



Intro to the Clark County Amateur Radio Emergency Service for Prospective Members

Eric Hobson, KI7MKQ
CCNVARES Emergency Coordinator

`ccnvares.netcontrol@gmail.com`

April 2023



Topics

- What is ARES?
- What do ARES members do and what equipment do they use?
- What's the commitment?
- How do I get involved?



What's ARES?

- Amateur Radio Emergency Service
- Volunteer ham radio operators serving their communities (serving local government and non-government agencies) with voice and data communications
- ARES provides/tracks training specified by our served agencies and informs them who is qualified to support their requirements
- Served Agencies: Clark Co. Office of Emergency Management (OEM), State Division of Emergency Management (DEM), hospitals, National Weather Service





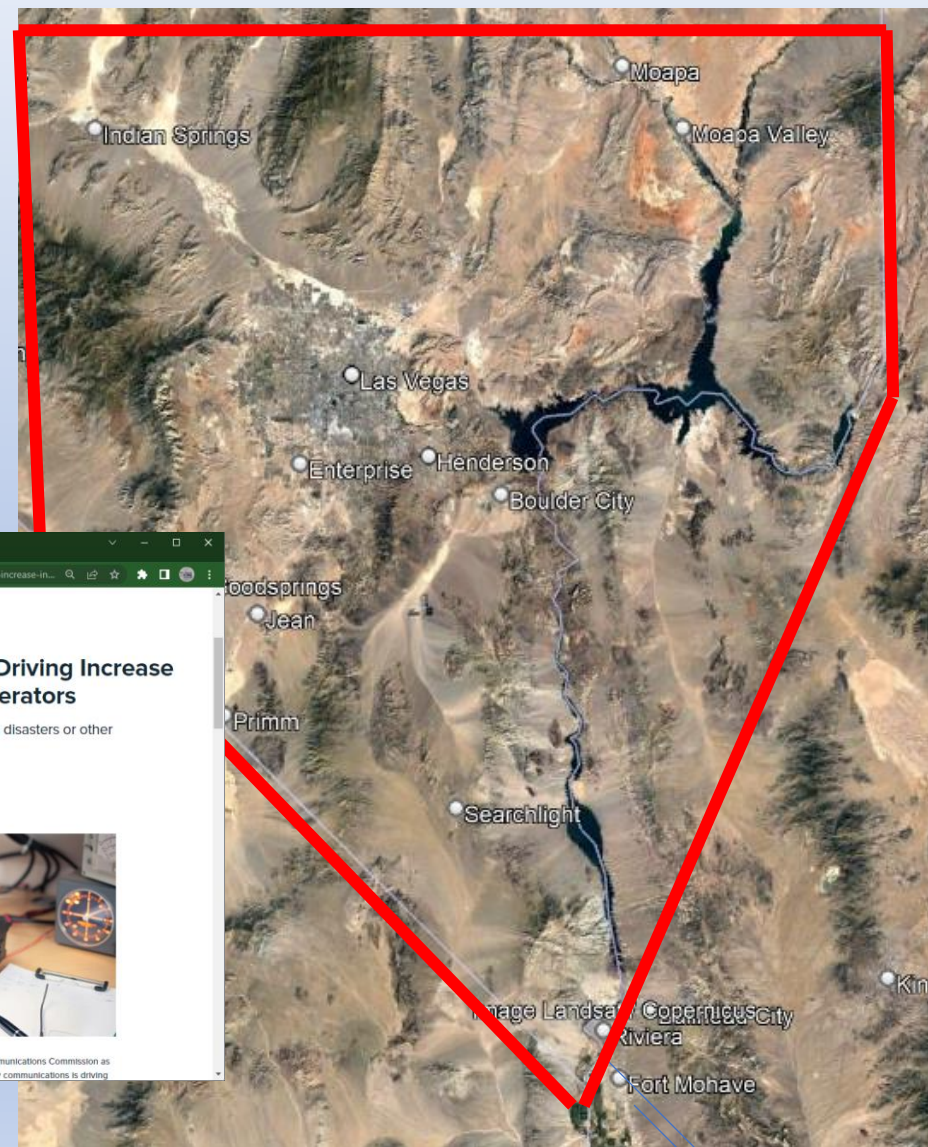
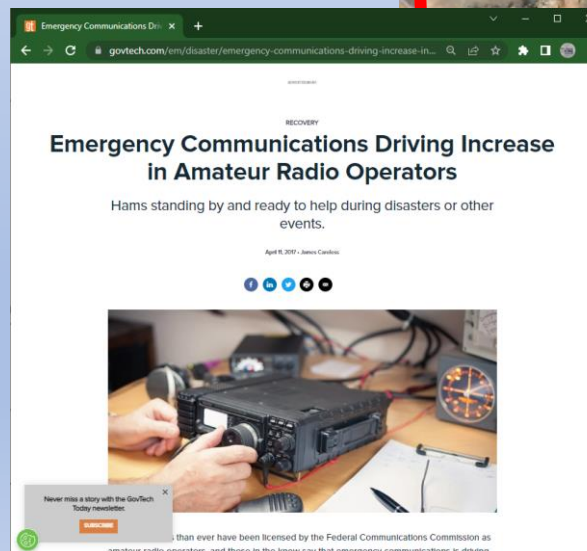
What's ARES?

