WinLink

What is it and what it is good for?

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W7EFL

What is this WinLink stuff?

- WinLink is a system for sending email via radio.
  - You do not need an internet connection for this.
- You can also send email without radio (Telnet WinLink).
  - You <u>do</u> need an internet connection for this.
- In short, you can do email with <u>or</u> without an internet connection. This can be useful functionality if:
  - You are on a sailboat in the middle of the ocean.
  - You are in a disaster area and want to communicate with the rest of the world.
- Accepted for contingency communications by many government organizations and non-government organizations (NGOs).

Use with internet

- If I have internet, why would I be interested in WinLink?
  - If you are an active participant in ARES or RACES, WinLink capability is good to have.
  - WinLink allows you to conveniently receive and forward messages using forms (more on that later).
  - It is easier to send messages to others who are using WinLink if you have it also.
- Good as a practice mode to learn about the software.
- If you are looking at WinLink for use <u>exclusively</u> with an internet connection, there really is not much to be excited about.

Use with radio

- Sending email from your radio is really where WinLink is useful.
- You can send messages in several modes using WinLink.
    - Conventional messaging to a common message server (CMS).
    - Hybrid mesh network—transfers messages using only radio HF forwarding.
    - Peer-to-peer (P2P) transfer directly between two client stations.

Emergency Communications

- We have all become reliant on email for communications—government agencies are no different.
  - During times of emergency, internet connections may not be available.
  - In some cases, failure of a single fiber-optic cable is all it takes to sever internet communications.
  - The capability of sending and receiving email with no internet connection usually gets the attention of local emergency coordinators.

Getting Started—Client Program Options

- You can find a list of client programs and compare features at the winlink.org website.

- Program options include:
  - Outpost
  - AirMail
  - WoAD
  - Pat
  - PacLink-Unix
  - PacLink
  - WinLink Express

WinLink Express

- Of the listed email client programs, Winlink Express (formerly RMS Express) seems to support the most modes while being easy to use.

- Winlink Express is widely used and is well-supported.

- Winlink Express program and form updates are pushed out pretty regularly.

- You can download Winlink Express at: https://winlink.org/WinlinkExpress

- This discussion will focus on Winlink Express since it is the only client I have tried.

Financial support (optional)

- If you find Winlink useful and want to support the continued development, purchase a registration key for $24 per call sign.

- You may also choose to support the Amateur Radio Safety Foundation through a donation (not the same as purchasing a key).

- You can find links to donate or purchase registration keys at https://winlink.org/WinlinkExpress

Getting Started

- All you need to start is a computer (Windows 7 and up) and an internet connection.

- Download the Winlink Express at https://winlink.org/WinlinkExpress
  - Click download link to get the zipped installation file
  - Open the installation file (double click) and follow the prompts
  - Select a folder to install the program (default C:\RMS Express).
  - Present requirement is 85.2 MB free space
  - Select a desktop shortcut if so desired (recommended).
  - Select the install button. . . Wait. . . Select finish when prompted

- Fill in the blanks on the configuration screen (next slide).

Organize ▾   Extract all files

Favorites
- Desktop
- Downloads
- Recent Places

Libraries
- Documents
- Music
- Pictures
- Videos

Homegroup

Computer
- Local Disk
- Recovery
- HP_TOOL
- Local Disk

Network
- HOME
- REDDOG

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified

Winlink Express Properties

Call Signs

My Callsign: [ ]   My Password: [ ]
(Case sensitive) ☐ Show password

Callsign suffix (optional): [ ] (Used for country code)   [Change password]

Password recovery e-mail: [ ]
(Non-Winlink e-mail address where lost password will be sent when requested)

[Remove Callsign]   [Request password be sent to recovery e-mail]

Auxiliary Callsigns and Tactical Addresses

[ ]   [Add Entry]
[Remove Entry]
[Edit Entry]

My Grid Square: [ ]   [Lat/Lon to Grid Square]

Winlink Express registration key: [ ]

Service Codes

PUBLIC

(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)
If you change service codes, you must update the list of channels.

[Update]   [Cancel]

Contact Information (Optional)

Name: [ ]
Street address 1: [ ]
Street address 2: [ ]
City: [ ]
State/Province: [ ]
Country: [ ]
Postal code: [ ]
Web Site URL (optional): [ ]
Phone number: [ ]
Non-Winlink e-mail: [ ]

Additional information (optional):
[ ]

Recalculate HF path quality if SFI changes more than: [30]
Keep logs for [2] weeks.   Keep deleted messages for [30] days.
☐ Display list of pending incoming messages prior to download
☑ Warn about connections to stations holding messages
☑ Allow diagnostic information to be sent to the Winlink Development Team
☐ Automaticaly install field-test (beta) versions of Winlink Express

Winlink Express

[ ]   Settings
Help

No active session...

