Spurious Emissions

The Newsletter of the South Bay Amateur Radio Society

From The President's Shack
By John Wright, K6CPO

First of all, let me apologize for being almost a month late with this issue. It's been one thing after another and with taking a week off to attend Quartzfest (more on that later in the issue) I managed to get way behind on everything.

We've had our first meeting at our new location at Chula Vista Fire Station Number 4 and, frankly, the turnout was better than the board expected. Because the fire station is a more secure facility than the RV resort, we need people to man the door prior to meetings to let attendees into the facility. This would entail being at the door from 6:30 PM until 7:05 PM, at which time the door would be closed and locked and the individual would come into the meeting. If anyone is interested in volunteering, please contact me.

Both our repeaters were down for several days in January and investigation revealed the solar controller was not charging the batteries, which shutdown and the repeaters went off the air. The repeaters were placed back on AC current and we contacted Morningstar about the controller.

The controller was out of warranty and the response from Morningstar was not the most favorable. At the recommendation of Bioenno Power, the manufacturer of our batteries, the Technical Committee decided to purchase two Bioenno solar controllers and install them as separate systems on the two batteries.

By the time you read this, the controllers will be installed and the repeaters will be back on full solar power.

Everyone is aware of the recent government shutdown and the possibility it could occur again as early as three weeks. During the shutdown, the FCC ceased processing amateur radio application, both for new grants and license upgrades. As of this writing (Jan 31) the FCC is back in operation and making up the backlog.

If another shutdown were to occur, SANDARC VEC will continue to administer examinations according to their normal schedule.

SOBARS member Ed Flinn, WA6YVX, has been connecting his WIRES-X node to the MINWIS (Minnesota-Wisconsin) Fusion net through our UHF repeater on Monday evenings at 5:30 PM local time. This brings in the Fusion Tech Net out of the Bakken Amateur Radio Society in Minneapolis. For those of you with Yaesu System Fusion radios this could be an interesting net.

This is all I have for now. 73! ⚡

Quartzfest, 2019

Article By John Wright, K6CPO, Photos Courtesy Kris Weed, KR1SS

I decided that this was going to be the year I finally attended Quartzfest, the big RV hamfest in Quartzsite, Arizona. Since my little tent trailer needs new tires, I contacted a ham friend who is an Arizona resident and has a nice travel trailer. He is a regular attendee at Quartzfest and was willing to share his trailer with me.

Quartzfest ran from January 20, 2019 through January 26, 2019. I left San Diego on the morning of the 20th and after a five hour drive (with a stop in Yuma) I arrived at the Road Runner camping area on Bureau of Land Management (BLM) land just outside Quartzsite. Camping there is free for up to 14 days, more than enough time to cover the event. I arrived in time to catch the tail end of the opening ceremonies *(Cover Photo)*.

The Special Event Station, W7Q, was up and operating every day of the event. Anyone could come in and operate if they desired.

There was a full schedule of seminars and workshops covering just about any topic imaginable, including several that were of interest to RV owners. There was also a special event station, W7Q, that operated just about every day.

My friend Tom, N7WEM, is involved with the Sunlife Amateur Radio Club and the Venture Out Amateur Radio Club in Mesa, AZ. There were several members of both clubs in attendance and I got to know them fairly well.

Every morning at 7:45 AM there was an announcement net on simplex, outlining the day's events and schedule. Announcements came from Kris Weed, KR1SS, the event organizer, and the day's schedule was read by Gordon West, WB6NOA, of Ham Nation fame. I set up my ammo can go kit on the counter in the trailer so we could listen to the net every morning.

Of primary concern the second day was getting registered and obtaining my raffle prize tickets, Because I had to leave on Friday, the 25th, I was unable to participate in the Grand Prize Drawing as it was "have to be present to win." I did, however, obtain a ticket for a drawing to be held at the Yuma Hamfest in February.

Tuesday morning, my friend, one of his fellow club members and I went into Quartzsite to check out the giant RV show there. There were acres and acres of RV on display, from the fanciest bus-sized models, to the smallest trailers. There was also a sizeable vendor show, at which I picked up several items.