- A program organized by the private national organization Amateur Radio Relay League (ARRL.org), ARRL membership is not required
 - Nevada is broken into 3 districts, we're in Southern District:
Clark/Nye/Esmeralda/Lincoln
- ARES members are enrolled with the OEM listing their skills and equipment to participate in operations on OEM's behalf under RACES (Radio Amateur Communications Emergency Service) federal rules.



The Need

- Clark Co is somewhat triangular, 130 miles/side
 - Larger than the smallest 5 US states!
- 57 listed hospitals on OEM website
 - Ham radio backup at many
- 19 town boards + major cities
 - OEM direction to support them all
- → targeting 200+ *active* members (7000 hams in Clark Co.)
- Earthquake territory
- Monsoons
- Mountains make remote comms difficult → hams' specialty





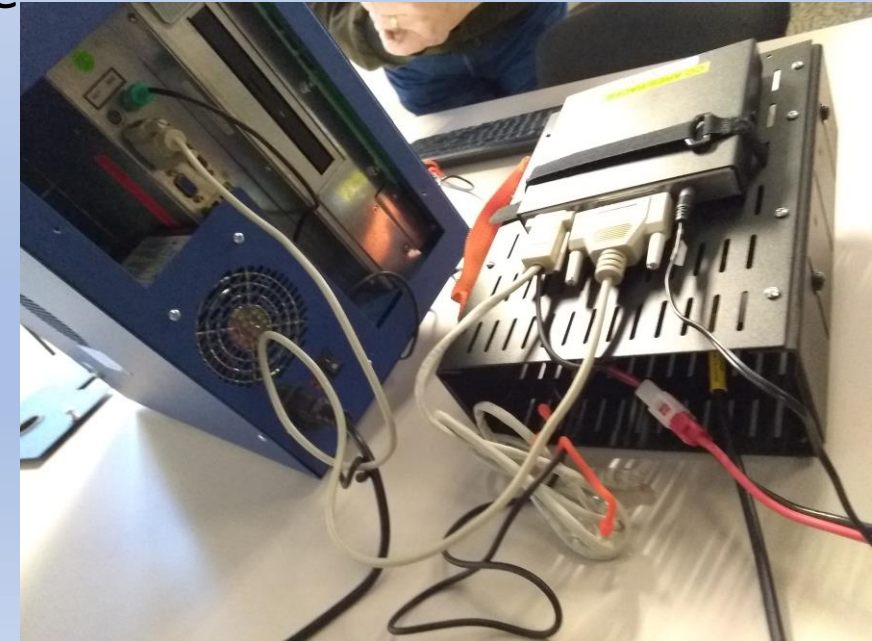
What do ARES members do?

What equipment is required?

- When “activated” by the OEM or a hospital, radio operators (RADOs) occupy government/hospital facilities staffing radios and computers providing links to other facilities in the county and to distant facilities (Carson City). Amateur and government radios.
 - Could be in metro Vegas, could be in rural Clark County, your vehicle could be your operating location. Some opportunity to activate from home.



