CHAPTER 4

ALLIED COMMUNICATION PROCEDURES

In addition to operating equipment and constructing messages, you must use correct communication procedures to provide concise and definite language so that communications may be conducted accurately and rapidly. The method of communicating may depend on a number of considerations, ranging from security to required speed of transmission. Whatever the condition, you as a Signalman must be able to perform to the best of your ability.

Although Signalmen normally use only three methods to communicate visually (flashing light, flaghoist, and semaphore) other methods such as sound and pyrotechnics are available. This chapter explains communication procedures used by communication personnel. Flaghoist procedures are covered in chapter 5.

GENERAL PROCEDURES

LEARNING OBJECTIVES: Explain the use of general procedures to eliminate lengthy transmissions, to maintain proper signaling discipline, and to determine the rule of visual responsibility.

Visual communications procedures may be subdivided into Allied, international, and special procedures.

Allied procedures are those used by the United States with its Allies and between Allied Nations.

International procedures, discussed in chapter 6, are those designed for nonmilitary communications between civil stations, but may be adapted for military use.

Special signal procedures are those not included under Allied or international procedures, such as those described in ATP 2, volume II. Other special signals include the following:

- Ship-shore movement signals
- Harbor tug control signals
- Signals for various foreign ports
- U.S. Navy and Allied fleet exercise signals

The foundation for these signal procedures is contained in ACP 129, *Communication Instructions, visual Signaling procedures;* ATP 2, *volume* II, *Allied Naval Control of Shipping Manual Guide to Masters;* ATP 1, volume II, *Allied Maritime Tactical Signal and Maneuvering Book;* and Pub 102, *International Code of Signals.*

OPERATING SIGNALS

Operating signals provide a brevity code for passing information pertaining to communication, aircraft operation, search and rescue, and so on. Although the signals eliminate the need for plain language transmissions between operators, they have no security and are in fact the equivalent of plain language. Operating signals are contained in ACP 131, *Communication Instructions Operating Signals.*

Description

Operating signals consist of three letters that start with either the letter *Z* or *Q* and may have figures, letters, abbreviations, or call signs following them. Most operating signals have complete meanings, but some require information to complete their meanings. The following rules apply:

1. Where a _____ appears, it must be filled in.

2. Where a (_____) appears, it is optional to complete.

Numbered alternatives, if used, will be followed without spacing.

Numeral flags must be used between Allied units. Numeral pennants must be used for the Q codes for non-Allied military stations and merchants.

Allocations

Allocations of operating signals are as follows:

QAA-QNZ: Allocated to the International Civil Aviation Organization (ICAO). The only civil stations that will have a copy of this series are those of the aeronautical service. Therefore, this series is not used

with other civil stations unless it is known that the station concerned is familiar with this series.

QOA-QQZ: Reserved for the maritime service.

QRA-QUZ: Allocated to the International Telecommunications Union (ITU). All civil stations should have a copy of this series. Therefore, this series may be used with all civil stations unless the station concerned indicates it is unfamiliar with the series.

QVA-QZZ: Not allocated.

ZAA-ZXZ: Allocated to the Allied military; held by all military stations.

ZYA-ZZZ: Reserved for temporary or permanent assignment of meanings on an intra-military basis by any nation, service, or command authorized use of ACP 131.

Use of Operating Signals

Operating signals either answer a question, give an order, or give advice.

Example: Order: ZJL—hoist the following signals.

Info: ZJI NKZO—Call sign of ship in company is NKZO.

In Allied military stations, a question or request can be implied by preceding the signal with the prosign INT.

Example: INT QRU—Have you anything for me?

INT ZJI—What are the call signs of ships in company with you?

In reply to a question, an affirmative or a negative sense can usually be implied by using just the basic operating signal.

Example: The reply to INT ZOE would be ZOE.

If desired though, the operating signal ZUE (affirmative) or ZUG (negative) may be used alone or in conjunction with the signal.

Example: The reply to INT ZOE may be ZUG or ZUG ZOE.

In non-Allied military or civil stations, a question can be implied by use of the prosign IMI following the signal.

Example: QAR 10 IMI—May I stop listening on the watch frequency for 10 minutes?

In reply to a question in the affirmative or negative sense, the letter *C* (affirmative) or *N* (negative) is used.

Example: The reply to QAR 10 IMI would be QAR 10C.

Call signs normally will follow the Q or Z signals; however, they also may precede the operating signal for separation or clarity.

Q and Z signals with numbered alternate meanings will be followed, without spacing, by the appropriate number to indicate the meaning intended.

Example: ZJH1 means: Your light is unreadable, not trained correctly.

Time groups used with Q or Z signals always will be followed, without spacing, by a zone suffix.

Any nation, service, or command may prohibit or restrict the military use, within its area of jurisdiction, of any operating signal. However, when such operating signals are received from other users, they must be recognized and acted upon.

A knowledge of operating signals is a must for all Signalmen. Section J of ACP 131 contains visual operating signals. Study this section to become more efficient in your job.

VISUAL RELAY RESPONSIBILITY

In visual communication, relaying is accomplished automatically when the call-up is made using collective call signs. A message should be relayed concurrent with its reception, when possible, to cut down the time delay between the end of the originator's transmission and its delivery to the final addressee.

Chain of Visual Responsibility

The general rule for determining the responsibility for any situation is that each addressee is responsible for delivery of the message to addressees beyond themselves in the general direction away from the originator. No rule set forth here, or prescribed by responsible commanders, is to be interpreted as restricting the initiative of any ship in relaying a message to an addressee who does not respond when called. It is the duty of any ship to expedite the transmission of a message by relaying when it is evident that she is in a better position to effect the necessary relay than the ship specifically responsible.

When a maneuver alters the position of units and ships relative to the officer in tactical command (OTC), the responsibility for relaying the signals does not alter until completion of the maneuver by all ships.

In single-line formations, any given ship is responsible for the ships beyond and in the direction away from the originating ship. In multiple-line formations, the senior officer is responsible for ships in his/her own line and line commanders of lines immediately adjacent to his/her own line. The line commanders in the multiple lines are responsible for ships in their own line and line commanders immediately adjacent but in a direction beyond and away from the originating ship. Individual ships are responsible for ships in their own line beyond and away from their own line commander.

In any operational formation or disposition, the chain of visual responsibility is governed by the rules set forth previously unless modified by responsible commanders. It may be necessary for a commander to issue detailed relaying instructions or diagrams showing sectors of visual responsibility, to make sure visual signals are cleared as quickly as possible. In assigning responsibility, a commander considers the relative capabilities of various ships, such as the type of visual equipment installed, personnel limitations, and type of formations.

Repeating Ship

A repeating ship is any ship through which a message is relayed. A repeating ship is any of the following:

- A ship specifically designated as a repeating ship
- A ship that automatically relays
- A ship that elects to relay to facilitate signaling
- A ship through which a message is routed

The function of a ship specifically designated as a repeating ship is to act as a primary relay station to facilitate communication.

As you can see, visual relay responsibility can be complicated; but it is a part of your job, so learn it.

OPERATOR'S RESPONSIBILITIES

Reliability, security, and speed depend, to a large extent, upon the operator. It is essential, therefore, that operators be well-trained, maintain signaling discipline, and understand thoroughly their responsibilities.

You should always follow the prescribed procedure. Unauthorized departures from or variations in prescribed procedures invariably create confusion, reduce reliability and speed, and tend to nullify security precautions. If an unusual circumstance is not covered by set procedure, initiative and common sense should provide a reasonable procedure. The following practices are forbidden:

1. Violating visual silence when such condition is imposed.

2. Transmitting the operator's personal sign. (The operator's initials or any other identifying sign constitutes a personal sign.)