System Folders
Inbox
Read Items
Outbox
Sent Items
Saved Items
Deleted Items
Drafts

Personal Folders

Global Folders

Winlink_Express_install   Compressed size: 37.4 MB   Ratio: 2%   Type: Application
Size: 37.9 MB   Date modified: 5/12/2022 7:53 AM

Connect with a Server

- Final step in setup is to connect with a Winlink system server (CMS). This can be done through an internet connection.

- You may be prompted to download a new version of Standard Forms. We will get to the forms stuff soon. Go ahead and download them or not.

- When the Winlink Express window is open, go to the "Open Session" box at the top of screen and select "Telnet Winlink" then click on "Open Session". When the Telnet Winlink Session screen opens, select **Start**. This will connect to the server and complete your registration. You should receive a message confirming password recovery address.

W7EFL   Settings   Message   Attachments   Move To: Saved Items   Delete   Open Session: Telnet Winlink   Logs   Help

No active session...

	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
	2021/11/10 18:28	DEY8ERKE87UJ	611	KF7AGO	KF7AGO	W7EFL	Re: Testing
	2021/09/20 01:07	OU9DM29VVQOU	808	KF7AGO	KF7AGO	W7EFL	Re: Testing Tuesday
	2021/01/23 18:10	6Q9SZ34TSWG9	2064	KF7AGO	KF7AGO	W7EFL	Re: FW: Re: //WL2K ham classes
	2021/01/12 00:01	JZZ5VEK5F947	1266	KF7AGO	KF7AGO	W7EFL	FW: Re: //WL2K ham classes
	2020/12/25 16:33	0VFF12ASQIL9	1563	KF7AGO	KF7AGO	W7EFL	//WL2K Re: ARES Comm guidelines
	2020/11/18 17:57	AU7IB402QCWA	457	KF7AGO	KF7AGO	W7EFL	//WL2K testing session
	2020/11/07 21:27	32H2CVQZANB6	1721	KF7AGO	KF7AGO	W7EFL	//WL2K Re: November 17 Test
	2020/10/21 14:21	405US6U0K114	1581	KF7AGO	KF7AGO	W7EFL	//WL2K Re: Contact and Test information
	2018/04/12 22:30	UCKDT36O7QFA	988	SYSTEM	WEBMASTER	W7EFL	Welcome to the Winlink web site!
	2018/04/12 22:16	VLSRBBGORSY6	472	SYSTEM	SERVICE	W7EFL	Password Recovery Address Change Notification

System Folders
Inbox (0 unread)
Read Items (0)
Outbox (0)
Sent Items (36)
Saved Items (0)
Deleted Items (0)
Drafts (0)

Personal Folders

Global Folders

Contacts

```
Message ID: DEY8ERKE87UJ
Date: 2021/11/10 18:28
From: KF7AGO
To: W7EFL
Source: KF7AGO
Downloaded-from: Telnet:cms.Winlink.org
Subject: Re: Testing

Hello to you Ed;
    If you have enough VE's, I will more than likely stay here at home BUT if you do need another VE just let me know and I'll be glad to come down.

GOD BLESS     kf7ago Jim    885-7787
----- Message from W7EFL sent 2021/11/09 17:00 -----

Message ID: ACQ0FORV8EH6
Date: 2021/11/09 17:00
From: W7EFL
To: KF7AGO
Source: W7EFL
Subject: Testing

Hi Jim,

We are having a testing session November 16 at 5:30 pm.  Location at the 911 call center.  You are welcome to attend and help if you want to, but it looks like we will have enough VEs without you.
 I know it is a bit of a chore for you and I don't want to impose on you if your help is not needed.  I also want you to know that I welcome your help and it is always good to see you.

Ed
```

11:14 AM
5/15/2022

Let's Compose a Message

- At the top of the screen, select "Message" and "New Message" from the dropdown menu.

- If you are sending to another WinLink user, all you need is the call sign—that is their email address in WinLink.

# Notice the simplicity of the recipient address—just the call sign.

Post to the outbox

- When you have completed the message, click on "Post to Outbox". This will "park" your message waiting for you to connect. Nothing has been sent yet.

