

4. When printing, how can you avoid confusion between zero and the letter O?
5. What is meant by the terms CLOSED and OPEN as applied to a telegraph key?
6. How much tension should you place on the spring screw of the key?
7. When you are operating a key, why must you be sure that your elbow does not protrude over the edge of the table?
8. What is a good way to develop rhythm in sending Morse code?

## CHAPTER 3

# RADIOTELEGRAPH

A message is a written thought or idea, expressed briefly in plain or secret language and prepared for transmission by the most suitable means of communication.

Most messages have at least one addressee responsible for taking action on the contents and for originating any necessary reply. These are known as ACTION addressees. Other addressees with an official concern in the subject of the message — but who do not have the primary responsibility for acting on it — receive the message for information. These are known as INFORMATION addressees. Do not be confused by the term "information addressee". Even though an information addressee usually is concerned only indirectly with a message, very frequently he must take action of some nature within his own command. For example, CANFLAGLANT sends the following message to SAGUENAY for action and to MARGAREE for information....

R-121517Z -  
FM CANFLAGLANT -  
TO SAGUENAY -  
INFO MARGAREE  
BT Unclassified x  
On arrival Halifax berth alongside MARGAREE at Jetty  
five  
BT

In this case MARGAREE will be prepared for the arrival of SAGUENAY. Men will be detailed for the handling of SAGUENAY's lines, etc. Some messages have only information addressees.

Messages may be divided into types according to the way they are addressed:

1. Single address.
2. Multiple address.
3. Book.
4. General.

A SINGLE ADDRESS message is sent to one addressee only.

A MULTIPLE ADDRESS message is sent to two or more addressees (as in the previous example message to SAGUENAY info MARGAREE), each of whom is informed of the other addressees. Each addressee must be designated either as *action* or *information*.

A BOOK MESSAGE is sent to two or more addressees, and is of such a nature that no addressee needs to know who the others are — although every addressee is informed whether he receives the message for action or for information. The station sending a BOOK message divides addressees into groups according to relay stations which serve them. A separate message is prepared and transmitted to each relay station, the message changed only to drop addressees that are the concern of some other station. Upon receiving a book message, a relay station may further reduce the number of addressees by repeating the process or by making up single address messages for each of its tributaries addressed. Since many book messages are meant for dozens of addressees, substantial time and expense are saved by the shortened headings.

A GENERAL message has a wide standard distribution. There are many types of general messages, each of which carries an identifying title, e.g. CANGEN or CANCOM, which is intended for a certain standard set of addressees. They also carry a sequential serial number, e.g. CANGEN 23, indicating that this is the 23rd CANGEN message originated to date.

Maintenance of general message files is often a radioman's duty. General messages are grouped according to type and filed in order of serial numbers. They are kept until cancelled or superseded.

Following is a list of the more common general messages with which you should become familiar.

| <i>Title</i> | <i>Originator</i> | <i>Description</i>                                                                                                                       |
|--------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| CANGEN       | CANAVHED          | On miscellaneous subjects, addressed to all ships, establishments and authorities of the RCN.                                            |
| CANCOM       | CANAVHED          | On RCN communication and crypto subjects, addressed to all ships, establishments and authorities of the RCN.                             |
| CANAIR       | CANAVHED          | General messages on Canadian naval air subjects — addressed to all RCN air stations, aviation supply depots and ships carrying aircraft. |
| CANLANT      | CANFLAGLANT       | On miscellaneous subjects, addressed to all ships and establishments in the Canadian Atlantic Command.                                   |
| CANPAC       | CANFLAGPAC        | On miscellaneous subjects, addressed to all ships and establishments in the Canadian Pacific Command.                                    |

In addition to these general messages listed, there are several others, the details of which can be found in relevant communication publications.

### Call Signs and Address Groups

Call signs and address groups are both used to identify addressees and to assist in transmission and delivery of messages.

## Call Signs

Call signs - letters, letter-number combinations, or one or more pronounceable words - identify some communication activity. This is true in both civil and military use, but military call signs may also designate the command served by the station. There are several categories of call signs. Some call signs belong to more than one category.

1. INTERNATIONAL CALL SIGNS are assigned radio stations of all countries - civil and military, afloat and ashore - according to international agreement. The first letter, or first two letters of an international call indicate the nationality of the station. Three or more letters generally identify stations as follows:

|                                                                     |                                   |
|---------------------------------------------------------------------|-----------------------------------|
| Three letters - Shore stations.                                     | Example - CFH<br>(Halifax Radio)  |
| Four letters - Ship stations.                                       | Example - CGJR<br>(HMCS COLUMBIA) |
| Five letters - Aircraft stations. Example -<br>VGRLB (RCN Aircraft) |                                   |

Here are some of the call sign letters which have been allocated. There are many more but space limitations must be considered.

|     |    |     |               |
|-----|----|-----|---------------|
| AAA | to | ALZ | U.S.A.        |
| CFA | to | CKZ | Canada        |
| CYA | to | CZZ | Canada        |
| GAA | to | GZZ | Great Britain |
| KAA | to | KZZ | U.S.A.        |
| MAA | to | MZZ | Great Britain |
| NAA | to | NZZ | U.S.A.        |
| VAA | to | VGZ | Canada        |
| VOA | to | VOZ | Canada        |
| WAA | to | WZZ | U.S.A.        |
| XJA | to | XOZ | Canada        |

The U.S. has the first half of the A block (AAA through ALZ) and the whole of the K, N, and W blocks. The U.S.

reserves A calls for the Army and Air Force. W and K blocks are assigned to commercial and private stations, merchant ships, and others, and the N block is for use only by the Navy, Marine Corps, and Coast Guard. Naval shore communication stations have 3-letter N calls. Naval vessels have 4-letter N calls. Examples..Naval Radio Station San Francisco-----NPG USS Duke's County (LST 735).....NGCY

2. INDEFINITE CALL SIGNS represent no specified facility, command, authority, or unit, but may represent any one or any group of these.

## Examples:

CGNS----- (to) Any or all Royal Canadian Naval ship(s).  
CGH ----- Any or all RCN shore radio stations.  
NERK----- (to) Any or all US Naval ship(s).  
NQO----- Any or all US Naval shore radio stations.

During wartime or large peacetime exercises it may become necessary to conceal the identity of the transmitting ship, originators and addressees. Codress procedure and indefinite ships call signs are then ordered. The originator and all addressees are concealed within the encrypted text, and the transmitting ship uses a 2-letter call sign beginning with G, (Canadian) and (British); or N, (U.S.).

3. NET CALL SIGNS represent all stations within a net. (A net is a group of stations in direct communication with one another on a common channel).

4. TACTICAL CALL SIGNS are composed of letters, numerals, letter-numeral combinations, or pronounceable words. They identify tactical commands or communication facilities.

5. RADIOTELEPHONE CALL SIGNS are words or combinations of words; such as SUNSHINE or HIGH-HAT - used only in radiotelephone communications.

6. VISUAL CALL SIGNS are groups of letters, numerals, special flags and pennants, or combinations of any of these, for use in visual communications.

### Address Groups

Call signs and address groups are used by the Navy in exactly the same way. Most holders of address groups are shore-based commands, authorities, or activities. Among other uses, address groups facilitate delivery of messages in instances where a communication centre serves so many activities that its own call sign is not enough to identify the addressee. Holders of address groups are not always ashore. All commands afloat (other than individual ships) hold address groups as well as call signs. Address groups, like call signs, are divided into types.