3. Using plain language when unauthorized to do so.

4. Using profane, indecent, or obscene language.

5. Using other than authorized prosigns.

VISUAL PROCEDURE

When transmitting a visual message, you must transmit each character distinctly. The speed of transmission is governed by prevailing conditions and the capability of the receiving operators.

Accuracy in transmission is far more important than speed. The difference in the time required to send a message at 10 words per minute and that required to transmit at 15 words per minute is slight. Even this slight gain in time may be nullified by an added time required for repetitions. The speed at which the receiving operator can copy without having to obtain repetitions is the speed at which the transmitting operator should transmit. When an operator is transmitting to more than one station, his/her governing speed is to be that of the slowest receiving operator. The speed of transmitting the heading should be slower than the speed of transmitting the text.

Logs and Files

Every signal transmitted or received by visual means must be logged, together with the time of execution, in a suitable record book. A file of all messages transmitted or received by visual means must be kept to facilitate future reference. Logs and files are covered more in depth in chapter 8.

Message Transmission

Messages are to be transmitted exactly as written. Abbreviations must not be substituted for plain language or plain language substituted for abbreviations.

Call Signs

The following call signs are authorized for use in calling and answering: visual, international, tactical, task organization, collective, and indefinite. Address groups may be used as call signs by Coast Guard and Navy commands (except in non-military communications.)

Call signs and address groups in message headings will ordinarily be arranged in alphabetical order in the form in which they are transmitted, whether plain, encrypted, or mixed. For this purpose, / (slant sign) and figures 0 through 9 will be considered the twenty-seventh through thirty-seventh letters of the alphabet. Care must be taken to avoid separating groups of related call signs or conjunctive address groups, which are interdependent.

The different methods of visual signaling require variations in procedure for calling and answering. The necessary instruction for each method is prescribed throughout this chapter.

FLASHING LIGHT PROCEDURES

LEARNING OBJECTIVES: Explain the procedure for calling, answering, relaying, verifying, repeating, correcting, and receipting using directional and non-directional flashing light. Identify procedures for communicating with aircraft, with daylight signaling lantern (DSL), and infrared.

The two forms of flashing light used are directional and non-directional. Directional procedure is always employed when using a directional light. It is also employed when using a non-directional light when the call is that of a single station. Non-directional procedure is one station transmitting to a number of other stations simultaneously by means of a light showing over a wide area. See appendix II for tips for sending and receiving flashing light.

USE OF SIGNAL LIGHTS

In wartime, the greatest care is to be taken when signaling at night. Flashing light is to be used only when necessary and a minimum of light employed except when making recognition signals. Then, a light of sufficient brilliancy must be used to ensure its being immediately seen. You must, however, always remember that in heavy weather small ships have trouble reading dim lights.

The background must always be considered, and care should be taken not to use a signaling light close to or in line with navigation lights. No upper-deck lighting should be visible on or in the vicinity of the signal deck.

The use of signal lights at dusk and dawn must be avoided whenever possible. If, however, their use is unavoidable, you must pay constant attention to the brilliancy of their light.

At night, a constant watch is to be kept on the ship of the OTC by all other ships. It may be found, after communication has been established, that the brilliancy of the light can still be further reduced. It is absolutely essential when using any type of directional light to keep it trained accurately throughout the transmission of the message.

At all times, ships are to inform other ships signaling to them when their lights are observed to be brighter than necessary, by use of the prosign D. Frequently test sight arrangements of lights for alignment. To prevent masthead and yardarm signaling lights from being accidently lighted, the switch in the power supply line should be kept open until use of the light is actually required.

DIRECTIONAL PROCEDURE

The transmitting station waits for the receiving station to make a flash for each word, prosign, coded group, or operating signal. Should the receiving station fail to flash for the group, it will be repeated by the transmitting station until a flash is received from the receiving station. An exception to this rule is that a flash is not necessary to the prosign K when there is an immediate response to K. A flash should be made to K in the message ending when there will be a delay while checking the message to ensure its completeness.

NON-DIRECTIONAL PROCEDURE

This procedure permits one station to transmit to a number of other stations simultaneously by means of a light showing over a wide area. It is seldom used at night in wartime because of the danger of enemy interception. It may be used by day or night in circumstances where the risk is negligible. The procedure prescribed for the non-directional flashing

light differs from that laid down for the directional flashing light, as follows:

1. The call consists of a collective call sign or a number of call signs repeated until answered by all receiving stations.

2. Each receiving station answers by transmitting a continuous series of Ks until the calling station, seeing that all the receiving stations have answered, stops calling, waits a short time, then starts transmitting the message. When practicable, receiving stations should use a directional light of minimum brilliance.

3. Where repeating ships are used, they will repeat the originator's transmission word by word as received.

4. During transmission of the message, all receiving stations keep their signal lights out. Should a receiving station miss a portion of the message, that station is to request a repetition in the normal manner upon completion of the transmission. A station that is repeating the message as received but misses a portion may substitute the operating signal ZEP for the missing portion and proceed with the transmission. When the missing portion is obtained, it is transmitted in the form of a correction.

ZEP means this portion (or message) was incompletely received. Each word or group missed, which is indicated by the position of ZEP in the message, will be forwarded as soon as obtained.

5. Receiving stations, after checking, receipt for the message by making RRRR.

6. When the prosign F is used in the non-directional procedure, no ship is to make any response to this call or to receipt for the message. Ships that miss the transmission or any portions thereof may request repetitions by directional flashing light from adjacent ships. In requesting such repetitions, ships should bear in mind the danger of disclosing the tactical composition of the formation.

7. The separative sign is used between coded groups.

Where a special non-directional daylight signaling lantern (DSL) is fitted, the procedure to be used by the transmitting station is the same as prescribed for the non-directional procedure. Receiving stations answer by hoisting DESIG. Repetitions are obtained in the same manner as for the non-directional procedure. The message is receipted for by hauling down DESIG.

CALLING

When calling another station, you are responsible for certain details. In visual communications, the identity of the calling station is usually apparent, and it is necessary only to gain the attention of the station being called. Normally this is done by directing the signal light at the station and making the receiving station's call sign until answered When it is desirable to identity the calling station, use the full call. This consists of the call sign of the station called, and when answered, the prosign DE and the call sign of the calling station. On occasion, when using the no-response procedure, it may be necessary for you to transmit the full call before or without being answered

Examples: Abbreviated call—D15 (until answered)

Full call—D15 (until answered) DE A22 or D15 DE A22

Collective or multiple calls may be used as required. A collective call sign consists of a single call sign representing more than one station: C Squad 2. A multiple call may consist of two or more individual or collective calls: C Squad 2 C40. Both collective and multiple calls may be followed by the prosign DE and the call sign of the calling station.

Call signs and address groups that may be used in the heading and/or ending are visual call signs from ACP 129, call signs from ACP 113, and address groups from ACP 100.

The call may serve as the address. When abbreviated calls are used, it is assumed that the message is addressed from and to the senior officer embarked. When this is not the case, use a full call or the address component.

ANSWERING AND RECEIPTING

The answer normally consists of the prosign K. The calling station may flash for the series of Ks from each unit until all units have responded. If necessary to distinguish which of several stations is being answered, the prosign K should be preceded by the call sign of the station answered.

Where more than one station is being called in the same direction or during low visibility, the answering station may need to indicate its own identity when answering. This is done by transmitting the prosign DE followed by own call sign and prosign K.

When required, a full answer, consisting of the call sign of the calling station and the prosign DE followed by the call sign of the station answering, may be used.

