RADIO AMATEUR'S TFC SCHOOL

THE ART OF PASSING RADIO TRAFFIC ACCURATELY & EFFICIENTLY

KATE HUTTON K6HTN ORS DRS
LOS ANGELES
SECTION TRAFFIC MANAGER

NATIONAL TRAFFIC SYSTEM · PRIDE · SERVICE · TRADITION · INNOVATION ·

NTS

Why not just send email !!??!!

- Useful in a disaster "when all else fails"
- Excellent training for message handling in general (ARES & other emcomm) & directed net operation
- Hones basic operating skills & knowledge of propagation
- Hams enjoy it

"When all else fails ... amateur radio"

National Traffic System

- A public service activity of amateur radio
- Originally, free message service for non-commercial messages, when long-distance phone calls & telegrams were expensive
- Now, the message traffic arm of ARES (Amateur Radio Emergency Service) & training for emcomm operators

- Hiram Percy Maxim needed to buy a tube, but could not raise seller on radio
- Started the American Radio **Relay** League
- Began as the formal ARRL relay system using 14 "trunk lines"
- Improved frequency control allowed "nets" to form
- Updated to present net structure in 1949 by George Hart W1NJM
- First digital implementation in 1990s
- 2010s - radio email via WinLink2000 (WL2K)

NTS IS THE ONLY AMATEUR RADIO SERVICE THAT "PRACTICES" 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
- Young people can experience responsibility
- 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>
```
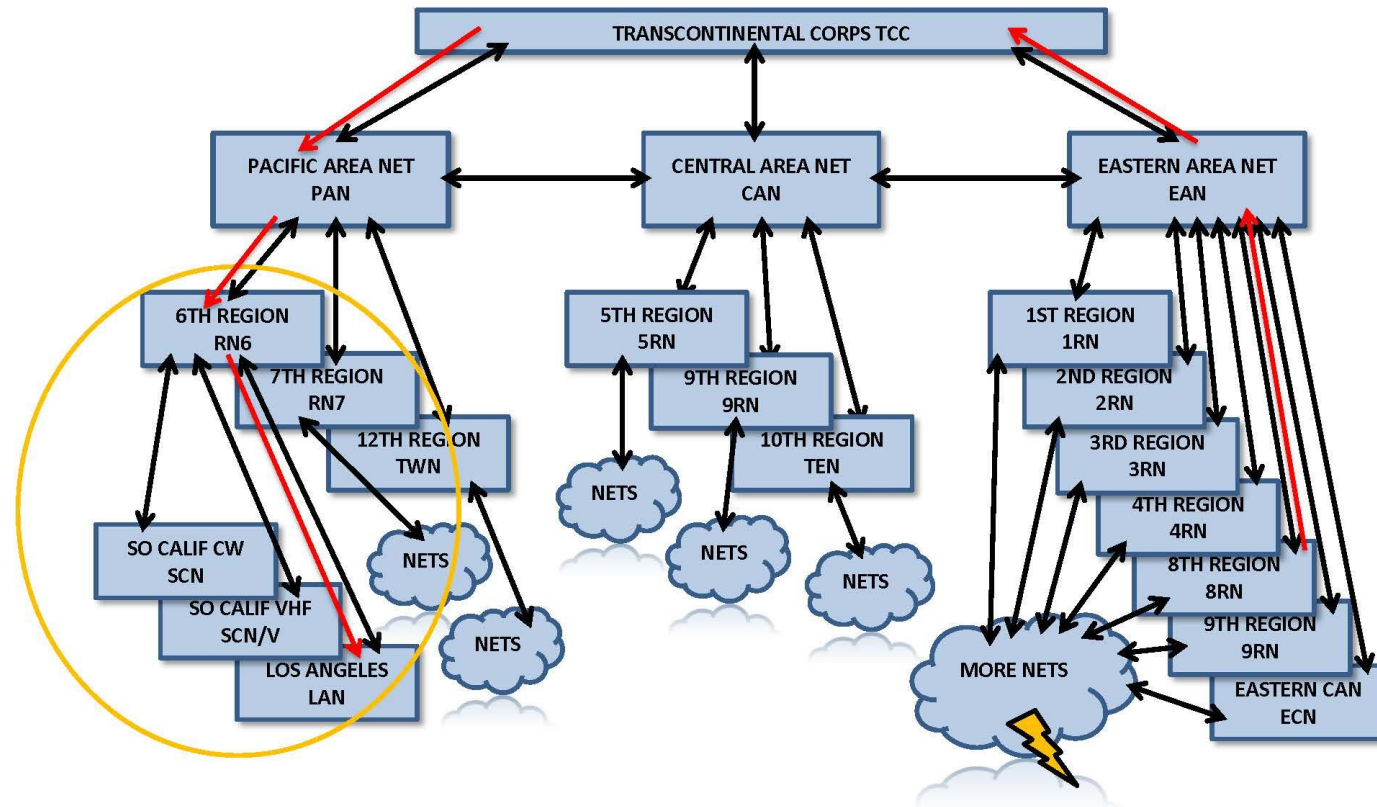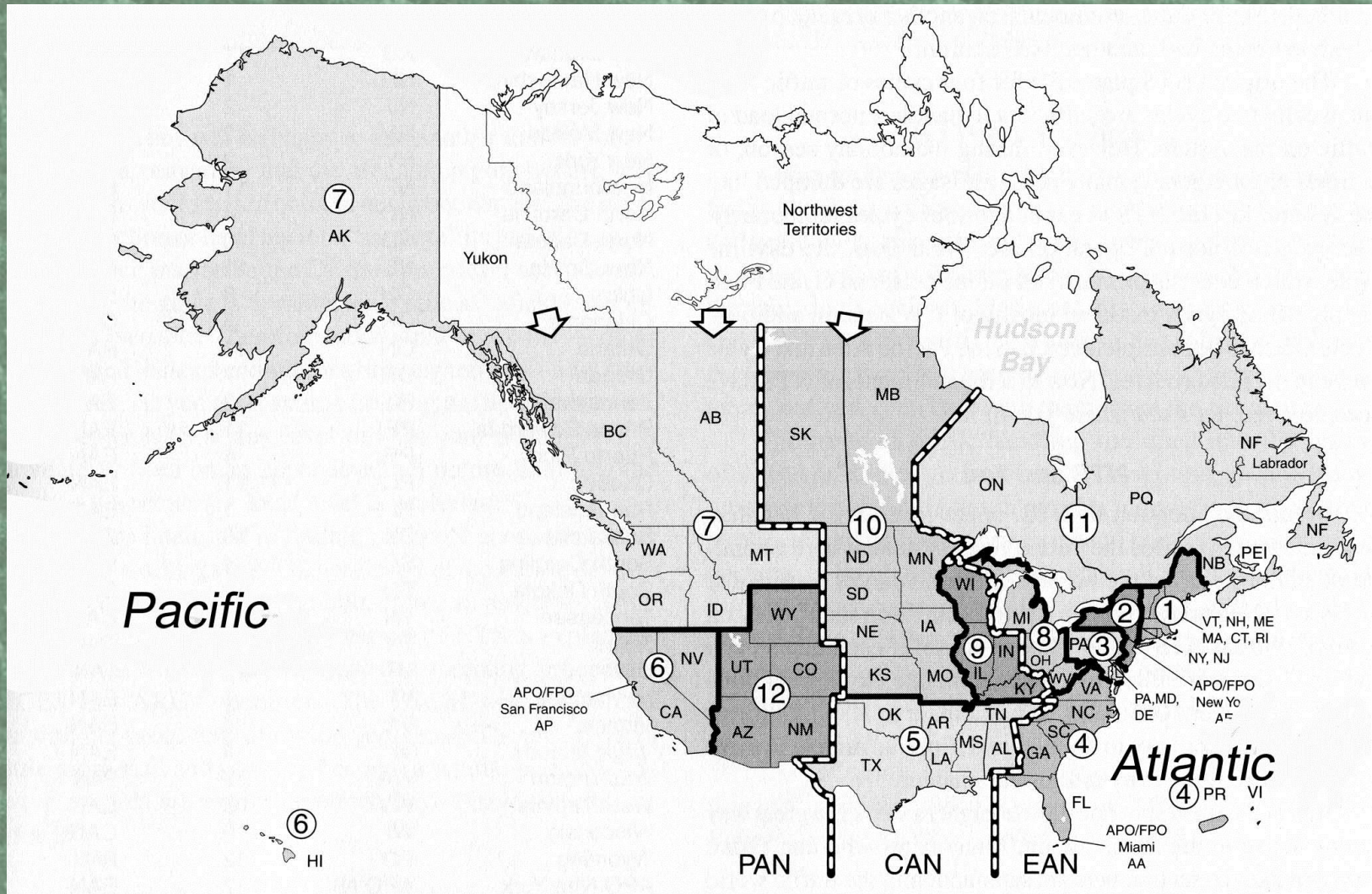
How did it get from Michigan to Pasadena CA? Relayed through …

NATIONAL TRAFFIC SYSTEM MANUAL NETS

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
