The Care and Feeding of a Winlink Station

Tired of the same old Push the Button, say your call sign, wait for a response?
Has the pizazz and excitement of making noise on the airwaves gone?
Do you look on your handheld, portable, or base station as the same old boring bunch of electronic components?
Do you long for something new in your ham radio experience?

Well bunkie, listen up! Let me tell you about the coolest HAM Radio interconnection service ever!

It's called Winlink. This is a world-wide radio messaging system that uses amateur band radio frequencies and some government frequencies as well, to provide radio interconnection services that include:

- Email with attachments,
- Position reporting
- Weather bulletins,
- Emergency and relief communications and
- Message relay.

The system is built and administered by volunteers and is financially supported by the Amateur Radio Safety Foundation[1]

History

Winlink networking started by providing interconnecting services for amateur radio. It is well known for its central role in emergency and contingency communications worldwide. The system used to employ multiple central message servers around the world for redundancy, but in 2017-2018 upgraded to Amazon Web Services that provides a geographically redundant cluster of virtual servers with dynamic load balancers and global content distribution. Gateway stations have operated on sub-bands of HF since 2013 as the Winlink Hybrid network offering message forwarding and delivery through a mesh like smart network whenever internet connections are damaged or inoperable. In the late 2000's it increasingly became what is now the standard network system for radio email, worldwide. In response to the

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[1] **Amateur Radio Safety Foundation** -The primary purpose of the Amateur Radio Safety Foundation is to provide for the formation, training, maintenance, and testing of volunteer licensed amateur radio emergency services and networks using state-of-the-art communications technology. These services and networks to serve the public by facilitating emergency, health, or welfare communication in times of disaster or other communications emergencies.

The Amateur Radio Safety Foundation was incorporated Jan 1, 2006 as a non-profit Florida Corporation; Federal ID Number 20-5586920. This corporation is a NON-PROFIT PUBLIC BENEFIT CORPORATION and is not organized for the private gain of any person. It is organized under the Non-Profit Public Benefit Corporation Law for public and charitable purposes. The purpose for which the corporation is organized is to transact any lawful business for which Non-Profit corporations may be organized under the laws of the State of Florida, as they may be amended from time to time and under Section 501 (c) 3, Internal Revenue Code.

Winlink (our primary project) is a worldwide system of volunteer resources supporting email by radio, with non-commercial links to internet email. These resources come from Amateur Radio, DHS NCC SHARES, and other volunteer organizations. The Winlink system provides valuable services to emergency communicators and to licensed operators who do not have access to the internet.

Winlink provides world-wide email communications to areas impacted by emergencies. Winlink is a 100% volunteer effort and functions only through your generous donations and the efforts of hundreds of Amateur Radio operators around the world. You can find out more about Winlink by visiting the Winlink website at http://www.winlink.org

need for better disaster response communications the network was expanded to provide separate parallel radio email networking systems for the US Department of Homeland Security SHARES Winlink Radio Email System, along with other governments (non-amateur radio) services, also to include organizations such as the American Red Cross, the Austrian Red Cross, and other such critical infrastructure NGO[2]'s.

Users

The Winlink system is open to properly licensed amateur radio operators, worldwide. The system primarily serves radio users without normal access to the internet, government and non-government public service organizations, medical and humanitarian non-profits, and emergency communications organizations. As of July 2008, there were approximately 12,000 radio users and approximately 100,000 Internet correspondents. Monthly traffic volume averages over 100,000 messages

So What do you need to play with Winlink?

Since you have been listening thus far, your next step might be the Winlink Tutorial found at: https://www.philsherrod.com/Winlink/Winlink_PowerPoint.pdf

Here Phil Sherrod W4PHS, describes email with or without the internet.

Simply put, all you need is: 1. A PC, a cable from your pc's microphone and speaker connections (this can be a USB connection); 2. A Winlink compatible soundcard (I'm using the **Digirig** which is a device that is 1.5" x .5" x .5" (available from amazon for $64.00 or **Digirig Lite** for $54.95) and cables (~$40.00 from Amazon or you can make your own); 3. A radio (UHF/VHF/or HF) (your handheld will probably work just fine); 4. The Winlink software.

The software for your pc is a free download from www.winlink.org. There are versions for Macintosh, PC and Linux.

How does the connection work?

Making a Winlink connection is simplicity itself.

1. **Open** Winlink and compose your message or (and this is the cool part, if your sending emergency traffic, use one of the available Winlink templates to compose your message. Using the template sends a little overhead and then only the required data that is skinneyed down to the essential data.

2. **Connect** to your local gateway. This is the tricky part. I spent all of one afternoon trying to connect only to find that the gateway was bogus. Once I connected to a functional gateway everything was smooth sailing.

3. **Transfer** your message. Your computer acts like a packet modem automatically syncing your outgoing messages and downloading any incoming traffic in a matter of seconds

4. **Disconnect** is automatic. Once the transaction(s) are completed the system disconnects, leaving the frequency clear for the next operator.

Utah Area EmComm is adopting Winlink as one of the modalities for emergency communication. Using the templates to report in, results in fast and virtually error free traffic.

[2] NGO – Non-Governmental Organization

Get yourself setup. Winlink is a blast to use either as an emergency communications channel or as a wireless email system

As a closing thought. In 2012, Leon Panetta gave a speech he entitled "Defending the Nation from Cyber Attack"[3]. In his speech he referenced what he called a "cyber–Pearl Harbor" which could involve the derailing of passenger trains, contamination of the water supply in major cities, or the shutdown of the power grid across large parts of the country. He said that because the internet is open, it is highly accessible which presents new territory for warfare. He says that this could be the battlefield of the future where adversaries can seek to do harm to our country, to our economy and to our citizens. Winlink provides a simple means of sending and receiving messages without the use of the internet. To do this non internet communication requires advanced preparation and practice.

If you are interested discussing this further, let me know. While I am by no means and expert, I know people that can answer deep technical questions.

Any comments or questions?

73
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[3] https://nsarchive.gwu.edu/document/21479-document-78