In the flashing light procedure when giving an immediate receipt to a message in response to the prosign K, use the prosign R singly without the ending sign K or AR.

RELAYING INSTRUCTIONS

When relaying responsibilities are automatic, relaying instructions need not be inserted in the transmission instructions.

The prosign T is to be used when signals/messages are passed through a relay when the relaying responsibilities are not automatic and the originator requires no report of delivery. The address component is mandatory. When a message is received with the prosign T standing alone in the procedure component of the heading, it means "Station called transmit this message to all addressees."

Examples: Suppose that C60 transmits a message to R55, with instructions for R55 to transmit the message to F31; in that case, the heading would be as follows:

R55 DE C6O T R 231210Z MAR 96 FM C87 TO R55 F31 BT

Prosign T followed by a call sign in the procedure component means "Station called transmit this message to station(s) whose call follows T." Assume that C60 transmits a message to R55 with instructions for R55 to transmit the message to one of the addressees—in this instance, B62:

R55 DE C60 T B62 R 231210Z MAR 96 FM C60 TO R55 F31 B62 GR4 BT UNCLAS RETURN HOME SOON. BT K

Prosign T both preceded and followed by call signs means "The station indicated before T is to transmit this message to the station(s) indicated immediately following T." Station C60, transmitting a message to R55 and F31, instructs R55 to transmit the message to B62:

F31 R55 DE C6O R55 T B62 R 231210Z MAR 96 FM C60 TO B62 F31 R55 GR4 BT UNCLAS RETLURN HOME SOON. BT K

When transmission is accomplished, all addressees (B62, F31, R55) will have received the message.

The prosign L is to be used when the originator requires relaying ships to report through the chain of command when the message has been delivered.

The prosign L is not to be used in the transmission instructions of executive method messages. The prosign L must, however, be passed in to the originator by relaying ships when the text of the executive method message has reached the last ship in the chain of visual responsibility. It is not to be passed in for the executive signal nor for messages where no response procedure is used.

The prosign L must be passed to the originator by a ship that relays an emergency alarm signal to the OTC.

NOTE

Visual call signs must NOT be used in the transmission instructions or address of messages to be transmitted or relayed by other than visual means.

SPECIAL PROCEDURES

The signals listed are signals used in special circumstances. ACP 129 covers procedures for using these special signals.

- Calling an unknown station
- No-response procedure
- Double-flash procedure
- Exchanging identities with the senior officer present afloat (SOPA)
- Alarm procedure for enemy reporting
- Special visual prosign OL
- Synchronizing time

CORRECTIONS AND REPETITIONS

Errors or omissions noted by the transmitting operator are to be corrected as follows:

During transmission, the operator should transmit the error prosign, repeat the last word, group, prosign, or operating signal correctly transmitted before the error, followed by the correct word, group, prosign, or operating signal, and continue on. When transmission is completed but before a receipt is obtained, the

operator should use the appropriate prosigns to correct any portion of the message.

After transmission and after a receipt is obtained, a service or abbreviated service message should be used to send any correction.

When errors or omissions are noted by the receiving operator, corrections or repetitions are to be obtained

- before a receipt has been given by the appropriate prosign, or
- after a receipt has been given by a service or abbreviated service message.

NOTE

The prosign IMI cannot be used to request repetition after a receipt has been given.

A service or abbreviated service message used to obtain repetitions or send corrections is normally assigned a precedence equal to that of the message to which it refers.

Corrections sent without a request are preceded by the prosign C with appropriate identifying data where necessary, and transmitted in the same manner as those sent in answer to a request for repetitions, corrections, or verifications.

When repetitions of portions of a message containing the call are made, the original call must be repeated in such repetitions except when only one station was called originally.

In accomplishing the previously mentioned procedures, use the prosigns AA, AB, WA, and WB. These prosigns are used in service or abbreviated service messages in conjunction with IMI, INT, C, J, and some operating signals. IMI is used by communications personnel to obtain a repetition; J is used by an addressee to obtain a verification and repetition of the entire transmission.

Examples:

Message

C3 DE F5

-P-231010Z MAR 96

-FM F5

-TO C3

-INFO B3

GR9 BT

SEAKY-YAMXZ-HINLP-MMIAP-YSBOU-QWJFD-LJGFX-VITZG-ILTVQ

To request repetition of the last transmission, C3 would send:

F5 DE C3

IMI K

To request all before the text, C3 would send:

F5 DE C3

IMI AB BT K

F5 would send:

C3 DE F5

AB BT-C3 DE F5

-P-231010Z MAR 96

-FM F5

-TO C3

-INFO B3

GR9 BT K

To request repetition of all before TO, C3 would send:

F5 DE C3

IMI AB TO K

F5 would send:

C3 DE F5

AB TO

C3 DE F5

-P-231010Z MAR 96

-FM F5

-TO K

To request repetition of the eighth group, C3 would send:

F5 DE C3

IMI 8 K

F5 would send:

C3 DE F5

8-VITZG

To request repetition of the second to fifth groups, C3 would send:

F5 DE C3

$\overline{\text{IMI}}$ 2 TO 5 K

F5 would send:

C3 DE F5

2 to 5-YAMXZ-HINLP-MMIAP-YSBOU K

To request repetition of the second and fourth to seventh groups, C3 would send:

F5 DE C3

$\overline{\text{IMI}}$ 2-4 to 7 K

F5 would send:

C3 DE F5

2-YAMXZ-4 TO 7-MMIAP-YSBOU-QWJFD-LJGFX K

In plain language messages, portions of the text are identified as words rather than numbered groups. The prosigns WA and WB are used as appropriate.

VERIFICATIONS

During certain conditions, addressees of a message may wish to verify with the originator either the entire message or a portion of it. This can be done with the use of a service, abbreviated service, or formal message. However, only the addressee may request a verification, and the reply must be authorized by the originator. Operators are not permitted to originate a request for a verification or reply thereto.

In most cases, a message will be receipted for before the need for a verification becomes evident. In those cases where it is apparent, prior to receipting for a message, that a verification will be required, verification may be requested at once instead of first receipting for the message.

The prosign J after a call and followed by identification data, when necessary, means "Verify with the originator and repeat message or portion indicated."

Examples:

Message:

D3 DE A2

-R-211355Z MAR 96

-FM A2

-TO D3

-INFO W7

$\overline{\text{BT}}$

CHANGE COURSE WHEN READY. DO NOT CHANGE SPEED. $\overline{\text{BT}}$ K

To request verification and repetition of the entire message, D3 would send:

A2 DE D3

J 211355Z MAR 96 K

A2 would verify the message with the originator and if correct as previously sent would repeat the entire message.

To request verification and repetition of the heading, D3 would send:

A2 DE D3

J 211355Z MAR 96 AB $\overline{\text{BT}}$ K

A2 would verify with the originator and then reply:

D3 DE A2

C 211355Z MAR 96 AB $\overline{\text{BT}}$

D3 DE A2

-R-211355Z MAR 96

-FM A2

-TO D3

-INFO W7

$\overline{\text{BT}}$ K

EXECUTIVE METHOD

The executive method is used when it is desired to execute a signal at a certain instant; for example, to ensure that two or more units take action at the same moment. Although the executive method normally is associated with signals from a signal book, it may be used when appropriate for plain language.