Upon retuning to the event location, I attended a seminar on "Land Ops." Not knowing what this was, I was intrigued. As it turns out, Land Ops is an organization of individuals that combine the activities of ham radio, off-roading, and other sports such as orienteering and geocaching. As part of their activities at Quartzfest, they sponsored an off-road event for those that had appropriate vehicles. There is a video on YouTube at https://www.youtube.com/watch?v=5DLxS2ØScxc&t=499s that shows the line of 4WD vehicles getting ready to depart on their drive. At 5:45 into the video you'll see a trailer on the right flanked by two red pick-up trucks. That is the trailer I was staying in (my truck is on the right.)

On Thursday evening, the Sunlife and Venture Out clubs had a nice well attended potluck dinner and one of the members flew a drone over the gathering. https://www.youtube.com/watch?v=CØZBKDwuiUs.

ARRL Southwestern Division Director brought attendees up to date on the recent ARRL board meeting.

ARRL Southwestern Division Director Dick Norton, N6AA, spoke Friday morning with an update on the January ARRL Board meeting at the headquarters in Newington, CT. Thanks to my opposite number, Arizona Section Public Information Coordinator Virgil

Silhanek, K7VZ for the following notes on Dick Norton's talk.

- ARRL board has revoked the code of conduct.

- There is a new lawyer they are working with from DC who has previous experience with the FCC.

- WARFA jammer. Problems persist.

- Volunteer Monitor program. The Official Observer (OO) program worked on our end, but nobody was paying attention on the FCC side. They want VM's to be qualified and be able to get results when problems arise.

- QSL Bureau will be returned to being a membership benefit. Stop trying to run it for profit.

- NTS- National Traffic System. Many split off to RRI- Radio Relay International. The damage has been done, but the current board would like to mend ties.

- ARES – They are going to allow sections to set the "rules" and adapt. Discussion focused on some sections organize ARES based on counties, while others operate under hospital layouts, etc. The ARES program in each section will be the ultimate call of the Section Manager (along with SEC and DEC's.) They will follow local requirements. The ARRL EC-001 course fee of $50 will be dropped and ARES members will be able to take this for free.

- Data rates on HF. Discussion focused on allowing use of PACTOR4 in the USA. It hasn't "ruined" amateur radio in all other countries that allow the data rates.

- Petition for Technicians to gain more HF privileges. It was discussed, but there is no real update at this time.

- Web site revamp. Life Long Learning program. There are 30k new hams annually, ARRL gets about 17% who join and only half of those renew. They really want to focus on new hams and are brainstorming how to appeal to these folks. The ARRL wants to provide a resource where all hams can turn to for answers and Elmer help.

- Membership discussion from the crowd: Someone brought up the ARRL should offer a discount to first time members. There was also membership incentives suggested for older hams as well as life membership discount ideas thrown out. The ARRL used to offer a 5 year renewal, but only offers up to 3 years now. Bring back 5 year option. Someone suggested the IEEE offers free lifetime membership if years of paid membership plus age is greater than 100. Adopt a similar program? It was joked that most in attendance would qualify.

- Many hams have started YouTube channels with training on amateur radio. KE0OG suggested the ARRL work with these folks to contribute to Life Long Learning portal mentioned above.

- ARPA status was discussed. See ARRL press release. There was a lot of discussion and I stopped taking notes here.

The Final Minutes of the January board meeting can be found at: http://www.arrl.org/files/file/2019 Board of Directors/Final Minutes January 2019.pdf

I enjoyed my first visit to Quartzfest and plan on attending future events if I have the opportunity. I'd recommend it for any ham as a worthwhile event. ✐

Amateur Radio (Illegally) Aiding Yacht Racers
By Dan Romanchik, KB6NU

The Golden Globe Race (https://goldengloberace.com), a 30,000 mile, non-stop solo yacht race to celebrate Sir Robin Knox-Johnston's historic 1968/9 world first solo non-stop circumnavigation. There are 18 sailors in the race, which started on July 1, 2018 from Les Sables-D'Olonne, France.

Amateur radio is at the heart of the latest controversy surrounding the race. *Scuttlebutt Sailing News* reported (https://www.sailingscuttlebutt.com/2019/01/21/maintaining-information-barrier/) on January 21, 2019 (day 205 of the race):

"Sailors have been making use of the Amateur Radio net (ham radio) for decades, and while National telecommunication authorities have often turned a deaf ear to unlicensed operators using made-up call signs while at sea, warnings from a National regulator to Golden Globe Race skippers has created intrigue into an exciting finale for race leaders.

