ETO Exercise Basics

Some reminders, especially for New Arrivals to ETO:

- Read and Follow the Instructions **PRECISELY**. Details are sometimes missed in the reading, and some of our assignments can be tricky!
- Make Sure you Address the Correct Clearinghouse for Your Geographic Location (especially if you're temporarily in a different region)
    - Our Tactical Addresses are all formatted as "ETO-nn", where nn is *always* either a 2-digit number ("01", "03", …, "10") or "DX".
    - For Canada, enter ETO-CAN
    - Make sure you type a ZERO, not the letter “O”, in the 2-digit number.
    - If you don't know your Clearinghouse's Tactical Address, Use this web page to look it up: https://emcomm-training.org/More_Info.html#Maps
- For our exercises, we recommend that you always check the "Request message receipt" box in your message before you Post it to your OutBox.
- Another suggestion from our Gurus: put your own "normal" Email Address in the CC box, so that you receive a copy in your non-Winlink Email, as another confirmation that your Winlink message was sent out correctly.
- **IMPORTANT! Just because you receive a CC of your own Winlink submission, and/or receive an ACK from your Clearinghouse, doesn’t guarantee that your position will be shown on the Results Map. Your message needs to follow the exercise instructions 100% correctly, for your location to be plotted.**
- **IMPORTANT! Always accept form updates (if offered, when starting up Winlink Express) before starting an exercise. Always accept updates to the Winlink Express executable (if offered) before starting an exercise.**
- **ETO exercises are designed to be completed using the Winlink Express client, in a Windows environment. If you choose to use any other Winlink Client Program, your mileage may vary, and your response may not be mapped or graded as Correct.**

[continued on the next page…]

EmComm Training Organization

Nationwide Communications Semi-Annual Drill May 14th, 2022

Scenario and Guidelines

Operation "Ashfall"

EmComm Training Team

EmComm-Training.org

05-14-22 Semi-Annual Drill

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Purpose

The purpose of the Nationwide ETO (EmComm Training Organization) semi-annual communications drill is to demonstrate the ability of Amateur Radio to provide accurate and timely messaging by forms using email over radio (Winlink) to further the mission of the agencies and organizations that we serve. This can involve partners including the Amateur Radio Emergency Service (ARES), Radio Amateur Civil Emergency Service (RACES), Auxiliary Communications Service (ACS), along with many other government agencies and non-government organizations. As accuracy and reproducible documents are a cornerstone of modern disaster communications, the primary emphasis will be on digital written forms of communications, as opposed to verbal.

Objectives

- Amateur radio stations, in an imaginary disaster scenario where the conventional infrastructure is compromised, will compose and send forms/emails using the Winlink “email over radio” system to ETO clearinghouses
- Create an added drill component to compose and send messages/forms by Winlink P2P
- Include additional tasks for participants in messaging, including the finding of additional information to be included or analyzed
- Continue to emphasize digital modes for achieving accuracy and timeliness of messaging
- Encourage partner organizations to participate in their own local operations during the drill
- Prepare and train amateur radio operators to effectively use the Winlink system
- Determine weaknesses that future training can address

Semi-annual drill scenario

THIS IS A DRILL

During April, an uptick in seismic activity was noted in the active areas of Yellowstone National Park. On Monday, May 2nd, an increase in seismic activity with an earthquake swarm occurred at the Norris Geyser field in the Park. Quake values greater than 4.5 were recorded over the following hours. On Tuesday, May 3rd, quakes registering greater than 6 made it quite clear that something is happening at Yellowstone. The following day, the Geologist in charge of the Yellowstone Volcano Observatory (YVO) reported that sensors were showing increasing magma buildup at Norris with indications that harmonic tremors being seen increased the likelihood of some kind of eruption soon. Following a meeting in Washington DC, the Alert level for a volcanic eruption at Yellowstone was raised to RED by USGS. This created increasing fear across the globe that a catastrophic event was now a possibility.

FEMA and the US Military were placed on high alert in response to the potential crises that were now on the horizon. DHS held several meetings on how an eruption would affect the US population and the economy of the US. US Utility providers and communications carriers became increasingly alarmed about the impact of heavy volcanic ash on the US infrastructure. US news agencies were beginning around-the-clock coverage of the situation. The President of the United States addressed the nation on May 6th stressing the public should remain calm as officials were unsure how severe the upcoming eruption may be or its consequences. Precautionary evacuations were ordered within a 50-mile radius of the volcano on May 7th.

