The RADIO AMATEUR’S TFC SCHOOL

THE ART OF PASSING RADIO TRAFFIC ACCURATELY & EFFICIENTLY

KATE HUTTON K6HTN
Part 1
What & Why?
In a disaster, we may need ... 

- A robust, diversified system for passing
- short messages
- throughout US & Canada (at minimum)
- via amateur radio (HF, VHF & more)
- using
  - CW
  - SSB
  - FM
  - Digital modes
“When all else fails ... amateur radio”
Hiram Percy Maxim needed to buy a tube, but could not raise seller on radio. Convinced another operator to relay request.

Later formed the American Radio Relay League.

Present net structure started in 1949 by George Hart W1NJM.

First digital implementation in 1990s.

2010s - radio email via WinLink2000 (WL2K).
History: Radio Relay International (RRI)

- Founded in 2016
- Absorbed many assets of the NTS (nets & digital assets voted for affiliation)
- Dedicated specifically to emergency communications preparedness & practice for same
- Organic in nature. Management selected by election.
- High standards
TRAFFIC HANDLERS “PRACTICE” FOR DISASTERS EVERY DAY, 365.25 DAYS PER YEAR
ROUTINE TRAFFIC

- Provides daily practice passing messages
- Teaches directed net operations
- Hones basic radio skills (phone, CW & digital) & knowledge of propagation
- Elmering opportunities
- Play trivia games, chess, etc.
- Extra points on Field Day
- Oh, yes ... send quaint, retro greetings to friends & relatives
So ... someone calls you on the telephone & gives you this message:

“Welcome to the FISTS Club. We are glad to have you with us and hope you will enjoy the fun and fellowship of the organization. Best wishes.”
What did this message look like in its “native form”?

NR 42 R HXG K8LJG 6 FLINT MI APR 15
KATE HUTTON K6HTN
PO BOX 60212
PASADENA CA 91116
626 123 4567
<BT>
ARL SIXTY NINE FISTS CLUB
73
<BT>
JOHN K8LJG FISTS NR 1460
<AR>
How did it get from Michigan to Pasadena CA? Relayed through ...

MANUAL TRAFFIC NETS

ILLUSTRATING (RED) A MESSAGE FROM MICHIGAN TO SOUTHERN CALIFORNIA

Local operator picked message up on LAN & delivered it via telephone
Nets operate in Cycles

- Section net (e.g. 7 pm)
- Region net (e.g. 7:45 pm)
- Area net (e.g. 8:30 pm)
- Region net (e.g. 9:30 pm)
- Section net
- Outgoing TFC flows “up” at the beginning of the Cycle & “down” at the end
- Inter-area (IATN/TCC) ops carry traffic between Area nets
Originally,

- Cycle I – morning
- Cycle II – early afternoon
- Cycle III – late afternoon
- Cycle IV – evening

- In today’s world (low volume), only Cycle 4 (CW) & parts of Cycle 2 (sideband)
- Section & local nets (such as LAN & SCN) are “training nets” & “delivery nets”
- Any interested ham is more than encouraged to participate
- SCN/CW requires ~15 WPM CW – a great way to increase your code skills

- RN6 & WAN require more skill & experience; casual visitors are generally excused immediately – but eavesdropping is great code practice
Digital Traffic Network (DTN)

- Parallel to traditional net structure
  - Area & Region hub stations
  - Section & local digital traffic stations
- Automatic forwarding of traffic
- Currently carries about 2/3 of long-haul traffic load
- Operates in PACTOR mode
- More on this later in presentation
Types of skills needed

- Region & Area nets, Inter-Area schedules require skilled operators to move large volumes of TFC efficiently.
- DTN needs ops who can run an automated station on HF and/or packet.
- Section & local nets need “people people” to help deliver & originate traffic, train new ops & interface with public.
- All these activities would likely happen in an disaster situation.
Part 2
The Radiogram Format and its 4 parts

Using standard, expected format & procedures reduces error & increases efficiency!!
**RADIOGRAM**

**Preamble**

<table>
<thead>
<tr>
<th>MSG. NO.</th>
<th>PRECEDENCE</th>
<th>HX</th>
<th>STATION OF ORIGIN</th>
<th>CHECK</th>
<th>PLACE OF ORIGIN</th>
<th>TIME (UTC)</th>
<th>DATE</th>
</tr>
</thead>
</table>