There are two types of executive methods:

1. Delayed executive method

2. Immediate executive method

Tactical signals may be sent by flashing light. When the OTC uses that method, however, the

procedure for the executive method is governed by the following rules:

- Only abbreviated plaindress messages may be used with the executive method.
- Executive method messages do not carry a time group.
- A message that requires a signal of execution carries the prosign IX immediately before the first BT.
- When using the executive signal, IX (5-second flash), the IX is effectively a *stand by* and should be repeated as often as necessary to ensure that all ships have received the *stand by* and are awaiting the order to execute. The moment of execution will be the completion of the 5-second flash. In both directional and non-directional procedures, all ships repeat the IX being made to ensure the signal is ready for execution and repeat the executive signal (5-second flash) to ensure simultaneous execution.
- The executive signal IX (5-second flash) alone after a call means "Execute all unexecuted messages transmitted by this station (by the executive method) to the same call."
- Requests for repetitions, corrections, or verifications of the texts of signals taken from a naval signal book must be for the entire text or for those portions separated by TACK. If there are more than two TACKS in any signal, further amplification by use of the nearest whole signal is required.

Delayed Executive Method

When the delayed executive method is used, receiving stations receipt for the message, and the signal of execution is made in a later transmission.

Example: C8 transmits directly to C6:

C8 makes	C6 makes
C6 (until answered)	K
IX	Flash
BT	Flash
Turn	Flash
Stbd	Flash
Four	Flash
BT	Flash
K	R
To execute the signal, C8 makes	
C6 (until answered)	K
IXs	IXs
5-second flash	5-second flash
AR	Flash

Immediate Executive Method

In the immediate executive method, the text is sent twice separated by IMI. The executive signal, IX (5-second flash), is made at the end of this transmission. As a receipt cannot be obtained before execution of the message, the use of the immediate executive method must be authorized by the officer originating the message. Directional procedure may be used with a single ship. Non-directional procedure must be employed if signaling with two or more ships at night. Immediate executive method is not normally used during daylight when signaling two or more ships unless the originating ship is fitted with DSL. It is not to be used with directional flashing light when employing no-response procedures. Examples of immediate executive signals are located in ACP 129; study these examples to better familiarize yourself with executive method procedures.

Canceling Messages

Once the executive signal has been made, a message cannot be canceled. An executive method message awaiting execution can only be canceled by a separate non-executive method message. To cancel all messages awaiting execution, the prosign NEGAT is transmitted. NEGAT preceded by a call cancels all executive method messages addressed to that call. To cancel only one message or portion of several messages awaiting execution, the prosign NEGAT must be followed by identification data, consisting of a repetition of the text that is desired to be canceled.

COMMUNICATING WITH AIRCRAFT

When communicating with aircraft, keep the following points in mind:

1. Flashing is only possible when the aircraft is occupying certain positions relative to the line of sight from the station from which the flashing is taking place. Because of the aircraft's rapid movement, the time during which it is in a favorable position for signaling is very short.

2. The signaler in the aircraft may have no one to write down the message for him/her. He/she may have to read the whole message, and write it down from memory or write down each word before sending a flash. It may, therefore, be advisable with a long message to use the double-flash procedure.

3. The aircraft should be maneuvered into a favorable position so that the signaler can have an unobstructed view for as long a period as possible.

4. Accurate training of the light by the operator at all times is most important.

Aircraft are called by the means of the prosign $\overline{AA}$, the unknown station. Many aircraft cannot signal by flashing light, and an answer should not always be expected. If no answer is seen, the message is to be made through at least twice; repetitions are to be preceded by the prosign $\overline{IMI}$. Receipt may be indicated by the aircraft rocking its wings.

INFRARED COMMUNICATIONS

Infrared communications are divided into two forms: directional and non-directional. Directional is the use of the standard searchlight fitted with the H hood. Non-directional is the use of the AN/SAT 2 system located on the yardarm.

Infrared communication between separate ships is generally directional. A station having traffic for wide distribution will normally use non-directional procedures.

The OTC may prescribe calling periods during which infrared traffic may be passed without a special signal to attract attention. For example, stations may be required to monitor for infrared signaling for 15 minutes beginning on the hour and half hour. Such instruction may be found in the operation orders, communications plan, or message traffic calling periods. At the beginning of the calling period, the OTC may transmit the appropriate operating signal and the call signs of the stations the traffic is for. Stations not included in the traffic list may secure their equipment unless they have traffic for the OTC or other units in company.

To transmit infrared traffic outside calling periods or when calling periods have not been prescribed, the stations may be alerted by the code word **NANCY HANKS** on voice radio, the appropriate signal from ATP 1, volume II, or an operating signal.

The point of train (POT) light is a steady infrared light used to assist the sender in locating the receiving station and in keeping his/her light properly trained. It is turned on to indicate that a station is communicating or is ready to communicate with infrared. It is turned off at all other times. In the event of non-directional procedure, the originator's POT lights will become its *Nancy* beacons, and the receiving stations will be able to train their receivers on the actual transmission.

SEMAPHORE PROCEDURES

LEARNING OBJECTIVES: Explain the procedure for calling, receipting, and requesting repetitions, interruptions, and relays by semaphore. Explain procedure for transmitting, rate of signaling, and the use of numerals. List special characters and semaphore abbreviations.

Semaphore and flashing light can be used interchangeably. Semaphore is much faster and generally more secure than flashing light for short-distance transmission in clear daylight. Semaphore may be used to transmit messages to several addressees at once if the sender is in a suitable position. Because of its speed, it is better adapted for long messages than other visual methods. Semaphore can be used at night with the use of wands attached to flashlights. See appendix II for semaphore drills and procedures.

Semaphore signaling procedures are similar to those used in flashing light. The general rules of visual responsibility apply; call signs are the same; and message parts are unchanged. Because of the different equipment used, some differences in procedure do exist.

Care is to be exercised in selecting a good background from which to send a semaphore message. The better the background, the greater the signaling distance.

The characters are to be formed in the same plane as the sender's shoulders, with staffs at their full extent, forefingers along the staff. When the sender is making the front sign, the flags should be crossed in front of the body.

A distinct pause is to be made at each character according to the rate of signaling. When transmitting prosigns, operating signals, and abbreviations, make this pause of double duration. A double-duration pause is also recommended when sending coded messages.

The front sign is made at the end of each word, group, prosign, or operating signal. Where double letters occur, the arms are to be dropped to the front

sign after the first letter is made, and moved to the second letter without pausing.

NUMERALS

Numerals occurring in all components of a semaphore message must be spelled out. If it is desired that numerals be recorded as digits, they must be preceded and followed by the numeral sign except in the heading and ending, where numerals or numeral pennants are always recorded as digits.

SPECIAL CHARACTERS

The following is a list of semaphore special characters. You must know these characters to become a semaphore operator.

1. The **answering** sign is used to answer a call. If necessary, the answering sign may be preceded by a call sign to denote the station answered.

2. The **attention** sign is used as a preliminary call by semaphore and to establish communication.

3. **Front** sign.

4. The **numeral** sign is used before and after each group of numerals, or group of mixed letters and numerals in the text that are to be recorded and counted as a single group consisting of letters and digits.

5. The **separative** sign in semaphore is a special character made by sending the character II as one group. It is used to prevent mistakes in reception, which might occur if letters or figures of adjacent groups are run together.

SPECIAL SEMAPHORE ABBREVIATIONS

The abbreviation SEM may be used in calling and answering by flashing light to indicate that a semaphore message will follow or that the transmitting station is to use semaphore.

Move signs are also special semaphore abbreviations. The four move signs are as follows:

- MD—move down
- ML—move to your left, as you face me
- MR—move to your right, as you face me
- MU—move up

Move signs are used by the receiving station to direct the transmitter to move to a better transmitting position.

CALLING

A station may be called by semaphore, flashing light, or flaghoist.

Semaphore

A call by semaphore is made by transmitting the call sign of the station called or by just making the attention sign. It may be answered either by making the answering sign C by semaphore or by transmitting the prosign K by flashing light.

