

7: Basic Message Handling Part I

Learning Unit 7

Basic Message Handling Part I

Objective:

This lesson is intended to provide basic knowledge for both formal and informal message handling, but is not intended to make you an "expert". Further study and practice on your own will be necessary. Level II of this course provides more advanced information on net operations and message handling.

Student Preparation Required:

None

Information:

Consider the following scenario: There are 330 hurricane evacuees in a Red Cross shelter. ARES is providing communications, working in 12-hour shifts. An elderly diabetic woman is brought in at 1400 hours. She will require her next dose of insulin by 2300 hours. The manager goes to the radio room. There is an operator wearing a red baseball hat with funny numbers and letters on it. He asks the operator to inform the county EOC of the medication need. The operator calls the Red Cross EOC and says, "Hey, we have a diabetic lady here who will need insulin by 2300 hours", but doesn't write the message down or log the request.

At 2030 hours the medication has still not been delivered. The shelter manager goes to the radio room to inquire about its status. There is now a different person with a blue baseball cap with a new set of funny letters and numbers. He knows nothing of the earlier request, but promises to "check on it". In the meantime, EOC personnel have discarded the message because it was written on a scrap of paper and had no signature authorizing the order for medication. No one sent a return message requesting authorization.

If each operator had generated and properly logged a formal message, with an authorized signature, it would be a relatively simple matter to track. The informal message has no tracks to follow. Also, by sending a formal message, you are nearly guaranteeing that the receiving station will write it down properly (with a signature) and log it, greatly enhancing its chances of being delivered intact.

Formal vs. Informal Messages

Both formal (written in a specific format) and informal (usually verbal) messages have their place in emergency communication. In general, informal messages are best used for non-critical and simple messages, or messages that require immediate action, those are delivered directly from the author to the recipient. Formal messages are more appropriate when two or more people will handle them before reaching the recipient, or where the contents are critical or contain important details. The most common formal message format is that used by ARRL's NTS, discussed below.


Informal Verbal Messages

Some emergency messages are best sent informally in the interest of saving precious seconds. If you need an ambulance for a severely bleeding victim, you do not have time to compose and

send a formal message. The resulting delay could cause the death of the patient. Other messages do not require a formal written message because they have little value beyond the moment. Letting the net control station know where you are or when you will arrive need not be formal. The message is going directly to its recipient, is simple and clear, and has little detail. Many of the messages handled on a tactical net fit this description.

Formal Written Message Formats

A standard written message format is used so that everyone knows what to expect. This increases the speed and accuracy with which you can handle messages. The ARRL/NTS message form, or "Radiogram", is a standard format used for passing messages on various nets, and is required for all messages sent through the National Traffic System. While this format may not be perfect for all applications, it serves as a baseline that can be readily adapted for use within a specific served agency. Regular practice with creating and sending messages in any standard format is recommended.



**The American Radio Relay League
RADIOGRAM
Via Amateur Radio**

Number 207	Precedence P	HX E	Station of Origin W1FN	Check 10	Place of Origin LEBANON NH	Time Filed 1200 EST	Date JAN 4
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To: **MARK DOE
RED CROSS DISASTER OFFICE
123 MAIN ST
RUTLAND VT 05701**

Telephone Number: **802-555-1212**

This Radio Message was received at:

Amateur Station _____ Date _____

Name _____

Street Address _____

City, State, Zip _____

NEED	MORE	COTS	AND	SANITATION
KITS	AT	ALL	FIVE	SHELTERS
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

JOAN SMITH SHELTER MANAGER

REC'D	From	Date	Time	SENT	To	Date	Time
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A licensed Amateur Radio Operator, whose address is shown above, handled this message free of charge. As such messages are handled solely for the pleasure of operating, a "Ham" Operator can accept no compensation. A return message may be filed with the "Ham" delivering this message to you. Further information on Amateur Radio may be obtained from ARRL Headquarters, 225, Main Street, Newington, CT 06111.

