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Topic 14

Basic Message Handling and Documentation

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Objectives

Welcome to Topic 14.

This topic is intended to provide you with basic knowledge for both formal and informal message handling, but it is not intended to make you an "expert." Further study and practice on your own will be necessary.

Student Preparation required:

None.

Introduction

If an 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 Versus Informal Messages

Both formal and informal messages have their place in emergency communications. In general, *informal messages* are best when the content is non-critical and simple, or when they 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 they reach the recipient, or when the contents are critical or contain important details. Common formal message formats used by ARRL's National Traffic System (NTS) will be discussed here.

Informal Oral 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 patient's death. Other messages do not require a formal written message because they have little value beyond the moment. Letting the Net Control Station (NCS) 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.

Informal Written Messages

When we send a written message, we do it to preserve accuracy, no matter how many people pass the message along. It may be that informal or "tactical" messages are not written out in ARRL format, or not written at all. However, this does not mean that accuracy is any less important. If someone gives you a short message to relay to someone else, you should repeat it as closely to the original as possible. Messages that will be relayed more than once should always be sent in a standard format to prevent multiple modifications that may affect the meaning.

Here is an example of what might happen if you are not careful to maintain the precise meaning of the original message:

> The original message says: "The shelter manager says she needs 50 cots and blankets at Hartley Hill School by tonight."

> The message, after being passed through several people, says: "He says they need a bunch more cots and blankets at that school on the hill."

Message Handling Rules

Do not speculate on anything relating to an emergency! There may be hundreds of people listening to what you say (other amateurs, the media, and the general public using scanners), and any incorrect information could cause serious problems for the partners or others. You do not want to be the source of any rumor. If your partner requests an estimate, you can provide that information as long as you make it very clear that it is only an estimate. For example, "The estimated number of homes damaged is 12," would be an acceptable thing to say.

Pass messages exactly as they have been written or spoken. Even more important than speed is accuracy; your job as a communicator is to deliver each message as accurately as possible. Therefore, you must not change any message as you handle it. If it is longer than you would like, you must send it anyway. Seemingly misspelled words or confusing text must be sent exactly as received. Only the original author may make changes. If you note an inaccurate word count in an NTS format message, you must maintain the original count and follow it with the actual count received at your station, i.e., "12/11."

Some volunteers wonder whether they should return a confusing or incorrect-seeming message to the author before first sending it. This is a judgment call. If the apparent error will affect the meaning of the message and the author can be contacted easily, checking with the author is probably a good idea. Whenever possible, it is a good practice to read each message carefully in the presence of the author before accepting it. This way, potential errors or misunderstandings can be corrected before the message is sent.

Formal Written Message Formats

A standard written message format is used so everyone knows what to expect. This increases the speed and accuracy with which you can handle messages. Two message formats, FEMA Incident Command System (ICS) form ICS 213 and ARRL's message form, or "Radiogram," are used for passing messages on various nets and are required for all messages sent through the National Traffic System. While these formats may not be perfect for all applications, they serve as a baseline that can be readily adapted for use by specific partners. Regular practice with creating and sending messages in any format is recommended.

Modified Message Form for Disasters

While ARRL format messages can handle many different types of information flow, the requirements for formats may be unique to an individual partner or type of emergency. Your emergency communications group should work with each partner before the emergency to see which format will best fulfill their needs. A good example is the popular ICS form ICS 213, which is used by most government agencies.

ICS 213 General Message

Purpose: The General Message (ICS 213) is used to record incoming messages that cannot be orally transmitted to the intended recipients. The ICS 213 is also used by the Incident Command Post and other incident personnel to transmit messages (e.g., resource order, incident name change, other ICS coordination issues) to the Incident Communications Center for transmission via radio or telephone to the addressee. This form is used to send any message or notification that requires hard-copy delivery to incident personnel.

Preparation: The ICS 213 may be initiated by incident dispatchers and any other personnel on an incident.

Distribution: Upon completion, the ICS 213 may be delivered to the addressee and/or delivered to the Incident Communications Center for transmission.

Instructions for completing the ICS-213 can be found at **www.fema.gov/media-library/assets/documents/33548**

Example of an ICS 213

GENERAL MESSAGE (ICS 213)

1. Incident Name (Optional):		
2. To (Name and Position):		
3. From (Name and Position):		
4. Subject:	5. Date:	6. Time

7. Message:

8. Approved by: Name: _____ Signature: _____ Position/Title: _____

9. Reply:

10. Replied by: Name: _____ Position/Title: _____ Signature: _____

ICS 213	Date/Time: _____

1	**Incident Name** (Optional)	Enter the name assigned to the incident. This block is optional.
2	**To** (Name and Position)	Enter the name and position for which the General Message is intended. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
3	**From** (Name and Position)	Enter the name and position of the individual sending the General Message. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
4	**Subject**	Enter the subject of the message.
5	**Date**	Enter the date (month/day/year) of the message.
6	**Time**	Enter the time (using the 24-hour clock) of the message.
7	**Message**	Enter the content of the message. Try to be as concise as possible. Here you can also include Amateur Radio-specific "Radiogram" number, Precedence, Handling Instructions, check, etc.
8	**Approved by** • Name • Signature • Position/Title	Enter the name, signature, and ICS position/title of the person approving the message.
9	**Reply**	The intended recipient will enter a reply to the message and return it to the originator.
10	**Replied by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person replying to the message. Enter date (month/day/year) and time prepared (24- hour clock).

Non-Standard Format Messages

Much of the tactical information being passed during a major emergency will not be in ARRL format. It may have much of the same information but will be in a non-amateur format or no format at all. These messages should also be passed exactly as received. If necessary, use the ARRL format and place the entire non-amateur message in the "message" section of the ICS 213.

