STAGES OF WINLINK EXPERIENCE FOR EMERGENCY COMMUNICATIONS

Gordon Gibby KX4Z
July, 2016

Like most systems that provide significant functionality, the more you know about WINLINK, the more you can get out of it. However, remember it is not a commercial product – it is supported by a non-profit group, and developed by volunteers who are giving of their time to benefit their fellow man. It will not always be perfect, and the documentation may not be either. (In fact, it isn't.)

Let's consider a series of steps that an individual ham, or an ARES group, can take to develop their digital emergency communications skills to better serve THEIR fellow citizens:

ENTRY LEVEL	Suggestions & Accomplishments
Get digital device (signalink or Packet TNC) connected to radio. Deal with the obvious radio frequency interference problems that you're very likely to encounter if you've never done digital before. *Use a shielded USB cable to the computer, and add lots of ferrites!*	HF – Use Signalink or equivalent. HF/VHF – use Signalink or equivalent VHF only – TNC-X works well for VHF only, but a Signalink with software is equivalent. [1]
Learn how to do peer-to-peer digital communictions. *PRACTICE!* *If possible, connect up the frequency-reading portions of the FLDIGI software.*	FLDIGI (free software) for HF or VHF can do PSK31, MT63 and many other protocols, peer to peer. On HF, look for PSK31 hams 70kHz up from the bottom of the band. Signals are distinctive on the waterfall, very narrowband. Within an hour, you'll be well on your way to knowing all about it. [2] With just this level of expertise, you can transfer digital documents for emergency communications. If you add expertise in the ARQ products in the FLDIGI line, you'll be able to transmit error-free digital attachments.
Gain WINLINK access *PRACTICE! Try connecting to more than just your favorite RMS server station; try different times of the day; become familiar with the propagation prediction system.*	Install WINLINK_EXPRESS [3] HF – use WINMOR, also learn TELNET (acts like normal internet email) VHF – connect to a nearby Packet RMS, either using TNC-X or Signalink + software (UZ7HO or Direwolf work well) [4]

If possible, connect the frequency-controlling portions of the WINLINK sytstem.	With this level of expertise, on HF you can now provide long-distance error-free communications to your Red Cross or EOC.
MORE ADVANCED LEVEL	
If you didn't gain both HF and VHF WINLINK experience, take the time to widen your experience by learning how to do the one you didn't already.	
Install PACLINK once you have packet WINLINK access. Learn how to set up the POP3/SMTP servers, and configure multiple client emails on connected computers [5]	You now have the ability to provide **At-Your-Desk** service to an EOC or Shelter during loss of normal telecommunications.
FAR ADVANCED LEVEL	
Become a sysop of either an HF or VHF RMS server. It may take you a while to get all the RFI out of your system....	You can start with just one software package and direct Internet access – RMS_PACKET (vhf) or RMS_TRIMODE (HF) can operate with no other software, and an Internet connection.
Add RMS_RELAY to your new server station	Gives you the ability to maintain connection even with loss of the Internet, and you can configure your RMS_RELAY to provide completely local email service via radio between different disaster locations (such as EOC-Shelter or Shelter-Shelter)
Provide BOTH hf and vhf servers. Both RMS Packet and RMS_TRIMODE can connect to the same single instance of RMS_RELAY – even on different computers! (Done by TCP/IP)	Now you have the ability to assist with both (1) local email service via Packet VHF, and (2) seamless "long distance" service where outbound email will transition automatically to your HF transceiver and forward over the radio even in the event of complete Internet loss

[1] TNC-X: http://tnc-x.com/ Many other products will also work, including Kantronics and the TinyTrack4
[2] FLDIGI: (software is on Source Forge) http://www.w1hkj.com/
[3] WINLINK EXPRESS client softwaare: http://www.winlink.org/ClientSoftware
[4] UZ7HO: http://uz7.ho.ua/packetradio.htm I suggest using the slower version, the soundmodem.exe version, rather than the more exotic 9600 baud version. DIREWOLF: https://github.com/wb2osz/direwolf
[5] http://www.winlink.org/Paclink Note this is NOT "Paclink AGW", a completely different sofware.