**TO:**

FROG LADY K6FRG
SAN ANDREAS AVE
LOS ANGELES CA 90065

**Adressee Section**

__________________________

**MESSAGE:**

<table>
<thead>
<tr>
<th>TEXT</th>
<th>25</th>
<th>WORDS</th>
<th>OR</th>
<th>LESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**FROM (SIGNATURE):**

BRASS POUNDER K6HTN
PASADENA CA

**Signature Section**

Form 1602

<table>
<thead>
<tr>
<th>RECEIVED FROM (CALL)</th>
<th>TIME</th>
<th>DATE</th>
<th>TRANSMITTED TO (CALL)</th>
<th>TIME</th>
<th>DATE</th>
</tr>
</thead>
</table>
RADIOGRAM

<table>
<thead>
<tr>
<th>MSG. NO.</th>
<th>PRECEDENCE</th>
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<th>STATION OF ORIGIN</th>
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<th>PLACE OF ORIGIN</th>
<th>TIME (UTC)</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4898</td>
<td>R</td>
<td>E</td>
<td>K6HTN</td>
<td>18</td>
<td>PASADENA CA</td>
<td></td>
<td>AUG 6</td>
</tr>
</tbody>
</table>

TO:  
CHUCK VERDON W5KAV  
10304 189TH LN SW  
ROCHESTER WA 98579  
CHUCK DOT VERDON AT RADIO DOT RELAY DOT ORG

MESSAGE:

MONTHLY
WHO
WHAT
HAIR

TRIVIA
IS
IS
QUERY

TRAFFIC
BOBAK
UNUSUAL
73

QUESTION
FERDOWSI
ABOUT

X
AND
HIS

FROM (SIGNATURE):  
KATE K6HTN

---

Form 1602
Message Number “NR”

4898 R HXE K6HTN 18 PASADENA CA SEP 30

- Chosen by originating station for their record keeping
- Usually sequential number from the beginning of the month or year
- Voiced as

  Number four eight niner eight
Precedence

Four possibilities:
- R (routine)
- W (disaster health & welfare message)
- P (priority)
- EMERGENCY

Routine
Handling Instructions

- Optional
- Full list available in documentation
- HXC – report date/time of delivery
- HXE – delivering station ask for reply
- HXF – hold delivery until _____
- HXG – toll call or postage not necessary

Hotel Xray Echo
Originating Station

4898 R HXE **K6HTN** 18 PASADENA CA SEP 30

- Callsign of first ham to commit the message to radiogram format & send it on radio

**Kilo Six Hotel Tango November**
Check

4898 R HXE K6HTN 18 PASADENA CA SEP 30

- Number of “words” (“groups”) in text
- Does not include the preamble, address or signature sections
- Alerts for an error, if the receive station counts the wrong number of groups
- Find the error or “amend the check” to, e.g. 18/17
Place of Origin

- Town & state of the person named in the Signature Section (person sending message)
- Not (necessarily) the location of the originating station

Pasadena California
Time filed

4898 R HXE K6HTN 18 PASADENA CA SEP 30

- Not present in this radiogram, since it is a routine trivia traffic message
- Time when message was created by station of origin
- Include time zone info such as 0015Z or 1615PT (Z assumed if not specified)
Date Filed

4898 R HXE K6HTN 18 PASADENA CA SEP 30

- Date when message was created by station of origin
- Must correspond to time zone, if Time Filed is present
- Use abbreviations JAN, FEB, MAR, etc

September Three Zero
### Handling instructions

**Number:** 123

- **R = Routine**
- **W = Health & Welfare**
- **P = Priority**
- **EMERGENCY**

**Date and time of origin:**

**1st ham to put it on the radio:**

**Number of words in the TEXT:**

**city, state, or Canadian providence**
Addressee Section

CHUCK VERDON W5KAV
10304 189TH LN SW
ROCHESTER WA 98579

The more (correct) information included, the more likely the radiogram can be delivered. (Chuck’s phone number omitted here for privacy reasons – but should be included in radiogram.)
Chuck ...Verdon I spell Victor Echo Romeo Delta Oscar November... Amateur Call Whiskey Fife Kilo Alpha Victor ... Figures One Zero Three Zero Four ... Mixed Group One Eight Niner Tango Hotel ... Initials Lima November ... Initials Sierra Whiskey ... etc
Procedural Words (Pro-words)

- I spell = I’m about to spell phonetically the word I just said
- Affirmative (NOT Roger) = Yes
- Negative = No
- Roger = I copy your message
- Say Again (NOT Repeat) = Please repeat
Introducers