A Reminder of the Importance of the Signature

During an emergency, the messages you handle can easily contain requests for expensive supplies that have a very limited "shelf life" (such as blood for a field hospital), or for agencies that will only respond to properly authorized requests (i.e., for medevac helicopters). For this reason, it is critical that you include the signature and title of the sender in every message.

Service Messages

A *service message* is one that lets the originating station know the status of a message they have sent. A service message may be requested by a handling instruction (HX) or may be sent by any operator who has a problem delivering an important message. During emergencies, service messages should only be sent for priority and emergency messages.

Logging and Record-Keeping

The ICS 214 is an increasingly popular method for logging. It maintains an accurate record of formal messages handled and various aspects of your station's operation that can be very useful later, and in some cases, it is required by law. Lost or misdirected messages can be tracked down later, and a critique of the operation afterwards can be more accurate. All logs should include enough detail to be meaningful later on, especially the date and an accurate time. With some agencies, your log becomes a legal document and may be needed at some later time should an investigation occur. In this case, logs should be completed and turned in to the appropriate person for safekeeping and review.

ICS 214 Activity Log

Purpose: The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, task forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation: An ICS 214 can be initiated and maintained by personnel in various ICS positions as needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution: Completed ICS 214s are submitted to supervisors who forward them to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Example of an ICS 214

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period: Date From: _____ Date To: _____ Time From: _____ Time To: _____	
3. Name:	4. ICS Position:	5. Home Agency (and Unit):

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: _____ Position/Title: _____ Signature: _____
ICS 214, Page 1	Date/Time: _____

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To,"
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

What to Log

Log all incoming and outgoing messages. Record the name of the sender, addressee, the station that passed the message to you, the station to whom the message was sent, the message number, and the times in and out. Keep the written copy of each message in numerical order for future reference.

Also, log which operators are on duty for any given period and record any significant events at your station. These might include changes in conditions, power failures, meals, new arrivals and departures, equipment failures, and so on.

In addition to the log, copies of all messages should be kept and catalogued for easy retrieval if needed later for clarification or message tracking. Many operators make notes about when the message was received and sent, as well as to whom and from whom, directly on the message form itself. This helps speed up tracking later on. Never rely on your memory.

Should informal messages be logged? This is usually up to the stations involved and depends on the circumstances. Even informal messages can contain important details that may need to be recalled later. Emergency or priority messages of any kind, even unwritten ones, should always be logged. Some net control operators like to log every message or exchange, no matter how inconsequential. Others like to log only those with potentially important details.

Log Formats

At a station with little traffic, all information can be included in one chronological log. However, if a large number of messages are being handled and you have a second person to handle logging, separate logs can make it faster and easier to locate information if it is needed later. You might keep one log for incoming messages, one for outgoing messages, and a third for station activities. The NCS will also need to keep a log of which operators are assigned to each station, and the times they go on and off duty.

Who Should Log

At the net level, logging can be handled in several ways. If activity is low, the net control operator can handle logging. In busy nets, a second person can keep the log as the net's "secretary" and act as a "second set of ears" for the NCS. The logger can be at the NCS, or they might be listening from a different location.

If an "alternate NCS" station has been appointed, they should keep a duplicate log. If they need to "take over" the net, all the information will be at hand, preserving the continuity of the net.

In addition to logs kept at the net level, each individual operator should keep his or her own log. This will allow faster message tracking and provides duplicate information should one station's logs become lost or damaged.

In a fast-moving tactical net, keeping a log while on the move may be impossible for individual stations. In this case, the Net Control Station may decide to keep one log detailing the various informal messages passed on the network.

Logging is a good position for a trainee with limited experience or an unlicensed volunteer. Two experienced and licensed operators can also alternate between on-air and logging duties to help combat fatigue.

Writing Hints and Techniques for Message Copying and Logging

Your logs should be clear and legible to be of any use. If only you can read your handwriting, the log will be of little value to the operator who takes the next shift, or to the partners as a legal document. Print in neat block letters on lined paper or a preprinted log form. A firm writing surface with support for your forearm will reduce fatigue and improve legibility. Keep both pens and pencils on hand because each works better under different conditions. Logs that will become legal documents should always be written in permanent ink. Some operators prefer special "diver's" pens that will write on wet surfaces at any angle.

Logs should be kept in notebooks to prevent pages from becoming lost. If preprinted log sheets are used, file them in a three-ring binder. If more than one log is kept, each should be in its own notebook to prevent confusion and accidental entries. Logs that will become legal documents should be kept in hard-bound books with prenumbered pages so that missing pages will be obvious.

In fast-moving situations, keeping a log of any kind can be difficult or impossible. If a message, exchange, or event should be logged, try to do it as soon as possible afterwards, or ask the NCS to add it as a notation in his or her log. If there are enough operators to do this, one may be assigned the sole task of logging the net's operations, thus freeing up other net participants to handle messages more quickly.

Message Authoring — Them or Us?

One of the oldest arguments in emergency communications is over the question of whether or not emergency communications personnel should author (create) partner-related official messages. If your job is strictly communication, and the message is not about the communication function you are providing, the best answer is no. "Pure" communicators are not generally in a position to create messages on behalf of the partners. They have no direct authority and usually lack necessary knowledge. However, you should always work with a message's author to create text that is clear and to the point, and that uses the minimum number of words necessary. Once you do this with most partner personnel, they will be happy to send you appropriate messages, since it saves them time, too. If the author tells you to "just take care of the wording for me," it is still a good idea to get their final approval and signature before sending the message.

If you have had additional training for a partner — a specific job that involves message origination, that is quite different from the situation of a "pure" communicator. In this case, you may be able to generate an official message if you have been given the authority to do so.

Other messages that can and should be generated by all emergency communications operators are those that deal solely with communication. Examples would be messages about net operations and frequencies, and requests for relief operators, radio equipment, supplies, food, and water for emergency communications personnel.