Hospital “Blue Box”
Hamlink voice/data system

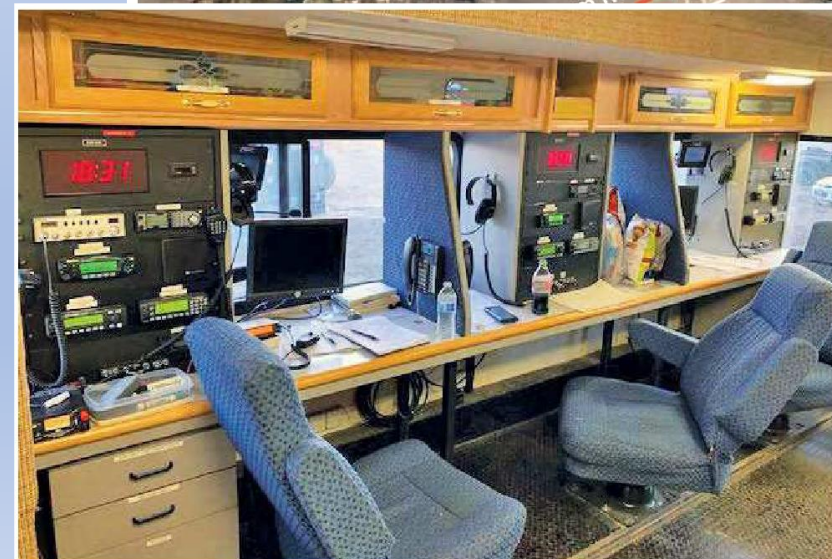




What do ARES members do?

What equipment is required?

- Previous Activation: September 2019—Storm Area 51
- Clark and Nye Co ARES augmented Lincoln Co ARES to provide health and welfare support for the anticipated 30,000 attendees (3000 actual) in bare desert conditions.
- UHF/VHF voice and HF digital comms for Rachel, Hiko, Alamo NV; Clark County Emergency Comms Center, Regional Emergency Ops Center (Reno), NV DEM (Carson City)
- 400+ total hours volunteered



Photos
© ARRL 2020
Feb 2020 QST
article

What do ARES members do?

What equipment is required?



- ARES members are trained in SKYWARN® procedures supporting the National Weather Service



SKYWARN
WEATHER.GOV®

I15 near Moapa



Bunkerville 2010



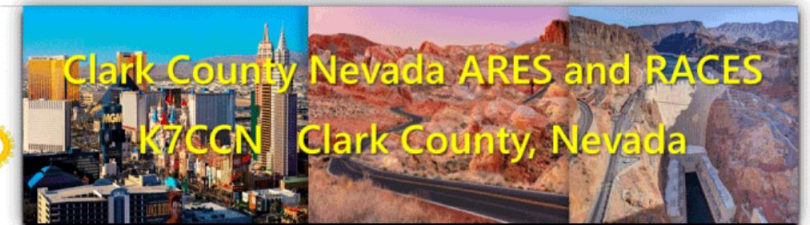


What do ARES members do?

What equipment is required?

- In preparation for activation ARES members train on a regular basis in radio procedures, government incident command system (ICS) procedures, safety, etc.
 - The weekly ARES net (7:30 p.m. Mon) is essentially a small exercise, like a “resource net”
 - UHF/VHF voice: via repeaters and simplex
 - HF voice
 - UHF/VHF/HF digital: packet BBS, AX.25 packet and Vara Winlink
 - DMR, DSTAR digital voice
 - Echolink voice and text
 - Mesh (broadband TCP/IP over ham freqs)
 - “By any mode necessary”

ccnvares.org



We Augment and Support Vital Communications During Emergencies and Disasters for our Served Agencies especially "When all else fails"

Clark County ARES Net: Mondays 19:30L Pacific time: On 447.325 (-) 100.0, 147.18 (+) D244, and Echolink "CCNVARES" and "NV-GATE", IRLP Western Reflector Ch 3 (9253).
Separate check-ins at 19:00L on DMR Nevada Talk Group 3132: CC 15 TS 2, DSTAR REF014B and N7ARR Port B, and HF 3.9650Mhz LSB



