BASIC TRAFFIC HANDLING SUMMARY

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VOICE

W3YVQ, V6.8

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INTRODUCTION

This document contains selected excerpts from the ARRL NTS Methods and Practices Guidelines (MPG, PSCM Appendix B). This summary of basic topics is intended to be a ready reference for the essentials of voice traffic handling taught in the local ARES® and NTS operating environments. It is a useful handout or web review to use as a follow-up to class work or practice nets. Mentors are encouraged to use the higher level documentation to build lesson plans for more intensive training in the various methods of efficient traffic net operations and net control duties as well as the integration of the digital modes. Also included here are the Precedences, ARRL Handling Instructions and ARRL Numbered Radiograms often provided to the new amateur radio operator.

1. THE ARRL MESSAGE FORMAT

(Prepared for this document - figures in parentheses are referred to in sections below.):

PBL (opt.) (call sign) (signatory location) (opt.) (UTC) (UTC)

NR (1)	PREC (2)	HX__ (3)	STN ORIG (4)	CK (5)	PLACE OF ORIG (6)	TIME FILED (7)	MON (8)	DT (9)

TO

THIS RADIO MESSAGE WAS RECEIVED AT:
AMATEUR STATION _____ TEL_____
NAME _____
STREET ADDRESS _____
CITY/STATE/ZIP _____

TEL

OP NOTE (10)

TXT

SIG OP NOTE (11)

RCVD FROM	NET	DATE/TIME	SENT TO	NET	DATE/TIME

ORIG FROM - DATE/TIME	DLVD TO - DATE/TIME

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MESSAGE CHARACTERS - PUNCTUATION

- **CHARACTERS:**
  Only **Letters** (caps), **Figures** and/or **Slashes** ("/") are permitted characters when formatting the ARRL radiogram.

- **PUNCTUATION:**
  Punctuation symbols other than the "/" are not used. Spelled-out words representing the desired punctuation are substituted when formatting the radiogram, with the following exceptions:
  - **X** **X** is substituted for a period when formatting the text (except to end the last sentence.) The text may not end with an "X" - just leave it off. The text ends with the proword "break" when sending.
  - **R**

R is substituted for a decimal point in figure groups when the message is formatted, as in 146R67 for 146.67.

/ The **SLASH** symbol, or slant bar, is permitted and is used to separate parts of a mixed group; as in AB/3, W1AW/3, or 24/7, etc. It is seldom used as the first or last character of a group. The **BACKSLASH**, ("\") on the other hand, must be spelled out as a word group when formatting the message.

Other punctuation is spelled out.

DASH The hyphen symbol is not permitted, hence the group **DASH** as a separate group is used to separate the parts of a 9 digit zip code; as in: 21200 DASH 1234;
or to separate parts of compound names, etc. The group **HYPHEN** may be used within the text if desired.

QUERY A question is ended with the group **QUERY** instead of the **X** for the period.

(more) **COMMA, COLON, SEMICOLON, EXCLAMATION, UNDERSCORE, TILDE, BACKSLASH,** etc., may also be used when formatting the message, and all are spelled out as separate word groups where needed to substitute for punctuation symbols. (See also the Email Addresses and URLs, Formatting Section.)

- **EMAIL and URL Address Punctuation:**
  See the Email Addresses and URLs, Formatting Section.

- See Section 2 for prosigns or prowords used during transmission of the message which are not written into the radiogram itself. These are signals to the receiving operator.

PREAMBLE

(Formatting rules for Preamble parts follow. See also Preamble Voicing, Special Rules.)

(#)	PREAMBLE PART
1	**Message Numbers** may contain only figures with no leading zeros. Number may be preceded by **SVC** + space for service messages. See Service Messages.
2	**Precedence: Emergency, P, W,** or **R.** May be preceded by "**TEST**" for exercise messages. See Precedence table, Exercise Messages and Preamble Voicing special rules.
3	**Handling Instructions: OPTIONAL.** See table of Handling Instructions including the formatting rules at the bottom of the table.
4	**Station of Origin:** Call sign of the station originating the message - unchanged from origination through delivery.
5	**Check:** Number of groups in the text, preceded by **ARL** + space if ARRL Numbered Radiograms present in the text. **No part of the radiogram may be altered** except in the case of an error leading to a discrepancy between the check and the actual group count the check may be appended with the corrected value, as in: 12/13, 12/ARL 12.
6	**Place of Origin:** The location of the person for whom the message is originated, not necessarily the location of the station of origin. When different a "signature op note" may be used as needed to instruct handlers relative to servicing or replies.
7	**Time Filed: OPTIONAL** (Time message inserted into the amateur system -seldom used on Routine traffic, often used on Priority traffic to "time stamp" the content.) Unmarked times are assumed to be UTC and must agree with the month and date. If local time is to be used (often done for served agencies) a time zone designator must be added, as in: 1430L, or 1430EST, or 1430EDT, etc., and the month and date must agree. (The time filed is formatted as a single mixed group with no spaces.)
8, 9	**Month, Date:** The default month and date are UTC. If a **local Time Filed** is used the month and date must agree with the Time Filed. The Month group is entered as the three letter abbreviation. The Date group is entered as one or two figures with no leading zeros.

OP NOTES

10	**Address Op Note:** Used to include information relative to delivery, etc. Content is generally not delivered to the addressee.
11	**Signature Op Note:** Used to include information relative to replies or servicing, etc. Content is generally not delivered to the addressee.

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SERVICE MESSAGES

A service message is sent between stations relative to message handling or delivery. The letters **SVC** (voiced as "**SERVICE**") are placed ahead of the message number. The precedence should be the same as that of the message being serviced. Since they affect timely delivery service messages are generally handled before routine messages. SVC is not a message precedence. Example voicing for a preamble beginning SVC 16 R W1AW…:
"**number SERVICE ONE SIX ROUTINE WHISKEY ONE ALFA WHISKEY…**"

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PRECEDENCES

(See ARRL FSD-3)
EMERGENCY (Spelled out on form.*)
Any message having life and death urgency to any person or group of persons, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be very rare. On CW/RTTY, this designation will always be spelled out. When in doubt, do not use it.
PRIORITY (P)
Use abbreviation P on CW/RTTY. This classification is for a) important messages having a specific time limit, b) official messages not covered in the emergency category, c) press dispatches and emergency related traffic not of the utmost urgency, d) notice of death or injury in a disaster area, personal or official.
WELFARE (W)
This classification, abbreviated as W on CW/RTTY, refers to either an inquiry as to the health and welfare of an individual in the disaster area or an advisory from the disaster area that indicates all is well. Welfare traffic is handled only after all emergency and priority traffic is cleared. The Red Cross equivalent to an incoming Welfare message is DWI (Disaster Welfare Inquiry).
ROUTINE (R)
Most traffic in normal times will bear this designation. In disaster situations, traffic labeled Routine (R on CW/RTTY) should be handled last, or not at all when circuits are busy with higher precedence traffic.

Notes: These precedences are not meant to prohibit handling lower level traffic until all higher levels are passed. Common sense dictates handling higher precedence traffic before lower when possible and/or outlets are available.
* **EMERGENCY**: Emergency is always spelled out in the preamble. Means other than Amateur Radio should be included in the delivery options. EMERGENCY messages have immediate urgency. They should take priority over any other activity and should be passed by the best means available with the cooperation of all stations.

EXERCISE MESSAGES

Messages in the ARRL format passed for test and exercise purposes may be given a precedence preceded by the word "TEST", as in "**TEST R**", "**TEST P**", "**TEST W**", or "**TEST EMERGENCY**". It is customary to indicate within the text of such messages the words "TEST MESSAGE" as the first two groups, or "EXERCISE" as the first and last groups of the text. This helps alert listeners to the nature of the content to avoid undue alarm. In some exercises, the life of the message may be terminated when the exercise period is terminated, i.e., any such

messages are not handled after the exercise. Consult with the ARES/RACES/NTS group conducting the test to determine if such messages should be filed, handled and delivered afterwards to permit a full evaluation of the exercise.

HANDLING INSTRUCTIONS

ARRL RADIOGRAM HANDLING INSTRUCTIONS ("HX-CODES")	
HXA__	(Followed by number.) Collect landline delivery authorized by addressee within ____ miles, (if no number in blank, authorization is unlimited). This means that the originating station has obtained authorization from the addressee, through the party originating the message, to call collect when delivering the message.
HXB__	(Followed by number.) Cancel message if not delivered within ____ hours of filing time; service message back to originating station. NOTE: filing time must be included in preamble.
HXC	Report date and time of delivery of the message back to the originating station by service message.
HXD	Report to originating station the identity of station from which received, plus date and time. Report identity of station to which relayed, plus date and time, or if delivered, report date and time and method of delivery (this information is sent by service message to the originating station).
HXE	Delivering station get reply from addressee, originate message back. This reply is sent to the person from whom the original message was received, at the "place of origin", using a full address obtained from the addressee. If an address is not available, a reply can often be successfully routed back to the station of origin since a record is kept of originator's info.
HXF__	(Followed by a number.) Hold delivery until ____ (date). This blank contains the number of the day on which the message should be delivered (even if it is in the following month).
HXG	Delivery by mail or landline toll call not required. If toll call or other expense involved, cancel message and send service message back to originating station.

Compliance with these instructions is mandatory. (See ARRL FSD-218, the "Pink Card")
MORE THAN ONE HX__ CODE MAY BE USED. If more than one code is used they may be combined provided no numbers are to be inserted; otherwise the HX should be repeated, thus: 207 R **HXAC** W1AW, or, 207 R **HXA50 HXC** W1AW...
Ed. note: To be consistent with not introducing preamble groups, such multiple codes may be voiced as follows: HXAC: "**HOTEL X-RAY ALFA CHARLIE**"; HXA50 HXC: "**HOTEL X-RAY ALFA FIFE ZERO... HOTEL X-RAY CHARLIE.**" The numbers following eligible HX_ codes are expected. In this example the HXA in the first case has the range number intentionally omitted, thus the "C" may be appended. In the second case, where the optional 50 mile range is included, the figures force the separation of the full "HXC".

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EMAIL ADDRESSES AND URLS, FORMATTING

When so formatted these addresses may be voiced with the standard protocols. When copied at the receiving end, all characters are assumed to be contiguous unless noted otherwise.
Groups are counted after formatting.

EMAIL: john_doe@domain.net - **JOHN UNDERSCORE DOE ATSIGN DOMAIN DOT NET**
URL: http://www.arrl.org/ - **HTTP COLON SLASH SLASH WWW DOT ARRL DOT ORG SLASH**

Also encountered may be:

(&)	**AMPERSAND**	**($)**	**DOLLARSIGN**	**(%)**	**PERCENTSIGN**
(*)	**ASTERISK**	**(>)**	**GREATERTHANSIGN**	**(~)**	**TILDE**
(\)	**BACKSLASH**	**(<)**	**LESSTHANSIGN**		**UPPERCASE [letter(s)]**
(-)	**DASH (HYPHEN)**	**(#)**	**NUMBERSIGN**		**LOWERCASE [letter(s)]**

The group **SPACE** may be used if a space is an integral internal part of the syntax sequence. Note that a combination such as "#somd" (1 group) becomes **NUMBERSIGN SOMD** (two groups) as written into the radiogram, voiced "**NUMBERSIGN... initials SIERRA OSCAR MIKE DELTA**."

