

# National Traffic System (NTS) *WCF Traffic Handling Seminar*

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Slides Adapted from Training  
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# National Traffic System (NTS) Messaging Basics

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## Outline

- What is the National Traffic System?
- Advantages of NTS Messaging
- NTS Hierarchy and modes
- The ARRL Radiogram Form
- ARL Abbreviated Texts
- How to Deliver an NTS Message
- Emergency Communications
- NTS Digital



# What is the National Traffic System (NTS)?

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- The “RELAY” in American Radio Relay League (ARRL)
- Started in 1915 as the formal ARRL system to relay messages around the country
- Transmit & Receive Modes: Voice, CW, Digital
- NTS and Amateur Radio Emergency Services (ARES)
- Requirements to join: Any level Ham license & interest
- ARRL Field Organization Appointments: Official Relay Station (ORS), Digital Relay Station (DRS) & Section Traffic Manager (STM).
- Radio Relay International (RRI) founded in 2016 to modernize the National Traffic System



# Advantages of NTS Messaging

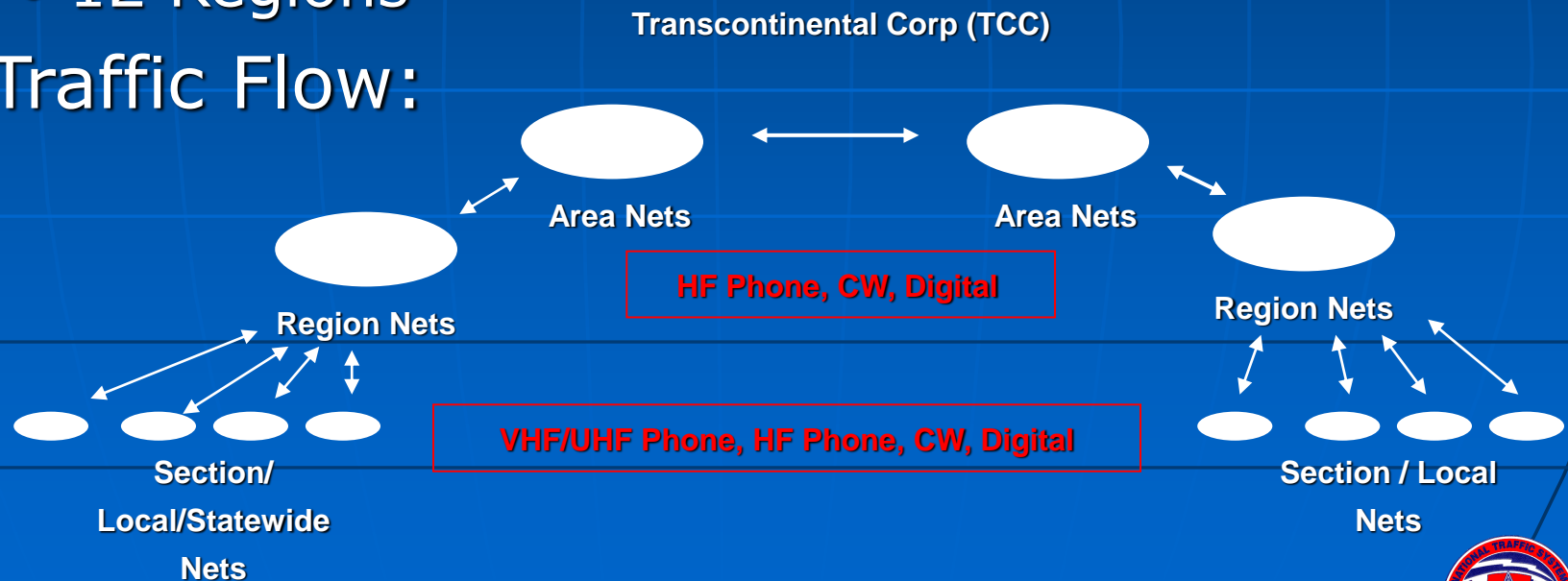
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- Wireless! Send them from anywhere.
- Use a little HT or a big base station
- Standard Format
- Accountability
- NTS Nets meet daily
- Speed (digipeater vs. email)
- *When all else fails...*
- Fun, good practice & helpful!