Message Security and Privacy

Information transmitted over Amateur Radio can never be totally secure, since FCC rules strictly prohibit us from using any code designed to obscure a message's actual meaning. Anyone listening in with a scanner can hear everything that is said on voice nets. The federal Communications Privacy Act does not protect Amateur Radio communications, and anything overheard may be legally revealed or discussed. Reporters in disaster-prone areas have been known to purchase digital-mode decoding software for laptops in order to intercept ham radio communications during disasters.

However, this does not mean that you can discuss any message you send with others. Messages sent via Amateur Radio should be treated as privileged information and revealed only to those directly involved with sending, handling, or receiving the message. This must be done to offer at least a minimum level of message security. You cannot prevent anyone from listening on a scanner, but you can be sure they do not get the information directly from you.

Your partners should be made aware of this issue and must decide which types of messages can be sent via Amateur Radio and using which modes. The American Red Cross (ARC) has strict rules already in place. In general, any message with personally identifiable information about clients of the partners should be avoided — this is a good policy to follow with any partner, if you are in doubt. Messages relating to the death of any specific person should never be sent via Amateur Radio. Sensitive messages should be sent using telephone, landline fax, courier, or a secure partner radio or data circuit. While we can never guarantee that a message will not be overheard, there are ways to reduce the likelihood of casual listeners picking up your transmissions.

Here are some security ideas: Use a digital mode: packet, PSK31, fax, RTTY, AMTOR, digital phone, etc. Pick an uncommon frequency — stay off regular packet nodes or simplex channels. Do not discuss frequencies or modes to be used openly on voice channels. Avoid publishing certain ARES or RACES net frequencies on websites or in any public documents. Some agencies use a system of "fill in the blank" data gathering forms with numbered lines. To save time on the radio all that is sent is the line number and its contents. A casual listener might hear, "Line 1, 23; line 5, 20%; line 7, zero." The receiving station is just filling in the numbered lines on an identical form. Without the form, a casual listener will not have any real information. As long as encryption is not the primary intent, this practice should not violate FCC rules.

Other Documents

ICS 205 Radio Communications Plan

Purpose: The Incident Radio Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader for use by incident responders.

Preparation: The ICS 205 is prepared by the Communications Unit Leader and given to the Planning Section Chief for inclusion in the Incident Action Plan (IAP).

Distribution: The ICS 205 is duplicated and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit. Information from the ICS 205 is placed on Assignment Lists.

Example of an ICS 205

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:			2. Date/Time Prepared: Date: Time:					3. Operational Period: Date From: Date To: Time From: Time To:		

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader): Name: _____ Signature: _____

ICS 205	IAP Page _____	Date/Time: _____

ICS 201 Incident Briefing

Purpose: The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation: The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander, along with a more detailed oral briefing.

Distribution: Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate.

Instructions for completing an ICS-201 can be found at www.fema.gov/media-library/assets/documents/33512

Example of an ICS 201

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: _____   Position/Title: _____ Signature: _____
ICS 201, Page 1   Date/Time: _____

Components of a Standard ARRL Radiogram

The standard Radiogram format is familiar to most ham radio operators 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.

2. The **Address** includes the name, street address or post office box, city, state, and zip code of the recipient.

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 (10 if using a keyboard) to make it easier and faster to count them for the "check." 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 never at the end of the text. Question marks are spelled out in text and spoken as "question mark," and sometimes as "query." Both the X and question mark should be used only when the meaning of the message would not be clear without them.

4. The **Signature** can be a single name, a name and call sign, a full 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.

The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
207	P	E	W1FN	10	LEBANON NH	1200 EST	JAN 4

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

	From	Date	Time		To	Date	Time
REC'D				SENT			

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.

Details of the Preamble

The preamble or "header" is the section of the ARRL 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 ARRL 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 that are involved in day-to-day 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 all but one case, a single-letter abbreviation is sent with CW or digital modes. On the phone, the entire word is always spoken. Within the ARRL format, there are four levels of precedence:

Routine — Abbreviated as "R." Most day-to-day 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; any official or emergency-related messages not covered by the EMERGENCY precedence. This precedence is usually only 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 from 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 partner 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 prosigns 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 that 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 prosign is used, they can be combined like this: HXAC. However, if numbers are used, such as with HXF, 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 Radiogram format. It is not the message's original author.

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 reread 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."

Block #6 — Place of Origin

This is the name of the community, building, or partner where the originator of the message is located, whether a ham radio operator 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 for Welfare, Priority, and Emergency messages. 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 partner 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. Note that the title of each block is not spoken, with the exception of the word "number" at the beginning, which tells the receiving station that you are beginning the actual message.

The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
207	P	E	W1FN	10	LEBANON NH	1200 EST	JAN 4

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

	From	Date	Time		To	Date	Time
REC'D				SENT			

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.

Prowords and Prosigns

When sending formal traffic, standard "prowords" or prosigns" (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 prowords and prosigns saves considerable time. Some prowords and prosigns 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 prowords are: "figures" sent before a group consisting of all numerals, "initial" to indicate that a single letter will follow, and "break" to signal the transition between the address and the text, and the text and the signature.

Message Handling Prowords, Prosigns, and Abbreviations

Proword	Prosign (CW)	Meaning or Example
BREAK	BT*	Separates address from text and text from signature
CORRECTION	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" or "no"
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 single 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: ARES, SCTN
MIXED GROUP	Not Needed	Letters and numbers combined in a group will follow. Example: 12BA6
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 of preamble
GO AHEAD	K	Invitation for specific station to transmit
ROGER	R	Message understood. In CW, may be used for decimal point in context
WORD AFTER	WA	"Say again word after …"
WORD BEFORE	WB	"Say again word before …"
BETWEEN	-	"Say again between … and …"
ALL AFTER	AA*	Say again all after …"
ALL BEFORE	AB	"Say again all before …"

*Two letters are sent as one character.

