

# The Winlink Radio e-Mail Network Winlink for Emergency Communication

Phil Sherrod – W4PHS / NCS398



Developed by  
The Winlink Development Team



Defense Secretary Leon Panetta warns of "Cyber Pearl Harbor".

# What is Winlink

- Email over radio, worldwide.
- Mature, well-tested, and full-featured system.
- Adopted by government agencies at all levels for contingency communications.
- Extensive use by CISA SHARES and their member agencies.
- Used by the National Guard
- Used by infrastructure-critical NGOs.
- Historical usage trend from Maritime to EmComm.
- Development is driven by user input and experiences during incidents and exercises.

# Winlink Interoperability

- Connects amateurs, SHARES, USCG Aux, National Guard, NGO, and many others.
- HF – Pactor, Winmor, Vara, ARDOP
- VHF / UHF – Packet, Vara FM
- SMTP/POP/IMAP – Outlook and other mail clients
- MESH over microwave (for example, AREDN)
- Radio bridge to Internet e-mail allows connectivity to almost everyone in the world.
- A radio system is worthless unless it's interoperable with the person you want to reach. With the e-mail bridge, Winlink is the most interoperable radio system in the world.

# Winlink Has Been Used in Multiple Incidents

**Government Activation**



**Exercise for Congress**



**Hurricane Maria**



**California Fires**

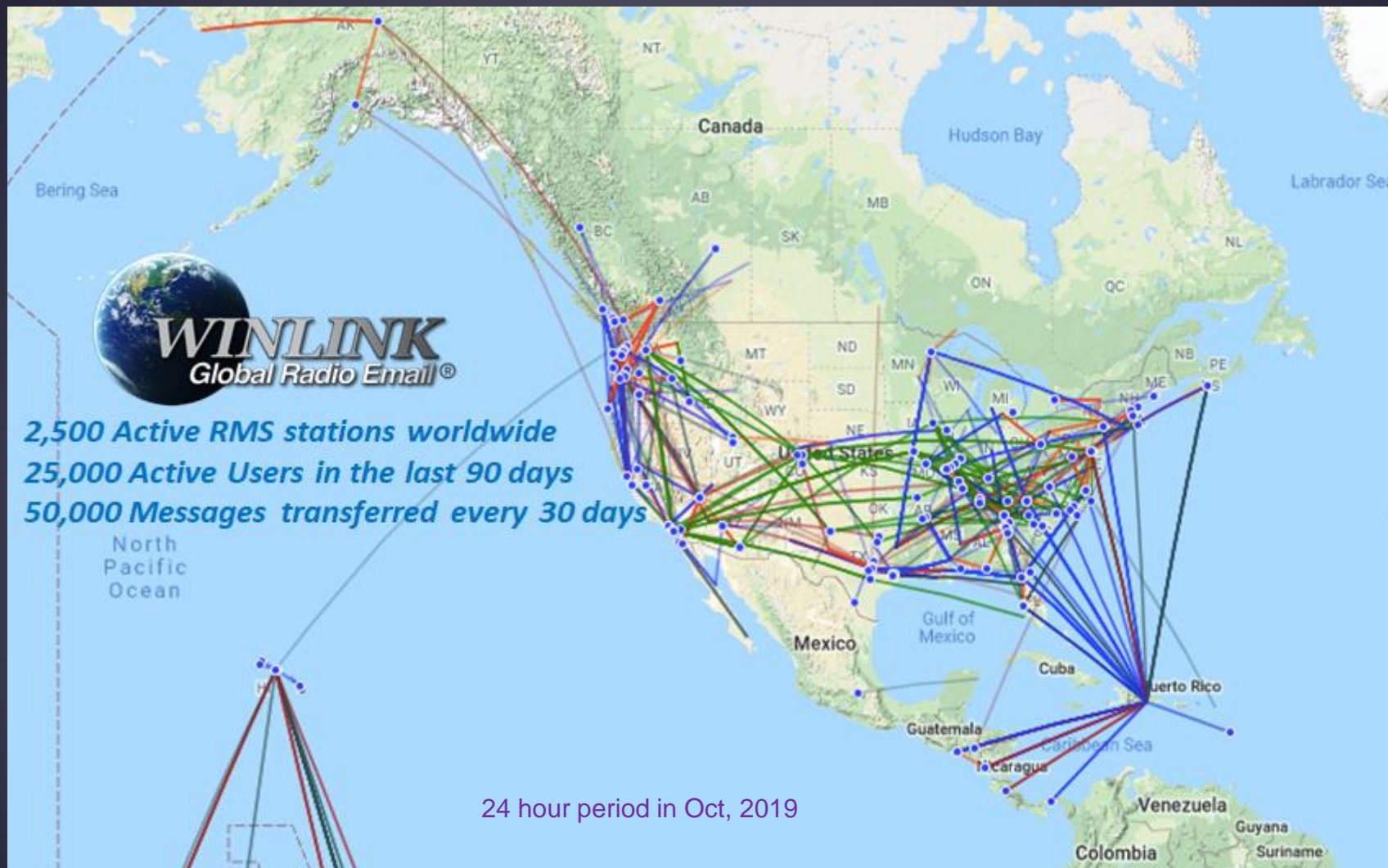


# Winlink System – Inexpensive & Portable

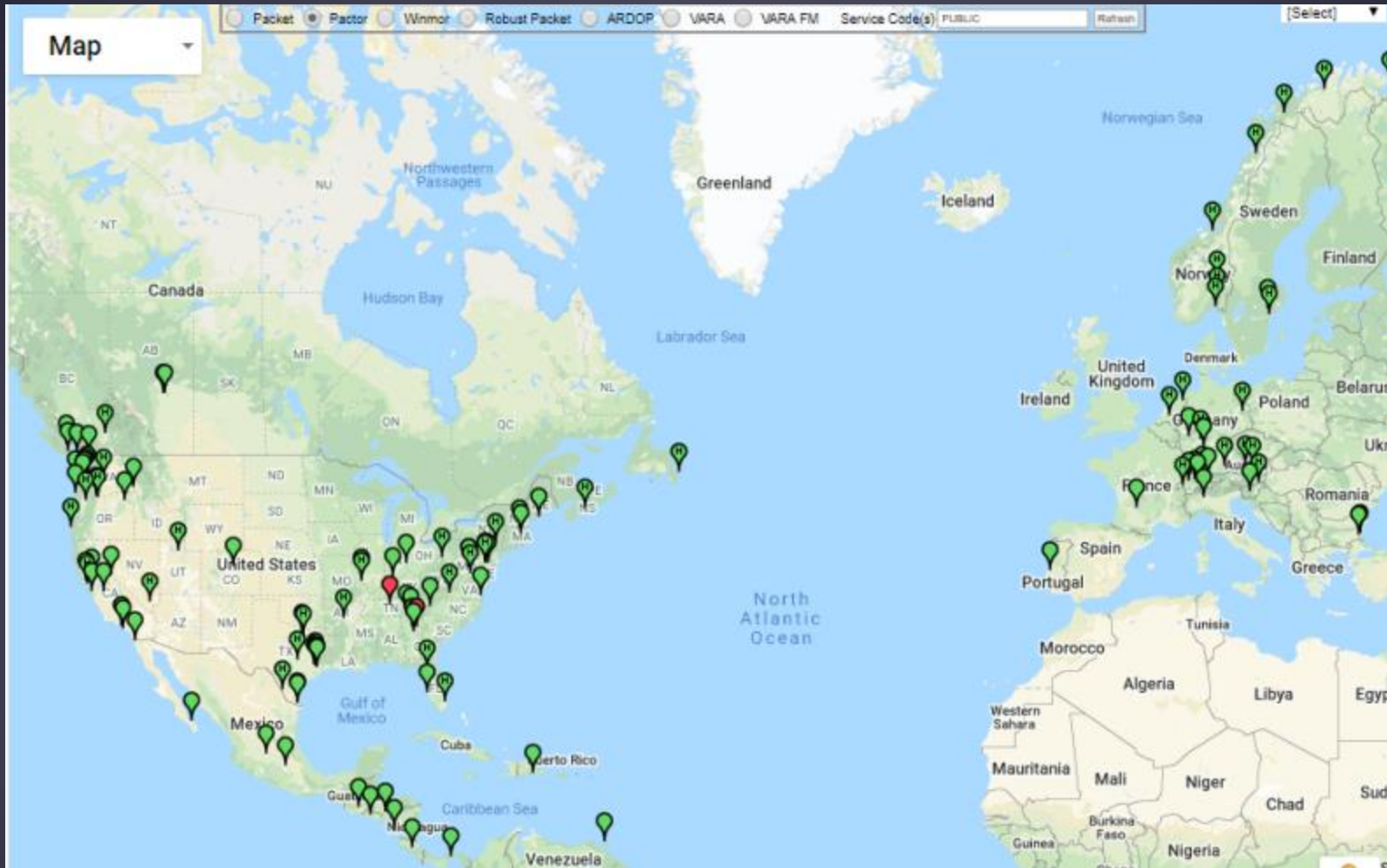
- Equipment for a Winlink station:
  - HF Radio and Power supply – Ham radios are fine
  - HF antenna – Must be frequency agile
  - Pactor modem
  - Soundcard
  - Cost about \$3,200