# NTS Hierarchy and Modes

- US and Canada organized into Area, Region, and Local Nets
  - 3 Areas
  - 12 Regions
- Traffic Flow:



# NTS Areas

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# States/Provinces, Regions and Areas

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State	Region	Area
CT, ME, MA, NH, RI, VE	1RN	EAN
NJ, NY	2RN	EAN
DE, DC, MD, PA	3RN	EAN
FL, GA, NC, PR, SC, VI, VA	4RN	EAN



# States/Provinces, Regions and Areas

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State	Region	Area
MI, OH, WV	8RN	EAN
LB, NB, NF, NS, ON, PE, PQ	2RN	EAN
AL, AR, LA, MS, OK, TN, TX	5RN	CAN
IL, IN, KY, WI	9RN	CAN
AZ, CO, NM, UT, WY	12RN	PAN





# States/Provinces, Regions and Areas

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State	Region	Area
IL, IN, KY, WI	9RN	CAN
NWT, SK, SD, IA, KS, MB, MN, MO, NE, ND	10RN	CAN
CA, GU, HI, NV	6RN	PAN
AK, AB, BC, ID, MT, NWT, OR, WA	7RN	PAN
AZ, CO, NM, UT, WY	12RN	PAN



# Message Format

## The ARRL Radiogram



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

Number <b>704</b>	Precedence <b>R</b>	HX <b>C</b>	Station of Origin <b>N2GS</b>	Check <b>14</b>	Place of Origin <b>CHESTER NJ</b>	Time Filed <b>1830</b>	Date <b>JUL 2</b>
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To:

**JOE SMITH KC2XXY**  
**1234 SECOND ST**  
**SUMMIT NJ 07901**

This Radio Message was received at:

Amateur Station \_\_\_\_\_ Date \_\_\_\_\_  
 Name \_\_\_\_\_  
 Street Address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_

Telephone Number: **650-123-4567**

<b>THIS</b>	<b>IS</b>	<b>THE</b>	<b>ARRL</b>	<b>RADIOGRAM</b>
<b>FORM</b>	<b>XRAY</b>	<b>DETAIL</b>	<b>TO</b>	<b>FOLLOW</b>
<b>XRAY</b>	<b>HAVE</b>	<b>FUN</b>	<b>73</b>	

**GREG SZPUNAR N2GS**

REC'D	From	Date	Time	SENT	To	Date	Time
					<b>Austin AK2US</b>	<b>7/2/03</b>	<b>2112 EDT</b>


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.



# ARRL Radiogram Form

- Preamble:** Message number, precedence, HX (optional handling code), station of origin, check (text word count), place of origin, time filed (optional), and date.
- Addressee:** Name, call sign (if a ham), full street address, city, 2-letter state abbreviation, zip code (very important) & telephone (be sure to include area code).
- This Radio Message was received at:** Station identification and location.
- Text:** 25 words maximum, 5 per line; Use the word "xray" for a period (.) and "query" for a question mark (?). Last word in salutation (e.g., "73", "Love", etc.)
- Signature:** (Write-in above REC'D block) Name & call sign of person who wrote the message – include full phone number if not a Ham or if new to NTS.



The American Radio Relay League  
RADIOGRAM  
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Number <b>704</b>	Precedence <b>R</b>	HX <b>C</b>	Station of Origin <b>N2GS</b>	Check <b>14</b>	Place of Origin <b>CHESTER NJ</b>	Time Filed <b>1830</b>	Date <b>JUL 2</b>
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To:

**JOE SMITH KC2XXY  
1234 SECOND ST  
SUMMIT, NJ 07901**

Telephone Number: **650-123-4567**

This Radio Message was received at:

Amateur Station \_\_\_\_\_ Date \_\_\_\_\_

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

<b>THIS</b>	<b>IS</b>	<b>THE</b>	<b>ARRL</b>	<b>RADIOGRAM</b>
<b>FORM</b>	<b>XRAY</b>	<b>DETAIL</b>	<b>TO</b>	<b>FOLLOW</b>
<b>XRAY</b>	<b>HAVE</b>	<b>FUN</b>	<b>73</b>	<b>_____</b>

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- REC'D & SENT:** Record the names and call sign of the person you rec'd the message from and/or sent/forwarded the message to, along with the date & time (EST/EDT or Z).



