GUIDE FOR INDIVIDUAL USERS OF

N T X

U.S. NAVY TELETYPEWRITER EXCHANGE SYSTEM

15 MARCH 1945   OPNAV-20-7 (I)

GUIDE FOR INDIVIDUAL USERS OF

U. S. NAVY

TELETYPEWRITER EXCHANGE SYSTEM

N T X

OPNAV 20-7

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Revised 15 March 1945

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This Guide contains the necessary instructions for individual users who transmit their messages to an NTX relay office via TWX or Navy leased teletypewriter private line for ultimate delivery.

NAVY DEPARTMENT

OFFICE OF THE CHIEF OF NAVAL OPERATIONS
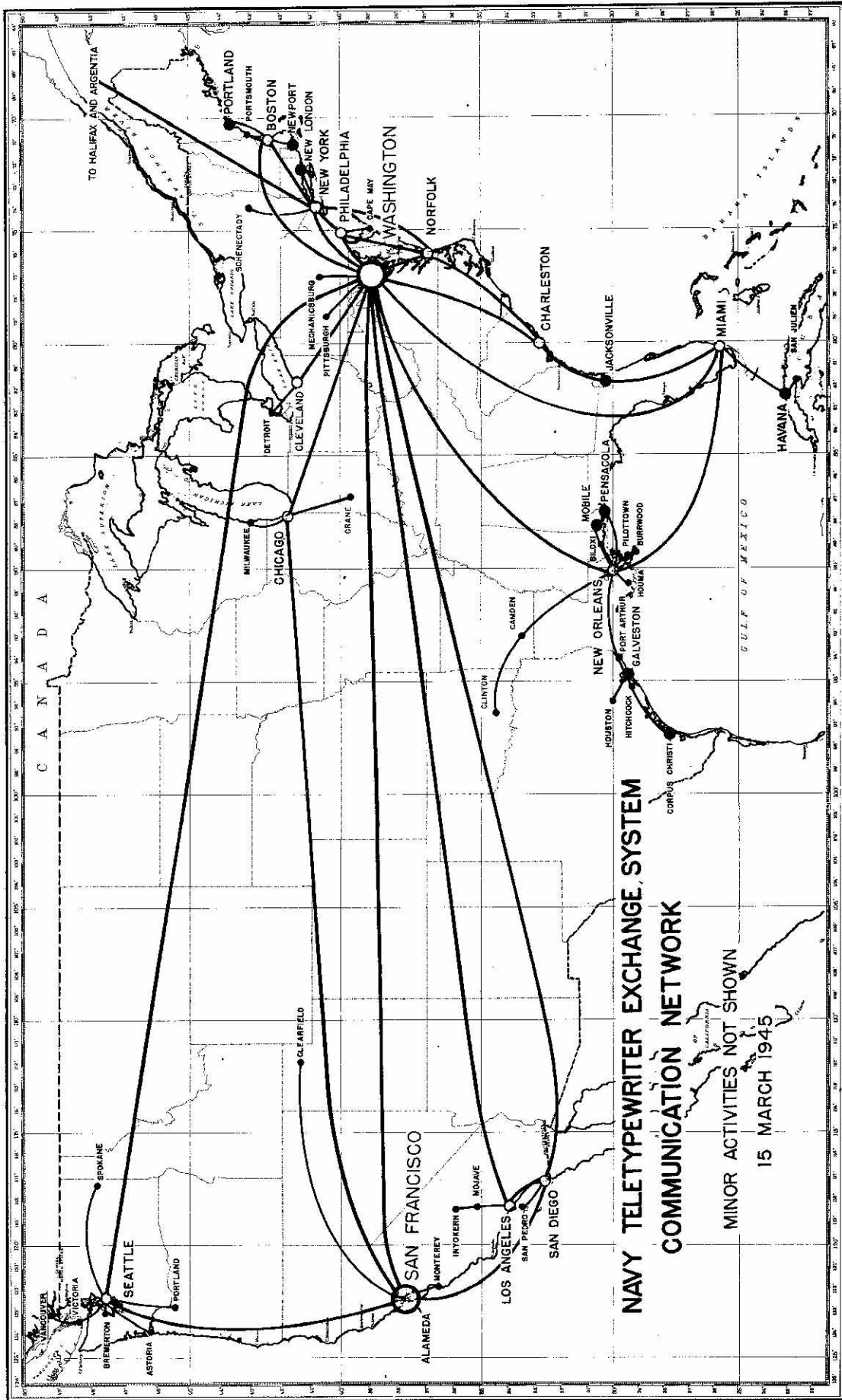
WASHINGTON 25, D.C.

15 March 1945

From :   Chief of Naval Operations
To   :   All Bureaus and Offices of the Navy Department
           All Continental Naval Districts and River Commands

Subj :   Guide for Individual Users of NTX

1.   This second edition of the Guide for Individual Users of the Navy Teletype-writer Exchange Service (NTX) is effective on receipt. All modifications in operating practice which differ from the first edition have either been promulgated by separate letters, or are of such nature that they will cause no confusion if not placed into effect simultaneously.

2.   The speed of service over the NTX system has reached such a degree of efficiency that the time required to transmit a message from the Navy Department to any naval activity connected to this service now averages less than 20% of the time that elapses between the originator releasing the message and the action officer receiving his copy. The other 80% of the elapsed time is required for local pick-up and delivery service at the originating and terminal offices.

3.   This inefficient local service is nullifying to a large extent the increased efficiency made possible by the NTX system. This subject was discussed in the Secretary of the Navy's letter, serial 3542120, of 1 December 1944, a copy of which is included in this publication as Appendix 6. Commanding Officers should direct their communication officers to make the necessary time studies to determine whether or not this directive is being carried out.

4.   It is requested that every case of poor service, such as excessive delay in receipt of a message, excessive garbling, loss of a message, or any other type of discrepancy be reported immediately.

5.   No formal letter is required to report a discrepancy. A copy of the message containing the discrepancy, either a ditto or carbon copy if practicable, with a notation in pencil or otherwise on the message as to the nature of the discrepancy, is all that is required. As no forwarding letter or signature is required, Communication officers may be instructed to mail copies of messages which have been poorly handled without reference to higher authority. The message should be mailed to the Chief of Naval Operations, (DNC - 20-P4), Navy Department, Washington 25, D. C.

6.   Normally, no acknowledgement will be made of the receipt of discrepancies of a minor nature, but the report of a lost message or a major discrepancy will be acknowledged after investigation.

7.   The procedure in this Guide is limited to circuits comprising the NTX system. This system will be expanded overseas as conditions permit.

JOSEPH R. REDMAN
By direction

NAVY TELETYPEWRITER EXCHANGE SYSTEM COMMUNICATION NETWORK

MINOR ACTIVITIES NOT SHOWN

15 MARCH 1945

TO HALIFAX AND ARGENTIA

PORTLAND
PORTSMOUTH
BOSTON
NEWPORT
NEW LONDON
NEW YORK
PHILADELPHIA
SCHENECTADY
CAPE MAY
WASHINGTON
NORFOLK
MECHANICSBURG
PITTSBURGH
CLEVELAND
DETROIT
CHARLESTON
JACKSONVILLE
MIAMI
SAN JULIEN
HAVANA

MILWAUKEE
CHICAGO
CRANE
CAMDEN
CLINTON

PENSACOLA
MOBILE
BILOXI
PILOTTOWN
BURRWOOD
NEW ORLEANS
HOUMA
FORT ARTHUR
GALVESTON
HOUSTON
HITCHCOCK
CORPUS CHRISTI

GULF OF MEXICO

CANADA

SPOKANE
CLEARFIELD

MOJAVE
INYOKERN
SAN FRANCISCO
MONTEREY
LOS ANGELES
SAN PEDRO
SAN DIEGO

SEATTLE
PORTLAND
VICTORIA
VANCOUVER
BREMERTON
ASTORIA
ALAMEDA

LAKE SUPERIOR
LAKE MICHIGAN
LAKE ONTARIO

FOREWORD

The NTX System consists of a nation-wide network of Navy leased and Navy owned teletypewriter private lines as shown on the map on the opposite page. This system, involving over 50,000 miles of teletypewriter channels, provides a means of fast typewritten communication service to various naval activities.

Primary relay offices are located in Washington and San Francisco for handling the major portion of the transcontinental traffic load. Major relay offices have been established at each of the Continental District Headquarters Communication Offices and at Los Angeles, California and Cleveland, Ohio. Minor relay offices have also been established wherever the volume of traffic justifies.

All activities in each Continental Naval District which have a high volume of traffic are in turn connected by local circuits.

Where local circuits are not justified, delivery is made by local TWX, or in those cases where TWX is not justified, by Western Union, messenger, or telephone.

The distinguishing feature of this system is the fact that the message is delivered in exactly the same form as prepared by the originator, thus, even the mistakes made by the originator in transmitting the message carry through to the addressee. For this reason, the correct preparation and typing of messages cannot be overstressed.

Messages are relayed from one circuit to another by the manual transfer of perforated message tape. Semi-automatic relay equipment has been installed in all relay offices for receiving and transmitting messages in tape form.

The economy of using the NTX system is apparent. For example, the cost of handling the average 75 word message by NTX from Washington to the West Coast is less than fifty cents (50¢) including the cost of personnel, whereas a minimum three minute TWX connection is $2.20.

It is assumed throughout this Guide that the reader is a competent, trained teletypewriter operator, familiar with the operation of teletypewriter machines and the handling of messages over the TWX system as operated by the telephone company. This information is available from the local telephone company and is included in their regular training program for teletypewriter operators.

If additional information is required and cannot be obtained locally, it should be requested from the District Communication Office. Do not hesitate to use the NTX System when such information is needed.

RECORD OF REVISIONS

Revision Number	Date of Revision Letter	Page Number and Paragraph	This Book Revised By (Name)	Date This Book Revised

NTX GUIDE FOR INDIVIDUAL USERS

TABLE OF CONTENTS

MESSAGE FORM AND OPERATING PRACTICES

1.   If the individual user is connected by private line to an NTX relay office, the relay office is called in accordance with local instructions as slight differences in installations require minor modifications in local procedure.   If TWX is used, the NTX relay office is called in exactly the same manner as any other TWX station, using the correct TWX call.   After the connection has been established, messages are transmitted in the forms illustrated by the following examples.   These forms are designated "~~Modified Naval~~ *N T X* Form."

Example 1   Single Address ~~Modified Naval Message~~ *N T X* Form

- -

P P P ←─────────────────────────── Precedence indicator

SNMAS V GNXNX NR 1 P ────────────── Date-time-group

FM
~~FROM~~ NAVPUR NYK ▨ Ø31740

TO SUPPLY OFFICE NYD MARE I ~~SLND~~   Not normally used in plain language dispatches. Use two line feeds to separate address from text when "GR" not used.

GR 11 ←───────────────

ADVISE BLADING OF SHIPPING ORDERS 412345

AND 412436 AND DATE SHIPPED   Time message was filed at the communication office.

                                 Date message was filed.

~~1745 JD 3 DEC 412345 412436~~   Important figures in text may be repeated as a check.

- -

2.   Explanation of Example 1.

(a)   After a connection is established with the NTX relay office, each message is started by pressing:

5 LETTERS
2 CARRIAGE RETURNS
1 LINE FEED
1 LETTERS

This insures the receiving machine being properly set to receive the message.

(b) P P P

Precedence indicators are typed ahead of the NTX routing indicators as follows:

Priority (5 bells)	P P P
Routine	R R R
Deferred	D D D
Night Letter	NL

(c) Always press the CARRIAGE·RETURN key twice at the end of every line to allow sufficient time for the carriage to return to the beginning of the line before the next letter is printed.

(d) SNMAS V GNXNS NR 1 P

"SNMAS" is the NTX routing indicator for the addressee as listed in "NTX Directory" (OPNAV 20-10), the letter "V" is an abbreviation for "From" and "GNXNS" is the indicator of the originator.

Extreme care should be taken that the routing indicator is correct as it serves the same purpose as a telephone number or a TWX number. Routing indicators are for the sole purpose of routing traffic over the NTX system so that it will be delivered to the addressee with a minimum of delay. The routing indicator does not replace the address and should not be confused with naval call signs nor used in lieu of call signs.

The originator's identifying serial number follows the originator's routing indicator and the precedence indicator is typed once after the serial number.

(e) Two (2) LINE FEEDS separate the NTX heading from the plain language address.

(f) FROM NAVPUR NYK NY Ø3174Ø

"FROM" is followed by the originator and the date time group. The regular naval date time group is used on all messages sent via TWX to the NTX relay office for relay over the NTX system.

In order to make the time uniform on all types of messages, regardless of where they originate, GCT (Greenwich Civil Time) is always used.