Within **email, packet** and **URL** addresses included in the radiogram, **DOT** as a separate group is substituted for a period (decimal points are not used in such addresses). Other groups such

as **UNDERSCORE** and **ATSIGN** are included as necessary to format such addresses as a series of word groups with no punctuation symbols.

All sequences so rewritten as groups should return the original email address, packet address, or URL without ambiguity at the point of delivery.

TEXT, GROUP DEFINITION, GROUP COUNTING

The radiogram text is generally 25 words or less using the characters shown above. The occasional text with a few more groups is permissible to avoid splitting the message. Much longer messages may be broken into two or more radiograms (which may be transmitted booked) at a point where each separate part makes sense as a single message to the greatest extent possible.

A group is defined as a series of concatenated letters, figures, and/or slashes, with no intermediate spaces, but with a space on the left and on the right.

The group count for the check is the number of all such individual groups between the "breaks" that frame the text. The "breaks" are not counted in the check.
Examples:

1 GROUP	2 GROUPS	3 GROUPS
THANKYOU	THANK YOU	I THANK YOU
X	555 1234	410 555 1234
JPOLE	J POLE	2M J POLE
146R67	146R67 MHZ	146 DECIMAL 67
11PM	11 PM	11 PM LOCAL
2345EST	2345 EST	1145 PM EST
BACOOEPEOC	BACOOEP EOC	BACO OEP EOC

ARL, THE ARRL NUMBERED RADIOGRAM PROWORD

ARL (in check)	Indicates the presence of one or more ARRL numbered radiogram(s) in the text. The letters ARL precede the Check figures separated by a single space, as in: **ARL 12.**
ARL (in text)	The separate initial group **ARL** precedes each ARRL Numbered Radiogram (numbers spelled out) in the text, as in: **ARL FIFTY ARL FIFTY SIX NEW LICENSE**

BLANKS IN ARRL NUMBERED RADIOGRAMS

BLANKS ARL Numbered Radiograms	Some ARRL Numbered Radiograms contain one or more blanks for information to be added by the originator. When formatting the single radiogram the information for the blank(s) follows the ARRL Radiogram number(s), as in **ARL FIFTY THREE LETTER …**, or **ARL FORTY SEVEN 305 W1AW MAR 15 2330 …**

- Note: The blanks shown in the printed ARRL Numbered Radiograms may be filled in with all the needed information to complete the sense of the message. These blanks should not be confused with the group "BLANK" used as a placeholder when sending traffic booked.

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DELIVERING RADIOGRAMS

- Every attempt should be made to deliver NTS radiograms within 48 hours of origination if at all possible. Verify addressee information and phone numbers for delivery using the local phone book or internet services.
- Radiograms are delivered to the public typically by telephone, reaching the addressee directly, and indicating that you are a local amateur radio operator providing a free public service by sending radiograms at no charge for the public. Indicate that you have a "greetings message" from the person signing the message at the place of origin. Ask if they would like to get a pencil and paper to copy the message. Read the message,

translating any ARRL Numbered Radiograms into plain language. Solicit a reply, getting the full address and telephone number for new addressee.

- If undeliverable after 48 hours, you have two choices: 1) Service the message as undeliverable back to the originator and wait for advice; or 2) service the message back indicating no luck so far but that you will continue to attempt delivery. In either case, give sufficient information in the service message to verify that you have the correct addressee information.
- You are obligated to honor any handling instructions (HX codes) in the preamble of the original message. HXC and HXD require a service message from you to the originator; HXE requires you solicit a reply from the addressee, etc. An ARL SEVEN may also be imbedded in the text.
- Messages unable to be delivered by telephone may be mailed at your option, with a service message to the originator indicating so. Toll charges are also expended at your option, notwithstanding a handling instruction or lack thereof. Messages may be serviced back as undeliverable simply because there is no outlet station in a position to handle it.

SERVICE MESSAGES, SVC

- A service message is sent between stations relative to message handling or delivery. The letters **SVC** are placed ahead of the message number. SVC is not a message precedence. The precedence should be the same as that of the message being serviced. Since they affect handling or timely delivery, service messages are generally handled before routine messages. Service messages are framed in the usual manner, and may be booked to a common addressee on manual nets, not booked on digital systems.
- Example service preamble follows. SVC 16 R W1AW…, sent as: "**number SERVICE ONE SIX ROUTINE WHISKEY ONE ALPHA WHISKEY...**" Although SVC is technically the correct mark of a service message, and it is infrequently used in the NTS today, it is none the less recommended.
- Service messages are generally given higher precedence in the traffic nets, and every attempt should be made to get them delivered to the message originator. (HXG and other handling instructions mean little.)

TYPICAL SERVICE MESSAGES, A FEW EXAMPLES

(Delivered - typical HXC response.)

SVC 1 R W1AW ARL 9 NEWINGTON CT MAR 3
JOHN SMITH W1TX
12 OAK DRIVE
PODUNK MD 21200
410 555 1212
=
ARL FORTY SEVEN 234 JONES
MAR 3 2300 73
=
STEVE WA1W

(Note that UTC is part of the ARL Forty Seven.)

(Undeliverable - bad phone number.)

SVC 2 R W1AW ARL 13 NEWINGTON CT MAR 3
JOHN SMITH W1TX
12 OAK DRIVE
PODUNK MD 21200
410 555 1212
=
ARL SIXTY SEVEN 235 BRADFORD
TEL 410 555 3434 INCORRECT
NO LISTING 73
=
STEVE W1AW

(Undeliverable - no phone - mailed.)

SVC 3 R W1AW ARL 14 NEWINGTON CT MAR 3
JOHN SMITH W1TX
12 OAK DRIVE
PODUNK MD 21200
410 555 1212
=
ARL SIXTY SEVEN 1238 HARRIS
TEL 410 555 3434 INCORRECT
NO LISTING MAILED 73
=
STEVE W1AW

(Not yet delivered - no answer.)

SVC 4 R W1AW ARL 18 NEWINGTON CT MAR 3
JOHN SMITH W1TX
12 OAK DRIVE
PODUNK MD 21200
410 555 1212
=
ARL SIXTY SEVEN 68 BOB
W3YY TEL 410 555 7890
NO ANSWER TWO DAYS X
STILL TRYING 73
=
STEVE W1AW

- There are many permutations, of course. Generally it is helpful to give the last name of the addressee, or call sign, in addition to the message number, and an explanation of the difficulty sufficient for the originator to understand the problem and perhaps suggest a solution. Place yourself in the position of the originator and try to imagine what you might need to resolve a message delivery problem, and then provide that information.

REPORTING, SAR/PSHR

- Section Traffic Managers in the ARRL Sections appreciate hearing of your traffic handling activity. Consult with the STM regarding the requirements for reporting your traffic count (SAR - station activity report) and public service activity (PSHR - public service honor roll report), including the message format for reporting by radiogram. SAR and PSHR reports are filed monthly with the STM. This information is often posted on the web for the Section.
- Traffic is counted based upon the interface: 1 point for a message **originated** on behalf of a third party, an off-the-air activity; 1 point for **receiving** a radiogram over the air for relay or delivery; 1 point for **sending** a radiogram to another station over the air for relay or delivery; and 1 point for **delivering** a radiogram to a third party, an off-the-air activity. Thus it is typical to count 2 points for most radiograms handled. A service message from you to an originator counts only 1 point for its being sent over the air. A message received for your station counts only 1 point if received over the air.
- Stations are encouraged to apply for the ARRL station appointment as Official Relay Station (ORS). See the ARRL web site, station appointments.

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2. VOICING THE MESSAGE:

Voicing protocols are intended to help avoid errors inherent in speech perception, to help ensure the receiving operator knows what the sending operator is doing at all times and to help ensure the highest possible degree of accuracy and efficiency in radio message transfer. Except for the prowords, introducers and operational words presented herein the receiving operator copies everything else voiced by the sending operator between the framing prowords. Extraneous words, comments and explanations, etc., are counterproductive and are considered poor practice.

The resultant copy should always be a replica of the original radiogram in every respect.

"Every single word not absolutely needed may be dispensed with profitably." - Operating An Amateur Radio Station (OARS pamphlet), CD-4(1/83), ARRL, Inc., Newington, CT, page17.

ITU PHONETIC ALPHABET

A	ALFA	J	JULIETT	S	SIERRA	2	TWO
B	BRAVO	K	KILO	T	TANGO	3	THREE (TREE)
C	CHARLIE	L	LIMA	U	UNIFORM	4	FOUR
D	DELTA	M	MIKE	V	VICTOR	5	FIVE (FIFE)
E	ECHO	N	NOVEMBER	W	WHISKEY	6	SIX
F	FOXTROT	O	OSCAR	X	X-RAY	7	SEVEN
G	GOLF	P	PAPA (PA-'PA)	Y	YANKEE	8	EIGHT
H	HOTEL	Q	QUEBEC (KAY-'BEK)	Z	ZULU	9	NINE (NINER)
I	INDIA	R	ROMEO	1	ONE	0	ZERO

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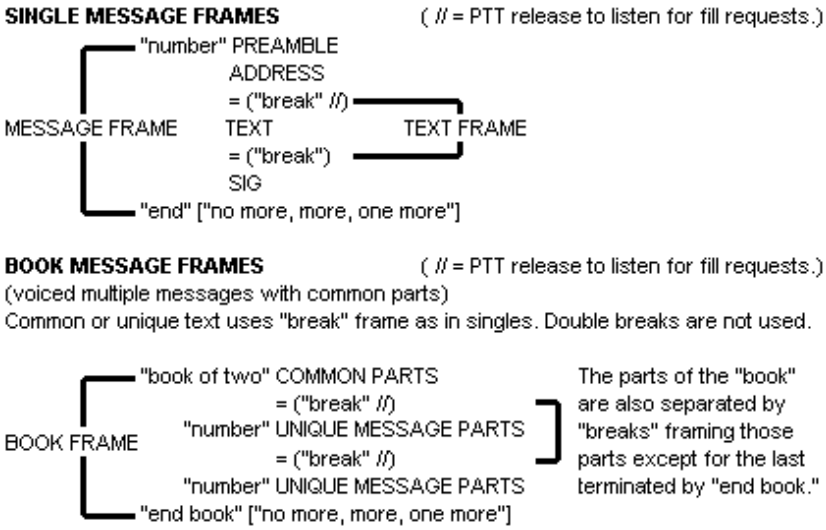
FRAMES

A receiving operator needs to know where copy should begin and end. This is indicated by the sending operator using certain prowords to "frame" the individual message, the text, a message book, or individual parts of booked messages.



(See Single Message Voicing Example and Book Voicing Example.)

The "**end no more**" phrase is understood to indicate "**OVER**" which may be therefore dispensed with. The receiving operator copies all groups sent between the message, part, or text framing prowords except the prowords themselves.

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INTRODUCERS

Words used to introduce non-plain-text groups in the address, text and signature. Each group eligible for **introduction** or **spelling** is dealt with **one group at a time**. When voicing an introduced group (or preamble group eligible for introduction) the characters are each **voiced one character at a time, letters phonetically**. There is only **one introducer used per group**. (An additional introducer would indicate the beginning of a new group.) See also the special rules for Preamble Voicing.