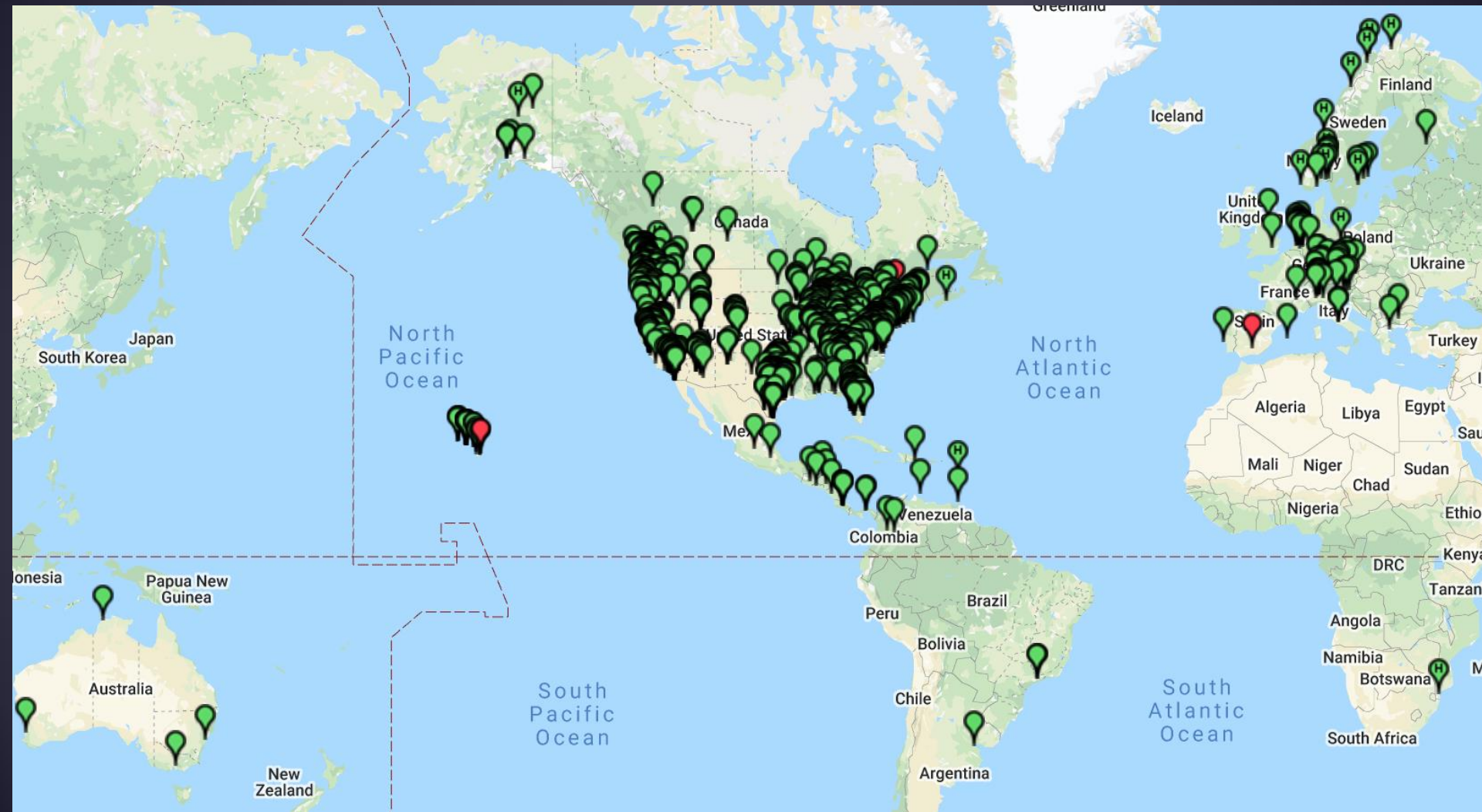
# Scope of Winlink System



# Current Ham HF Pactor RMS Stations

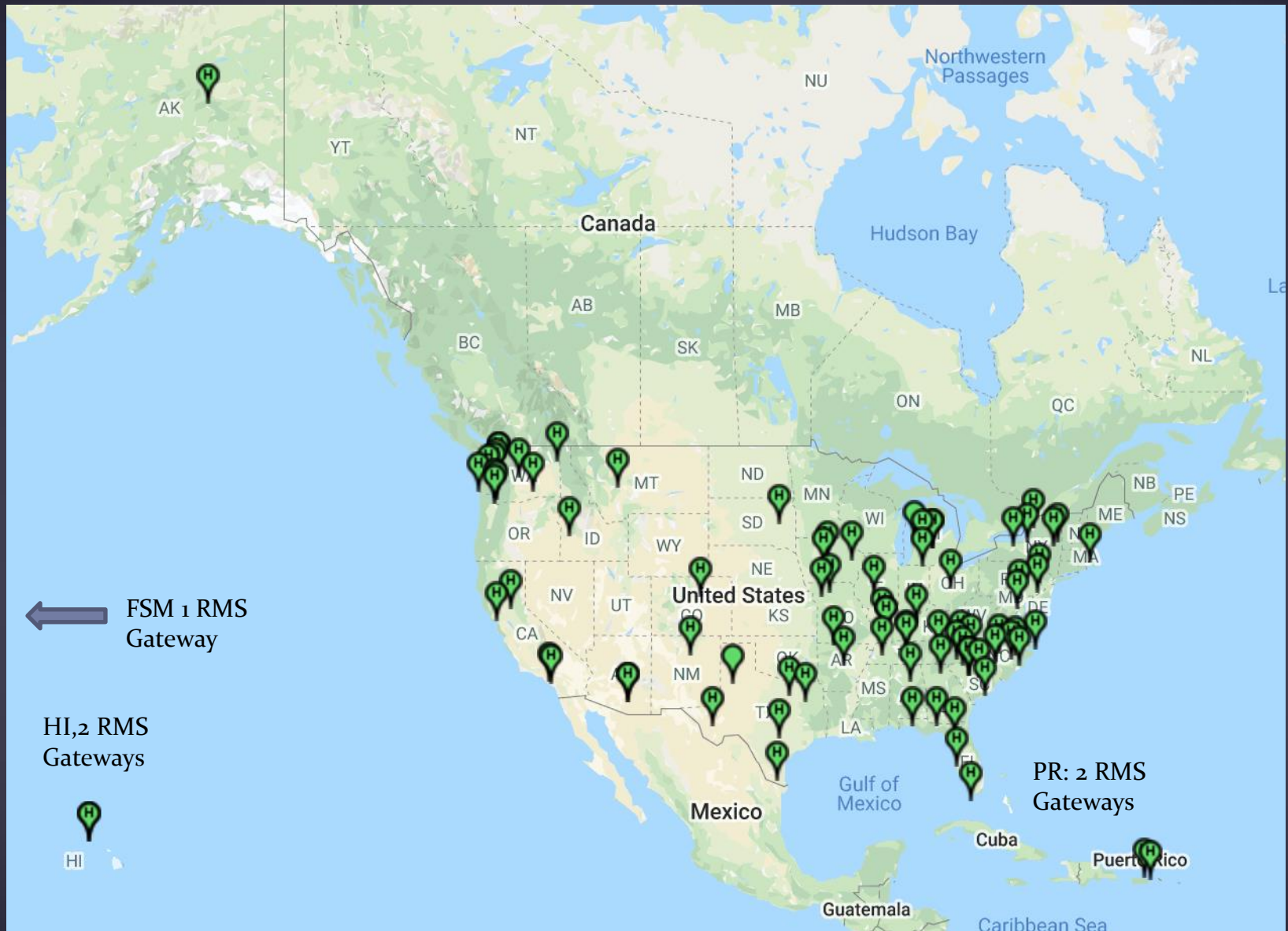


# Ham VHF/UHF RMS gateways





# CISA SHARES Winlink Hybrid RMS Gateways



# Why Do We Need HF Radio and Winlink?

- We have ever-expanding cell phone coverage, FirstNet, IPAWS, Satellite systems & Internet communications.
- So why do we need HF radio and Winlink...
- Because of hurricanes, ice storms, earthquakes, forest fires, cyberattacks, and many other events that knock out everything else.
- Because of its reach, HF radio can provide essential communication when all other communication is gone. Puerto Rico and New Orleans are good examples.
- HF Winlink requires no external existing infrastructure.

# Disaster Assessment Picture – Kentucky Ice Storm



## Kentucky Ice Storm

Cell, Land-line or Fax? NO!

- Air Card? NO!

- Public Safety, Mutual Aid? NO!

- Satellite/Microwave? NO!

- Winlink Radio E-Mail?

*Yes! Mobile from a TEMA vehicle.*

*This picture was one of several sent by TEMA mobile through the Winlink radio email system.*

# DHS Submission to FCC After Puerto Rico

**The value of volunteer amateur operators cannot be overstated.**

DHS comments filed to the FCC regarding the use of amateur volunteers during the 2017 Hurricane season (mainly Maria):

***“FCC Q1: To what extent were response efforts facilitated by amateur radio operators?”***

DHS A1: In addition to the direct services provided by amateur radio operators, the indirect services of technology development, operator training, and support of the SHARES Winlink network (among others) makes amateur radio an indispensable component of our national capability to prepare for, protect against, respond to, recover from, and mitigate against all hazards.”

# Additional DHS Comments

**The value of volunteer amateur operators cannot be overstated.**  
DHS comments filed to the FCC regarding the use of amateur volunteers during the 2017 Hurricane season (mainly Maria):

***“FCC Q2: Going forward, should efforts be made to increase the use of amateur radio services in connection with the planning, testing and provision of emergency response and recovery communications?”***

DHS A2: We ask the Commission to review those aspects of Part 97 of their rules relating to emergency communications, including operational and technical restrictions, which limit utilization of new technologies”.

# What Winlink Offers for EmComm

- Reliability, Accuracy, and Interoperability:
  - High reliability (99.99% availability for 15 years)
  - 100% accurate message transmissions (ARQ protocol)
  - Radio bridge to Internet e-mail.
- Geographical dispersion and redundancy for reliability
- A communication system is only useful if the recipient can receive the messages. Winlink is used by *many* agencies and NGO. Even if they don't have a radio, you can send and receive Internet e-mail.
- Interoperability is vital in EmComm.