(The suffix "TWX" is used only on messages handled exclusively by TWX on a direct point to point basis.)

(g) TO SUPPLY OFFICE NYD MARE I CALIF

"TO" is followed by the addressee. The address in the message heading should be complete. The names of cities should be abbreviated in accordance with authorized abbreviations. Abbreviations for the state should always be included. (See Appendix 5)

(h) GR 11

A group count is optional in plain language messages but is not normally used. It is mandatory in encrypted messages. See Appendix 3 for instructions on group counts. Two (2) LINE FEEDS separate the addressee from the text if a group count is not used.

(i)   Two (2) LINE FEEDS separate the last line of the text from the next line.

(j)   1745 JD 3 DEC 412345 412436

"1745" is the time, GCT (Greenwich Civil Time), that the message was filed for transmission and became the responsibility of communication personnel. This is commonly called the "filing time."

The operator's initials "JD" are followed by the date the message was filed, "3 DEC."

Important numbers in the text may be repeated after the date. Such repetition serves as a check.

(k)   Transmit at the end of every message:

2 CARRIAGE RETURNS
10 LINE FEEDS
16 LETTERS

(l)   If this is the last message, transmit:

2 PERIODS
30 SPACES

The 2 PERIODS, the "Clear Indicator," will notify the relay office that transmission of all messages on hand has been completed and the 30 SPACES will clear the tape from the typing reperforator at the relay office. The 2 PERIODS and 30 SPACES should be torn off by the relay office before relaying on trunk circuits.

3.   It is extremely important that the above operations be closely followed. If they are omitted or improperly placed, a mutilated or overlined copy will be received by the addressee. The message is received in exactly the same form as transmitted.

4.   It is the responsibility of the originating office to obtain a receipt for sent traffic. If a receipt is not received promptly, the operator should ring two bells followed with a notice "R R R."

5.   There is a difference in the keyboard and shifting operation between the teletypewriters supplied for commercial TWX service and those used on the Navy NTX and Army communication systems. Operators should be thoroughly familiar with these differences which are covered in detail in Appendix 1. The following general rules should always be followed on either type of machine:

(a)   Always press the LTRS key to shift from upper to lower case.

(b)   Always press the FIGS key between groups of upper case characters as well as to shift from lower to upper case.

FINAL DELIVERY BY TWX OR TELEPHONE

6.   If final delivery from the last relay office is to be made by TWX, usually indicated by an "X" in the routing indicator, the TWX number may be inserted immediately after the addressee as shown in Example 2 on the following page.

When final delivery by telephone is desired indicate this by placing the word "PHONE" immediately in front of the addressee. If the telephone number is known it should follow immediately after the word "PHONE."

Example 2

- -

CMXOL V GNXNS NR 2

FROM NAVPUR NYK NY Ø31745

TO NAVAL ORDNANCE PLANT LVILLE KY LS 571

TEXT TEXT TEXT

- -

RECEIPTING FOR MESSAGES

7.   Messages received from the relay office may be preceded by one or more channel numbers assigned by the various intermediate relay offices when passing the message to the next relay office. Channel numbers are assigned consecutively from a daily series for each circuit. Note in Example 3, that in this case there is no channel number from the last relay office BM to BMXH as BMXH will receipt for this message.

Example 3

- -

WN43 ←   *Indicates that this was the 43rd message sent from Washington to Boston.*

SN B21 ←   *Indicates that this was the 21st message sent from San Francisco to Washington via the "B" channel*

P P P

BMXH V SNMBA NR 21 P

- -

8.   Each message or string of messages received should be receipted for as shown in Example 4 if channel numbering is not used from the last relay office to the receiving station. It is important to receipt promptly. In Example 4, the operator "JD" at "BMXH" is receipting.

Example 4

- -

V BMXH R 173Ø JD   *Time of receipt*

- -

9.   When a string of messages is received, the following form is used. The operator "JD" at "BMXH" is receipting for three (3) messages.

Example 5

- -

V BMXH R WNEA NR 14 SNAD 12 WNRC 13 1745 JD   *Use NR for first message only*

- -

10.   When the traffic load is heavy or where local conditions make it desirable, the relay office may employ channel numbering to the individual user. In this case, periodic number comparisons are made instead of receipting for each message. See Example 6 and section on Supervisors' Wires.

Example 6

- -

16ØØZ NR COMPARISON SENT 48 RECD 2Ø

- -

UNATTENDED SERVICE

11.   Teletypewriter machines may be equipped for unattended service which permits an incoming call to be completed without an operator in attendance. This service is not generally advocated for naval activities because of the possibility of fouling up of paper, tearing and jamming of ribbons, or mechanical trouble. It may be used, however, between an NTX relay office and an individual user after the user's closing hour.

12.   Unattended service should not be used for TWX calls between naval activities, except, when receipt can be obtained for messages so transmitted immediately after the opening of the office the following morning. This is accomplished by relay offices without additional TWX charges as outlined below:

    (a)   When transmitting to unattended TWX offices, two or three messages will normally be saved for transmission within one (1) hour after the opening of the TWX office, and the unattended station will receipt for all traffic received during the unattended period on this connection. This makes use of all time charged for, instead of wasting more than two (2) minutes as would be the case if a three (3) minute call is placed merely to obtain a receipt.

    (b)   If, for any reason, the relay office has no need to establish a connection within one (1) hour after the opening of the TWX office, a special call should be made by the relay office to obtain receipts for these messages, unless previously received on a call originated by the unattended station.

13.   Traffic received on an unattended basis should be carefully checked immediately upon the reopening of an office. The receipt should be made on the first connection established with the relay office as shown in Example 7, by referring to the originator's routing indicator and identifying serial number of each message received, unless the messages are channel numbered by the relay office, in which case reference may be made to the channel numbers. "UNAT" indicates that the messages were received on an unattended basis.

Example 7

- -

V BMXH R UNAT KNYA NR 5 GNXR 12 SNHA 2 GNXH 9 PNXO 13 1225 JD
              ↖ *Use NR for first message only*
- -

14.   When a teletypewriter is equipped for unattended service it is extremely important that the machine be left at the close of office hours with an adequate supply of paper and a good ribbon, both properly adjusted in the machine.

Substitute following by pasting this sheet (6) over entire section on "Multiple Address Messages," page 6, inserting sheet 6a, and inking out sub-paragraphs (bO and (c), top of page 7.

MULTIPLE ADDRESS MESSAGES.

15. Multiple address messages for NTX transmission to two or more addressees require only one transmission by TWX to the NTX relay office just as a conference connection to all the addressees require only one transmission.

16. The multiple address message form as shown in Example 8 is exactly the same as the single address form except as noted in the explanation following the example.

Example 8   Multiple Address - NTX message form.
- -
4-4-4
P P P
BMMB PNMS SNMAS UNC V GNMMS NR 3 P

FM NAVPUR NYK 032745
TO SUPPLY DEPT NYD BON/BMMB
SUPPLY DEPT NYD PHILA/PNMS
SUPPLY DEPT NYD MARE I/SNMAS
COM THREE/DLVD

INFO NSD NRFK/MAILED
CNO/UNC
SECNAV/UNC

TEXT   TEXT   TEXT
TEXT   TEXT   TEXT

1755/3 DEC JD
- -

17. Explanation of Example 8.

  (a) 4-4-4

     The numeral, repeated three (3) times ahead of the routing and precedence indicators, denotes the number of different addressees or communication offices to which the message must be delivered without processing by the NTX system and will always agree with the number of routing indicators in the call-up line.

This number will often be different from the total number of addressees as delivery to some addressees may be by mail or other means, or one communication office may serve more than one addressee.

The number calls the attention of operators in the relay office to the fact that the message is a multiple address message and therefore should be carefully checked to determine the delivery responsibilities of the office receiving it.

(b) When the message is in NTX form, the routing indicators shall appear in the same order as the plain language addressees except where a message carries dual precedence. (See Page 12)

When the message is in naval form, the routing indicators are not required to be in the same sequence as the call signs in the radio heading, since a heading in Naval form must be complete, including transmission instructions, and a communication office receiving such a message makes delivery to the addressees it serves in accordance with the Naval radio heading and never the routing indicators, except in the case of codress.(OPNAV 20-9, Part 1, Section A)

(c) In all multiple address messages prepared in NTX form, the appropriate routing indicator of the office responsible for terminal delivery shall appear after each plain language addresse (See Example 8 above.)

It will be noted in Example 8 that when the message is in NTX form the routing indicators are in the same sequence as the plain language addressees. Where one communication office serves more than one addressee the routing indicator appears only once in the callup line, but is repeated after the appropriate plain language addressees.

(d) "INFO" addressees are always listed last, and should be separated from the "ACTION" addressees by an extra line feed.

The first action addressee is preceded by the word "TO" The first information addressee is preceded by the abbreviation "INFO".

If delivery of the message to one or more of the addressees is made by mail or some means other than NTX, the word "MAILD" or "DLVD" will appear after the addressee in the heading. This informs the relay office that the NTX System is not responsible for delivery to addressees so indicated and no routing indicator is shown for such addressees.

(b) BMEB PNXS SNMAS KNYXE V GNXNS NR 3 P

The routing indicators for each addressee are listed in the same order as the plain language addressees except where a message carries dual precedence (See page 12).

Only one (1) identifying serial number is assigned to a multiple address message.

(c) The addressees are listed in the same order as written by the originator. The "INFO" addressees are always listed last.

The first information addressee is preceded by the abbreviation "INFO."

If the message is mailed to one or more of the addressees, the word "MAILED" will appear after the addressee in the heading. This informs the relay office that the NTX system is not responsible for delivery to addressees so indicated and no routing indicator is shown for such addressees.

SCHEDULING OF TWX CONNECTIONS

18. A TWX station should be directed by the relay office to handle its traffic with the relay office on a scheduled basis if the volume justifies and the facility situation permits such a procedure.

19. Normally the relay office will arrange the schedule so that the various activities place their TWX calls at different times, thus reducing to a minimum the amount of terminal equipment required and insuring a uniform traffic load.

20. The scheduled calls will normally be initiated by the TWX station. In case there is no traffic on file for transmission, no call should be placed. If the relay office has traffic on hand and no call is received within ten minutes after the scheduled time, the relay office will initiate the call.

21. Immediately after establishment of the connection, all traffic on hand at the TWX station should be transmitted to the relay office. The relay office should immediately receipt for this traffic and begin transmission of traffic it has on hand.

22. If tape transmission is used, all TWX messages filed for transmission during the interval between schedules should be punched and made ready for transmission at the scheduled time.

23. Where manual operation is used, the messages should be processed so that there will be no delay once the connection has been established.

24. Grouping of messages on scheduled connections results in a reduction of charges as well as more efficient handling of traffic because connections of less than three minutes are reduced to a minimum. The TWX rate is based on a minimum of three minutes per connection. Two messages of average length can be transmitted in one three minute connection, and each additional minute is charged for at 25% of the initial 3 minute rate.

25. High precedence traffic is, of course, transmitted as soon as possible, irrespective of schedules.

LONG MESSAGES

26.   To permit long messages (over 100 groups) to be filed on standard size sheets of paper and to permit micro-filming, they should be broken up into sheets of about 100 groups each as shown in Example 9.

   (a)   Proceed as with a short message, but after the last word on each sheet, except the last, transmit: "END SHEET 1" (or correct sheet number).

   (b)   Each sheet is separated from the previous sheet by ten LINE FEEDS.

   (c)   At the top of the second and subsequent sheets, the routing indicator of the originator and the same identifying serial number are preceded by "V" This serves to identify the sheet in case it is separated from the rest of the message.

          The sheet number follows the identifying serial number: "SHEET 2."

   (d)   The last sheet should be terminated exactly the same as a short message, 2 CARRIAGE RETURNS, 10 LINE FEEDS, and 16 LETTERS.

Example 9   (Sheet One)
- -

BMEB V GNXS NR 19

FROM NAVPUR NYK NY Ø41745

TO SUPPLY DEPT NYD BSN MASS

TEXT TEXT TEXT

TEXT TEXT TEXT

END SHEET 1 ◄——————— *Last line of sheet one*
- -
                          (Sheet Two)
Sheet one and sheet two are separated by ten LINE FEEDS.
- -
V GNXNS NR 19 SHEET 2 ◄——— *First line of sheet two*

TEXT TEXT TEXT

TEXT TEXT TEXT

- -

27. Numbering of messages is necessary for purposes of message identification and c i r c u i t or channel assurance. T h e r e a r e two types of message numbers:

(a) Identifying Serial Number: A consecutive serial number placed on a message by the originating office. This number carries through to all addressees, who may by quoting it, refer the originating office to a specific message. It also serves as the channel number from the originating office to the relay office. Every originating office will start a new series of identifying serial numbers daily at 1ØØØ GCT (Greenwich Civil Time), which is the equivalent local time tabulated below. The date used with each series is the date on which the series originated, even though a message is transmitted on the following date prior to time assigned for changing the series. Where a date is required it is written as follows: GNXK NR 1Ø/8 (8 is the date).