1. COLLECTIVE ADDRESS GROUPS represent two or more commands, authorities, activities, units, or combinations of these. The group includes the commander and his subordinate commanders. EXAMPLE:

OFBJ-----CANCORTON ONE (The whole of 1st Canadian Escort Squadron)  
BMRQ-----CANCOMCORTON ONE (The Commander 1st Canadian Escort Squadron).

2. CONJUNCTIVE ADDRESS GROUPS are used only with one or more other address groups. The conjunctive address group DRHG, for example, represents the Naval Control of Shipping Officer at------. This particular group must be followed by a geographic address group.

3. GEOGRAPHIC ADDRESS GROUPS represent geographical locations or areas, and are always preceded by conjunctive address groups. Assuming the geographic address group for Kodiak, Alaska to be SAAN, the Naval Control of Shipping Officer, Kodiak, would be addressed DRHG SAAN.

4. ADDRESS INDICATING GROUPS (AIG'S) represent a specific set of action and/or information addressees. The originator may or may not be included. YRHG is the AIG for eight particular oilers as action addressees and Commander Service Force Pacific Fleet and Commander Military Sea Transportation Service, as information addressees. The

originator is Commander Military Sea Transportation Service, Pacific Area. In this case ten call signs and address groups are eliminated from the heading of the message by use of one AIG.

In addition to the above are the SPECIAL OPERATING GROUPS which are used by certain allies of Canada, U.S.A. and U.K. These are 4-letter groups, identical in appearance to address groups, and provided to pass special instructions in headings of messages. EXAMPLE: EUBJ---Pass to the first addressee.

### Precedence

Precedence is one of the most important concepts in naval communications. To communication personnel it indicates the relative order in which a message must be handled and delivered, and to the addressees the relative order in which the contents are to be noted. Precedence is assigned by the originator on the basis of message content and how soon the addressee must have it. The various precedences have the same force through all the means of transmission.

Use of higher precedences is limited to certain types of urgent traffic, and standards for handling each precedence are prescribed. Study the Precedence Table (Figure 3-1).

### Originator, Drafter, Releasing Officer

The ORIGINATOR of a message is the command by whose authority the message is sent. The DRAFTER is the person who actually prepares the message for release. Usually department heads, e.g., Engineer Officer, Supply Officer, Medical Officer, etc., are authorized to draft messages. The RELEASING OFFICER authorizes transmission of the message for and in the name of the originator. The Commanding Officer is usually releasing officer, but he may delegate releasing authority if he wishes.

A radioman charged with accepting locally originated messages must know who has releasing authority. Check every message for his signature.

PRECEDENCE TABLE

| Pre-sign | Designation           | Definition and use                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Handling requirements                                                                                                                                                                                                                  |
|----------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Z        | FLASH                 | A FLASH message must be short and must deal with an emergency situation of vital proportions. The precedence reserved (1) for initial enemy contact reports; and (2) special emergency operational-combat traffic assigned by specifically designated high commanders, or by operational commanders of units directly affected.                                                                                                                                     | FLASH messages must be hand-carried, processed, transmitted and delivered in the order received, and ahead of all other messages. Messages of lower precedence are interrupted as necessary until the FLASH message is cleared.        |
| Y        | EMERGENCY             | Reserved for messages which demand immediate delivery to the addressee, such as those meeting one or more of the following qualifications: (1) applying reports of initial enemy contact; (2) emergency communications which affect current implementation of a tactical action; (3) distress traffic; (4) messages which affect gravely the national security; and (5) messages concerning weather of a destructive nature-hurricanes, typhoons, tidal waves, etc. | 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.          |
| O        | OPERATIONAL IMMEDIATE | Used only for messages whose value depends on prompt delivery, such as: (1) tactical messages pertaining to operations in progress; (2) traffic concerning immediate movements of ships, aircraft or ground forces; (3) most weather messages; and (4) important administrative messages bearing directly on tactical operations.                                                                                                                                   | OPERATIONAL IMMEDIATE messages are processed, transmitted and delivered in the order received, and ahead of messages of lower precedence, even to the extent of interrupting processing and transmission of lower precedence messages. |
| P        | PRIORITY              | Reserved for important messages which must have precedence over routine traffic. PRIORITY 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 very 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.                                                                                                           |
| W        | DEFERRED              | To be employed for all types of messages which justify transmission by rapid means, but which will admit of the delay necessary for priority 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 3-1

## BASIC MESSAGE FORMAT

With a few exceptions, military messages sent by electrical telecommunications are arranged according to a standard joint form called the BASIC MESSAGE FORMAT. The form is substantially the same whether the message goes by radiotelegraph, radiotelephone, manual teletypewriter, or by automatic tape equipment, although the format exists in four versions—one adapted to the special requirements of each of these primary transmission media. Here we will study the radiotelegraph message format, which is the most important to the radioman. You will meet the other formats later on, but if you learn the one given here you will have little trouble understanding any message.

All messages in joint form have three parts: HEADING, TEXT, and ENDING. (Of the three, the most complex is the heading, which often uses as many as 10 of the format's 16 lines.) HEADING, TEXT, and ENDING are divided into COMPONENTS. Each component, in turn, contains one or more ELEMENTS. From left to right, the accompanying table (Figure 3-2) divides the message into its PARTS, COMPONENTS and ELEMENTS. The heading, for example, consists of the following components: Procedure, Preamble, Address, and Prefix. Elements of the procedure (see "Elements" column) consist of the call, transmission identification, and transmission instructions. Contents of the call are station(s) called, prosign XMT and exempted calls, and the prosign DE and designation of station calling.

It is well to consider each item in the heading separately, for each has a special meaning and its relative position is significant. Prosigns, call signs, address groups, and other contents that make up a typical heading must always appear in the order specified for the means of transmission. It is understood that there is no relationship between format lines and typed or handwritten lines. Format line 12, for example, is the text of the message and may consist of many written lines.

BASIC FORMAT FOR THE RADIOTELEGRAPH MESSAGE

| Parts      | Components | Formal line | Contents                                                                                                                                                                                                       |
|------------|------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H          |            | 1...        | Not used.                                                                                                                                                                                                      |
| E          | Procedure  | 2...        | Station's call; presign XMT (except) and exempted calls; Presign DE (from) and designation of station calling.                                                                                                 |
| A          |            | 3...        | STATION SERIAL NUMBER                                                                                                                                                                                          |
| D          | Preamble   | 4...        | Presign T (relay); G (repeat this transmission back to me exactly as received); F (do not answer); operating signals; call signs, address group, address indicating group, routing indicators; plain language. |
| I          | Address    | 5...        | Precedence presign; date-time group and zone suffix; operating signals; <i>PASSED IN</i>                                                                                                                       |
| N          |            | 6...        | Presign FM (originator of this message is); originator's designation expressed as call sign, address group, or plain language.                                                                                 |
| G          | Prefix     | 7...        | Presign TO; action addressee designation(s).                                                                                                                                                                   |
|            |            | 8...        | Presign INFO (this message addressed for information to); information addressee designation(s).                                                                                                                |
|            |            | 9...        | Presign XMT; exempted addressee designation(s).                                                                                                                                                                |
|            |            | 10...       | Accounting symbol; group count; <i>XXXXXXXXXX</i>                                                                                                                                                              |
| SEPARATION |            |             |                                                                                                                                                                                                                |
| E          | Text       | 11...       | Presign BT (Base).                                                                                                                                                                                             |
|            |            | 12...       | Internal instructions; basic idea of originator.                                                                                                                                                               |
|            |            | 13...       | Presign BT.                                                                                                                                                                                                    |
| SEPARATION |            |             |                                                                                                                                                                                                                |
| E          | Procedure  | 14...       | Hours and minutes expressed in digits and zone suffix, when appropriate.                                                                                                                                       |
| N          |            | 15...       | Presigns B (leave to follow); AS (I must pass); C (I am about to correct a transmission error in some foregoing part of this message); operating signals; <i>XXXXXXXXXX PASSED IN</i>                          |
| D          |            | 16...       | Presign K (go ahead and transmit), or AR (end of transmission).                                                                                                                                                |