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. Once you are done, if the receiving station has missed any portion of the message they will say, "say again all after ____," "say all before," or "say again all between ____ and ____." In some nets, the practice is to say "break" and then unkey between sections of the message so that a station can ask for missing words to be repeated before going on (these repeated words are also known as "fills"). In many nets the entire message is read first before any fills are requested, to save time. All numbers in groups are spoken individually, as in "three two one five," not "thirty-two fifteen" or "three thousand two hundred and five."

Time-Savers

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 each of them. The only exception is the word "number" at the beginning of the header. Here is an example of how not to read the header of a message on the air:

> "Number two zero seven precedence, Priority handling instructions, HX Echo station of origin W1FN check one zero place of origin, Lebanon NH time one two zero zero EST date, 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 many unneeded words to the message, including "station of origin," "check," "time," "going to," "address," "ZIP," and "telephone" and other block titles. If there is something about the message that deviates from the standard format, or if an inexperienced operator is copying the message without a preprinted form, then some additional description may be necessary, but in most cases it just wastes time. (The proword "figures" is used correctly, and "number" is always spoken before the message number.)

Reference Links

ARRL Net Directory
www.arrl.org/arrl-net-directory

ARRL Precedence and Handling Instructions
http://www.arrl.org/files/file/Public%20Service/ARES/ARESmanual2015.pdf

ARES Field Resources Manual
http://www.arrl.org/files/file/Public%20Service/ARES/ARESFieldResourcesManual-2019.pdf

ARES and NTS Forms
www.arrl.org/public-service-field-services-forms

More information on formal message handling and forms
www.arrl.org/files/file/Public%20Service/MPG104A.pdf

Review

Formal messages are more likely to be delivered intact than oral comments. Using a standard format for formal messages makes it easier and faster for both sending and receiving stations to handle. Frequent practice with any formal message format is essential if you are to be able to use it accurately and quickly.

Section 3: The Network for Messages

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TOPIC 15:

Introduction to
The National Traffic System (NTS)

</div>

Objectives

Welcome to Topic 15.

This Learning Topic is designed to offer a basic understanding of NTS and its function during an emergency. After you have completed the topic, you will understand how messages are passed from one location to another, and which nets are involved. You will also know how the NTS is designed to facilitate the timely and orderly flow of messages.

Student Preparation required:

None.

What is the NTS?

The National Traffic System (NTS) is a unique arrangement for handling messages that was designed over 50 years ago. Organized traffic handling was a central purpose of ARRL at its founding in 1914! Its goal is to enable a message to be passed across the continent within 24 hours. NTS does this with a group of specialized nets operating in a "cycle" that allows messages to move smoothly from a local net, to a regional net, to various transcontinental nets, and then back down to regional and local nets at the destination. Ultimately, someone in a local net near the addressee should be able to deliver the message by phone, in person, by mail, or email and even amateur radio. Many NTS messages reach their address by radio, and it should be included as a viable delivery resource.

One of the most important features of the NTS is the "system concept." No NTS net is an independent entity; it interfaces with other NTS nets. Each net performs a specific function in the overall organization. To the extent a net fails to perform any of its functions, it can affect the performance of the overall system. (A net whose exclusive purpose is to pass messages between

its own stations would not be considered part of NTS.)

In the days before inexpensive long-distance telephone, and well before the Internet and email, the NTS was used heavily for routine daily communication between Amateur Radio operators, family, and friends. This daily traffic kept NTS members in practice for handling large volumes of traffic during emergencies and disasters, the ultimate reason for the NTS's existence. Today, routine daily traffic on the NTS is light, and large-scale emergency operations are generally during major disasters with widespread infrastructure damage. However, this does not lessen the importance of the NTS in assisting our served agencies. One of the most important duties of NTS and its benefits to served agencies is "health and welfare" traffic as we will discuss. However use of NTS is dependent to a large degree upon the Partners and their traffic requirements. It is wise to note that not all served agencies will elect to use the NTS system, opting instead to use their own forms, such as during an incident where an ICS-213 form may be required. We must remember the principal that we serve at their pleasure and must employ the format which they direct us to use.

The NTS is not part of ARES, but is a separate and distinct ARRL program. The NTS and ARES work together. Think of the NTS as a "long distance carrier," and of ARES as the "local exchange carrier." This analogy is not perfect, but it is close.

The NTS is not intended as competition for the many independently organized traffic networks. When necessitated by overload or lack of outlet for traffic, the facilities of independent networks can function as alternate traffic routings where this is indicated in the best interest of efficient message relay and/or delivery.

Nets may sometimes find it necessary and expedient to adopt temporary measures to ensure the movement of traffic. This is considered improper operation only when no attempt is made to return to the normal schedule. Nevertheless, improper operation of any NTS net is the concern of all NTS nets, and every effort should be made to assist in returning any non-functioning or improperly functioning net to its normal operation.

> The NTS is not part of ARES, but is a separate and distinct ARRL program. The NTS and ARES work together. Think of the NTS as a "long distance carrier," and of ARES as the "local exchange carrier."

How the NTS Works

The National Traffic System consists of four different levels of nets. These operate in an orderly time sequence to move messages in a definite pattern from origin to destination. A message flows through the NTS in a manner similar to a business-person who travels between two small rural towns at opposite ends of the country. This person has to change carriers many times in the process, starting with a drive to the local airport, then a feeder airline to a major airport, to a transcontinental airline, to another feeder airline, and finally by ground again to the destination.

In a very similar manner, the transcontinental message starts with the originating station in a local net, is carried up to the "Section" net, then up to the "Region" net, then up to the "Area" net, across to another "Area" net, and then back down the line to the point of delivery.

Of course, the message, like the passenger, can "get on" or "get off" at any point if that is the origin or destination. Thus, a message from San Francisco to Los Angeles would not go beyond Region level, and one from Syracuse to Buffalo would remain in the Section net(s). At the local level, messages may be passed into or out of local ARES or other nets for delivery to served agencies, or may be delivered to private citizens directly.