Eastern War Time Ø6ØØ
Central War Time Ø5ØØ
Mountain War Time Ø4ØØ
Pacific War Time. Ø3ØØ
Honolulu Time. ØØ3Ø

(b) Channel Number: A consecutive number assigned according to circuit by the relay office when passing a message to the next relay office. Channel numbers are not normally used by the last relay office to the office of the addressee when the messages are receipted for individually. Channel numbers are also changed at 1ØØØ GCT (Greenwich Civil Time).

28. A number sheet as shown in Example 10 should be maintained for each day's traffic in order to keep a record of all sent and received traffic handled with the relay office and to facilitate keeping the number series straight.

Example 10 Number Sheet and Traffic Log.

- -

DATE ___15 July 1944___   ACTIVITY ___Sup. Ships___

NTX CALL ___BMPA___   LOCATION ___Bath, Maine___

TRAFFIC SENT TO AND RECEIVED FROM BM

SENT	OPR'S INITIALS	TIME	REC'D	OPR'S INITIALS	ORIGINATOR AND IDENTIFYING SER NR	TIME
1	JA	Ø8Ø5	1	JA	WNS NR 16	Ø812
2			2		S NXB NR 3	Ø813
3			3		GNXK NR 1Ø	Ø918
4	BL	Ø915	4	BL		
5	JM	Ø94Ø	5			
6	JM	1Ø35	6			
7			7			
Etc.			Etc.			

- -

29.   Original copies of messages should be endorsed in pencil with the routing indicator of the NTX office to whom the message is transmitted, the identifying serial number, the time sent, and operator's initials, or a copy of the message as transmitted may be filed with the original. The filing time is, of course, also stamped or written on the original when it is received by the communication office or communication personnel.

(a)   As each message is transmitted, the corresponding consecutive identifying serial number is crossed off on the sent side of the sheet and the operator's initials are entered opposite the number.

(b)   , As each message is received the operator's initials, the originator's routing indicator, and identifying serial number are recorded as shown in Example 10. The next number is crossed off in the column headed REC'D. (Where channel numbers are used by the relay office, this number will correspond to the channel number).

(c)   The time should be entered approximately every ten (10) minutes where there is a continuous flow of traffic, otherwise for each message handled.

30.   Each operator is responsible for the continuity of the sent numbers during his tour of duty. It must be emphasized that the receiving operator is responsible for seeing that a complete message is received before receipting for a message. The operator is also responsible for the continuity of channel numbers from the relay office where they are used.

CORRECTION OF ERRORS

31.   In manual operation, conscious typing errors should be corrected by striking "X" six times and repeating the last word correctly transmitted as shown in Example 11.

Example 11
- -

WILL ARRANGE FURNIHS XXXXXX ARRANGE FURNISH EMERGENCY POWER
- -

32.   Before delivering messages corrected in the above manner, the office of final delivery should cross off with a pencil the words that were repeated or incorrectly transmitted. (See Example 12).

Example 12
- -

WILL ~~ARRANGE FURNIHS XXXXXX~~ ARRANGE FURNISH EMERGENCY POWER
- -

33.   When a simple typing error is noticed too late to be corrected by the "X" method, the correction may be made as a footnote correction between the end of the text and the filing time. (See Example 13).

Example 13
- -

MAKE 3RD WORD LINE 5 EXTINCT REPEAT EXTINCT

1235 JA 3 DEC

- -

34.   If for any reason a message that has been partially transmitted cannot be completed, the words "BUST THIS" should be transmitted and the message should then be entirely retransmitted under the same identifying serial number. Try to avoid the necessity of having to do this.

35.   When an error is made in perforating tape for automatic transmission, the error should be "erased" in the tape by back-spacing to the incorrect perforations and "lettering-out" the error by means of the LTRS key. That portion of the message may then be re-punched. The "erased" portion will not appear in the page copy when the tape is sent.

36.   Corrections after a message has been transmitted must be made by sending another message referring by identifying serial number and date time group to the message transmitted in error and clearly explaining to the addressee the nature of the correction.

37.   The method of securing a verification or correction of a message received via NTX is discussed in detail in the section "What to do When a Message is Garbled, Unintelligible, or Obviously Incomplete" on page 15.

PRECEDENCE

38.   Messages are assigned precedence by the originator to show the relative order in which they are to be transmitted. The assignment of precedence is determined by the originator. If no precedence is indicated by the originator, the message will be transmitted Deferred.

Note: There is a tendency on the part of naval personnel to mark a message "Priority" for the purpose of impressing the addressee with the necessity of answering promptly. Every effort should be made to discourage this practice.

There is no objection to the word "priority" (spelled out in full) being written as the first word of the text, or to the use of expressions such as "immediate reply requested", "reply by 1400 today requested", or other appropriate expressions. These messages should be stamped or marked "Priority" by personnel doing the routing, regardless of the precedence assigned for communication handling.

To mark a message filed late in the afternoon "Priority" when it is addressed to an Inspector of Naval Material or other activity that does not maintain a 24-hour watch merely to impress the inspector that an immediate answer is required is inexcusable.

Communication personnel at all offices should discourage the use of high precedence to impress addressees, but at the same time, should be alert to give proper precedence to those few dispatches that require routine or priority handling over the NTX system.

39.   In assigning the following precedence indicators to messages, careful consideration should be given to such factors as the speed of action required, differences in time zones, and the closing hours of the offices involved.

(a)   The fact that only a very small percentage of continental naval activities are prepared to take action outside of regular office hours, except on priority dispatches, should be kept constantly in mind.

40. Precedence that may be assigned to administrative messages.

    (a)   NIGHT LETTER (Indicator NL) - Night letters are normally delivered upon opening of the addressee's office the morning after the date of filing.

        This precedence should always be used for messages that do not require action the day of filing, such as administrative reports and inventories filed one day before the reporting deadline, orders for supplies, unless such supplies are urgently required, and for all administrative messages which are filed too late in the afternoon to permit delivery to the addressee during the business day on which filed. Based on experience in the Navy Department, Night Letters and Deferred precedence should be used for approximately 70% of the messages filed.

    (b)   DEFERRED (Indicator D) - Normally Deferred traffic will be delivered to the teletypewriter room of the addressee within one hour after transmission from the originating office if the message is filed before 2:00 p.m., local time of the addressee. If the message is received after office hours, it will be delivered at the opening of business the following day. No attempt will be made to delivered Deferred messages received after the addressee's office has closed.

        A Deferred message or Night Letter is automatically given Routine handling at the beginning of office hours the day following the day of filing.

    (c)   ROUTINE (Indicator R) - Only messages which require immediate delivery to the addressee, whether received during addressee's office hours or not, should be given Routine precedence. Routine messages are handled in the order of filing and are delivered after office hours to an action officer.

    (d)   PRIORITY (Indicator P) - is the highest precedence that can be given to administrative traffic and should be used only on those messages which are of such urgency that the established speed of routine handling will not suffice.

        Priority messages are delivered as soon as received regardless of the time of day. Where immediate delivery cannot be affected, a priority dispatch addressed to the originator will be filed stating the cause for delayed delivery.

41. The following precedence may be assigned only to operational messages:

    (a)   QPE (Indicator QPE) - is used to indicate messages that are operational in nature and will be transmitted ahead of all administrative messages.

    (b)   URGENT (Indicator O) and OPERATIONAL PRIORITY (Indicator OP) are reserved exclusively for use on operational messages requiring special handling.

42. All precedence indicators are placed after the originator's identifying serial number and since it could easily be overlooked by NTX personnel at relay offices where messages are recorded only on perforated tape, they are also transmitted ahead of the routing indicators.

43.   A message may be assigned more than one type of precedence when it is desired to expedite delivery to certain addressees and give slower handling to others. (See Example 14)

Example 14   Multiple Address - Dual Precedence Heading Form

- -

3 3 3

P P P

BMEB P   *Priority to this addressee*

GNYXB SNMAS R V MFXE NR 25 P   *Routine to these addressees*

FROM NAD PTSMH VA Ø41635

TO SUPPLY DEPT NYD BSN MASS P

SUPPLY DEPT RECDIV NYD BKLYN NY R   *These precedence indicators inserted by originator on original copy.*

SUPPLY OFFICE NYD MARE I CALIF R

TEXT TEXT TEXT

- -

44.   Explanation of Example 14

(a) P P P

The higher precedence indicator is typed ahead of the first routing indicator.

(b) BMEB P

The routing indicators of the addressees which are to receive the faster handling appear on the next line followed by the higher precedence indicator.

(c) GNYXB SNMAS R V MFXE NR 5 P

The routing indicators of the addressees which are to receive the slower handling appear on the next line, followed by the lower precedence indicator.

The "V", originator's routing indicator, and identifying serial number are followed by the higher precedence indicator in the normal manner.

45.   Example 15 on the next page further illustrates the use of dual precedence messages.

<u>Example 15</u>   Dual Precedence - Routine and Deferred

- -

3 3 3

R R R   *Routine to this addressee*

BMEB R   *Deferred to these addressees*

GNYXB SNMAS D V MFXE NR 12 R

FROM NAD PTSMH VA Ø6164Ø

TO SUPPLY DEPT NYD BSN MASS R   *These precedence indicators*

SUPPLY DEPT RECDIV NYD BKLYN NY D   *inserted by originator on*

SUPPLY OFFICE NYD MARE I CALIF D   *original copy.*

TEXT TEXT TEXT

- -

Dual Precedence - Routine and Night Letter

- -

3 3 3

R R R

BMEB R   *Routine to this addressee*

GNYXB SNMAS NL V MFXE NR 32 R   *Night letters to these addressees*

FROM NAD PTSMH VA Ø7153Ø

TO SUPPLY DEPT NYD BSN MASS R   *These precedence indicators*

INFO SUPPLY DEPT RECDIV NYD BKLYN NY NL   *inserted by originator on*

SUPPLY OFFICE NYD MARE I CALIF NL   *original copy.*

TEXT TEXT TEXT

- -

46.   Messages handled by the NTX System are automatically relayed at all relay points without being scrutinized for errors. Holding up messages at any relay point for the purpose of checking them for errors would obviously curtail the fast service now being rendered.

47.   As no mechanical equipment of the complexity of automatic teletypewriter equipment and associated circuits has ever been produced that did not occasionally develop mechanical trouble, even though no human errors were made, it is obvious that messages will sometimes be received which are garbled, overlined, or incomplete. When this happens, it is necessary to request a repetition of an entire message, or parts of a message, depending on the extent of garbling. Such repetition, verification, or correction is obtained by means of a "Service Message," normally spoken of as a "Service" and abbreviated "SVC" when written.

48.   Since numerous naval activities and commercial firms with whom naval activities communicate are served only by Western Union, the adoption of a standard form for writing "Services" which will permit their interchange with commercial communication companies without rewriting at the point of transfer is important. "Services" (SVC's) are handled over all commercial systems free of charge. The instructions which follow permit service messages written for transmission over the NTX System to be transferred to and understood by commercial companies when necessary.

49.   Service messages must be concise and clear and contain all essential information. To reduce the number of words that must be transmitted in services, standard abbreviations as listed in Appendix 2 are used by commercial communication companies and should also be used by NTX personnel when practicable. When you are unable to find an abbreviation quickly that will cover the information that you require, there is no objection to the use of English words written out in full. "Accuracy and Speed are the essence of good communications."

50.   Service messages will be assigned precedence in accordance with the speed required to clear up the particular point in question.

    (a)   Since the use of a service message usually indicates that delivery of a message is being delayed, or that action cannot be taken by the addressee, the service shall normally be assigned Priority precedence when Routine or high precedence traffic, or Deferred traffic filed the previous day is involved.

    (b)   An activity receiving a service message carrying a Priority precedence should naturally expedite the reply in the same manner. This should be done even though the original message may have been of Deferred precedence, as the lapse of time involved makes it necessary to handle the rerun as a Priority if service standards are to be maintained.

    (c)   When making a decision as to whether or not a service should be given Priority precedence, consideration should, of course, be given to the amount of delay already experienced, the time of day, time zones involved, and closing hours of the offices involved. No rules can ever replace "common sense."

51.   If an answer to a service message is not received within a reasonable length of time, a second request, with "SEC REQ" as the first word of the text, should be sent referring to the original service message. A "THIRD REQ," "FOURTH REQ," etc., should be sent if necessary.