- Create any other messages you want to send so they can all be sent using the same session.

- Connect to the server by selecting "Open Session" and "Telnet Winlink". Start the session and you will send and receive any pending messages.

Receiving Messages

- If does <u>not</u> work just like your gmail or AOL account.
- There is no automatic notification that you have a message.
- You need to connect to the server to find out if you have any messages!
- Open a session to see if you have any messages. Don't forget to start the session.

Sending to non-WinLink Users

- You can send a message to an external domain. Just use the full email address including the domain when creating the message.

- In this case, I used W7EFL@arrl.net, which will forward to my gmail account.
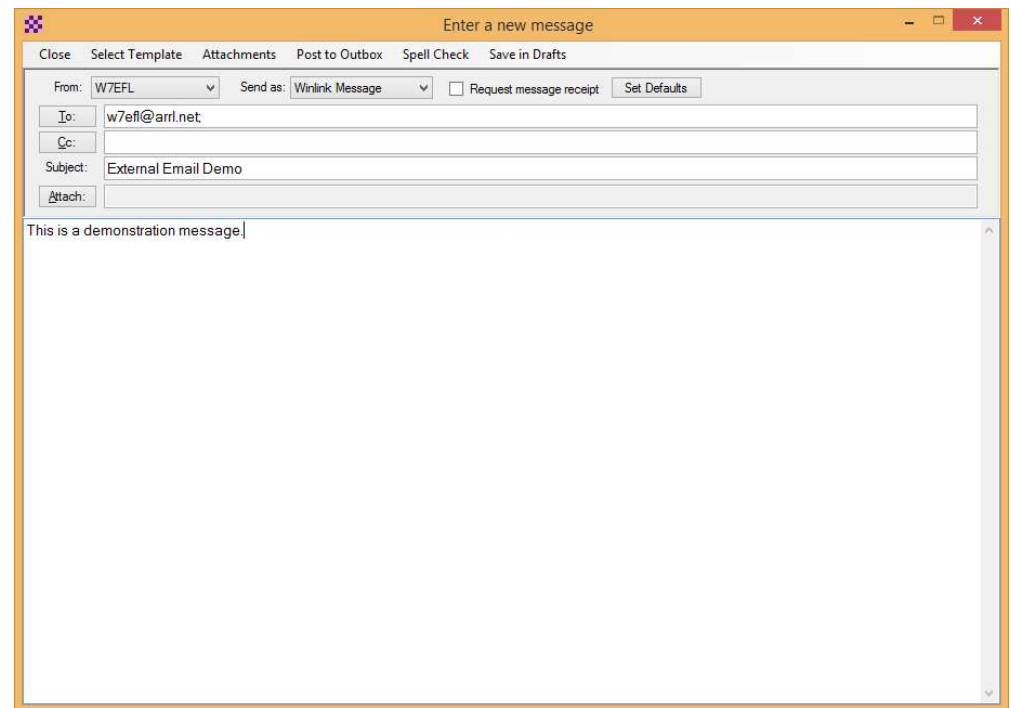
….and a few seconds later here it is
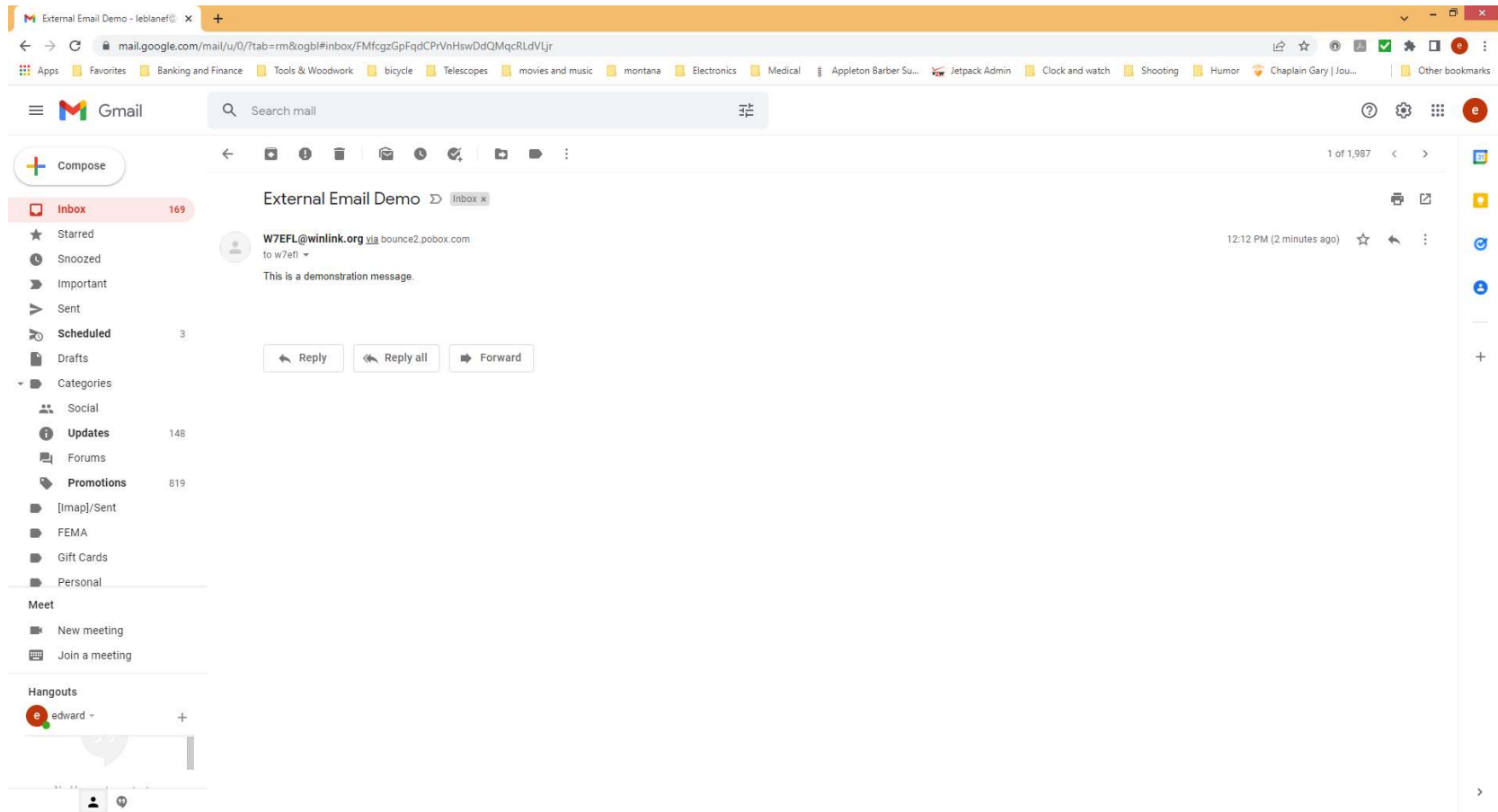
Sending to a WinLink user