A special class of Pro-Words

- Figures or Number Group = a group of numerals follow
- Initials or Letter Group = letters spelled phonetically follow
- Mixed Group = a word including letters, figures & “/” follows, e.g. RN6
- Amateur Call = a callsign follows

Introducers not necessary in preamble.
Addressee Section Continued

CHUCK VERDON W5KAV
10304 189TH LN SW
ROCHESTER WA 98579
break

Rochester Initials Whiskey Alpha ...
Figures Niner Eight Fife Seven Niner
Text

- Usually limited to “25 words or less”
- No conventional punctuation
- Sentence separator (X), QUERY (question mark), DASH or HYPHEN spelled out & each count as one word in the Check
- “Words” can be Words, Initials, Figures or Mixed Groups
- Usually written in lines of five groups for easy counting
MONTHLY TRIVIA TRAFFIC QUESTION X
WHO IS BOBAK FERDOWSI AND
WHAT IS UNUSUAL ABOUT HIS
HAIR QUERY 73

Monthly ... Trivia ... Traffic ... Question ...
Intial Xray ... Who ... Is ... Bobak I spell
Bravo Oscar Bravo Alpha Kilo ...
Ferdowsi I spell Foxtrot Echo Romeo
Delta Oscar Whiskey Sierra India ... and
... What ... Is ... Unusual ... About ... His
... Hair ... Query ... Figures Seven Tree
Remember to speak slowly enough for the receiving station to write it down or type it
... but not slowly enough to waste net time!!

(“copy speed”)
Signature

- (Some forms don’t have a space for it)
- Very important, however
- This is the person on whose behalf the radiogram is originated & sent
- If the person wants an answer (HXE), they may need to include necessary delivery information
Kate I spell Kilo Alpha Tango Echo ... Amateur Call Kilo Six Hotel Tango November ... End ... No more

Trivia messages are sent to friends & fellow TFC handlers, so no further information may be needed.
RX op may ask for “Fills”

- Say Again Word Before __________
- Say Again Word After __________
- Say Again Between _______ And _______

If RX station says **Say Again Word After His**, then TX station says **His Hair**
- Confirm ______
RX station says Confirm Bobak, I spell ..., TX station says Confirmed (not Yes & not Roger)

- Check
RX station says Check, and TX station says Check One Eight
- **Say Again Zip**
  RX station says **Say Again Zip**, TX station repeats the zip code.

- **Say Again Preamble**
  RX station says **Say Again Preamble**, TX station repeats the whole Preamble.
Once you are confident you have copied it all correctly, you say **Roger Number Four Eight Niner Eight**

“ROGER” ONLY WHEN YOU ARE SURE YOU HAVE THE WHOLE MESSAGE RIGHT - DON’T BE SHY ABOUT ASKING FOR FILLS

**ACCURACY BEFORE SPEED !!!**
Now you “hold” a radiogram ... you can:

1) Relay it
2) Deliver it
3) Service it

In a timely fashion! Unless it’s addressed to you, dropping it in the trash is NOT an option.
- You may REFUSE a message if it appears not to comply with Part 97, or if you cannot relay or deliver it

- **NEVER CHANGE THE MESSAGE**, even if you think it is wrong!! You can contact the originating station for clarification.

- You are allowed to add “Op Notes” just after the Address or Signature Sections, e.g.
  
  OP NOTE TEL MAY BE 626 123 4569

- Op Notes may also be helpful for delivery information, e.g.
  
  OP NOTE DLVR AFTER 4 PM TRY 2106 TEL FIRST THEN 3808
Exercise

Compose a radiogram. Consider writing one that you actually want to send.

Think carefully about how to word your message to fit clearly into 25 words!!
Part 3
Directed Nets
TFC Nets are Directed Nets

- Speak only when
  - Checking in
  - Directed to do so by Net Control (NCS)
  - Volunteering to take traffic
  - Request permission to leave the net

- Be brief & use standard phrasing

- Checking in is a two-step process
  - Give your callsign
  - When asked, list your traffic
Getting In & Out of a Net

- Listen a couple of times first
- Try to find & download the NCS script for that net
- It usually starts with something like

**CALLING ALL AMATEURS. THIS IS BOB WB6YJJ, NET CONTROL FOR TONIGHT’S SESSION OF THE LOS ANGELES NET.**
THIS IS A DIRECTED NET. PLEASE MAKE NO TRANSMISSION UNTIL CALLED FOR BY NET CONTROL.