- 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*"
- Any interested ham is *more than* encouraged to participate
- SCN/CW requires ~12 WPM CW – a great way to increase your code skills

- RN6 & PAN require more skill & experience; casual visitors are generally excused immediately – *but eavesdropping is great code practice*
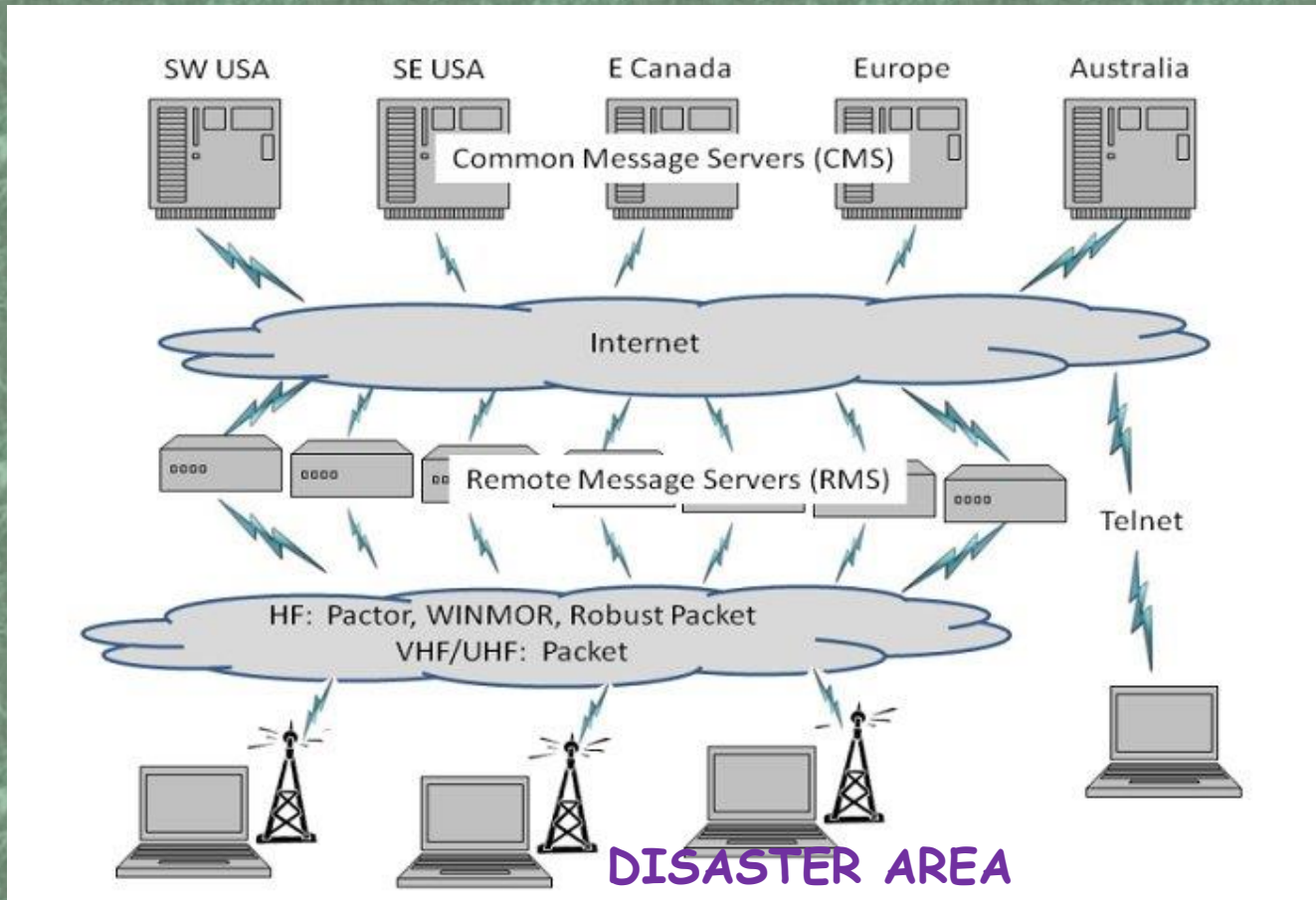
NTSD

- Parallel to traditional NTS structue
  - Area & Region hub stations
  - Section & local digital relay stations
- Independent of scheduled net times
- Automatic forwarding of traffic
- Currently carries 1/2 to 3/4 of long-haul traffic load
- Operates in PACTOR mode
- More on this later in presentation

Radio email
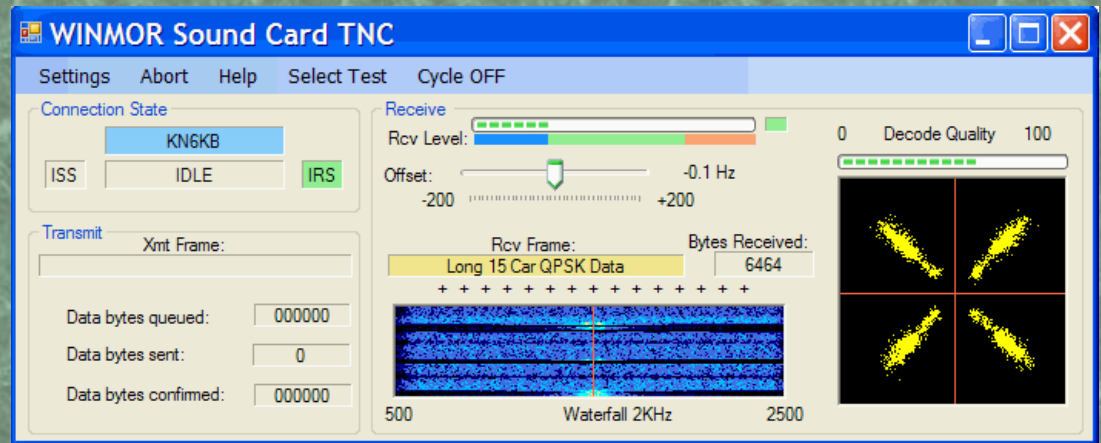
- WinLink2000 (WL2K) – PACTOR or WINMOR on HF; packet on VHF
- Sent to a gateway station, where it enters the internet
- Email format; *may contain live radiograms*
- Attachments allowed
- Small files, please! (300 baud on HF, 9600 baud on packet)

WL2K originally required the Internet to access message stored on Common Message Servers

SW USA SE USA E Canada Europe Australia

Common Message Servers (CMS)

Internet

Remote Message Servers (RMS)

Telnet

HF: Pactor, WINMOR, Robust Packet
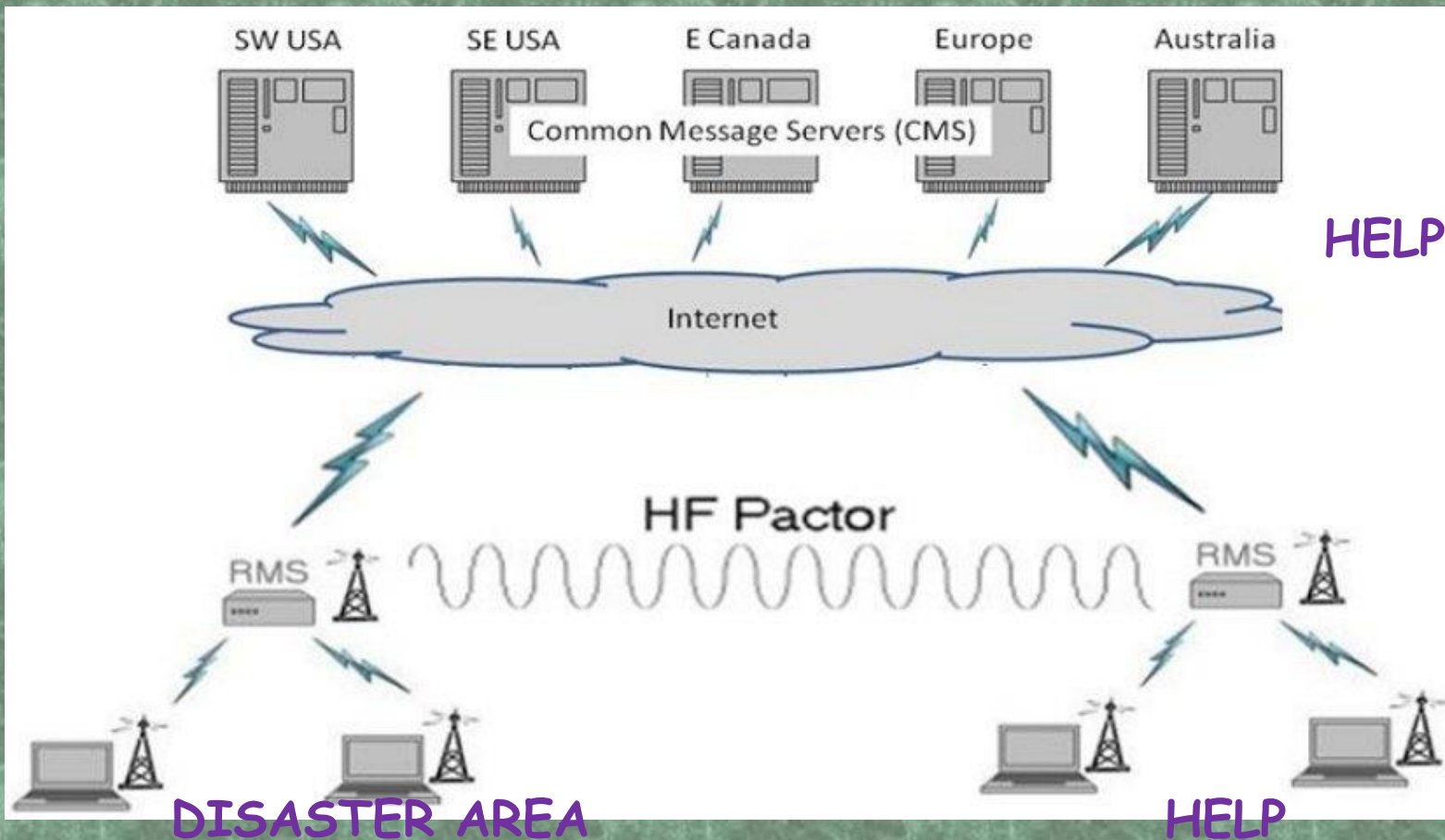VHF/UHF: Packet

DISASTER AREA

Works if you can get messages by radio to a gateway (RMS) outside disaster area

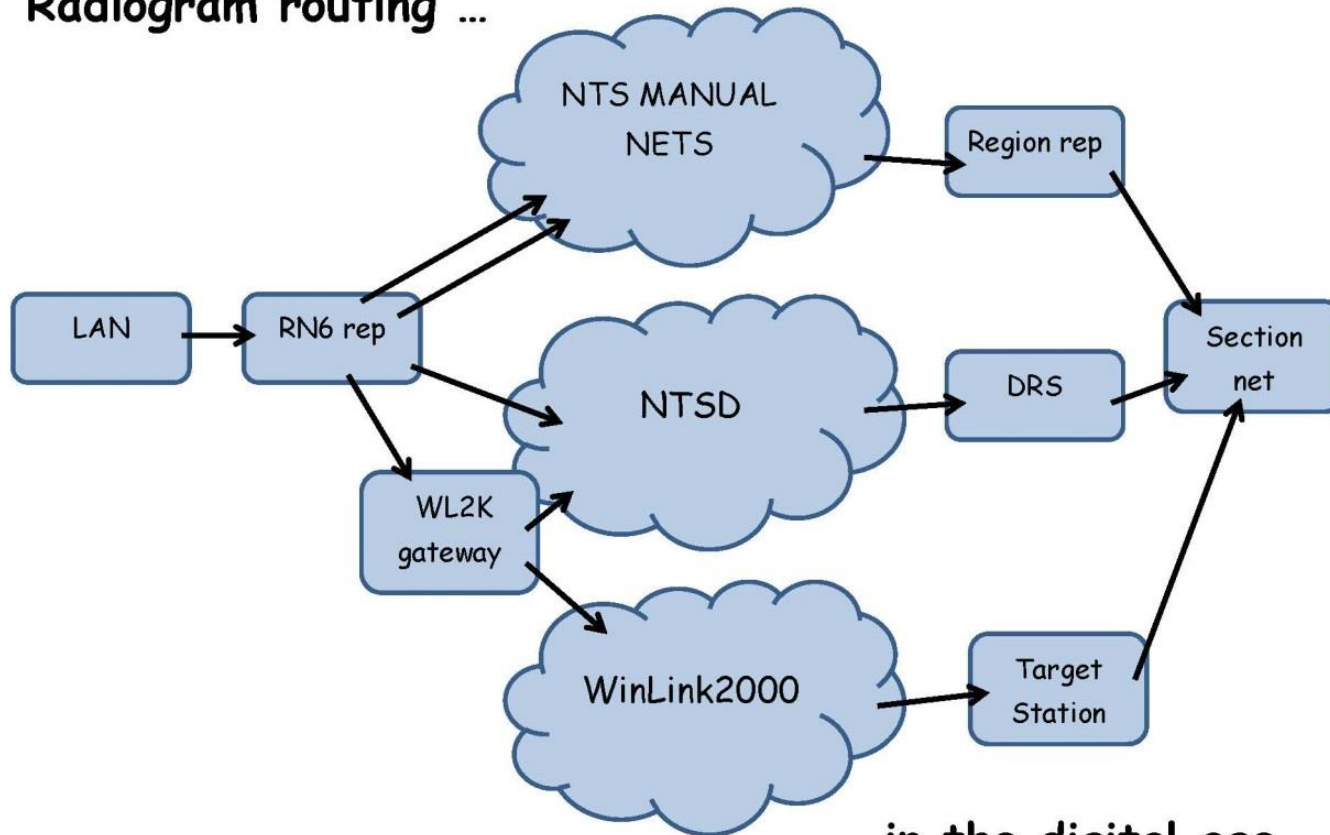# WL2K CAN OPERATE IN RADIO ONLY MODE, FROM ONE RMS TO ANOTHER, BYPASSING THE CMS
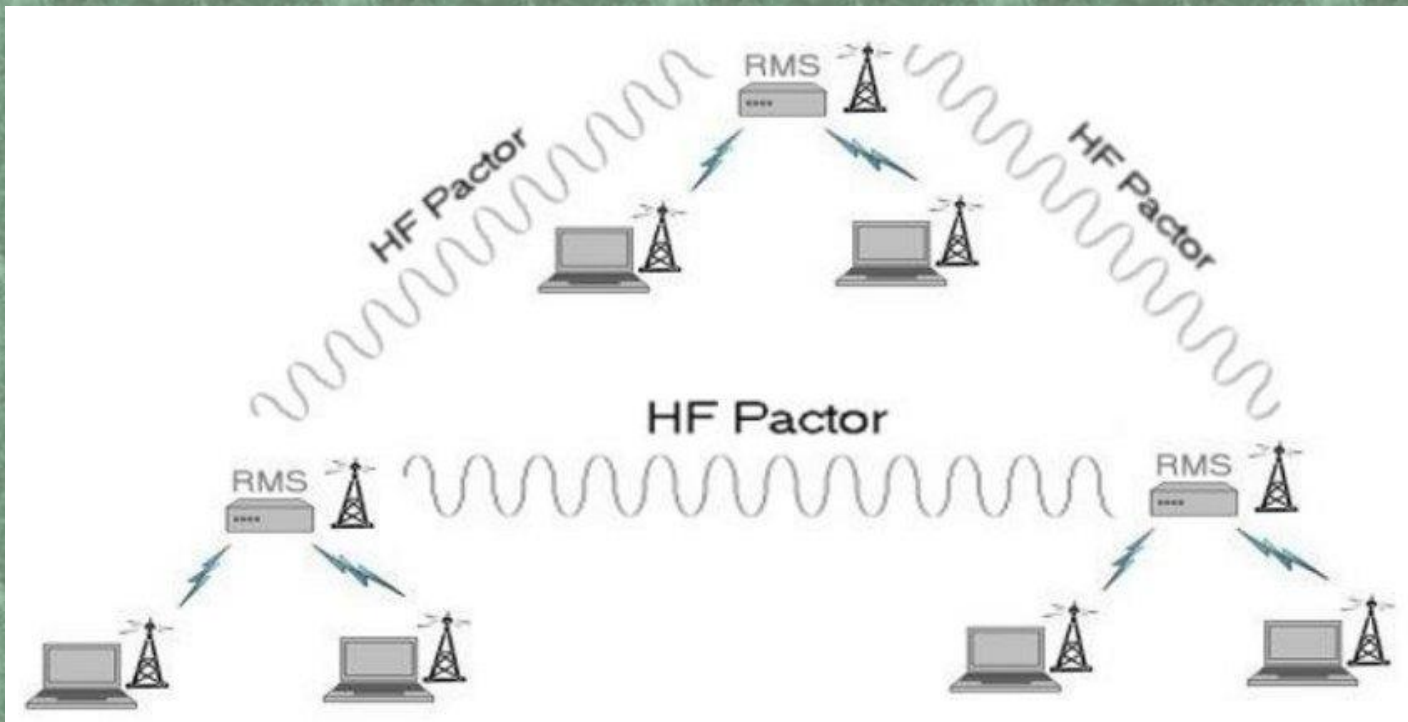
IF YOU SEND YOUR TRAFFIC TO A "HYBRID" RMS, IT CAN WORK EITHER WAY

All paths should be exercised regularly

Modes & Frequencies chosen based on ...

