

National Traffic System (NTS)

An Introduction

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National Traffic System (NTS) Messaging Basics

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
- NTS Digital
- Local NTS Contacts & Nets
- Additional Resources



What is the National Traffic System (NTS)?

- 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).



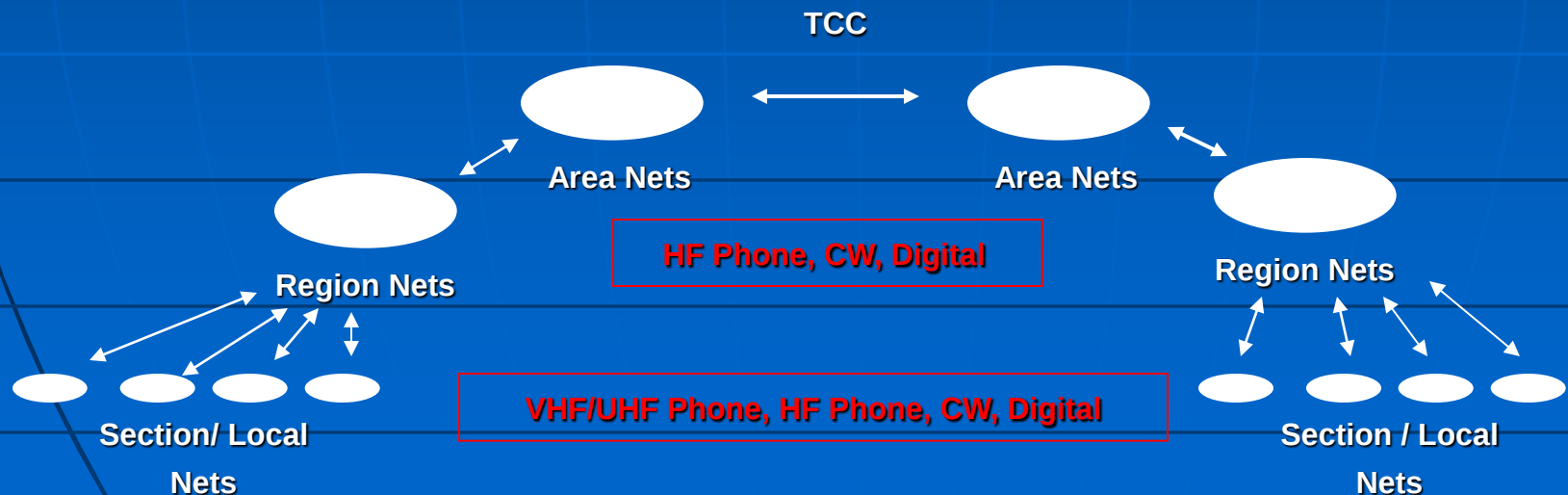
Advantages of NTS Messaging

- 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



States/Provinces, Regions and Areas

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
MI, OH, WV	8RN	EAN
LB, NB, NF, NS, ON, PE, PQ	2RN	EAN



