the Post Office Department and who is authorized by Public Law to perform postal finance functions and other postal duties. The term includes Army, Navy, and Air Force mail clerks.

MILITARY POST OFFICE.—A branch of a designated U. S. Post Office established by authority of the Post Office Department and activated and operated by the Departments of the Army, Navy, or Air Force to serve military personnel. The term includes Army and Air Post Offices (APO's), and Navy Post Offices (NPO's and FPO's).

POSTAL CONCENTRATION CENTER.—A Post Office or agency of the Post Office Department at which all mail for designated forces on maneuvers, afloat, or overseas, is concentrated for sorting, delivery to military authorities, or onward dispatch.

POST OFFICE.—A United States Post Office, branch or station, operated by employees of the Post Office Department, or under contract with that Department, for the purpose of transacting postal business.

THEATER OF OPERATIONS.—That portion of a theater of war necessary for either defensive or offensive military operations; theater limits are usually designated by competent military authority. (In time of peace, oversea areas not a part of U. S. national territory.)

UNIT MAIL CLERK OR MAIL ORDERLY.—A person of the Armed Forces or a civilian employee thereof designated by an appropriate military unit commander to receive and deliver incoming and outgoing mail for the unit for which he is designated at a Post Office or Military Post Office, and to make proper disposition of undeliverable mail.

ZONE OF INTERIOR.—That part of national territory in a theater of war not included in the theater of operations. (In time of peace, the continental United States, its Territories and possessions.)

MILITARY MAIL.—United States and international mail which bears a military address or return address and which is in the custody of the military department.

GENERAL POLICY STATEMENTS

The operation of postal services under military jurisdiction will complement that of the U. S. Post Office Department for the purpose of serving military postal needs (1) in areas where the U. S. Civil Postal Service does not operate, and (2) in other places where the military situation requires.

Military postal services will operate in conformity with the provisions of U. S. Postal Laws and Regulations, other Post Office Department instructions and supplemental military instructions which are necessary, recognizing exceptions to and modifications which are authorized by competent authority from time to time.

The Department of Defense and the Post Office Department will cooperate in postal matters in order to ensure that the total postal effort necessary to provide adequate postal services to military forces and installations is coordinated in the interests of providing efficient and expeditious mail service.

There will be established a continuing means by which the Department of Defense and the Post Office Department can examine postal matters of interdepartmental concern. At the seat of government a single office will be named by the Department of Defense and by the Post Office Department to collaborate in basic postal policy matters, and specific points of liaison between the military departments and the Post Office Department at postal operating level will be provided as necessary.

Insofar as is practicable, considering the mission, organization and operations of the individual military departments, their policies and procedures pertaining to military postal services will be uniform, provided that the essential requirements for efficient and expeditious postal service to military forces are maintained.

Where efficiency and economy without adverse effect on essential postal requirements can be obtained, and in order to eliminate unnecessary overlap and duplication, military postal facilities and postal services operated by the military departments will be utilized by the military services on a reciprocal basis.

In instances where postal information affecting military intelligence security is involved in the routing or other processing of military mail at Post Office Department facilities, intelligence security requirements of the military departments will govern access to such information.

The military departments will make arrangements with any foreign government to operate military post offices whenever military post offices are to be located within their sovereign territory, or otherwise initiate action to effect such arrangements through appropriate United States agencies.

The military departments are financially responsible for registered or insured mail until delivered or otherwise properly disposed of while such mail is being handled by unit mail clerks or mail orderlies after receipt from or prior to delivery to a Post Office or Military Post Office. The military departments are responsible that military personnel, who are designated to handle post office funds and accountable postal stock, will be covered by fidelity bond, or if authorized by law, in lieu of such bond, to assume financial responsibility for claims arising in connection with the handling of such post office funds and accountable stocks by such designated personnel.