Introducer	Example	**Voicing**: One introducer per group. Voice one character at a time, letters phonetically. Introducers are shown here in lower case except for the letters "ARL."
AMATEUR CALL	W1AW	"**amateur call WHISKEY ONE ALFA WHISKEY**" (No appended information - see MIXED GROUP for voicing call signs with appended information.)
AMATEUR CALLS (optional shortcut)	(special)	Used to introduce a series of amateur call sign groups in a message text, using the introducer only once for the first of the series, as in net reports, etc. Use with care. In such a series all the groups must be of the same type.
ARL (in check) (If numbered radiogram in the text.)	ARL 15	"**A R L… ONE FIFE**." The "ARL" is voiced as three separate letters without introduction, and the check figures follow after a space pause without introduction, voiced one digit at a time.
ARL (in text) (Numbered Radiogram numbers are always written	ARL SIXTY	"**A R L… SIXTY I spell SIERRA INDIA X-RAY TANGO YANKEE**." The "ARL" is voiced as three separate letters, although in difficult

spelled out and voiced with phonetic spelling.)		conditions it may be introduced as an initial group as in “initials ALFA ROMEO LIMA.”
FIGURE, **FIGURES**	6 16	“**figure SIX**” “**figures ONE SIX**” (Compound form sixteen, etc., not used.)
Telephone figures in **text**.	555 1234	“**figures FIFE FIFE FIFE… figures ONE TWO TREE FOUR**” (Two groups. Three groups, as in 410 555 1234, are handled in a similar fashion.)
Telephone figures <u>following a zip code</u> in an **address** or **signature address -** the typical message address.	(special)	Address telephone figure groups <u>after a zip code</u> are introduced with the figures introducer only once, as in 410 555 1234: “**figures FOUR ONE ZERO… FIFE FIFE FIFE… ONE TWO TREE FOUR**”, using separating pauses. (Such groups in the text are introduced individually.)
Telephone figures following an address or signature address with <u>NO preceding zip code</u>: “**PHONE FIGURES**”	(special)	Address telephone figure groups with <u>NO preceding zip code</u> are introduced with the “PHONE FIGURES” introducer used only once (this is a signal for the copying operator to skip the zip code in the copy). Given: BALTIMORE MD 410 555 1234, voice: “**BALTIMORE MARYLAND phone figures FOUR ONE ZERO… FIFE FIFE FIFE… ONE TWO TREE FOUR**.” (Elsewhere each group is introduced.)
Nine digit ZIP codes. (in an address only)	(special)	Format - 21200 DASH 2345, voiced with the “figures” introducer used only once as in “**figures TWO ONE TWO ZERO ZERO DASH I spell D A S H… TWO TREE FOUR FIFE**” (Elsewhere each group is introduced.)
Canadian or other mixed group ZIP codes. (in an address only)	(special)	Format - A4X 2L7, voiced as in "**mixed groups ALFA FOUR X-RAY... TWO LIMA SEVEN"**, using a pause between groups. (Elsewhere each group is introduced.)
INITIAL **INITIALS**	X A CW	“**initial X-Ray**” (The older non-introducing method will result in copy of the word “X-Ray”, not “X”.) “**initial ALFA**” “**initials CHARLIE WHISKEY**”
INITIAL GROUPS (optional shortcut)	(special)	Used to introduce a series of initial groups in a message text, using the introducer only once for the first of the series as in net reports, etc., for voicing a series of suffixes. Use with care. In such a series all the groups must be of the same type.
MIXED GROUP (2 or more character types, beginning with letters or “/”)	B2 AM/3 W1AW/3	“**mixed group BRAVO TWO**” “**mixed group ALFA MIKE SLASH TREE**” (Note there is no additional introducer for the figure 3.)

		"**mixed group WHISKEY ONE ALFA WHISKEY SLASH TREE**" (This is not a simple call sign but a mixed group.)
MIXED GROUPS (optional shortcut)	(special)	Used to introduce a series of mixed groups in a message text, using the introducer only once for the first of the series as in net reports, etc., for voicing a series of call signs appended with added information. Use with care. In such a series all the groups must be of the same type.
MIXED GROUP FIGURE (2 or more character types, beginning with a figure)	2M 2/A 3PM 4/B3	"**mixed group figure TWO MIKE**" "**mixed group figure TWO SLASH ALFA**" "**mixed group figure TREE PAPA MIKE**" "**mixed group figure FOUR SLASH BRAVO TREE**" (Note there is no additional introducer for the figure 3.)
MIXED GROUP FIGURES (2 or more character types, beginning with 2 or more figures)	1430PM 146R67	"**mixed group figures ONE FOUR TREE ZERO PAPA MIKE**" (single group) "**mixed group figures ONE FOUR SIX ROMEO SIX SEVEN**" (single group)
OP NOTE	OP NOTE	Voiced as prowords to introduce address or signature op note information. The information within an op note is voiced as in text groups. The OP NOTE introduction follows the last of the address or signature information.

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INTRODUCER SUMMARY

INTRODUCER*	GROUP	VOICING
AMATEUR CALL	**W1AW**	"**amateur call WHISKEY ONE ALFA WHISKEY**"
ARL In check	**ARL 12**	"**A R L ONE TWO**."
ARL In text	**ARL SIXTY**	"**A R L SIXTY I spell SIERRA INDIA X-RAY TANGO YANKEE**"
FIGURE	**4**	"**figure FOUR**,"
FIGURES	**16**	"**figures ONE SIX**."
INITIAL	**A**	"**initial ALFA**,"
INITIALS	**PM**	"**initials PAPA MIKE**."
MIXED GROUP	**B2** **B/6** **W1AW/1**	"**mixed group BRAVO TWO**," "**mixed group BRAVO SLASH SIX**," "**mixed group WHISKEY ONE ALFA WHISKEY SLASH ONE**"
MIXED GROUP FIGURE	**2PM** **2/3**	"**mixed group figure TWO PAPA MIKE**," "**mixed group figure TWO SLASH TREE**,"
MIXED GROUP FIGURES	**2310Z** **146R67**	"**mixed group figures TWO TREE ONE ZERO ZULU**," "**mixed group figures ONE FOUR SIX ROMEO SIX SEVEN**."

Introducers alert the receiving operator to the special nature of the following group to be transmitted. Introducers may be voiced in a slightly different tone of voice and a little faster than copy speed to help distinguish them. This process becomes second nature to experienced traffic handlers. Remember that all introduced groups, or groups eligible to be introduced in the Preamble, are **voiced one character at a time, letters phonetically**.
* See the Introducers section regarding the introduction of telephone numbers and zip codes in addresses, OP NOTE, and the special use of AMATEUR CALLS and INITIAL GROUPS for introducing a series of like groups.

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PREAMBLE VOICING, SPECIAL RULES

Special rules. Introducers not used. **All groups in the Preamble eligible to be introduced are voiced as if they had been introduced but the introducer is omitted**. Such groups are voiced one character at a time, letters phonetically. Introducers are not used when voicing the preamble.	
SVC	voiced as "service," as in "**number SERVICE TWO ONE… ROUTINE…**"
Message #	voiced one digit at a time.
Precedence	voiced as the full word, not the initial, as in: "**number TWO ROUTINE….**"
Handling Instructions	(HX_, optional) are voiced one character at a time, letters phonetically.
Station of Origin	call sign voiced one character at a time, letters phonetically.
Check **Amended Check**	voiced one digit at a time, as in (12) "**ONE TWO**;" ARL voiced as letters followed by digits one at a time, as in (ARL 12) "**A R L ONE TWO**." (12/13) is voiced "**ONE TWO CORRECTED TO ONE TREE**," or (12/ARL 12) "**ONE TWO CORRECTED TO A R L ONE TWO**."
City Of Origin	spelled using "I spell" if not a common name well known. This is the location of the person signing the message, not necessarily the location of the stn of orig. Example: "**PODUNK I spell PAPA OSCAR DELTA UNIFORM NOVEMBER KILO**," or optionally letter-spelled if no ambiguity.
State	voiced as the full name, as in "**MARYLAND…** " for MD.
Time Filed	voiced one character at a time, letters phonetically.
Month	voiced as the full name, as in "**MARCH…** " for MAR.
Date	voiced one digit at a time, as in "**NINER**" or "**ONE FOUR**."
Examples: 2 R W1AW 12 NEWINGTON CT MAR 24 **"NUMBER TWO… ROUTINE… WHISKEY ONE ALFA WHISKEY… ONE TWO… NEWINGTON… CONNECTICUT… MARCH… TWO FOUR…"** 3 R HXCE W1AW ARL 6 NEWINGTON CT 1320L MAR 25 **"NUMBER TREE… ROUTINE… HOTEL X-RAY CHARLIE ECHO… WHISKEY ONE ALFA WHISKEY… A R L SIX… NEWINGTON… CONNECTICUT… ONE TREE TWO ZERO LIMA… MARCH… TWO FIFE…"**	

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PROWORDS - OPERATIONAL WORDS

(Used to tell the receiving operator what you are doing.)	
I SPELL	Say the **single** group, immediately add "I spell", then spell the group with letters or phonetically, as in: "**TWO I spell T W O**", or "**BACH I spell BRAVO ALFA CHARLIE HOTEL**."
I SAY AGAIN (emphasis)	Say a group, or a phrase of several groups, say "I say again", and repeat the group(s) for emphasis, as in: "**BRACKETS I say again BRACKETS**;" or "**BACK TODAY I say again BACK TODAY**."
I SAY AGAIN (on error)	Given the text: "BACK NEXT TUESDAY;" correct sending error: "**BACK TUESDAY I say again BACK NEXT TUESDAY**." Note after "I say again" you go back to the last group sent correctly and resume transmission including that group. This action distinguishes this use of "I say again."
break	Proword to frame voicing the text or separate parts of a book.
number - end	Prowords to frame voicing the single radiogram.
book of (qty.) - end book	Prowords to frame voicing a book of messages.
more, one more, no more	Operational words following **end** or **end book** to indicate the number of messages to follow. "No more" implies "**over**."
OVER	Go Ahead (end of transmission). Using "OVER" to end voice transmissions greatly helps in avoiding "doubling" with another station.

(Used to tell the receiving operator what you mean.)	
ROGER	"**All received and understood**." (Does NOT mean yes!)
CHARLIE, AFFIRMATIVE	Means "**YES**."
NO, NEGATIVE	Means "**NO**."