# What Winlink Offers for EmComm (more)

- Standard e-mail format with many features
  - Binary file attachments (pictures, pdf, spreadsheets)
  - Automatic message compression/decompression
  - On SHARES, encrypted attachments and Pactor 4.
- Time independence – Stores messages for pickup at a later time.
- Good operation at most power levels
- Not limited by station-to-station propagation
- Many built-in ICS and other forms
- Automatic message logging, and 309 report generation

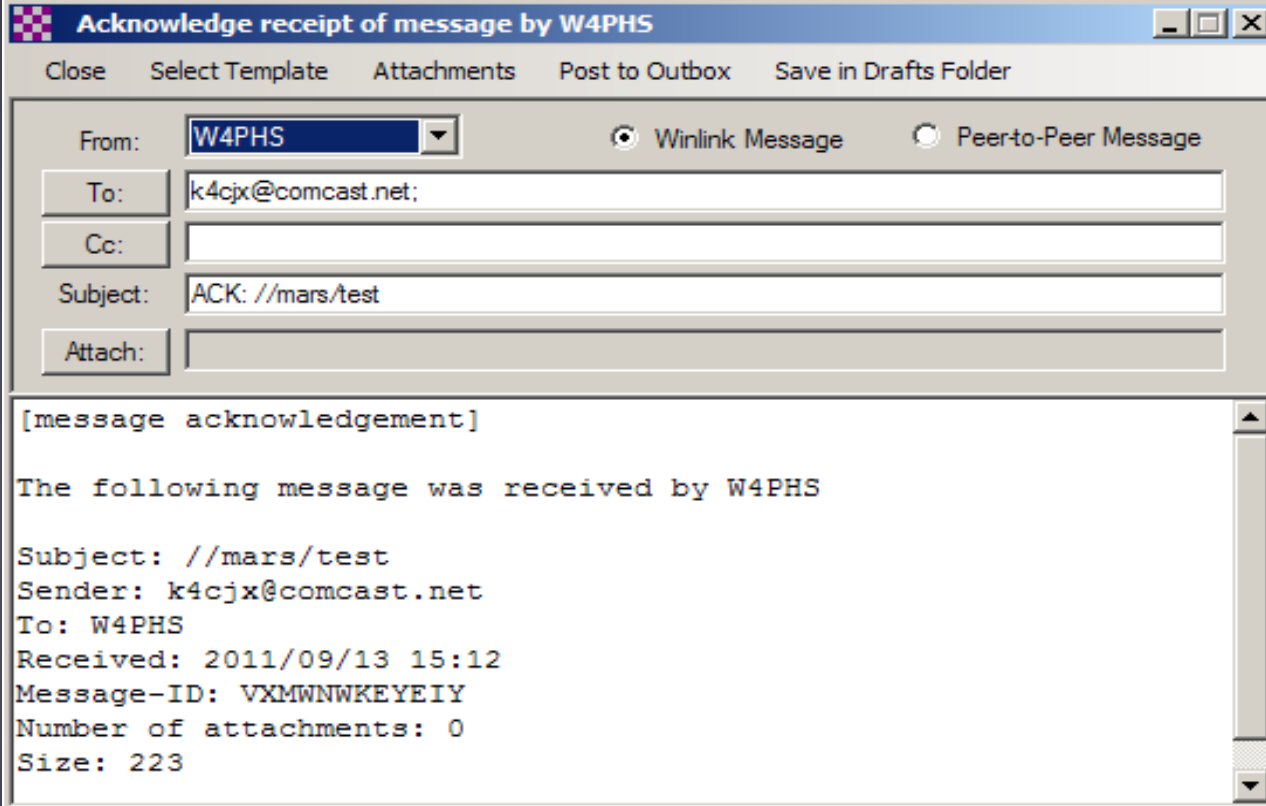
# Winlink Express Features for EmComm

- Message read receipt acknowledgments
- Picture editor
- Position reports
- Catalog requests
- Standard forms
- 309 Message log generation
- Conventional, Radio-only, and MESH operation



# Message Receipt Acknowledgements

- Positive acknowledgment that message was received
- Information about message filled in automatically
- Proof of message delivery



The screenshot shows a software window titled "Acknowledge receipt of message by W4PHS". The window has a menu bar with "Close", "Select Template", "Attachments", "Post to Outbox", and "Save in Drafts Folder". Below the menu bar is a form with the following fields:

- From:** W4PHS (dropdown menu)
- To:** k4cjsx@comcast.net
- Cc:** (empty)
- Subject:** ACK: //mars/test
- Attach:** (empty)

There are two radio buttons: "Winlink Message" (selected) and "Peerto-Peer Message".

Below the form is a text area containing the following text:

```
[message acknowledgement]

The following message was received by W4PHS

Subject: //mars/test
Sender: k4cjsx@comcast.net
To: W4PHS
Received: 2011/09/13 15:12
Message-ID: VXMWNWKEYEIIY
Number of attachments: 0
Size: 223
```

# Requesting Receipts and Setting Message Defaults

The image shows a software interface with a 'Request read receipt' checkbox and a 'Set Defaults' button. A 'Message Default Settings' dialog box is open, showing options for default account, sending mode, CC addresses, and message sending options. Callout boxes provide explanations for these settings.

Request read receipt for this message

Primary callsign or tactical address

Default to conventional, radio-only, or peer-to-peer

Automatically use these CC addresses

Request read receipts by default

Message may not be altered when forwarded or received

Set message sending defaults

Message Default Settings

Default account for sending: W4PHS

Default sending mode: Winlink Message

Default CC addresses

Message sending options

Default request read acknowledgement

Disallow editing or altering sent messages

To use defaults, close and reopen the message screen

Save Cancel

# Setting User Preferences

Preferences

Message Reading Options

Viewing seconds before marking message read:

Automatically move read items to Read Items folder

Message review before downloading

Display list of pending incoming messages prior to download

Message acknowledgement options

Default to requesting message read acknowledgements

Automatically send message read acknowledgements when requested

Automatically send message read acknowledgements for all read messages

Ignore read acknowledgement requests on incoming messages

Message sending options

Automatically add contact entry for each destination address

Disallow editing or altering messages you send

Line wrapping

Wrap print lines after this many characters:

Distance Units

km  Miles

Update Cancel

Review pending messages before downloading

Options for message acknowledgments

# Posting Position Reports

- Send message with your current position
- Manually enter or use GPS input
- Use Catalog Request to locate nearby users

GPS / Position Report

GPS Serial Port:  
GPS Serial Port:  GPS Baud Rate:

GPS Status  
\$GPRMC,1.70646,0.00,A,36.004649,N,086.460039,W,0.00,95.56,220620,,A,49  
Last fix at 2020-06-22 17:06:46

GPS Latitude:  GPS Longitude:   
GPS Speed:  Knots GPS Course:  True  
 Automatically update grid square from GPS position:

Position Report  
Your last position report was posted at 2020-05-31 12:17:42 UTC  
   
Report Date/Time:  UTC  
(Latitude/longitude may be entered as decimal degrees, DD-MM.MMMx, or DD-MM-SSx)  
Latitude:  Longitude:   
Speed:  Knots Course:  True  
Comment - 148 Characters Maximum:

GlobalSat BU-353-S4 USB GPS Receiver (Black)  
by GlobalSat  
★★★★☆ 1,039 ratings | 272 answered questions  
Amazon's Choice for "bu-353s4"

Price: \$25.99 ✓prime Today by 6PM & FREE Returns  
Your cost could be \$15.99. Eligible customers get a \$10 bonus when reloads  
Eligible for [amazon smile](#) donation.

- Built-in GPS Patch Antenna
- Built-in Roof Mount Magnet
- 48-Channel All-in-View Tracking
- SiRF Star IV GPS Chipset
- WAAS/ EGNOS Support

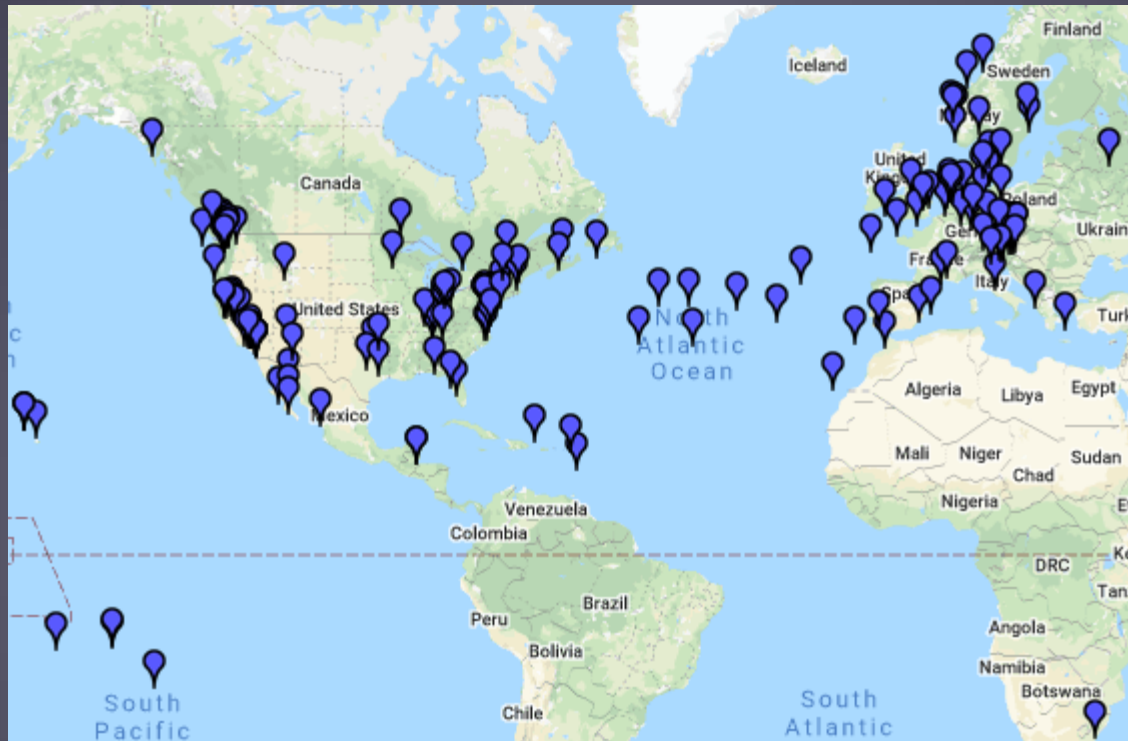
Compare with similar items  
New (52) from \$25.99 ✓prime FREE Shipping  
 Report incorrect product information.