- As you can see from the previous example, the default email address for a WinLink user is *call sign*@winlink.org.

- Because a winlink message may be sent over HF radio links, there has to be a mechanism to cut out spam. We would have countless messages about our auto warranty without this.

- Start the subject line with //WL2K

- I have found this to be nearly impossible to explain to some folks, so you probably do not want to use WinLink to communicate with non-hams (and maybe even some hams).

Without the Subject Prefix "//WL2K"
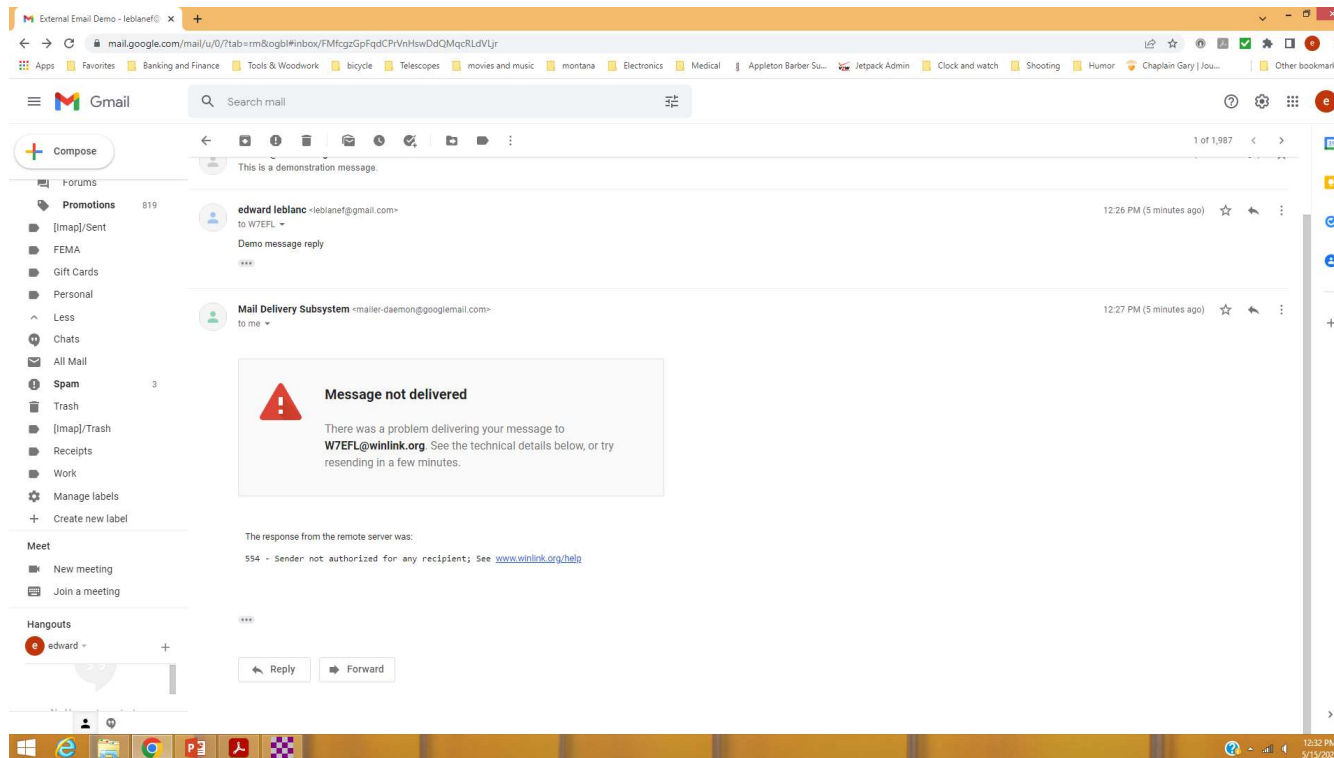
With the //WL2K added—Success!
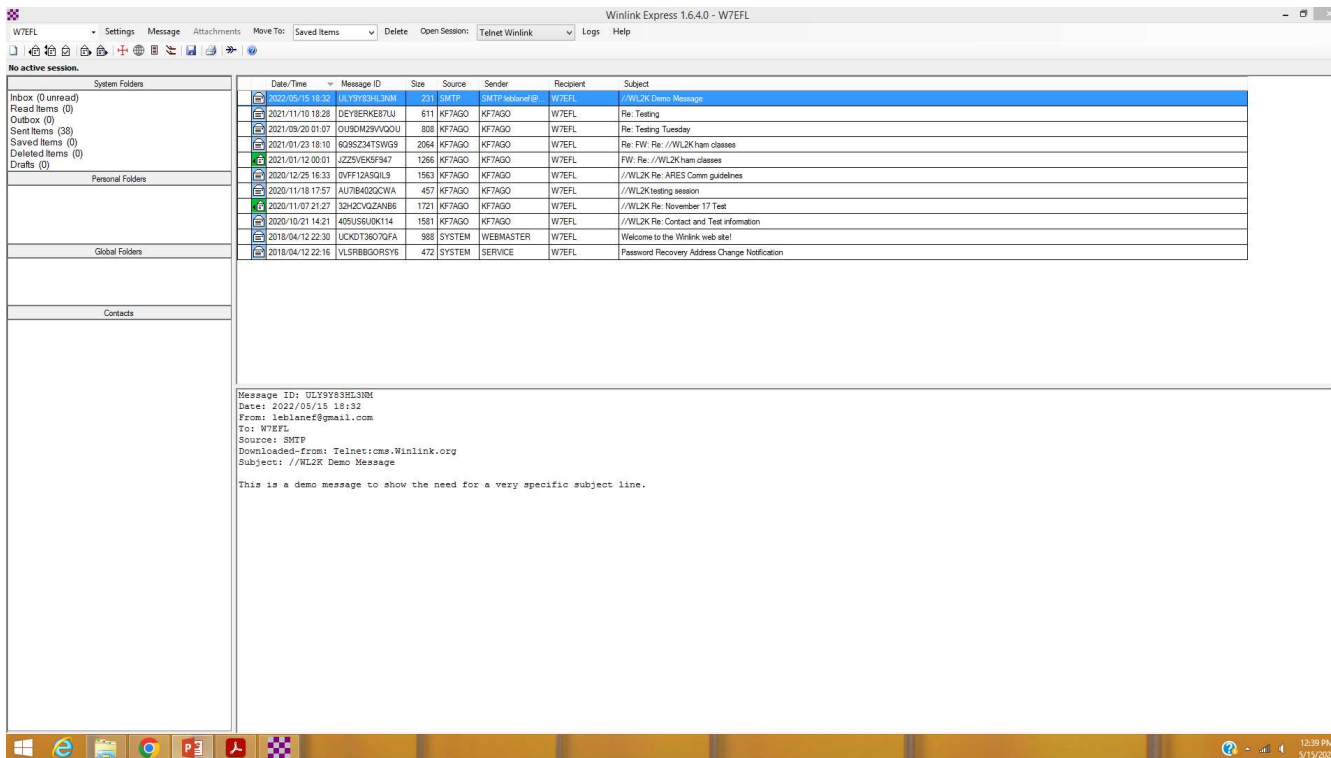
Radio mode