The American Radio Relay League, Inc. is the National Membership Society of licensed radio amateurs and the publisher of QST Magazine. One of its functions is promotion of public service communication among Amateur Operators. To that end, The League has organized the National Traffic System for daily nationwide message handling.

Components of a Standard ARRL/NTS Radiogram:

The standard Radiogram format is familiar to most hams from the pads of yellow-green forms available from ARRL Headquarters. The form has places for the following information:

1. The "Preamble", sometimes referred to as "the header", consists of administrative data such as the message number, originating station, message precedence (importance) and date and time of origination. The combination of the message number and the originating station serves as a unique message identifier, which can be traced if necessary. We will discuss the Preamble in greater detail below.

2. The "Address" includes the name, street address or P.O. box, city, state, and ZIP of the recipient. The address should also include the telephone number with area code since many Radiograms are ultimately delivered with a local phone call.

3. The "Text" of the message should be brief and to the point, limited to 25 words or less when possible. The text should be written in lines of five words (ten if using a keyboard) to make it easier and faster to count them for the "check." Care should be taken to avoid contractions, as the apostrophe is not used in CW. If a word is sent without the apostrophe, its meaning could be lost or changed. The contraction for "I will" (I'll) has a very different meaning when sent without the apostrophe! Contractions are also difficult to understand when sent by phone, especially in poor conditions. Commas and other punctuation are also not used in formal messages. Where needed, the "period" can be sent as an "X" in CW and digital modes, and spoken as "X-RAY." The "X" may be used to separate phrases or sentences but should be used only when the message would not be clear without it, and never at the end of the text. Question marks can be used as needed, and are usually spoken as "question mark", and sometimes as "query".

4. The "Signature" can be a single name, a name and call sign, a name and a title, "Mom and Dad", and occasionally a return address and phone number -- whatever is needed to ensure that the recipient can identify the sender and that a reply message can be sent if necessary.

Details of the Preamble:

The preamble or "header" is the section of the ARRL/NTS message form where all the administrative details of the message are recorded. There are eight sections or "blocks" in the preamble. Two of them, "time filed" and "handling instructions", are optional for most messages.

Block #1 - Message Number:

This is any number assigned by the station that first puts the message into NTS format. While any alphanumeric combination is acceptable, a common practice is to use a numeric sequence starting with the number "1" at the beginning of the emergency operation. Stations who are involved in year-round message handling may start numbering at the beginning of each year or each month.

Block #2 - Precedence:

The precedence tells everyone the relative urgency of a message. In most cases, a single letter abbreviation is sent with CW or digital modes. On phone, the entire word is always spoken.

Within the ARRL/NTS format, there are four levels of precedence:

Routine -- abbreviated with the letter "R". Most Amateur traffic is handled using this precedence - it is for all traffic that does not meet the requirements for a higher precedence. In a disaster situation, routine messages are seldom sent.

Welfare -- abbreviated as "W". Used for an inquiry as to the health and welfare of an individual in a disaster area, or a message from a disaster victim to friends or family.

Priority -- abbreviated as "P". For important messages with a time limit; official messages not covered by the EMERGENCY precedence or a notification of death or injury in a disaster area. This precedence is usually associated with official traffic to, from, or related to a disaster area.

EMERGENCY -- there is no abbreviation -- the word EMERGENCY is always spelled out. Use this for any message having life or death urgency. This includes official

messages of welfare agencies requesting critical supplies or assistance during emergencies, or other official instructions to provide aid or relief in a disaster area. The use of this precedence should generally be limited to traffic originated and signed by authorized agency officials. *Due to the lack of privacy on radio, EMERGENCY messages should only be sent via Amateur Radio when regular communication facilities are unavailable.*

Block #3 - Handling Instructions:

This is an optional field used at the discretion of the originating station. The seven standard HX pro-signs are:

HXA -- (Followed by number.) "Collect" telephone delivery authorized by addressee within (X) miles. If no number is sent, authorization is unlimited.