On May 9th, a single volcanic vent opened at Yellowstone spewing a sprawling cloud several miles into the sky. Strong ashfall began in areas around the vent as evacuations were ongoing. Several inches of ash had fallen as of May 10th creating extreme travel hazards requiring the sheltering of people trying to flee the area. The heavy consistency of ash (many times heavier and denser than wood ash) was causing roof collapses in areas within 65 miles of the active vent. Utility failures and communications outages began increasing out to 100 miles from the vent.

By the time May 11th had arrived, it was clear that the eruption at Yellowstone was a moderate eruption and not the cataclysmic global eruption that had been feared by many. Moderate eruptions have occurred in the history of Yellowstone in addition to the large super-eruptions of Volcanic Explosivity Index (VEI) level of 8. A VEI of 6 has been attributed to the ongoing eruption. Although not a super eruption by definition, it is an eruption far more severe than the Mt. St. Helens eruption in 1980.

The greatest impacts have been ashfall and an unexpected cascading power failure that has spread across much of the nation. Such an event has never occurred before. Even cities as far as Chicago and Los Angeles have reported outages. This has put extreme stress on communication sites that have limited generator fuel. Ashfall is spreading across the US by unusually strong cold-weather features sweeping through the Pacific NW across the nation including areas of the east coast and the Gulf States.

DHS, NWS, and USGS have become increasingly concerned with the impacts on both health and infrastructure from the impact of the ash. They are looking for the public to report conditions across the nation. Due to the power outages and communications issues, this has become increasingly difficult.

Amateur radio has been asked to help with this reporting. The EmComm Training Organization (ETO) has been asked to have its members report their infrastructure, weather conditions, and ash conditions across the US and Canada by Winlink. Areas without reliable internet access can also use the peer-to-peer part of Winlink to achieve these results.

Although the world dodged a bullet in terms of a super eruption, the US, Canada, and Mexico have not fared nearly as well. The eruption itself is already subsiding a bit, but its effects will be felt in North America for years to come both in terms of human suffering and economic impact. Montana, Wyoming, and Idaho have suffered the worst of the regional impacts. Power outages will be prolonged in these areas long after the rest of the nation returns its power grid to a near-normal status. This is a great time for amateur radio to show its capability to report information in an environment when many other traditional systems are unavailable.

Drill Assumptions

For the purpose of this drill, it will be assumed that power, internet, and phone services are very sporadic throughout the US. In some areas, they may be operable and in others, they may not be functioning. This will allow us to conduct other additional options where some systems may be functional.

Drill Activities and Timeline

The semi-annual drill will feature two primary components. The first is the sending of a Winlink Message via a traditional RMS station. This can be done using HF or a VHF/UHF Winlink RMS gateway. This part is required for successful credit on the drill. The second primary component of the drill is the sending of the message by HF Winlink Peer to Peer. Although it is not a requirement, you are strongly encouraged to participate in this activity if you have HF Winlink capability. Peer to Peer (P2P) could be one of the last digital capabilities we have at our disposal in many severe disasters that damage or destroy infrastructure. The timeline for the RMS portion of this drill will have messages starting:

Sat, May 14, 2022, 00:00 UTC (Fri, May 13, 5:00 PM PDT)
Messages must be received by Sun, May 15, 2022, 06:59 UTC (Sat, May 14, 11:59 PM PDT)

And for the P2P (Peer to Peer) portion, Target Stations will operate on:

Sat, May 14, 2022, from 6:00 AM until 6:00 PM <u>Local Time at their location</u>.

Primary activity using Winlink RMS stations

Primary Messaging Activity Overview

The main goal of the first primary activity part of this drill is to send a message with an embedded form through a Winlink RMS station by HF or VHF/UHF to your ETO regional clearinghouse. In this drill, it will not be a tutorial as we normally practice during the weekly exercises. You will demonstrate the skills you have learned from the previous Winlink Thursday exercises.

NOTE: If your message is transferring very slowly, find a Gateway Station in a better location for you. Band conditions and propagation have a huge impact on message transfer speed.

Drill Message Requirements for the first primary drill component

Participants will use the new Field Situation Report form to send your situational information to your regional clearinghouse.