- This is a little more complex.
  - You need to connect your computer USB port to the HF radio.
  - Some radios have a built-in interface and all you need is the appropriate cable.
  - An external "adapter" or TNC may be required or desireable.
  - The Tigertronics SignaLink ™ *USB* is a very popular choice.
  - Go to the Tigertronics website and look up your radio to see what is required.
- As an example, the TenTec Jupiter shows the following part numbers:
  - Jupiter SLUSB5PD (ACCY) SLCAB5PD (ACCY) SLMOD5PD
  - $139.95 + $9.95 for the pre-configured jumper module or make up your own jumpers. Some recommend against the pre-configured module as a waste as it is easy to configure the jumpers yourself.

Connection

- Connecting the device is pretty simple.
    - One cable goes to the radio (get the correct cable for your radio from Tigertronics when ordering).
    - One cable goes to the USB port on your computer—power comes from the computer USB port.
    - Install the jumper module.
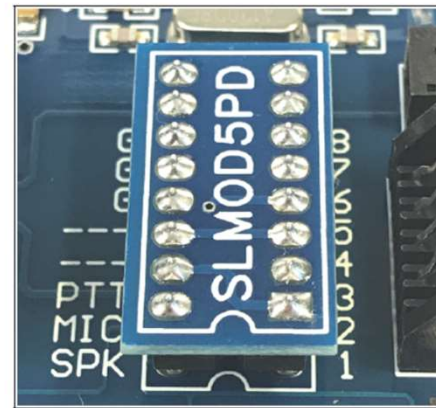
Figure 1 – Plug & Play Jumper Module
properly installed notch to notch

Select the Appropriate Session Type
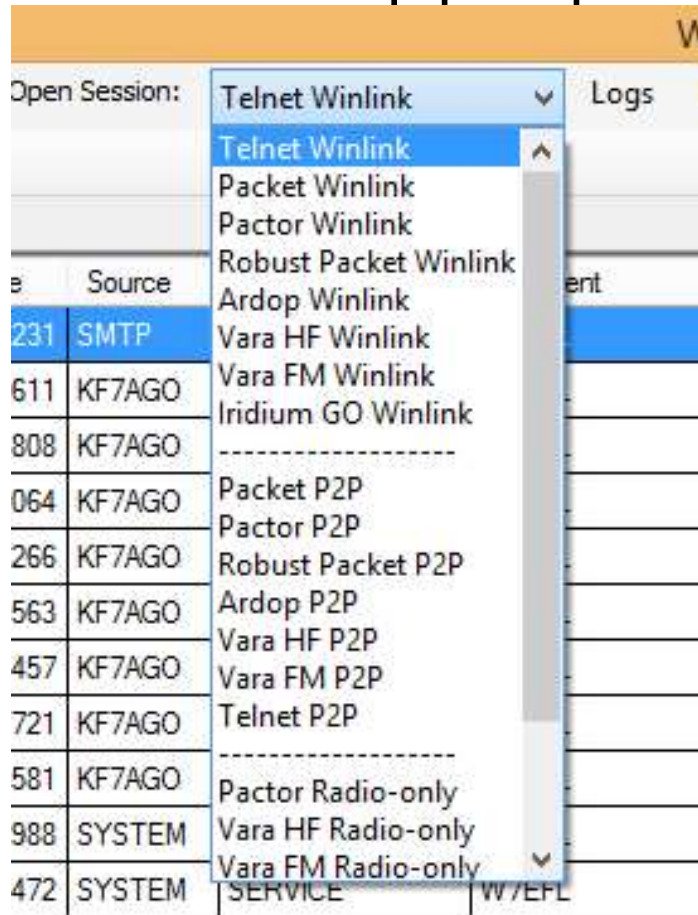
- As you can see there are many modes to choose from.
- Make use of the "Book of Knowledge" at the WinLink site for specifics about your radio and mode selection.
- You will need to select frequency, etc. on subsequent screens.
- https://winlink.org/RMSChannels

RMS Channels

What's all the fuss about forms?