 **PillPack by Amazon Pharmacy**  
Your medication, delivered [Learn more >](#)



# Winlink Webpage Position Map

- Position map at <https://winlink.org/userPositions>
- Updated as new position reports are received
- Click a pin for detailed information



# Winlink Catalog Requests

Winlink Query Catalog

Categories	Inquiry ID	Description	Size
METAREA_IV	ALIR.JPG	GOES IR Sat Image for Gulf of Alaska	42406
METAREA_IX	ALVS.JPG	GOES Visible Sat Image for Gulf of Alaska	55545
METAREA_V	BAJA_GOM.JPG	GOES Sat Pix of Baja and Gulf of Mex	39126
METAREA_VI	CAIR4.JPG	GOES IR Sat Image for Caribbean	87492
METAREA_VII	EUMETSAT	MET-9, MET-7, MTSAT1R, GOES11 and GOES13 (DWD)	315538
METAREA_VIII	GEIR.JPG	Eastern Pacific Southern Hemisphere IR	64937
METAREA_X	GLAPXRBL.JPG	GOES-East Gaylord, MI	57861
METAREA_XI	GLCURIR.GIF	GOES-12 Current IR satellite Imagery for Great Lakes	57861
METAREA_XII	GLCURVS.GIF	GOES-12 Current Visible satellite Imagery for Great Lakes	57861
METAREA_XIV	GLCWV.GIF	Great Lakes - Lake St Clair Wave Height	57861
METAREA_XVI	GLDLHRBL.JPG	GOES-East Duluth, MN	57861
NAVIMAIL	GLDTRBL.JPG	GOES-East Detroit/Pontiac, MI	57861
PROPAGATION	GLESFCUR.GIF	Great Lakes - Lake Erie Surface Currents	57861
S/PACIFIC_WX	GLEWN.GIF	Great Lakes - Lake Erie Winds	57861
SAT_KEPS	GLGRBRBL.JPG	GOES-East Green Bay, WI	57861
SAT_PIX	GLGRRRBL.JPG	GOES-East Grand Rapids, MI	57861
UK_CADET	GLHSFCUR.GIF	Great Lakes - Lake Huron Surface Currents	57861
US_FIRE_INFO	GLHWN.GIF	Great Lakes - Lake Huron Winds	57861
WL2K_FORMS	GLHWV.GIF	Great Lakes - Lake Huron Wave Height	57861
WL2K_HELP	GLMKXRBL.JPG	GOES-East Milwaukee, WI	57861
WL2K_RMS			
WL2K_USERS			
WX_AK_COAST			
WX_ARCTIC			
WX_ATLANTIC			
WX_AUS			
WX_AUS_RAD			
WX_BC_COAST			
WX_BERMUDA			
WX_BRAZIL			
WX_BUOY			
WX_CANADA			
WX_CANARIES			

Selections

Double click to add or delete query selections.

Post Request

Last Update  
0000-00-00 00:00

Update catalog list

Update via Internet

Request update via radio

Cancel

# Reply to Catalog Request



# Request for Report of Closest Users

Winlink Query Catalog

Categories	Inquiry ID	Description	Size
WL2K_RMS	CMS_STATUS	Real time Operational Status of all WL2K CMSs	3968
WL2K_TERMS	CMS_TRAFFIC	Winlink Message Traffic History	1995
WL2K_USERS	WL2K_MOBILES	Mobile user posting reports in the last 30 days	20000
WX_AK_COAST	WL2K_NEARBY	Closest 30 WL2K Mobiles to Your Last Reported Position	20000
WX_ARCTIC			
WX_ATLANTIC			
WX_AUS			
WX_AUS_RAD			
WX_PALE_DE			

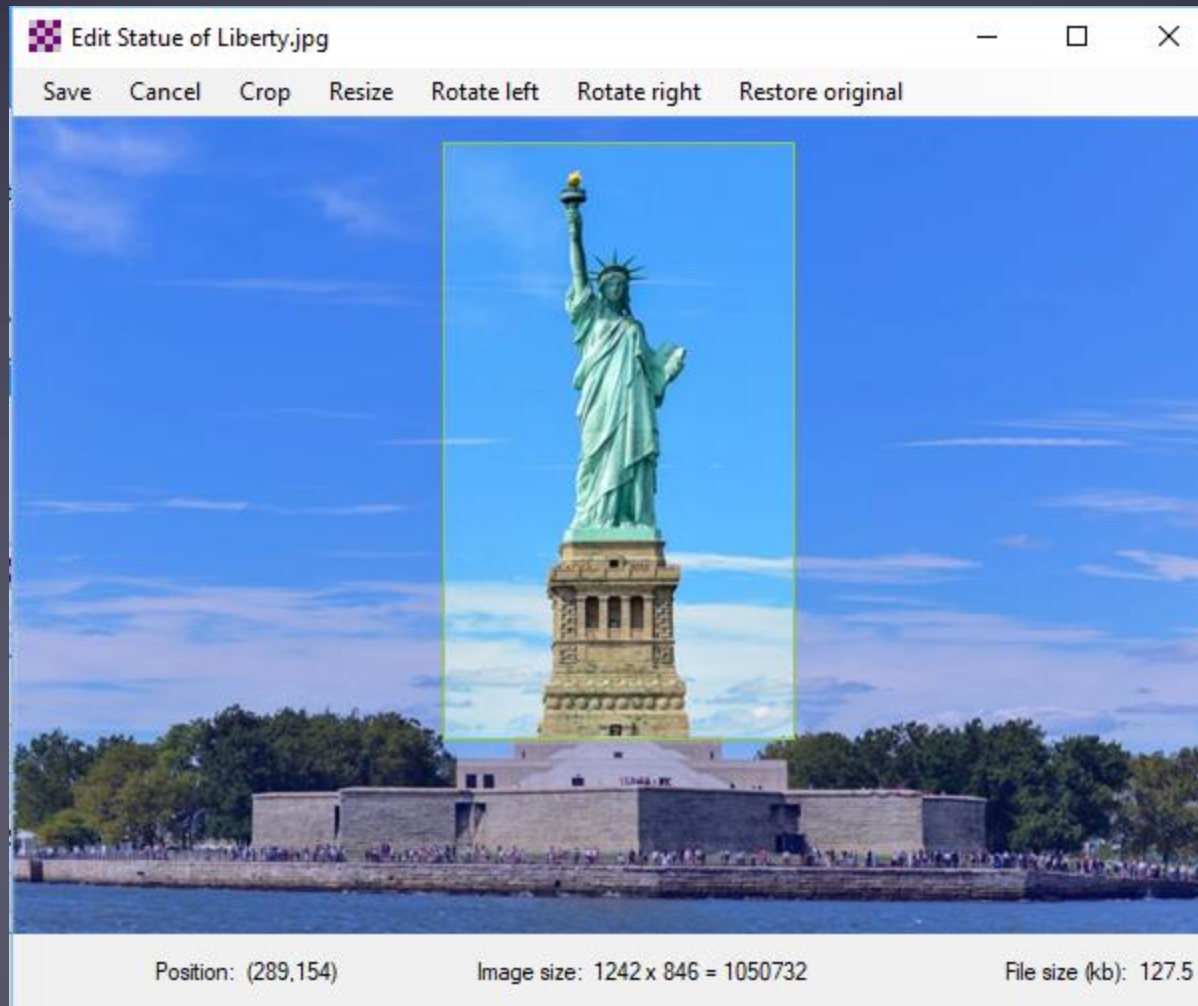
```
List of users nearby W4PHS
Position: 36-00.46N 086-46.00W posted at: 6/22/2020 7:18:00 PM
(NOTE: All dates in UTC, distance in nautical miles and bearings true great circle.)

Winlink 2000 Nearby Mobile Users
(Only the latest report for each call within the past 10 days is listed.)

CALL      Dist(nm @ DegT)      POSITION              REPORTED             COMMENT
W4PHS     0.0 @ 000            36-00.46N 086-46.00W 2020/06/22 19:18    Home QTH.
KM4ACK    23.3 @ 085            36-02.54N 086-17.36W 2020/06/13 17:17
AE4FQ     74.0 @ 157            34-52.27N 086-10.81W 2020/06/13 00:28    Check in from Paint Rock Valley!
WA2USA    78.3 @ 338            37-12.70N 087-23.54W 2020/06/14 18:15
KC4OJS    130.0 @ 109           35-17.40N 084-15.00W 2020/06/21 02:34    GREEN, Getting ready for Field Day
```