NTS nets may use FM, SSB, CW, and IRLP and VoIP (Voice over Internet Protocol). Messages may also be passed through NTS-affiliated local and Section traffic nodes that employ digital modes such as AMTOR, packet, D-Star, Winlink, PSK-31 and other such new technology modes with store-and-forward capabilities and bulletin-board operations. Long hauls can be made by the NTS digital stations on HF that interface with Section traffic nodes and the traditional nets of the system.

Local Nets

"Local" NTS nets are those that cover small areas such as a town, city, county or metropolitan area, but not a complete ARRL Section. They usually operate on two-meter or 70cm bands at times and on days most convenient to their members. Other nets are designated as "emergency" (ARES) nets that do not specialize in routine traffic handling. These nets generally become active only for training and during emergencies.

Local nets are intended mainly for local delivery of traffic, with a goal of delivery by non-toll telephone calls. They provide outlets for locally originated traffic, and route the incoming traffic as close as possible to its actual destination before delivery.

A local net, or "node", may also be conducted on a local packet system, where messages may be stored, forwarded, and picked up by local operators for subsequent delivery. A Net (Node) Manager is appointed by the Section Traffic Manager to manage these functions, and assure that traffic is moved expeditiously.

Section Nets

The purpose of the "Section" net is to handle messages within the Section, and to handle messages moving to and from the "Region" nets.

Either liaison stations from local NTS nets and nodes, individual stations, or both, handle messages passing within the Region. In most areas, all stations in the Section are invited to take part. However, in a highly populated Section with several metropolitan areas covered by local nets, representation may be by liaison stations, plus individual stations in cities or towns not covered by local nets.

The Section may have more than one net (e.g. a CW net, a VHF net, an SSB net, or a Section packet BBS). In an area with low population density or NTS activity, two or more Sections may combine to form a single net operating at Section level. Section nets are administered through the office of the Section Manager, with authority for this function often delegated to an appointed Section Traffic Manager and/or designated Net Managers. In the case of combined-Section nets, officials of the Sections concerned should collaborate on the designation of a qualified Amateur to manage the net.

Region Nets

"Region" nets cover a wider area, such as a call area. At this level, the object is representation of each ARRL Section within the Region. Participants normally include:

- A Net Control Station, designated by the Region net manager.

- Representatives from each of the various Sections in the Region, designated by their Section Net Managers.

- One or more stations designated by the Region net manager to handle traffic going to points outside the Region.

- One or more stations bringing traffic down from higher-level NTS nets.

- Any other station with traffic.

There may be more than one representative from each Section in the Region net, but more than two are usually superfluous and will only clutter the net. However, all Section representatives are required to represent the entire Section, not just their own net.

The purpose of the Region net is to exchange traffic between the Sections in the Region, put out-of-Region traffic in the hands of liaison stations, and distribute traffic coming into the Region among the Section net representatives. Regional nets are administered by managers elected by the NTS volunteers and supported through the Membership and Volunteer Programs Department (MVP) at ARRL Headquarters.

Area Nets

At the top level of NTS nets is the "Area" net. Participation at the area level includes:

- A Net Control Station, designated by the Area Net Manager.

- One or more representatives from each Region net in the Area, designated by the Region Net Managers.

- Transcontinental Corps (TCC) stations designated to handle traffic going to other Area nets.

- TCC stations designated to bring traffic from other Area nets.

- Any station with traffic.

There are three Areas, designated "Eastern," "Central" and "Pacific," the names roughly indicating their coverage of the US and Canada except that the Pacific Area includes the Mountain as well as the Pacific time zones. Area nets are administered by managers elected by the NTS volunteers and supported through the Membership and Volunteer Programs Department (MVP) at ARRL Headquarters.

For a map of NTS areas and regions, see below:

National Traffic System Area and Region map.
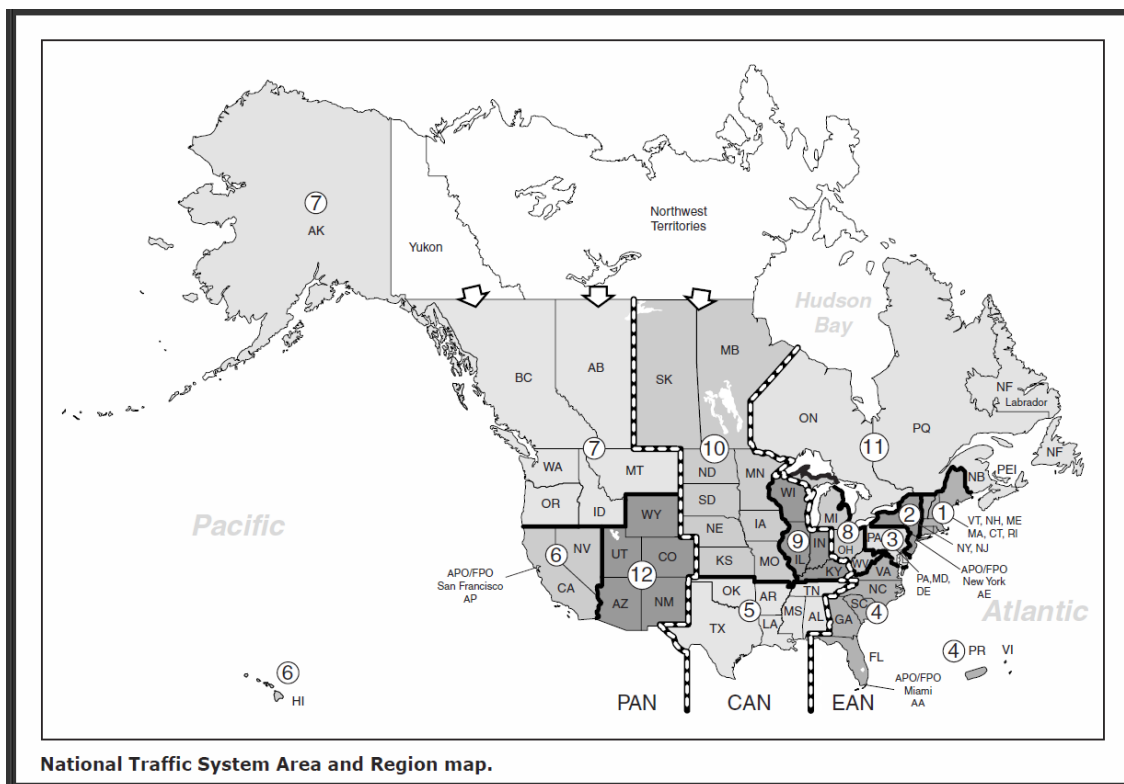
Map key: **National Traffic System Routing Guide**