- Geographic area to be covered by net
- Propagation
- Skills & interest of available volunteers
- In an emergency, whatever equipment & skill set is available

Types of skills needed

- Region & Area nets, TCC require skilled operators to move large volumes of TFC efficiently
- NTSD needs ops who can run 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 emergency

The Radiogram Format
and its 4 parts

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

The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date

To:

HAMMY HAMSTER KJ6HWL
12345 MAIN ST
ANYTOWN CA 912345
213 123 4567

Addressee Section

This Radio Message was received at:

Amateur Station_____ Date_____
Name_____
Street Address_____
City, State, Zip_____

Telephone Number:

TEXT   25   WORDS   OR   LESS

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

BRASS POUNDER K6HTN   Signature Section

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.

4898 R HXE K6HTN 18 PASADENA CA SEP 30

CHUCK VERDON W5KAV

10304 189TH LN SW

ROCHESTER WA 98579

<BT>

MONTHLY TRIVIA TRAFFIC QUESTION X

WHO IS BOBAK FERDOWSI AND

WHAT IS UNUSUAL ABOUT HIS

HAIR QUERY 73

<BT>

KATE K6HTN

<AR>

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

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

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

Routine

Handling Instructions

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

- Optional
- Full list available from Resources sheet
- 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 <u>not</u> 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

One Eight

Place of Origin