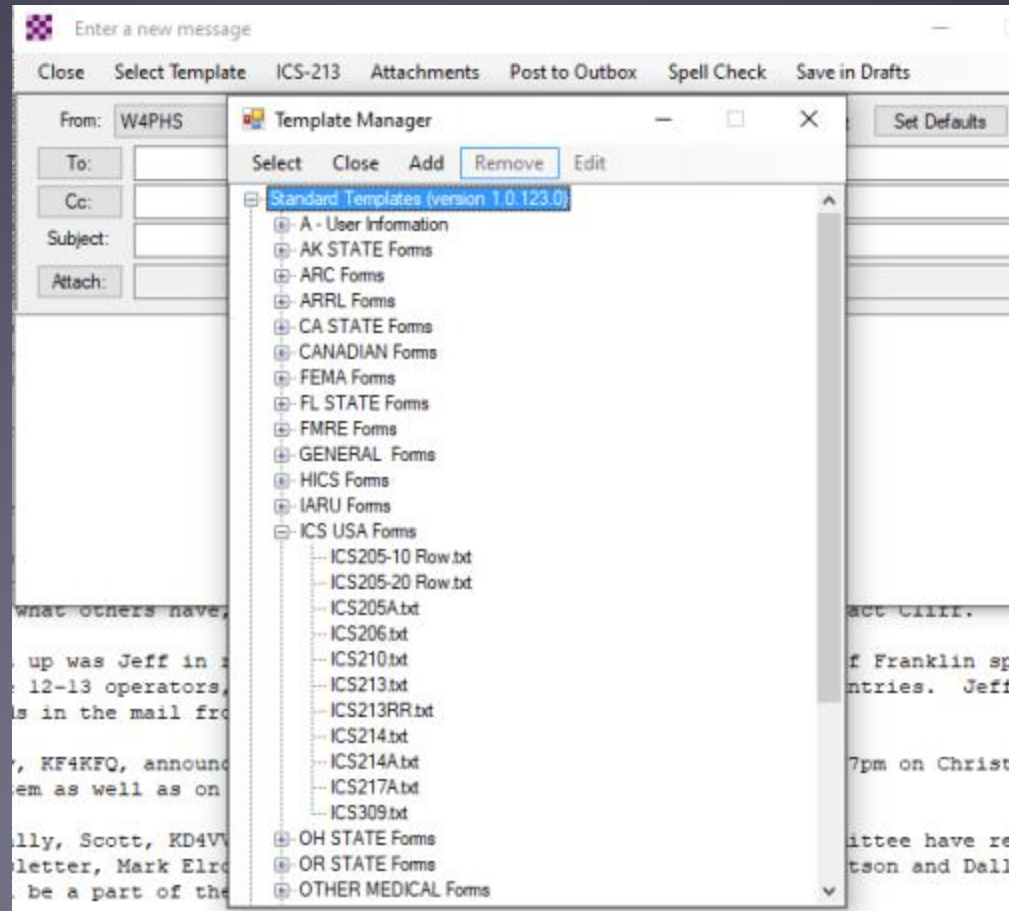


# Built-in Picture Cropping/Resizing



# Message Templates & Forms

- Winlink Express has built-in message templates and html forms.



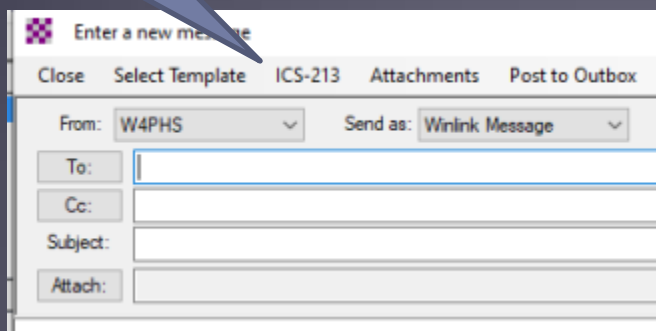
# Example 213 Message Form

General Message (ICS 213)		
1. Incident Name: Test 213 message form		
2. To (Name/Position): Phil Sherrod		
3. From (Name/Position): Phil Sherrod		
4. Subject: Test message sent as an ICS 213 form	5. Date: 2019-7-11	6. Time: 12:44
7. Message		
Situation at shelter:		
23 persons currently being held.		
20 adults and 3 children		
1 dog		
Running on generator power. Estimated fuel 12 hours.		
Food available for today, but not tomorrow.		
Water sufficient for two days.		
10 additional blankets needed.		
Dog food needed		
8. Approved by: Phil	Position / Title: Shelter RADO	

# Selecting Favorite Forms/Templates

- Favorite forms/templates have buttons on the message composition screen.

ICS-213 has been set as a favorite form



Enter a new message

Close Select Template ICS-213 Attachments Post to Outbox

From: W4PHS Send as: Winlink Message

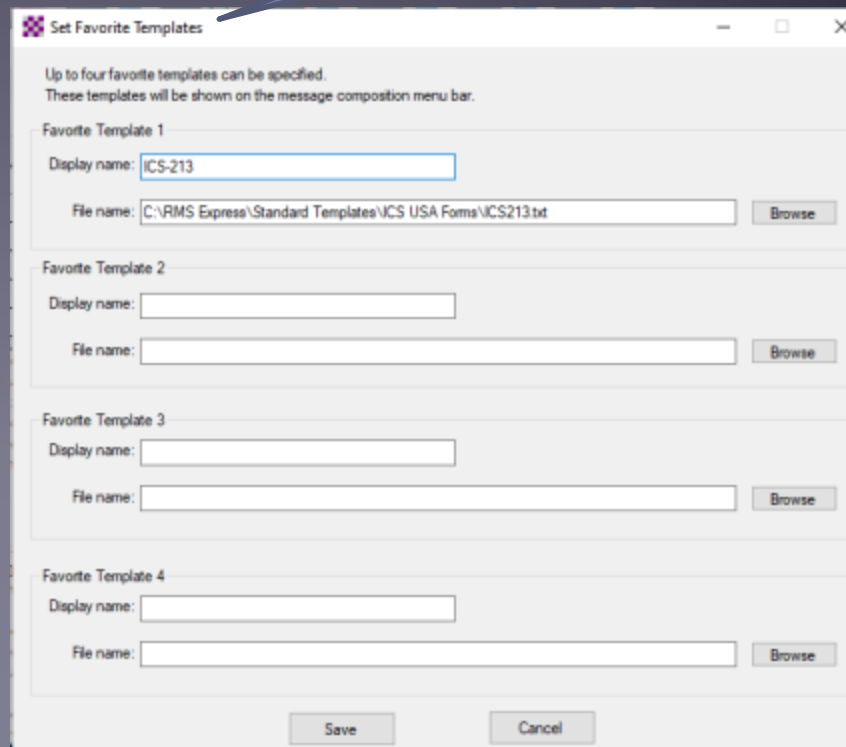
To:

Cc:

Subject:

Attach:

Message/Set favorite templates screen



Set Favorite Templates

Up to four favorite templates can be specified.  
These templates will be shown on the message composition menu bar.

Favorite Template 1

Display name: ICS-213

File name: C:\RMS Express\Standard Templates\VCS USA Forms\VCS213.txt Browse

Favorite Template 2

Display name:

File name: Browse

Favorite Template 3

Display name:

File name: Browse

Favorite Template 4

Display name:

File name: Browse

Save Cancel

# Built-in ICS-309 pdf Message Log Generator

**Generate ICS-309 Communication Log**

**Generate an ICS-309 Communication Log as a pdf File**

Select Message Mailboxes

Inbox  Outbox  Drafts  Personal 1: Standard  Personal 2: High Priority  Read  Sent  Deleted  Saved

Message Date Range

Limit start date/time: 2017-08-01 08:15 (Local time)

Limit end date/time: 2017-09-02 14:15 (Local time)