State/Province	Abbrev.	Region	Area
Alaska	AK	7	PAN
Alabama	AL	5	CAN
Alberta	AB	7	PAN
Arizona	AZ	12	PAN
Arkansas	AR	5	CAN
British Columbia	BC	7	PAN

California	CA	6	PAN
Colorado	CO	12	PAN
Connecticut	CT	1	EAN
Delaware	DE	3	EAN
Dist. of Columbia	DC	3	EAN
Florida	FL	4	EAN
Georgia	GA	4	EAN
Guam	GU	6	PAN
Hawaii	HI	6	PAN
Idaho	ID	7	PAN
Illinois	IL	9	CAN
Indiana	IN	9	CAN
Iowa	IA	10	CAN
Kansas	KS	10	CAN
Kentucky	KY	9	CAN
Labrador	LB	11	EAN
Louisiana	LA	5	CAN
Maine	ME	1	EAN
Manitoba	MB	10	CAN
Maryland	MD	3	EAN
Massachusetts	MA	1	EAN
Michigan	MI	8	EAN
Minnesota	MN	10	CAN
Mississippi	MS	5	CAN
Missouri	MO	10	CAN
Montana	MT	7	PAN
Nebraska	NE	10	CAN
Nevada	NV	6	PAN
New Brunswick	NB	11	EAN
New Hampshire	NH	1	EAN
New Jersey	NJ	2	EAN
New Mexico	NM	12	PAN
New York	NY	2	EAN
Newfoundland	NF	11	EAN
North Carolina	NC	4	EAN
North Dakota	ND	10	CAN
Nova Scotia	NS	11	EAN
Ohio	OH	8	EAN
Oklahoma	OK	5	CAN
Ontario	ON	11	EAN
Oregon	OR	7	PAN
Pennsylvania	PA	3	EAN
Prince Edward Is.	PEI	11	EAN
Puerto Rico	PR	4	EAN
Quebec	PQ	11	EAN
Rhode Island	RI	1	EAN
Saskatchewan	SK	10	CAN
South Carolina	SC	4	EAN
South Dakota	SD	10	CAN
Tennessee	TN	5	CAN
Texas	TX	5	CAN

Utah	UT	12	PAN
Vermont	VT	1	EAN
Virginia	VA	4	EAN
Virgin Islands	VI	4	EAN
Washington	WA	7	PAN
West Virginia	WV	8	EAN
Wisconsin	WI	9	CAN
Wyoming	WY	12	PAN
APO New York APO	NY	2	EAN
APO San Francisco APO	SF	6	PAN

Transcontinental Corps

The handling of higher priority messages between "Area Nets" is accomplished through the facilities of the Transcontinental Corps (TCC). TCC members handle "routine" messages only in times of extreme overload. This is not a net, but a group of designated liaison stations that have the responsibility for seeing that inter-Area traffic reaches its destination Area. TCC is administered by TCC directors, or as delegated to the Area Digital Coordinator, in each Area who assign stations to report into Area nets for the purpose of "clearing" inter-Area traffic, and to keep out-of-net schedules with each other for the purpose of transferring traffic from one Area to another.