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SPELLING

- **GROUPS ARE SPELLED ONE AT A TIME**. Voice the group then immediately say "I spell," then spell the group with either letters or phonetics. Do not voice two or more groups and then go back to spell them. "I spell" is used for one group at a time. If a group requiring spelling is passed over, the sending operator may use "I say again" to go back to the group in question, spell it, and then continue on with transmission from that point. (Alternatively the introducer "initials" may be used to spell some groups as in Jon, "**initials JULIETT OSCAR NOVEMBER**," without first voicing the "Jon.")
- **ADDRESSEE LAST NAMES** are customarily spelled with **phonetics**. Last names are critically important for verification and delivery of radiograms.
- **OTHER PROPER NAMES** are customarily spelled with letters or phonetics. This is not mandatory for names such as commonly understood location names or names such as "John," but "Jon" would be spelled. Upon hearing the "I spell" the receiving operator will wait to hear the group spelled. Any proper name for which the spelling is not commonly understood should be spelled out
- **SOUND-ALIKE OR UNUSUAL GROUPS** are spelled with letters or phonetics, as in: "**TWO I spell T W O**," or "**OXEN I spell OSCAR X-RAY ECHO NOVEMBER**"
- The choice to use **LETTERS** rather than **PHONETICS** depends upon whether the letters may sound alike or be uncertain to the receiving operator (the B, C, D, E, G, P, T, V, Z effect). Overuse of phonetics wastes time in good radio conditions, but when there is any doubt about the likelihood of accurate copy spell it out with letters, or, in poor conditions, use the phonetics which greatly aid in correct copy.
- **ARRL NUMBERED RADIOGRAM** numbers (always written out as words) are always voiced, then, using "I spell," each individual number is spelled with phonetics. "Fifty and Sixty, and the teen's compounds, tend to sound alike over radio. Where two numbers are used each is spelled individually, as in: **"A R L SIXTY I spell SIERRA INDIA X-RAY TANGO YANKEE... ONE I spell OSCAR NOVEMBER ECHO"**

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SENDING SPEED

- Perhaps the single most difficult skill in sending record traffic is learning the speed at which to voice the groups transmitted. The receiving operator may be copying with pen and paper, using a favorite old "mill," or using word processing. Knowing which method is in use is helpful in tailoring sending speed but assuming pen and paper is the starting point.
- Introduced and spelled groups are sent one character at a time thus it is generally easy to "keep up" with the sending speed for those. Other groups or phrases transmitted must be sent with sufficient clarity and appropriate speed for the receiving operator to perceive what to copy and not to have to rush to "keep up." Rushing leads to errors and/or illegible copy.
- An experienced operator will, for example, transmit a phrase or long group followed by an "X" by sending the phrase or group, pausing for copy time, and then voicing the "X-RAY." Otherwise the "X" may be forgotten by the receiving operator concentrating on spelling out the prior phrase or group.
- Remember that spaces are also a critically important part of the process. Spaces, or pauses in articulation, convey group separation and other signals to the receiving operator. Sending "Glen Dale Court" too quickly may result in the incorrect copy of Glendale Court. Omission of a pause is also a signal, for example, when sending a group, voicing "I spell" immediately, and then going back to voice the characters one at a time (the receiving operator hearing "I spell" immediately will wait for the spelling).

- Introduction and spelling also clearly indicate that only one group is being treated in the transmission.
- The sending operator should always voice the groups as recommended and visualize the ongoing copy process. When transmitting pretend to “spell out” and copy the groups as they are sent. This will automatically allow the extra time needed by the receiving operator to spell out the longer groups or phrases.
- This all requires practice. Sending traffic on regular nets or across a table from a receiving operator can help you to learn how to do this effectively. Receiving traffic yourself will give you insight into the effects of sending speed, but you will still have to concentrate on paying special attention to this matter during transmission. Knowing how to do this well is a mark of an experienced traffic handler. During emergencies an inexperienced operator may send too quickly and not be experienced in these protocols resulting in numerous fill requests, uncertainty and reduction in net throughput to half or worse.

- **The objective in handling written radio message traffic is to transmit, copy, relay and deliver the message EXACTLY as it was written by the originator.**

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MESSAGE VOICING RULE SUMMARY

FRAME START	• A single message frame begins with “number,” the book frame begins with “book of [number].” Frame prowords are not copied.
PREAMBLE	• All groups are voiced using the rigorous rules for text groups except that for all groups eligible to be introduced the introducer is omitted and the characters are sent one at a time, letters phonetically. See Preamble Voicing.
ADDRESS	• All groups are voiced using the rigorous rules for text groups except special rules apply for introducing and voicing telephone figures and certain zip codes. Three groups of telephone figures are introduced with “figures” once at the beginning. If no zip code is present telephone figures are introduced with “phone figures.” Last names are spelled with phonetics. See Introducers, Figures.
OP NOTE	• Address Op Note regarding delivery is introduced with the prowords “**op note**” and the information within the Op Note is voiced using text rules.
TEXT	• The text is begun with the proword “break” followed by a listening pause. • The most rigorous voicing rules apply. All eligible groups are introduced as described in the Introducers rules which require each character in the group to be voiced individually, letters phonetically. • A series of the same kind of groups eligible to be introduced may be introduced once in the plural at the beginning of the series (a shortcut of convenience for net reports, etc.) • Proper names are spelled with letters or phonetics after using “I spell.” Sound-alike groups, plurals and unusual words are spelled with letters or phonetics after using “I spell.” • A series of groups may be voiced as a phrase so long as there are no groups contained therein eligible to be introduced. • The text ends with the proword “break” **without** a following listening pause. • The beginning and ending text frame “break” groups are not copied or counted in the check.
SIGNATURE	• All groups are voiced using the rigorous rules for text groups except special rules apply for introducing and voicing telephone figures and certain zip codes. Three groups of telephone figures are introduced with “figures” once at the beginning. If no zip code

	is present telephone figures are introduced with “phone figures.” Last names are spelled with phonetics. See Introducers, Figures.
OP NOTE	• Signature Op Note regarding servicing or replies is introduced with the prowords “**op note**” and the information within the Op Note is voiced using text rules.
FRAME END	• Single message copy stops at the proword “end.” Book copy stops at the prowords “end book.” These frame prowords are not copied. The end of the frame is concluded with the operational words “more, one more, no more” as appropriate. “No more” implies “over.” See the following message and book voicing examples and the Message Exchange.
SPEED	• Send the message using appropriate speed for manual pen and paper copy unless requested to do otherwise. Transmit pauses clearly - they are free.
EXTRANEOUS WORDS	• All other extraneous words or comments are dispensed with. Except for introducers and operational words everything else voiced is copied by the receiving operator. Avoid voicing all such extraneous words or message part names when transmitting.

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SINGLE MESSAGE VOICING EXAMPLE

Typical typed presentation of the ARRL radiogram shown in the format which may also be used on digital modes including radio-email. NTSD traffic requires a “TO” and “SUBJECT” line entry ahead of the preamble for routing information (See MPG-6). The “=” symbol used for break is consistent with the double dash symbol used on the CW mode.

- Use the appropriate frame prowords (number, end, etc.)
- Bold groups should be spelled.
- Underlined groups in the Preamble are eligible for introduction but the introducers are omitted. (See also the Preamble Voicing).
- Underlined eligible groups elsewhere are introduced.

3 TEST P W1AW 26 MIDDLE RIVER MD 1118L MAR 19	Preamble - no introducers used.
JOHN P **SMYTHE** EC W3XYZ 16 OAK RD PODUNK MD 21200 410 555 1234	Addressee (last name spelled with phonetics), title, call and address. See special tel. nr. introduction.
=	Break: “BT,” or “=,” or blank line.
EXERCISE X WAVE HIT AT 1110 X DAMAGE **TO WILSON** POINT AREA AND **HAWTHORNE** AREA X I AM ON 145R45 WITH WB3FMT ON 2 METERS EXERCISE	Text (this message is shown as a test priority exercise message).
=	Break: “BT,” or “=,” or blank line.
PHIL W1AW	Signature Blank line before next message.

(Voicing example - **…** indicates a copy pause)
RX: “Ready to copy;” TX:
”**NUMBER TREE… TEST PRIORITY… WHISKEY ONE ALFA WHISKEY… TWO SIX… MIDDLE RIVER MARYLAND… ONE ONE ONE EIGHT LIMA… MARCH… ONE NINER…**

JOHN… initial PAPA SMYTHE I spell SIERRA MIKE YANKEE TANGO HOTEL ECHO…
figures ONE SIX OAK I spell O A K initials ROMEO DELTA…
PODUNK I spell PAPA OSCAR DELTA UNIFORM NOVEMBER KILO MARYLAND…
figures TWO ONE TWO ZERO ZERO…
figures FOUR ONE ZERO… FIFE FIFE FIFE… ONE TWO TREE FOUR…
break**…** (PTT release expected here for a possible fill request. If nothing heard in a few seconds, continue.)

EXERCISE… initial **X-RAY… WAVE HIT AT**
figures **ONE ONE ONE ZERO** initial **X-RAY… DAMAGE… TO** I spell **T O… WILSON** I spell **W I L S O N…**
POINT AREA… AND HAWTHORNE I spell **H A W T H O R N E AREA…**
initial **X-RAY…** initial **INDIA AM ON** mixed group figures **ONE FOUR FIFE ROMEO FOUR FIFE…**
WITH amateur call **WHISKEY BRAVO TREE FOXTROT MIKE TANGO… ON** figure **TWO METERS…**

EXERCISE…
break**…**
PHIL I spell **PAPA HOTEL INDIA LIMA…** amateur call **WHISKEY ONE ALFA WHISKEY…**
end no more" (PTT release)
"ROGER [73] W3RX"
"[THANKS 73] W3TX"

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BOOK VOICING EXAMPLE

Messages having common parts may optionally be voiced "booked" to save transmission time. The resultant copy must be able to be restored to single message replicas of the originals. Booking is a voicing option of the operators.

Given the example messages:

5 R W1AW ARL 9 NEWINGTON CT MAY 16	6 R W1AW ARL 9 NEWINGTON CT MAY 16
JOHN SMITH	JAMES DOE
16 OAK RD	22 ELM STREET
PODUNK MD 21200	PODUNK MD 21200
410 555 1234	410 555 5678
=	=
ARL FIFTY ARL FIFTY SIX	ARL FIFTY ARL FIFTY SIX
LICENSE RENEWAL X 73	RECENT UPGRADE X 73
=	=
RICK	RICK

(Book voicing example - **…** indicates a copy pause)
RX: "Ready to copy;" TX:
"book of two **ROUTINE WHISKEY ONE ALFA WHISKEY ARL NINER NEWINGTON CONNECTICUT MAY ONE SIX**
break**…** (PTT release)
ARL FIFTY I spell **FOXTROT INDIA FOXTROT TANGO YANKEE… ARL FIFTY** I spell **FOXTROT INDIA FOXTROT TANGO YANKEE… SIX** I spell **SIERRA INDIA X-RAY… BLANK BLANK…** initial **X-RAY** figures **SEVEN TREE**
break**… RICK** I spell **ROMEO INDIA CHARLIE KILO…**
break**…** (PTT release)
number **FIFE JOHN SMITH** I spell **SIERRA MIKE INDIA TANGO HOTEL…**
figures **ONE SIX OAK** I spell **O A K** initials **ROMEO DELTA…**
PODUNK… MARYLAND… figures **TWO ONE TWO ZERO ZERO…**
figures **FOUR ONE ZERO… FIFE FIFE FIFE… ONE TWO TREE FOUR…**
break**…** (PTT release) **LICENSE RENEWAL…**
break**…** (PTT release)
number **SIX JAMES DOE** I spell **DELTA OSCAR ECHO…**
figures **TWO TWO ELM STREET…**
PODUNK… MARYLAND… figures **TWO ONE TWO ZERO ZERO…**
figures **FOUR ONE ZERO… FIFE FIFE FIFE… FIFE SIX SEVEN EIGHT…**
break**…** (PTT release) **RECENT UPGRADE…**
end book**…** no more" (PTT release)
"ROGER [73] W3RX"
"[THANKS 73] W3TX"

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BLANKS, USED IN BOOK TRANSMISSION

Booking is a transmitting technique used to save time in transmission by avoiding repeating common parts in a number of messages. It is used by agreement between operators and is always optional. (Examples below are shown written out - use proper voicing when sending.)

