

# Asynchronous communication and Amateur Radio - Winlink One Possible Solution

Robert Bower W9RWB

Michiana Amateur Radio Club

What is Synchronous Communication?

## What is Synchronous Communication?

Communication that happens in real time.

What is Asynchronous Communication?

## What is Asynchronous Communication?

Communication that is not in real time.

What is Synchronous Communication?

Communication that happens in real time.

What is Asynchronous Communication?

Communication that is not in real time.

## What are examples of each?

- ▶ Using your voice
- ▶ Written
- ▶ Phone
- ▶ Computer

What are examples of each?

- ▶ Using your voice



# What are examples of each?

- ▶ Using your voice
  - ▶ Conversation - Synchronous
  - ▶ Leaving a message with someone - Asynchronous

What are examples of each?

▶ Written

# What are examples of each?

- ▶ Written
  - ▶ Passing Notes in Class - Synchronous
  - ▶ Note, Postcard, letter - Asynchronous

What are examples of each?

▶ Phone

# What are examples of each?

- ▶ Phone
  - ▶ Conversation - Synchronous
  - ▶ Leaving a message on Voice Mail - Asynchronous
  - ▶ Texting - Could be either

# What are examples of each?

- ▶ Computer
  - ▶ Chat - Synchronous
  - ▶ Email - Asynchronous

# What are examples of each?

- ▶ Using your voice
  - ▶ Conversation - Synchronous
  - ▶ Leaving a message with someone - Asynchronous
- ▶ Written
  - ▶ Passing Notes in Class - Synchronous
  - ▶ Note, Postcard, letter - Asynchronous
- ▶ Phone
  - ▶ Conversation - Synchronous
  - ▶ Leaving a message on Voice Mail - Asynchronous
  - ▶ Texting - Could be either
- ▶ Computer
  - ▶ Chat - Synchronous
  - ▶ Email - Asynchronous

Can you do asynchronous communication with amateur radio?



Can you do asynchronous communication with amateur radio?

YES!!!!!!!!!!!!!!!

Can you do asynchronous communication with amateur radio?

Examples

# Can you do asynchronous communication with amateur radio?

## Examples

- ▶ NTS Radiogram
- ▶ Packet Radio BBSes
- ▶ Winlink

## What is Winlink?

Winlink 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.

## Why use Winlink?

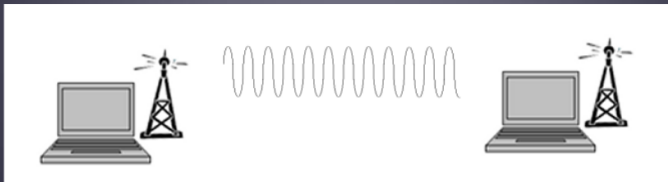
- ▶ Ability to communicate with Hams that are currently not on air.
- ▶ Cross-band communication with no special equipment.
- ▶ Ability to communicate with non-Hams.
- ▶ Emergency Preparedness

# Modes

## P2P Peer to Peer

The receiving Station needs to be using the same frequency and protocol as the transmitting station with their Winlink client running but the control operator of the receiving station does not need to be present.

Since Winlink is a data mode upper sideband is used on any HF frequency.



Amateur Radio Safety Foundation, Inc.

Figure 1: Peer to Peer Winlink Diagram

## Radio Only

Also referred to as a Hybrid MESH network

### Radio-Only Winlink Network (No Internet)

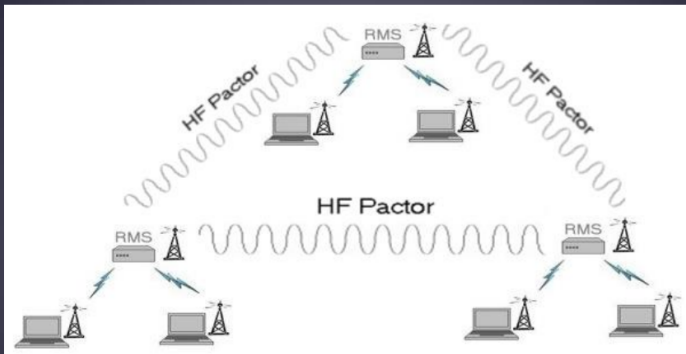


Figure 2: Radio Only Winlink Diagram

## Radio Only

Used during "Internet Outage"

Must use Pactor 2-4, VARA, or Packet to connect.