"Modern navigation and routing tools are restricted from use in the 2018-19 contest, limiting GGR skippers to the type of equipment available for the inaugural Sunday Times Golden Globe solo

non-stop round the world race in 1968-69. That includes Amateur Radio.

"The skippers have been using this free communication system to gain weather forecasts and maintain contact with their teams, which is allowed under the Race Rules. However, it is the responsibility of each skipper to ensure that they abide by National and International regulations which Jean-Luc Van Den Heede and Mark Slats, in first and second in the race, have not been doing. *[[Neither Van den Heede or Slats have valid amateur radio licenses…Dan]]*

"Said the warning, 'You use an amateur callsign and are making connections with amateur radio operators. The call sign letters are not registered, and thus illegal. I ask you to stop. If you have a legal amateur callsign then I urge you to present it.'"

As a result of this warning, Slats is considering dropping out of the race, even though the race is nearly complete. *Yachting Monthy* reports (https://www.yachtingmonthly.com/boat-events/golden-globe-race/golden-globe-race-slats-considers-quitting-comms-row-68574):

"Mark Slats, who is less than 50 miles from Golden Globe Race leader Jean-Luc Van Den Heede, has announced he is thinking about retiring from the race after being banned from broadcasting on the Ham Radio Net.

"Race organisers said the Dutch skipper does not have the required licence, and has been warned by the Dutch authorities to stop broadcasting, which has left him unable to communicate with his shore team.

"Under the rules of the race, all of the entrants are able to use this free communication system to gain weather forecasts and maintain contact with their teams, but, it is the responsibility of each skipper to ensure that they abide by national and international regulations."

It's not only the yachters that are flouting the rules, it's the amateur radio operators who are communicating with them. According to *Yachting Monthly,* OFCOM, the UK regulator issued the following warning:

"Fair warning both to unregistered GGR skippers and to legitimate Ham radio operators communicating with them. In Britain, the Ham Radio net is controlled by OFCOM, which recently revoked more than 500 licences for non-compliance. This includes communicating with unregistered Ham radio operators. The maximum penalty is 6 months in prison, a £5,000 fine and loss of their licence."

This is a fascinating story, and I wish that I'd found out about this sooner. It would be interesting to listen in on some of these communications. One question I have is why these guys failed to obtain a valid amateur radio license? The Golden Globe Radio website notes, "[The race] will be sailed under the auspices of the Royal Nomuka Yacht Club in the Kingdom of Tonga. His Royal Highness, Crown Prince Tupouto'a Ulukalala is Patron of the Race." They probably could have issued valid amateur radio licenses to all the racers.

If any of you have heard the communications or know any more about the technical details, I'd love to hear from you.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog ([KB6NU.Com](KB6NU.Com)), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and one of the hosts of the No Nonsense Amateur Radio Podcast (NoNonsenseAmateurRadio.Com). When he's not think about operating maritime mobile, you'll find him on 30m, 40m, and 80m. ✐

Overview of the Winlink "Hybrid" Network

The Winlink radio e-mail network is a versatile system that supports multiple transmission protocols (e.g., Pactor, Winmor, ARDOP, packet, telnet) and several methods for storing and transferring messages – Conventional, Radio-relay, and peer-to-peer. This document will focus on messages sent using HF protocols, primarily Pactor.

Winlink Operating Modes

Winlink provides three modes for transferring messages between stations.

Conventional – This is the standard and preferred mode. A client station consisting of a computer running Winlink Express, a radio, a modem, and an antenna makes an HF radio connection to a Radio Message Server (RMS). The RMS makes an Internet connection to a Common Message Server (CMS) that is the central message repository. Messages sent by the client go by radio to the RMS and then through the Internet where they are stored on a CMS until the recipient connects and downloads messages addressed to them.