BLANKS, ONE FOR ONE SUBSTITUTION:

- When sending books with a common text except for one or more groups which may be variable, one or more "BLANK" groups may be used as place holders in the fixed text to indicate each of the groups to be provided in the variable message parts later.
- With this method the "BLANKs" provide for a group count in the common text which agrees with the Preamble Check. This is a signal to the receiving operator that there will be a group for group correlation in the variable text for the contents of each "BLANK" sent later. This one for one substitution defines the variable text as having only one group representing each "BLANK" used in the common text, hence there is no ambiguity between the groups transmitted in the variable text.
- These "BLANKs" may be associated with plain text or with ARRL Numbered Radiograms, or both; and do not always represent adjacent text groups. Note that the group "BLANK" used as a placeholder here is not the same as the blank shown in the list

of ARRL Numbered Radiograms in which it is permissible to have more than one group sent to complete the Radiogram's information.

EXAMPLE, COMMON TEXT, check ARL 8:

break **ARL FIFTY THREE BLANK ARL FIFTY SIX BLANK** break (SIG) break
and in the variable parts:
number **12** (address) break **LETTER LICENSE** break
number **13** (address) break **PACKAGE APPOINTMENT** end book no more

The operator knows from the Check that each BLANK stands for one group, hence there is no ambiguity in understanding the two groups given in the unique texts for each message. If one or both ARRL Radiogram had a two or three group variable, one BLANK would be used for each group. Since the number of BLANKs used maintains agreement with the Check, there will be no ambiguity in understanding the variable parts, as in:

Check ARL 9:
ARL FIFTY THREE BLANK BLANK ARL FIFTY SIX BLANK break (SIG) break
and in the variable parts:
NR **12** (Address) break **KIND LETTER LICENSE** break
NR **13** (Address) break **BOOK PACKAGE APPOINTMENT** end book no more

- Multiple "BLANKs" are permitted, each in the position in the common text of the group to be given later. They correspond exactly, one for one in order, to the groups given in the variable text parts.
- Generally, if more than two consecutive "BLANKs" are required, a single BLANK may be used to represent more than one group, but with care to avoid ambiguity. (See the next section below regarding Blanks, Single Placeholder for Multiple Groups.)

BLANKS, SINGLE PLACEHOLDER FOR MULTIPLE GROUPS:

- When sending books with a common text except for a number of groups which may be variable, and more than two consecutive "BLANKs" would be required as single group placeholders, it is permissible to use a single placeholder for all the variable groups even though the common text will not have a group count which agrees with the Preamble Check. The receiving operator will recognize the disparity and watch for the number of groups used in the variable texts. (When parts of a book are reformed into single messages the resultant group counts for the texts for each message must agree with the given Preamble Check.)
- Such single placeholder "BLANKs" may be associated with plain text, or with ARRL Numbered Radiograms, or both.
- **CAUTION:** See the next part below concerning ambiguity in completing multiple BLANKs for multiple groups in the transmission. There comes a time when the economy of booking complex texts with BLANKs is not worth the possible resultant confusion.

EXAMPLE COMMON TEXT TO DIFFERENT ADDRESSEES, Check ARL 8:

break **ARL FORTY SEVEN BLANK** break (SIG) break
and in the variable parts:
number **14** (address 1) break **305 W1AW MAR 15 2330** break
number **15** (address 2) break **307 W1AW MAR 16 0745** end book no more

EXAMPLE COMMON TEXT TO THE SAME ADDRESSEE, Check ARL 8:

(address) break
ARL FORTY SEVEN BLANK break (SIG) break
and in the variable parts:
number **14** break **305 W1AW MAR 15 2330** break
number **15** break **307 W1AW MAR 16 0745** end book no more

BLANKS, BLOCK OF TEXT TO REDUCE AMBIGUITY:

- **CAUTION:** If more than one "BLANK" standing for multiple groups is used in a common text, care must be taken to ensure that there will be no ambiguity in the variable texts given later as to where the information from one "BLANK" ends and the next begins. Adding an "X" or other marker between groups, not in the original messages, is **not permitted** to separate such groups. Thus if ambiguity would result by using more than one such "BLANK" placeholder, one or both in place of multiple groups, it would be wise to avoid booking the message transmission in the first place. Confusion could result in the attempt to save time. Alternatively, the sending operator may use a single "BLANK" for a block of text containing the variable groups and fixed intervening text as shown below.

EXAMPLE COMMON TEXT TO DIFFERENT ADDRESSEES, Check ARL 20:
where there is different ARL SIXTY FIVE and ARL EIGHT information to be sent:
...
break **ARESMAT TEAMS SCHEDULED TO LEAVE TONIGHT X ARL SIXTY FIVE BLANK ARL EIGHT BLANK 73** break (SIG) break
and where there would be ambiguity in completing the BLANKs in the variable parts, the transmission may be revised to:
...
break **ARESMAT TEAMS SCHEDULED TO LEAVE TONIGHT X ARL SIXTY FIVE BLANK 73** break (SIG) break
and in the variable parts with the complete ARL EIGHT components included:
NR **14** (Address 1) break **STL MAR 10 1330 UA 701 ARL EIGHT 6** break
NR **15** (Address 2) break **BWI MAR 10 1745 NW 15 ARL EIGHT 10** end book no more

- The economy of booking in this manner may only become valuable when a large number of such messages and their texts need to be sent. For a few such messages, sending the messages as singles may lead to less confusion.

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LISTENING BETWEEN GROUPS, INTERRUPTING

- When the sending station is operating PTT it may listen between groups or phrases. The phrase "**LISTENING BETWEEN GROUPS**" is voiced before the start of the first message frame. The receiving operator can interrupt at any time.
- If the receiving operator misses a group it may interrupt and send the last group copied, and the sending operator will resume with the next group.

Examples (transmissions indented to convey timing):

1) Continuing after group sent:
TX: **TO... SEE... YOU... AT...**
RX: **YOU** (YOU copied-TX continues with next group)
TX: **AT HAMFEST...**

2) Continuing after a phrase:
TX: **TO SEE YOU AT...**
RX: **SEE**
TX: **YOU AT HAMFEST...**

3) Correcting and continuing:
TX: **TO SEE YOU AT...**
RX: **YOUR** (error in request)
TX: **SEE YOU AT HAMFEST...** (SEE repeated)

Interrupting Tips:

- The interrupt method should be used immediately when copy of a group is missed or uncertain. It is poor practice to interrupt and force the sending operator to back to earlier parts of the message.
- If there is some other reason for interrupting, the receiving station may send **WAIT**. When ready, a specific group(s) to begin with may be sent (from anywhere in the message), in which case transmission is resumed after the specified group(s). The receiving station may also send a message part name (PBL, ADR, TXT, SIG, etc.) in which case transmission resumes with that part.
- On PTT/VOX operation asking for fills from any previous part of the message is also acceptable after the expected break at the start of a text, the break before a booked message number, or at the end of the message(s), using the standard formal fill requests. See Fill Requests.
- The interrupt method works well on simplex but may not be practical on some FM repeaters due to timer or audio delays.

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JUMPING AHEAD

- A receiving operator, recognizing a "standard message" from an originator, might interrupt the sending with "SIGNATURE" (at the "break" before the text) as soon as the address is received. The sending operator skips the text, sends "break," and follows with the signature.
- If the receiving station interrupts with a ROGER at the "break" before the text it is indicating it knows both the text and signature, however the sending operator should send the signature and signature op note, if an op note is present, when the op note is not "standard" for that message. If in doubt the sending operator should at least confirm the receiving station has the op note.

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FILL REQUESTS

At the first text frame break or at the end of the message the receiving operator may ask for repeats of specific groups or part names, or may request confirmation of groups copied. This is done with a simple declarative statement such as "word after THE," or "street address," etc., or "confirm HAMFEST." The interrogative is implied. The sending operator repeats the group(s) requested or confirms the copy given. Notice that "OVER" is not required in such exchanges. The receiving operator then may make an additional request or reply "ROGER," or "GO AHEAD," to resume the exchange. The requests follow:

GROUPS	"[IN (part)] **WORD AFTER** (group(s))" "[IN (part)] **WORD BEFORE** (group(s))" "[IN (part)] **ALL AFTER** (group(s))" "[IN (part)] **ALL BEFORE** (group(s))" "[IN (part)] **BETWEEN** (group A) **AND** (group B)" • The optional "[IN (part)]" refers to the PBL, addressee, street address, city, zip, telephone number, text, signature, op note, or whatever part of the message to which you wish to direct the attention of the operator for the fill request. The "[IN (part)]" is not used unless necessary for clarity in the request.
PART NAME	To request repeat of a part of the message ask "**(part name)**", such as preamble, number, precedence, handling instructions, station-of-origin, check, city-of-origin, date, last name addressee, street address, city, zip, telephone, address op note, text (entire), signature, signature op note, etc. Simply say "preamble", "text", "zip", or "signature", etc., and the sending station will repeat that part of the message specified.
CONFIRM	To verify a group or part ask: "**CONFIRM** (group(s))"; The affirmative response is "**CONFIRM**," or a correction is sent by repeating the correct group(s), spelling if necessary for clarity.

FILL RESPONSES

The shortest and most efficient method is preferred and is shown here. Given a message text and signature as follows:

"… **ARRIVED 6PM X WILL BE ARRIVING HOME NEXT WEEK** break **LLOYD** end no more"

STN	FILL REQUEST (1)	STN	RESPONSE (2)
RX:	**"WORD AFTER HOME"**	TX:	**"NEXT"**
RX:	**"WORD BEFORE BE"**	TX:	**"WILL"**
RX:	**"BETWEEN ARRIVING AND WEEK"**	TX:	**"HOME NEXT"**
RX:	**"CONFIRM HOME"**	TX:	**"CONFIRM"**
RX:	**"CONFIRM THIS WEEK"**	TX:	**"NEXT WEEK"** (3)
RX:	**"IN TEXT ALL AFTER HOME"**, (Use of [IN (PART)])	TX:	**"NEXT WEEK"**
RX:	**"SIGNATURE",** (Use of PART NAME)	TX:	**"LLOYD I spell L L O Y D"**

1. The request may contain one or more groups as required for clarity. For example, if there is more than one "X" in the message text give the group before the "X" and the "X" to reduce the ambiguity.
2. Transmit requested group(s). There is no need to repeat the request. There is no need to transmit additional groups before and after the group(s) requested unless there is some need for particular emphasis or clarity by framing. Simply give the receiving operator what is asked for, remembering on repeaters to allow time for the links and transmitters to come up before voicing. Notice that "OVER" is not required in such exchanges.
3. "NEXT" might be spelled to emphasize the error correction.