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

- 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

The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number of words in the TEXT

Handling instructions

city, state, or Canadian providence

Number

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
123							

To:

R = Routine
W = health & welfare
P = Priority
EMERGENCY

1st ham to put it on the radio

This Radio Message was received at:

Amateur Station_____ Date_____
Name_____
Street Address_____
City, State, Zip_____

Date and time of origin

Telephone Number:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

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.

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Addressee Section

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

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 W5KAV
10304 189TH LN SW
ROCHESTER WA 98579
break

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 ... Intials 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), question mark (QUERY), DASH or HYPHEN spelled out & each <u>count as one</u> 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
break

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

- The invisible part of the form (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 should include necessary delivery information

break
KATE K6HTN
end no more

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 is needed.

Exercise 1

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 !!

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 it all correct, 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 TRUMPS SPEED !!

Now you "hold" a radiogram … you can:

1) Relay it

2) Deliver it

3) Service it

In a timely fashion! Dropping it in the trash is **NOT** an option.

Radiogram compression

- Certain long messages can be sent with short text

- ARL numbered radiograms

- See "Resources" for a complete list

- In the preamble, the <u>Check</u> reads <u>ARL 6</u>, 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.

- 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 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

Need a break?

Exercise 2

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. I am ready to copy**.

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 ROBERT WORJA, 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 NTSD liaisons check in ...)
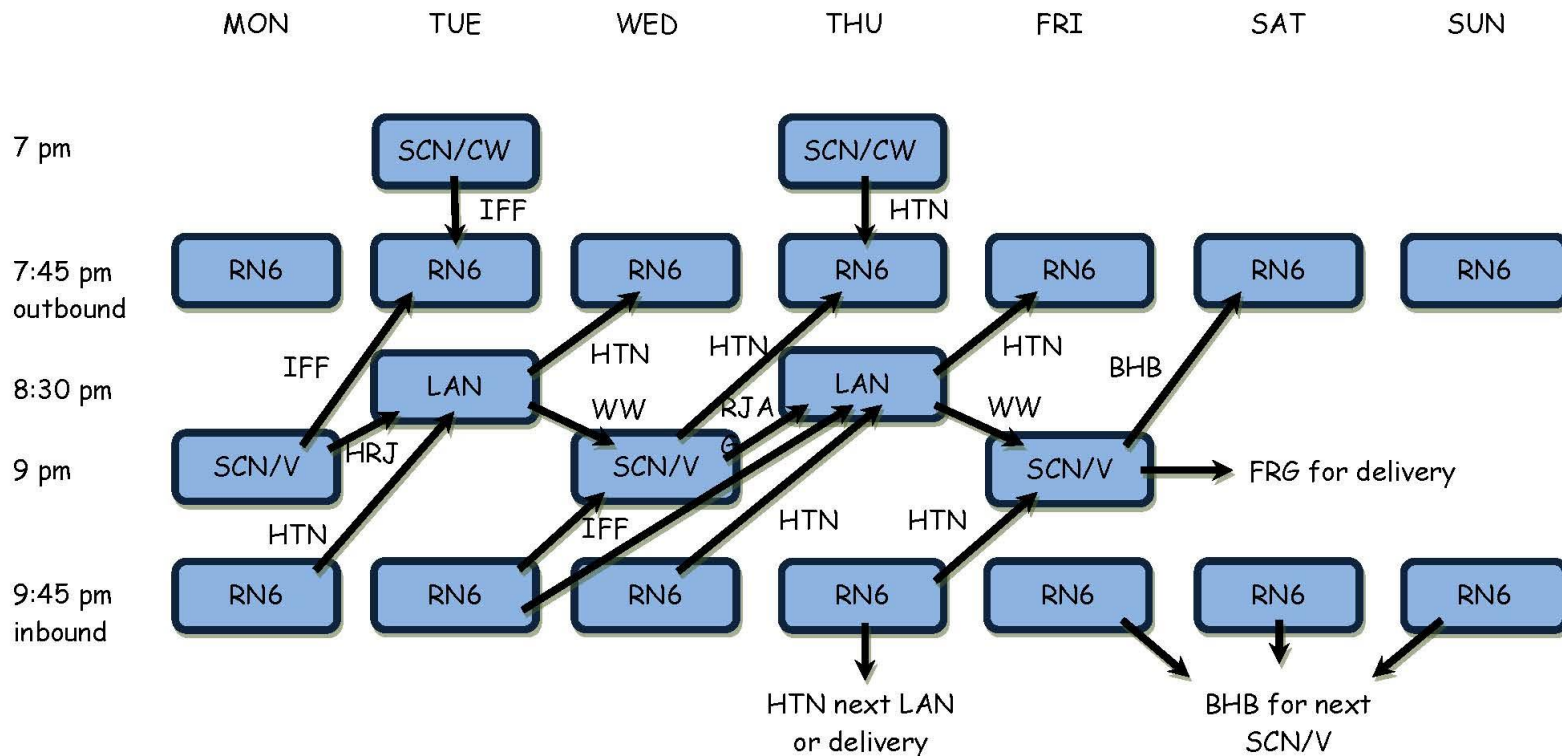
LOS ANGELES SECTION CYCLE 4 NTS NETS & LIAISONS

BHB = KI6BHB, IFF = K6IFF, WW = W6WW, HTN = K6HTN, FRG = K6FRG, HRJ = KJ6HRJ, RJA = W0RJA

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**

K6FRG says: **K6FRG back to net**

K6GPZ is now obliged to deliver or service this message within 48 hours or hand it off 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:

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.

… excuse all the stations, thank the repeater system operators, and close the net.

Net Demo

Booking TFC

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

Give "common parts" first,
Then the "non-common parts"

Book Example, 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

NR 37

break

MARTY WOLL N6VI

break

End of message, end of book

No more

Delivering TFC