- WinLink uses form templates to send information easily and efficiently.
  - We all know that the government must have forms to survive, right?
- With the use of a library of forms that exists at each computer, all that needs to be transmitted is the intelligence to complete the form.
  - This saves bandwidth and is a necessary part of using HF for transmission of things like FEMA resource requests and things like that.
- There are even radiogram forms.
- When the form is received by an outside (of WinLink) user, a pdf is created to make it look right for the end user.
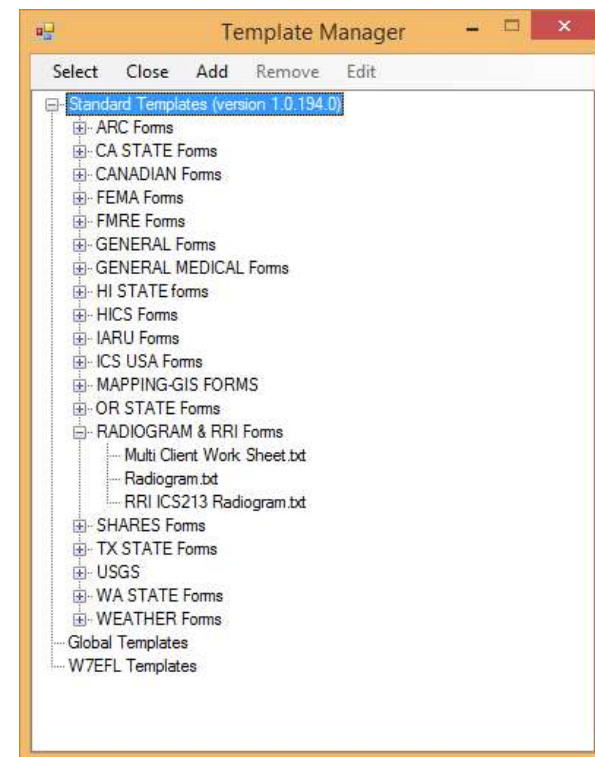
Form Updates

- Since only the data to fill out the from is transmitted, it is important to have common templates for all users.

- The form updates are regularly pushed.

- It only takes a few seconds to update the forms using a Telnet session.