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RESOLVING A CHECK DISCREPANCY - THE QTB METHOD

- Check discrepancies might be due to a missed counting error on the TX station's copy of the message, a TX station's transmission error, or an RX station's copy error. The RX station may ask for a confirmation of the check, or ask for fills of groups in doubt as above, but should avoid fishing around for errors.
- The RX station may confirm the check, or if confident it copied it correctly, may immediately proceed with a first-initial check - the QTB method of resolving the discrepancy. In fact, either station that first becomes confident that there is a check discrepancy may initiate the sending of the first character of each group of the text.
- If RX sends, the TX station makes note of where there is a discrepancy in the letter sequence, and then re-sends sufficient groups to correct the copy. If TX sends, the RX station asks for a fill covering the discrepancy. This process is efficient and most often saves much time compared to fishing around for text errors by trial and error.
- Do not re-send whole parts or the entire message unless specifically requested to do so as a last resort.
- If the text is confirmed and the check is still in error, AMEND the check with the "/", as in "13/12", or "12/ARL 12", or "ARL 12/12", or "ARL 13/ARL 14", etc.

Examples: (Letters must be voiced phonetically. RX is the receiving operator, TX the sending operator.)
Given a CK 9 message text and signature:
break **ARRIVED 6PM X WILL BE ARRIVING HOME NEXT WEEK** break **LLOYD** end no more

1) The receiving station initiating the first initial (QTB) method:
RX: **First Initials A 6 X W B A N W over**, (the H for HOME missing)
TX: **ARRIVING HOME NEXT**, (TX frames HOME so RX can easily locate the group.)
RX: **Roger W3RX**

2) Or, if the TX station initiated the first initials transmission:
TX: **First Initials A 6 X W B A H N W over**
RX: **Word After ARRIVING**, (RX noting the missing H in its copy.)
TX: **HOME**
RX: **Roger W3RX**

- In either case the station sending the letter sequence, particularly on FM repeaters, may elect to do five groups at a time, listening after each five for an interruption from the other station to clarify a discrepancy. When doing so, it is helpful to introduce the letter sequence by voicing “First Initials Five at a Time.”

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3. DIRECTED TRAFFIC NETS

ID REQUIREMENTS

- Give your full call sign when checking into the net and when excused directly from the net. Give your full call sign after making comments, other contributions to the net and exchanging traffic.
- Suffixes may be used to seek permission to transmit. Suffixes may be used to acknowledge leaving the net when dispatched to a stack. No response is expected from individual stations excused en-mass by list or by closing the net.

CHECKING IN, LISTING TRAFFIC

- Listen to the NCS. Open net calls (for any stations) or specific net calls will be made from time to time. When the appropriate call is made for your category check into the net with the following information. List all your business at the first check-in opportunity.
- Net liaisons are typically single responders, hence they check in with their full traffic list when the NCS calls for the liaison by net name or call sign. Multiple responders for another net check in using the two-step method, indicating their jobs, assignments, and then either “no traffic,” or “with traffic” and waiting for NCS to ask them to “LIST” their traffic.
- Other stations checking in use the two-step method, giving their full traffic list only after the NCS recognizes their call sign and asks them to “LIST” their traffic.

The Traffic List sequence:
[CALL] [JOBS] [ASSIGNMENTS] [TRAFFIC STATUS] [TRAFFIC LIST] [COMMENT]

<table>
<tr><th>[CALL]</th><th>[JOBS]</th><th>[ASSIGNMENTS]</th><th>[TRAFFIC STATUS]</th><th>[TRAFFIC LIST]</th><th>[COMMENT]</th></tr>
<tr><td rowspan="5">(full call sign)</td><td rowspan="5">Such as alternate net control, etc.</td><td rowspan="5">Liaison assignments, using “FROM” and “TO” net name as required for clarity;

then voice traffic status 1, 2, or 3:</td><td>1) “NO TRAFFIC”; (OVER is not required unless a comment is added),
or 2;</td><td>(none)</td><td>Plus any info needed by the NCS. If so, then end with
... “OVER.”</td></tr>
<tr><td rowspan="2">2) “WITH TRAFFIC”, if multiple responders possible;
or 3;</td><td>Wait for NCS request to “LIST” then give full TRAFFIC LIST...</td><td>Plus any info needed by the NCS;</td></tr>
<tr><td colspan="2">End last item with “OVER.”</td></tr>
<tr><td rowspan="2">3) If single responder with traffic, then: “TRAFFIC…”</td><td>Give full TRAFFIC LIST…</td><td>Plus any info needed by the NCS;</td></tr>
<tr><td colspan="2">End last item with “OVER.”</td></tr>
</table>

Traffic List Examples (items in brackets [] are optional):
NO TRAFFIC:
“W1AW [ALTERNATE NET CONTROL] [FROM FIRST REGION] NO TRAFFIC” (OVER not required); or
“W1AW [ALTERNATE NET CONTROL] [FROM FIRST REGION] NO TRAFFIC CAN HANDLE PODUNK OVER”

WITH TRAFFIC (as a single responder or when asked to **LIST**)**:**
“W1AW [ALTERNATE NET CONTROL] [FROM FIRST REGION] TRAFFIC [PODUNK ONE]... [PODUNK HOLLOW TWO]... [MESSAGE FOR ALL STATIONS ONE]... [BOOK OF FIVE PODUNK HEIGHTS THREE PODUNK CITY TWO]... [WORDS FOR NET]... [WORDS FOR W1XYZ]... [CAN HANDLE NEWINGTON] OVER”

- Traffic is customarily listed in order as **TRAFFIC**, **singles**, **formal messages for all stations**, **books**, **words** for net, **words** for stations, and the optional **comment**, always ending with **OVER**.

- On Section or Local NTS nets it is customary to assist traffic assignment by giving the telephone area code and exchange for listed traffic, as in: **"PODUNK ONE PHONE FOUR ONE ZERO... FIFE FIFE FIFE"**; and if two or more messages are listed for the same location: **"PODUNK HOLLOW TWO PHONE FOUR ONE ZERO... FIFE FIFE FIFE AND FOUR ONE ZERO... FIFE FIFE SIX."**
- Messages for **amateur stations** may be listed using the **call sign** as the destination (if the amateur frequents or is known to the net - the town added if not). The comment "if he/she checks in" may be added if you prefer to cancel the message if the station does not appear on the net. Service or reply messages to well known sources of mass mailing traffic typically are addressed to their call sign, but it is recommended that the city, state and zip code be provided to aid routing through the digital networks
- On Section and Local NTS nets, **traffic for out-of-Section** is listed for the next higher net by net name, or simply "through." Messages for the coverage area of the net are listed by town and phone area and exchange. Messages listed on a Local net may be listed the same way, but may need to be routed to a Section net to reach an outlet. The NCS can advise or ask for suggested routing. Refer to the Section's net structure.
- Booked messages may also be listed to aid in dispatching: **"BOOK OF FIVE PODUNK HEIGHTS 3 PODUNK CITY 2,"** phone information added as necessary as above, and after all the single messages are listed. This allows the NCS to dispatch multiple stations to copy the book.
- Comments are related to information which might be required by or useful to the NCS, such as offering to take messages already listed on the net. Words for the net or with the NCS are listed separately as traffic, as in **"WORDS FOR THE NET,"** or **"WORDS WITH THE NCS."**
- The **"NO TRAFFIC"** status without a comment does not require an **"OVER."** If a comment is added it must end with **"OVER."**
- The list following **"TRAFFIC"** is always ended with **"OVER,"** with or without a comment.

CHECKING INTO THE NET:

SINGLE RESPONDERS, single liaisons or stations called specifically:

NCS: FIRST REGION REP
STN: W1AW FIRST REGION NO TRAFFIC (OVER not required); or
W1AW FIRST REGION TRAFFIC PODUNK ONE WORDS W1XYZ OVER
NCS: W1AW STAND BY (Acknowledging the station and asking it to stand by, or the NCS may dispatch the station to pass its traffic.)

MULTIPLE RESPONDERS are possible on net calls such as open net calls (stations with or without traffic), those for liaisons where more than one is expected, or in calls where numerous stations might respond, such as a call for stations with suffixes beginning with ALFA through MIKE, etc. A mix of stations with and without traffic checking in is shown below.
The "**two step**" check-in method:

NCS: STATIONS WITH OR WITHOUT TRAFFIC
STNS: W1XX NO TRAFFIC (OVER not required);
W2XX WITH TRAFFIC (OVER not required);
W3XX NO TRAFFIC (OVER not required)
NCS: W1XX W3XX STAND BY acknowledging the no-traffic station list first; then
W2XX PLEASE LIST
XX: W2XX TRAFFIC PODUNK ONE WORDS W1XYZ OVER
NCS: W2XX STAND BY (The NCS acknowledges the station and asks it to stand by, or may dispatch it with another station to handle its traffic. The **"STAND BY"** is a transaction ending command and the NCS may then leave a gap for other stations to try a call (tail ending), or the NCS may make another open net call.)

- If you have no traffic, the NCS will repeat your call to acknowledge you and ask you to stand by; or, if you have traffic, wait for the NCS to acknowledge your call sign and ask you to "**LIST**," then check in with your **full traffic list sequence**, including call sign, jobs, liaison assignments, **"traffic"** and then the list of message destinations and quantity for each as shown above, and ending with **"OVER."**

TRANSMIT ONLY WITH NCS PERMISSION

PERMISSION TO TRANSMIT

- On a directed traffic net the stations should **transmit only with permission** from the NCS. This may be done in response to net calls by the NCS for general check-ins, calls for specific assistance, for relays, to respond to traffic offers; or by NCS calls to specific stations. For stations already checked into the net, such permission is obtained by the station voicing its call sign suffix, waiting for the NCS to repeat the suffix to acknowledge the request, and then transmitting the request, information or relay, etc.
- Failure to have NCS permission to transmit can quickly lead to disorder on directed nets. Listen to the NCS and avoid the impulse to jump in without permission.

TRANSACTIONS

- Business on a directed traffic net generally consists of "transactions," i.e. exchanges between the NCS and a station or between two or more stations on the net with NCS permission. The NCS also makes open and specific net calls from time to time, checks stations into the net, assigns traffic to recipient stations, dispatches traffic, and excuses stations.
- There are generally key words used to conclude such transactions such as checking in a station by the NCS saying the call sign and asking the station to "**stand by**," or a traffic dispatching operation to an off-net frequency which is concluded by the stations dispatched acknowledging "(suffix) **going**", or an exchange of traffic or information on the net concluded by the stations signing their full call signs. Listen to the NCS and wait for any transactions in progress to be completed before breaking into the net for any reason (except for an emergency or urgent need to gain the attention of the NCS such as to catch an excused or dispatched station before it leaves the net frequency).

TAIL-ENDING

- Most NCS operators will accept tail-ending calls. **When a transaction is completed** on the net frequency a new station checking in, a station on the net requesting permission to transmit, or a station returning from off frequency, can make its call to gain the attention of the NCS. Thus new check-ins, net stations and returning stations do not necessarily have to wait for the NCS to make an open or specific net call to have an opportunity to make the attempt. However, if the NCS makes a specific net call, such stations should pause briefly to allow the specific responder(s) time to make their call before tail-ending an attempt. For example, if the NCS calls for a station in Podunk, a pause should be given for any Podunk responder before a new station, net station, or returning station should make their call.
- An NCS should leave gaps between transactions to accommodate such tail-ending calls. No gap is a signal that the NCS is not accepting tail-ending calls.