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 unverified 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 and I have a radiogram greeting for you from ..."

- It's not as hard as it sounds
- Include "National Traffic System" somewhere in the conversation & 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 & <u>get necessary address & telephone information</u>

- Engage in conversation if the recipient seems to want to

- Good chance to invite a ham to a club meeting or engage in Elmering

"Servicing" messages

If the message you have is

- Not deliverable (no *), or

- Has **HXC** handling instructions you will need to send a radiogram _to the originating station_, reporting delivery

- For **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 (no *)

ARL SIXTY SEVEN 345 PHONE

323 123 4567 DISCONNECTED

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

Phone number is usually included, in case it was garbled in the relay chain somewhere. If the reason for non-delivery does not involve the phone number, there is no need to include it.

You need another break !!??!!

OK, 5 minutes

NTSD = NTS Digital

- Available 24/7 independent of net times
- Fast!
- Automatic message forwarding
- Error free if input is error free
- "Frequency & Propagation agile"
- Larger capacity than manual nets
- Can adapt faster to message load
- Redundant routing paths

Software

- WinLink v. 3 = "WinLink Classic"
  - Available from NTSD MBO station
  - Windows XP (in Windows 98 compatible mode)
  - Full-featured forwarding & frequency scanning
- Airmail
  - Fully supported up thru Windows 7
  - Supports WinLink2000 also
  - Does not scan frequencies
- **BPQ**