Options

Separate entry for each recipient

Combine recipients into a single entry

Task ID: Winlink Training

Task Name: Winlink Training

Operational period: Training period

Operator name: Phil

Station ID: W4PHS

Output pdf file: c:\test\309.pdf

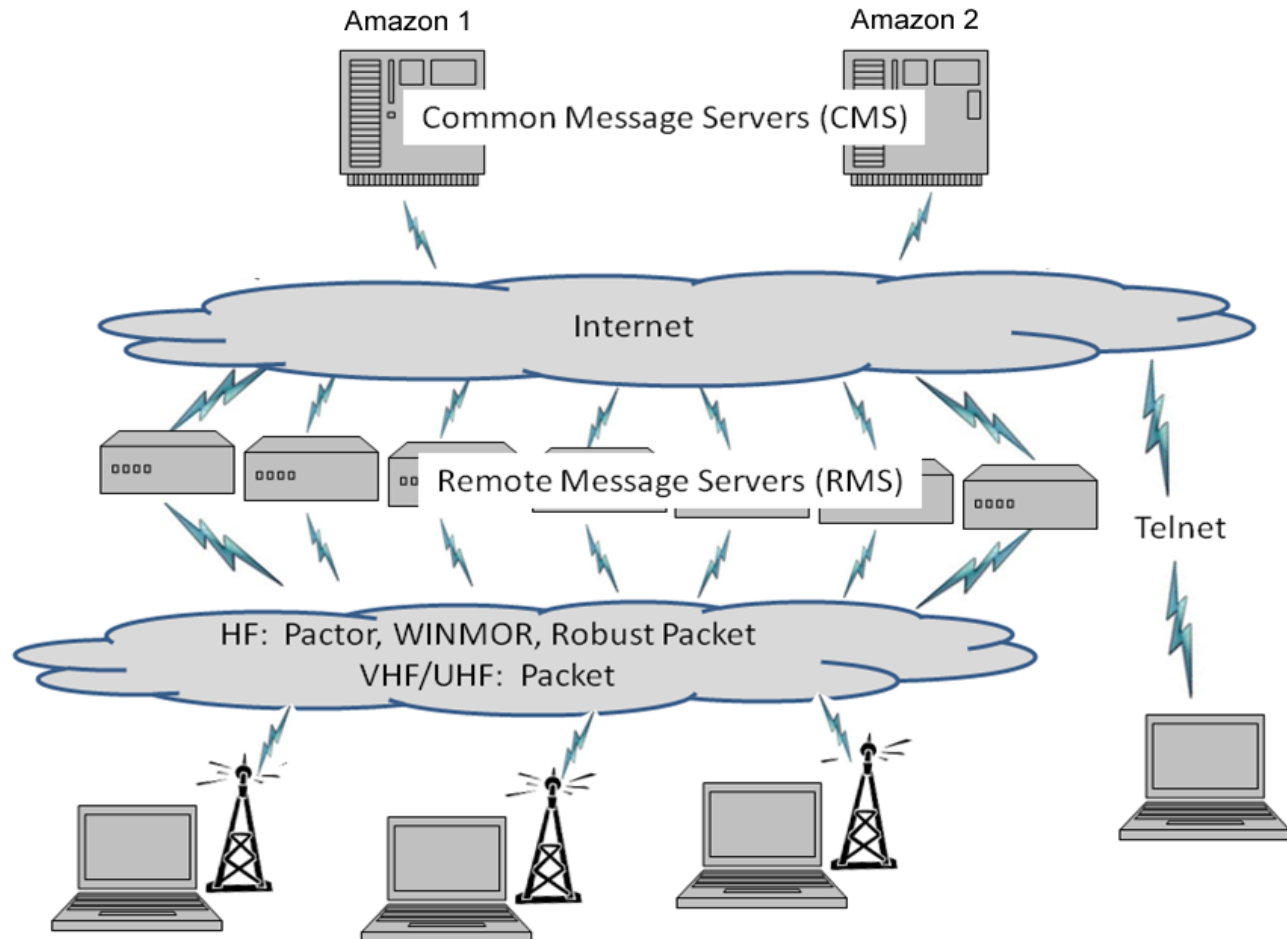
COMMUNICATIONS LOG		TASK # Winlink Training	DATE PREPARED: 2017-09-13
OPERATIONAL PERIOD # Training period		TASK NAME: Winlink Training	TIME PREPARED: 08:02
RADIO OPERATOR NAME: Phil		STATION ID: W4PHS	
LOG			
TIME	FROM	TO	SUBJECT
2014-11-19 19:35	sub-server@sa1doos.com	W4PHS	GF S:31N,19N,090W,074W
2014-12-01 19:30	K4DK	W4PHS	/JWL2K Net announcements 12-01-14
2014-11-19 10:00	phil@philherod.com	W4PHS	Test
2014-11-19 10:28	phil@philherod.com	W4PHS	Test 3
2014-11-21 09:13	H8NDSE	W4PHS	/JWL2K P2P Scanning for Favorites
2014-12-03 15:16	N8KZB	W4PHS	/JWL2K FW: Unable to route message to W3NRG
2014-11-22 19:35	sub-server@sa1doos.com	W4PHS	GF S:31N,19N,090W,074W
2014-11-25 08:10	NNS4UR	W4PHS	Test folder
2014-11-24 19:22	K4DK	W4PHS	/JWL2K Net announcements 11-24-14
2014-12-01 15:52	judgeforester@yahoo.com	W4PHS	Re: /JWL2K Winlink message with attachments from Phil Herod
2014-12-18 19:23	K1KY	W4PHS	P2P Message Test from K1KY-T2
2014-12-18 19:26	K1KY	W4PHS	Re: Greetings from Phil
2014-12-19 12:18	K1KY	W4PHS	Twinet P2P Message test to 2 addys
2014-12-19 12:33	W4CAT	W4PHS	Test message from W4CAT - Galatin over the MESH
2014-12-18 22:32	W4CAT	W4PHS	P2P Test from LaVergne K1KY-CP1 station via MESH to SMYRNA to Internet
2014-12-18 22:31	k4cp@comcast.net	W4PHS	Re: /JWL2K FW: K1KY-CP1 MESH Winlink Message to K1KY-T2
2014-12-11 17:09	K1KY	W4PHS	/JWL2K K1KY-10 9600 BAUD WINLINK RMS BACK ON THE AIR!
2014-12-18 17:48	K1KY	W4PHS	/JWL2K K1KY KPC 9612+ Winlink Settings in my RV
2014-12-19 00:48	K1KY	W4PHS	/JWL2K FW: P2P test Message from Galatin to Smyrna via MESH - Winlink
2014-12-18 19:15	k4cp@comcast.net	W4PHS	Re: /JWL2K K1KY KPC 9612+ Winlink Settings in my RV
2014-12-16 21:39	K1KY	W4PHS	/JWL2K FW: K1KY-CP1 MESH Winlink Message to K1KY-T2
2014-12-31 12:07	ADMIN	W4PHS	New Web App: Sysop's Message Monitor
2015-01-07 08:02	W4CAT	W4PHS	/JWL2K RMS Post Office Test
2015-01-08 09:14	W4CAT	W4PHS	/JWL2K Delivery time
2015-01-08 10:44	K1KY	W4PHS	/JWL2K Re: Greetings from Phil
2015-01-08 09:08	W4CAT	W4PHS	/JWL2K 1MB File - RMS Post Office
2015-01-08 09:11	W4CAT	W4PHS	/JWL2K Here are 2 files - nearly 2MB total
2015-01-08 12:03	W4CAT	W4PHS	/JWL2K 2 Mb transmit time 1:30
2015-01-08 12:30	K1KY	W4PHS	/JWL2K 2mb receive time 1:40
2015-01-08 18:31	K1KY	W4PHS	/JWL2K 3.13MB File received via MESH
2015-01-08 12:11	W4CAT	W4PHS	/JWL2K 3.13 MB transmitted 2:15
2015-01-08 18:23	K1KY	W4PHS	/JWL2K 3.13 MB file transfer time over MESH
2015-01-08 13:03	W4CAT	W4PHS	/JWL2K 3.2MB Max tested successful
2015-01-08 18:45	K1KY	W4PHS	/JWL2K 2nd test via MESH 3.13 mb file upload time 8:11
2015-01-08 19:07	K1KY	W4PHS	/JWL2K RMS Relay View Log status issue
2015-01-08 12:00	W4CAT	W4PHS	/JWL2K Large file test 2Mb
2015-01-08 12:07	W4CAT	W4PHS	/JWL2K 3 Mb file transfer test
2015-01-08 13:01	W4CAT	W4PHS	/JWL2K 3.2 MB File attempt

# Winlink Operating Modes

- For efficiency, reliability and flexibility, the Winlink system provides four modes for transferring messages:
  - **Conventional** system that stores messages on CMS “backbone” servers. Uses Internet from RMS to CMS.
  - **Radio-Only (“Hybrid”)** network that transfers messages over long distances using automatic HF forwarding without the Internet.
  - **Peer-to-Peer** direct connections between two client stations without any use of Internet or Infrastructure.
  - **MESH Network**
    - **Peer-to-peer** through MESH between two Winlink Express.
    - **Post office server** hosted by RMS Relay.

# Winlink Architecture (Conventional Mode)

- CMS
- RMS (gateway)
- Client (you)