Example of Update Push
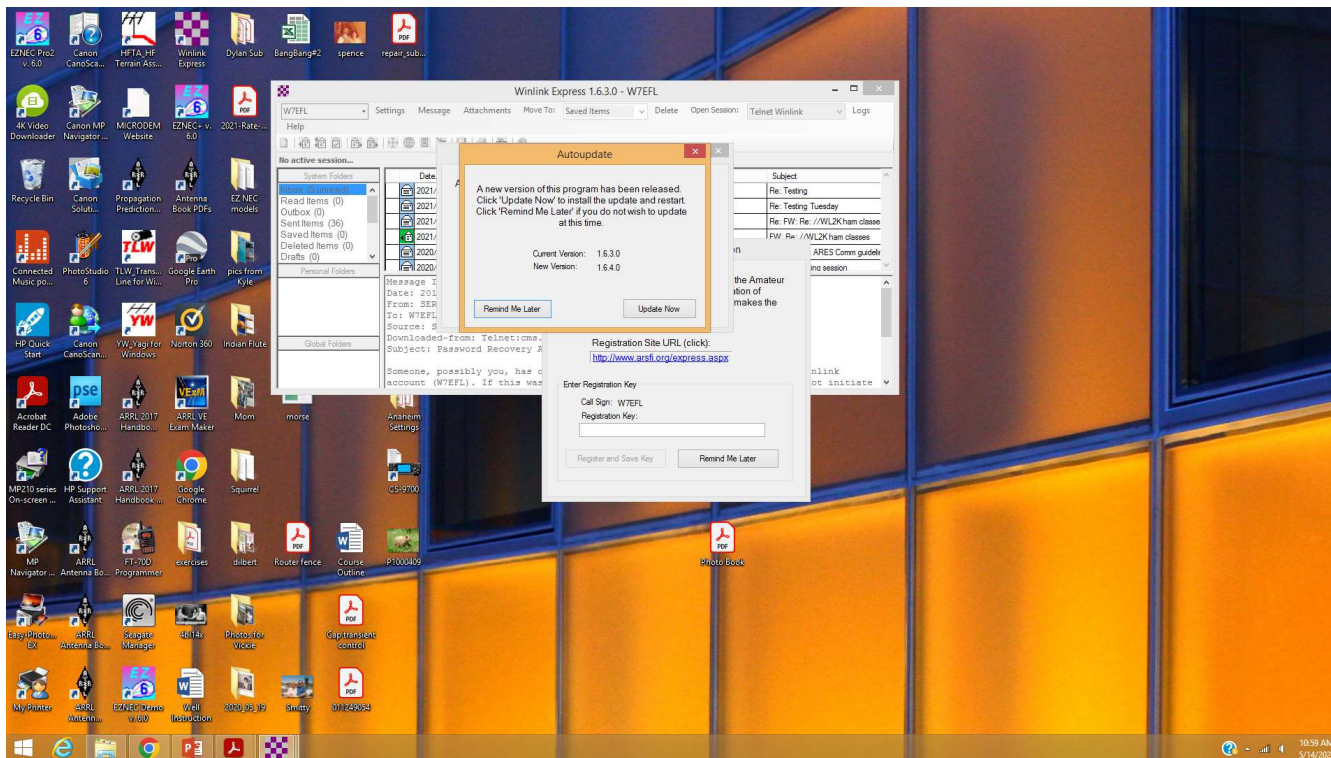
Using a Form

- To use a form, create a new message and click on "Select Template"
- The template manager menu will come up.
- Select the category and the form you want to use.
- This will open a form in your browser.
- For this example, I will use the Radiogram.

Radiogram Form

Amateur Radio RADIOGRAM Text Creator — *Read Help and Instructions!*

Number	Precedence	Handling Instructions	Station Of Origin	Check	Place of Origin	Time	Date
4	R / EMERGENCY / P / W	NONE / HXA / HXB	W7EFL	0		Optional	MAY 15
☐ SVC (Handler use)	Emergency not in use at this time.	HX Help / ADD MORE HX INFO	Change if not you.			○ Current UTC Time / ○ Current Local Time / ● No Time	

TO:

Name: FIRST AND LAST NAME MINIMUM   Call Sign: IF ANY OR KNOWN

Address: OPTIONAL

City / Town: VERIFY YOUR SPELLING   State or Province: ST   2 Letter Codes   Zip: USA/CAN

Country: OPTIONAL

Phone: 555 555 5555   Extension: #'s ONLY   E-mail: NEED EMAIL, PHONE, OR BOTH TO ENSURE DELIVERY.

Op Note about this Radiogram: OPTIONAL - KEEP IT SHORT!

MESSAGE TEXT Check: 0   ARL Message Numbering Help

SUGGESTION IS NO MORE THAN 25 GROUPS (WORDS)

Click here to preview for accuracy BEFORE you SUBMIT

Signature (name) of person for whom message originated: PERSON WHO ORIGINATED THIS MESSAGE

Operator Note: OPTIONAL - KEEP IT SHORT!

>>> NOW CLICK HERE and select a Liaison Station <<<   YOU MAY ENTER ANY ADDRESS HERE

Submit   Reset Form   *Contact KB1TCE about this form: Ver 10.5*

Filled out

- There are links embedded in the form for help and instructions.

- You may want to read the instructions, but where is the fun in that?

- Hit submit and see what happens.

- Prompt comes up to close browser window to complete submission of form.

Post and send

- When the form is completed, post to the outbox and send.
- If you want it to go to a specific email address, enter that address in the Liason Station Box (sometimes reading the instructions is a good thing).

Summary

- WinLink is not a substitute nor replacement for modes like PSK31. If you think it is, you will be disappointed in it.
- WinLink is a valuable addition to the tools used for EmComm operations.
- The ability to send and receive email without an internet connection makes it attractive in times of emergency.
- The use of standardized forms makes it convenient to send and receive data in formats useful to various agencies
- This was just to get you started and see if you have any interest.
- If you decide to download WinLink Express, send me a note at W7EFL.

Additional Information

- https://en.wikipedia.org/wiki/Winlink
- https://winlink.org/content/winlink_book_knowledge
- https://www.tigertronics.com/