# Radiogram Form Detail (1 of 6)



The American Radio Relay League  
RADIOGRAM  
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
<b>704</b>	<b>R</b>	<b>C</b>	<b>N2GS</b>	<b>14</b>	<b>CHESTER NJ</b>	<b>1830</b>	<b>JUL 2</b>

## Number

- Assigned by the message originator
- No standard way of numbering messages
- Consecutive (1, 2, 3..., starting over at the new year or monthly)
- Order by month & number (507 = 7th you originated in May; 11244 = 244th message you originated in November)

## Precedence (Emergency, P, W, or R)

- Emergency (life or death urgency in a declared emergency) always spelled out
- P = Priority (official traffic in a declared emergency)
- W = Health & Welfare (used only in a declared emergency)
- R = Routine (everything else – most frequently used)



# Radiogram Form Detail (2 of 6)



The American Radio Relay League  
RADIOGRAM  
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
<b>704</b>	<b>R</b>	<b>C</b>	<b>N2GS</b>	<b>14</b>	<b>CHESTER NJ</b>	<b>1830</b>	<b>JUL 2</b>

To:

## 1. (Optional) HX or Handling Code – A, B, C, D, E, F or G

- Collect landline delivery authorized within \_\_\_ miles of addressee or unlimited if blank (A150 = collect call authorized w/in 150 miles; A = collect call authorized regardless of miles)
- Cancel message if not delivered within \_\_\_ hours of filing time & service originating station (B72 = cancel if not delivered within 72 hrs and send message to originator to notify them)
- Confirmation of delivery requested by originating station ("TOD YOUR 1014 JULY 4 1330 PST XRAY 73" or if issues "ARRL SIXTY SEVEN 1014 PHONE 650 555 1212 INCORRECT NO REPLACEMENT FOUND SENT RADIOGRAM INSTEAD XRAY 73")
- Report your identity & time/date rec'd message plus time/date delivered or sent to another
- Delivering station to get reply from addressee and send to originator as a new message
- Hold delivery until \_\_\_ (numbered day of month) – great for birthday or anniversary messages (F14 = deliver on 14<sup>th</sup> of the month; F1 = deliver on the 1<sup>st</sup> of month after date filed)
- Delivery by mail or toll call not required, service originating station (often ignored).



# Radiogram Form Detail (3 of 6)



The American Radio Relay League  
RADIOGRAM  
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
<b>704</b>	<b>R</b>	<b>C</b>	<b>N2GS</b>	<b>14</b>	<b>CHESTER NJ</b>	<b>1830</b>	<b>JUL 2</b>

1. **Station of Origin:** Call sign of station who put the message into NTS format; If N2GS prepares message 1207 for a fellow ham, then puts it onto an NTS packet BBS for relay to Vermont, the originator is... N2GS. If WB2W prepares message 23 for his non-ham neighbor then gives it to N2GS to relay to any NTS net, the originator is... WB2W.
2. **Check:** The word count in body text only (do not count the address or signature); precede with "ARL" if any of the ARL numbered texts are used (e.g., ARL 7).
3. **Place of Origin:** The city & state where the message was written.
4. **(Optional) Time Filed:** This is not used much... 24-hr format & time zone
5. **Date:** Month (non-numeric – abbreviated) & day number message was created e.g., Sep 21)



# Radiogram Form Detail (4 of 6)

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To: <b>JOE SMITH KC2XXY</b> <b>1234 SECOND ST</b> <b>SUMMIT NJ 07901</b>	This Radio Message was received at: Amateur Station _____ Date _____ Name _____ Street Address _____ City, State, Zip _____
Telephone Number: <b>650-123-4567</b>	

## To:

Name, call sign (if going to a ham), street address or P.O. Box, city, state (abbreviated) & zip code. Note: Digital and packet NTS messages are routed via zip code.

## Telephone Number:

Be sure to include the area code and double-check the number!!!

## This Radio Message was received at:

Your station identification, date received, and your location. More received-from detail will go in the "REC'D" block after body text and signature.





# Radiogram Form Detail (5 of 6)

THIS	IS	THE	ARRL	RADIOGRAM	
FORM	XRAY	DETAIL	TO	FOLLOW	
XRAY	HAVE	FUN	73		
<b>GREG SZPUNAR N2GS</b>					
From	Date	Time	To	Date	Time

**Text:** 25 words maximum, 5 per line; Use "xray" for a period (.) and "query" for a question mark (?).

**Signature:** There is no "Signature" field, just write-in below text; Name & call sign of author – include phone number if not a ham or if not known on an NTS net.