    (a)   In determining a "reasonable length of time," allowance should be made for the number of relay points involved, the time of day, opening and closing of the addressee's office, time zones, etc.

    (b)   In those cases where unusual delays are experienced in obtaining results, a copy of the original message and subsequent services will be sent to Chief of Naval Operations (DNC) for investigation. No letter of transmittal is required if the data on copies of messages is complete.

52.   If a message is received partially garbled, with one or more words unintelligible, the message may be released to the addressee marked "SUBJECT TO CORRECTION," indicating the location or character of the error. A service message will then be originated by communication personnel requesting a rerun or confirmation from the originator.

53.   If a message is delivered to the addressee with an error, garble, or other discrepancy, without a notation "SUBJECT TO CORRECTION," the addressee should request communication personnel to originate a service message. It will be the responsibility of communication personnel to see that the required information is received and passed to the original addressee.

54.   It should be noted that each service message contains the following data. (See examples that follow):

    (a)   Precedence indicator as required.

    (b)   The routing indicator of the activity addressed, the letter "V," the routing indicator of the originating activity, serial number, and precedence indicator as required.

    (c)   FROM SVC (which indicates the message is from the Service Desk), the routing indicator of the originating activity, and the date time group assigned to the service message.

    (d)   TO SVC (which indicates the message is addressed to the Service Desk), the routing indicator of the activity being addressed.

    (e)   The text of the service message will contain:

        (1)   The description of the message on which you want information. This description will contain if available, originator's routing indicator, identifying serial number, and date time group of the message in question.

        (2)   The discrepancy or misunderstanding which brought about the necessity for the service message.

        (3)   A statement of exactly what is wanted from the originator of the message to clarify the message in question.

    (f)   Filing time of the service message, initials of the operator, and date.

EXAMPLES OF DISCREPANCIES AND SERVICE MESSAGES

55.   Following are examples of discrepancies which may occur, together with examples of the wording of service messages that could be used to obtain information necessary to correct the discrepancy.

DISCREPANCY: Questioning a word in the text.

A message is received with the 10th word in the text reading "TNE." The office receiving this message does not know whether it should be "TEN" or "ONE." Therefore, a service (SVC) message is sent to the originator so that he may consult his original copy and send back the correction. The text of the SVC message in an unabbreviated form might read as follows:

> Your message GNYC serial number 18 date time group 291143.
> Confirm tenth word text received TNE repeat TNE.

Using the abbreviations listed in Appendix 2 the above is abbreviated as follows:

> UR GNYC NR 18 291143 CFM 10TH WD COMES TNE RPT TNE
> *(Your)   (Number)   (Confirm)   (Word)   (Repeat)*

Service messages are transmitted in the form illustrated by Example 16.

Example 16   Standard Service Message Form

- -

P P P

GNYC V WNDE NR 30 P

FROM SVC WNDE 291235

TO SVC GNYC

UR GNYC NR 18 291143 CFM 10TH WD COMES TNE RPT TNE

1235 JD 29 DEC

- -

REPLY: The reply to the service message, without heading required for transmission, before being abbreviated might read as follows:

> See your service WNDE serial number 30 date time group 291235.
> Make tenth word in GNYC number 18, date time group 291143.
> TEN repeat TEN.

The reply would appear as illustrated by Example 17, on the following page, with the NTX heading for a service message and properly abbreviated.

Example 17   Standard form for reply to a "SVC" message.

- -

P P P

WNDE V GNYC NR 2Ø P

FROM SVC GNYC 291255

TO SVC WNDE

SYS NR 3Ø 291235 GNYC NR 18 291143 MAKE 10TH WORD TEN RPT TEN
(See your service) ← *A reply to a "svc" must always refer to the original "svc"*

1255 JD 29 DEC

- -

DISCREPANCY: Message so garbled entire rerun is necessary.

    A message is received so badly garbled or containing so many errors that it is unintelligible and a complete rerun is necessary. In such a case, the text of the service sent to the originator follows:

    WNAD NR 31 3Ø1725 GARBLED REP AND RER (Example 18 is reply)

Example 18   Standard form for reply to a "SVC" message, which includes complete repetition (rerun) of message being questioned.

- -

P P P

GNYD V WNAD NR 5 P

FROM SVC WNAD 3Ø181Ø

TO SVC GNYD

SYS NR 12 3Ø1755 HW REP AND RER
←——————————————— *Separate original message and "svc" heading by two carriage returns and only two line feeds.*

GNYD V WNAD NR 31 ←

FROM BUDOCKS WASH DC 3Ø1725 ← *Identifying serial no. and date time group of rerun message are the same as on the original.*

TO NYD NYK NY

ORDER NR 4346 SHIPPED 25 JAN BL 4213684

1735 JD 3Ø DEC *(See note below)*

- -

Note: This is filing time on original message. No additional separate filing time is necessary as date time group in heading of the service message is the filing time. Unless repunching is necessary, this permits the original tape to be used for the rerun without it being necessary to splice on a tail to add the filing time.

56.   Since Examples 16, 17, and 18 show the complete form of service messages, the examples that follow show only the suggested text for service messages required to correct the various discrepancies and an appropriate reply.

(a) Message so badly garbled entire rerun is necessary.

UR WNAD NR 31 3Ø2Ø3Ø GARBLED RER
                              (Rerun)

(Reply): SYS NR 12 3Ø21Ø9 WNAD HW REP AND RER
  (See your service)   *(Herewith) (Repunched) (Rerun)*
                            Original message follows:- fact it
                            was repunched indicates errors were
(b) Questioning a word in the text.   *discovered in original transmission.*

UR GNYC NR 18 291143 CFM 10TH WD COMES TNE RPT TNE

(Reply): SYS NR 3Ø 291355 GNYC NR 18 291143 MAKE 10TH

WORD TEN RPT TEN

(c) Incomplete text. (Does not make sense starting at words ''ordered to''
                        in 17th line)

UR WNAD NR 34 11172Ø TEXT INCOMPLETE VERIFY AND CFM

AA 17TH LINE ORDERED TO

(Reply): SYS NR 2Ø 11745 WNAD NR 34 11172Ø AA 17TH LINE

ORDERED TO 12 NAVDIST FOR TEMPORARY DUTY

(d) Insufficient or incomplete address on message of a previous day.

UR WNAD NR 42/12 112322 COMES ADDRESSED OINC GBA
                                        (Give better address)
(Reply): SYS NR 1Ø 131842 WNAD NR 42/12 112322 CORRECT ADS

OINC MOVIE FILM EXCHANGE NAVSTA PALMBEACH FLA

(e) Accuracy or meaning of text.

UR WNDE NR 17/12 111845 NOT UNDERSTOOD CFM AND CLARIFY

(Reply): SYS NR 3 12123Ø FILE WNDE NR 17/12 111845 NEW MSG TO

FOLLOW

(f) Reference not held.

UR WNEA NR 27 12144Ø REFERENCED UR 1213ØØ UNLOCATE RER

(Reply): SYS NR 36 12151Ø HW RER WNEA NR 21 1213ØØ WE TRACE

FOR NON-DELIVERY

(g) Service message is not answered.

SEC REQ MY SVC NR 39 23185Ø RE WNC NR 97 231749 GR 81 TEXT

SHOWS GR 8Ø

(h) <u>Text Overlined</u>

        UR WNDE NR 13 11536 20TH AND 21ST LINES OLINED RER AA

        19TH LINE

(Reply): (See note below) SYS NR 16 11162Ø HW RER AA 19TH LINE

        WNDE NR 13 111536

(Note - Usually overlining should be noted at the time of receipt and immediately corrected by the relay office rerunning and eliminating false CARRIAGE RETURNS or adding LINE FEEDS as required. See example 19, Page 21. The message at the relay office is printed on a long tape which makes it impossible for one line to be printed over another).

(i) <u>Group count does not check.</u>

        WNC NR 97 231749 GR 81 TEXT SHOWS GR 8Ø

(Reply): SYS NR 39 23185Ø WNC NR 97 231749 GR 8Ø RPT GR 8Ø

OPERATORS' REQUESTS (RQ's) AND REPLIES (BQ's)

57. An RQ or a BQ is simply the label given "circuit talk" between operators working keyboard teletypewriters directly connected with each other.

58. The purpose of RQ's is to facilitate the correction of minor discrepancies noted at completion of a transmission, which otherwise would have to be handled by service messages requiring release by supervisory personnel.

59. An RQ (Request or Question) is used only for the purpose of obtaining fast information or a quick correction on a message that has just been received.

60. A BQ is the answer to an RQ and both the RQ and BQ should be recorded on the bottom of the page copy of the message being questioned (or on last message of a string if messages are transmitted in this manner).

61. RQ's and BQ's are authorized for use on the NTX system <u>only</u> between the operators of offices that are directly connected by teletypewriter equipment which permits transmission by direct keyboard.

62. They are <u>never</u> numbered. They are <u>never</u> relayed. They are <u>never</u> used between relay offices using semi-automatic relay equipment, which does not provide direct keyboard transmission.

63. They may be used as outlined above with Western Union, who has the same general policy regarding the use of RQ's and BQ's.

64. Efficient and judicious use of RQ's and BQ's rests with the individual operator. The operator will decide whether the discrepancy can be cleared up quickly by using the RQ-BQ method, without resorting to a formal service.

65. Authorized abbreviations (see Appendix 2) are used wherever possible for all RQ's and BQ's.

66. The following time limits must be observed in RQ-BQ traffic:

    (a)   An RQ must be sent within <u>one minute</u> after the message in question has been received, otherwise a Service must be used.

    (b)   A BQ in answer to an RQ should normally be sent within <u>three minutes</u> after the RQ has been received. Thus, the total elapsed time between receipt of an original message and receipt of the BQ correction should be not more than <u>four minutes.</u>

    (c)   If an RQ remains unanswered for more than three (3) minutes, a "Second Request" RQ, including the words "SEC REQ" shall be transmitted.

67. When the answer to an RQ cannot be given within the above time limit, the supervisor or service desk should be notified. A service message will then be used to answer the RQ, but a BQ must be sent immediately to the originator saying that you are "Answering by Service." This is abbreviated for transmission: "BQ ANS BY SVC."

68. The following discrepancies and examples illustrate the use of RQ's and BQ's:

<u>DISCREPANCY:</u> Message PNSD NR 23 received overlined.

<u>ACTION DESIRED:</u> Relay office you are connected with to check the message and rerun. A message at the relay office is on a long tape and it is impossible for one word to be printed on top of another on the tape. The relay office can, therefore, rerun the same tape, pausing at the point where overlining started, insert a LINE FEED and/or CARRIAGE RETURN or eliminate a "false" CARRIAGE RETURN, thus transmitting usable copy without it being necessary to service the originating office for a rerun.

<u>Example 19</u>   RQ Form

- -

GN V GNSD   ◄————————————————————   *Routing indicators required only when more than one office on the same circuit*

RQ PNSD NR 23 3RD AND 4TH LINE OLINED JD

- -

REPLY: If rerun can be made at once, the reply should consist of an immediate rerun of the message, properly supervised by using the keyboard so that false CARRIAGE RETURNS are eliminated or LINE FEEDS added where required. If this is not practicable, one of the following BQ's (replies) may be appropriate.

    (a)   Minute please: BQ MIN

    (b)   Answering by Service: BQ ANS BY SVC

    (c)   BQ MY COPY GARBLED REQUEST RER FROM ORIG

As a BQ is always in answer to an RQ no calls are required when transmitting BQ's as the operator who originated the RQ is standing by waiting for the answer.

DISCREPANCY: The tenth word of PNSD NR 24 is received garbled as follows:
RELEARED

ACTION DESIRED: The following suggested text requests the relay office to check
their received tape to see if tenth word is garbled or if garble resulted
on transmission from relay office to the originator of the RQ. If relay
office tape is garbled, it will be necessary for the addressee to go back
to the originator of the message with a SVC.

RQ PNSD NR 24 CFM 1ØTH WD COMES RELEARED

RPT RELEARED

(Reply): BQ PNSD NR 24 1ØTH WD RELEASED RPT RELEASED

DISCREPANCY: Due to relay office operator striking a "6" for a "5" message
just received carries channel number 64; last message on received
number sheet is 53.

ACTION DESIRED: The relay office is requested to verify the channel number in
the following suggested text.

RQ WNEA NR 98 CHANNEL NR 64 LAST RECD 53

(Reply): BQ WNEA NR 98 CORRECT TO NR 54 RPT NR 54

SUPERVISORS' WIRES

69.   Supervisors' wires are used for the purpose of controlling traffic handling,
such as arrangements for alternate routing when outages occur or normal routes
are overloaded, communications regarding equipment trouble, notices of closing
and opening circuits, and channel number comparisons and discrepancies. Super-
visors' wires are never used to obtain corrections or confirmation of a message
or part of a message. Service messages are used for this purpose.