7RN Sections and Divisions

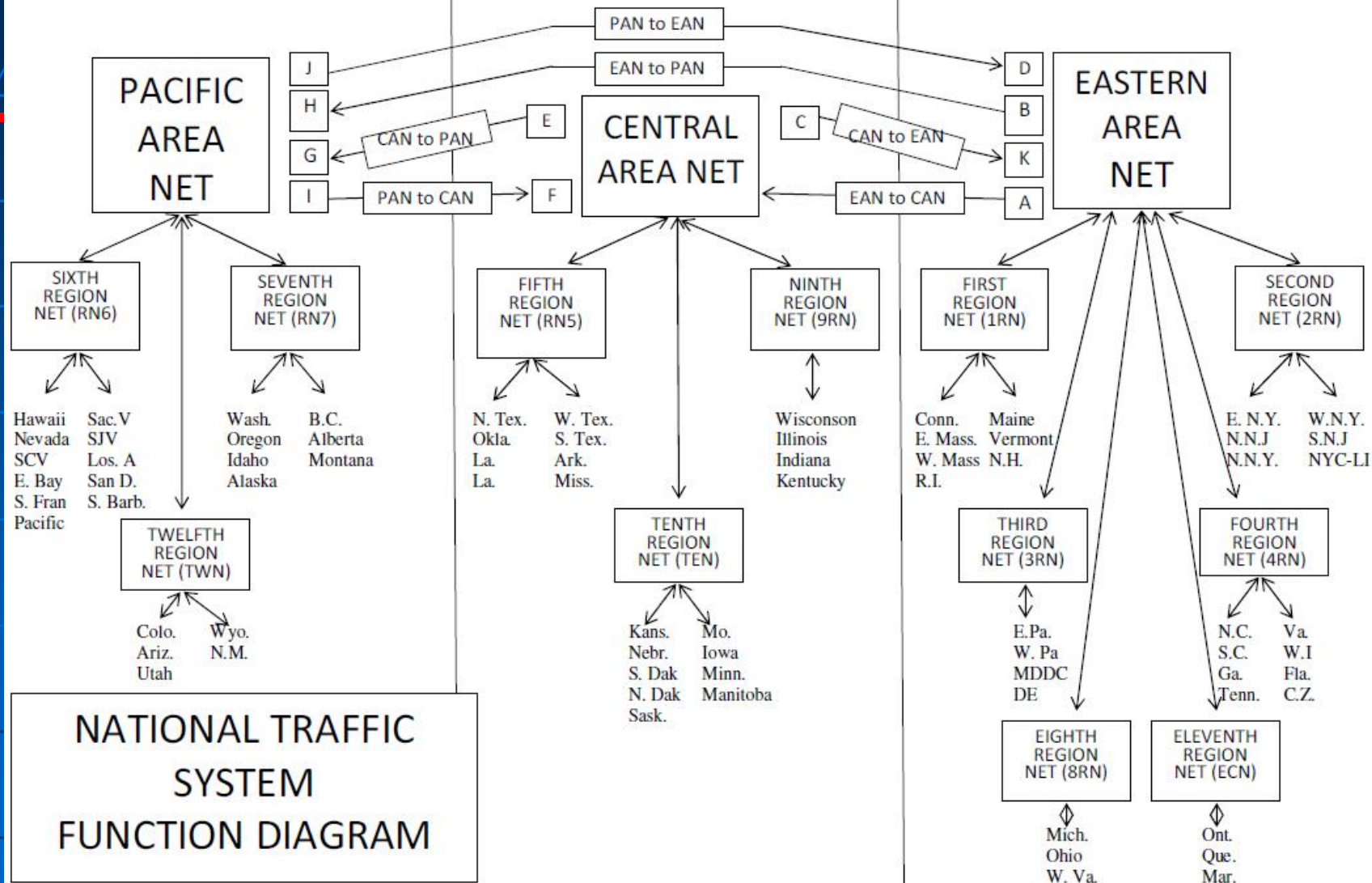
State	Division	Sections
Washington	Northwest	EWA WWA
Oregon	Northwest	OR
Idaho	Northwest	ID
Montana	Northwest	MT
Alaska	Northwest	AK



PACIFIC AREA

CENTRAL AREA

EASTERN AREA



Message Format

The ARRL Radiogram



The American Radio Relay League
RADIOGRAM
Via Amateur Radio

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

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

THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	

GREG SZPUNAR N2GS

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

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
Via Amateur Radio

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

THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	

GREG SZPUNAR N2GS

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

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.

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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
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

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
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

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 “ARL 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 14th of the month; F1 = deliver on the 1st 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
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

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)

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

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)

Telephone Number:				
THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	
GREG SZPUNAR N2GS				
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)

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

- 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)

- 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

- Preferred delivery is via telephone.
- Okay to leave on voicemail or answering machine IF you are comfortable 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.



Record Keeping & Reporting (PSHR)

- 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
STM = Bill Fraser W7ARC w7arc@arri.net



Advantages of NTS Digital

- 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

- Complementary system
- Trained operators always needed for origination and delivery of messages



NTSD and Pactor

- HF NTSD Operates almost exclusively in the automatic control sub-bands
 - 3.585 - 3.600 MHz
 - 7.100 - 7.105 MHz
 - 10.140 - 10.150 MHz
 - 14.095 - 14.0995 MHz
 - 14.1005 - 14.1120 MHz
- Using Pactor 1, 2, and Pactor 3.
 - *Pactor 2 and 3 are proprietary modes.*
- All pactor connects start out at Pactor 1 and then shift up to higher speed if the equipment at both ends is compatible.
- Bandwidth for Pactor 1 and 2 is 500 Hz. pactor 3 will expand its bandwidth up to 2.4 KHz at highest speeds.



7RN Nets

- Open to all HAMs
- Liaisons to/from EWA and WWA
- Liaisons to PAN

Frequency (MHz)	Time	Mode
7.235	9:45 AM 3:15 PM	SSB
3.560	7:30 PM	CW
3.560	9:30 PM	CW

WWA/EWA Local Nets

- Open to all Hams with or without traffic handling experience.
- A great place to start and to learn first hand.

