

Western Placer Amateur Radio Club

AMATEUR RADIO TRAFFIC HANDLING

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2 TYPES OF NETS

- **OPEN or UNSTRUCTURED NETS** are used when there is little traffic volume or there is little need to direct individual stations with a Net Control (Informal)
- **DIRECTED or CONTROLLED NETS** are used when traffic is directed through the NCS to discourage doubling between stations on the frequency and preserve open air time for emergency & priority messages. Most emergency nets (RACES or ARES) use one of the 3 forms of a directed net. (Formal)

3 FORMS OF CONTROLLED NETS

- **COMMAND OR TACTICAL NET** used in large incidents when it becomes necessary for the leadership to solve jurisdiction issues.
- **TRAFFIC NET** is the “front line” net during an incident that may include interagency communications and traffic message handling
- **RESOURCE OR SOCIAL NET** are used to exchange information, recruit operators & organize equipment to support events, activities or incident operations

3 MODES OF TRAFFIC NETS

1. CW TRAFFIC NETS

2. PHONE OR VOICE TRAFFIC NETS

3. DIGITAL TRAFFIC NETS

**THIS PRESENTATION WILL ONLY COVER
VOICE MODE TRAFFIC NETS BECAUSE
IT IS THE TYPE MOST COMMONLY USED
TODAY AND IT IS THE EASIEST TO LEARN**

ORGANIZATION OF TRAFFIC NET STRUCTURE

USA and Canada divided into 3 National **AREAS which are divided into **REGIONS** which are divided into **LOCAL-SECTION DIVISIONS****

1. Eastern AREA Nets (EAN)

A. Contain 6 REGIONS

2. Central AREA Nets (CAN)

A. Contains 3 REGIONS

3. Pacific AREA Nets (PAN)

A. Contains 3 REGIONS California is in the Pacific Area, Region 6RN which includes Guam, Hawaii, Nevada and California. We are in Northern California, Sacramento Valley Section

ARRL (AMERICAN RADIO RELAY LEAGUE) TRAFFIC HANDLING SYSTEM BASICS

What is NATIONAL TRAFFIC SYSTEM (NTS)?

The NTS is a relay messaging system (**the second "R" in ARRL**) developed for *content accuracy*. Whatever message is sent by way of the NTS, is received *exactly* as it was originated. There is no margin for error.

The National Traffic System consists of ARRL affiliated and independent amateur radio networks ('nets') which pass non-commercial messages on behalf of third parties as a *public service*. Licensed Amateur Radio Operators perform this service at no charge.

Hiram Percy Maxim founded the ARRL for the purpose of handling message traffic in 1914. Messages (traffic) have been passed between Amateur Radio Operators to benefit the public ever since Amateur Radio was established. The NTS was established by the ARRL in 1949 in response to membership demand. It carries on the tradition of message relaying

What is Traffic?

Traffic is NTS formalized messages utilizing the ARRL "RADIOGRAM" standardized format. NTS messages may be sent to, or by, anyone. You do not have to be a ham to initiate or receive a message. A licensed ham must, of course, handle the *transmission*, relay and delivery of the traffic.



THE AMERICAN RADIO RELAY LEAGUE
RADIOGRAM
 VIA AMATEUR RADIO



NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
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TO

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION _____ PHONE _____

NAME _____

STREET ADDRESS _____

CITY, STATE, ZIP _____

TELEPHONE NUMBER

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

FROM	DATE	TIME	TO	DATE	TIME
REC'D			SENT		

THIS MESSAGE WAS HANDLED FREE OF CHARGE BY A LICENSED AMATEUR RADIO OPERATOR, WHOSE ADDRESS IS SHOWN IN THE BOX AT RIGHT ABOVE. AS SUCH MESSAGES ARE HANDLED SOLELY FOR THE PLEASURE OF OPERATING, NO COMPENSATION CAN BE ACCEPTED BY A "HAM" OPERATOR. 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 0611

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.

Sample ARRL Radiogram #1

- 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).
- 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	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

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

This Radio Message was received at:

Amateur Station _____ Date _____

Name _____

Street Address _____

City, State, Zip _____

THIS _____

FORM _____

XRAY _____

IS _____

XRAY _____

HAVE _____

THE _____

DETAIL _____

FUN _____

ARRL _____

TO _____

73 _____

RADIOGRAM _____

FOLLOW _____

GREG SZPUNAR N2GS

REC'D	From	Date	Time	SENT	To	Date	Time
					Justin 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 & 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).

ARRL RADIOGRAM PREAMBLE

The *PREAMBLE* contains 8 components

- 1. *Message Number***
- 2. *Precedence (E, P, W, R)***
- 3. *Handling Instructions***
- 4. *Station of Origin***
- 5. *Check***
- 6. *Place of Origin***
- 7. *Time***
- 8. *Date***

ARRL RADIO GRAM FORMAT

Every Formal Radiogram message should contain the following four main components:

1. PREAMBLE:

Number	Precedence	Handling Instructions	Station of Origin	Check	Place of Origin	Time Filed	Date
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Assigned by Station of Origin; Never Changed; Begin with 1 each month of year	Determines order in which traffic passed. Always use ITU phonetics to assure accuracy. E=EMERGENCY P= Priority W=Welfare R=Routine (refer to ARRL Precedence Definitions below for more details)	HX Optional with Originating Station (OS) but if used it must be inserted by all relay stations. Used if a specific need is present A= Collect landline B=Cancelled if not delivered within # hours C=Report date & delivery time to originating station (OS) D=Report date, time, method & relay station identity to (OS) E=Delivering Station get reply from addressee & send to (OS) F=Hold delivery to specific date G=Deliver by mail or landline. If expense involved return to (OS) See below for more detail	The Call Sign of the originating station that created the message. First Amateur handler	The number of words or word groups in the text of the message. A word group is any group of one or more consecutive characters with no interrupt-ingo spaces	The Location (City & State) for whom the message was created which may or may not be the Originating Station (OS)	OPTIONAL Used only when the filing time has some importance relative to the Precedence, Handling Instructions or the message text	The date the message was filed. (If time filed is used, date and time must agree)

