

AMERICAN

How-to: Coastal Survival

SURVIVAL

GUIDE

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SEND EMAILS BY HAM RADIO?

**WORLD GONE SILENT HAS A NEW AND
EASY SOLUTION!**

BY JIM JEFFRIES

Amateur radio (ham) operators have many modes of operation available to them: voice is the most common, followed by several digital types that encode voice and data, and finally Morse code. They just need the right gear to match the mode.

Hams generally are restricted to conversing only with other licensed operators on amateur frequencies. This can present a problem when you need to communicate with family or group members who are not licensed or don't have access to their radio and, due to the situation,

› *Right:* Many of the email procedures used in ham radio are complex and sometimes require extensive training and coordination. Amateur Radio Clubs normally hold training sessions to teach emergency communications teams how to work together. Formal training such as this is not necessary with the WGS EMAIL WITH HAM RADIO kits.



WINLINK GLOBAL RADIO EMAIL SYSTEM



The Winlink Global Radio Email system is a hybrid email service created by and for amateur radio operators. Due to the system's ability to work with or without Internet connectivity, it is a tremendous benefit to emergency response and disaster recovery communications, as exhibited during the recovery efforts following the devastating hurricanes that struck Puerto Rico in 2017. Massive amounts of information, much of it sensitive in nature, was conveyed back and forth, without any physical connection to the US mainland, in the form of email originating from ham stations on the island to emergency coordinators and relief agencies in the United States.

Winlink supports different modes of operation including conventional Internet-based traffic (telnet); peer-to-peer (P2P) for direct radio-to-radio messages; and radio only, wherein messages are stored at one primary (and one alternate, if desired) radio station for pickup.

In their own words, Winlink is "a worldwide radio email service that uses radio pathways where the Internet is not present, and is capable of operating completely without the Internet—automatically—using smart-network radio relays. Winlink provides its users email with attachments, position reporting, weather and information bulletins, and is well-known for its role in emergency and disaster relief communications.

"Licensed Winlink operators/stations use both amateur radio and government radio frequencies worldwide. The system is built, operated and administered entirely by licensed volunteers. Support for the system is provided by the Amateur Radio Safety Foundation, Inc., a US 501(c)(3) non-profit, public-benefit entity. Winlink Global Radio Email® is a US registered trademark of the Amateur Radio Safety Foundation, Inc."

URL: www.Winlink.org

"HAMS HAVE BEEN SENDING AND RECEIVING EMAIL THROUGH THEIR RADIOS FOR DECADES—EVEN BEFORE THE INTERNET WAS COMMONPLACE—FOR EMERGENCY AND CASUAL CONVERSATIONS."

all you have available is your amateur radio. Although FCC regulations prohibit non-licensed persons from transmitting on amateur frequencies (except in life-or-death emergencies), reaching those you need using ham radio is as easy as sending an email.

Hams have been sending and receiving email through their radios for decades—even before the Internet was commonplace—for emergency and casual conversations. By interfacing a computer to their transceiver, they can send messages over the airwaves without any reliance on a local connection to land-based infrastructure. Today, much of this email is sent through the Winlink Global Radio Email system (see sidebar). In the past, the gear to do this was often expensive, and the task of putting it all together and making it work required a high level of expertise. Fortunately, times have changed.

Chandler Friedman, founder and owner of World Gone Silent (WGS), recognized the need for a simplified and cost-effective solution to provide even inexperienced radio operators with the ability to send and receive email. Through extensive research and testing, Chandler developed kits that can do this and more: introducing World Gone Silent's Email with Ham Radio Kit.

The Email with Ham Radio Kit is available in two versions: a VHF kit, which includes a portable





transceiver, computer-to-radio interface with required cables, and an instruction booklet; and an HF kit, designed as an optional add-on for the WGS Portable HF Pack, which comes with a computer-to-radio interface, cables, and instructions (Portable HF Pack available separately.) A computer (not included) is required to send and receive messages through the Winlink Global Radio Email system. Chandler sent both kits to evaluate for this review.