Flashing Light

The call for a semaphore message may be made by flashing light, in which case it is answered by flashing light. After being answered, the transmitting station then indicates a semaphore message will follow by use of the abbreviation SEM.

Flaghoist

To call by flaghoist, hoist the call sign of the station called above flag JULIETT. If the message is intended for all ships in visual range, hoist only flag JULIETT. DESIG hoisted below JULIETT indicates that a priority message awaits transmission. If it is desired to indicate a higher precedence, the appropriate precedence prosign (Z or O) may be hoisted below DESIG.

The receiving station hoists the call sign of the transmitting station above ANS at the dip; when ready to receive the transmission, the receiving station will close up ANS, and then will haul ANS down to receipt for the transmission. The ANS pennant may be used without the call when no confusion will result.

RECEIPTING

Semaphore messages are receipted for by sending the prosign R by semaphore or flashing light or by hauling down the ANSWER pennant after the transmitting station hauls down the call.

If the transmitting station has more semaphore messages to send and is using the flaghoist call, the call is dipped on completion of each message. The prosign B is made followed by the prosign K. The receiving ship dips the ANS pennant to receipt for the message sent. When the transmitting station is ready to transmit the next message, it closes up the hoist, and

the receiving station follows suit when ready to receive.

REPETITIONS

Receiving stations request repetitions only when the transmitting station completes the message. The procedure to request repetitions by semaphore is basically the same as for flashing light. Chapter 4 of ACP 129 contains procedures for receiving and giving repetitions.

INTERRUPTIONS

The transmitting station may dip the call sign of the receiving station to indicate that it is required to wait. The receiving station should then dip its answering hoist until the transmitting station again hoists the call sign close up. The transmitting station may also use the prosign AS by semaphore. The receiving station may dip the answering hoist to indicate that it is unable to receive.

RELAY

Relay procedures are basically the same as those for flashing light except that the relay station need not wait for the end of the message before beginning to relay.

EXECUTIVE METHOD

The use of the executive method by semaphore is NOT authorized.

PYROTECHNICS

LEARNING OBJECTIVES: State the meaning of *pyrotechnics* and *colored lights.* List the limitations and characteristics of each.

PYROTECHNICS

Pyrotechnic signals are contained in *Pyrotechnic Signals,* ACP 168. Pyrotechnic light, flares, and rockets for international emergency situations are found in the *Intemational Code of Signals,* Pub 102.

The meaning of a pyrotechnic signal depends on the color rather than the type of pyrotechnic used. Limitations of pyrotechnic signals must be fully recognized by Signalmen. Following are some characteristics that serve as guidelines for using pyrotechnics:

1. Simplicity, instead of complicated color combinations, is essential. Signals composed of a succession of pyrotechnics or a combination of colors should be avoided because there is always danger that an observer may not see the whole signal and, consequently, may misinterpret it.

2. Experiments have proved that the standard colors red, white (or yellow), and green are the only satisfactory colors under varying conditions of visibility.

3. Under certain atmospheric conditions, white signals may appear yellow. Likewise, a white signal may be mistaken for a green signal under certain humid conditions. It is easy for tracer signals to be confused with red ones. Therefore, take care when identifying these signals.

4. Pyrotechnic signals are easily copied by the enemy, either for their own purposes or to confuse their opponents. Little reliance can be placed on them unless the source or origin can be definitely identifed.

5. At a distance, it is difficult to identify the exact location from which a pyrotechnic was fired. A single pyrotechnic fired by each of two separate originators may appear to an observer as two pyrotechnics fired simultaneously or in succession from one originator.

6. The originator of a pyrotechnic signal has no way of knowing whether the signal was observed by the receiver for whom it was intended. Unless the action taken by the receiver indicates receipt, the signal should be confirmed by other means of communication. Once a pyrotechnic signal has been fired, there is no method of canceling except by using a different pyrotechnic device or by some other method of communication.

7. The range of visibility for a pyrotechnic signal is variable and unreliable because it depends largely on weather conditions.

Pyrotechnic signals may be used either by day or night unless otherwise specified. Being a Signalman, you must be very familiar with pyrotechnic signals; one day you will serve as a boatcrew Signalman. One of your duties as a member of a boatcrew is identifying the different pyrotechnic signals.

SOUND SIGNALING

LEARNING OBJECTIVES: Identify procedures for transmitting, receipting, and executing sound signals. Identify limitations of sound signaling.

The International Morse Code and special signals are used for this means of communication. When transmitting by whistle, siren, fog horn, or other devices in which the length of sound can be controlled, you use a short blast to represent a dot and a long blast to represent a dash. When transmitting with a device that is struck to create sound, such as a bell, gong, or drum, use a single stroke to represent a dot and two rapid strokes to represent a dash.

No heading or ending is used in sound signaling. The text is to be made twice, separated by a pause.

LIMITATIONS

The use of sound communication is normally limited to certain specified sound signals. The ones commonly used are those prescribed for vessels in the Rules of the Road. When sound signals are used in special circumstances, care must be exercised that they do not conflict with the more commonly used signals and thereby confuse ships and stations not familiar with the special signals.

Sound signals other than those included in the Rules of the Road are not to be employed in pilotage waters and are only to be used in an emergency when short range radio is not available, or for sounding visual call signs on occasions when the OTC may wish to ascertain which ships are within hearing distance.

Sound signals may only be used by the OTC or by an individual ship having vital information for the OTC. Signals made by any ship other than the OTC are to be followed by the call sign of that ship.

RECEIPTING

When the OTC signals by sound, one ship usually is directed to repeat back or receipt for the signal. When sound is used by an individual ship, the OTC is always to receipt for the signal with that ship's call sign followed by the prosign R. The OTC may direct another ship to receipt by making that ship's call sign followed by the prosign K. The designated station receipts by making the prosign DE followed by the prosign R. No ship is to relay a sound signal.

EXECUTIVE METHOD

The executive signal consists of a 5-second blast immediately following the repetition of the text. The execute to follow sign ($\overline{IX}$) is not to be sent either in the text or preceding the 5-second blast. The signal is executed on termination of the 5-second blast. Ships are not to wait for any ship that may be ordered to repeat back or receipt. When ships are ordered to repeat back, they are to include the executive signal if one has been used.

IDENTIFICATION OF SHIPS

On occasion the OTC may wish to determine which ships are within hearing distance. This may be done by the OTC sounding the appropriate signal only once.

On hearing this signal, ships are to reply by sounding their visual call signs once only as follows:

1. If addressed to one ship, immediately on hearing the signal.

2. If addressed to more than one ship, the ships will answer in alphabetical order of call signs. If no ship sounds within 30 seconds, the next ship in order is to sound.

RADIOTELEPHONE

LEARNING OBJECTIVES: Define *radiotelephone* (R/T). Describe the procedures for operating the radiotelephone and maintaining security; list precautions that should be observed when communicating by radiotelephone.

Radiotelephone (R/T) is used for voice tactical and administrative communication by ships and aircraft.

The time will come when, as a Signalman, you will need to use the R/T. Study this section to improve your ability to use voice communication procedures.

There can be certain drawbacks to using the R/T. Poor voice communications (whether because of faulty equipment, adverse atmospheric conditions, or inept performance by an operator) can create confusion, reduce reliability and speed, and adversely affect operations. It is essential that all users observe established operating procedures.

Basic guidance for voice radio communication is contained in *Communications Instructions Radiotelephone Procedures,* ACP 125. Various naval publications prescribe procedures for specific environments.

SECURITY

In the interest of security, transmission by R/T should be as short and concise as possible. All operators must be cautioned that transmission by R/T is subject to enemy interception, and care must be taken when passing information.