Name	Time	Frequency (MHz)	Mode
WARTS	6:00 PM	3.975	SSB
WSN	7:30 AM 6:45 PM	3.563	CW

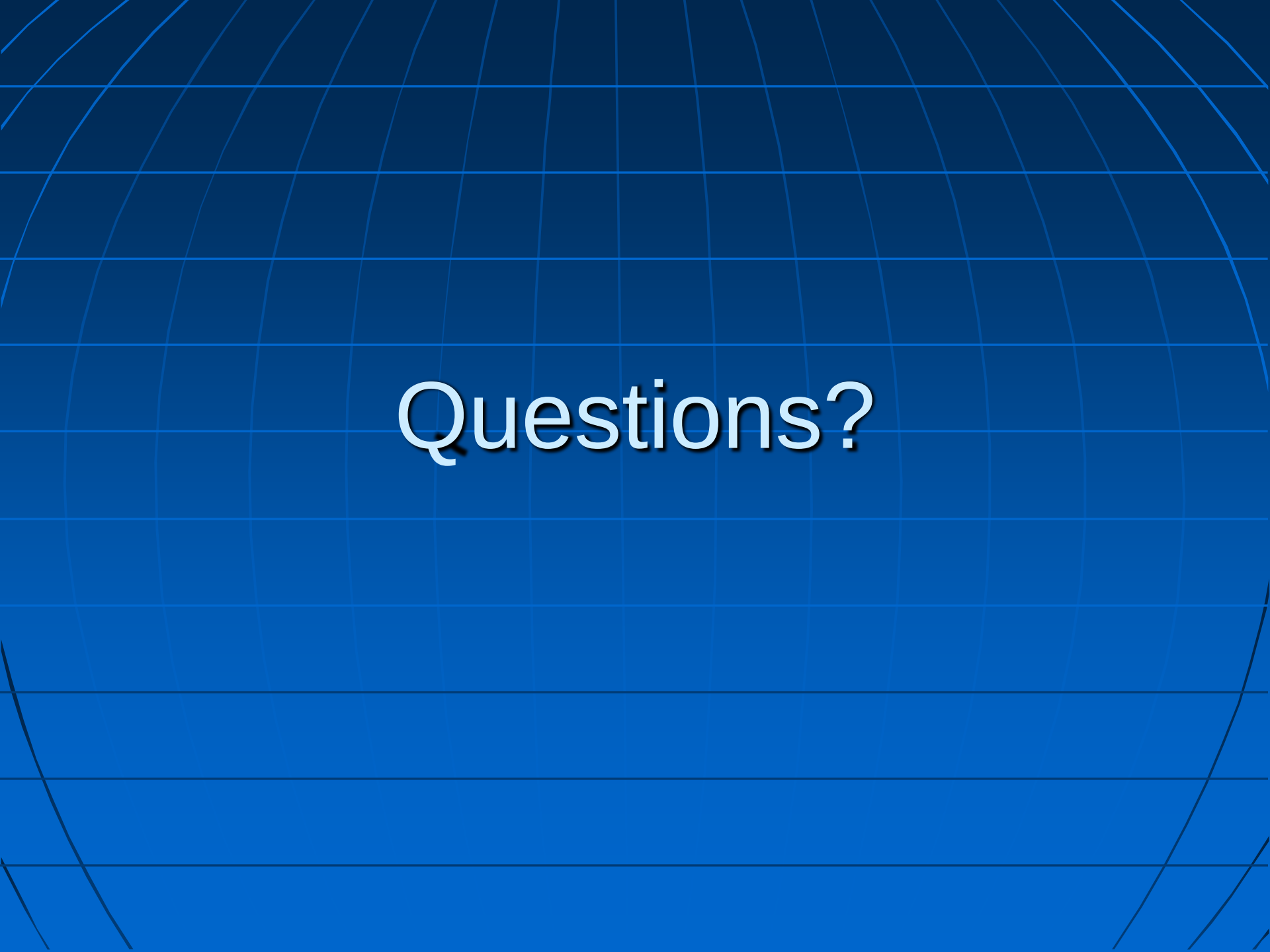


Additional Resources

- [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).
- [Public Service Communication Manual](#) – Detailed reference on NTS message handling (\$1 from ARRL), also available on ARRL web site.
- [Western Washington Section website](#) – Bill Fraser W7ARC is the Section Traffic Manager for WWA website.

<http://www.arrl.org>





Questions?