AGREEMENT

Section I

The Department of Defense agrees:

1. That the military departments will maintain and operate military postal services for military personnel (1) in areas where the U. S. Civil Postal Service does not operate and (2) in other places where the military situation requires;

2. That the military departments will maintain and operate organized postal services with appropriate headquarters agencies and operating elements as necessary to adequately perform and administer postal functions under military jurisdiction;

3. To establish at the seat of government a single office which will provide a continuing means for dealing with a designated liaison office of the Post Office Department on all questions requiring the establishment of uniform policies as they relate to planning, operations, and supply matters concerning military postal responsibilities of interdepartmental nature;

4. That the military departments will designate, at the seat of government, specific offices which will maintain continuing liaison with the designated liaison office of the Post Office Department in matters concerning military postal operations;

5. That the military departments will publish a joint manual for the guidance of military postal clerks which, when concurred in by the Postmaster General, will supersede Post Office Department Pamphlets entitled: "The Army Mail Service" (1942) and "Mail Service Manual, U. S. Navy," (1945);

6. That the military departments, when requested by the Post Office Department, will furnish the Post Office Department at the seat of government and to its representatives designated for this purpose in established military command areas or districts in the Zone of Interior, information required by the Post Office Department and necessary for it to provide efficient and satisfactory postal services to personnel and units at military installations;

7. That the military departments will establish and operate military terminal postal facilities in conjunction with Postal Concentration Centers at Ports of Embarkation and at other places as may be mutually determined with the Post Office Department to perform the following functions:

a. Furnish the Postal Concentration Centers necessary information to permit proper processing of military mail.

b. Receive military mails from the Post Office Department and accept responsibility for onward dispatch and delivery to military personnel in maneuver areas, staging areas, afloat and overseas. This does not preclude dispatch of such mail by the Post Office Department, when military considerations will permit, for delivery to military authorities at designated oversea points.

c. Furnish the Postal Concentration Center with appropriate information to enable it to properly provide for onward dispatch when military mail for forces overseas is dispatched direct by the Post Office Department to the military authorities at designated oversea points. In such cases the military departments will accept the mail at the oversea points and be responsible for its delivery to addressees.

d. Maintain necessary records of military mail dispatched,

e. Perform other postal operations which the military departments deem necessary;

8. That the military departments will accept from the Post Office Department at post offices designated for that purpose at military installations in the Zone of Interior, incoming mail addressed to military personnel, and to deliver same;

9. That the military department will designate representatives to accept for delivery at U. S. Post Offices and at Military Post Offices, all official and personal mail of the units for which they are designated. Registered or insured mail, the delivery of which is restricted by the sender or addressee, will not be turned over to such designated representatives referred to above for delivery, except when the addressee is located at a point remote from the post office or Military Post Office and it is impracticable for him to call in person thereat. In such instances such mail may be delivered to designated representatives upon written request of the addressee;

10. That the military departments will furnish directory service for insufficiently and incorrectly addressed military mail, delivering such of it as is possible and returning the rest to the U. S. Postal Service, each piece endorsed to show a forwarding address or that it was undeliverable, and the reason therefor;

11. That no "Collect on Delivery" (COD) mail will be accepted for mailing at Military Post Offices;

12. That no special delivery service will be performed by military personnel;

13. That the military departments will assume financial responsibility for loss, damage, theft, wrong delivery, or rifling of registered mail and numbered, insured mail after receipt from or prior to delivery to a post office or Military Post Office by its authorized representatives (unit mail clerk or mail orderly);

14. That the military departments will provide that bond is given for all military postal clerks and other persons officially designated to have custody of post office funds and other accountable postal stock or, if authorized by law, in lieu of such bond, to reimburse the Post Office Department, upon submission of claims, in amounts equal to funds and accountable postal stock embezzled by or lost through negligence, errors, or defalcations, and for funds expended by the Post Office Department in payment of claims arising from negligence, errors, losses, or defalcations on the part of such persons;