The Conventional Mode is efficient and highly reliable. Winlink operates multiple CMS that synchronize with each other frequently to provide completely redundancy. The system can run without interruption with only one CMS in operation. Over the last 15 years, the Winlink central system has been available 99.99% of the time. If an RMS is down and unable to receive a connection, the client can connect to a different RMS. Since all messages are stored in the central CMS database, it doesn't matter which RMS the sender and recipient connect to.
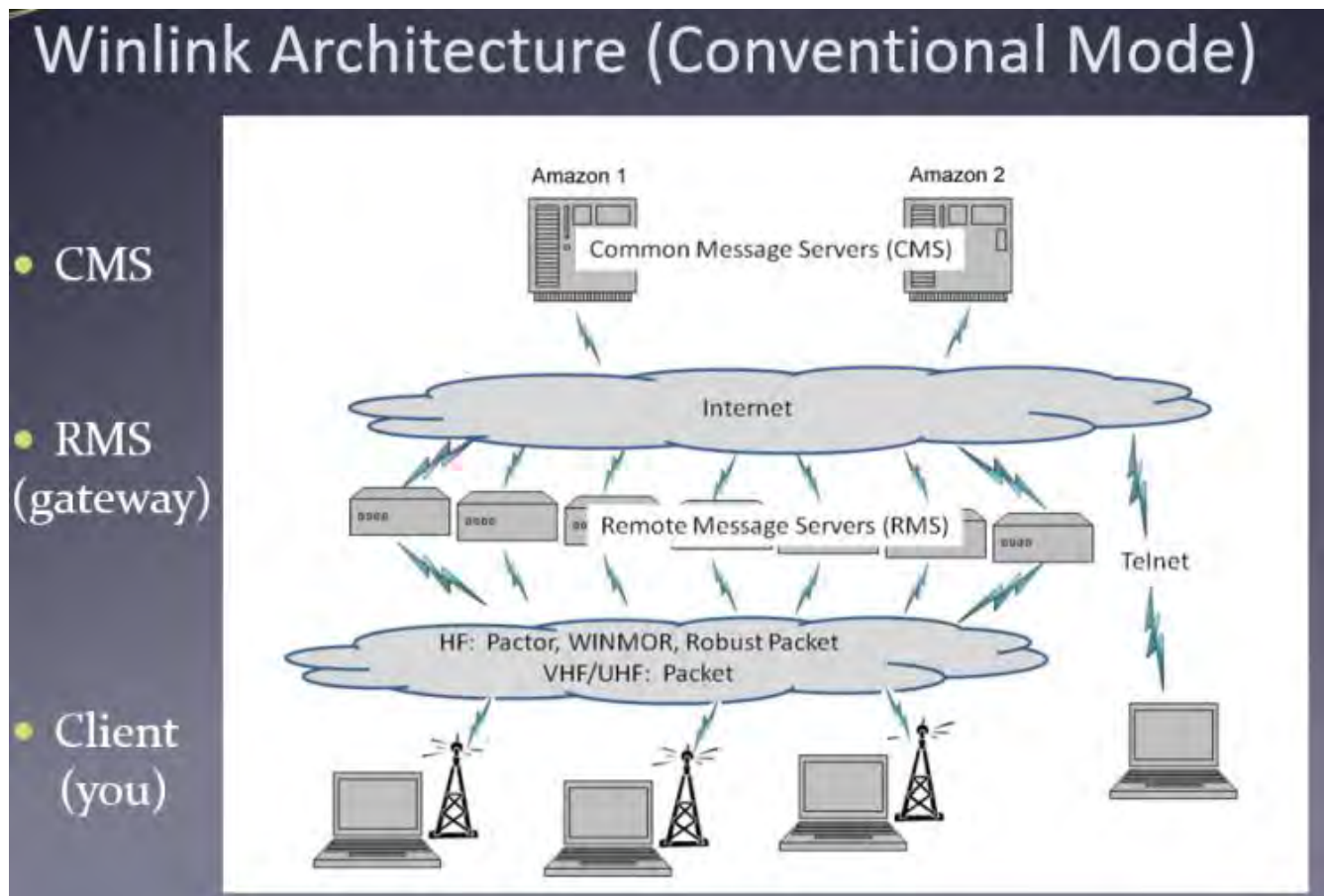
Radio-Forwarding Mode – Conventional mode is reliable and efficient, but it relies on an Internet connection between the RMS and a CMS. If an RMS is running strictly in conventional mode, and it doesn't have an Internet connection, it cannot accept connections from client stations and route them to a CMS. If an Internet outage is confined to the local region of the RMS, a client can simply select a different RMS that has Internet to reach a CMS. However, with the increasing risk of network hacking and cyber-attacks, there is a growing concern with the vulnerability of the Internet itself. By policy, some government sites are prohibited from connecting to the public Internet out of fear of hacking attacks.