70.   Supervisors' wires are simple, brief, underlined_ messages, and are similar
to RQ's and BQ's in that they are used only between offices connected by direct
circuits. Unlike RQ's and BQ's, they must be referred to the supervisor for infor-
mation and reply and should never be answered by an operator without supervisor's
specific direction. Supervisors' wires are not limited to direct keyboard trans-
mission or specific handling time as are RQ's and BQ's.

71.   Normally they are transmitted as shown in Example 20. The text has no
set form but should be written in as few words as is practical to accomplish
its purpose, using the same abbreviations as are authorized for service messages
in Appendix 2. Bell signals are used when immediate attention is required.

Example 20   Supervisor's Wire Form
- -

(2 bells) ◄─────── *When immediate attention is required*

BMP SUPVR V BMPAR

OPEN FOR TRAFFIC
                      Optional when supervisor's wire does not
12Ø1 JD 3 DEC ◄─── *require filing for record purposes.*
- -

72.   Suggested texts for supervisors' wires follow with appropriate replies.

   (a) Opening a Private Line

           OPEN FOR TRAFFIC   (Reply): GA

   (b) Closing a Private Line

           CLOSING SENT 2∅ RECD 48 (Reply): CLOSING SENT 48 RECD 2∅

   (c) Closing out Number Series

           FINAL NR COMPARISON   (Reply): (a) FINAL NR COMPARISON
           SENT 35 RECD 42   SENT 42 RECD 35

                                              (b) FINAL NR COMPARISON
                                                   OFF SENT 43 RPT 43
                                                   RECD 35 CK AND ADVISE

   (d) Periodic Number Comparisons

           ∅2∅∅Z NR COMPARISON   (Reply): ∅2∅∅Z NR COMPARISON
           SENT 48 RECD 2∅   SENT 2∅ RECD 48

   (e) Periodic Number Comparisons - Alternative Method

           In cases where channel numbering is used, particularly if automatic
   numbering is involved, the following modified procedure may be used.

   (1)   A message tape is prepared in the form shown below, with
          the appropriate time, for each channel or circuit.

               THIS MY ∅2∅∅Z NR COMPARISON

   (2)   The tape is then transmitted as a numbered message using
          the next consecutive channel number and, assuming that this is
          the SN-WN B channel, would be received at WN in this form:

               SN B35

               THIS MY ∅2∅∅Z NR COMPARISON

   (3)   If the received numbers at the receiving office (WN) are solid
          through 35 on the "B" Channel, the number comparison tape is
          sent back to the originator (SN) on the "B" Channel preceded by
          the next consecutive channel number. It will be received at SN as
          follows:

               WN B7∅

               SN B35

               THIS MY ∅2∅∅Z NR COMPARISON

(4)   In case either office has an open number in the series, the missing number should be reported immediately. Responsibility for continuity of received numbers rests with the station receiving the traffic.

(5)   Close out comparisons may be handled in the same manner but will be identified as "final":

THIS MY 1000Z FINAL NR COMPARISON

(f) Channel Number "open" (not checked "received" on number sheet even though later numbers in sequence have been received)

NR 14 OPEN   (Reply): (a) CANCEL NR 14

                              (b) HW RER NR 14

(g) Message Received without a Channel Number

BMPAV NR 4 NO CHANNEL NR   (Reply): MAKE BMPAV NR 4

LAST RECD NR 11   NR 12

(h) Channel Number 15 used on two Received Messages

NR 15 DUPE BMPAV   (Reply): MAKE MDEA NR 3

NR 6 AND MDEA NR 3   NR 16

(i) Suspected Circuit or Equipment Trouble   (Circuit has been idle for appreciable length of time)

LAST RECD NR 43   (Reply): LAST SENT NR 43

                            EQUIPMENT TROUBLE

(If circuit is out, use TWX or telephone)   HERE NOW RESUME

(j) Stop Notice   (Sent after breaking on a single circuit or on the send side of a duplex circuit)

STOP PAPER TORN

(k) Go Ahead Notice   (Required after a stop notice has been sent and ready to resume reception)

GA START WITH NR 43

73.   When an addressee has received a message over the NTX system and wishes
to have it delivered to an additional addressee(s), the NTX routing indicators of the
original message are replaced by the NTX routing indicators required to forward
the message.

74.   A new "FROM-TO" heading is inserted ahead of the original "FROM-TO"
heading, separated from it by the appropriate phrase to show the reason for for-
warding to additional addressees.   One of the following phrases should normally
convey this information.

    (a)   FORWARDED FOR INFO

    (b)   FORWARDED FOR ACTION

    (c)   FORWARDED FOR RECOMMENDATION

    (d)   FORWARDED FIRST ADEE FOR ACTION OTHERS FOR INFO

    (e)   FORWARDED FOR ACTION THIS OFFICE NOT CONCERNED

    (f)   FORWARDED FOR ACTION APPARENTLY ADDRESSED THIS
           OFFICE IN ERROR.   (If address is correct but routing
           indicator is incorrect, see Page 26, "Responsibility For
           Handling Misrouted Messages")

           (Note: A routing indicator is not an addressee).

    (g)   FORWARDED . . . . (any appropriate phrase)

75.   Thus, for example, a message might read as follows when received:

        2 2 2

        PNNM GNNM V BMAI NR 62

        FROM INSMAT BSN MASS 2Ø1623
        TO INSMAT PHILA PA
        INFO INSMAT NYK NY

76.   If the Inspector of Naval Material at Philadelphia forwards the message for
information to the Inspector of Naval Material, Pittsburgh, it would appear as follows:

Example 21

- -
WNRC V PNNM NR 48

~~FROM~~ INSMAT PHILA PA 21Ø146

TO INSMAT PGH PA

FORWARDED FOR INFO

~~FROM~~ INSMAT BSN MASS 2Ø1623

TO INSMAT PHILA PA

INFO INSMAT NYK NY

TEXT TEXT TEXT
- -

RESPONSIBILITY FOR HANDLING MISROUTED MESSAGES

77.   An NTX office is responsible for delivery of every message received even though the message was transmitted to them through error. This is a fundamental policy and must be thoroughly indoctrinated in all personnel connected with the communication organization.

78.   Occasionally an office will receive a message in error due to an incorrect routing indicator. This error might have been made by the originator, or it may have resulted from mechanical trouble in the system. In some cases, the routing indicator may be correct but the relay office may transmit it over the wrong circuit. While the final relay office is jointly responsible with terminal offices for checking routing indicators against the plain language address, this does not relieve an office which receives an incorrectly routed message from responsibility for taking action as outlined in the following paragraphs to insure correct delivery.

79.   If the error should be noted before the receipt is given to the relay office, the correct action is to refuse to give a receipt. If the message for example is GNSD NR 37, this should be done by sending an appropriate RQ to the relay office as follows:

RQ GNSD NR 37 REQUEST YOU CORRECT ROUTING RL

The relay office would then reply with a BQ as follows:

BQ FILE GNSD NR 37 WE REROUTE JD

80.   If through inattention or other cause the misroute is discovered after you have receipted for the message, or where channel numbering that does not require an individual receipt is used, file a service message immediately to your relay office stating the facts. For example:

WN B99 GNSD NR 37 191513 MISROUTED TO THIS OFFICE

183Ø RL 19 DEC

Relay office would reply by SVC as follows:

FILE WN B99 GNSD NR 37 191513 WE REROUTE

1845 JD 19 DEC

81.   The relay office should recover the message tape, tear off the original routing indicators, prepare the new correct routing indicators, and transmit as required to insure proper delivery.

82.   If the tape cannot be recovered, the relay office should advise the originating office by a service message to refile the message to the addressee(s) who failed to receive a copy because of incorrect routing indicator(s). The text of the service message would read as follows:

GNSD NR 37 191513 MISROUTED RER TO PNSD RPT PNSD

1855 JD 19 DEC

83.   Prior to the installation of automatic relaying equipment, it was found that operators manually relaying messages frequently skipped a word in the process, and for that reason a group count on every message was formerly considered mandatory in order to insure completeness. As messages are automatically relayed on the NTX system, there is no necessity for a group count in plain language messages handled over the system.

84.   With the automatic method of relaying, except for garbles introduced by mechanical troubles, the message is received in exactly the same form, including errors, in which it was prepared by the originating office. Garbles caused by mechanical troubles result in the transmission of incorrect letters, but not in the loss of a complete word as is the case with manual relaying.

85.   In view of the above, on the NTX system a group count should only be used on plain language messages when it is known by the originating office that the message will be manually relayed enroute, as for example over a Morse telegraph circuit, or that it will be converted enroute to regular Naval form for transmission by radio to one or more addressees not a part of the NTX system.

86.   A group count (GR) is mandatory in messages in regular Naval form, whether plain language or encrypted. Words should be counted in accordance with DNC 5, "Communication Instructions." As messages in Naval form are prepared for transmission by trained communication personnel, this causes no difficulty for NTX users.

87.   A summary of rules for determining group count is contained in Appendix 3.

TABULATED MESSAGES

88.   The ability to handle messages with the material tabulated or in columnar form is one of the many advantages of the NTX system. An examination of many of the messages now being transmitted over the system, however, indicates that no consideration has been given to elimination of needless spaces, and as a result, the circuit time required is often twice and sometimes three times the circuit time required had the material been properly arranged for transmission.

89.   Reports normally transmitted in tabular form are inventory reports, production status reports, inspector of recruiting reports, and orders for materials. Analysis of sample reports indicates a Night Letter (NL) precedence would give entirely satisfactory speed of service over the NTX system, and all such reports should be so classified unless justification for higher precedence is apparent.

90.   Where periodic NTX handling of a report is necessary, it is requested that the office preparing the report consult with the communication officer in charge of the major relay office serving their area with respect to the form that will require the least circuit time for transmission, and at the same time not impose an unnecessary burden on the personnel using the report. As illustrated by the example which follows, reports can be easily prepared in such manner.

91.   In the example on the next page, each period represents the transmission of a blank or space which requires as much circuit time as the transmission of a character. In this example, the correct form reduced the equivalent number of words requiring transmission over the circuit by 300 and this represents a saving of five (5) minutes in circuit time.

92.   Examples of correct and incorrect tabulation.

STOCK REPORT AND REQUIREMENTS

ITEM	CAT NO	QUANTITY ON HAND	ARTICLE	REQUIRE
1	268423	100	CYL RINGS	300
2	93846	39.	MUFFLERS	50
3	624354		MAGNETOS	20
4	34256	300	WRIST PINS	300
5	19432	140	VALVES	500
6	10641	23	MANIFOLD TYPE L	35

Incorrect Method

etc, to

item

| 50 | 43264 | 42 | CARBURETORS | 50 |

Example 22   Correct Method of Preparing Tabulated Material for Transmission

- -

STOCK REPORT AND REQUIREMENTS

ITEM	CAT NO	QUAN ON HAND	ARTICLE	REQUIRE
1	268423	100	CYL RINGS	300
2	93846	39	MUFFLERS	50
3	624354	32	MAGNETOS	20
4	34256	300	WRIST PINS	300
5	19432	140	VALVES	500
6	10641	23	MANIFOLD TYPE L	35

etc. to

item

| 50 | 43264 | 42 | CARBURETORS | 50 |

Using this form as compared to the form above, the same information can be transmitted with a saving in circuit time equivalent to 300 words.

- -

93.   TWX is used for communication with users where the traffic load or distance from the NTX relay office does not justify the installation of a private line. Where the traffic load is such as to justify the installation of private lines, TWX service is normally replaced with leased circuits connected directly with the NTX relay office.

94.   All the previous articles in this Guide, except that on "Scheduling of TWX Connections," apply in their entirety to private line operation and operators should be thoroughly familiar with them before studying the following additional instructions which pertain only to private line service.

95.   Most NTX relay offices are provided with special teletypewriter switchboards and associated equipment which permits concentrating the handling of traffic over a group of channels into a limited number of operating positions. These installations are commonly referred to as "concentrators" and require the user to be familiar with certain operating practices not required for normal private line operation.

96.   Instructions covering the above type of operation are contained in OPNAV 20-14 "Facilities - Maintenance - Operation Manual" which also includes equipment operating instructions for individual users of the particular type of installation involved in each area.

97.   Equipment is provided at relay offices to make a hard monitor copy of traffic transmitted direct to the individual user, since it is the joint responsibility of the relay office and the user to check the quality and accuracy of transmission of final delivery to terminal offices.

> Note -   In this connection, Navy Department Bureaus and other large users of NTX service who have experienced communication personnel are classed as "Branch Offices" rather than "Individual Users."