  - BBS like WinLink Classic, but runs on more modern platforms

NTSD MBO station

- Operates in automatic control HF sub-bands

- Uses PACTOR 1, 2 & 3 (BPQ can add WINMOR)

- Scans list of frequencies for TFC listed for it

- Forwards TFC to next MBO or holds for DRS to download it

- TFC flow follows Region, Area routes similar to manual nets

- DRS up/download from Region or Section MBO

NTSD Structure

- Has local/Section, Region & Area MBO stations similar to NTS nets

- TCC replaced by Pactor links between Area MBOs

- DRS are NTSD liaisons on local/Section nets

Sample zip code forwarding file

900**	K6HTN	9071*	K6HTN
901**	K6HTN	90723	K6HTN
902**	K6HTN	9073*	K6HTN
903**	K6HTN	90744	K6HTN
904**	K6HTN	90745	K6HTN
905**	KJ6GYL	90746	K6HTN
9051*	K6HTN	90747	K6HTN
90637	K6HTN	90748	K6HTN
90638	K6HTN	90749	K6HTN
90639	K6HTN	9075*	K6HTN
9064*	K6HTN	908**	K6HTN
9065*	K6HTN	91***	K6HTN
9066*	K6HTN	923**	K6HTN
9067*	K6HTN	935**	K6HTN

Section level NTSD

- DRS
  - connect with Sixth Region MBO daily & download TFC forwarded for them
  - using Airmail on HF
  - distribute TFC to local nets & handlers

You are probably already delivering digital TFC!

- DRS upload outgoing TFC to Region MBO
  - using Airmail on HF
  - or WL2K
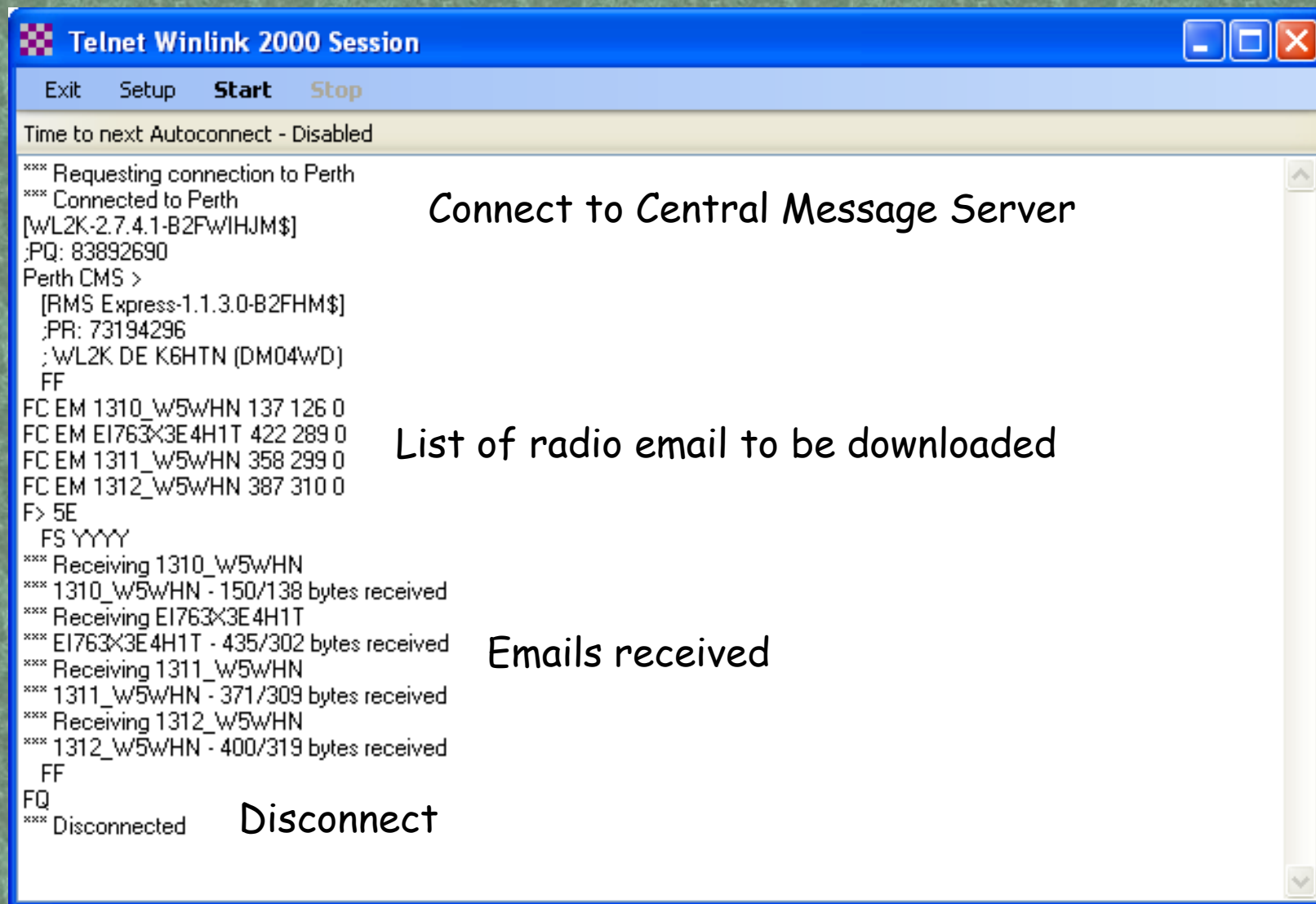
WinLink2000 (WL2K)

- Familiar email format

- May carry radiograms

- Accepts small attachments

- PACTOR 1, 2, 3, VHF/UHF packet, WINMOR sound card mode & telnet

- Forwarding via internet; or radio-all-the-way if infrastructure fails

- Helps integrate NTS, NTSD & ARES

WL2K with RMS Express …
select mode (in this case internet)
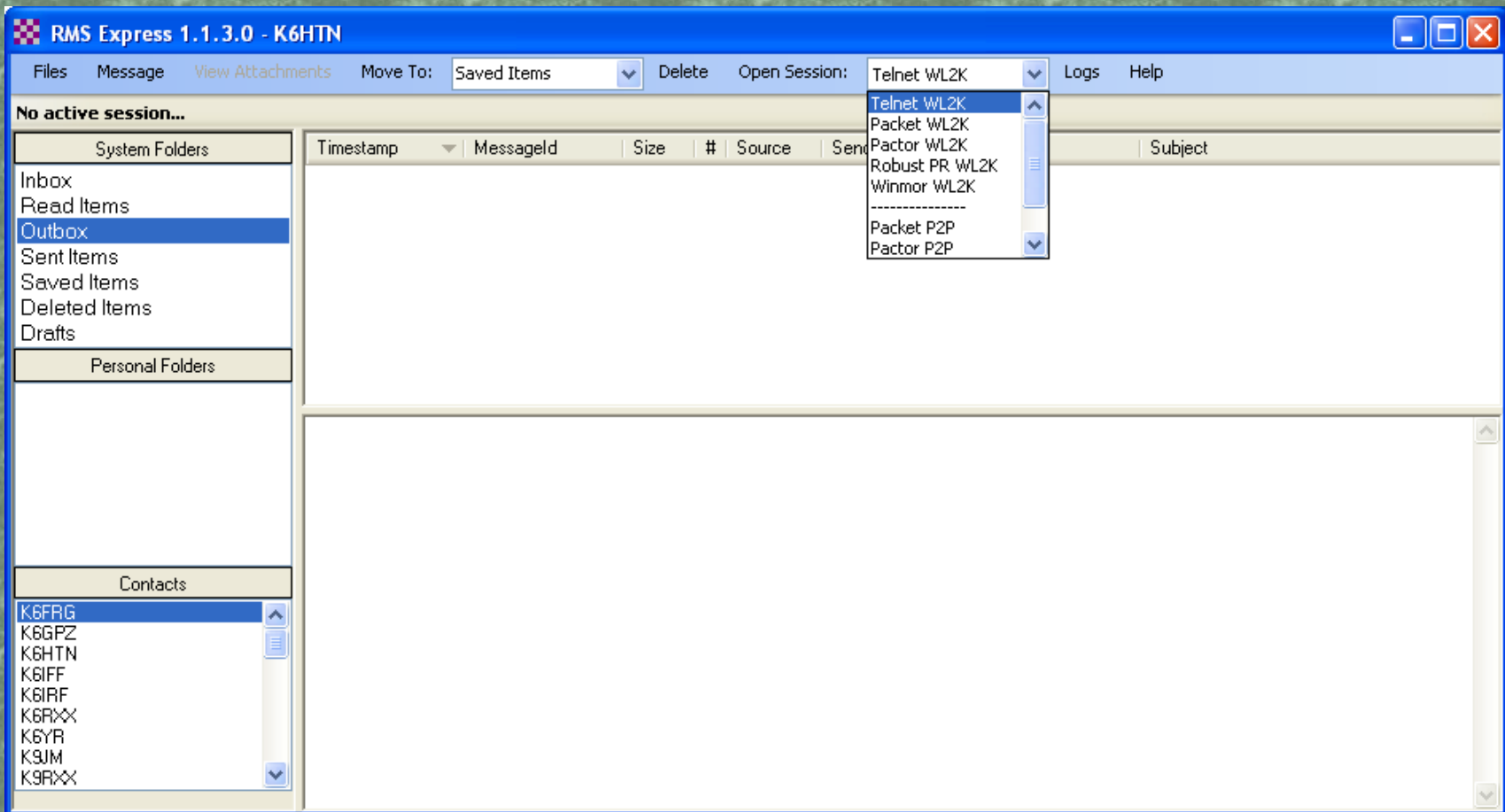
... Open Session ... Start ...