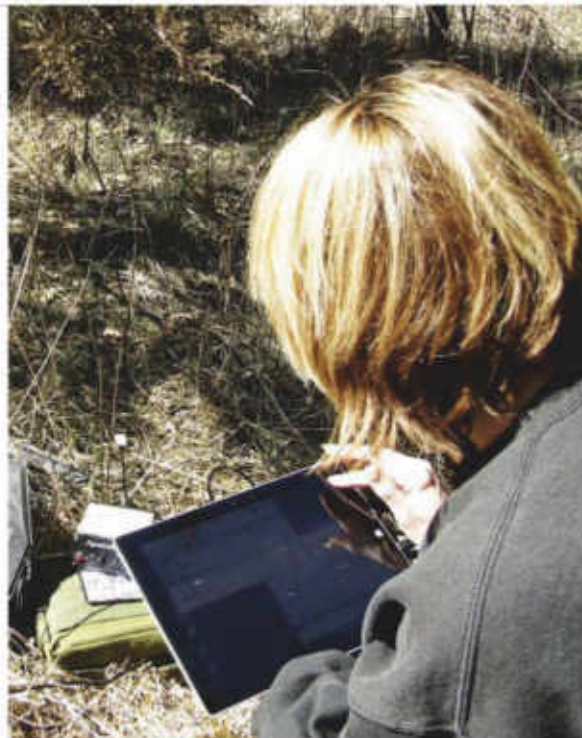
These kits operate on amateur frequencies, so an FCC-issued ham radio license is required. You must have a valid call sign to set up the email application and use the Winlink Global Radio Email system. If you are not already a licensed ham, don't worry; a prepaid subscription to the Ham Test Online study course (www.HamRadioLicenseExam.com) is included in the VHF kit. Vouchers are included in the WGS HF Pack for the general class license.

THE WGS EMAIL WITH HAM RADIO VHF KIT

At the heart of the kit is the Yaesu FT-60 Dual-Band (VHF/UHF) Handheld Transceiver (HT). The FT-60 has been in production for quite some time and remains one of the most recommended handheld radios on the market. Built to withstand the rough handling and extreme conditions that often occur in emergency situations, it is a top pick for search and

◀ Above, left: The VHF kit connected to a portable computer, ready to send email or text messages.

◀ Above, right: The Yaesu FT-60R made its debut in 2004, and is still in production with no end in sight. This highly-rated handheld transceiver is superbly designed, ruggedly built, and very easy to operate.



◀ Left: Testing the EMAIL WITH HAM RADIO VHF kit in the field with a Microsoft Surface running Windows 10. With these kits, you can send and receive email and text messages from just about anywhere.

◀ Left, bottom: Using the EMAIL WITH HAM RADIO VHF kit mobile.



◀ *Left:* Radio on and software running, stations can be left unattended and connected to peer-to-peer (P2P) to exchange email messages. This frees the operator to do other tasks and not worry about missing important communications.

◀ *Below:* The EMAIL WITH HAM RADIO kit connected to the Yaesu FT-857D found in the WGS Portable HF Pack. Email and text messages were sent through a Winlink station over 1,000 miles away on HF, and VHF connections locally and through Digipeaters.

rescue teams and disaster response personnel.