98.   Checking at time of delivery from relay office to the terminal office accomplishes two things:

> (a)   It greatly reduces the number of service messages and reruns on trunk circuits. An experienced operator at the relay office can eliminate without difficulty, errors due to overlining (caused by false CARRIAGE RETURN or no LINE FEED), and correct parts of message in the wrong case (caused by failure to hit "LTRS" or "FIGS" key) by use of the keyboard. This requires the message to be retransmitted but it is far more efficient from a system standpoint for the final relay office operator to do this than it is to request a rerun from the originator. When this procedure is necessary, mail a discrepancy report to the originating office.

> (b)   Where experienced NTX personnel are not available at a terminal office, it allows experienced personnel in the relay office to initiate a SVC message requesting a rerun if correction cannot be accomplished as outlined above.

99.   Individual receipts for traffic exchanged between the relay office and the individual user are handled in the prescribed form (Page 4) and are transmitted after the relay office or individual user has indicated the end of transmission.

> (a)   It is the responsibility of the individual office to obtain a receipt for sent traffic. If the receipt is not received promptly, the operator should ring two (2) bells followed by "R R R" indicating a receipt is desired.

100.   When the traffic load is heavy, or where local conditions make it desirable, the relay office may employ channel numbering to the individual user. This method consists of preceding the message with the call of the relay office and a number which represents the actual physical count of the message to the individual user.

(a)   When traffic is heavy, individual users, instead of receipting for each message, periodically receive a request from the relay office for a number comparison in which is stated the number of messages sent to and received from the individual user. Should a discrepancy exist, an "open" or missing number on the number sheet will frequently reveal the missing message since the messages are exchanged in numerical sequence. When traffic is light, a receipt for each message may be given at the end of transmission on local circuits, even where channel numbering is used.

101.   Messages may be preceded by one or more channel numbers that were assigned by intermediate relay offices and which are of no particular significance to the individual user. As each of these channel numbers is preceded by a relay office routing indicator, they should cause no confusion.

102.   Incoming transmission from the relay office serving the individual user will normally begin without an announcement. Therefore, the teletypewriter machine should be left running at all times during service hours.

103.   All offices on way circuits (multi-point) are normally connected at all times, and will therefore receive copies of all messages transmitted over the circuit. For this reason, it is essential that each office check and handle all messages containing their routing indicator and/or their address. Always check both, as you are jointly responsible with the relay office for rerouting a message which, through error, has the routing indicator of your office but is addressed to some other activity. After careful inspection, all other traffic may be disregarded and properly destroyed.

104.   Operators should be careful not to interrupt transmission on a way circuit except for priority traffic. Any one office on a way circuit should not transmit more than five (5) minutes without allowing a short interval to enable other offices to indicate that they want to use the circuit.

105.   A large percentage of messages are delivered from the last relay office to the addressee via TWX. All NTX operators must follow the instructions for transmitting messages and preparing tape as outlined in Appendix 1.


OPERATORS' RESPONSIBILITIES

106.   The success of any communication system depends primarily upon careful preparation of each message for transmission in strict accordance with instructions. This reduces delays, confusion, and the need for the exchange of additional messages to correct messages poorly prepared for transmission in the first place.

107.   The efficient teletype operator is always on the alert to observe any unusual condition in the office that might affect the safe, accurate, and rapid flow of traffic whether it be a traffic pileup, an error in a message, an open number, a failing teletypewriter or circuit, delayed or misrouted messages, etc., and to effect immediate corrective action when anything unusual is observed.

108. The efficient operator will give close attention to:

(a) Periodic number sheet inspections to insure against lost or delayed messages.

(b) Proper handling of messages containing irregularities.

(c) Special handling of multiple address messages to insure the use of the proper routing indicators.

(d) Rerouting of misrouted messages to insure their retransmission to proper destination.

(e) Rerouting of own traffic when normal facilities are "out". Telephones and Western Union are always available as alternate methods. There is never an acceptable excuse for failure to move traffic if any method is available.

(f) Prompt receipting of incoming messages and obtaining of receipt on sent messages.

(g) Prompt reporting of circuit or equipment trouble to supervisor or those responsible for maintenance.

(h) Proper maintenance of paper, tape, and ribbons in teletypewriters and operation of all power and equipment controls.
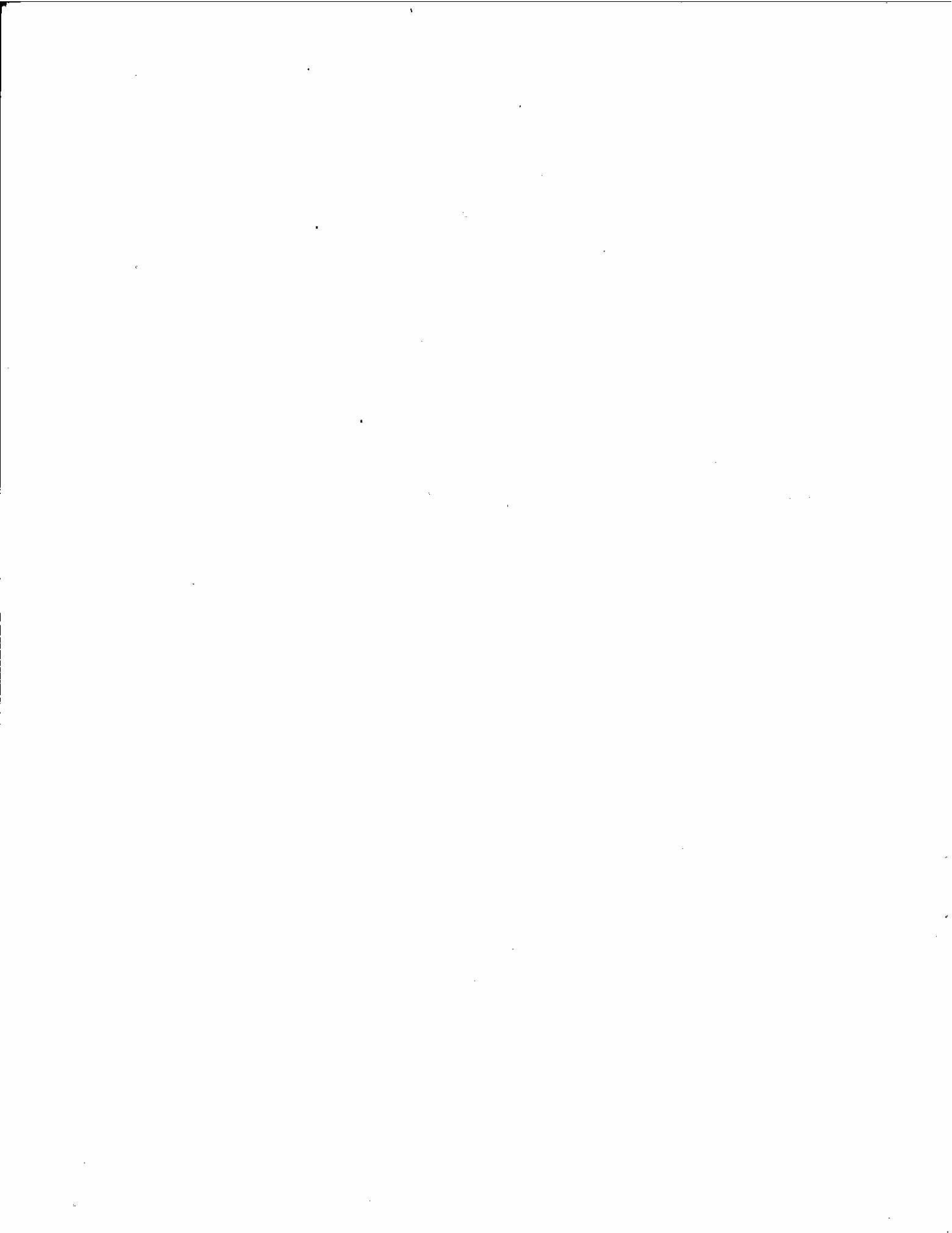
APPENDIX 1

VARIATIONS IN TELETYPEWRITER KEYBOARDS

1.   Teletypewriter machines, owned or leased by the Naval Communication Service for private line service, shift from upper case characters (FIGURES) to lower case characters (LETTERS) only when the LTRS key is pressed.

2.   Teletypewriter machines furnished for TWX service shift from upper case characters (FIGURES) to lower case characters (LETTERS) automatically whenever the space bar is pressed, in addition to shifting when the LTRS key is pressed.

3.   In order to be sure that these differences in shifting operations do not result in errors, the general rules below must always be followed when transmitting a message by direct keyboard or punching tape on either a TWX teletypewriter or a Navy owned or leased teletypewriter.

   (a)   Press the LTRS key to shift from upper to lower case.

   (b)   Press FIGS key between groups of upper case characters as well as to shift from lower to upper case.

4.   Always press the LTRS key to shift from upper to lower case (disregarding the automatic unshift feature on a TWX machine) for example:

   35784 (space) (LTRS) TRY MAKE . . . .

   This will have no adverse effect on either a TWX machine or a Navy machine used on a private line. This rule applies whether a direct keyboard or a tape perforator is used. Failure to follow this practice would result in the following:

   Transmitted on TWX machine: "35784 TRY MAKE"
   As received on Navy machine :   "35784 5 4 6 . - (3"

5.   Always press the FIGS key after the space before each group of figures or upper case characters in a series, for example:

   .   35784 (space) (FIGS) 27896 (space) (LTRS) NOT RECEIVED . . .

   This will have no adverse effect on either a TWX machine or on a Navy machine used on a private line. This rule also applies whether a direct keyboard or a tape perforator is used. Failure to follow this practice would result in the following:

   Transmitted on Navy machine: "35784 (space) 27896
   As received on TWX machine: "35784 (space)WUIOY

6. Because of several keyboard arrangements in use, punctuation marks other than periods, quotation marks, slants, and dashes or hyphens should not be used. In Navy messages, the letter "X" is usually used to indicate all forms of punctuation, otherwise it is preferable to spell out such marks as follows:

SYMBOL	MEANING	TRANSMITTED
.	Period	PERIOD
.	Decimal Point	POINT
,	Comma	COMMA
-	Dash	DASH
( )	Parentheses	PAREN
""	Quotation Marks	QUOTE UNQUOTE
?	Question Mark	QUES

7. The following variations in upper case keyboard layouts will be found, (primarily between TWX and Navy owned or leased machines):

LOWER CASE	UPPER CASE	
	Standard TWX Keyboard	Most Navy Keyboards
F	1/4	!
H	STOP	# or £
J	,	!
K	1/2	(
L	3/4	)
C	1/8	:
V	3/8	;
B	5/8	?
N	7/8	,

All other upper case characters should be the same.

8. If a message is received in which a number of characters are in the wrong case, it is a simple matter to correct them by translating to the other case, reading the key caps of the receiving machine and the list of variations above.

9. On standard Navy teletypewriters the numeral "zero" appears with a slant mark through it, thus: Ø, in order to differentiate it from the letter "O". Where any confusion or misunderstanding can result, it is preferable to spell out the figure or name of a letter.

APPENDIX 2

ABBREVIATIONS AUTHORIZED FOR USE IN "SERVICE MESSAGES"

The following abbreviations are authorized for use in service messages, supervisors' wires, and RQ-BQ handling over the NTX system. The same abbreviations, with the exception of those indicated by an asterisk may be used in service messages handled over commercial systems.

If no authorized abbreviation is available, use plain English. These abbreviations should never be used in the text of an official message unless the originator uses them in preparing the message.

*AA	All after	*OP	Operational Priority
*AB	All before	ORIG	Originator
ACK	Acknowledge		
ADSE (ADEE)	Addressee	*P	Priority
ADS	Address	PARA	Paragraph
ADV	Advise	*PAREN	Parentheses
ANS	Answer	PHONE	Telephone
		PLS	Please
BQ	Correction follows		
BUST THIS	Disregard this partial transmission; will rehandle	*R	Received (or Routine)
		*RDO	Radio
		RE	Regarding
		RECD	Received
CFM	Confirm	REF	Refer(ence)
CFN	Confirmation	REP	Repunch
CK	Check	RER	Rerun
CKT	Circuit	RPT	Repeat
*COMM	Communication(s)	RQ	Request for correction
*CR	Carriage return		
		SAP	Soon as possible
*D	Deferred	SEC	Second
DESTN	Destination	SHLD	Should
*DTG	Date time group	SUPVR	Supervisor
DUPE	Duplicate	SUSP	Suspected
		SVC	Service (message)
FIGS	Figures or upper case	SYS	See your service (message)
GA	Go ahead	TEL	Telegram
GBA	Give better address	TO	For action to
*GCT	Greenwich Civil Time (Z time)	*TOD	Time of delivery
		*TOF	Time of filing
*GR	Group	*TOR	Time of receipt
HW	Herewith	UNDLD	Undelivered
		UNKN	Unknown
INFO	Information	UR	Your
*LF	Line feed	*V	From
LTRS	Letters or lower case		
		WD	Word
MIN	Minute	*WA	Word after
MSG	Message	*WILCO	Will comply
		WU	Western Union Telegraph Company
NL	Night Letter		
*NR	Number		
*NTX	Navy Teletypewriter Exchange System	*Z	Indicates time is Greenwich Civil Time
*O	Urgent		
OK	All right-correct		
OLINE(D)	Overline(d)		

* Not used by Commercial Communication Companies.