```
[Telnet Winlink 2000 Session]                    [_][□][X]

Exit    Setup    Start    Stop

Time to next Autoconnect - Disabled

*** Requesting connection to Perth
*** Connected to Perth                          Connect to Central Message Server
[WL2K-2.7.4.1-B2FWIHJM$]
;PQ: 83892690
Perth CMS >
  [RMS Express-1.1.3.0-B2FHM$]
  ;PR: 73194296
  ; WL2K DE K6HTN (DM04WD)
  FF
FC EM 1310_W5WHN 137 126 0
FC EM EI763X3E4H1T 422 289 0               List of radio email to be downloaded
FC EM 1311_W5WHN 358 299 0
FC EM 1312_W5WHN 387 310 0
F> 5E
  FS YYYY
*** Receiving 1310_W5WHN
*** 1310_W5WHN - 150/138 bytes received
*** Receiving EI763X3E4H1T
*** EI763X3E4H1T - 435/302 bytes received   Emails received
*** Receiving 1311_W5WHN
*** 1311_W5WHN - 371/309 bytes received
*** Receiving 1312_W5WHN
*** 1312_W5WHN - 400/319 bytes received
  FF
FQ
*** Disconnected           Disconnect
```

You may send TFC on NTSD

- Send radio email via WL2K (PACTOR, WINMOR or packet) **to WS6P**

- Subject line:

    ```
    NTSD OK 2; pse HXC this email
    ```

- Email text:
    ```
    NTSD OK 2
    ATTACHED FILE:
    ATTACH.TXT
    THX 73 KATE K6HTN
    ```

- Attach NTSD batch file w/radiograms

NTSD 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 DXPEDITION
BT
KATE K6HTN
AR

/EX
(next ST line goes here, or a blank line at end)

Routing for routine TFC

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

But all paths should be exercised regularly.

Never put all your eggs in one basket!

In a disaster situation

- Use radio email format if
    - attachments (e.g. ICS 213) need to be sent
    - ... email address is known & WinLink address is on addressee's white list
    - Addressee is likely to be reading email
- Send radiogram (possibly by radio email) if
    - address & tel are known
    - a relay is needed
    - you want someone to take responsibility for delivering the message

The job isn't finished until the paperwork is done.

- Helps track lost messages if necessary
- Monitors NTS activity, performance & pinpoints regional problems
- Highlights your Section, Area, etc preparedness levels

The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date

To:

This Radio Message was received at:

Amateur Station_____ Date_____
Name_____
Street Address_____
City, State, Zip_____

Telephone Number:

_____   _____   _____   _____   _____

_____   _____   _____   _____   _____

_____   _____   _____   _____   _____

_____   _____   _____   _____   _____

_____   _____   _____   _____   _____

From	Date	Time		To	Date	Time
REC'D				SENT		

- "**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**

- AND send the Section Manager (SM) N6HD your **PSHR** report, with copy to the STM

- 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 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 **ARL 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** comms response, net control, etc
- **6**: 10 pts for operating **MBO** station or WL2K gateway sation, 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

- Pass more than 10 message per month, become an Official Relay Station (ORS)

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

Shameless Recruiting!

- Net participants, delivering stations
- DRS stations (need HF & Airmail)
- NTSD liaison stations (need WL2K), get TFC from DRS to take to local nets
- Packet RMS gateways stations (need automatic VHF station) for NTS & ARES
- Alternate MBO station (need HF automatic station w/ Airmail or WinLink Classic)

Other opportunities

- Net control (NCS)
  - maintains efficient order on the net, while welcoming newcomers
  - 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 arranges 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**
  - be NCS, NM, liaison to RN6, PAN, TCC, etc

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
- 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

Congratulations!

- You made it to the end of the class
- Now for your FINAL EXAM – take home & on the honor system

  Visit http://www.emcomm.org/thc/
- THEN GO GET ON THE NETS!

Liberally borrowed from:

- Marty Woll N6VI, PowerPoint downloadable from www.areslax.org
- Greg Szpunar N2GS & Dave Struebel WB2FTX, PowerPoint downloadable from www.arrl.org
- http://home.earthlink.net/~k7bfl/pan/pan.html
- www.mi-nts.org/pdf/NTStrain.pdf
- http://www.qsl.net/d4ares/nts-history.htm
- My traffic Elmers KI6BHB, K6IFF, W6WW & K6YR

On-line Resources

PRIMARY NTS RESOURCES

http://www.arrl.org/public-service-communications-manual

http://www.arrl.org/appendix-b-nts-methods-and-practices-guidelines

http://wx4j.com/MPG6_NTSD_RADIOEMAIL.htm

www.arrl.org/files/file/**NTS%20Presentation%206-2012.ppt**

http://www.arrl.org/files/file/Public%20Service/RADIOGRAM-2011.pdf

http://www.arrl.org/files/file/Public%20Service/fsd3.pdf

http://www.arrllax.org/index.php?page=traffic-nets

SECONDARY NTS RESOURCES

http://www.arrllax.org/index.php?page=national-traffic-service

http://www.qsl.net/n5lf/cw-nts.html

www.scc-ares-races.org/nts/**radiogram_form**.xls

http://www.arrl-mdc.net/MDC_NTS_NETS/MDCNTS71.htm

http://www.emcomm.org/thc/