NET DUTIES AND FORMAT

- NCS DUTIES include calling the net, checking in stations, listing traffic, assigning traffic, dispatching traffic, excusing stations, closing the net and filing a net report for each session run.
- Consult the Net Manager for the suggested net format and other policies. The net format is a style or sequence of operations customized for that particular net and is a separate policy from the standard operating protocols presented in this document.

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OTHER MODES, BANDS

- The NCS may dispatch stations to exchange traffic using other modes such as Winlink 2000 radio-email, packet radio, RTTY, APRS, or other means. The NCS may also dispatch stations to other bands or modes such as to the CW segments or other bands better suited to the propagation between the stations or band crowding conditions. HF ground wave or simplex VHF/UHF may be used.
- The objective of directed traffic nets is to move the maximum amount of traffic in the shortest possible time. Other activities on the net are simply overhead in performing that task.

- Separate nets may be set up for groups of stations with common traffic exchanging requirements or for welfare traffic distribution, etc. Section plans generally call for liaisons between all nets operating in support of an emergency response. The NCS will explore all possible paths for moving traffic based upon available resources.

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DISPATCHING TRAFFIC

- Note that in each of the dispatch line sequences the syntax is self completing, thus dispensing with the need to send "OVER" after the commands. This dispatch sequence is short and efficient, and is expected by the stations. Repeating parts of the dispatch may cause confusion and premature acknowledgments from the stations. When excusing stations in advance as they are sent off net the excusing syntax must follow immediately after the main part of the dispatch syntax to avoid premature acknowledgments.
- The NCS solicits and assigns receiving stations for listed traffic, and then may instruct stations to pass traffic immediately or at a later time, either on the net or off frequency.
- A "**stack**" is a frequency off of the net on which two stations are engaged in a traffic exchange. A third station may be dispatched to get in line to wait to call one of those stations when it becomes available.
- **FREQUENCY:** "HERE" is used as the (freq) in the syntax for dispatching exchanges on the net. The "UP 6" examples for the stack destination could obviously be a repeater, simplex FM frequency, specific HF frequency, or any other location, band, or mode required.

1) DISPATCHING TWO STATIONS:

NCS: **W3RX W3TX UP 6 PODUNK 3**, (or "5.33", or "55 simplex", or "3825", etc.); or
W3RX W3TX HERE PODUNK 3

- The NCS usually addresses the RX station first, TX second, but may reverse the order if RX is not being heard well.
- Stations acknowledge departing by sending "**(suffix) going**" in the order in which they were dispatched. The **receiving station** checks the stack frequency and makes the first call to initiate the exchange. If the assigned frequency is busy the RX station moves away from the net to the first clear frequency (if possible - not so for repeaters). If stations do not make contact within 30 seconds they both return to net and report the failure.

2) Adding one waiting station to a stack, order given ("AFTER" always used on voice):

NCS: **W3XX UP 6 W3RX AFTER W3TX PODUNK 2**
W3XX waits up 6 for W3RX to finish then calls W3RX to gain control of the stack.

3) Adding a second waiting station at the stack, order given (use with care):

NCS: **W3YY UP 6 W3RX AFTER W3XX PODUNK 1**
W3YY waits up 6 for W3XX from case 2 above to finish, then calls W3RX to gain control of the stack.

4) Checking copy before departing, conditional dispatch:

NCS: **W3RX CALL W3TX IF OKAY UP 6 PODUNK 3**
W3RX calls W3TX on the net, and, if copy is good, both move to the stack.

5) Dispatching a relay station to assist in the exchange:

NCS: **W3RLY RELAY W3RX W3TX UP 6 PODUNK 2**
All 3 stations acknowledge, "**(suffix) going**," in the order dispatched, and W3RLY calls the stations and mediates the exchange at the stack frequency.

- The NCS may elect to dispatch a station as soon as it checks into the net without acknowledging it except by implication, as in:

6) IMMEDIATE DISPATCH (skipping the normal acknowledgment):

STN: **W3XX WITH TRAFFIC**
NCS: **W3XX PLEASE LIST**
STN: **W3XX TRAFFIC PODUNK 3 OVER**
NCS: **W3RX W3XX UP 6 PODUNK 3**; (RX was already checked in and handles Podunk.)

RX: **RX GOING**
XX: **XX GOING**

7) Or to call for a liaison or outlet to handle the listed traffic:

STN: **W3XX WITH TRAFFIC**
NCS: **W3XX PLEASE LIST**
STN: **W3XX TRAFFIC PODUNK 3 OVER**
NCS: **W3RX?** (soliciting the known outlet for Podunk)
STN: **W3RX NO TRAFFIC**
NCS: **W3RX W3XX UP 6 PODUNK 3;**
RX: **RX GOING**
XX: **XX GOING**

- The immediate dispatch may also be used to re-dispatch a returning station, or excuse a returning station with the normal acknowledgment of the return skipped.

8) SPLIT DISPATCH (Skipping acknowledgment, interrupting the dispatch, soliciting the outlet, and then completing the two part dispatch.)

STN: **W3XX WITH TRAFFIC**
NCS: **W3XX PLEASE LIST**
STN: **W3XX TRAFFIC PODUNK 3 OVER**
NCS: **W3RX...** (RX not yet checked in but NCS knows W3RX handles Podunk.)
RX: **W3RX NO TRAFFIC**; (W3RX is QRU. If RX had QTC, NCS would abort to an immediate dispatch.)
NCS: **... W3XX UP 6 PODUNK 3**; (completing the W3RX W3XX UP 6 dispatch)
RX: **RX GOING**
TX: **XX GOING**

- Technically the call for W3RX without the query violates the specific net call syntax, but experienced stations recognize what the NCS is doing here. This is a combination of both the immediate and split technique, both stations being acknowledged only by implication. This method should be used with care.

9) BOOKS TO MULTIPLE STATIONS: The NCS may dispatch a number of stations to receive parts of a book from a TX station at a stack or on net frequency (freq. = HERE). The dispatch:

NCS: **W3TX W3XA (dest [qty]) W3XB (dest [qty]),** etc., **(freq) BOOK [OF (qty)]**
Or if the stations know the assignments:
W3TX W3XA W3XB (freq) BOOK [OF (qty)]
STNS: Each acknowledges "**(suffix) going**" in the order dispatched if dispatched off net.

- The TX station initiates contact with the stations on the net or on the stack frequency and assumes the role of a net control for transmission of the book, polling all stations QRV and, after the exchanges, requesting acknowledgment.

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EXCUSING STATIONS

EXCUSING A STATION ON NET

NCS: **W3RX [THANKS 73] YOU ARE EXCUSED** (Note the farewells precede the "EXCUSED," the command ending syntax - no "OVER" is required. If words are added after "EXCUSED" then an "OVER" would be required at the end.)
STN: **[73] W3RX**

EXCUSING STATIONS IN ADVANCE

Stations may be EXCUSED in advance from the net in the dispatch command when being dispatched off frequency for exchanges. The net control will add the excusing commands at the end of the dispatch line, as in:

NCS: **W3RX W3TX UP 6 TOWSON 3 W3RX EXCUSED**
W3RX W3TX UP 6 TOWSON 3 W3TX EXCUSED
W3RX W3TX UP 6 TOWSON 3 BOTH EXCUSED
W3XYZ UP 6 W3TX AFTER W3RX PODUNK 2 W3XYZ EXCUSED
W3XYZ UP 6 W3TX AFTER W3RX PODUNK 2 W3TX EXCUSED

W3XYZ UP 6 W3TX AFTER W3RX PODUNK 2 BOTH EXCUSED

- Stations **excused** at the dispatch sign out with **full call sign**. If the contact station is to be excused, the dispatched station relays that information to the station at the stack.
- Note that only the dispatched station and/or its contact on the stack are excused in advance in this dispatch. The other station already at the stack is not so excused since contact with that station is not assured or customary. That station would return to the net to be excused, or already may have been excused in advance.
- Note that, as in dispatches, the line syntax is self completing thus dispensing with the need to send "OVER" after the "EXCUSED."

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4. THE MESSAGE EXCHANGE

The primary business on directed traffic nets is to move traffic (although some special nets may also interweave social exchanges between traffic dispatches, etc.).

In the following examples, RX is the receiving station, TX the sender. Unless instructed otherwise the sending station passes all the dispatched traffic with only the customary listening pauses. Fills may be requested at those pauses. Thus a series of singles and/or booked messages is sent continuously with only listening pauses for fills and then the entire series is acknowledged at the end. When finished the receiving station clears any remaining fills and then acknowledges all the traffic with a "ROGER" and ID at the end.

Items in parentheses ( ) are completed by the station sending. Items in brackets [] are optional.

MESSAGE EXCHANGE, TWO STATIONS ON AND OFF NET

ON NET: RX addressed first by NCS:

NCS: **"W3RX W3TX HERE PODUNK 2"**
RX: **"[W3TX W3RX] READY TO COPY"** (Note: The RX station at this point may omit the "Ready to Copy" to force the TX station to ask "Ready to Copy?" This may be done if the RX station is not sure if it can hear the TX station well.)
TX: **"number...** (voices message 1) ... **end one more"** (listening pause for fills)
TX: **"number...** (voices message 2) ... **end no more"**
RX: **"ROGER [73] W3RX"**
TX: **"[THANKS 73] W3TX";** and the NCS resumes control.

Or, **TX first** (used when the RX may not be hearing the NCS well):

NCS: **"W3TX W3RX HERE PODUNK 2"**
TX: **"[W3RX W3TX] READY TO COPY?"**
RX: **"[W3RX] READY TO COPY"**
TX: **"number...** (voices message 1) ... **end one more"** (listening pause for fills)
TX: **"number...** (voices message 2) ... **end no more"**
RX: **"ROGER [73] W3RX"**
TX: **"[THANKS 73] W3TX";** and the NCS resumes control.

OFF NET, TWO STATIONS, moving to a "stack" frequency.

The RX station checks the frequency and initiates the call to establish the stack frequency. If the assigned frequency is busy the RX station moves in a direction away from the net to the first available clear frequency to initiate the stack (except when using FM repeaters).

NCS: **"W3RX W3TX [FREQUENCY] PODUNK 2"**
RX: **"RX GOING"**
TX: **"TX GOING"** (acknowledging in the order dispatched), and at the stack:
RX: **"IS THE FREQUENCY IN USE?"…** then **"W3TX W3RX READY TO COPY"** (Note: As above, the RX station may omit the "Ready to Copy" to force the TX station to ask in cases where the RX station is not sure it can copy the TX station.)
TX: **"[W3TX] number...** (voices message 1) **... end one more"** (listening pause for fills)
TX: **"number...** (voices message 2) **... end no more"**

RX: **“ROGER [73] W3RX”**
TX: **“[THANKS 73] W3TX”** (Both stations pause for a moment on frequency. Other stations may have been dispatched to the stack to call one of the two for additional exchanges. A missed connection can cause a lot of wasted net time. If no calls are heard in a few seconds, both stations return to the net.)