NCS may call for check-ins in a specific order:

IS THERE A REPRESENTATIVE FROM THE RN6 NET PRESENT? (RN6 liaison checks in ...)

ARE THERE ANY REPRESENTATIVES FROM OTHER TRAFFIC NETS PRESENT? (SCN and DTN liaisons check in ...
WE WILL NOW TAKE CHECK-INS FROM ANY STATIONS WISHING TO LIST TRAFFIC.

This is your cue. Press the PTT, wait a couple of seconds, then say: **K6FRG in Los Angeles, with traffic**

NCS says: **K6FRG, good evening Jutti, please list your traffic**

You say: **RN6 One, Glendale One**

NCS says: **Thank you, next station?**
Once everyone is checked in & all the traffic is listed, NCS repeats the traffic list & asks who can take any of the traffic.

NCS says: **Who can help with any of this traffic?**

K6GPZ says: **GPZ**

NCS says: **GPZ**

K6GPZ says: **I can take Glendale.**  K6GPZ
NCS says: **K6GPZ, call K6FRG for the Glendale traffic**

K6GPZ says: **K6FRG K6GPZ Ready to Copy**

K6FRG says: **Number Two Five Routine ...**
When transfer is complete:
K6GPZ says: **Roger number Two Five.**
**K6GPZ back to net, or just Roger**
K6FRG says: **K6FRG back to net**
K6GPZ is now obliged to deliver or service this message within 48 hours or relay it to another traffic handler.

NCS then assigns the next traffic, etc.
When all the traffic is handled, NCS may ask for questions or comments, then excuse all the stations, thank the repeater system operators, and close the net:

**THANK YOU TO ALL THE STATIONS THAT HAVE PARTICIPATED. PLEASE REMEMBER TO LOG YOUR PUBLIC SERVICE HONOR ROLL POINTS AND REPORT THEM VIA RADIOGRAM AT THE END OF EACH MONTH.**
Exercise

We will demonstrate passing a radiogram by voice, then ...

Divide into pairs & pass each other your radiograms.

Begin with the receive station calling the transmit station: **W6TX this is W6RX. Read to copy.**
Part 4
Common Shortcuts: Numbered Radiograms & Booked Traffic
Radiogram compression

- Certain long messages can be sent with short text
- ARL numbered radiograms
- Complete list readily available
- In the preamble, the Check reads ARL 6, indicating that the text is expandable
- Text reads

  ARL SIXTY NINE FISTS CLUB 73
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.
Booking TFC

Saves time when
- Same message to multiple stations
- Multiple messages to same station

Give “common parts” first,
Then the “non-common parts”
Here is a book of three – common parts:

R K6HTN 8 PASADENA CA DEC 24
break
THANKS FOR QSO IN CW
ROOKIE ROUNDUP 73
break
KATE K6HTN
break
Uncommon Parts

NR 35
DAVID GREENHUT N6HD
break
NR 36
DENNIS OSZUSCIK (I spell ...) KI6UNC
break
NR 37
MARTY WOLL N6VI
Break

End of message, end of book
No more
Part 5
Delivering Traffic
Delivery Quality Rating

1. If in person, use “official” form *****
2. By telephone to addressee *****
3. By telephone to family member ***
4. To voice mail, if name given in greeting **
5. By USPS, use form & supplemental letter
6. To anonymous voice mail, ask them to call you to get message
7. By email, ask them for reply email to verify delivery
Get your purpose across before they decide you are selling something or soliciting votes

“Hi. My name is Kate. I am a local amateur radio operator K6HTN. I help relay messages by ham radio, as practice for disaster situations, and I have a radiogram greeting for you from ...”

- It’s not as hard as it sounds
- Mention that we are practicing for future disasters
- Expand all Numbered Radiogram texts before you call
- Don’t give preamble or routing information unless the recipient (a ham, presumably) asks for it
- If HXE, remember to ask for a reply & get necessary address & telephone information
- Engage in conversation if the recipient seems to want to
- Good chance to invite a new ham to a club meeting or engage in Elmering
“Servicing” messages

If the message you hold is

- Not deliverable or
- Has HXC handling instructions, you will need to send a radiogram to the originating station, reporting delivery
- Has HXE, remember to ask for a reply message & send it to the person listed in the signature section.
Successful Deliveries (HXC)

ARL FORTY SEVEN 123 K6FRG OCT 31 0500Z
(8 words) “Reference your message number 123
to K6FRG delivered on Oct 31 at 0500Z”

Or

NR 123 DLVD K6FRG OCT 31 (6 words, time not
needed for most routine traffic)

May be stacked:

NR 123 K6FRG 124 W0RJA 125 K6GPZ DLVD
OCT 31 X 73
Unsuccessful Deliveries

ARL SIXTY SEVEN 345 PHONE
323 123 4567 DISCONNECTED

“Your message number 345 undeliverable because of phone 323 123 4567 disconnected. Please advise.”