The following basic rules are essential to transmission security and are to be strictly enforced:

1. No transmission will be made unless it has been authorized by proper authority.

2. The following practices are forbidden:

- Violation of radio silence
- Unofficial conversation between operators
- Transmitting on a direct net without permission
- Excessive tuning and testing
- Transmitting the operator's personal sign
- Unauthorized use of plain language
- Use of other than authorized prowords
- Linkage or compromise of classified call signs and address groups by plain language disclosures or association with unclassified call signs
- Profane, indecent, or obscene language

3. The following practices are to be avoided:

- Use of excessive transmitting power
- Excessive time consumed in tuning, changing frequency, or adjusting equipment
- Transmitting at a speed beyond the capabilities of receiving operators

RADIO NET

A radio net is the organization of two or more stations in direct communication on a common channel. Usually the senior station in the circuit is net control, and it directs the operation and flow of traffic on the net. The type of net and method of operation is determined from consideration of operational factors involved.

In a free net, the net control station (NCS) authorizes stations to transmit traffic to other stations without first obtaining permission from NCS. However, the NCS is not relieved of responsibility for maintaining circuit discipline.

In a direct net, stations must obtain permission from NCS before communicating with other stations. When two or more stations have traffic to send, NCS grants permission in order of message precedence. An exception is that flash messages may be sent direct.

A net is deemed to be a free net unless otherwise ordered. To change the type of net in effect, the NCS will transmit, “This is a free net” or "This is a directed net," as appropriate.

Free and direct nets are generally associated with, but are not restricted to, administrative circuits in port. They are a means of net operation and should not be confused with specifically named circuits; for example, task group reporting net, naval gunfire control net, task group tactical/ warning net.

CIRCUIT LOGS

Circuit logs are maintained, when possible, on all R/T nets or circuits. The log should show a complete record of all transmitted and received traffic and of operating conditions. The log should also include the following:

- Time of entering and leaving the circuit
- Causes of delays on the circuit
- Frequency adjustments and changes
- Unusual occurrences, such as procedures and security violation

Messages addressed to, or relayed by, the receiving station are written in full on a message blank. Only sufficient data needs to be entered in the log to identify the message (originator, time of receipt, and the date-time group). Other messages should be logged with as much detail as possible. A watch-to-watch record of circuit operators is kept, with each operator signing the log on being relieved.

No entries will be erased. Necessary changes are made by drawing a single line through the original entry and then entering the change adjacent to the lined-out entry. The operator making the change initials the correction. All entries must he legible. Abbreviations may be used, but they must be readily understood.

In connection with circuit logs, the following terms identify the requirements of different types of radio watches:

Guard—A continuous receiver watch with a transmitter ready for immediate use. A complete log is kept.

Cover—A continuous receiver watch. A transmitter is tuned and available, but not necessarily immediately. A complete log is required.

Copy—A continuous receiver watch with a complete log.

Listen—A continuous receiver watch. A complete log is optional, but all traffic of interest to own ship must be logged.

Although logs may be kept manually, automatic recording devices should be used whenever possible on circuits requiring complete logs.

PHONETIC ALPHABET

Because it is easy to confuse the sound of certain letters, such as *B* and *D,* or *C* and *Z,* letters of the alphabet are never spoken as such. Instead, their phonetic equivalents are used. See table 4-1 for the phonetic alphabet. When signals from naval signal

Table 4-1.—Phonetic Alphabet

LETTER	PHONETIC EQUIVALENT	PRONOUNCED AS
A	ALFA	Al fah
B	BRAVO	BRAH voh
C	CHARLIE	CHAR lee
D	DELTA	DELL tah
E	ECHO	ECK oh
F	FOXTROT	FOKS trot
G	GOLF	GOLF
H	HOTEL	hoh TELL
I	INDIA	IN dee ah
J	JULIETT	JEW lee ett
K	KILO	KEY loh
L	LIMA	LEE mah
M	MIKE	MIKE
N	NOVEMBER	no VEM ber
O	OSCAR	OSS cah
P	PAPA	pah PAH
Q	QUEBEC	keh BECK
R	ROMEO	ROW me oh
S	SIERRA	see AIR rah
T	TANGO	TANG oh
U	UNIFORM	YOU nee form
V	VICTOR	VIK tah
W	WHISKEY	WISS key
X	XRAY	ECKS RAY
Y	YANKEE	YANG key
Z	ZULU	ZOO loo

books are transmitted by voice radio, the voice equivalents of the flags are used.

NUMERALS

To distinguish numerals from words similarly pronounced, the proword FIGURES may be used before such numbers. Numerals are pronounced as shown in the following examples:

Numeral	Spoken As
0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW er
5	FIFE
6	SIX
7	SEV en
8	AIT
9	NIN-ER

NUMBER	Pronounced
12	Twelve
44	Fower Fower
90	Niner Ze-ro
136	Wun Tree Six
500	Fife Ze-ro Ze-ro
1,478	Wun Fow-er Seven Ait
7,000	Seven Tou-zand
16,000	Wun Six Tou-zand
812,681	Ait Wun Too Six Ait Wun

The numeral 0 is always spoken as *zero,* never *oh.* Decimal points are spoken as *day-see-mal.*

In general, numbers are transmitted digit by digit except that exact multiples of thousands are spoken as such. However, there are special cases when the normal pronunciation is prescribed and this rule does not apply.

PROWORDS

Prowords are pronounceable words or phases that have been assigned meaning to expedite message handling on R/T circuits. Prowords are not to be substituted for textual words.

The prowords contained in table 4-2 are authorized for general use. For R/T communication between units of different nationalities, equivalent prosigns may be used instead of prowords. When so used, they are transmitted phonetically.

GENERAL PROCEDURES

ACP 125 contains the general procedures for R/T communication. To become a good operator, you must follow these procedures and instructions. A few of the general procedures follow:

- Listen before transmitting. An unauthorized break in transmitting causes confusion and often blocks a transmission in progress.
- Speak clearly and distinctly. Both slurred syllables and clipped speech are hard to understand. A widespread error among untrained operators is the failure to emphasize vowels sufficiently.
- Speak slowly. Give the recorder a chance to get it all down. That way you save time and avoid repetitions.
- Avoid extremes of pitch. A high voice cuts through the interference best, but is shrill and unpleasant if too high. A lower pitch is easier on the ear, but is difficult to understand through background noises if it is too low.
- Be natural. Maintain a normal speaking rhythm. Group words in a natural manner. Send your message phrase by phrase instead of word by word.
- Use standard pronunciation.
- Speak in a moderately strong voice to override unavoidable background noises and prevent dropout.
- Keep correct distance between lips and microphones. A distance of about 2 inches is correct for most microphones.

There are many more general procedures that could make for better transmission. Take time to become familiar with these procedures.

Abbreviations

Dates within the text should be spoken digit by digit, and the month, in full.

Example: 19 Mar is spoken as one nine March.

Initials used alone or in conjunction with short titles are to be spoken phonetically.