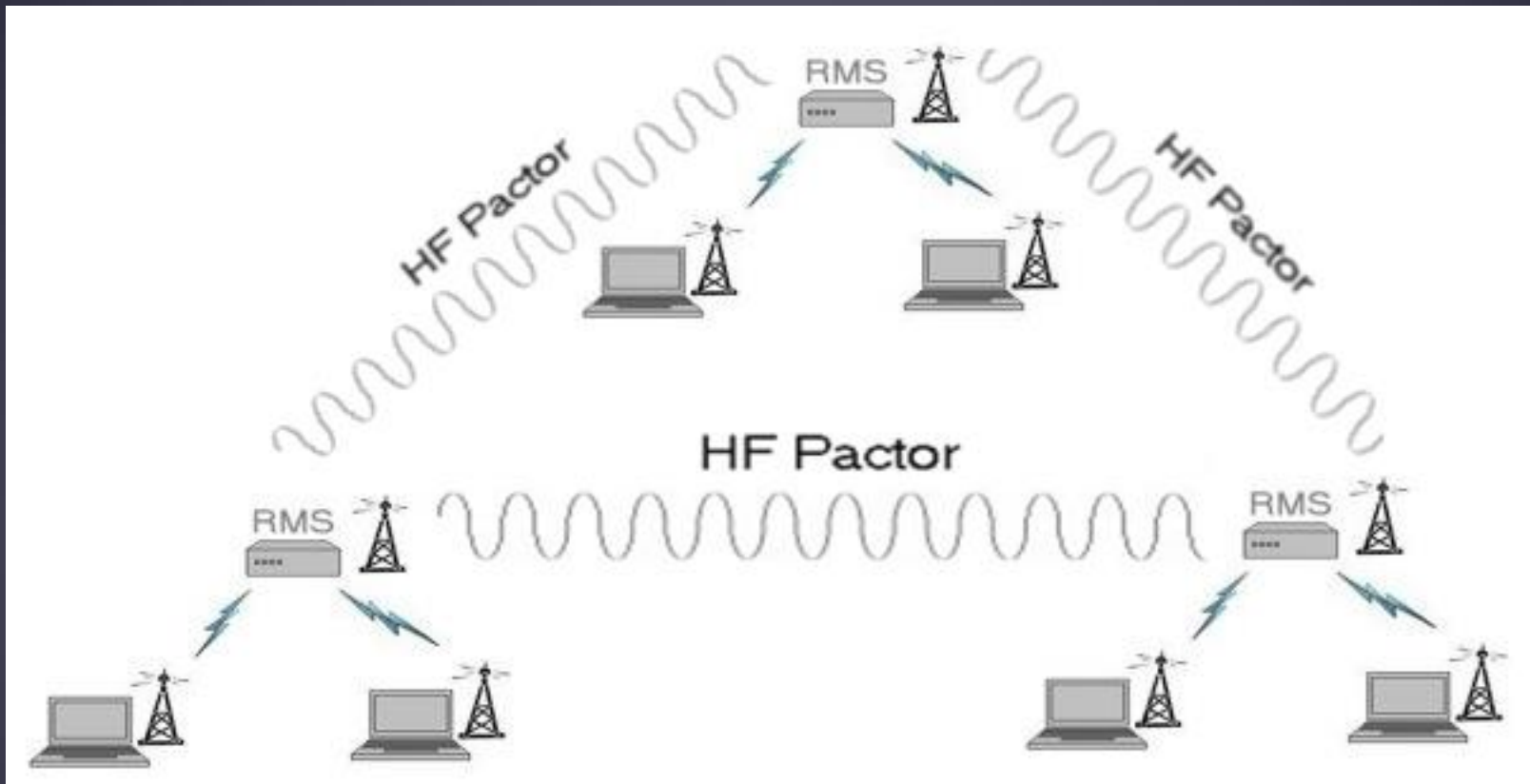


# What if the Entire Internet is Down?

- Winlink offers a contingency “Radio-Only” operating mode that transfers messages without using the Internet.
- Not for use under normal circumstances, but it’s there if the need arises.
- Note: Conventional Winlink works fine if you are in a no-Internet zone, but you can make an HF connection to an RMS with Internet.
- Radio-only mode is if the whole Internet is down or it’s required by the agency you’re supporting (e.g., SHARES).



# Radio-Only Winlink Network (No Internet)



# Message Pickup Stations (MPS)

- Radio-only messages for you are stored on your designated Message Pickup Stations (MPS).
- Select your MPS in Winlink Express

Select two RMS as your Message Pickup Stations (MPS)

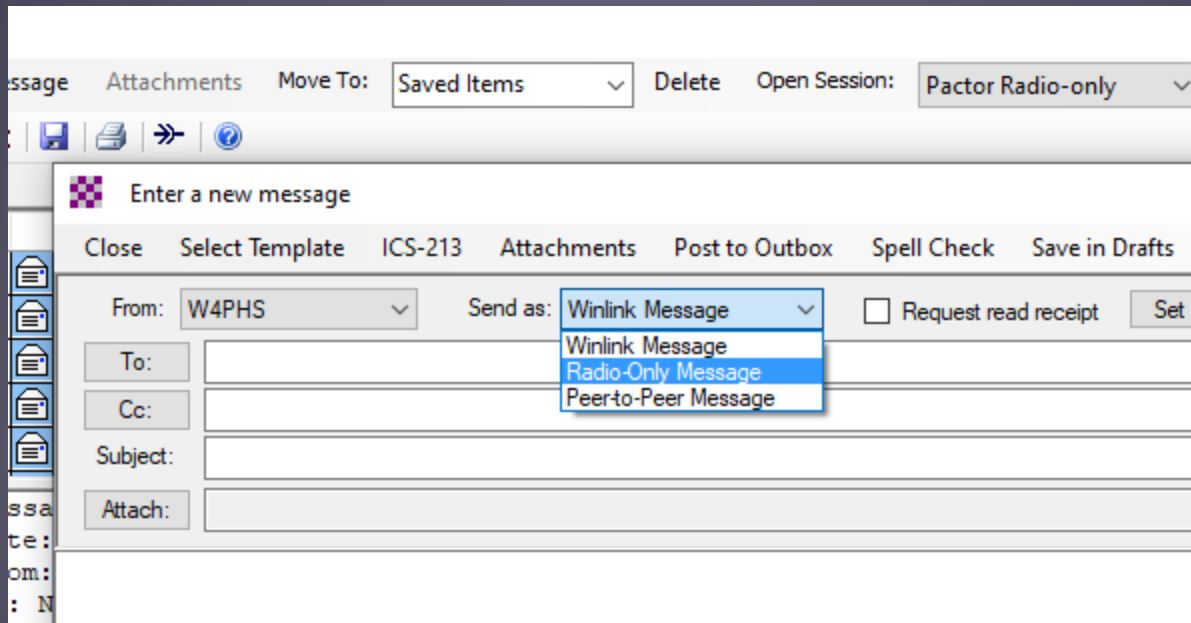
Specify e-mail address(es) to receive notifications of pending radio-only messages

The screenshot shows the 'Hybrid Network Parameters' dialog box. It contains the following elements:

- Message Pickup Stations (MPS):** Three dropdown menus labeled 'MPS 1:', 'MPS 2:', and 'MPS 3:'. To the right are buttons for 'Update list of RMS available as MPS' and 'Display list of RMS available as MPS'. Below these are buttons for 'Register MPS via Internet' and 'Queue radio message to register my MPS'. A status line reads 'Last MPS list update: 2020-05-05-07:35'.
- E-mail notification of pending messages on MPS:** A section with a text area for email addresses and a label 'Hours pending before notification message is sent:' with a value of '2' in a small input field.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

# Sending a Radio-Only Message

- Select “Radio-Only Message” when composing message.
- Select one of the Radio-only session types



# Pros and Cons of Radio-Only Network

- **Advantages:**

- Operates completely independent of the Internet.
- Satisfies requirements of some organizations.

- **Disadvantages:**

- Messages must be picked up from designated Message Pickup Stations (MPS).
- Less reliable than conventional mode.
- There is a delay in message delivery due to relaying.
- Reduced message traffic capacity due to HF relaying.
- Cannot send messages to Internet e-mail addresses.

# Winlink over MESH Networks

- Winlink Express and RMS Relay work well with MESH networks like AREDN.
- RMS Relay can function as a MESH “Post Office.”
- Winlink Express can connect to post office servers through MESH connections.
- RMS Relay can accept Winlink Express and SMTP/POP/IMAP connections for other e-mail programs.
- Contact entries can designate users on post office servers.
- RMS Relay can automatically synchronize messages between post office servers.

# Accessing Post Office Server from Express

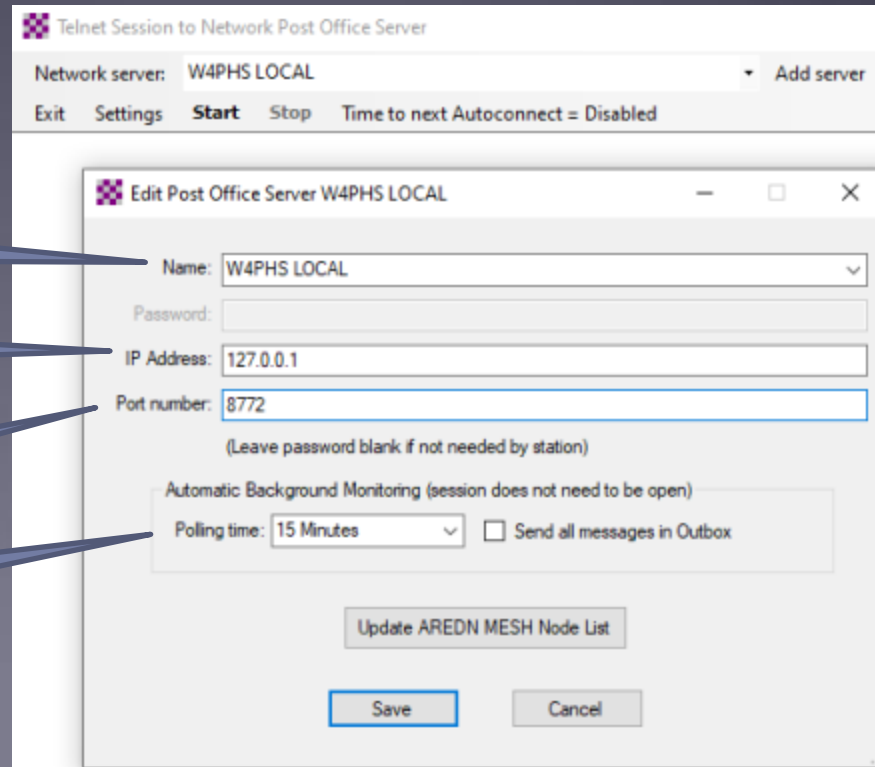
- Winlink Express stores a list of P.O. servers you use
- It can do background send/receives

Name you use to reference the mail server.

IP address or domain name of mail server.

Port server is listening on.

Background sending/polling controls.



# Adding a Contact Entry on a P.O. Server

- The “Name” is how messages are addressed to it.
- Open the list of mail servers, and select (CMS), a network post office server or a Telnet P2P connection.

Name of the contact. Use as a To address to send messages to this contact.

Actual e-mail address or callsign

Optionally, select mail server where messages are to be sent.

The screenshot shows the 'Add contact' dialog box with the following fields and values:

- Name: ICC
- E-mail: W4PHS
- Notes: Incident Communication Coordinator
- Mail Server: K1KY (dropdown menu open showing options: (none), (CMS), -- Post Office Servers --, K1KY, W4PHS HOME, W4PHS OFFICE, -- Telnet P2P --, W4PHS, XE2BNC)

# Sending Messages to a Contact

- Specify the contact name as the recipient
- Message will be sent to the callsign/address at the designated server using a background task.