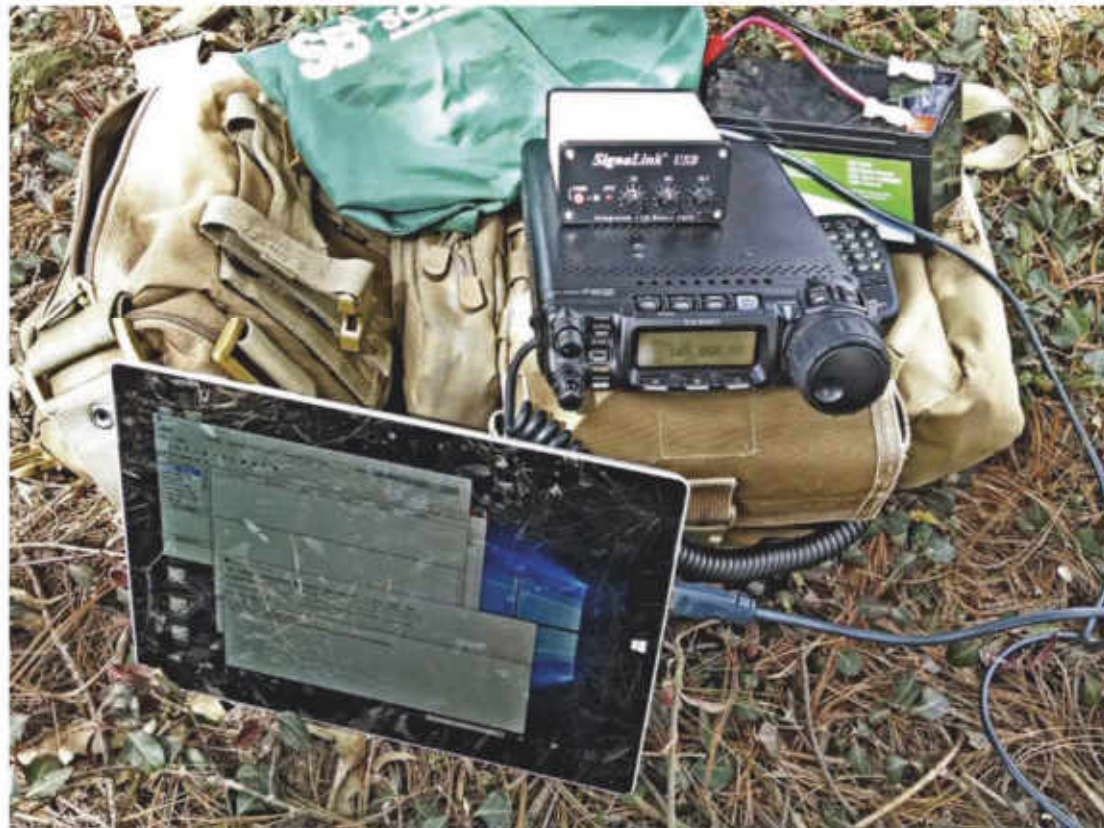
Yaesu FT-60 Specifications

- Receive range: 108-137 MHz (Air Band); 137-520 MHz (AM/FM); 700-999 MHz (FM)
- Transmit bands: 2 meters, 144-148 MHz (FM); 70 centimeters, 430-450 MHz (FM)
- Selectable transmit power: 5 watts high; 2 watts mid; 0.5 watts low (approximate)
- Antenna connection: SMA
- Battery: 7.2 V/1400 mAh nickel-metal hydride battery pack with drop-in overnight charging cradle (Charging cradle and AC adapter not shown in photo.)

The computer-to-transceiver interface is a Signalink USB made by Tigertronics. Connected between the computer and the radio, it passes audio signals back and forth and controls the transmit (PTT) function of the HT.

As explained in the instruction booklet, a magnetic compass is included for the purpose of ensuring the path between stations is not obstructed by buildings or terrain.

The kit is contained in a well-constructed MOLLE-compatible pouch with zipper closure, and it can be attached to a pack or vest or worn on a belt. The VHF kit measures approximately 7 inches wide, 5 inches tall, by 3 inches thick and weighs in at about 1½ pounds. The





◀ Amateur Radio operators use voice, digital modes and email to pass information. Gear can be complex and require a strong skill set. U.S. Army MARS operators, all licensed hams, like AAT30T pictured here, carry out critical communications in support of military and disaster response missions. Photo by KB3JUV, Wikipedia commons

that, you can refer to the manufacturer's user manual, which is also included. As mentioned, there are some software applications that must be downloaded and installed from the Internet (all are free). Web addresses and installation steps are contained in the WGS instruction booklet.

SETTING UP AND TESTING

My experience with the process would give me an unfair advantage, so I enlisted one of the members of my group for this test; she holds an amateur technician license but was not familiar with the hardware or the steps involved. As she followed the instructions, downloaded and installed the software, and assembled the gear, I took notes. Within a few minutes, she was on the air.

Creating email and text messages in Winlink Express is similar to any other email application, but there are additional steps to perform

HF kit is the same size but a bit lighter since no radio is included.

Though not included, a computer running Microsoft Windows version 7 or higher, with an available USB port, is needed. An Internet connection is required to download and install software including Winlink Express (the email client), and for updates in the future. The hardware requirements are not very demanding, and most any PC should work. For portability, choose a laptop, notebook or tablet PC. (Mac and Linux operating systems are not officially supported.)

The WGS instruction booklet, created by Chandler, guides you through every step. The booklet is very well written and does not contain a bunch of eye-crossing technical jargon. If you need

◀ Below: Add email and text message capability to the Yaesu FT-8900 contained in the WGS Repeater Pack with the HF kit.



REACH THE PEOPLE
YOU CARE ABOUT
NO MATTER WHAT.

WORLD GONE SILENT

World Gone Silent, founded by Chandler Friedman and based in Los Angeles, specializes in emergency communications. Every kit includes an expertly written instruction booklet to create an easy-to-use, rapidly deployable solution for most any emergency communications scenario. Chandler also assists individuals in developing customized communications plans.

Chandler, W2NP, is Community Emergency Response Team (CERT) certified and has been involved with the Amateur Radio Emergency Service (ARES) in Los Angeles. Before moving to the West Coast, he was the emergency coordinator for ARES in Atlanta. The knowledge and experience he has gained by being an active member in emergency communications means he knows what works and what doesn't during a disaster.

Whether you are just starting out, or wishing to add a new layer of capabilities, WGS has the gear and advice you need. Visit the WGS website (www.WorldGoneSilent.com) for informative articles and videos on emergency communications topics, and to check out the growing list of products and services offered.



before messages can be sent. After the radio is connected and turned on, it must be tuned to one of the frequencies specified in the Winlink Express channel selection table. This table is based upon location information you entered while setting up the application. Location can be manually changed as needed. The list of available Winlink stations can change over time, so update the database as often as practical, but don't wait till disaster strikes! Some of these steps may seem complicated, but by following Chandler's instruction booklet it is a simple task.