Figure 3-2

The form of the message and its transmission requirements dictate which components, elements, and contents will be used in the heading. Format line 1 is reserved for teletype writer and tape relay work, and is omitted in radiotelephone and radiotelegraph. The abbreviated plaintext heading (which we will meet just a little later) may omit any or all of the following: PRECEDENCE, DATE, DTG and GROUP COUNT. Many messages not in abbreviated plaintext will omit such elements as transmission instructions, information addressee data, and final instructions because there is no occasion for them. The messages themselves are, for this reason, much simpler than the basic message format, which must provide for everything. You will seldom see a message that uses every format line, and you may never see one that uses all the contents. But remember that the sequence actually used in any one message must be in accordance with the proper message format.

It is not possible in a training manual such as this to show you how to construct headings to meet every eventuality. The relevant communication publications will be available to you on the job, and are the ONLY valid, up-to-date reference sources for operational communication information. However, a few sample messages follow. Compare them with Figure 3-2 as you read. If you learn them well you will have a good grounding in the construction of the radiotelegraph message.

### Radiotelegraph Message Examples

Radiotelegraph communication is usually established by a preliminary call prior to transmission of the message. The station with a message to transmit identifies itself to the station for which it has a message—if in direct communication—or otherwise, to the station that will effect relay or delivery of the message. Let us begin here with a simple preliminary call (a single call): CGLE DE CZCW K.

From the previous discussion of call signs, it is apparent that this transmission is sent from one RCN ship to another.

A check of the call sign book shows that CGLE is HMCS BONAVENTURE (RRSM 22), and CZCW is HMCS OTTAWA (DDE 229). This call translates literally, "BONAVENTURE from OTTAWA, go ahead and transmit". From the very fact OTTAWA is attempting to establish communication, BONAVENTURE's operator knows OTTAWA has a message to send. Accordingly, he inserts a message blank in his type-writer and tells OTTAWA to go ahead.

### EXAMPLES

#### CZCW DE CGLE K

With communication established, OTTAWA commences clearing traffic. The message may be analysed as follows:

| Format Line                                                                                                                                                              | Transmission                                    | Explanation                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 2 & 3                                                                                                                                                                    | CGLE DE CZCW                                    | BONAVENTURE from OTTAWA.                                                                                       |
| 5                                                                                                                                                                        | -M- 222345Z                                     | DEFERRED precedence, DTG indicating that this message was originated at 2345 GMT on the 22nd day of the month. |
| 10                                                                                                                                                                       | GR7                                             | Group count. This message has seven groups in the text.                                                        |
| 11                                                                                                                                                                       | BT                                              | Break. Separation between the heading and text.                                                                |
| 12                                                                                                                                                                       | UNCLAS. GUARD<br>MAIL FOR YOU<br>AT FIRST LIGHT | Text.                                                                                                          |
| 13                                                                                                                                                                       | BT                                              | Break. Separation between the text and ending.                                                                 |
| 16                                                                                                                                                                       | K                                               | Go ahead and transmit.                                                                                         |
| On hearing the prosign K, BONAVENTURE's operator checks the message and counts the groups. If he has missed some of the message, or is in doubt whether he received some |                                                 |                                                                                                                |

part correctly, he obtains repetitions of those portions. When he is sure he has the message complete and correct, he sends a transmission to OTTAWA, so informing her operator. This transmission is called a RECEIPT: CZCW DE CGLE R AR

In the above example two ships are in direct communication and the call has served as the address in the message. A message that must undergo relay to reach the addressee will require a somewhat longer and differently constructed heading, inasmuch as it must be apparent to every station handling the message:

1. who originated the message;
2. who receives the message for relay purposes; and
3. to whom the message is ultimately destined.

Assume that HMCS BONAVENTURE, steaming off Bermuda, has completed her mission of qualifying carrier pilots and wishes to so report to CANFLAGLANT in Halifax and to the Naval Air Station, Dartmouth, N.S. Communication is established with Naval Radio Station, Albro Lake (CFH) on one of the ship-shore bands, and transmission of the message commences. Note the use of the information addressee prosign. Address groups in subsequent examples are fictitious because the actual ones are classified.

| Format Line | Transmission | Explanation                                                                      |
|-------------|--------------|----------------------------------------------------------------------------------|
| 2 & 3       | CFH3 DE CGLE | Halifax radio from BONAVENTURE.                                                  |
| 4           | NR2          | Station serial number (only used between ships and shore stations when ordered). |
| 4           | -T-          | Transmit this message to all addressees.                                         |
| 5           | -R-          | ROUTINE precedence.                                                              |
| 5           | 051700Z-     | DTG.                                                                             |
| 6           | FM CGLE-     | Originator, HMCS BONAVENTURE.                                                    |
| 7           | TO BLMQ-     | Action to CANFLAGLANT.                                                           |

|    |                                                               |                                                                                                                                                                                                                                                                                                                                                  |
|----|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | INFO ETVO --                                                  | Information to Naval Air Station,<br>Dartmouth, N.S.                                                                                                                                                                                                                                                                                             |
| 10 | GR8                                                           | Group count (optional with plain<br>language).                                                                                                                                                                                                                                                                                                   |
| 11 | <u>BT</u>                                                     | Long break.                                                                                                                                                                                                                                                                                                                                      |
| 12 | UNCLAS.<br>CARQUALS COM-<br>PLETED. ETA<br>BERMUDA<br>061800Z | Text. Certain authorized abbre-<br>viations, standard throughout the<br>services, are often used in mes-<br>sages for sake of brevity. The<br>version as sent is considerably<br>shorter than the expanded text,<br>which reads: UNCLASSIFIED.<br>CARRIER QUALIFICATION<br>LANDINGS COMPLETED. ES-<br>TIMATED TIME OF ARRIVAL<br>BERMUDA 061800Z |
| 13 | <u>BT</u>                                                     | Long break.                                                                                                                                                                                                                                                                                                                                      |
| 16 | K                                                             | Go ahead and transmit.                                                                                                                                                                                                                                                                                                                           |

CFH3 gives BONAVENTURE a receipt for the message, and by doing so assumes responsibility for relay.

Here is an example of a type of message which you may be seeing often. This is a fleet broadcast message from Halifax Radio (CFH) originated by CANFLAGLANT. Note the use of conjunctive address groups and the exempted addressee prosign. CW fleet broadcast headings are sent "words twice", except when plain language is used instead of call signs and address groups.