Field Situation Report form

The Field Situation Report form is a new addition to Winlink Express based on the SHARES Spotrep-2 form. This new form is used to gather infrastructure status information in an easy-to-use format. If you have been participating in the Winlink Thursday exercises, you will have recently used this form.

Field Situation Report form used for this drill

Participants using the form will start by clicking Setup near the top and insert the following text **EmComm Training Organization 0514 THIS IS A DRILL** . When using the form, participants are free to simulate infrastructure outages and report them on the form. The answers do not need to actually reflect the real-world conditions at the participant's location at the time of the drill. In addition to the answers on the form, we will be asking participants to simulate and note ashfall amounts in inches at their locations. You will place this information *in the comments section of the form*. Participants must be careful, however, that their form answers do not conflict with the optional activity if they are attempting it. For example: if you list your internet and cell service on the form as non-functional, it would be rather difficult to use it in the optional activity where you would follow an online link. Choose your answers carefully.

Note: If you are planning to participate in the P2P portion of the drill, you will find it helpful to select **Save Field Situation data** as provided at the bottom of the form. More on this later.

FIELD SITUATION REPORT

Emcomm Training Organization 0514 THIS IS A DrILL

Setup Click to add an agency or group name Load Field Situation data Form info

For Non-Express recipients, this form is sent as plain text in the message body.
Once this page is submittefd No changes or editing of this message are allowed

PRECEDENCE: (P) - Priority DATE/TIME: TASK #

FROM: WQ1O

TO:

INFO (CC):

*Call signs or E-mails entered into the **TO** or **INFO** fields above, can be multiples separated by a semicolon ;*

1. Is there is an EMERGENT/LIFE SAFETY Need ○ **YES** ◉ **NO**

If your local situation is LIFE CRITICAL, report via 911. If 911 services are not available, a reporter may use this form and mark the block for LIFE CRITICAL; the reporter should describe the situation and provide the residential address.

2. City County: State: Territory:

3. Latitude and longitude: LAT Ex: 38.5567 LON Ex: -116.9824 . *MGRS* Ex:11SNR0184195204 *Grid* FN41tq

LAT and LON are required to map this SpotRep. If entering manually use Decimal Degree format or from an attached GPS device.
By default LAT, LON and MGRS to the center of the grid square listed in Express Settings

4. LandLines functioning? ○ YES ○ NO POTS ○ NO VOIP ○ NO POTS or VOIP ◉ Unknown - N/A

If no, state provider.

5. Cell Phones functioning? ○ YES ○ NO ○ TEXT ONLY ◉ Unknown - N/A

If no, state provider.

6. AM/FM Broadcast Stations functioning? ○ YES ○ NO ◉ Unknown - N/A

If no, provide broadcast station callsign/frequency that is off-the-air.

7. TV Stations functioning? ○ YES ○ NO ◉ Unknown - N/A

If no, indicate over-the-air or cable, state provider.

8. Public Water Works functioning? ○ YES ○ NO ◉ Unknown - N/A

Comments

9. Commercial Power functioning? ○ YES ○ NO ○ UNSTABLE-Brown outs/blinking lights ◉ Unknown - N/A

If no, state provider.

10. Internet functioning? ○ YES ○ NO ◉ Unknown - N/A

If no, indicate Fiber/Cable/Wireless/Satellite, state provider.

11. NOAA/NWS Weather Radio? ○ YES ○ YES, but degraded audio ○ NO ◉ Unknown - N/A

If no or yes but degraded, indicate transmitter frequency/channel, location, and/or callsign