Table 4-2.—Prowords

PROWORD	EXPLANATION	EQUIVALENT TO
ACKNOWLEDGE (ACK)	An instruction to the addressee that the message must be acknowledged.	ZEV
ADDRESS GROUP	The group that follows is an address group.	—
ALL AFTER	The portion of the message to which I have reference is all that which follows _____ .	AA
ALL BEFORE	The portion of the message to which I have reference is all that which precedes _____.	AB
ANSWER AFTER	The station called is to answer after call sign _____ when answering transmissions.	ZGO
ASSUME CONTROL	You will assume control of this net until further notice.	ZKD
AUTHENTICATE	The station called is to reply to the challenge which follows.	INT ZNB
AUTHENICATION IS	The transmission authentication of this message is _____ .	ZNB
BREAK	I hereby indicate the separation of the text from other portions of the message.	BT
BROADCAST YOUR NET	Link the two nets under your control for automatic rebroadcast.	—
CALL SIGN	The group that follows is a call sign.	—
CLOSE DOWN	Stations are to close down when indicated. Acknowledgements are required.	ZKJ
CORRECT	You are correct, or what you have transmitted is correct.	C
CORRECTION	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted ____.	EEEEEEEE
	An error has been made in this transmission Ior message indicated). The correct version is _____ .	C
	That which follows is a corrected version in answer to your request for verification.	C
DISREGARD THIS TRANSMISSION-OUT	This transmission is in error. Disregard it. (This proword is NOT to be used to cancel any message that has been completely transmitted an for which receipt or acknowledgment has been received.)	EEEEEEEE
DO NOT ANSWER	Stations called are not to answer this call, receipt for this message, or otherwise transmit in connection with this transmission. When this proword is employed, the transmission shall be ended with the proword OUT.	F
EXECUTE	Carry out the purpose of the message or signal to which this applies. (To be used only with the executive method.)	IX (5 sec dash)
EXECUTE TO FOLLOW	Action on the message or signal which follows is to be carried out upon receipt of the proword EXECUTE. (To be used only with the delayed executive method.)	IX
EXEMPT	The station(s) immediately following is (are) exempted from the collective call or from collective address.	XMT
FIGURES	Numerals or numbers follow.	—

Table 4-2.—Prowords—Continued

PROWORD	EXPLANATION	EQUIVALENT TO
FLASH	Precedence FLASH.	Z
FROM	The originator of this message is indicated by the address designator immediately following.	FM
GRID	The portion following is a grid reference.	—
GROUPS	This message contains the number of groups indicated by the numeral following.	GR
GROUPS NO COUNT	The groups in this message have not been counted.	GRNC
I AM ASSUMING	I am assuming control of this net until further notice.	ZKA
I AUTHENTICATE	The group that follows is the reply to your challenge to authenticate.	ZNB
IMMEDIATE	Precedence IMMEDIATE.	O
IMMEDIATE EXECUTE	Action on the message or signal following is to be carried out on receipt of the word EXECUTE. (To be used only with the immediate executive method.)	$\overline{\text{IX}}$
INFO	The addressees immediately following are addressed for information.	INFO
I READ BACK	The following is my response to your instructions to read back.	—
I SAY AGAIN	I am repeating transmission or portion indicated.	$\overline{\text{IMI}}$
I SPELL	I shall spell the next word phonetically.	—
I VERIFY	That which follows has been verified at your request and is repeated. (To be used only as a reply to VERIFY.)	C
MESSAGE	A message that requires recording is about to follow. (Transmitted immediately after the call. This proword is not used on nets primarily employed for conveying messages. It is intended for use when messages are passed on tactical or reporting nets.)	ZBO
MORE TO FOLLOW	Transmitting station has additional traffic for the receiving station.	B
NEGATIVE (NEGAT)	Cancel message(s) sent by the delayed executive method. (NEGAT may be used to cancel a single message or a group of messages awaiting execution.)	—
NET NOW	All stations are to net their radios on the unmodulated carrier wave that I am about to transmit.	ZRC 2
NOTHING HEARD	To be used when no reply is received from a call station.	ZGN
NUMBER	Station serial number.	NR
OUT	This is the end of my transmission to you, and no answer is required or expected.	$\overline{\text{AR}}$
OVER	This is the end of my transmission to you, and a response is necessary. Go ahead, transmit.	NR
PRIORITY	Precedence PRIORITY.	P
READ BACK	Repeat this entire transmission back to me exactly as received.	G
REBROADCAST YOUR NET	Link the two nets under your control for automatic rebroadcast.	—

Table 4-2.—Prowords—Continued

PROWORD	EXPLANATION	EQUIVALENT TO
RELAY (TO)	Transmit this message to all addressees (or addressees immediately following this proword). The address component is mandatory when this proword is used.	T OR ZOF
RELAY THROUGH	Relay your message through call sign _____	ZOK
ROGER	I have received your last transmission satisfactorily.	R
ROUTINE	Precedence ROUTINE.	R
SAY AGAIN	Repeat all of your last transmission. Followed by identification data means "Repeat _____ (portion indicated)."	IMI
SEND YOUR	I am ready to receive your message, report, etc. (Used only in reply to the offer of a message, etc., on tactical or reporting nets.)	K
SERVICE	The message that follows is a SERVICE message.	SVC
SIGNALS	The groups that follow are taken from a signal book. (This proword is not used on nets primarily employed for conveying signals. It is intended for use when tactical signals are passed on non-tactical nets.)	—
SILENCE (Repeated three or more times)	Cease transmissions on this net immediately. Silence will be maintained until lifted. (Transmissions must be authenticated by use of a self-authentication system, code word, etc.)	HM HM HM
SILENCE LIFTED	Silence is lifted. (Transmissions must be authenticated by means of a self-authentication system, code word, etc.)	ZUG HM HM HM
SPEAK SLOWER	Your transmission is too fast. Reduce speed of transmission.	QRS
STOP REBROADCASTING	Cut the automatic link between the two nets that are being rebroadcast and revert to normal working.	—
THIS IS	This transmission is from the station whose designator immediately follows.	DE
THIS IS A DIRECTED NET	From now until further notice this net is directed.	ZKB
THIS IS A FREE NET	From now until further notice this net is free.	ZUG ZKB
THROUGH ME	Relay your message through me.	ZOE
TIME	That which immediately follows is the time or date-time group of the message.	QTR
TO	The addressees immediately following are addressed for action.	TO
—TO—	The portions of the message to which I have reference is all that which appears between the groups ____ and ____ .	—
UNKNOWN STATION	The identity of the station with whom I am attempting to establish communication is unknown.	AA
USE ABBREVIATED CALL SIGNS	Call signs are to be abbreviated until further notice.	—
USE ABBREVIATED PROCEDURE	As conditions are normal, all stations are to use abbreviated procedure until further notice.	—
USE FULL CALL SIGNS	Call signs are to be sent in full until further notice.	—

Table 4-2.-Prowords—Continued

PROWORD	EXPLANATION	EQUIVALENT TO
USE FULL PROCEDURE	As conditions are not normal, all stations are to use full procedure until further notice.	—
VERIFY	Verify entire message (or portion indicated) with the originator and send correct version. (To be used only at the discretion of, or by, the addressee to which the questioned message was directed.)	J
WAIT	I must pause for a few seconds.	$\overline{\text{AS}}$
WAIT-OUT	I must pause longer than a few seconds.	$\overline{\text{AS}}$ $\overline{\text{AR}}$
WILCO	I have received your signal, understand it, and will comply. To be used only by the addressee. Since the meaning of ROGER is included in that of WILCO, the two prowords are never used together.	—
WORD AFTER	The word of the message to which I have reference is that which follows _____.	WA
WORD BEFORE	The word of the message to which I have reference is that which precedes _____.	WB
WORDS TWICE	Communication is difficult. Transmit each phrase (or each code group) twice. (This proword may be used as an order, request, or as information.)	QSZ
WRONG	Your last transmission was incorrect. The correct version is _____.	ZWF

Example: ACP is spoken phonetically as Alfa Charlie Papa.

Personal initials are spoken phonetically prefixed by the word INITIALS.

Example: W.C. Williams is spoken as INITIALS Whiskey Charlie Williams.

Abbreviations frequently used in normal speech may be used in the same manner when transmitted by voice radio.