If the reason for failure is a bad or wrong phone number, include the number, in case it was garbled in the relay chain somewhere.
Part 6
Digital Traffic Network
Digital Traffic Network (DTN), formerly NTS-Digital (NTSD)

- Available 24/7 independent of net times
- Automatic message forwarding
- Error free if input is error free
- Larger capacity than manual nets
- Can adapt faster to message load
- Redundant routing paths
DTN Structure

- Has local/section, region & area MBO stations similar to NTS nets
- IATN/TCC replaced by PACTOR links between area MBOs
- DTS/DRS are liaisons on local/section nets and/or delivery stations
- **WinLink v. 3 = “WinLink Classic”**
  - Historical, does not run on current platforms

- **Airmail**
  - Used by most section-level DTS
  - Supported thru Windows 10
  - Supports WinLink2000 also
  - Does not scan frequencies

- **BPQ**
  - Used by Mail Box Operators MBOs
  - BBS like WinLink Classic, but runs on more modern platforms
  - Supports PACTOR & WINMOR
DTN MBO station

- Operates in automatic control HF sub-bands
- Uses PACTOR 1, 2 & 3
- Scans list of frequencies for TFC listed for it
- Forwards TFC to next MBO or holds for DTS to download it
- TFC flow follows Region, Area routes similar to manual nets
- DTS up/download from Region or Section MBO
Section level DTS

- Connect with Sixth Region MBO daily & download TFC for the section
- Using Airmail on HF
- Distribute TFC to local nets & traffic handlers

You are probably already delivering digital TFC!

- Upload outgoing TFC to Region MBO
Part 7
Radio Email
Radio email

- **WinLink2000 (WL2K)** – PACTOR or WINMOR on HF; packet on VHF
- Sent to a gateway station, where it enters the internet
- Email format; *may contain live radiograms*
- Attachments allowed
- Helps integrate NTS, RRI, DTN & ARES
- Small files, please! (300 baud on HF, 1200 or 9600 baud on packet)
WL2K with RMS Express ...
select mode (in this case internet)
... Open Session ... Start ...

Connect to Central Message Server

List of radio email to be downloaded

Emails received

Disconnect
Email can now be seen in Inbox

This one contains a radiogram
WL2K originally required the Internet to access message stored on Common Message Servers.

Works if you can get messages by radio to a gateway (RMS) outside disaster area.
WL2K can operate in radio only mode, from one RMS to another, bypassing the CMS.
IF YOU SEND YOUR TRAFFIC TO A “HYBRID” RMS, IT CAN WORK EITHER WAY.
In a disaster situation

- Use radio email format if
  - Attachments (e.g. ICS 213) need to be sent
  - ... email address is known
  - Addressee is able/likely to be reading email
  - Winlink.org is not on the addressee’s spam list
- Send radiogram (possibly using radio email) if
  - Address & tel are known
  - A radio relay is needed
  - You want someone to take responsibility for delivering the message
Common Uses of WL2K for TFC

- Traffic Jam: too much traffic for allotted net time (usually section level)
- Conditions: bad propagation (HF) or repeater misbehavior
- A local area has no radio outlets
- A local area has no liaisons on your net
- Sending DTN batch files
- Please use nets or DTN for SVC messages !!!
  WL2K is not a general purpose “wormhole”!
Any op may send TFC on DTN

- Send radio email via WL2K to your DTN MBO station (WS6P in RN6)
- Subject line:
  DTN QTC OK 1; pse QSL this email
- Email body:
  DTN QTC OK 1
  ATTACHED FILE:
  ATTACHMENT.TXT
  THX 73 KATE K6HTN
- Attach DTN batch file w/radiogram
DTN Batch File Format

ST 73108@NTSOK < K6HTN  (originating stn call sign)
OKLAHOMA CITY 405 123

53 R K6HTN ARL 10 PASADENA CA SEP 15
PAT WB5NKD
OKLAHOMA CITY OK 73108
BT
ARL SIXTY SEVEN 1403 N6HD
OUT OF COUNTRY ON DXPEDITON
BT
KATE K6HTN
AR

/EX
(next ST line goes here, if more than one radiogram, or a blank line at end)
Routing for routine TFC

1. Manual nets (to train operators)
2. DTN
3. Radio email

All paths should be exercised regularly.