*ABBREVIATIONS USED BY NAVAL RADIO
AND/OR THE ARMY AND/OR COMMERCIAL COMMUNICATION COMPANIES

As information only, additional abbreviations which may appear in service messages originated by Naval Radio, the Army, or Commercial Companies are listed below. These are not to be used in service messages on the NTX system except when included in a service relayed from some other system. Q signals, as authorized for radio communications, fall in the same category and should not be used in messages addressed to NTX offices unless message is in Naval form and addressed to a Naval Communication Office.

A	Originator's sign	HF	Heavy file or load
ADSD	Addressed	HR	Here
AR	End of transmission		
AS	Wait	II	Separative sign
		IMI	Repeat
B	More to follow	INT	Interrogatory
BK	Break - stop sending		
BKG	Breaking	J	Verify and repeat - This must be done by originator of the message
BT	Long break		
C	Correct	K	Go ahead
CHGS	Charges		
CLSD	Closed	LC	Left city
CMA	Comma	LG	Longram
COLL	Collect		
CTA	Destination office closed till a.m.	MK	Make
		MT	My time
		MVD	Moved
DFRS	Differs		
DL	Day letter	N	Not received or exempted
DLD	Delivered	NBR	Number
DLR	Deliver	NC	No check (or no group count)
DLY	Delivery	NFU	Not for us
DSTC	Deliver(ed) subject to correction	NFT	No filing time
		NH	Not at home
DSTN	Destination	NITE	Night
DT	Date		
DUP	Duplicate	NM	Night message
		NR	No record
EFM	Expeditionary Force message	NRD	No record destination
		NSA	No such address
ENGD	Engaged	NSN	No such number
EX	Extra	NSP	No such post
		NTO	Name - To (addressee)
FLT	Filing time		
FLWG	Following	OFC	Office
FM	From	OGNL	Original
FWD	Forward, forwarded	OM	Our message
FYI	For your information	OOO	Out of order
		OS	Our service
G	Repeat back	OTR	Other
GA	Get answer (also Go ahead)	OUR	Our message of date
GBR	Give better reference		
GNTD	Delivery charge guaranteed	PAU	Present address unknown
GOVT	Government message	PD	Period
GSA	Give some address	PR	Payment refused

* Not to be used in messages originated on NTX System.

QMARK	Question Mark	SOS	See our service (also speed of service)
RCG	Receiving	SSTC	Sent subject to correction
RD	Report delivery	SYM	See your message
RDS	Reads		
RECT	Receipt	T	Transmit to
REQ	Request	TOT	Time of transmission
RPTN	Repetition	TPR	Teleprinter (Teletype-writer)
RSN	Reason		
S	Sent	VFY	Verify
SER	Serial (class of W.U. message)	W	For information to
SG	Signature		
SGD	Signed	XXXXXX	Error
SIG	Signature		
SNDR	Sender	YM	Your message
SOM	See our message	YMD	Your message of current date
		YS	Your service

* Not to be used in messages originated on NTX System.

APPENDIX 3

SUMMARY OF RULES FOR DETERMINING GROUP COUNT

1.   Following are extracts from rules for determining the number of groups in NTX messages. These rules agree with rules in DNC-5 for Naval Form.

   (a) Every word or combination of characters and/or figures in the text proper and not separated by spaces is counted as one group regardless of length even when containing a period, hyphen, parentheses, or slant line.

   (b) Punctuation marks are not counted unless spelled out as words except that "X" used as punctuation and separated by spaces is counted as one word. Hyphenated words and names are counted as one word.

   (c) If you are in doubt, and a group count is necessary, ask your relay office for assistance.

   The following examples are illustrative. The commercial domestic count is included for information only.

(Notes below apply to Commercial count)	NAVAL FORM AND NTX COUNT	COMMERCIAL DOMESTIC COUNT
124578 . . . . (6 characters)	1	2
A14 271930	2	3
L 5 6F	3	3
L 56F	1	1
L.56F	1	1
AND/OR . . . . (/ is counted).	1	3
O'CONNOR	1	1
JOHN L. SULLIVAN	3	3
VAN DORN	2	2
VANDORN	1	1
(ASSIGNED). . . . . . (parentheses are punctuation) . .	1	1
ARRIVED.LEAVING (period is punctuation).	2	2
ABCDEF. . . . . (6 characters)	1	2
ABCDE . . . . (5 characters)	1	1
BD/A:C. . . . . (period and colon are punctuation)	1	1
"BDLC" . . . . (quotation marks are punctuation)	1	1
A/B.253 . . . . (1 group of 6) (period is punctuation)	1	2
10,000TH . . . . . . (1 group of 7) (comma is punctuation)	1	2
NEWYORK	1	2
NEW YORK	2	2

Note: The rules for counting commercial cables, radiograms, and domestic messages are different in several respects from the rules for NTX group count and are too complicated and lengthy for a full explanation to be attempted here. Complete rules for commercial domestic count are set forth in the Western Union Tariff Book. Information as to the counting of words in commercial radiograms and cables may be found in DNC-5 (Communication Instructions) Appendix III Article 241.

APPENDIX 4

DEFINITIONS OF COMMONLY USED COMMUNICATION TERMS

ACKNOWLEDGMENT - A message from an addressee informing the originator that his message has been received and is understood. An acknowledgment should not be confused with a reply. A reply may serve in lieu of an acknowledgment. These messages are numbered when transmitted over the NTX system.

ACTION ADDRESSEE(S) - The addressee(s) considered by the originator as being responsible for any "Action" which is directed or implied by the message. A message may require joint or separate action by two or more addressees. All addressees other than "Action" follow the designator INFO in messages in Modified Naval form and are addressed for information only.

ADDRESSEE(S) - The ultimate recipient of a message. The person or activity to whom a message is addressed or directed by the originator.

ALTERNATE ROUTING - See "Routing."

BROADCAST - A message which is transmitted to two or more stations over one or more circuits simultaneously using one transmitter distributor and one tape. This should not be confused with a radio broadcast.

BREAK SIGNAL - A momentary removal of the line current accomplished by operating the break lever on a teletypewriter; used by a receiving office to stop transmission at the sending office. It is also used to call the relay office on circuits terminating in concentrator equipment.

CALL-UP - A call-up consists of the routing indicator(s) of the activity(ies) called, the letter "V", which is an abbreviation for "from", and the routing indicator of the calling activity.

CHAD TAPE - Perforated tape in which the perforations are cut completely out of the tape. The name "chad" applies to the confetti produced by punching holes through the paper.

CHADLESS TAPE - Perforated tape in which the perforations are only partially made and have the appearance of loose flaps of paper scattered over the tape. This permits printing on the tape in such a way that it can be easily read. As no confetti(chad) is produced, this tape is called "chadless tape".

CHANNEL - A single communication path between two offices.

CHANNEL INDICATOR - A letter (usually B, C, D, etc.) used to designate a particular channel where there are two or more channels between two particular points. For example, the second channel between New York and Washington is known as the "B" Channel and is indicated by the letter "B" preceding the channel number. Example: WN B39

CHANNEL NUMBER - A consecutive number which is used between relay offices to maintain a record of traffic handled on respective channels. It precedes the transmission of a message either by automatic, tab, or manual insertion.

CLASSIFICATION - Pertains to security in the handling of classified messages. (Art. 2040 DNC 5)

CLEAR INDICATOR - Two PERIODS transmitted after all other characters required at the end of a message indicates that a station is "clear" and has no more traffic on hand for transmission.

CODRESS - A type of message which carries the originator, action, and information addressee(s) in the encrypted text. (OPNAV 20-9 Part I, for examples).

COMMERCIAL FORM - The message form used for transmitting traffic (international or domestic) involving tolls at commercial rates and handled in accordance with commercial practices and requirements. (See OPNAV 20-9, Part I).

CONCENTRATOR - Switchboard and associated teletypewriter equipment which permits the concentration of a number of circuits into a limited number of sending and receiving teletypewriters. The switchboard allows associated equipment to be connected to any one of the several circuits appearing in the board.

CONFERENCE CONNECTION - A TWX (teletypewriter exchange service) connection whereby a number of TWX stations, usually not more than five, may be inter-connected for simultaneous communication.

CORRECTIONS - Errors in transmission which can be corrected by "X'ing" or "lettering out" or by correcting at the end of the message. (See "lettering out").

DATE TIME GROUP - A six digit group; the first pair of digits denotes the date, the second pair the hour, and the third pair the minute. It is employed to indicate the time of origin and is normally placed on the message by the originator. GCT (Greenwich Civil Time) is always used. The date time group, identifying serial number, and originator's routing indicator comprise the message reference data. The date time group is the primary means of reference for the originator.

DUAL PRECEDENCE - A multiple address message in which more than one type of precedence is assigned to expedite delivery to certain addressees and give slower handling to others. (Art. 2014, DNC 5).

DUPLEX OPERATION - A circuit arrangement which permits the sending and receiving of messages simultaneously on the same circuit.

FILING TIME - The filing time which is transmitted at the end of each message shows the time the message, properly released, was turned over to the communication office serving the activity; it can be considered the time the message is delivered to and becomes the responsibility of communication personnel. This filing time is expressed in GCT (Greenwich Civil Time).

GROUP COUNT (GR) - A figure indicating the number of groups (words) in the text. Its use is optional in plain language messages in Modified Naval Form but mandatory in all messages in Naval form except the abbreviated form.

HARD COPY - A message in printed page form or teletypewriter page copy. The term indicates that the message is in the form normally delivered to an addressee(s) or received from the originator.

INFORMATION ADDRESSEE(S) - One or more addressee(s) who are indicated by the originator for information only. Designated in messages in Modified Naval Form by the abbreviation INFO.

IDENTIFYING SERIAL NUMBER (NR) - A consecutive daily serial number placed on all messages filed by the originating office for message reference or accountability; it appears after the originator's routing indicator in the NTX heading. The identifying serial number, together with date time group and originator's routing indicators, comprise message reference data. The date time group is the primary means of reference for the originator.

LETTERING OUT - A correction made in tape by back spacing and using the LETTERS key to "erase" the incorrect portion which is then repunched correctly. These corrections do not appear on the received copy. This type of correction is commonly called "lettering out an error".

LOCAL CIRCUIT - A tributary circuit from a relay office to an individual user.

MISROUTED MESSAGE - A message routed to the wrong office.

NTX FORM - The message form normally used for transmission over the NTX system. Consists of the NTX routing indicators followed by "FROM", "TO", "INFO", and the message "TEXT" in plain language. (See OPNAV 20-7, Part I - Example 1).

MULTIPLE ADDRESS - A message which is addressed to more than one addressee and which may require several transmissions.

NAVAL FORM - The message form for transmission with regular naval heading. It consists of a heading composed of Naval call signs, procedure signs, and operating signals giving transmitting instructions, precedence, date time group, and group count, followed by the message text, plain or encrypted, and the message ending. (See OPNAV 20-9, Part I for examples).

NORMAL ROUTING - See "Routing".

OPERATOR'S REQUEST (RQ) - Brief unnumbered message used by an operator to request information or a correction on a message. Their use is authorized on the NTX system only between operators of individual offices and the relay office which directly serves them when these offices are directly connected by teletypewriter equipment which permits transmission by direct keyboard.

OPERATOR'S REPLY (BQ) - Brief unnumbered message used by an operator to reply to another operator's request (RQ). Their use is authorized on the NTX system only between operators of individual offices and the relay office which directly serves them when these offices are directly connected by teletype-writer equipment which permits transmission by direct keyboard.

ORIGINATOR - The originator of a message is the authority who orders the message to be sent. The authority may be the Commanding Officer or his officially designated representative(s). (Art. 2000 DNC 5).

PLAINDRESS - A type of message. The originator, action, and information address-ee(s) are outside the text and located in the heading. Clear or encrypted text may be used.

PRECEDENCE - Messages are assigned a precedence to show the relative order in which they are to be transmitted and handled. Precedence indicates the relative speed of service desired - not the importance of the message.