### Format

| Line | Transmission | Explanation |
|------|--------------|-------------|
|------|--------------|-------------|

|   |                 |                                                                                                 |
|---|-----------------|-------------------------------------------------------------------------------------------------|
| 2 | CGNS CGNS -     | Any or all RCN ships.                                                                           |
| 4 | NR L325 NR L325 | Station serial number. This is the 325th message placed on this broadcast during current month. |
| 5 | P P -           | Priority precedence to action addressees.                                                       |

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|    |                      |                                                                                                   |
|----|----------------------|---------------------------------------------------------------------------------------------------|
| 5  | R R --               | ROUTINE precedence to information addressees.                                                     |
| 5  | 121608Z              | DTG.                                                                                              |
| 6  | 121608Z              | Originators prosign.                                                                              |
| 6  | FM FM                | CANFLAGLANT.                                                                                      |
| 6  | BOSS BOSS --         | Action addressee prosign.                                                                         |
| 7  | TO TO                | All ships operating under.....                                                                    |
| 7  | EATG EATG            | COMCANLANT.                                                                                       |
| 7  | CABR CABR --         | Information addressee prosign.                                                                    |
| 8  | INFO INFO            | NAS Dartmouth, N.S.                                                                               |
| 8  | SKAT SKAT --         | Exempted addressee prosign,                                                                       |
| 9  | XMT XMT              | meaning that stations or addressees which follow are exempted from foregoing collective address-- |
| 9  | PINS PINS            | in this case the action address.                                                                  |
| 10 | GR 130 GR 130        | Destroyer Division 3 (Operating under COMCANLANT).                                                |
| 11 | <u>BT</u>            | Group count (optional with plain language text).                                                  |
| 12 | (130 groups of text) | Break.                                                                                            |
| 13 | <u>BT</u>            | Group count repeated in final instructions when used.                                             |
| 15 | GR 130               | This is the end of this transmission and no reply is expected.                                    |
| 16 | <u>AR</u>            |                                                                                                   |

## FORMS OF MESSAGES

A military message may be drawn up in any one of the following forms: PLAINTEXT, ABBREVIATED PLAINTEXT, or CODETEXT.

## Plaindress

**A plaintext message has originator and addressee designations.**

nations in the heading. Unless the call serves as the address, the message contains all the components (but not necessarily the elements) prescribed by the message format—with one exception: the prefix may be omitted. All foregoing examples of radiotelegraph messages are in plaintext form. When call sign encryption plans are in force, call signs and address groups in plaintext messages may be encrypted for a degree of security.

#### Plaintext, Call Serving as the Address

This form may only be used when the originator is in direct communication with the addressee(s). Example: CHAUDIERE (CZGJ) has a PRIORITY message for BONAVENTURE (CGLE) information COLUMBIA (CGJR).

CHAUDIERE is in direct communication with both addressees. CGJR CGLE DE CZGJ - ZFH2 CGJR - P - 241315Z BT Unclas. No trace torpedo area Yankee BT K

This form is considerably shorter than the Plaintext form, which would have to be used if CHAUDIERE were in contact with BONAVENTURE ONLY. Example:

CGLE DE CZGJ - T - P - 241315Z -  
FM CZGJ -  
TO CGLE -  
INFO CGJR BT Unclas. No trace torpedo area Yankee  
BT K

#### Abbreviated Plaintext

Operational requirements for speed of handling—of contact reports, for example—may dictate the abbreviation of plaintext message headings. In such cases any or all of the following may be omitted from the heading: Precedence, date, DTG, and group count. Following is an example of an abbreviated plaintext message:

CGRV DE CYVN - R - 1516Q BT Sent diver for briefing BT K In this example, the DATE has been omitted. The same message could also be sent:

CGRV DE CYVN - 1516Q BT Sent diver for briefing BT K In this case, both DATE and PRECEDENCE have been omitted.

There is a distinct difference between PLAINTEXT, CALL SERVING AS THE ADDRESS and ABBREVIATED PLAINTEXT form. Learn the forms well.

#### Codress

Codress is an encrypted message form in which originator and addressee designations (as well as additional passing instructions, if any) are buried in the encrypted text. Codress is a valuable security device. It conceals the identity of units and prevents an enemy from making inferences from originator-addressee patterns. Plaintext and codress may be compared from the following messages prepared in both versions:

TF 301 is exercising in the Western Atlantic. CTF 301 in HMCS BONAVENTURE wishes to report to COMCANLANT ashore that he is sending two Tracker aircraft to area Charlie to investigate suspicious object sighted by a reconnaissance aircraft. CTU 301.1.2 is also given the message for information. Assume the following call signs and address groups.

CTF 301.....E2L4  
CTU 301.1.2.....K3M3  
COMCANLANT.....FLOT

#### Plaintext Version:

CFH3 DE E2L4 - T - O - 221547Z -  
FM E2L4 -  
TO FLOT -  
INFO K3M3  
BT

Unclas. Intend detail two Trackers to investigate object sighted area Charlie  
BT

# **Codress Version:**

CFH3 DE GB -T-PH8K/RFW5/-O-221547Z GR48 BT  
(48 groups of encrypted address and text)  
BT

The only information an enemy might recover from this encrypted message is that:

1. It has been sent from a British or Canadian ship.
2. There are at least two authorities in the address whose designations have been disguised by encryption. (Other possibilities exist here, but you will learn them later).
3. It is of operational immediate precedence.
4. The message was originated at 1547 GMT on the 22nd, and
5. It contains 48 groups of encrypted text.

NOTE: The indefinite call sign (GB) and encrypted call signs (PH8K/) (RFW5/) are not presently in force. Plain call signs and address groups are used in the call and transmission instructions. However, this or any other system may be ordered at any time.

## **PROSIGNS**

Procedure signs, or PROSIGNS, are groups which convey in short standard form certain frequently sent orders, instructions, requests, reports, and the like relating to communications. In radiotelegraph, an overscore means that the prosign is sent as one character—that is, without the normal pause between the letters. Overscores are ignored in teletypewriter work.

Following is a complete list of authorized prosigns. Memorize them now. It may be helpful to prepare a number of small cards, the prosign on the front and its meaning on the back. Use the cards for self-drill.

# **Precedence Prosigns:**

Z .....FLASH  
Y .....~~EMERGENCY~~  
O .....~~OPERATIONAL~~ IMMEDIATE  
P .....PRIORITY  
R .....ROUTINE  
W .....~~DEFERRED~~

## **Prosigns Used to Identify Portions of a Transmission:**

AA .....All after.  
AB .....All before.  
WA .....Word after.  
WB .....Word before.

## **Ending Prosigns:**

K .....Invitation to transmit.  
AR .....End of transmission; no reply expected.

## **Pause Prosigns:**

AS .....I must pause for a few seconds.  
AS AR .....Wait an undetermined period.  
AS 5 AR .....Wait 5 minutes.

## **Separation Prosigns:**

BT .....Long break. (Separates text of message from heading and ending.)  
II (Written as short dash).... Separative sign. Used for all other separation in messages.

## **Prosigns Always Followed by One or More Call Signs and/or Address Groups:**

DE ..... From (in call).  
FM ..... Originator's sign.  
INFO ..... The addressee designations immediately following are addressed for information.

XMT..... Exempt.

TO..... The addressee designations immediately following are addressed for action.

#### Prosigns Used in Transmission Instructions of a Message:

T..... Transmit this message to all addressees or the addressee designations immediately following.

G..... Repeat this entire transmission back to me exactly as received.

F..... Do not answer.

#### Group Count Prosigns:

GR (plus numeral)... There are (numeral) groups in this message.

GRNC..... The groups in this message have not been counted.

#### Prosigns Used With the Executive Method:

IX..... Action on the message or signal which follows is to be carried out upon receipt of "Execute".

IX plus 5-second dash... "Execute" — carry out the purport of the message or signal to which this applies.

#### General

AA..... Unknown station.

B..... More to follow.

C..... Correct.

EEEEEEEE..... Error.

EEEEEEEE AR.... This transmission is in error. Disregard it.

HM HM HM..... Emergency silence sign.

IML..... Repeat.

INT..... Interrogatory.

J..... Verify with originator and repeat.

