HFIE-2014 Guidelines for US Amateur and Government Stations

About HFIE
High Frequency Interoperability Exercise (HFIE) is a readiness exercise event to test radio stations and radio operator practice for HF interoperability communications using Automatic Link Establishment (ALE). The exercise prepares radio operators to more efficiently handle essential Emergency Communications (EMCOMM) and respond to the needs of disaster relief. Participating radio operators use this exercise to gain more experience in setting up and operating stations, and to achieve technical proficiency in communicating via HF radio using ALE. HFIE is a free and open semi-annual exercise, coordinated by the HFLINK organization and the Global ALE High Frequency Network (HFN). More information is available at:
http://hflink.com
http://hflink.net

HFIE-2014 Timeframe
HFIE-2014 Starts 2014 March 27 at 00:01 UTC and ends 2014 April 07 at 23:59 UTC.

HFIE-2014 for US Amateur Radio Service and Federal Government Stations
At the request of FEMA, the FCC and NTIA have granted Special Temporary Authority (STA) for US Amateur Radio Operators and US Federal Government stations to communicate with each other for participation in the 12 days of HFIE-2014. Informal guidelines are presented here for technical operations of HF radio stations for participating US Amateur Radio Service and Government entities.

Objectives
A primary objective of the HFIE-2014 is to test HF two-way communication to meet essential communication needs and to facilitate relief actions. Another objective of HFIE-2014 is to test the interoperability between software-based ALE controllers using computer-interfaced HF radios (as commonly implemented in the Amateur Radio community) with various types of embedded-hardware ALE HF radios (commonly used by government and other services). The exercise encourages and promotes a common denominator of standard ALE techniques for maximum compatibility.

Interoperability Standards

Interoperability for communications in HFIE-2014 is facilitated by the use of 2nd Generation Automatic Link Establishment (2G ALE) as proscribed in the Federal Standard FED-1045a or MIL STD 188-141b/c family of protocols and equipment standards. At a minimum, ALE radio equipment used in the exercise should be capable of sending and receiving ALE Individual Calls, ALE Sounding, and ALE Text messaging (AMD) using the normal 2G ALE methods. The equipment may be normally set up for automatic channel scanning, or manual operation may be selected for fixed channel frequencies. Two shared channel frequencies will be used for HFIE-2014 out of the five channels approved for use by both Amateur and Federal Government stations during the timeframe of this exercise. Channel information is provided in Table 1.

Table 1. HFIE-2014 - HF Interoperability Channels

HFIE-2014
ALE HF Interoperability Channels for US Amateur Radio and Federal Stations

Channel Designation	Channel Frequency	Type of Communication	Comments	Sounding Gov	Sounding Amateur
HFIE Primary	5357.0 kHz USB	VOICE or AMD Texting	Call using ALE and communicate on this channel.	Yes Automatic	Manual or Non-Auto NALE
HFIE Secondary	5371.5 kHz USB	VOICE or AMD Texting	Call using ALE and communicate on this channel if the other channel is busy, or to conduct extended testing.	Yes Automatic	Manual or Non-Auto NALE

Notes:
1. Channel Frequency is the carrier reference frequency for Upper Sideband suppressed carrier, commonly displayed on the front panel of the radio.
2. Emission type for ALE modem signal is 2K80J2D (or 2K00J2D).
3. The center-of-channel frequencies are 5358.5 and 5373 kHz. The USB offset is -1.5 kHz.

ALE Radio Programming Information

Program your controller to automatically allow and add any new ALE address it receives.

If possible, program the two channel frequencies in a separate ALE channel group, or as part of your existing HFL NET group of channels.

You may program the ALLCALL channel of this group to 5357.0 kHz USB, and you may set it to allow sending ALLCALLS and receiving ALLCALLS.

Recommended sounding interval is 60 minutes.

The recommended scan rate is 2 channels per second.

Recommended ALE call duration is 12 seconds minimum and 20 seconds maximum.

Use POLITE or LBT (Listen Before Transmit) channel occupancy detection.

Linking protection (LP) should not be used for HFIE-related communications. Use AL0 setting.

NET = HFL

If you program an additional ALE NET into your radio, the NET name is HFL. If you already have the HFL NET programmed into your radio, you should add the 2 channels in Table 1, to your existing HFL NET. There is a total of 10 "members" of the HFL NET, and your ALE Self Address should be programmed in the first slot. Other net member ALE Addresses should be programmed in the other 9 slots:
KQ6XA, N2CKH, KB3JAJ, KJ4AYT, KE6IYC, W6HIQ, WB6MZS, WB4AKK, KG6VBX.