# Radiogram Form Detail (6 of 6)

REC'D	From	Date	Time	SENT	To	Date	Time
					<b>Austin AK2US</b>	<b>7/2/03</b>	<b>2112 EDT</b>
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.			

**REC'D:** Call sign from whom you received the message and date & time of receipt. Time may be either your local time (EST/EDT) or Zulu time. Make sure date agrees with time (Zulu is 5 hours ahead of EST – can cause date to roll forward).

**SENT:** Call sign you sent or passed the message to, or to whom you delivered it, with date & time. Also good to note delivery method for your own reference (i.e., via phone or left on Tom's voicemail). Always leave your call back number if message was left on voicemail!



# ARL Numbered Texts

## Purpose & How Counted

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- ARL Numbered Texts replace common phrases in message body text (i.e., Happy Birthday, Greetings by amateur radio, etc.)
- Use of ARL texts reduce total message word count – faster and more consistent transmission of text
- Translated before delivery of message to addressee
- ARL text numbers are always spelled-out in words (i.e., ARL SEVEN or ARL FORTY SIX)
- Message word count (check) is written as “ARL #” (e.g., ARL 4 or ARL 15) to alert operators that message includes at least one ARL numbered text.



# ARL Numbered Texts (Examples)

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- ARL FORTY SIX = Greetings on your birthday and best wishes for many more to come.
- ARL FORTY SEVEN = Your message \_\_\_\_\_ to \_\_\_\_\_ delivered \_\_\_\_\_ UTC
- ARL FIFTY = Greetings by amateur radio.
- ARL FIFTY ONE = Greetings by amateur radio. This message is sent as a free public service by ham radio operators at \_\_\_\_\_. Am having a wonderful time.
- ARL SIXTY SEVEN = Your message number \_\_\_\_\_ undeliverable because of \_\_\_\_\_. Please advise.



# How to Deliver an NTS Message

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- Preferred delivery is via telephone.
- Okay to leave on voicemail or answering machine IF you are comfortable that you reached the right person.
- Radiogram postcard if cannot reach by phone.
- Service originating station to inform if cannot deliver or if they requested confirmation (HXC).



# Record Keeping & Reporting (PSHR)

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- Use a log sheet to keep track of your messages
- Use a PSHR log sheet to tally monthly points for Public Service Honor Roll
- Report message count (originated, sent, received & delivered) to STM monthly
- Report PSHR totals to STM



# ***NTS Digital***

# Advantages of NTS Digital

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- Available 24/7, 365 days a year
- Error Free
- Frequency, Time, Propagation Agile
- Faster
- Able to respond and adapt quicker to urgent needs like disaster messages
- Multiple redundant routing paths
- NTSD exists at and incorporates all levels of traditional NTS from TCC, through Area, Region, Section and Local .





# Not to Replace Traditional NTS

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- Complementary system
- Trained operators always needed for origination and delivery of messages
- RRI operates many of the digital gateways.
- More and more messages are going over Winlink.



# Winlink Radio Messaging System (RMS)

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- Developed by Winlink Classic Programmers in late 1990's
- Uses Pactor 1, 2, and 3, VHF/UHF Packet Sound Card Vara, Telnet
- Forwarding via Internet; Radio all the way via NTSD if infrastructure fails
- Radio-email and Integration of NTS NTSD and ARES
- Chapter 6 Methods and Practices Guideline (MPG)



# Local NTS Digital

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- Basic equipment requirements
  - 2M rig
  - TNC capable of 1200 baud VHF Packet
  - Terminal Program

*OR*

  - Soundcard interface and software capable of emulating Packet
  - Computer



# Additional Resources

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- [ARRL Net Directory](#) – Excellent NTS reference with net listings by state (\$5 from ARRL). Online version is accessible free at the ARRL web site ([www.arrl.org](http://www.arrl.org)).
- [Public Service Communication Manual](#) – Detailed reference on NTS message handling (\$1 from ARRL), also available on ARRL web site.



# Participate in a Traffic Handling Net to learn more

**Eagle Net** VHF/UHF Net

NTS Net for West Central Florida

8:30PM on **NI4CE** 365 Days a Year

<http://ni4ce.org>

Florida Phone Traffic Net 7AM Daily

<https://fptn3940.net> 3940Khz HF

Tropical FAST Net 6PM Daily

# Questions?

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