NR (followed by Numeral)..... Station serial number.

R..... Your last transmission received satisfactorily. (also Routine Precedence)

## OPERATING SIGNALS

Radio operators and teletypists very frequently exchange routine advice and operating information, and occasionally relay emergency communication instructions or reports to other ships and stations and to aircraft. Traffic of this nature is transmitted in condensed standard form by the use of OPERATING SIGNALS — 3-letter groups beginning with Q or Z. These signals — of which there are several hundred — represent words, phrases, or complete sentences, and are a form of shorthand, eliminating time-consuming plain language transmissions. Q signals are employed in both military and civil communications, and are understood by ships and shore stations of any nationality. Z signals are used only in Canadian and allied MILITARY communications, and represent meanings not found in the Q code. Operating signals are published in ACP 131. This publication has decode sections for both Q and Z signals tabbed alphabetically, and an encode section tabbed by subject matter.

#### Use of Operating Signals

Operating signals are prescribed for every form of electrical telecommunications except radiotelephone. Instead, the radiotelephone operator transmits operating information in brief spoken phrases. An exception is when there are language difficulties, at which time an operating signal may be spoken phonetically.

Many operating signals may be used in either of two ways — as a question or as a statement. The prosign INT before the signal places it in the form of a question.

Example: HMCS BONAVENTURE asks Halifax Radio:

CFH3 DE CGLE INT QRT... (Shall I stop sending?)

CGLE DE CFH3 QRT... (Stop sending.)

The signal ZUG is used as a negative answer when there is no operating signal with the desired negative meaning;

CGLE DE CFH3 ZUG QRT... (Do not stop sending.)

Some signals must be accompanied by a numeral suffix which is used to complete, amplify, or vary the basic meaning.

Commercial ships and stations do not use the INT sign, but ask a question by use of prosign IMI following the operating signal, like this:

QRT IMI... (Shall I stop sending?)

QRV... (I am ready.)

QRV IMI... (Are you ready?)

**EXAMPLE:** A teletypewriter operator checks circuit operation with the query INT ZBK, meaning "Are you receiving my traffic clear"? The receiving station has a choice of replies: ZBK1 means "I am receiving your traffic clear, or ZBK2, "I am receiving your traffic garbled".

Many operating signals contain blank portions in their meanings which are filled in to convey specific information, INT ZRE means, "On what frequency do you hear me best"? In ACP 131 the declaratory meaning listed for ZRE is "I hear you best on KCS (MCS)". The operator fills in the necessary information:

CGXC DE CVVX ZRE 8470. .... (I hear you best on 8470 KCS.)

Other signals have, in their meanings, blanks enclosed in parentheses. Filling in such a blank is optional. INT ZHA means "Shall I decrease frequency very slightly (or KCS) to clear interference"? The operator receiving the signal INT ZHA without the frequency added knows it means, "Shall I decrease frequency very slightly?"

During wartime, operating signals are often encrypted, especially those which reveal:

1. Specific frequencies.

## SOME COMMONLY USED OPERATING SIGNALS

| Signal | Question                                                         | Answer, advice or order                                                                                                                                                                                                                                                                                              |
|--------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QCB    | -----                                                            | Delay is being caused by --- (1. your transmitting out of tune, 2. your slowness in answering, 3. lack of your reply to my ---).                                                                                                                                                                                     |
| QCH    | Does my frequency vary?                                          | Your frequency varies.                                                                                                                                                                                                                                                                                               |
| QCK    | What is the readability of my signals (or those of ---)?         | The readability of your signals (or those of ---) is --- (1 to 5).                                                                                                                                                                                                                                                   |
| QCL    | Are you busy?                                                    | I am busy (or I am busy with ---. Please do not interfere.                                                                                                                                                                                                                                                           |
| QCM    | Are you being interfered with?                                   | I am being interfered with.                                                                                                                                                                                                                                                                                          |
| QCN    | Are you troubled by static?                                      | I am troubled by static.                                                                                                                                                                                                                                                                                             |
| QCO    | Shall I increase power?                                          | Increase power.                                                                                                                                                                                                                                                                                                      |
| QCP    | Shall I decrease power?                                          | Decrease power.                                                                                                                                                                                                                                                                                                      |
| QCQ    | Shall I send faster?                                             | Send faster (--- RPM).                                                                                                                                                                                                                                                                                               |
| QCS    | Shall I send more slowly?                                        | Send more slowly (--- RPM).                                                                                                                                                                                                                                                                                          |
| QCU    | Have you anything for me?                                        | I have nothing for you.                                                                                                                                                                                                                                                                                              |
| QCV    | Shall I inform --- that you are calling him on --- KCS (or MCS)? | Please inform --- that I am calling him on --- KCS (or MCS).                                                                                                                                                                                                                                                         |
| QCW    | What is my turn?                                                 | Your turn is No. ---.                                                                                                                                                                                                                                                                                                |
| QCX    | Who is calling me?                                               | You are being called by --- on --- KCS (or MCS).                                                                                                                                                                                                                                                                     |
| QCA    | What is the strength of my signal (or those of ---)?             | The strength of my signals (or those of ---) is --- (1 to 5).                                                                                                                                                                                                                                                        |
| QCB    | Are my signals fading?                                           | Your signals are fading.                                                                                                                                                                                                                                                                                             |
| QCD    | Can you communicate with --- direct or by relay?                 | I can communicate with --- direct (or by relay through ---).                                                                                                                                                                                                                                                         |
| QCE    | Shall I change to transmission on another frequency?             | Change to transmission on another frequency (or on --- KCS (or MCS)).                                                                                                                                                                                                                                                |
| QCF    | Do you agree with my counting of words?                          | I do not agree with your counting of words; I will repeat the first letter or digit of each word or group.                                                                                                                                                                                                           |
| QCG    | How many telegrams have you to send?                             | I have --- telegrams for you (or for ---).                                                                                                                                                                                                                                                                           |
| ZAA    | -----                                                            | You are not observing proper circuit discipline.                                                                                                                                                                                                                                                                     |
| ZAL    | -----                                                            | I am closing down (until ---) due to ---.                                                                                                                                                                                                                                                                            |
| ZAM    | -----                                                            | Transmit only messages of and above precedence ---.                                                                                                                                                                                                                                                                  |
| ZAN    | -----                                                            | The last word (or group) --- (1. Received from you was ---; 2. Transmitted to you was ---).                                                                                                                                                                                                                          |
| ZAP    | -----                                                            | You are --- (1. Causing interference. Listen before sending; 2. Causing interference by insertion in order to wait; 3. Sending at the same time as --- (call sign); 4. Causing delay by slowness in answering; 5. Causing delay by slowness in answering my service or procedure message; 6. Answering out of turn.) |
| ZBQ    | Will you repeat what you (or ---) sent (at ---)?                 | Following is what I (or ---) sent (at ---).                                                                                                                                                                                                                                                                          |
| ZBH    | -----                                                            | Make preliminary call before transmitting traffic.                                                                                                                                                                                                                                                                   |
| ZBI    | -----                                                            | Place --- on watch on this frequency. (1. qualified speed key operator, 2. A competent operator.)                                                                                                                                                                                                                    |
| ZBO    | Of what precedence and for whom are your messages?               | I have (or --- has) --- message(s) (numeral indicating number of message(s) may be followed by Y, O, P, R, or M to indicate precedence for you (or for ---)).                                                                                                                                                        |
| ZBP    | -----                                                            | Your --- (1. Characters are indistinct; 2. Spacing is bad.)                                                                                                                                                                                                                                                          |
| ZBQ    | When and on what frequency was message --- received?             | Message was received at --- on --- KCS (or MCS).                                                                                                                                                                                                                                                                     |
| ZUG    | -----                                                            | Negative (No).                                                                                                                                                                                                                                                                                                       |

Figure 3-3

2. Cryptographic data.
3. The organization of networks.
4. Ship movements (estimated times of arrival, departure, etc).

At all other times operating signals must be regarded as the equivalent of plain language.