ON OR OFF NET:

- If TX is operating “Listening Between Groups,” all messages are sent continuously. The receiving station may interrupt at any time for repeats. The RX station acknowledges all the messages after they have all been sent.
- If not operating “Listening Between Groups,” the TX station pauses to listen for fills or interruptions after each “break” beginning a text and after the “break” before each book variable Number. If there are no fills required, there is no response from the RX station until acknowledgment after all messages have been sent.
- Note that “OVER” is not needed during the exchanges. The syntax of the exchange activity is self completing, the “OVER” being implied.

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RETURNING TO THE NET

FAILURE	If the stations fail to make contact within about half a minute or are unable to complete the assigned exchanges:
STN	Check back into the net by voicing “**(full call sign) no joy**”, “**(full call sign) no (suffix)**”, “**(full call sign) lost (suffix)**”, etc., if the assignment failed. An explanation may be added, or the NCS will ask for one.

SUCCESS	If the stations complete the assigned exchanges:
STN	Check back into the net by voicing “**(call sign suffix) back**” if the assignment was completed. NCS will acknowledge the return by simply repeating the suffix. * It is also the responsibility of all stations involved in off-net exchanges to advise the net control of any correction in the number of messages passed, and of the TX station to re-list with the NCS any messages not passed.
LIAISONS	Liaisons returning from other nets check back in by voicing “**(full call sign) from (net name)**” followed by either **“no traffic”** or **“with traffic.”** In the later case the NCS will ask the station to “LIST” its traffic.

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WORDS FOR THE NET, INFORMAL ANNOUNCEMENTS

NCS: **W3TX WORDS FOR THE NET, or W3TX YOUR ANNOUNCEMENT**
The NCS needs to dispatch such words when all stations are on the net frequency. The polling of stations is usually dispensed with.
TX: **ALL STATIONS... (sends words)... W3TX**
Either the NCS or the TX station should ask if there are any fills required or any stations wishing to respond to a query in the words.
NCS: Resumes the net after fills.

FORMAL MESSAGE TO ALL NET STATIONS ON NET

- The QNC process is similar to the Bulletin process below except the formal message is for all net stations to copy.

NCS: Either the NCS or the TX station must poll all net stations Ready to Copy.
W3TX MESSAGE TO ALL STATIONS
TX: **[W3TX] ALL STATIONS COPY number** … (sends message) ... **end no more**
Either the NCS or the TX station must poll all net stations for **fills** and a **“ROGER”** on the message - a formal radiogram as opposed to transmitting informal words to all stations on the net. After acknowledgments, TX signs, **W3TX**.
NCS: Resumes the net.

BULLETIN(S) TO MULTIPLE STATIONS, ON AND OFF NET

BULLETINS: Bulletins are a book of message(s) with **one message number** addressed to multiple recipients such as all American Red Cross liaisons or EOCs, etc. The TX station assumes the roll of NCS on the net or stack frequency.

- RED items are for use off net. If the traffic is dispatched on net FREQ becomes HERE.
- The TX station checks the frequency and initiates the call to establish the stack frequency. If the assigned frequency is busy the TX station moves in a direction away from the net to the first available clear frequency to initiate the stack. The TX station assumes the roll of NCS on the frequency.
- Items in parentheses ( ) are completed by the station sending. Items in brackets [] are optional.

NCS: "**W3TX (full calls of RX1, RX2, etc.) (FREQ) (BULLETIN)**"
TX: "**TX GOING**";
RX #s: "**RX1 GOING;**" "**RX2 GOING;**" etc., in the order dispatched;
TX: "**IS THE FREQUENCY IN USE?**"… then:
"(RX 1) ready to copy?" (suffixes or tactical call signs may be used)
RX1 **"ready"**
TX: **"(RX 2) ready to copy?"**
RX2 **"ready"** (TX polls until all RX stations ready.)
TX: "**[W3TX] number...** (voices message) ... **end no more**" (Multiple messages to the same addressee list may be transmitted in sequence.)
TX: **"(RX 1)?"** (suffixes or tactical call signs may be used)
RX1 **"ROGER (full call sign)"**
TX: **"(RX 2)?"**
RX2 **"ROGER (full call sign)"** (TX polls until all RX stations acknowledge*.)
TX: **"[THANKS 73] W3TX"** Fills may be settled with each recipient station as it is polled at the conclusion of the transmission sequence.

- It is the responsibility of the TX station to note which addressed recipients received the message(s) and for servicing back to the originator any messages not delivered to the intended recipient list.
- If no calls are heard all stations return to the net. (Other stations may be dispatched to the stack to call one of the stations involved for additional exchanges.)
- It is also the responsibility of all stations involved in off-net exchanges to advise the net control of any correction in the number of messages passed, and of the TX station to re-list with the NCS any messages not passed.

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BOOK TO MULTIPLE STATIONS, ON AND OFF NET

Common parts to all stations, **variable parts to different receiving stations**. This also includes bulletins with variable message numbers for each recipient station. The NCS has already assigned the messages to a specific list of recipients following the listing process. The TX station should make note of the call signs assigned to receive each particular address target, ask the NCS which stations will take each target address, or the NCS may indicate the target addresses to be taken by the stations during the dispatch sequence. This example shows a book for two stations. Each recipient, however, may be sent multiple variable message parts and there may be more than two recipient stations. Off net the TX station finds the clear frequency, or moves as indicated above for two stations off net to a stack, initiates the stack and calls the RX stations.

- RED items are for use off net. If the traffic is dispatched on net FREQ becomes HERE.
- The TX station checks the frequency and initiates the call to establish the stack frequency. If the assigned frequency is busy the TX station moves in a direction away from the net to the first available clear frequency to initiate the stack. The TX station assumes the roll of NCS on the net frequency.
- Items in parentheses ( ) are completed by the station sending. Items in brackets [] are optional.

NCS:

"W3TX (full calls of RX1, RX2, etc.) (FREQ) BOOK [OF TWO];" or
"W3TX (full calls of RX1 [address(es)], **RX2** [address(es)], **etc.) (FREQ) BOOK [OF TWO]"**;

TX: **"TX GOING";**

RX #s: **"RX1 GOING;" "RX2 GOING;"** etc., in the order dispatched; and at the stack:

TX: **"IS THE FREQUENCY IN USE?"**… then:
"(RX 1) ready to copy?" (tactical call signs may also be used)

RX1 **"ready"**

TX: **"(RX 2) ready to copy?"**

RX2 **"ready"** (TX polls until all RX stations ready.)

TX: **"(W3TX) book of [TWO]** (voices common parts) ... **break"**
(Any of the RX stations may break here for a fill if needed.)

TX: **"(RX1)"** (TX voices message number(s) and variable part(s) for RX1), then:
"break (RX1)?" (Signal for RX1 to settle fills and acknowledge message(s).)

RX1: **"ROGER (full call sign)"** (RX1 is now excused from the stack and returns to net.)

TX: **(RX2)** (TX voices message number(s) and variable part(s) for RX2) **end book no more"**, then:
(RX2)? (signal for RX2 to settle fills and acknowledge message(s));

RX2: **"ROGER (full call sign)"**

TX: **"[THANKS 73] W3TX"**

- If no calls are heard the last two stations return to the net. (Other stations may be dispatched to the stack to call one of the two for additional exchanges.)
- It is also the responsibility of all stations involved in off-net exchanges to advise the net control of any correction in the number of messages passed, and of the TX station to re-list with the NCS any messages not passed.

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5. ARRL NUMBERED RADIOGRAMS

ARRL NUMBERED RADIOGRAMS

Group One -- For Possible "Relief Emergency" Use

ONE	Everyone safe here. Please don't worry
TWO	Coming home as soon as possible.
THREE	Am in _____ hospital. Receiving excellent care.
FOUR	Only slight property damage here. Do not be concerned about disaster reports.
FIVE	Am moving to new location. Send no further mail or communication. Will inform you of new address when relocated.
SIX	Will contact you as soon as possible.
SEVEN	Please reply by Amateur Radio through the amateur delivering this message. This is a free public service.
EIGHT	Need additional _____ mobile or portable equipment for immediate emergency use.
NINE	Additional _____ radio operators needed to assist with emergency at this location.
TEN	Please contact _____. Advise to standby and provide further emergency information, instructions, or assistance.
ELEVEN	Establish Amateur Radio emergency communications with _____ on _____ MHz.
TWELVE	Anxious to hear from you. No word in some time. Please contact me as soon as possible.
THIRTEEN	Medical emergency situation exists here.
FOURTEEN	Situation here becoming critical. Losses
TWENTY THREE	Report at once the accessibility and best way to reach your location.
TWENTY FOUR	Evacuation of residents from this area urgently needed. Advise plans for help.
TWENTY FIVE	Furnish as soon as possible the weather conditions at your location.
TWENTY SIX	Help and care for evacuation of sick and injured from this location needed at once.

Emergency/priority messages originating from official sources must carry the signature of the originating official.

Group Two -- Routine Messages

FORTY SIX	Greetings on your birthday and best wishes for many more to come.
FORTY SEVEN	Reference your message number ____ to _____ delivered on ____ at ____ UTC.
FIFTY	Greetings by Amateur Radio.
FIFTY ONE	Greetings by Amateur Radio. This message is sent as a free public service by ham radio operators here at _____. Am having a wonderful time.
FIFTY TWO	Really enjoyed being with you. Looking forward to getting together again.
FIFTY THREE	Received your _____. It's appreciated; many thanks.
FIFTY FOUR	Many thanks for your good wishes.
FIFTY FIVE	Good news is always welcome. Very delighted to hear about yours.
FIFTY SIX	Congratulations on your _____, a most worthy and deserved achievement.
FIFTY SEVEN	Wish we could be together.
FIFTY EIGHT	Have a wonderful time. Let us know when you return.
FIFTY NINE	Congratulations on the new arrival. Hope mother and child are well.

	and damage from _____ increasing
FIFTEEN	Please advise your condition and what help is needed.
SIXTEEN	Property damage very severe in this area.
SEVENTEEN	REACT communications services also available. Establish REACT communication with _____ on channel _____.
EIGHTEEN	Please contact me as soon as possible at _____.
NINETEEN	Request health and welfare report on _____. (State name, address and telephone number.)
TWENTY	Temporarily stranded. Will need some assistance. Please contact me at _____.
TWENTY ONE	Search and Rescue assistance is needed by local authorities here. Advise availability.
TWENTY TWO	Need accurate information on the extent and type of conditions now existing at your location. Please furnish this information and reply without delay.
* SIXTY	Wishing you the best of everything on _____.
SIXTY ONE	Wishing you a very Merry Christmas and a Happy New Year.
* SIXTY TWO	Greetings and best wishes to you for a pleasant _____ holiday season.
SIXTY THREE	Victory or defeat, our best wishes are with you.
SIXTY FOUR	Arrived safely at _____.
SIXTY FIVE	Arriving _____ on _____. Please arrange to meet me there.
SIXTY SIX	DX QSLs are on hand for you at the _____ QSL Bureau. Send _____ self addressed envelopes.
SIXTY SEVEN	Your message number ___ undeliverable because of _____. Please advise.
SIXTY EIGHT	Sorry to hear you are ill. Best wishes for a speedy recovery.
SIXTY NINE	Welcome to the _____. We are glad to have you with us and hope you will enjoy the fun and fellowship of the organization.

* can be used for all holidays

ARL NUMBERS SHOULD BE SPELLED OUT AT ALL TIMES.

From ARRL FSD-3 (mod 5/05)

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