HXB -- (Followed by number.) Cancel message if not delivered within (X) hours of filing time; service (notify) originating station.

HXC -- Report date and "time of delivery" (TOD) to originating station.

HXD -- Report to originating station the identity of the station who delivered the message, plus date, time and method of delivery. Also, each station to report identity of station to which relayed, plus date and time.

HXE -- Delivering station to get and send reply from addressee.

HXF -- (Followed by date in numbers.) Hold delivery until (specify date).

HXG -- Delivery by mail or telephone - toll call not required. If toll or other expense involved, cancel message, and send service message to originating station.

If more than one HX pro-sign is used, they can be combined like this: HXAC. However, if numbers are used the HX must be repeated each time. On voice, use phonetics for the letter or letters following the HX to ensure accuracy, as in "HX Alpha."

Block #4 - Station of Origin:

This is the FCC call sign of the first station that put the message into NTS format. It is not the message's original author. For instance, you are the radio operator for a Red Cross shelter. The fire station down the street sends a runner with a message to be passed and you format and send the message. You are the "Station of Origin", and fire station is the "Place of Origin", which will be listed in Block 6.

Block #5 - The Check:

The "check" is the number of words in the *text section only*. Include any "periods" (written as "X," spoken as "X-Ray"). The preamble, address and signature are not included. After receiving a message, traffic handlers count the words in the message and compare the word count to the "check" number in the preamble. If the two numbers do not agree, the message should be re-read by the sending station to verify that all words were copied correctly. If the message was copied correctly and an error in the check number exists, do not replace the old count with the new count. Instead, update the count by adding a "slash" followed by the new count. For example, if the old count was five, and the correct count was six, change the check to "5/6". For more information on counting words and numbers for the check, [follow this link](#).

Block #6 - Place of Origin:

This is the community or building where the originator of the message is located, whether a ham or not. This is not the location of the station that first handled the message, which is listed in

Block 4, "Station of Origin".

Block #7 - Time Filed:

This is an optional field, unless "Handling Instruction Bravo" (HXB) is used. HXB means "cancel if not delivered within X hours of filing time." Unless the message is time sensitive, this field may be left blank for routine messages, but completing the time field is generally recommended. Many hams use Universal Coordinated Time (UTC) for messages and logging. During emergencies, it is better to use local time and indicators such as PST or EDT to eliminate confusion by emergency management personnel.

Block #8 - Date:

This is the date the message was first placed into the traffic system. Be sure to use the same date as the time zone indicated in Block 7.

Header Examples:

This is how a complete header might look for a CW or digital message:

NR207 P HXE W1FN 10 LEBANON NH 1200 EST JAN 4

This is how the same header would be spoken:

"Number two zero seven Priority HX Echo Whiskey One Foxtrot November One Zero Lebanon NH One Two Zero Zero EST January four."

A brief pause is made between each block to help the receiving station separate the information.

Pro-Words and Pro-Signs:

When sending formal traffic, standard "pro-words" or "pro-signs" (CW) are used to begin or end parts of the message, and to ask for portions of the message to be repeated. In addition to adding clarity, the use of standard pro-words and pro-signs saves considerable time.

Some pro-words and pro-signs tell the receiving station what to expect next in the address, text, and signature portions of the message -- they are *not* used while reading the header, since the header follows a pre-determined format. Examples of commonly used pro-words are, "figures" sent before a group consisting of all numerals, "initial" to indicate that a single letter will follow, or "break" to signal the transition between the address and the text, and the text and the signature.

MESSAGE HANDLING PRO-WORDS, PROSIGNS AND ABBREVIATIONS

Pro-Word	Pro-Sign	Meaning or Example
BREAK	BT *	Separates address from text and text from signature.
CORRECTIO	HH *	"I am going to correct an error."
END	AR *	End of message.
MORE	B	Additional messages to follow.
NO MORE	N	No additional messages. In CW can also mean "negative"
FIGURES	Not needed	Used before a word group consisting of all numerals.
INITIAL	Not needed	Used to indicate a single letter will follow.