Some of the most commonly used operating signals are listed in Figure 3-3 on page 53. Remember that the Q code is used internationally, where the Z code is used only within the services.

### Use of Operating Signal "ZBO"

Here is the meaning of ZBO as given in ACP 131: "I have (or \_\_\_\_\_ has) \_\_\_\_\_ message(s) (numeral indicating number of messages may be followed by precedence prosign to indicate the precedence) for you (or for \_\_\_\_\_).

ZBO2 means: "I have two messages for you". However, it is usually good practice to indicate the precedence (especially when working a shore station where a lot of traffic is handled). ZBO 3P means: "I have three messages for you, all priority precedence".

ZBO 3P-2R means: "I have three PRIORITIES and two ROUTINES for you".

ZBO 2R-CGWF means: "I have two ROUTINES for GATI-NEAU".

CGWF ZBO 2R-CZCC means: "GATINEAU (CGWF) has two ROUTINES for CRESCENT (CZCC)".

This operating signal may be used in the final instructions as well as in the call. For example, CZCW calls CGNJ and tells him that he has two PRIORITIES. In the final instructions of the first message, CZCW may send B K. But during transmission of the second message, the operator (CZCW) is handed another PRIORITY. In the final instructions he may send: BT ZBO 1P K.

It is INCORRECT to send: CGNJ DE CZCW ZBO P K.

### Circuit Discipline

Every operator must govern himself by the following rules:  
1. Obey promptly orders and instructions of the control station.  
2. These practices are forbidden:

- a. Violation of radio silence.
- b. Incorrect and unauthorized procedure.
- c. Gossip between operators.
- d. Excessive tuning and testing.
- e. Misuse or confusion of call signs and address groups.
- f. Unauthorized plain language.
- g. Unnecessary procedure transmission, particularly those dealing with readability and signal strength.
- h. Unnecessary breaking in.
- i. Transmitting at speeds beyond the capability of the receiving operator.
- j. Tuning a transmitter with the antennae connected.
3. A station given a message for relay is responsible for clearance of that message until either a receipt has been obtained or instructions are received to take no further action.
4. Answer calls immediately (provided radio silence is not in effect). IT IS IMPOSSIBLE TO OVER-ESTIMATE THE VALUE OF AN IMMEDIATE ANSWER.

### Correcting an Error

When an error is made in transmitting, the operator sends a series of eight or more E's. This is the error sign. It is sent immediately after the error. The operator goes back to the last correctly sent word, group, or prosign, repeats it, and continues with the correct version.

Example:

CVVX DE CGWN -P- 171025Z BT  
RETURNING TO BASTEEEEEEEE TO BASE BT K

This procedure applies regardless of where the error occurs except in the heading, where the error sign is followed by the

last prosign or Op. Signal sent correctly. When followed by the prosign AR the error sign means "This entire transmission is in error, disregard it".

Examples: CFH DE CGWN -P-201345Z - FM EEEEEEEEE

AR (Disregard this transmission - cancel it.)

CVVX is sending a message to CGWN and makes an error in

the heading: CGWN DE CVVX -R- 161300Z -

FM CVVX -

TO BRKL

BRMX

CGWN

CGXEEEEEEEE

TO BRKL

BRMX

CGWN

CGWQ

BT Etc.

Note - The operator returned to the last PROSIGN sent correctly.

#### Procedure and Service Messages

PROCEDURE messages are used to obtain and provide CORRECTIONS, VERIFICATIONS, and/or REPETITIONS. The text of a procedure message contains only prosigns, operating signals, address designations, identification of messages or parts of messages, and any necessary amplifying data. It may contain any of the components shown in the basic message format, except that the LONG BREAK is used only if the DTG is included. The DTG, in turn, is employed only when it is necessary to show time of origin, or when further references may be made to the message.

SERVICE MESSAGES pertain to any phase of traffic handling, communication facilities, or circuit conditions. They are prepared and transmitted as regular messages, and may be encrypted. Most service messages concern traffic originated at, destined to, or refilled by a station (but remember they do

not request or give corrections, verifications, or repetitions).

A service message pertaining to another message usually carries an equal precedence. You can recognize a service message by one or more of the following:

1. Reference to another service message.

2. The abbreviation SVC in the prefix or as the first word of the text.

3. The fact that it is specifically addressed to a communication centre.

#### Counting Groups

The group count of a message is the number of groups in the text, and is found in the message just before the first long break prosign (BT). In a message, GR followed by numeral(s) means "This message contains the number of groups indicated". In a message containing a text of six words the group count is written GR6. If the message is encrypted, the group count indicates the number of code groups in the text. Rules to follow when counting groups:

1. Count groups between BT and BT.

2. Count every word as one group.

3. Count each group of figures, letters, symbols NOT interrupted by a space as one group. Example, "part number IX3498/2-45" is counted as three groups.

4. Hyphenated words and hyphenated names, when transmitted as one word, count as one group.

The LONG BREAK prosign BT is placed before and after the text of a message, but is not a part of the text. It is the prosign separating the heading from the text and the prosign separating the text from the ending. The text of a message is always between the two long break prosigns. Here is a list of examples that will help you to learn the correct method of counting groups.

Example:

Bray Hyphen Corbie..... 3

Group Count

|                         |   |
|-------------------------|---|
| Bray-Corbie.....        | 1 |
| New York.....           | 1 |
| XFUY.....               | 1 |
| CNYR NKLY JVRN.....     | 3 |
| /France/.....           | 1 |
| Paron France Paren..... | 3 |
| 125/3.....              | 1 |
| CG.....                 | 1 |
| 125-3/3-55-X56.....     | 1 |
| 35 Dash 567P.....       | 3 |
| Mr J.F. Adams.....      | 4 |
| BF6 311845Z.....        | 2 |
| /124.0-130-6/.....      | 1 |

#### Acknowledgement

An acknowledgement is a communication announcing that the message to which it refers has been received and is understood. An acknowledgement may only be sent by the addressee of the message. It goes back to the originator, and assures him not only that the addressee has received the message, but that he UNDERSTANDS it.

You will receipt for a message containing a request for an acknowledgement just as you would any other. The meaning of "received" contained in an acknowledgement is an additional receipt from your Commanding Officer.

Acknowledgements are usually obtained by means of a request within the text. The acknowledgement itself is made by the transmission, YOUR (DTG) ACKNOWLEDGED.

An acknowledgement may be requested AFTER transmission of the message. Perhaps there was no need for an acknowledgement at the time the message was sent, but the need came up later. On the other hand, an acknowledgement may have been requested in the first message, but the addressee was slow in complying. After transmission of a message, an acknowledgement may be gained either by an operating signal or another message. In the following example, CAYUGA

(CGWN) requests ALGONQUIN (CZJX) to acknowledge a message which has been transmitted. Instructions to acknowledge were not included in the text.

CZJX DE CGWN INT ZEV 152321Z K ("Request you acknowledge message with date-time group 152321Z")

After receipting for the above, CZJX acknowledges the message indicated: CGWN DE CZJX ZEV 152321Z K

If it is desired to hasten an acknowledgement previously requested, the same procedure as indicated in the example above, or the following message form may be used: CZJX DE CGWN -P- 160300Z BT Unclas. MY 152321Z.