Example: USS *Forrestal* may be spoken as USS *Forrestal.*

Punctuation marks are pronounced as they appear in the text, with the following exceptions: PAREN/UNPAREN or OPEN BRACKETS/CLOSE BRACKETS; an oblique stroke is called SLANT; quotation marks are spoken QUOTE/UNQUOTE.

Call Signs

Voice call signs are letters, numbers, or letter/number combinations that identify commands and units of commands. These include ships, aircraft squadrons and wings, shore establishments, type commanders, and task organization components. The voice call signs change daily.

In addition to the daily changing of the call signs, JANAP 119 contains ship and other joint armed forces voice call signs. Although the pub is always kept up to date, it is not normally used. JANAP 119 provides an adequate backup system, but lacks the security needed today.

Voice calls do not provide any degree of identification security, so they should not be used over harbor common circuits. In ports not under U.S. control, international call signs will be used. In U.S.-controlled ports overseas, names of ships and abbreviations of administrative activity titles serve as voice calls. As a general rule, the USS prefix, hull number, and first name or initial of ships need not be included in the voice call unless it is essential for clarity. Even when necessary for clarity, it is unnecessary to use the phonetic equivalents for letters and initials.

Establishing Communications

The basic methods for establishing and conducting communications are defined in ACP 121. Abbreviated call signs are not to be used in establishing communication. Before conducting regular traffic over R/T circuits, you may have to make contact with the stations involved to ascertain that communication is possible.

Example:

M15B transmits:

Alfa One Six Two—THIS IS Mike One Five Bravo—OVER

Al62 answers:

Mike One Five Bravo—THIS IS Alfa One Six Two—OVER

M15B having nothing for A162, transmits:

Alfa One Six Two—THIS IS Mike One Five Bravo—OUT

Establishing a Net

Full call signs are used when opening a net, reopening a net, or reporting into a previously established net. Proper control by the NCS and adherence to operating rules by all stations within the net enable the net to begin and maintain an exchange of traffic with minimum delay. The NCS is also responsible for maintaining security on its net. Appropriate security guidance will be furnished by the NCS to all stations prior to establishing a net.

Example:

When ready to establish a net, the NCS transmits:

Yankee One Six Charlie—THIS IS Mike One Five Bravo—OVER

Each subordinate station then answers the call in alphabetical order:

Mike One Five Bravo—THIS IS Alfa One Six Two—OVER

Mike One Five Bravo—THIS IS Bravo One Nine Eight—OVER

Mike One Five Bravo—THIS IS Delta Two Three Four—OVER

Once the net has been established, it will normally work with abbreviated procedures and call signs. The NCS will, however, order the net to work full or with abbreviated procedures or call signs, as required by the conditions.

MESSAGES

Although R/T uses three message forms—plaindress, abbreviated plaindress, and codress—the form most used is the abbreviated plaindress. However, the three parts are still used (heading, text, ending).

The procedures for use of the above mentioned messages are the same as for the use of the visual message.

Plaindress

A plaindress message is one in which the originator and addressee designators are indicated externally of the text. It contains all components of the basic message format (unless the call serves as the address) and must always include the precedence and date-time group. The group count will always be included when the accounting symbol is used.

Abbreviated Plaindress

Operational requirements for speed and handling may require abbreviations of plaindress headings. In such cases, any or all of the following may be omitted:

- Precedence
- Date
- Date-time group
- Groupcount

Codress

A codress message is one in which the entire address is encrypted within the text. The heading contains only information necessary to enable communications personnel to handle it properly.

Service Messages

Service and abbreviated service messages are messages used between communications personnel and pertain to any phase of traffic handling, communication facilities, or circuit conditions. See chapter 3 for more information concerning service messages.

GENERAL OPERATING PROCEDURES

The procedures for conducting radio checks, repetitions, cancellations, corrections, and verifications are contained in ACP 125; take time to study these procedures.

EXECUTIVE METHOD

The executive method is used when it is desired to execute a tactical message at a given instant; that is, to ensure that two or more units take action at the same moment. An abbreviated plaindress format is normally used for transmitting messages by the executive method. When conditions are good, it is necessary to have all stations called acknowledge receipt of tactical message. In these circumstances, only those call signs preceding the proword OVER receipt for the message. Messages sent by the executive method are never to have a time group included in the message ending. There are two executive methods:

- Delayed
- Immediate

Delayed Executive Method

A tactical message sent by the delayed executive method will carry the warning proword EXECUTE TO FOLLOW in the message instructions, immediately preceding the text. The executive signal will be sent later in the form STAND BY—EXECUTE, the latter word being the instant of execution. The text of the message being executed must be repeated prior to the transmission of the proword EXECUTE when:

1. It is a portion of, or one of, several outstanding signals; or

2. A considerable time has elapsed between the transmission of an EXECUTE TO FOLLOW message and the transmission of the executive signal.

Example:

M15B transmits:

Six Charlie—THIS IS Five Bravo—EXECUTE TO FOLLOW—Corpen Mike One One Two—OVER

All stations respond in alphabetical order to full call signs:

Six Two—ROGER—OUT

Nine Eight—ROGER—OUT

Three Four—ROGER—OUT

After a considerable period of time has elapsed M15B transmits:

Six Charlie—THIS IS Five Bravo—Corpen Mike One One Two— Standby—EXECUTE—Three Four—OVER

Three Four responds:

Three Four—ROGER—OUT

Immediate Executive Method

In cases of urgency, the executive signal may be transmitted in the final instruction element of the message. This type of message does not allow stations to obtain verifications, repetitions, acknowledgements, or cancellations before the message is executed. Messages made by the immediate executive method should be in plain language, or should be limited to basic TURN, SPEED, and CORPEN signals.

The warning proword is IMMEDIATE EXECUTE. The text is sent twice, separated by the proword I SAY AGAIN. The executive signal is sent in the final instructions.

Example:

M15B transmits:

Six Charlie—THIS IS Five Bravo—IMMEDIATE EXECUTE—BREAK—Turn Port—Tack-Speed One Four—I SAY AGAIN—Turn Port—Tack—Speed One Four—Stand by—EXECUTE—Nine Eight—Three Four—OVER

B198 and D234 transmit:

Nine Eight—ROGER—OUT

Three four—ROGER—OUT

BEADWINDOW

Beadwindow is a simple, rapid procedure for use by circuit operators to police the security of insecure voice networks. It brings to the immediate attention of operators the fact that an Essential Element of Friendly Information (EEFI) has been disclosed on the circuit. Additionally, the beadwindow report serves to alert other operators on the net of the EEFI disclosure and thus acts as an educational aid, producing increased security awareness among operators and an overall improvement in the security of insecure voice radio.

The beadwindow procedure uses a code word (beadwindow) and a number combination, which are

transmitted immediately to the station disclosing an EEFI. When a station on the net transmits information listed in an EEFI, the net control operator transmits the code word *beadwindow*, followed by the number of the EEFI that has been disclosed.

Approved broad EEFIs for general use are listed in ACP 125, chapter 5. Additional specific operations and exercises may be developed and broad EEFIs expanded by individual nations or by operational commanders. The EEFI list should be posted in clear sight of the operator at all secure voice positions for rapid reference.

SUMMARY

In this chapter you were taught how to communicate by flashing light, semaphore, radiotelephone, sound, colored lights, and pyrotechnics. You were taught general procedures; visual responsibility; how to use operating signals; how to challenge and reply; and how to call, answer, request repetitions, and acknowledge. You were taught the difference between the delayed executive method and the immediate executive method and the time when you should use each. Now it is up to you to exercise this knowledge. Practice is the key. So when you have a little extra time, pick up a pub to further broaden your knowledge.