To provide resiliency to an Internet outage, Winlink offers a Pactor **radio-forwarding** mode that transfers messages from an RMS that doesn't have Internet to another RMS that has Internet and/or to an RMS where the recipient can pick them up. This mode of operation can operate with local and total Internet outages.
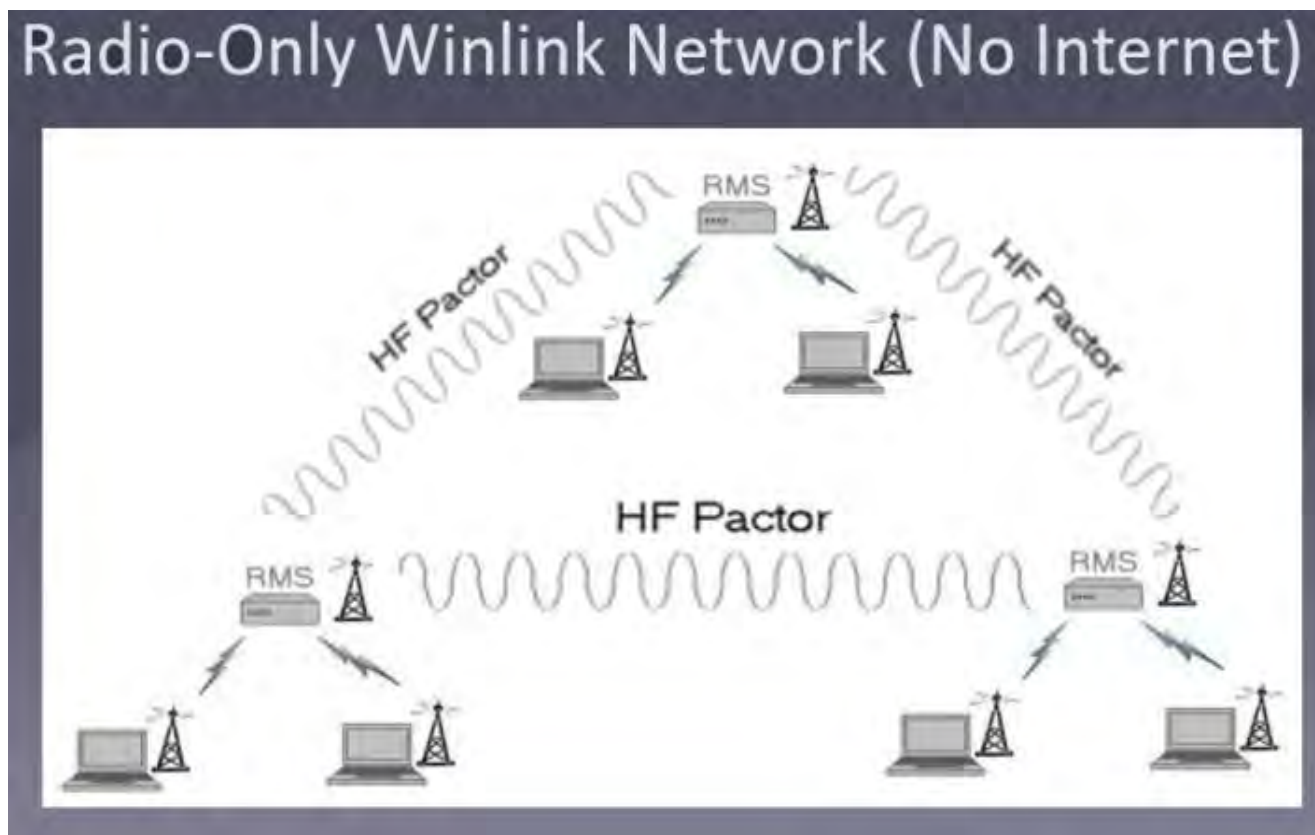
In order for an RMS to participate in the radio-forwarding Winlink network, it must run both the RMS Trimode and the RMS Relay programs, and RMS Relay must be configured to operate in "Hybrid Mode". RMS are encouraged to do this, but it is not required.

The term "**Hybrid Mode**" refers to an RMS configured to operate in Conventional Mode when it has Internet access and to switch automatically to Radio-Forwarding Mode if it loses the Internet connection.