(Hasten acknowledgement).

Comply BT K

After receipting for the above, CZJX originated the following acknowledgement:

CGWN DE CZJX -P- 160320Z BT Unclas. Your 152321Z. Acknowledged BT K

#### Verification and Repetitions

There are occasions when messages or parts of messages must be verified, corrected, or repeated. To do this the prosigns AA (All after) WB (word before), and WA (word after) are used in procedure messages in conjunction with IMI, C, J, and certain operating signals. IMI or J used alone means "Repeat" or "Verify and repeat" the entire transmission. The prosign INT may be used in conjunction with prosigns AA, AB, WA, WB to question a portion of a message.

Example: INT WA serial -13B means, "Is the word after serial 13B?"

When a message must be verified, corrected, or repeated, it is necessary to identify the message in question. This may be done by using the date-time group and/or the station serial number. In either case, the message may be further identified by adding the call sign of the originating station, the group count, or both. If even more identification is needed, the complete preamble, or address, or the complete (or partial) text may be included.

When it is necessary to use a code group of an encrypted message as a reference point, reference is made to it by number—that is, according to the numerical order in which it appears in the text. Use of numbers as reference to encrypted groups will be illustrated further on in this study.

For a plain language message the reference point is a plain language word. If a word or group used to identify a part of a message appears more than once in that message, the first occurrence of that word or group is meant. If otherwise intended, amplifying data such as adjacent words or groups must be included.

The following message is transmitted:

CGXG DE CZJX -R- 150800Z -

FM CZJX -

TO CGXG -

INFO BRKL

GR5

BT

XRDT MNCR TYQO MNSA PWCT

BT

B K

The prosign BT is used in the message twice. Therefore a request using:

1. AB BT denotes all before the text (the first BT),
2. AA BT denotes all after the heading (the first BT),
3. AA PWCT BT denotes the message ending, where PWCT is the last group in the text (the second BT).

It is important that you learn the correct usage of these prosigns. Make sure you understand the rules and examples that follow. Here is the encrypted message that will be used throughout the examples:

CGXG DE CZJX -R- 231408Z -

FM CZJX -

TO CGXG -

INFO CYVX GRII

BT

JAPY BOQU LAJY KUPY FOQO MUCU KAWC GUZO  
XAVA RATU SABO  
BT K

### Use of IMI

The prosign IMI means REPEAT. It may be used by the receiving operator to mean "Repeat last transmission", or, with identifying data, to mean "Repeat portion indicated". It may be used by the sending operator to mean "I will repeat the difficult plain language word I just transmitted", or "I am going to repeat this message". IMI is never used to request repetition of a message for which a RECEIPT has been given.

CGXG desires the entire message (given above) to be repeated. He sends:

CZJX DE CGXG IMI K

CZJX replies with the message, just as he sent it the first time. CGXG desires a repetition of the heading.

Request: CZJX DE CGXG IMI AB BT K

Reply: CGXG DE CZJX AB BT - CGXG DE CZJX -R-

231408Z - FM CZJX - TO CGXG - INFO CYVX

GRII BT K

**Special Note:** When a request "IMI AB BT" is made, the BT is sent again in the repetition. This is the only occasion on which this is done. For example, "IMI AB WRECKING", would be replied to with a repetition of all before (but not including) the word WRECKING. CGXG desires all after the eighth group repeated.

Request: CZJX DE CGXG IMI AA 8 K

Reply: CGXG DE CZJX AA 8 -XAVA RATU SABO BT K

In plain language messages, portions of the text are identified as words rather than as group numbers.

Request: CGJD DE CGXY IMI WA CARRY K

Reply: CGXY DE CGJD WA CARRY - OUT K

Request: CGJD DE CGXY IMI CARRY TO SIXTEEN K

Reply: CGXY DE CGJD CARRY TO SIXTEEN - CARRY OUT

PLAN SIXTEEN K

You have already learned that the prosign INT means "Interrogatory". It is used to question transmissions - messages or parts thereof. For instance, in a plain language message you believe the word after "carry" is "out", but you are not sure:

CGJD DE CGXY INT WA CARRY - OUT K  
CGXY DE CGJD C K

or, if the word happens to be "off", CGJD would reply,

CGXY DE CGJD C WA CARRY - OFF K  
CGXG asks for a repetition of the ninth group.

Request: CZJX DE CGXG IMI 9 K

Reply: CGXG DE CZJX 9 - XAVA K

CGXG wants portion of a message from third to eighth group repeated.

Request: CZJX DE CGXG IMI 3 TO 8 K

Reply: CGXG DE CZJX 3 TO 8 - LAJY KUPY FOQO MUCU  
KAWC GUZO K

#### Use of "J"

J means VERIFY AND REPEAT. It is used when an addressee does not understand all or a portion of a message which he has received. It is important to understand that the operator does not originate the request. It must be released just as any other message. It is not an exchange of information between operators, it goes back to the originator of the message.

When used with AA, AB, WB, and WA, J means "Verify and repeat message or portions indicated". An operating signal or an encrypted message is used when the encipherment alone needs checking.

CGXG wants the message verified by the originator and repeated.

Request: CZJX DE CGXG J 231408Z K (the DTG is used as reference)

Reply: (CZJX finds message correct as sent) CGXG DE

CZJX C 231408Z -R-231408Z - FM CZJX - TO  
CGXG-INFO CYVX GRIL BT JAPY BOQU LAJY  
KUPY FOQO MUCU KAWC GUZO XAVA RATU SABO  
BT K

CGXG desires the text of the message verified by the originator and repeated.

Request: CZJX DE CGXG J 231408Z AA BT K

Reply: (originator finds the text correct) CGXG DE CZJX C  
231408Z AA BT - JAPY BOQU LAJY KUPY FOQO  
MUCU KAWC GUZO XAVA RATU SABO BT K

CGXG wants the heading of the message verified by the originator and repeated.

Request: CZJX DE CGXG J 231408Z AB BT K

Reply: (heading found to be correct) CGXG DE CZJX C  
231408Z AB BT -R- 231408Z -FM CZJX - TO  
CGXG -INFO CYVX GRIL K

CGXG desires that the third group and groups six to eight of the message be verified by the originator.

Request: CZJX DE CGXG J 231408Z 3 - 6 TO 8 K

Reply: (groups found by originator to be correct) CGXG DE  
CZJX C 231408Z 3 - LAJY - 6 TO 8 - MUCU KAWC  
GUZO K

Should the portion be found INCORRECT by the originator, the same procedure is used, the originator sending back the corrected version.

#### Break-In-Procedure

There are times when you will need to break in on someone's transmission. This is permissible if you observe break-in-procedure. When only one station is involved in the reception of a message, breaking in is permitted, IF NECESSARY. The station desiring to break in makes a series of dashes. When the transmitting operator hears these dashes between his transmitted characters, he stops - at least momentarily - to discover the reason for the break-in. This pause allows the station breaking to ask for repetitions, a shift of frequency,

etc. When two stations are working directly on a circuit, the most frequent use of the break-in-procedure is for on-the-spot repetitions of portions missed.

Any station on the circuit having a message of higher precedence than the one being handled has the privilege of breaking in and transmitting his message. Of course, discretion is to be used in these cases. If a low-precedence message lacks only a few groups of being completed, the station transmitting it should not be expected to give way for the higher-precedence message unless it is of an urgent nature. This would cause unnecessary loss of circuit time.