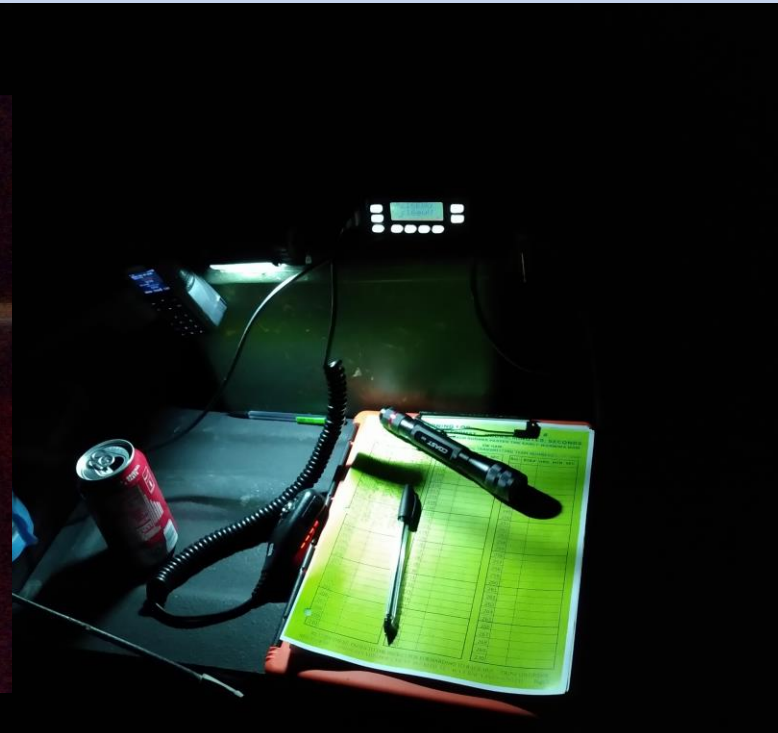
What do ARES members do?

What equipment is required?

- ARES members may individually support public service events with comms: Baker To Vegas, Silver State Classic Challenge, First Responder's Relay Race, Pony Express, Tonopah/Prescott Rally,...
- These possess many common elements to an activation and are good training



Baker 2 Vegas, night shift



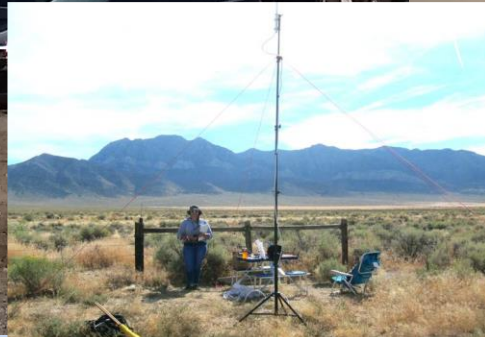
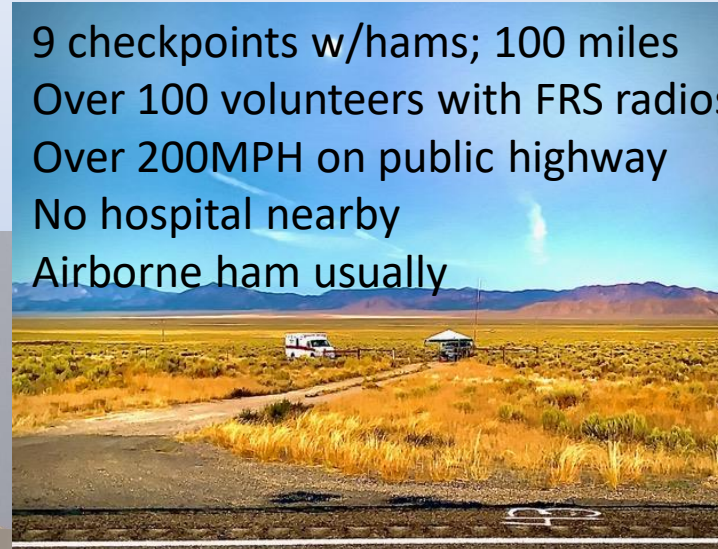


What do ARES members do?

What equipment is required?

- Public service event:
Silver State Classic Challenge

9 checkpoints w/hams; 100 miles
Over 100 volunteers with FRS radios,
Over 200MPH on public highway
No hospital nearby
Airborne ham usually





What do ARES members do?