DIVERSIFICATION! Never put all your eggs in one basket!
Part 8

The job isn’t finished until the paperwork is done.
<table>
<thead>
<tr>
<th>Number</th>
<th>Precedence</th>
<th>HX</th>
<th>Station of Origin</th>
<th>Check</th>
<th>Place of Origin</th>
<th>Time Filed</th>
<th>Date</th>
</tr>
</thead>
</table>

To:

This Radio Message was received at:

Amateur Station___________ Date____
Name__________________________
Street Address__________________
City, State, Zip________________

Telephone Number:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

From | Date | Time | Rec'd
---|------|------|-----

To | Date | Time | 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.
• “**Rec’d**” is for the station you got the message from, the date & time or net name

• “**Time**” often omitted for Routine traffic

• “**Sent**” is for the station you relay the traffic to

• “**This Radio Message**, etc.” is for the occasion when you deliver the radiogram in hardcopy form - put your own info there

Needed in case a message is lost & needs to be tracked.
- Radiograms should be retained for at least 6 months, in case there is some question.
- After that, they should be shredded, since they contain address & telephone information.
- At the end of the month, send the Section Traffic Manager (STM) K6HTN your “Station Activity Report” SAR & PSHR
- If you use digital modes, send a report to Region MBO WS6P, indicating total sent & received by digital modes
- Details & examples may be found by searching www.arrl.org
- Send your SAR, PSHR & digital reports by radiogram
Station Activity Report (SAR) focuses on NTS

- **O**: nr of messages originated (for third party)
- **R**: nr of messages received via RF
- **S**: nr of messages sent by RF
- **D**: nr of messages delivered
- **Total**
Public Service Honor Roll (PSHR focuses on all emcomm)

- **1:** nr of public service **nets** (ARES, DCS, NTS, etc) checked into (capped 40)
- **2:** **SAR** total (capped 40)
- **3:** 10 pts each for **ARRL appointment**, such as ORS, SEC, etc (capped 30)
- **4:** 5 pts per hour for **drills & public events** (footraces, parades, etc)
- **5:** 5 pts per hour for **emergency** radio comms response, net control, etc
- **6:** 10 pts for operating **MBO** station or **WL2K** gateway station, etc
- Total
Recognition

- PSHR > 70 have callsign listed in fine print in QST
- SAR > 500 (or D > 100, O > 100) have callsign listed in QST under Brass Pounders League, medallion after 3 mo

TOTAL STATS RCVD BY ARRL HQ HELPS DOCUMENT OUR USE OF THE FREQUENCIES!!
Shameless Recruiting!

- Local net participants, delivering stations
- Liaisons to WAN Cycle 2 (sideband, 20 meters, daytime)
- DTS stations (need HF & Airmail)
- Packet RMS gateways stations (need automatic VHF station) for NTS/RRI & ARES
Other opportunities

- **Net control (NCS)**
  - maintains efficient order on the net, while welcoming newcomers
  - checks station in
  - makes traffic list
  - matches traffic with receive stations
  - decides best order to pass traffic, considering
    - time constraints, esp for liaisons
    - available off-frequency options
    - propagation issues (relays required, etc)
  - answers questions & deals with issues after net
- **Liaison**
  - check into another net & take traffic headed for your “home” net

- **Net manager** (NM)
  - assigns NCS & liaison schedule
  - subs or helps arrange a sub if needed
  - keeps up net statistics (total messages passed, net time, etc.)
  - monthly net report to STM

- **Section Traffic Manager (STM)**

- **CW operator**
  - Traffic to/from SCN/CW, be NCS, NM, liaison to RN6, WAN
Homework!

You won’t learn to pass traffic by sitting in class!

- Listen to traffic nets
- Check into a net
- Send a radiogram to distant friend or family member (Holidays/birthdays are good excuses!)
- Accept a radiogram for delivery & deliver it
- Attend NTS meetings
- Help out with a drill or public preparedness event where radiograms are solicited from the attendees
For More Info

• ARRL
  225 Main St
  Newington CT 06111
  860 594 0200
  hq@arrl.org

• Contact Section Traffic Manager

• Radio Relay International
  PO Box 192
  Buchanan, MI. 49107
  info@radio-relay.org

• https://qni-newsletter.net/