I SAY AGAIN	IMI *	Used to indicate a repeat of a word or phrase will follow.
I SPELL	Not needed	"I am going to spell a word phonetically."
LETTER	Not needed	Several letters together in a group will follow. Example:
MIXED	Not needed	Letters and numbers combined in a group will follow.
X-RAY	X	Used to indicate end of sentence, as with a "period."
BREAK	BK *	Break; break-in; interrupt current transmission on CW
CORRECT	C	Correct, yes
CONFIRM	CFM	Confirm (please check me on this)
THIS IS	DE	Used preceding identification of your station
HX	HX	Handling instructions, single letter to follow -- optional part
GO AHEAD	K	Invitation for specific station to transmit
ROGER	R	Message understood. In CW, may be used for decimal
When receiving formal traffic, the following pro-words, always preceded by "Say Again", are used to ask for clarification or repeats of missing words.		
WORD	WA	"Say again word after..."
WORD	WB	"Say again word before..."
BETWEEN	-	"Say again between...and"
ALL AFTER	AA *	"Say again all after..."
ALL BEFORE	AB	"Say again all before..."

<p>* <i>Two letters are sent as one character.</i> Additional CW abbreviations are covered in a later Learning Unit.</p>		
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Sending a Message with Voice: When the receiving station is ready to copy, read the message at a pace that will allow the receiving station to write it down. If the receiving station has missed any portion of the message, they will say, "say again all after ____" or "say again all between ____ and ____." In some nets, the practice is to un-key after saying "break" between sections of the message so that a station can ask for missing words to be repeated (these repeated words are also known as "fills"). In many nets the entire message is read first before any fills are requested. All numbers are spoken individually, as in "three two one five", not "thirty-two fifteen", or "three thousand two hundred and five".

Here is the entire message as it would be spoken:
"Number two zero seven Priority HX Echo Whiskey One Foxtrot November
One Zero Lebanon NH one two zero zero EST January four.
Mark Doe
Red Cross Disaster Office
Figures one two three Main Street
Rutland VT figures zero five seven zero one
Figures eight zero two five five five one two one two
Break
Need more cots and sanitation kits at all five shelters
Break
Joan Smith Shelter Manager
End No more"

Time Savers

What NOT to say:
When passing formal traffic, do not add unnecessary words. Since the parts of the header are always sent in the same order, there is no need to identify them. Here is an example of how *not* to read the header of a message on the air:
"Number two zero seven Priority HX Echo station of origin W1FN
check one zero time one two zero zero EST Lebanon NH January 4
Going to Mark Doe Red Cross Disaster Office
Address figures one two three Main Street Rutland VT
ZIP figures zero five seven zero one
Telephone Figures eight zero two five five five one two one two"

This example added nine unneeded words to the message, including "station of origin," "check",

"time", "going to", "address", "ZIP", and "telephone". If there is something about the message that deviates from the standard format, or if an inexperienced operator is copying the message without a pre-printed form, then some additional description may be necessary, but in most cases it just wastes time. (The pro-word "figures" is used correctly, and "number" is always spoken before the message number.)

Reference links:

- For a **list of ARES and NTS nets** in your area, see [The ARRL Net Directory](#)
- For a detailed discussion of the **FCC Rules on emergency and third party communications**, please see the ARRL *FCC Rule Book*, Chapter 5.
- [Precedences and handling instructions](#) -- ARRL web site
- [NTS and ARES forms](#) -- NTS message blanks, instructions, etc - ARRL web site
- [FSD218 Message Form Card](#) (also known as the "Pink Card")

Review:

Formal messages are more likely to be delivered intact than verbal comments. Using a standard format for formal messages makes it easier and faster for both sending and receiving stations to handle.