Before you use you must sign up and select a Message Pickup Station (MPS)

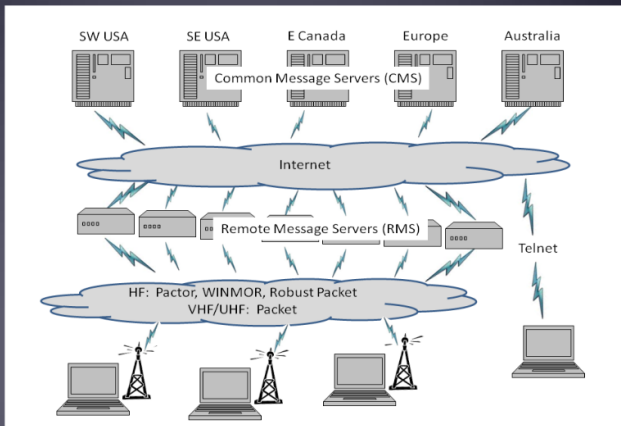
You can select up to three using Winlink Express



## Default Mode

Also known as Conventional

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



Amateur Radio Safety Foundation, Inc.

Figure 3: Conventional Winlink Diagram

# Protocols

- ▶ 802.11
- ▶ ALE
- ▶ Ardop
- ▶ D-Star
- ▶ Packet
- ▶ Pactor I-IV
- ▶ Robust Packet
- ▶ TCP/IP
- ▶ Telnet
- ▶ Vara
- ▶ Vara FM
- ▶ Web Mail

## External Emails

You can send an email to any email address not just other Winlink users with your Winlink Client.

### Examples

- ▶ Gmail [clutchcargo@gmail.com](mailto:clutchcargo@gmail.com)
- ▶ Yahoo mail [clutchcargo@yahoo.com](mailto:clutchcargo@yahoo.com)
- ▶ [w9ab@w9ab.org](mailto:w9ab@w9ab.org)

# Text Messages

Most cell phones have an email address such as 555-555-555@domain.com so you can send text messages from your Winlink Client.

## Examples

- ▶ AT&T: @txt.att.net for SMS or @mms.att.net for MMS
- ▶ T-Mobile: @tmomail.net for SMS and MMS
- ▶ Verizon: @vtext.com for SMS or @vzwpx.com for MMS
- ▶ Google: @msg.fi.google.com

## Receiving Emails

When you signup with winlink.org you receive an email address  
callsign@winlink.org

Any email user can send you an email at callsign@winlink, not just other Winlink users.

While your Winlink email works just like any email remember this is a rf dependent network only give your email to those who need it.

# Winlink Catalog

## Position Reports

Winlink can send and receive position reports.

## Weather Reports

## Propagation Reports

## News

# Winlink Forms

# Standard Forms

Included with most Winlink Clients

## Examples

- ▶ American Red Cross
- ▶ FEMA
- ▶ General
- ▶ Incident Control System
- ▶ Mapping GIS
- ▶ Radiogram
- ▶ USGS
- ▶ Various State Forms
- ▶ Weather



## Forms Not Included

[https://winlink.org/content/forms\\_not\\_standard\\_library\\_download\\_process\\_instructions](https://winlink.org/content/forms_not_standard_library_download_process_instructions)

# Winlink Radio Mail Servers I have Used

## ARDOP and VARA

### 20m

- ▶ WA3WLH-10
- ▶ WW4MSK

### 30m

- ▶ KB5LZK Nighttime Good

### 40m

- ▶ K1EHZ
- ▶ K4PAR Nighttime Conditions rated as Good
- ▶ KB5LZK Nighttime Conditions rated as Good
- ▶ W6IDS Daytime Conditions rated as Fair

# Winlink Wednesday

<https://winlinkwednesday.net/>

## Help with Winlink

Winlink

<https://winlink.org/>

Pat is a cross platform Winlink client

<https://getpat.io/>

KM4ACK's YouTube Channel

<https://www.youtube.com/@KM4ACK>

Off-Grid Ham Radio OH8STN's YouTube Channel

<https://www.youtube.com/@OH8STN>

Using VARA with Linux

<http://k6eta.com/linux/installing-rms-express-on-linux-with-wine>