During poor reception a station may break in to request that the transmitting station send the standard test signal (a series of V's) in order that the receiver may be retuned for better reception.

When communication is good, it frequently speeds traffic handling for one station to send several messages to another without interruption. Normally five messages should comprise a string. However, the receiving station may use an operating signal to indicate the number of messages to be sent in a given string. This procedure is more commonly used between fixed shore stations where a greater volume of traffic is handled.

*Example:* After establishing communication at a scheduled time, CFH30 tells GYC21 that he has ten messages to transmit:

GYC21 DE CFH30 ZBO10 K  
GYC21 answers and tells CFH30 to send his traffic in strings of five: CFH30 DE GYC21 QSG5 K

#### Relay

When a message begins the journey from point of origin to destination, it may or may not need to be handled by other stations along the way. If a message is transmitted from one station to another WITHOUT the aid of a relaying station, the two stations are said to be in DIRECT communication. In this case, remember, the originator may use the call as the

address, and the originator's sign FM is not necessary. However, in order to do this, the originator must be in direct communication with ALL addressees.

If a relay is required, it is known as INDIRECT communication. In such a case the complete address as well as appropriate transmission instructions must be included. The specific relay requires use of the prosign T. When a message is received with the prosign T alone, it means: "Station called transmit this message to all addressees".

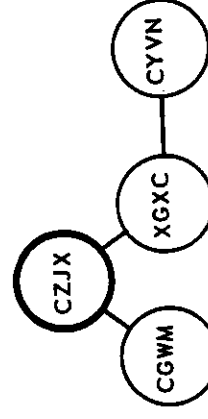
*Example:* Suppose CZJX sends a message to CGXC with instructions for CGXC to relay to all addressees—in this case, CYVN...

CGXC DE CZJX -T-R-151600Z-FM CZJX-TO CYVN  
GR4 BT GOLF WHISKEY FOXTROT TWELVE BT K

The prosign T followed by one or more address designations means: "Station called transmit this message to addressee(s) whose address designation(s) follow".

*Example:*

CZJX is in direct communication with CGWM and CGXC. CGXC is in touch with CYVN. Picture it like this.



CZJX sends a message to CGXC and CGWM; CZJX instructs CGXC to relay to CYVN. The transmission would read as follows:

CGWM CGXC DE CZJX -CGXC-T-CYVN -R-091345Z-  
FM CZJX-TO CGWM-INFO CGXC CYVN GR38 BT (etc.)  
When this has been accomplished, all addressees will have received the message.

The prosign XMT (exempt) is not used in conjunction with T. T instructions may be modified by use of the operating signal ZWL to denote that no forwarding action is required to addressee designation(s) immediately following ZWL.

## NETS

A net is an organization of two or more stations in direct communication on a common channel. One station in the net — the NET CONTROL STATION — is in charge. The station serving the senior commander is usually designated as net control, although it may be another station if another station is in better position to control the net. The duties of the net control station are to speed flow of traffic on the net, to limit transmissions to the essential minimum, to settle disputes incident to traffic handling, and to monitor the net so that corrective action can be taken against poor operating practices.

### Directed and Free Nets

Large nets and nets handling many messages usually operate as DIRECTED nets, which means that no station may transmit a message without calling and obtaining permission from net control. Nets which do not require strict control may operate as FREE nets. In this case the controlling station authorizes member stations to send their messages without obtaining prior permission.

### Executive Method

To speed tactical movements of ships and planes, the executive method is frequently used. It is sent when some action must be executed at a certain instant, especially when two or more ships must take action at the same time. While the executive message is usually associated with visual and radiotelephone messages, it may be used with radiotelegraph.

The procedure for executive method messages may seem complicated at first. Actually, the steps are simple, and a

few drills will do much toward squaring you away on this method. You can start by getting in mind three rules for handling executive messages:

1. Only abbreviated PLAINTEXT messages may be sent by this method.
2. A message which requires a signal of execution carries IX immediately before the first BT
3. In executive method messages, a group count and date are NEVER used. However, a time group may be used. Normally, if a time group is used it is placed either in the preamble or ending but not in both.

The signal of execution is known as the EXECUTIVE SIGNAL and consists of IX followed by a 5-second dash. When transmitted by radio, it is always preceded by a full call. The instant of execution is the termination of the 5-second dash. The executive signal (IX 5-second dash) alone after a call means: "Execute all unexecuted messages which I have transmitted". IX may be repeated a few times while awaiting transmission of the 5-second dash.

Assume G7F3 is the call sign for Task Unit 301.1.2 and D4L2 is the call sign for Commander Task Unit 301.1.2  
*Example:* G7F3 DE D4L2 IX IX IX (5-second dash) AR.

An executive method message is identified if it is one of several outstanding unexecuted messages. It is also identified if a considerable length of time passes between transmission of the message and the time to execute it. However, when a receipt is requested, it is indicated by transmission of K after the 5-second dash, instead of AR.

Once the executive signal has been given, it cannot be annulled. If the originator wishes to cancel all outstanding UNEXECUTED messages, he will transmit NEGAT.

*Example:* G7F3 DE D4L2 IX BT FORM ONE EIGHT ZERO BT K

Before executing the signal, D4L2 desires to annul it. He transmits G7F3 DE D4L2 BT NEGAT BT K

Each ship in the task unit then receipts for the annulment

in alphabetical/numerical order. To annul a particular signal or one of several outstanding unexecuted signals, NEGAT is transmitted, followed immediately by the signal which is to be annulled. Assume D4L2 sent the following messages and had executed none of them:

G7F3 DE D4L2 IX BT PAPA OSCAR TACK DELTA GOLF  
BT K

G7F3 DE D4L2 IX BT TURN SIX BT K

G7F3 DE D4L2 IX BT SPEED TWO SIX TACK GOLF KILO  
BT K

D4L2 desiring to annul TURN SIX sends:

G7F3 DE D4L2 BT NEGAT TURN SIX BT K

To show verification of an executive method message by using the prosign J, let us assume D4L2 transmits a message with the text: "FORM NINE TACK SPEED FIVE":

G7F3 DE D4L2 IX BT FORM NINE TACK SPEED FIVE  
BT K

All ships receipt except CZCC, who asks for a verification of the speed. It is checked by the originator and found to be correct:

DE CZCC J AA TACK K CZCC DE D4L2 C AA TACK -  
SPEED FIVE BT K DE CZCC R AR

Should the originator have found the speed signal to be incorrect, he would have cancelled it to the task unit in the following manner:

G7F3 DE D4L2 BT NEGAT SPEED FIVE BT K

## QUIZ

1. What is a message?
2. Differentiate between ACTION and INFORMATION addressees.
3. Name the four types of messages.

4. What is a CANGEN?
5. List the PARTS of a message.
6. List the COMPONENTS in the heading of a message.
7. What elements may be omitted from an ABBREVIATED plaintext message?
8. Give an example of a SINGLE call.
9. A military message may be drawn up in any one of three forms. What are they?
10. What is a PROSIGN?
11. May an OPERATING SIGNAL beginning with "Q" be used when communicating with a merchant ship?
12. Are OPERATING SIGNALS generally used on radiotelephone circuits?
13. Show an example of an INTERNATIONAL call sign of a ship of the RCN, the call sign of an RCN shore station, and the INTERNATIONAL call sign of an aircraft of the RCN.
14. What does PRECEDENCE indicate to communication personnel? To the addressee?
15. Define ORIGINATOR, DRAFTER, RELEASING OFFICER.
16. List four practices which are forbidden radio operators so that CIRCUIT DISCIPLINE may be maintained.