12. Additional Comments *Brief summary of current situation - expected outage times, major observations, etc.*

13. POC Point of Contact

Save Field Situation data Submit Reset Form Ver 0.1.5

Additional drill optional activities

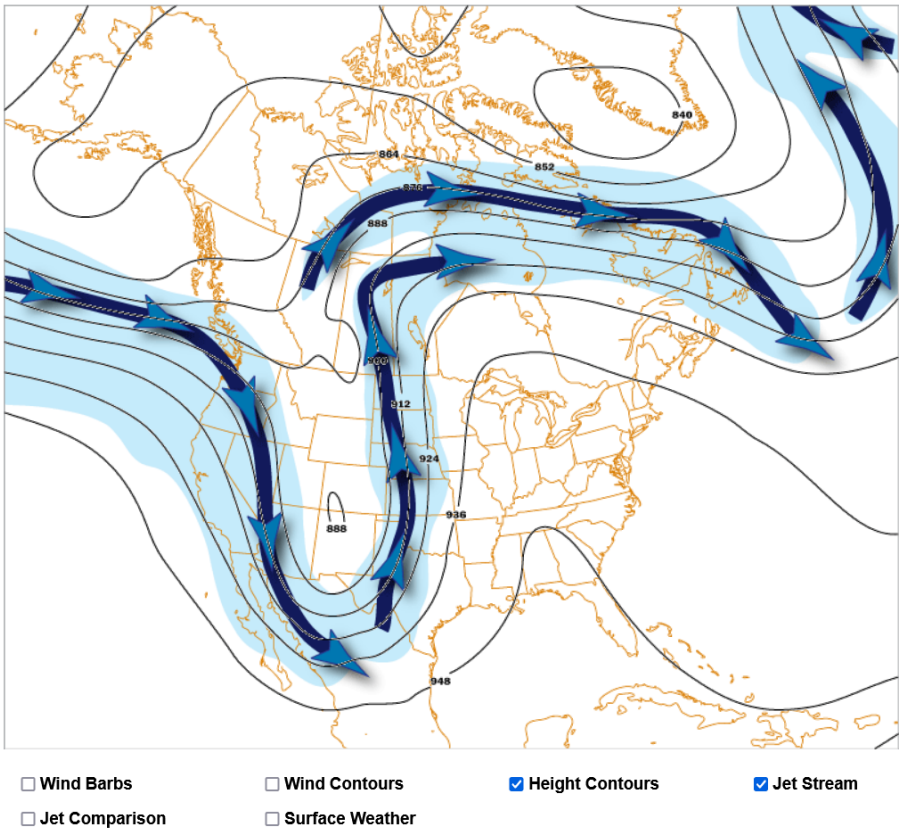
For the primary part of the drill, participants will also have an additional optional activity available.

Additional activity option

Participants will go online (if possible) to: https://www.weather.gov/jetstream/300mb

Click on Jet Stream below the map. See if the sample Jet Stream shown is flowing over or near your area. Indicate with the words “Jet Stream over” or “Jet Stream near” depending on your location and place the words in the comments box on the form.

Example Fig. 1



Additionally, data is available from Mountain Weather. They offer both Current and Forecast Jet Stream maps, and their site is especially appropriate for this drill.

https://www.mountainweather.com/weather-maps/usa-forecast-maps/

Semi-annual Drill responses and grading

This section describes the grading and responses for the information reported on the Field Situation Report form.

Required responses

AGENCY or GROUP NAME: Must match exactly EmComm Training Organization 0514 THIS IS A DRILL

Precedence: MUST be Priority

TASK # must be: 0514

Box1: **MUST be checked No and contain no comments**

Box 2: CITY must be filled in along with COUNTY and STATE for the RMS gateway part of the drill. NO TERRITORY should be specified. For international participants sending to ETO-CAN or ETO-DX your information under Territory should be specified. For the P2P part of the drill, CITY must be filled in.

Lat/Long is required in Decimal Degree format.

Boxes 4-11 must contain comments if the answer is "NO", and must not contain comments if the answer is "YES" or "Unknown - N/A."

Box 12 must contain ashfall mounts in inches if present or "NO ASHFALL" if none is present.

Box 13 must be filled.

Grading Criteria

There are eighteen required responses listed above. Each correct response earns 5 points with an additional 10 points for "participation", for a maximum grade of 100 points. However, incorrect responses to the precedence or Box 1 questions will result in an automatic fail. Read and follow these instructions carefully!

(P2P) Peer-to-peer Winlink operations

ETO Peer-to-Peer (P2P) Drill Instructions (v2022.5)

In preparation for the possibility that Winlink RMS stations become unavailable, or the main email system continues to degrade, ETO will periodically test P2P communications. In addition, due to the nature of the ashfall itself, Target Stations physically located in Regions 07 and 08 have been knocked off the air. We have inserted nearby stations to serve as substitute locations. Be aware!

ETO ***Field Station Instructions***

For this portion of the drill, you will send a form to one or more designated **ETO P2P Target Stations**

In the Main Winlink window, select the message you created for the standard RMS portion of the drill (or create a NEW one using the **Saved data** from the original message).