Use name of contact as To address.

Enter a new message

Close Select Template ICS-213 Attachments Post to Outbox Spell Check Save in Drafts

From: W4PHS Send as: Winlink Message  Request read receipt Set Defaults

To: ICC:

Cc:

Subject: Incident report

Attach:

This is an incident report that needs attention.

“PO” with recipient in outbox shows message is queued for a post office server

Winlink Express 1.5.28.1 - W4PHS

W4PHS Settings Message Attachments Move To: Saved Items Delete Open Session: Telnet Winlink

No active session...

System Folders	Date/Time	Message ID	Size	Source	Send	Recipient	Subject
Inbox (0 unread)	2020/05/05 15:19	1Q7XA3OYN6A3	156	W4PHS	W4PHS	W4PHS (PO)	Incident report
Read Items (0)							



# Using RMS Relay with Outlook and other Clients

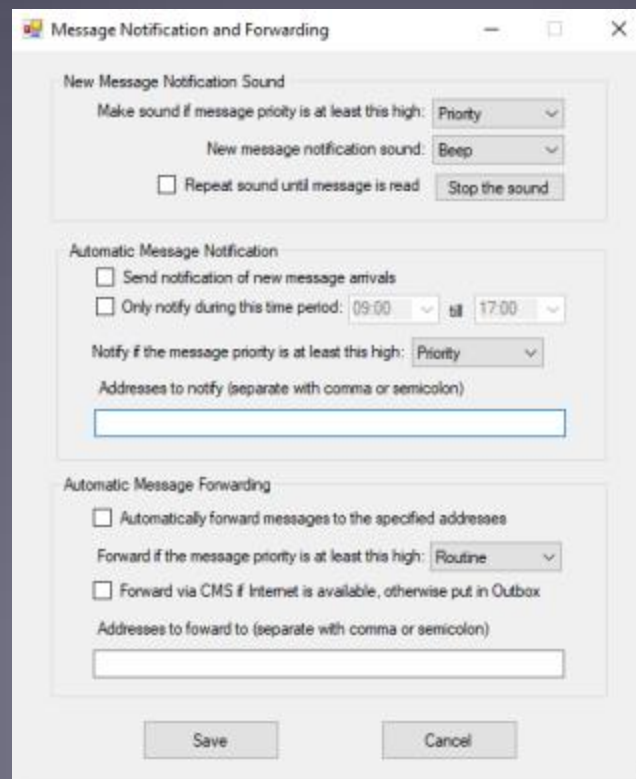
- Outlook and other conventional e-mail programs can connect to RMS Relay using SMTP, POP, and IMAP.
- Tactical addresses are used to identify each individual.
- Radio control and HF forwarding/receiving is done without users' involvement.
- Allows non-radio people to continue sending-receiving e-mail if the Internet goes down.
- Good choice for administrator, mayor, etc.

# Message Priority Indicator

- A priority indicator can be specified for a message when it's composed by putting “//WL2K x/” on the front of the subject where ‘x’ is a single letter indicating the priority.
- //WL2K R/ -- Routine (this is the default priority)  
//WL2K P/ -- Priority message  
//WL2K O/ -- Immediate priority  
//WL2K Z/ -- Flash priority
- Example: “//WL2K Z/ Need immediate assistance”
- Messages are delivered in priority order

# Message Notification Feature

- See Settings/Message notification and forwarding
- Winlink Express can ring the computer bell or forward messages if the priority is at least the specified priority.



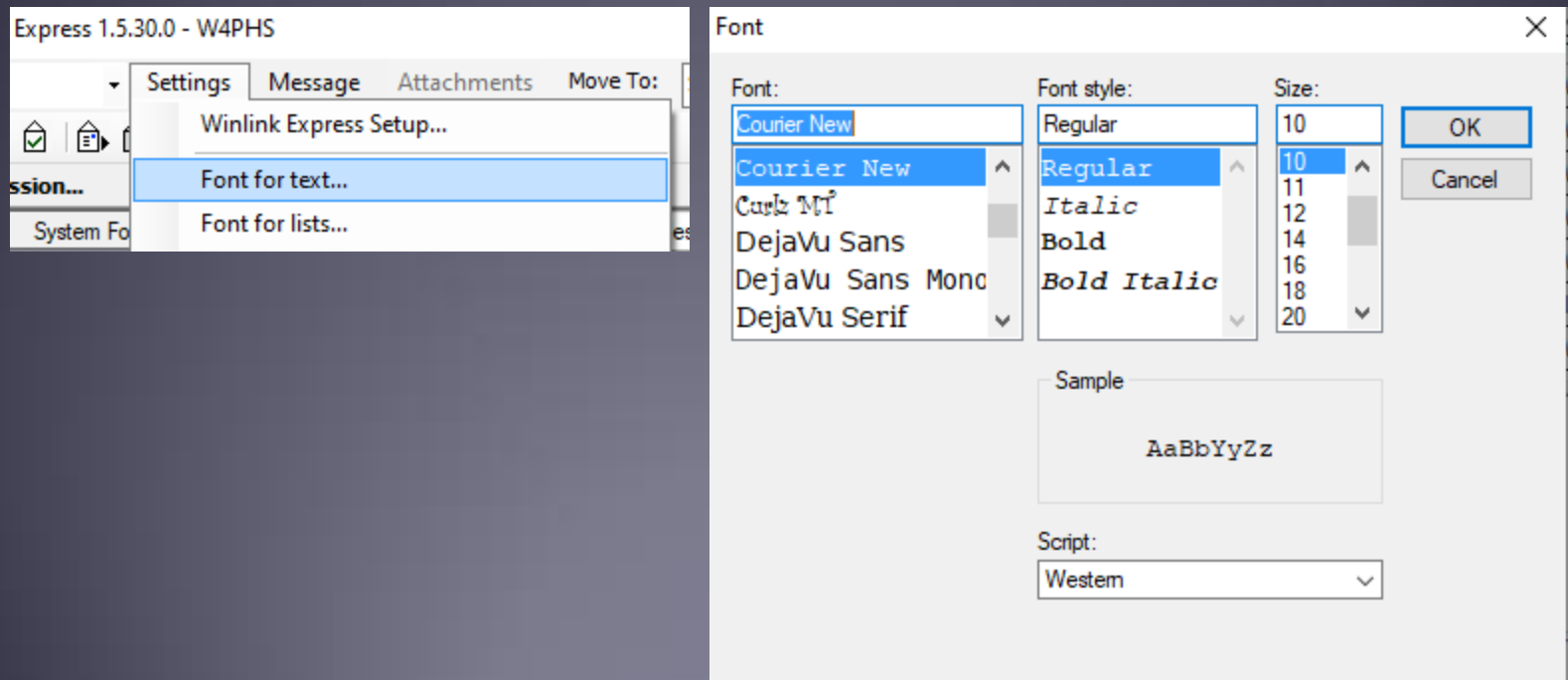
The screenshot shows a dialog box titled "Message Notification and Forwarding" with three main sections:

- New Message Notification Sound:** Includes a dropdown for "Make sound if message priority is at least this high:" (set to "Priority"), a dropdown for "New message notification sound:" (set to "Beep"), a checkbox for "Repeat sound until message is read" (unchecked), and a "Stop the sound" button.
- Automatic Message Notification:** Includes a checkbox for "Send notification of new message arrivals" (unchecked), a checkbox for "Only notify during this time period:" (unchecked) with time range "09:00" to "17:00", a dropdown for "Notify if the message priority is at least this high:" (set to "Priority"), and a text input field for "Addresses to notify (separate with comma or semicolon)".
- Automatic Message Forwarding:** Includes a checkbox for "Automatically forward messages to the specified addresses" (unchecked), a dropdown for "Forward if the message priority is at least this high:" (set to "Routine"), a checkbox for "Forward via CMS if Internet is available, otherwise put in Outbox" (unchecked), and a text input field for "Addresses to forward to (separate with comma or semicolon)".

At the bottom are "Save" and "Cancel" buttons.

# Setting the Typeface in Winlink Express

- Click Settings/Font for text or Font for lists
- Select the font type and size



# Winlink Future

- Growth in civil agency support
- Additional forms as requested by agencies (~90 now)
- Feature requests based on incidents & exercises
- Slow phase-out of WINMOR and ARDOP on HF
- VARA HF 2300 and 500 Hz growth
- VARA FM becoming popular (much faster than packet)
- Some programs becoming open-source projects
- IONOS HF/VHF Channel Simulator (KN6KB)
- Busy detector research
- Keeping U.S. hams/sysops legal (frequency/message contents)

# Prepare *Yourself* for EmComm Service

- Technology is only one component
- Formula for successful EmComm:  $I = (2P + 2T) * R$
- **I**nteroperability, **P**lanning, **P**olicy, **T**raining, **T**echnology, **R**elationships
- When times are good, people work with people they know. When times are bad, people work with people they know. Relationships are the key.
- When you need a friend, it's too late to make a friend.
- Minimum ICS training: IS-100, 200, 700, 800
- Recommend ICS-300, ICS-400, COML, COMT
- AuxComm training good. ICS training for relationships.
- Participate in exercises. Keep system updated and tested.



- Winlink team:
  - Phil Sherrod, W4PHS (Developer)
  - Steve Waterman, K4CJX (Administrator)
  - Lor Kutchins, W3QA (President, ARSFi)
- Winlink web site: [www.winlink.org](http://www.winlink.org)
- White papers about Winlink: [www.qrz.com/db/W4PHS](http://www.qrz.com/db/W4PHS)
- Support group:  
<https://groups.google.com/forum/#!forum/winlink-programs-group>