15. That the military departments will conduct domestic Postal Money Order Service at Military Post Offices and keep such records and submit such reports of Money Order business transacted as are usually required by the Post Office Department; and will issue checks drawn on The Treasurer of the United States payable to the Postmaster to whom accounting is to be made in exchange for any Money Order funds received at Military Post Offices, such checks to be issued when funds accumulated at a Military Post Office total or exceed $100.00 except that funds will be exchanged for check only once daily. When foreign currency is accepted in postal transactions at Military Post Offices located in foreign territory, such checks will be issued in dollars at the official rate of exchange;

16. That the military departments will make up and dispatch outgoing military mail in accordance with Post Office Department requirements. Outgoing mail at military installations served directly by the Civil Postal Service will be separated by states prior to placement in Post Office Department channels where the volume of mail necessitates such in the interests of efficient and expeditious handling;

17. That the military departments will, in time of war or emergency, assume responsibility for the transportation of mail, both incoming and outgoing, between agencies of the Post Office Department established at Zone of Interior military installations and the railroad station or other source of such mail. In time of peace, responsibility for such transportation is assumed by the Post Office Department. In time of peace, the military departments will assist the Post Office Department in providing such transportation when Post Office Department facilities are inadequate to meet abnormal requirements;

18. That the military departments will furnish space, utilities, and janitorial service for post offices located at military installations by arrangement between the Postmaster and Commanding Officer concerned. Adequacy of such facilities will be determined jointly by representatives of the Post Office Department and the military department having jurisdiction;

19. That the military departments will, by arrangement between the Postmaster and Commanding Officer concerned, make available to Post Office Department employees, employed at post offices located at military installations, personal sleeping accommodations and meals comparable to such individual accommodations as are made available to civilian employees of the military departments;

20. That the military departments will assure that military commands will collaborate and cooperate and otherwise assist Post Office Inspectors and other representatives of the Postmaster General who are designated to audit postal accounts and observe and report on military postal service conditions and whose duties are covered by orders issued by competent authority. Appropriate military authorities will issue such orders when necessary in oversea areas. At installations in the Zone of Interior, including vessels in port, military commanders will recognize, in lieu of such orders, a Post Office Department Commission as authority for the Post Office Department representative to perform such duties at postal activities. Overseas, and in maneuver areas in the Zone of Interior, when necessary, and when performing travel at the request of a military department to audit postal accounts and observe and report on military postal service conditions, the military departments will provide government transportation, quarters, and messing facilities for such Post Office Inspectors, or other representatives of the Postmaster General, costs thereof to be borne by the individual at rates applicable to transient officer personnel;

21. That the military departments will collaborate with the Post Office Department in providing military postal personnel in order to assure that persons available with postal experience, civilian or military, may be procured to expand the military postal organizations in time of mobilization;

22. That the military departments will make periodic inspections of Military Post Offices to verify that the funds and accountable stock are on hand and properly protected, that all revenue due the Post Office Department or the military departments is being collected and properly accounted for, and that the service rendered is adequate;

23. That the military departments will furnish on request of the Post Office Department armed escort service for mail containing currency for military payrolls between the local railroad station or similar terminal and the post office of destination, with the specific understanding that the military departments assume no financial responsibilities for losses occurring during such movements.

Section II

The Post Office Department agrees:

1. To provide postal services for military installations in geographic areas where the U. S. Civil Postal Service operates, and to augment or otherwise modify the postal services as necessary in conformance with changing military requirements.