Fig 5-3 —National Traffic System flow chart. See text.
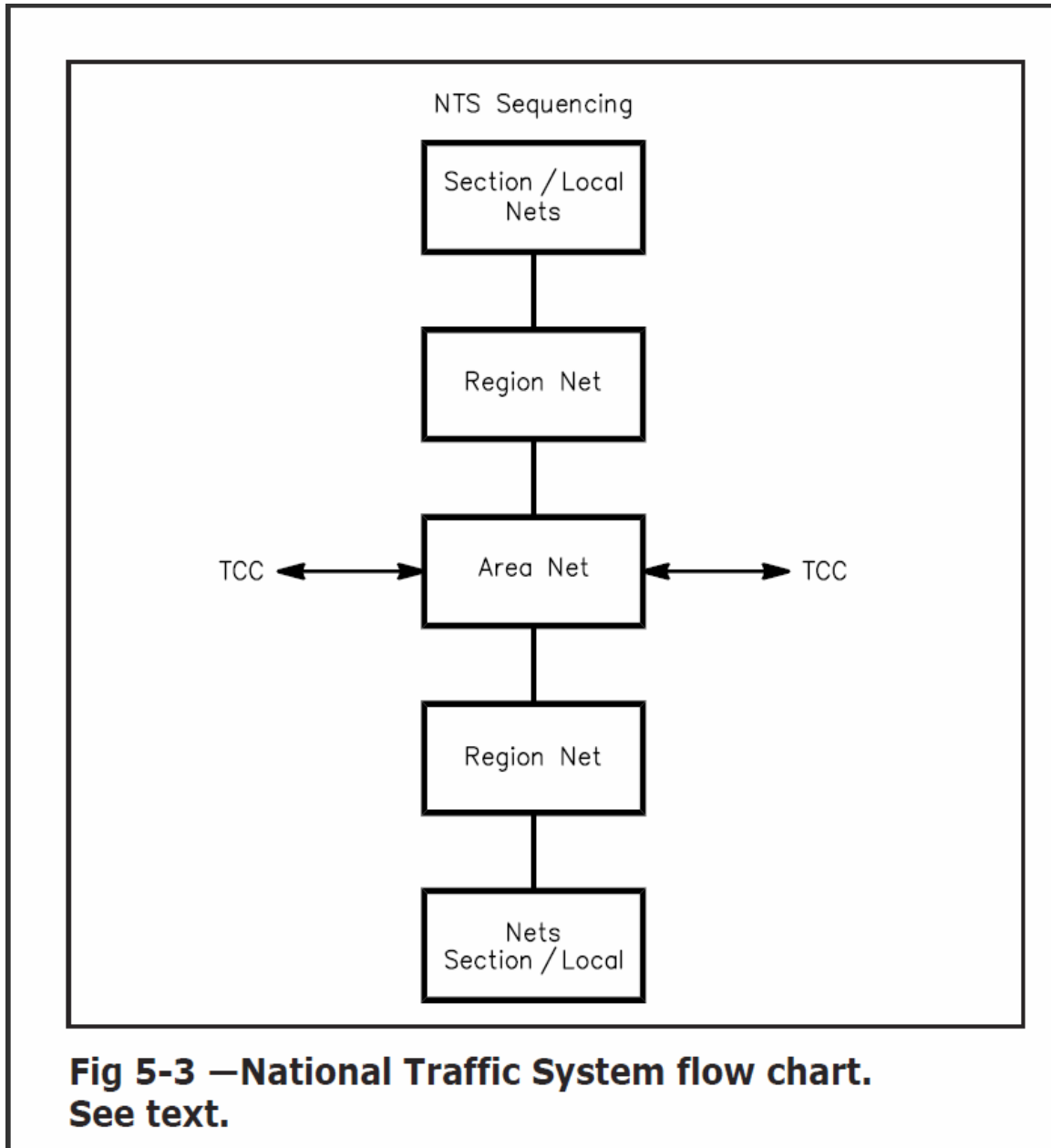
Review an example of an NTS message routing in the NTS manual at: http://www.arrl.org/chapter-nine-nts-traffic-routing.

"Hotline" Circuits

In certain situations, a large volume of traffic may be moving between two locations, such as from a large refugee center to an American Red Cross office. Rather than attempting to move these messages through the normal system, a "hotline" circuit is established between two or more stations at or near these locations. This avoids overloading normal nets, and speeds delivery of critical messages.

Increased Operations During Disasters

In day-to-day operation, the National Traffic System passes routine messages around the country. In its emergency role, the NTS is dedicated to disaster communication on behalf of ARES. The NTS is capable of expanding its cyclic operation partially or fully depending on the level of need. The normal cycles can be expanded to handle an increasing volume of messages with greater speed. In extreme cases, the cycles can operate continuously. This requires all nets to be on the air full time, with stations designated for liaison operation replacing each other as stations are dispatched to the higher or lower nets with which they make liaison.

Activation for Disasters

Emergency Coordinators in disaster areas consult with served agencies to determine which communication resources will need to be activated.

The Section Emergency Coordinator, working along with and in direct communications with the appropriate Section Manager(s), consults with affected DECs and ECs, and makes an activation recommendation to the Section Traffic Manager, and Section or Regional NTS managers as appropriate. The decision to alert the NTS Region management may be made by any combination of these officials, depending upon the urgency of the situation.

The scope of the activation will depend on the scope of the disaster. If messages need to be passed only within the Section, then only those nets will be activated. However, if the disaster is widespread and communications are disrupted over a large area, Region or Area nets may be needed. In such cases the Traffic Managers and SEC's, working with their Section Managers will need to coordinate the effort between sections or regions. The TCC then needs to become involved. Handling outbound Health and Welfare (H&W) traffic has a higher priority than inbound H&W – each outbound H&W message delivered may head-off several more H&W inquiries about the same person, since the person receiving the outbound H&W message may share the news with other friends and relatives.

Managers of NTS nets at local, Section, Region, and Area levels are directly responsible for activation of their nets at the request of ARES or NTS officials. Each EC is directly responsible for activating their local ARES nets.

NTS Alerting Plan

Section Traffic Manager (STM) and Section Net Manager Roles:
 During a disaster, the STM and certain Section net managers may be contacted by the Section Emergency Coordinator or the Section Manager to activate needed Section NTS and ARES nets, either to provide Section-wide contact or, in the case of NTS nets, to provide liaison with the nets outside the Section.

The STM and Section Net Managers make contact with NTS Region Net Managers in the event that messages connected with the disaster need to cross Section boundaries, and may recommend extraordinary activation of the Region net.

Specific Section net stations are designated to conduct liaison with the NTS Region net, either through another Section net or directly. This is the responsibility of Section officials, not the Region net manager.

Region Net Manager Functions:
Should a disaster situation's needs extend beyond the Section level, any one of the Section officials in a Region or a neighboring NTS Region may contact the Region Net Manager. The Region Net Manager should be able to predict such contact based on the circumstances, and should be available to receive their recommendation.

The Region Net Manager makes contact with the NTS Area Net Manager in the event that communications connected with the disaster transcend Region boundaries, recommending extraordinary activation of the Area NTS net.

Area Net Manager Functions:
There are only two Area Net Manager appointees for each of the three Areas in the US, but their function during and after disasters is of paramount importance. Area Net Managers maintain a high sensitivity to disasters that extend to or beyond Region boundaries. When one does, Area Net Managers take the initiative to alert the Region Net Manager involved to determine if extraordinary NTS operation is indicated.