Radiogram Form Detail *Preamble*



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 Preamble



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

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 Preamble



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

- 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.
- 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).
- Place of Origin:** The city & state where the message was written.
- (Optional) Time Filed:** This is not used much... 24-hr format & time zone
- Date:** Month (non-numeric – abbreviated) & day number message was created e.g., Sep 21).

ARRL RADIOGRAM ADDRESS

The **ADDRESS** contains the name street, city, state, zip and phone number of BOTH the intended recipient of the message on the top left under the preamble and the amateur radio operator who received the message in the box on the top right under the preamble.

Please note that punctuation is not used in the address section.

Radiogram Form Detail Address

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_____							

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.

ARRL RADIOGRAM MESSAGE BODY TEXT

The **MESSAGE BODY TEXT contains 25 words or less if at all possible.**

Normal punctuation characters are not used in the message text body.

The word **XRAY is used as a period but is not used after the last group of text.**

The word **QUERY is used for a question mark.**

The letter **R is used as a decimal, i.e. 146.52 is read as 146R52.**

Each word or group of numbers is written on one of the 25 separate lines on the Radiogram form.

ARRL RADIOGRAM SIGNATURE

The **SIGNATURE** is the name of the person from whom the message originated which may or may not be an amateur radio operator.

When sending the signature you say “Signed” and give the name of the person who originated the message..

Radiogram Form Detail *Signature*

REC'D	Gregg SZPUNAR e N2GS	Time	SENT	To AK2US	Date 7/2/03	Time 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 NINE or ARL ELEVEN)**
- **Message word count (check) is written as “ARL + # (e.g., ARL 4 or ARL 15) to alert operators that message includes at least one or more ARL numbered texts.**

ARL Numbered Texts (Examples)

- **ARL NINE = Additional _____ radio operators needed to assist with emergency at this location.**
- **ARL ELEVEN = Establish amateur radio communications with _____ on _____MHz.**

Full list of all ARL numbered text messages may be found at:

http://www.arrl.org/files/file/Public%20Service/FSD_3.pdf

STANDARD GOOD PRACTICES FOR SENDING VOICE MESSAGES

***ACCURACY IS THE MOST IMPORTANT FACTOR IN
MESSAGE HANDLING***

***NEVER CORRECT SPELLING OR EDIT THE
ORIGINAL MESSAGE IN ANY WAY***

SPEAK VERY SLOWLY AND CLEARLY

***PAUSE PERIODICALLY AND SAY “HOW COPY” TO
ALLOW RECEIVING STATION TO ASK FOR FILLS AS
NEEDED***

STANDARD GOOD PRACTICES FOR SENDING VOICE MESSAGES (CONTINUED)

- **Spell difficult or uncommon words using the ITU Phonetic alphabet**
- **Say “I spell” after you say the word but prior to spelling the word**
- **Say “numerals” prior to reading a street number, zip code or phone number, E.G. “numerals 95678”**
- **Use traditional “pro-words” when transmitting a message. E.G. Begin sending messages by saying “Please copy message number”**
- **At the end say “End of Message” after you read the signature name**
- **Say “break or how copy” to divide radiogram sections such as preamble from address or message text body from signature.**
- **Say “I say again” to repeat for clarity when asked for fills**
- **Don’t use “Q” codes in voice messages; only in CW messages**
- **Receiving station should never guess words when not clearly heard but should always say “repeat word after.... or word before....”**
- **Message should always be delivered or relayed to another station within 48 hours of receipt**

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.

AMATEUR RADIO TRAFFIC HANDLING LINKS

TRAFFIC HANDLING INFORMATION

http://www.abarc.net/files/Traffic_Handling_Info.pdf

NATIONAL TRAFFIC SYSTEM BASICS FOR RADIO MESSAGES

http://www.abarc.net/files/National_Traffic_System_Basics.pdf

ARRL NATIONAL TRAFFIC SYSTEM MANUAL

<http://www.arrl.org/chapter-one-national-traffic-system>

ARRL TRAFFIC HANDLING INSTRUCTORS GUIDE

[http://www.arrl.org/files/file/A%20GUIDE%20TO%20TRAINING%20TRAFFIC%20HANDLERS%20MASTER%20COPY\(1\).pdf](http://www.arrl.org/files/file/A%20GUIDE%20TO%20TRAINING%20TRAFFIC%20HANDLERS%20MASTER%20COPY(1).pdf)

ARRL EMERGENCY & ROUTINE MESSAGE LIST

http://www.arrl.org/files/file/Public%20Service/FSD_3.pdf

ARRL TRAFFIC PINK CARD

<http://goldenbearnert.org/files/PinkCardv202.pdf>

CALIFORNIA TRAFFIC NET 3.906 MHz (18:00 standard time; 18:30 daylight time) Daily

<http://califtrafficnet.com/>

GOLDEN BEAR AMATEUR RADIO TRAFFIC NET 3.975 MHz 19:00 Daily

<http://www.goldenbearnert.org/>