1. Click the “Forward Message” icon

2. In the “Send As” drop-down window, select “Peer-to-Peer Message”

3. In the “To” box, insert the FCC-issued call sign of the Target station you will be calling

Be sure to listen before calling. There should be little if any QRM.

NOTE: If your message is transferring very slowly, find a Target Station in a better location for you. Band conditions and propagation have a huge impact on message transfer speed.

By making the appropriate change in your message (the TO box), you can continue to use the same message with multiple P2P Targets

Please refer to the attached ETO P2P Target Station List to select appropriate Target(s) for P2P messages. You only need to enter the Center Frequency and Call Sign. The app will insert the Dial Frequency automatically.

You MUST set your system to 500 Hz bandwidth in TWO locations within the Winlink application to help conserve bandwidth for our P2P messaging.

Target Stations *will NOT* answer if you fail to do so.

1. In the **Vara HF Peer-to-Peer Session Window**>**Settings**>**Vara TNC Setup** and

2. In the **VARA HF TNC Window** >**Settings**> **VARA Setup.** (You’ll find the TNC Window hiding down on your Taskbar)

Check the **ETO # 2102 Vara HF P2P 500 Hz Setup** tutorial on YouTube for instructions (link posted on ETO website, Tutorials page).

https://youtu.be/tNgncCVXrHM

NOTE: A complete list of Target Stations for this drill is included.

P2P Target Station List – Frequencies / Locations

ETO P2P Target Station Frequencies (v2022.5)

Compliant with ARRL, CONOP, FCC, and IARU (Region 2) Band Plans as of Jan. 20, 2022.

Channel	Band (m)	Center Freq. (kHz)	Dial Freq. (kHz)	Mode - Bandwidth (Hz)	ETO Region
01	80	3581.500	3580.000	V500	01
02	"	3583.500	3582.000	V500	02
03	"	3585.500	3584.000	V500	03
04	"	3587.500	3586.000	V500	04
05	"	3589.500	3588.000	V500	05
06	80	3591.500	3590.000	V500	06
07	"	3593.500	3592.000	V500	04 *
08	"	3595.500	3594.000	V500	10 *
09	"	3597.500	3596.000	V500	10 *
10	"	3599.500	3598.000	V500	10
11	40	7041.500	7040.000	V500	05
12	"	7043.500	7042.000	V500	03
13	"	7045.500	7044.000	V500	06
14	"	7047.500	7046.000	V500	09
15	30	10131.500	10130.000	V500	01
16	"	10133.500	10132.000	V500	06
17	"	10135.500	10134.000	V500	09
18	20	14085.500	14084.000	V500	01
19	"	14087.500	14086.000	V500	04
20	"	14089.500	14088.000	v500	10

ETO P2P Target Station Locations (v2022.5)

Region	Channel	Station	Location	Notes
01	01	W1IZZ	East Falmouth, MA	
01	15	AI1V	Stamford, CT	
01	18	NP2GG	New Hartford, CT	20m Beam heading SW
02	02	KA2R	Lagrangeville, NY	
03	03	W4FLX	Rocky Mount, VA	
03	12	KV4JM	Norfolk, VA	
04	04	K9THZ	Chatsworth, GA	
04	07	K4HYJ	Dalton, GA	
04	19	KD4IMA	Panama City, FL	20m Omni
05	05	KC9FXE	Menomonie, WI	
05	11	W8RDG	Manistee, MI	
06	06	KF5ZHW	Boerne, TX	
06	13	KC5QOC	Albuquerque, NM	
06	16	N9JYJ	Ponca City, OK	
09	14	KK6SMD	Cerritos, CA	
09	17	K7NOJ	Green Vly, AZ	
10	08	AE7LM	Hailey, ID	
10	09	N2RSN	Keno, OR	
10	10	K8MPW	Wendell, ID	
10	20	W7JST	Bend, OR	20m Beam heading SE

ETO Target Station Instructions (v2022.5)

Scenario: *For this drill, Field Stations will* **create and send a message as outlined under *Field Station Instructions.*** *Please review those instructions so that you know what to expect.*

As a **P2P Target Station**, you will receive the P2P transmissions from multiple Field Stations.