For testing and exercises, messages can be composed and sent into a Hybrid RMS as "**Radio-Only Messages**." Because of the way these messages are tagged and the type of connection made to the RMS, these messages are forced to be handled using radio-forwarding mode even if the Internet is available. Radio-only messages must be addressed to the call sign of the recipient. SMTP e-mail addresses cannot be used with radio-only messages.

Message Pickup Stations (MPS)

Messages transferred by radio-forwarding are not stored on a CMS. Instead, they are forwarded to an RMS and stored in its local database for the recipient to download. Since it would be impractical to send a copy of every radio-forwarding message to every RMS, the recipient must designate which RMS he wants to use as his **Message Pickup Stations (MPS)**. This designation must be done at least 24 hours before radio-forwarding will be available for them. The MPS selection is done in Winlink Express by clicking Setting/Hybrid Network Parameters.

Hybrid Network Parameters

Parameters specified on this screen control the flow of messages when they are being sent via radio-only forwarding.

Message Pickup Stations (MPS)

MPS 1: N4MEH

MPS 2: N5TW

MPS 3:

Update list of RMS available as MPS

Display list of RMS available as MPS

Register MPS via Internet

Queue radio message to register my MPS

Last update: 2018-06-26-11:37

When operating in radio-only mode, incoming messages for you will be held on the designated Message Pickup Station RMS until you pick them up.

☐ Add /auto/ to subject lines

Save   Cancel

Each user should select two MPS. It's possible to select three, but for efficiency reasons, three is recommended only for emergency management agencies.

The sending station does not need to be aware of the MPS selected by the recipient. The message can be sent into any RMS operating in Hybrid Mode, and that RMS will forward a copy of the message via Pactor to the designated MPS. If the recipient has designated two MPS, a copy of the message is sent to each one. Once Winlink Express has downloaded a message from one MPS, it will not download the same message again from another MPS.

Using "PING" Messages to Test Radio-Only Forwarding

The Winlink hybrid network supports "PING" messages to check the radio-only connectivity between two RMS. Ping messages are different than normal Winlink messages in two ways:

- The message is addressed to the call sign of an RMS rather than the call sign of an end user.
- The message must be sent as a radio-only message and not through the CMS system.

To send a Ping message, put the call sign of the RMS you want to test as the "To" address of the message. Put **/PING/** as the subject of the message. (Ping is not case-sensitive, but it must be enclosed by '/' characters).

Send the Ping message into a hybrid RMS as a radio-only message. The message will be forwarded to the destination RMS using radio-only relaying. When the message is received by RMS Relay running on the destination RMS, RMS Relay will generate an automatic reply providing information about the RMS and showing the message path that was taken to reach it. This reply will be sent back via radio-only forwarding to the MPS registered for the sender of the message.

Radio-only message mode has several disadvantages compared to conventional mode:

- Conventional mode messages uploaded to a CMS are available to download within a minute. Radio-only messages may take minutes or hours to reach the MPS.
- Conventional messages can be downloaded through any RMS. Radio-only messages can be downloaded only by radio-only connections to one of the MPS.
- You cannot send Internet e-mails (Gmail, Yahoo, etc.) via radio-only.
- The recipients must have designated MPS.

Peer-To-Peer Mode – This mode of operation transfers messages directly from one client station to another client station without going through an RMS or a CMS; the Internet is not used. There are several disadvantages to peer-to-peer mode:

- Both stations must be on the air at the same time
- Stations must coordinate the frequency, and it must be clear
- Both stations must use the same transmission protocol, for example, Pactor.
- Messages cannot be sent to Internet e-mail accounts such as Gmail and Yahoo.
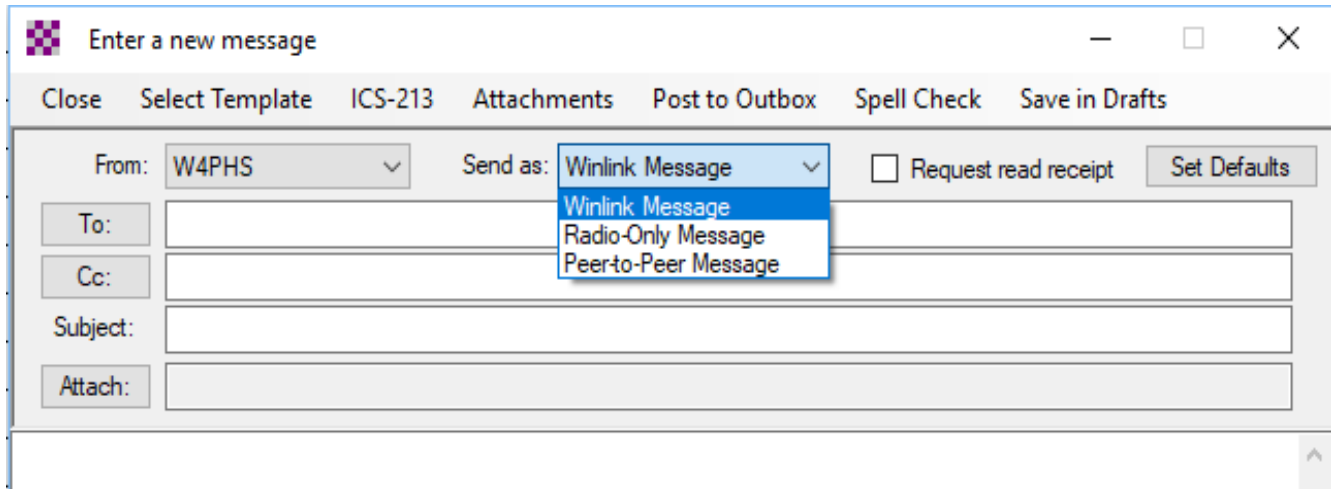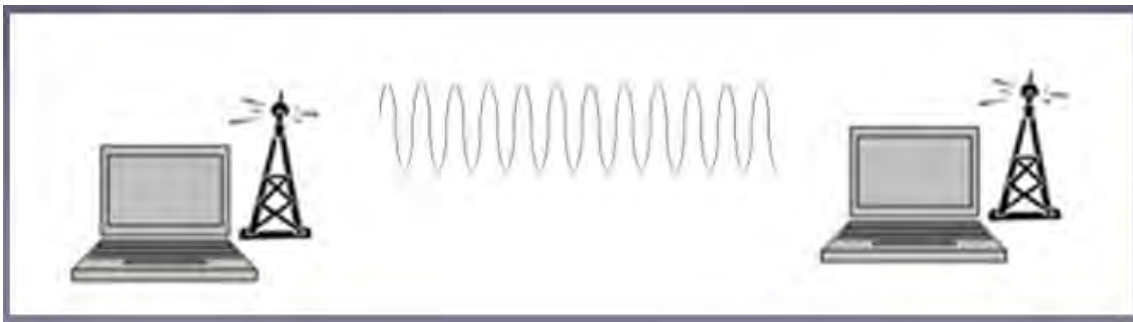
Composing and Sending Conventional, Radio-Only, and Peer-to-Peer Messages

The mode of message handling is specified both when a message is composed and when it is transmitted.

Composing a Message

A choice must be made for the mode on the screen where a message is composed.

"**Winlink Message**" – This specifies the message should be sent as a conventional message to a CMS. The message will be held in the Outbox until a conventional connection is made to an RMS. It will not be sent through a radio-only or peer-to-peer connection.

"**Radio-Only Message**" – This specifies the message is forced to be transferred by radio-forwarding. It is not sent to a CMS. The recipient must download the message from one of his/her designated Message Pickup Stations (MPS). The message will be held in the Outbox until a radio-only connection is made to an RMS. It will not be sent through a conventional RMS connection or a peer-to-peer connection.

"**Peer-to-Peer Message**" – This specifies the message is to be held until a peer-to peer connection is made to the client station having the call sign matching the "To" address of the message. The message will not be sent during a conventional connection to an RMS or during a radio-only connection.

