Madison County ARES Simplex Interoperability Plan

Contributors

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Reading this document

Please make note of your questions as you read the document.
As you continue reading through some of the examples will make more sense as additional terms/contexts are defined.

If terms/concepts are still not clear, please contact the author(s).
Alternately, you may email your comments/suggestions to Russell at rg010202@gmail.com.

Why

Interoperability in this document refers to the ability of ARES individuals involved in a coordinated response to communicate with each other.

In the event of an emergency or exercise, an interoperability plan can address connectivity issues and increase the effectiveness and speed of the response. The idea is if you have these frequencies in your rig, you will be able to start working as a communicator no matter where you are in the County. If you have an operational repeater, by all means utilize it. However, please continue to monitor HVCall.

Naming

The ARES/Ham Radio frequencies are prefixed with an H to distinguish them.

To alleviate confusion, standard mnemonics shall be used in all equipment to refer to individual channels. These are listed in the table below. Should the equipment not be capable of alphanumeric channel mnemonics, the radio should be placarded to indicate the channel mnemonic and its corresponding position on the radio's selector switch.

Naming Guide

V refers to 2M VHF
U refers to 70cm UHF

VHF Frequencies

Mnemonic	Freq	TX CTCSS	Notes
HVCall	146.540	CSQ	Primary
HVStage	146.520	123.0	
HVTac1	146.475	123.0	
HVTac2	147.475	123.0	
HVTac3	146.575	123.0	
HVTac4	147.575	123.0	
HVTac5	146.460	123.0	
HVTac6	147.540	123.0	

UHF Frequencies

Mnemonic	Freq	TX CTCSS	Notes
HUCALL	446.475	CSQ	
HUTac1	440.925	123.0	
HUTac2	441.025	123.0	
HUTac3	445.925	123.0	
HUTac4	440.975	123.0	
HUTac5	441.075	123.0	
HUTac6	445.975	123.0	

Statewide Frequencies

Mnemonic	Freq	TX CTCSS	Notes
SSB Phone Net (Primary)	3.905		80m
SSB Phone Net (Secondary)	7.230		40m
ILA	146.520		2m National Call
ILB	147.525		2m
ILC	147.535		2m
ILUHFA	446.000		70cm National Call
ILUHFB	446.400		70cm
ILUHFC	446.700		70cm

Repeaters

Specifics for repeater use will be determined on a per incident basis.

Use the simplex part of the plan to disseminate the repeater frequencies and PL. Operators should be prepared (have manual) to program odd splits if needed, PL's, etc.

Mode of Comms

Standard Analog FM voice.

Tone/CTCSS

Calling frequencies - NO PL, NO CTCSS, NO DCS
Tactical frequencies - 123.0 PL/CTCSS

This Tone was chosen to avoid interference from or interfering with other operations.

Do NOT use CTCSS to decode unless needed to help manage QRM.
ALWAYS transmit PL.

Power Output

Users are strongly encouraged to increase antenna gain and direction before increasing power.

No more power than the minimum needed to establish a near full-quieting circuit.

Adhere to the FCC regulations requiring the use of the minimum power needed to establish the circuit and RF Safety limits.

VHF - 2M

Base Station 200 watts max
Mobile Station 100 watts max
Field Station 50 watts max

UHF - 70CM

The UHF frequencies are intended for on scene operations.
For this reason and to minimize the possibility of interference with other stations:
Base Station 35 watts max
Mobile Station 35 watts max
Field Station 35 watts max

Tactical Frequencies used 'On Scene' 5 watts max

Time Out Timer (TOT)

When possible, the following TOT guidelines should be followed.

All stations not operating in mobile relay mode, where permitted, shall employ a time out timer set to limit transmission duration to a period of no greater than 60 seconds (1 minute).

All stations operating in mobile relay mode, where permitted, shall be configured to immediately drop transmit carrier upon cessation of input signal. Reasonable hysteresis time in squelching action of weak received signals, or in signals that have achieved a critical bit error rate (BER) are permitted.

Prolonged "hang time" in excess of 500 ms is not permitted.

Priority Levels

1. Emergency or urgent operation involving imminent danger to life or property;

2. Disaster or extreme emergency operation for mutual aid and inter-agency communications;

3. Special event control, generally of a pre-planned nature

Use

How could these frequencies be used?

Calling

Calling Channels Are used for simplex nets or calling other stations. After contact has been established, then switch to the frequency directed by calling party.

VHF

HVCall IS THE PRIMARY CALLING CHANNEL OF THIS PLAN.

Command/NCS should have someone assigned to monitor this frequency.

HVTac1-HVTac6 is used for point to point communications.
After Making contact on HVCALL stations will change frequency to HVTac1-HVTac6

UHF

HUCall is similar to HVCall. HUCall is a *secondary* calling channel. *Command/NCS may not be monitoring this frequency.*

HUTac1-HUTac6 is used Primarily for on site tactical use.

Since the tactical frequencies are intended for use by low power portable stations within a limited geographic area, you should be able to use the same frequency at multiple locations.

Staging

HVStage is used by hams responding in to an area to check in to staging.

When Mutual Aid Teams have been requested, this is where they will check in.

Tactical Frequencies

For instance communications may be needed within a shelter location. The shelter command should be monitoring and checked in to HVCall.

Shelter command should:
Determine if a Tactical frequency is needed
Determine a clear Tactical frequency
Advise NCS of the local use of the tac freq, by name
Continue Monitoring their Tactical frequency
Continue Monitoring their NCS assigned Net frequency
Advise NCS when the operation on the Tactical freq has terminated

Security

These frequencies are published, same as Public Safety frequencies are published. **No security is implied.** *Systems may be readily monitored.* Participants should recognize that the third man is always listening. Messages, should be brief, to the point and contain no more information than necessary.

Distribution

You are encouraged to distribute this document to all ARES stations so that they are familiar with the plan and have their radios pre-programmed in the event of an activation.

Iteroperability With Illinois ARES Groups

Any operations with other local or state ARES Groups should use the statewide frequencies that come from Illinois Iteroperability Field Guide.