Basic Operating Procedures

The following procedures are *suggested guidelines* for establishing links and exchanging communications between US Amateur Radio Service stations and US Federal Government stations operating in the exercise. Operators should operate within the approved guidelines and rules applicable to their own agency or organization, and radio service.

- For the purpose of this exercise, please send and respond only to communications which are initiated by an ALE call or an ALE text message.

- Transmit ALE Soundings on the channels to actively encourage communication with your station. See Table 1 for details on sounding methods.

- When responding to an ALE Call, you may reply either by voice or by texting AMD message. If responding by voice:
  1. Respond to the ALE ADDRESS (call sign) for a US station.
  2. Identify and announce the ALE call sign of the station you are responding to.
  3. Announce your own station call sign identification (or your ALE self address).
  4. Exchange a message by voice. See example messages below. Use phonetics if necessary.

- If responding to or initiating an ALE link to call a station, you may transmit a message containing the following information:
  1. The letters "HFIE" (this helps others identify your messages as part of HFIE).
  2. Your call sign (call sign, designator, or ALE self address).
  3. Your operator name (or an operator designator you are using for this event).
  4. The abbreviation of your organization or affiliation (Amateur default: HFLINK).
  5. The abbreviation of the state your station is located in.
  6. Any other information you wish to convey, such as a sequential message number, or other comments.
  7. Here are four examples of typical format AMD text messages:
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     HFIE WGY9999 MARK NV FEMA ACTIVE NEXT 2 HOURS
     HFIE WX3XYZ MIKE DC HFLINK CONTACT 123 CONFIRMED
     HFIE WB8XZZ JOE OH HFLINK MESSAGE RECEIVED OK
     HFIE KQ6XA BONNIE CA HFLINK
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- When your communication exchange with a station is complete, terminate the link using the **CLEAR LINK** command or **END** command of your ALE.

How To Determine Which Authorized US Stations May Communicate With Each Other

For HFIE-2014, NTIA and FCC approved Special Temporary Authority (STA) allowing US Amateur Radio stations and US Federal Government stations to communicate with each other using ALE, on the authorized channel center frequencies: 5332, 5348, 5358.5, 5373, 5405 kHz. But, this exercise will focus activity mainly upon only 2 of these available channels, as indicated in Table 1 of this document.

US Government stations can recognize call signs of US Amateur Radio stations by identifying the characters of the call sign (ALE Address). For Amateur Radio, the call sign is usually the same as the ALE address. US call signs generally begin with one of the following characters: K, N, W, or AA through AL. A single numeral is either in the 2nd or 3rd position.

US Amateur Radio operators can recognize US Government call signs and ALE addresses by the following guidelines. Government stations, for their ALE address, may use their call sign or an agency-issued identifier. Non-military Government call signs may be 3 or 4 letters followed by 1 to 5 digits. MARS (Military Auxiliary Radio System) call signs are 3 letters followed by one digit followed by 1 to 3 letters. US Coast Guard Auxiliary call signs may be "NF" or "NM" followed by 3 digits followed by 2 letters. Maritime shore stations are 3 letters. Ship stations are 4 letters. Some US Government stations use an ALE address with the segments of their call sign reversed – WGY900 could be 900WGY. Some government stations use a three-character agency identifier followed by additional letters or digits – e.g. WGY900 might use FEM900 (FEM indicating FEMA).

Reporting Format and Methods

Reports may be submitted in one of the following ways:

1. Posting of a communication exchange text via the ALE Comm Center chat room of the Global ALE High Frequency Network at http://hflink.net
   o You may register at HFLINK.NET with your call sign to show on the HF network map. Also please include your Grid Square when registering. The map does not show or utilize exact coordinates, the Grid Square is approximate.
2. An email report with a simple text log of communication exchanges and description of your station may be sent to hfie2014@hflink.net
   o Please include a description of your ALE hardware (manufacturer, model, and ALE firmware version) or ALE software product name and version number.
   o Indicate what (if any) ALE incompatibility or problem was experienced with which stations.
3. Automatic logging to hflink.net via PCALE ALE controller and ALE^stat software.
4. Please use the following format in UTC time to report a communication exchange:

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YOUR CALLSIGN
[OTHER CALLSIGN][03/27/2014][14:32][5.3 MHz][HFIE MESSAGE OR COMMENTS]
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Evaluation Criteria

After the end of the HFIE-2014, a database will be compiled containing reports and comments from various stations and operators participating in the exercise. HFLINK will facilitate an ongoing discussion via internet forum to examine any issues or problems encountered, and to recommend any necessary technical or operational improvements. A survey of participants will be launched by HFLINK to evaluate the exercise based upon factors recommended in the forum.

Certificates

HFIE-2014 Certificates and Wallet Cards will be issued to participating stations.