Connection Modes

When you open a session, you must select whether you want the session to make a conventional, radio-only, or peer-to-peer mode connection. This is done using the session drop-down list in Winlink Express.
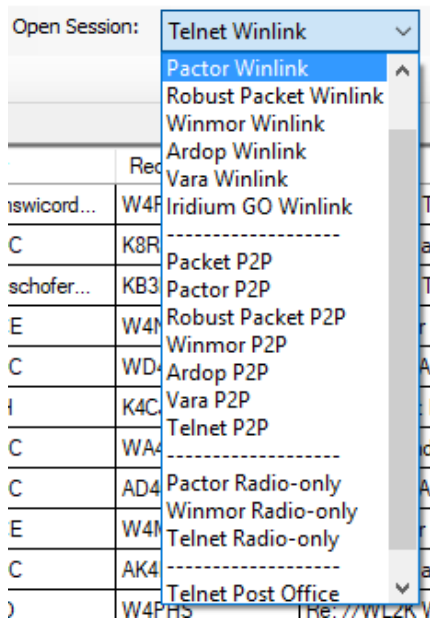
A "Winlink" session makes a conventional connection to an RMS. When a message is created and tagged as Conventional, Radio-only, or Peer-to-Peer, it will be held until the matching type of session is active.

When a conventional ("Winlink") connection is made to an RMS, data is relayed between the client station and a CMS. RMS Relay on the RMS simply passes packets back and forth.

When a radio-only connection is made to an RMS, RMS Relay running on the RMS processes the connection itself and stores any messages sent in its local database. No information is passed up to a CMS. Winlink Express appends "-T" to the call sign of the RMS to notify the RMS that a radio-only connection needs to be handled locally.

Handling of Conventional and Radio-Only Messages

Conventional Messages

RMS has an Internet connection – The connection is routed through the RMS and the Internet to a CMS. Messages being sent go to the CMS and are stored in its database. Messages for the connecting person held by the CMS are downloaded to the client.

RMS does not have an Internet connection – If the sysop of the RMS had enabled an option to accept only radio-only messages for no-Internet operation, a message will be sent back notifying the client, and the connection will be dropped. If the RMS is configured to accept conventional connections without Internet, Winlink Express displays a warning message notifying the operator that outgoing messages may be delayed.

If the client station operator elects to continue the connection, then outgoing messages are accepted by RMS Relay on the RMS and stored in its local database. Depending on how the RMS operator configures his RMS, the messages may be held until the Internet connection is restored and then uploaded to a CMS, or the RMS may make a Pactor connection to another RMS that has Internet and forward the messages through it to reach a CMS.

If the posted messages are addressed to call signs that have registered MPS, a copy of the message will be sent to each MPS for the recipient. In this case, the messages will be available on a CMS and also on the MPS. They will have the same message ID, so Winlink Express will download only one copy.

Radio-Only Messages

If a message is created as a radio-only message, and a radio-only connection is made to a hybrid RMS, then the RMS will always use RMS Relay to process the connection. Messages sent will be stored by RMS Relay in its local database. No copy of the message will be uploaded to a CMS. A copy of the message will be made for each MPS registered for the recipient, and the messages will be routed to the MPS where they will be stored in its local database.

Downloading Messages

Conventional messages are stored on a CMS. Radio-only messages are stored in the local database for the RMS designated as MPS. To retrieve a conventional message, you must make a conventional connection that reaches a CMS. The only exception is when the original RMS they were posted through didn't have an Internet connection, so copies were sent both to a CMS and the MPS.

Since radio-only messages are stored in the local database of the RMS designated as MPS, radio-only connections to one of the MPS RMS must be made to download these messages.

2019 Southwestern Division Convention

Yuma Hamfest
Yuma, Arizona
Feb. 15 & 16, 2019

Yuma County Fairgrounds
2520 East 32nd Street, Yuma, Arizona

www.yumahamfest.org

Check the Website for Additional Information

Gates Open for Camping Thursday, 2 pm Vendor Setup Friday, 7 am - Noon	Event Hours Friday, Noon - 5 pm Saturday, 8 am - 5 pm	Hamfest Dinner & Grand Prize Drawing Saturday Night 6:00 - 8:00 pm

Vendors & Exhibitors　　**Tailgating (Swap Meet)**
Consignment Sales　　　**Full Seminar Schedule**
License Testing　　　　　**DXCC Card Checking**
Hourly Door Prizes　　　**$25,000+ in Grand Prizes**
On-site RV Camping　　　**Emergency Preparedness**
Hamfest Dinner　　　　　**Admission Prizes**
ARRL Speakers　　　　　**Hospitality Area**
Transmitter Hunt　　　　**Near Space Balloon Launch**
$5.00 Admission　　　　　**Antenna Clinic & T-hunt**

Email Contact: *info@yumahamfest.org*