PROSIGN - A contraction meaning "PROcedure SIGN". Prosigns are single letters, or combinations thereof, used in the heading to facilitate communication by conveying, in a condensed form, certain frequently used orders, instructions, requests, and information related to communication. For example, the letter "V" used as an abbreviation for "from" and the letter "R" for "received" are prosigns.

RECEIPT - A receipt is an operator's signal (R), sent by the receiving office operator indicating that a message has been received.

REFILED MESSAGE - This term is used by the Navy in referring to messages transferred from the Navy communication system to a commercial system or vice versa.

RELAYED MESSAGE - A message received on one circuit and retransmitted over another circuit.

REPUNCH - A term used to indicate the manual repreparation of a message in tape form.

ROUTING - "NORMAL ROUTING" is the routing normally used for the transmission of a dispatch from the originating NTX office to the office serving the ultimate addressee. For example, a message which originates in Boston addressed to Miami is normally routed direct from Boston to Washington and from Washington to Miami. In case of failure or overload on the Boston-Washington direct circuit, "ALTERNATE ROUTING" instructions direct this message be relayed via the New York circuit to Washington, and if the Miami direct circuit is overloaded, alternate routing to Miami is via New Orleans or TWX to Miami. A chart showing direct and alternate routes for all NTX offices is maintained in each NTX office. (See OPNAV 20-9, Part II).

ROUTING INDICATOR - A combination of two to six letters which tells NTX relay office operators how to route a message so it will be delivered to the addressee(s) with a minimum of delay. It serves the same purpose as a telephone number or a TWX number.

SERVICE MESSAGE - A brief message incidental to correction, verification, or handling of another message. Service messages are numbered when transmitted over the NTX system.

SIMPLEX (SINGLE) OPERATION - A circuit arrangement which permits the transmission of messages in only one direction at a time.

SINGLE ADDRESS MESSAGE - A message which has only one addressee.

STOP NOTICE - A notice to stop transmitting. Used on duplex circuits instead of a "break".

SUPERVISOR'S WIRE - A brief unnumbered message sent between supervisors connected by direct circuit concerning operation of circuits and traffic handling.

TAB NUMBERING - A short perforated tape which contains the relay office routing indicator, a channel indicator where required, and a channel number. Tab numbers are prepared consecutively in a continuous tape roll. Relay offices may splice tab numbers ahead of message tapes or transmit the tab ahead of the message when automatic numbering is not provided.

TRUNK CIRCUIT   -   A circuit interconnecting relay offices.

TWPL CIRCUITS   -   This is a designation usually used by telephone companies for a teletypewriter (TW) private line (PL).

TWX   -   Teletypewriter exchange service, furnished by the telephone company, in which teletypewriter stations are connected to central offices and through these central offices connected to other stations in the same city or in another city. During the connection communication may be carried on in either direction but not in both directions simultaneously.

WAY CIRCUIT   -   (Multi-point) - A circuit shared by three or more offices.

APPENDIX 5

AUTHORIZED ABBREVIATIONS FOR CITIES AND STATES

The abbreviations for cities and states listed below should be used over the NTX system in the "FROM" and "TO" line of messages and in service messages in lieu of spelling out the point of origin and destination. They may be used in the text of messages if placed there by the originator, or at his request, but not otherwise.

When used to show origin or destination, these abbreviations for cities should always be used in conjunction with the authorized abbreviations for the state.

Alameda	ALMDA CALIF	Fort Wadsworth	FT WAD NY
Alexandria	ALEX VA	Fort Wayne	FT WN IND
Annapolis	ANPLS MD	Fort Worden	FT WDN WASH
Atlanta	ATLA GA	Fort Worth	FT W TEX
Atlantic City	LANT CTY NJ		
		Galveston	GALV TEX
Bainbridge	BNBDG MD	Glenview	GVIEW ILL
Baltimore	BALTO MD	Gravelly Point	GRAV PT VA
Bayonne	BAYON NJ	Great Lakes	G LAKES ILL
Bethlehem	BETH PA	Gulfport	GPORT MISS
Birmingham	BHAM ALA	Governor's Island	GOVIS NY
Boston	BSN MASS		
Bremerton	BRMTN WASH	Hartford	HART CONN
Bridgeport	BDGPT CONN	Houston	HOU TEX
Brooklyn	BKLYN NY	Hunters Point	HUN PT CALIF
Brunswick	BRNWK ME		
Buffalo	BFLO NY	Indianapolis	INDPLS IND
		Iona Island	IONA I NY
Cape May	C MAY NJ		
Charleston	CHASN SC	Jacksonville	JKVL FLA
Charlotte	CHARLT NC	Jacksonville Beach	JKVL BCH FLA
Chattanooga	CHATTA TENN		
Cherry Point	CH POINT NC	Kansas City	KSC MO
Chicago	CHGO ILL	Key West	K WEST FLA
Chincoteague Island	CHINC I VA		
Cincinnati	CIN OHIO	Litchfield Park	LFLD PK ARIZ
Clearfield	CLFLD UTAH	Little Rock	L ROCK ARK
Cleveland	CLEVE OHIO	Livermore	LVMOR CALIF
Corpus Christi	CORP CHRIS TEX	Long Island City	LI CTY NY
		Los Angeles	LOS A CALIF
Dallas	DAL TEX	Louisville	LVILLE KY
Davisville	DVILLE RI		
Dayton	DATN OHIO	Mare Island	MARE I CALIF
Denver	DVR COLO	Mechanicsburg	MECH PA
Des Moines	DES M IOWA	Memphis	MFS TENN
Detroit	DET MICH	Milwaukee	MILW WIS
		Minneapolis	MPLS MINN
East Boston	E BSN MASS		
East Hartford	E HART CONN	Nashville	NASH TENN
El Centro	EL CEN CALIF	Newark	NKJ NJ
Elizabeth City	ELIZ CTY NC	New Bedford	N BED MASS
El Segundo	EL SEG CALIF	New London	N LON CONN
Evansville	EVILLE IND	New Orleans	NRLNS LA
		Newport	NPT RI
Fallbrook	FLBK CALIF	Newport News	NPT NEWS VA
Fishers Island	FISH I NY	New York	NYK NY
Fort Hancock	FT HAN NJ	Norfolk	NRFK VA
Fort Lauderdale	FT LAUD FLA		
Fort Pierce	FT PCE FLA	Oakland	OAKLD CALIF
		Oceanside	OSIDE CALIF
		Oklahoma City	OK CTY OKLA

Parris Island	PARR I SC	San Francisco	S FRAN CALIF
Patuxent River	PAX RIV MD	San Pedro	S PEDRO CALIF
Pensacola	PNCLA FLA	Santa Barbara	S BARB CALIF
Philadelphia	PHILA PA	Santa Monica	S MONICA CALIF
Phoenix	PHNX ARIZ	Savannah	SVNH GA
Pittsburgh	PGH PA	Schenectady	SCHNEC NY
Port Angeles	PORT A WASH	Seattle	SEATL WASH
Port Everglades	P EVGLD FLA	Shoemaker	SHOMAK CALIF
Port Hueneme	PT HUEME CALIF	Shreveport	SPORT LA
Portland	PTLD ME	South Charleston	S CHASN WVA
Portland	PTLD OREG	South Weymouth	S WEY MASS
Portsmouth	PTSMH NH	Spokane	SPKN WASH
Portsmouth	PTSMH RI	Sunnyvale	SNVALE CALIF
Portsmouth	PTSMH VA		
		Terminal Island	TERM I CALIF
Quantico	QUANT VA	Treasure Island	TREA I CALIF
Quonset Point	QUON PT RI	Trenton	TRNTN NJ
		Tompkinsville	TMKVL NY
Richmond	RICH VA	Tulsa	TUL OKLA
Rochester	ROCH NY		
Rockland	RKLND ME	Washington	WASH NC
		Washington	WASH DC
St. Louis	STL MO	Waterbury	WATBRY CONN
St. Petersburg	S PETE FLA	Whidby Island	WHID I WASH
St. Simons Island	ST SI I GA	Wichita	WCHTA KANS
Salt Lake City	S LAKE UTAH	Wilmington	WILMN DEL
San Bruno	S BRUNO CALIF	Wilmington	WILMN NC
San Diego	S DGO CALIF		

* Authorized Abbreviations for Names of States

Alabama	ALA	Nebraska	NEBR
Arizona	ARIZ	Nevada	NEV
Arkansas	ARK	New Hampshire	NH
California	CALIF	New Jersey	NJ
Colorado	COLO	New Mexico	NM
Connecticut	CONN	New York	NY
Delaware	DEL	North Carolina	NC
District of Columbia	DC	North Dakota	NDAK
Florida	FLA	Ohio	OHIO
Georgia	GA	Oklahoma	OKLA
Idaho	IDA	Oregon	OREG
Illinois	ILL	Pennsylvania	PA
Indiana	IND	Rhode Island	RI
Iowa	IOWA	South Carolina	SC
Kansas	KANS	South Dakota	SDAK
Kentucky	KY	Tennessee	TENN
Louisiana	LA	Texas	TEX
Maine	ME	Utah	UTAH
Maryland	MD	Vermont	VT
Massachusetts	MASS	Virginia	VA
Michigan	MICH	Washington	WASH
Minnesota	MINN	West Virginia	WVA
Mississippi	MISS	Wisconsin	WIS
Missouri	MO	Wyoming	WYO
Montana	MONT		

* Except for "IDA" and "ME" and for running together without punctuation, these abbreviations are the same as those authorized by the U. S. Post Office. The Postal Guide shows no abbreviations for Idaho and Maine.

COMMUNICATIONS - STANDARDS OF SERVICE

The Secretary of the Navy's letter that follows sets up certain standards for local delivery service, and the officer in charge of communications in each activity is responsible for maintaining these standards. Speed of service surveys should be made on approximately one (1) per cent of the messages handled to determine whether or not this directive is being carried out.

"Speed of delivery" surveys can be easily made by calling by telephone the officer designated as "Action Officer" for a given dispatch and requesting that he inform you of the time he received the dispatch. This should be done approximately forty-five minutes after the dispatch was turned over to the local delivery organization for delivery.

If the message has not been delivered to the action officer within the forty-five minutes, it indicates that the standards of service set up by the Secretary of the Navy's directive are probably not being complied with and positive action should be taken to secure compliance.

Normally a written report should be made to your Commanding Officer.

(Copy)

NAVY DEPARTMENT
WASHINGTON 25 D. C.

Op-20-P-4-imf
Serial 3542120

1 December 1944

From: The Secretary of the Navy
To: All Bureaus and Offices of the Navy Department
           Commandants, All Continental Naval Districts

Subj: Communications - Standards of Service

1.   The Naval Communication Service has now modernized its teletypewriter network within the continental United States to an extent which insures the delivery of a routine dispatch from the communication office in any District Headquarters or Navy Yard within the continental limits to the communication office serving the continental addressees within an average time of 30 minutes plus not over 10 minutes for each relay in excess of one required. Investigation, however, has shown that the average time to make delivery after the message is received in the communication office or bureau office of the addressee is so great compared to the circuit transmission time that the high speed of the latter is largely nullified.

2.   There is no advantage in modernizing wire communications if the time required to make local delivery exceeds by several hundred percent the time required to transmit the dispatch from the communication office of origin to the communication office of final delivery.

3.   The poor speed of service now being obtained in making local deliveries of dispatches to action offices has a detrimental effect on the war effort and necessary action to attain the following standards of service will be initiated by all addressees. The times stated are average time for all dispatches and speed of service should be such that the maximum delay during peak load periods does not exceed twice the average time listed.

Type of Dispatch	Average Standard Time for Local Delivery
Routine	30 minutes
Deferred	45 minutes during office hours; not later than 15 minutes after the opening of office hours if dispatch received during non-office hours.

In the case of priority, operational priority, and urgent dispatches special handling should be afforded commensurate with the high precedence in order that they will reach the action office as quickly as possible.

4.   As all dispatches transmitted over the teletypewriter system are available in typed page form ready for delivery, either to addressee or coding board, there should be no difficulty in meeting the above standards. In the case of messages requiring decoding, time charged against "local delivery" should start when decoding is completed.

/s/   JAMES FORRESTAL

N T X

KNOW YOUR SYSTEM

*   *   *

The history of the Naval Communication Service is a panoramic picture of steady engineering progress and scientific development. The recent establishment of the Navy Teletypewriter Exchange System or NTX is another s t e p forward. This system has greatly increased the speed of delivery and traffic capacity of Naval Communications within the Continental limits. Satisfactory operation is dependent upon the efficiency of the operating personnel.

*   *   *

KNOW YOUR EQUIPMENT