What equipment is required?

- Public service event
Tonopah Rally



Go kit, Objective Station:
Mobile-class radio, good antenna, battery





What do ARES members do?

What equipment is required?

Participate in ham contesting like Field Day and Winter Field Day--keeps HF skills in austere conditions sharp

- Similar to keeping contact with Nevada DEM via HF
→ Achieving General license is a goal



What do ARES members do?

What equipment is required?

- Field Day 2022
- HF ops at Mt Charleston
- International contest



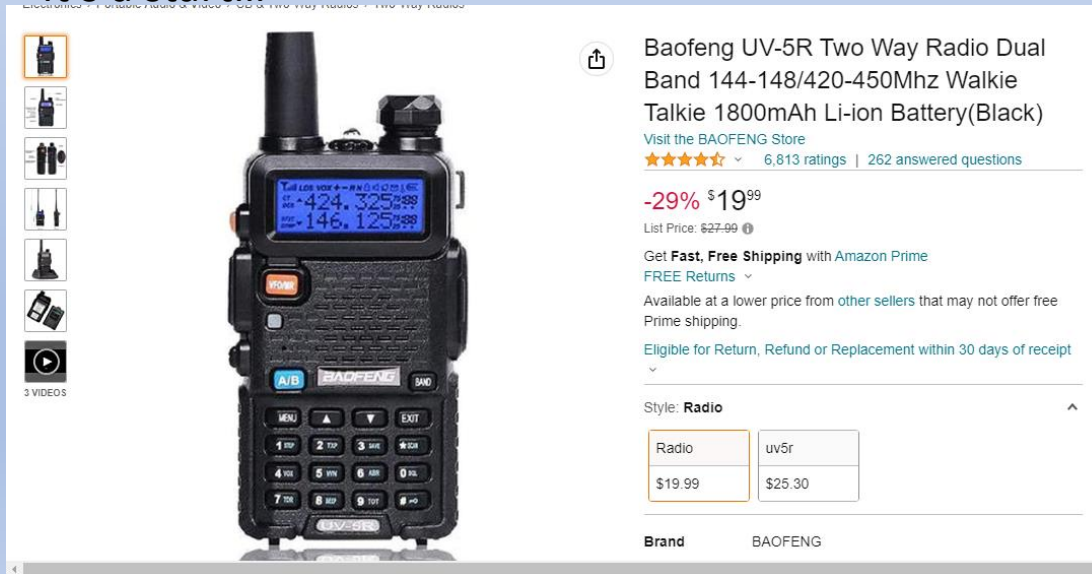


What do ARES members do?

What equipment is required?

- Almost all hams start with a handheld UHF/VHF radio (HT)
- You *might* get lucky and be able to reach a K7CCN repeater with one
 - 4 county-owned amateur radio repeaters covering the county

It's a start...





What do ARES members do?

What equipment is required?

- A better antenna (mag mount dual band on a cookie sheet) outdoors helps a great deal

HT alone definitely not enough out here



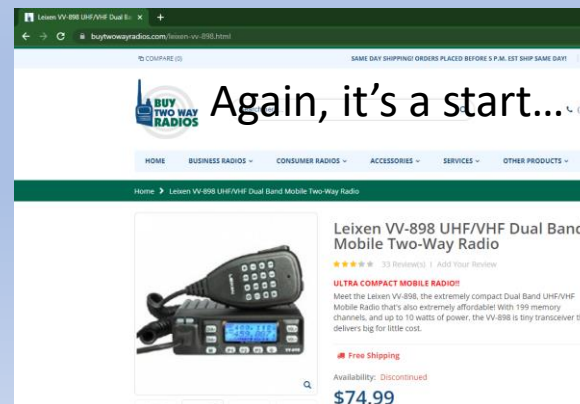


What do ARES members do?

What equipment is required?