See the enclosed **ETO P2P Target Station List – Frequency / Location** for your specific Channel assignment. Operation is from 6:00 AM to 6:00 PM *your local time unless noted otherwise.*

Please also note that the entire P2P drill will be using Vara HF P2P in v500 Hz mode in order to conserve bandwidth. Field stations have been instructed to make that setting, and you also need to make sure you do the same. ***If set properly, your station will automatically reject any calls at the wrong bandwidth.***

You have all done P2P before, so we won't go through the basic setup. If you are unsure of any item, just ask on the Target Station IO group:

https://emcomm-training.groups.io/g/P2P-Target-Stations/messages

At the end of the drill (6:00 PM your time), you may cease operating (it's OK if you run a bit over).

All the received P2P messages should be in your Winlink Express Inbox, We suggest that you create a Personal Folder named **"<year><month><date> (i.e.: 20220514) ETO P2P Drill"** and Move **ONLY THE RECEIVED MESSAGES** into that folder. Then open that folder, and …

1) Select all the messages (Click on the first message, SHIFT-Click on the last – be sure to scroll down, if necessary).

2) Select Message>Export Messages and Browse to a folder that makes sense to you.

3) Name the file "**<your call sign> P2P <year><month><date>.xml**" and click EXPORT.

4) Back to selected messages (make sure they are ALL still selected), go to Message>Generate ICS-309 Communication Log. Select the Personal Folder you created, **uncheck ALL other boxes** and check '**Combine recipients into a single entry**.'

5) Browse to the same path for the Output pdf file (suggest the same folder as the XML file) and name it "<**your call sign**> **ICS309 <year><month><date>.pdf**". Click on the "Generate ICS-309.PDF" box.

6) Repeat Step 4

7) Browse to the path for the Output pdf file (same folder as above) and name it "<**your call sign**> **ICS309 <year><month><date>.csv**". Click on the "Generate ICS-309.CSV" box, making sure that "Column Delimiter" is set to **Comma**.

6) Send all 3 files to: **ETO@LNAINC.com** by ***regular email*** and CC to **Bob Tykulsker KM6SO (rtykulsker@gmail.com)** for the mapping operation.

Please send it ASAP after the drill. Do not send anything else.

ETO semi-annual drill mapping

Mapping will be available after the conclusion of the drill and completion of the data analysis.

A link will be provided on the ETO website.

International Amateur Participation

International stations that wish to participate in the drill are welcome to do so by addressing their message to the ETO-DX clearinghouse. We ask that you use the same timeframe as established at the beginning of the document and convert the listed time frame to your time.

Those in Canada can address their messages to ETO-CAN (VA3QT in Barrie, ON).

International stations may also participate in the P2P portion of the drill. Please read the instructions carefully, and be aware of the operating times for the Target Stations (UTC -4, -5, -6, and -7 hours coinciding with Eastern, Central, Mountain, and Pacific US Daylight Time zones).

Partner Organizations Local Exercises

Many times, local partner organizations such as ARES, RACES, and AUXCOMM like to conduct local exercises in conjunction with larger ongoing drills. Local groups should feel free to conduct their localized exercises as they wish. Feel free to use our scenario if desired. Localized exercises will not be connected to our nationwide operation, but we encourage all organizations to take as many training opportunities as possible.

Frequently Asked Questions (FAQ)

1. **Do I need to do all parts of this drill?**

   A: No. The first primary part of the drill using an RMS gateway is required. You are free to do the optional activity and are encouraged to try the P2P part of the drill if you are able.

2. **What if I am new or have not worked with the form used in this drill?**

   A: You can look at all of the ETO Winlink Thursday exercises conducted this year on our website www.emcomm-training.org. There you can find the instructions for each one. ETO conducts basic training on an ongoing basis during the calendar year. You will have ample opportunities to participate in exercises almost identical to those you see listed on the webpage.

3. **What if I am connected to an RMS gateway station or a P2P target station and my connection is very slow?**

   A: You should consider changing to another gateway or target station. This can also be on another band, if necessary. This action provides two benefits. This first is that it will help facilitate your message in a more timely manner. It will also free up the original station or gateway for others that may get a better connection throughput.

4. **If I have trouble reaching my regional Target Station, how shall I proceed?**

   A: You may send your P2P message(s) to any Target Station of your choice. We recommend trying stations on different bands in order to gauge the current propagation situation.