On our first test the receiving station was 24 miles away, but with a high ridge in that direction (as determined by the kit's compass), the stations wouldn't connect. VHF is good for line of sight, meaning the radio's antennas must be able to "see" each other. If the distance is too great or if there are terrain features such as hills

› The WGS EMAIL WITH HAM RADIO kit fits in a MOLLE-Compatible pouch and weighs about 1 ½ pounds.

› Right: The World Gone Silent EMAIL WITH HAM RADIO VHF Kit includes everything needed to send email and text messages over the air from your existing computer.

“ALTHOUGH FCC REGULATIONS PROHIBIT NON-LICENSED PERSONS FROM TRANSMITTING ON AMATEUR FREQUENCIES (EXCEPT IN LIFE-OR-DEATH EMERGENCIES), REACHING THOSE YOU NEED USING HAM RADIO IS AS EASY AS SENDING AN EMAIL.”



in the path, direct communications may not be possible. One solution is to move to a higher location to clear possible obstacles or to connect an antenna mounted at a higher elevation.

Another method of increasing the range of the kit is through the use of a digipeater (short for digital repeater). Winlink supports this type of operation and, it is how we ultimately connected to the other station.

We also tested peer-to-peer messaging, where one radio calls the other and exchanges email directly. This worked very well and proved to be extremely effective for longer distances when connecting through digipeaters.

WGS Email with Ham Radio Add-on for the HF Pack



TEXT THEIR CELL WITH HAM RADIO



WGS Email with Ham
Radio Kit

Many disasters or emergencies are localized. Even if you use ham radio, what if loved ones elsewhere don't? Our new **Email with Ham Radio kit** includes everything you need to send an email or text message with a laptop - even without power, cell, or internet service nearby.

Get your message out. Reach them where they already are. Visit us to learn more!

www.worldgonesilent.com/asg

(Use code **ASG** at checkout for \$20 off your purchase)

“THE INFORMATION CONTAINED IN THE WGS INSTRUCTION BOOKLET CAN SAVE YOU MANY HOURS OF FRUSTRATION COMPARED TO TRYING TO DO THIS ON YOUR OWN.”



The interface and cables in the HF kit are configured for the Yaesu FT-857D, which is the radio contained in the WGS Portable HF Pack. Since the FT-857D covers HF and VHF, we tested the kit both with local stations on VHF, and with stations greater than 1,000 miles away on HF. In all tests, the Email with Ham Radio Kit performed flawlessly. By the way, the Yaesu FT-8900 featured in the World Gone Silent Repeater Pack uses the same interface cable as the FT-857D, so we tried the HF kit with it and, not surprisingly, it worked perfectly sending and receiving email and texts over VHF.

SUMMING UP

Testing was performed with various computers, including an older laptop running Microsoft Windows 7, and on a newer Microsoft Windows 10 Surface tablet. Following Chandler's instructions, installation of the hardware and software was trouble-free, even for a first-time user. The information contained in the WGS instruction booklet can save you many hours of frustration compared to trying to do this on your own.

The kits were tested inside the home, portable in the field, and mobile from within our vehicles. Since Winlink estimates the direction and distance to stations in its database based on the location entered during setup, the estimates become invalid when moving very far from that spot, but this really only affects line-of-sight VHF operation (terrain and distance have much less effect on HF signals). To overcome this issue, you should know what Winlink stations are reachable along your path and from your destination, which should be part of your operations and communications plans already.

Please keep in mind someone using a cellphone to receive and reply to email and texts that come through the Winlink Global Radio Email system must still have normal cell or Internet service on their end. Winlink provides a gateway to the Internet for remote stations operating over the airwaves; your radio is not talking directly to their phone.

Email and text messaging provide a way to communicate with family and group members who do not have access to radio equipment. The messages can be archived and referred to later, so important information remains accurate. Winlink Global Radio Email is a highly resilient system and is available to all ham radio operators. The WGS Email with Ham Radio Kits make it possible to add this potent capability to your preparedness communications plan simply and cost effectively. **ASG**

◀ Email and text messages can be sent from anyone to your station through the Winlink Global Radio Email system. U.S. Navy Photo by Mass Communication Specialist 3rd Class Dana D. Legg/Released. DVIDS

SOURCES

World Gone Silent
(770) 765-2976
www.WorldGoneSilent.com
VHF Kit with Yaesu FT-60
MSRP: \$549

HF Kit for the Portable HF Pack
MSRP: \$359