2. To operate Postal Concentration Centers as necessary to provide for concentration and sorting of military mail and the delivery or dispatch of such mail in accordance

with the requirements of efficient and expeditious postal service to military forces;

3. To separate, prior to delivery or dispatch to military authorities, mail for military units and personnel as follows:

a. Mail for forces overseas and maneuver forces, and all military vessels will be separated so far as practicable in accordance with information furnished by designated military authorities.

b. Mail for installations in the Zone of Interior will be separated generally by battalions, air squadrons, or separate activities and units. Variations in the degree of separation are authorized by mutual agreement between the installation commander and Postmaster concerned;

4. To deliver registered and insured mail addressed to military personnel at Zone of Interior military installations to the addressees or to designated military personnel upon being properly receipted for. Receipts will not be required for "minimum fee" insured mail. Registered or insured mail, the delivery of which is restricted, will be delivered as provided for in paragraph 9, Section I above;

5. Not to accept for mailing "Collect on Delivery" (COD) mail addressed to military personnel on military vessels or served through military post offices, and not to forward such mail to those vessels or post offices. This restriction will not apply to official shipments and shipments to Armed Forces agencies;

6. To arrange for transportation between its Postal Concentration Centers and the wharf, depot, or aerial terminal, when requested by the military authorities, in instances where the Post Office Department dispatches military mail direct instead of through a military postal installation;

7. To assume responsibility in time of peace for providing transportation of mail, both incoming and outgoing, between agencies of the Post Office Department established at military installations in the Zone of Interior and the railroad station of other source of such mail. In time of war or emergency the military departments assume responsibility for such transportation. In time of war or emergency the Post Office Department will assist the military departments in transporting such mail to the extent that Post Office Department facilities will permit;

8. To furnish the military departments with information to permit proper separation and routing of military mail by military postal activities prior to its entry into civil postal service channels, in order to facilitate and expedite delivery of mail;

9. To authorize the establishment of military post offices upon request of the military department;

10. To furnish the military departments with postal equipment and supplies necessary for the handling and dispatch of mails and for the provision of such other postal services as may be performed under military jurisdiction;

11. To sell stamps and stamped paper to officers duly designated by the military departments for cash or its equivalent, at such United States Post Offices as may be designated by the Post Office Department; to redeem for cash or its equivalent at such designated post offices unsold or damaged stamps or stamped paper, provided the number and denomination can be accurately determined; further, upon presentation to the Post Office Department of conclusive evidence, developed by a competent board of investigation, of the loss in transit of a shipment of stamps or stamped paper as a result of a casualty, to allow credit in the amount of the invoice value of the shipment. When deemed necessary by the military departments, accountable Postmasters will furnish individual fixed stamp credits and replenish them direct to Military Post Offices;

12. To assist the military departments by disseminating to the public information concerning proper methods of addressing military mail, restrictions applicable to such mail, and other matters requiring dissemination to persons corresponding with military personnel;

13. To extend the facilities of the domestic money order service to the Armed Forces through Military Post Offices;

14. To assign Post Office Inspectors or other representatives of the Postmaster General where necessary and desirable, for the purpose of auditing postal accounts at Military Post Offices and to observe and report on military postal service conditions, and to collaborate and cooperate with military commanders as representatives of the Postmaster General in order that efficient, expeditious and satisfactory postal service will be maintained;

15. To designate at the seat of government a Post Office Department official to maintain continuing liaison in connection with military postal services and to represent the Post Office Department in dealing with agencies of the Department of Defense in postal matters of policy or operational nature and other matters necessary to placing and continuing this Agreement in practical effect;

16. To collaborate with the military departments in their efforts to obtain military postal personnel.

* * * * *

This Agreement becomes effective 15 September 1950 after approval and signature by the Secretary of Defense for the Department of Defense and by the Postmaster General for the Post Office Department at which time it supersedes the existing Agreement between the Post Office Department and the War Department, dated 19 March 1940, and the existing Agreement between the Post Office Department and the Navy Department, dated 1 December 1944.

FOR THE DEPARTMENT OF DEFENSE:
(dated) 21 August 1950

(Signed) LOUIS JOHNSON,
Secretary of Defense.

FOR THE POST OFFICE DEPARTMENT:
(dated) 21 August 1950

(Signed) J. M. DONALDSON,
Postmaster General.

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