In the event that high-precedence inter-Area traffic is involved, the Area Net Managers contact the two Transcontinental Corps directors in the Area to assist by arranging to pass the traffic directly to other Areas.

The Area Net Managers in the affected Area also contact the other NTS Area Net Managers to discuss the possibility of opening extra net sessions if required to handle the traffic reaching them through NTS inter-Area handling. Under some circumstances, direct representation or "hotlines" may be indicated.

The Area Net Managers maintain close contact with all Region Net Managers in the Area and make decisions regarding overall NTS operation in consultation with them.

Transcontinental Corps (TCC) Directors:
These NTS officials will be involved only where traffic of a precedence higher than "routine" is to be handled between NTS Areas, or when extreme overloads are anticipated. TCC Directors are ready to alert TCC members and set up special out-of-net schedules as required. TCC Directors may be called upon by the Area Net Manager to set up "hotline" circuits between key cities involved in heavy traffic flow. TCC Directors know which of their TCC stations are located in, or close to, large cities to operate such circuits.

Area Staff Chair Responsibilities

The three Area Staff Chairpersons administratively oversee the NTS Officials and their operations above the Section level, and will advise their TCC Directors, and Area and Region Net Managers when appropriate. Their advice may be based on information forwarded by ARRL Headquarters. The chair maintains a high sensitivity to disasters and other emergencies that may develop. In a large-scale disaster, the chairperson should be able to contact one another via the International Assistance and Traffic Net and on other prearranged nets.

General Policy for all NTS Operators

NTS operators should be "self-alerting" to disaster conditions that might require their services, and should check-in to their regular net or perform assigned functions without being specifically called upon. Assignments should be worked out with the Net Manager in advance. If the operator cannot answer the question, "If I hear of a disaster, what should I do?" they should seek an answer through their Net Manager. It may be as simple as "report into the X Net on Y frequency."

If the operator concerned is highly specialized, it might be "report to your TCC director in the X net on Y frequency for a special assignment." Such an assignment might be an extra TCC function, or it might be as a functionary in a "hotline" point-to-point circuit needing special abilities or equipment.

Most NTS operators participate for one or two periods a week, and some are active daily. Although every net member should have a specific assignment, they must also remain flexible enough to change assignments when the need arises.

Read about Digital Communication and NTS:
Late in 2010 the Area Staff Chairs of the NTS approved updates to the ARRL *Public Service Communications Manual* (PSCM) Appendix B, Methods and Practices Guidelines, Chapter 6, NTSD and *Radio-email*. These revisions provide for a structure and guidance on how the ARRL Field Organization may use Radio-email to provide nation-wide messaging in the modern email format via Amateur Radio with near real-time delivery anywhere in the country, 24/7. It also provides for integration of the ARES®, NTS and NTSD efforts nation-wide.

The new *Radio-email* system uses the Winlink 2000 network, infrastructure independent local automatic email service modules, plus station-to-station, radio-all- the-way transport services provided by the NTS/D to support all Sections. The Winlink 2000 network also provides us with a firewall and white list protected interface with the public internet for handling welfare and partner messaging with internet addresses. New types of message formats are included, and guidance on handling ICS-213 and other similar message formats is included.

As with any email system, it is necessary to know the addresses of stations on the network in order know how to address messages. *Radio-email* may be sent to multiple addressees with multiple copies and binary attachments. NTSD is assigning client Target Station addresses to be

the outlet clients for messaging on the network. What this means for you, for example, is the ability to send public welfare emails from shelter victims directly to internet addresses, or at other shelters, and receive replies. You may also send Radiograms in the standard ARRL format, carried by *Radio-email*, directly to network stations in the NTS/D for handling. You may have partner and our own leadership officials, using their own computers, exchange *Radio-email* messages between all sites where amateur field stations are deployed. In each of those examples, no intermediate relaying manpower or nets are required within your "last mile" disaster area.

Reference Links

For more on NTS, see Section 2 of The ARRL Operating Manual.

NTS manual   http://www.arrl.org/chapter-one-national-traffic-system

Additional details on ARES and NTS can be found in the Public Service Communications Manual at:
http://www.arrl.org/files/file/Public%20Service/ARES/ARESmanual2015.pdf

For local information, or to learn more about NTS net operation in your area, contact your Section Manager (SM) http://www.arrl.org/sections or Section Traffic Manager (STM).

For a list of ARES and NTS nets operating in your area see The ARRL Net Directory at http://www.arrl.org/arrl-net-directory.

Review

The National Traffic System is a set of scheduled nets operating on a cycle that permits messages to be routed across the country in less than 24 hours. The cycles can be increased to allow for larger volumes of messages to be handled during an emergency. Nets operate at the local, Section, Region, and Area levels. The Transcontinental Corps can help expedite critical messages by bypassing the normal routes. Hotline circuits can be established between high-volume locations when needed. NTS nets provide a great venue for participants to practice using phonetics, and paying focused attention to details – which are required to take traffic and operate as an effective NCS.

Student Activities

Section 3 (Topics 14-15)

NOTE: These activities are for student review only and are not required to be submitted.

Topic 14

1. Describe formal vs. informal messages.

2. Describe the components of a standard ICS 213.

3. Describe the components of a standard Radiogram.

4. Compose two complete ICS 213 formatted messages and two complete ARRL formatted Radiogram messages in written form. Use Handling Instructions and include the time and date sent.

   Instructions for completing ICS 213 can be found at:

   www.fema.gov/media-library/assets/documents/33548

   Instructions for completing the ARRL Radiogram can be found at

   www.arrl.org/files/file/Intro%20to%20Emcomm%20Course/RADIOGRAM2011_Interactive.pdf

Topic 15

1. List at least two resources for locating emergency nets that operate in your area.

2. Identify at least three emergency nets (days, times, frequencies) that operate in your area, including an NTS net if possible.

3. Contact the Net Control Station for at least one of the nets you have identified. Determine the requirements for joining the net.