- For simplex operations, most urban situations and rural ops at any appreciable distance, a mobile-class dual band is required: 25-50W UHF/VHF, again with a “decent” antenna, perhaps on a 12-20’ pole; 20aH+ battery
- A modest/old/used Windows laptop
- PC/radio interface
- ARES members can provide extensive background on what works/doesn’t work. From “toss it in an ammo can” to pro-level builds

ARES is working with served agencies to see what equipment *they* provide at *their* facilities



Go Kit:
Mobile VHF/UHF,
Antenna on pole, PC,
interface, battery,
admin items

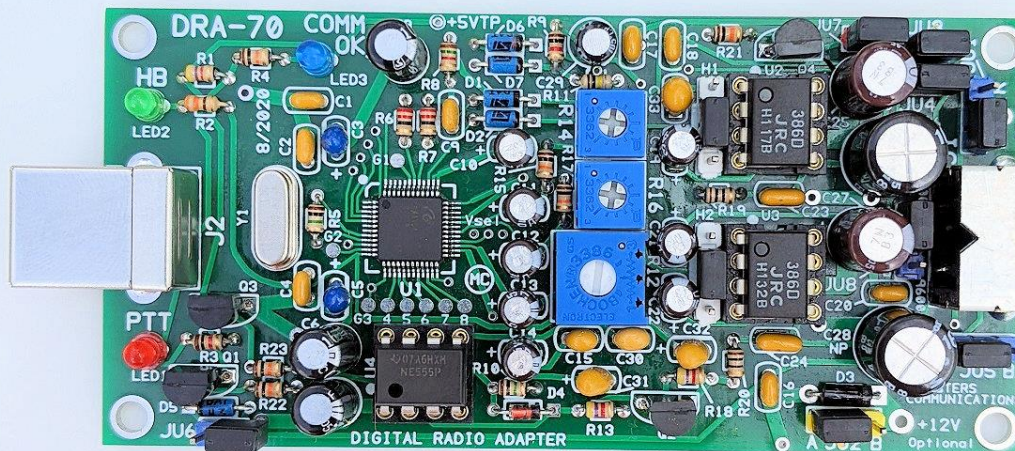
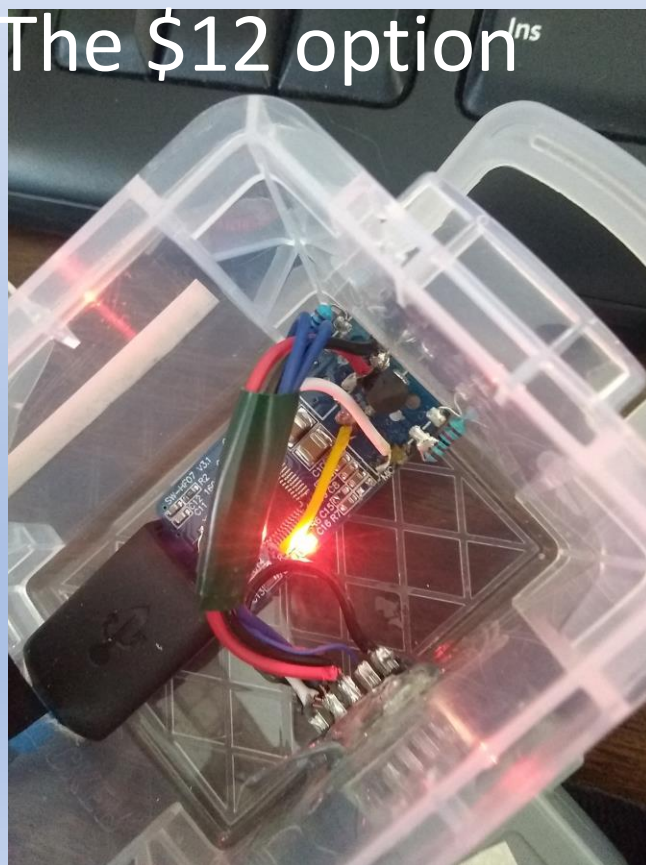


What do ARES members do?

What equipment is required?

- For digital operations a connection between the PC and radio

The \$12 option^{Ins}





What do ARES members do?

What equipment is required?

- Minimum 20 AmpHour battery and means to charge it, preferably without grid power (solar).
- Paper, pens, flashlight, etc. to operate off grid power and at night

"Tape Measure Yagi"
Yes, it works



Silver State Checkpoint





What do ARES members do?

What equipment is required?

- Some members, well its what they do.

NORAD West at Frank's house

Annual Radio Rodeo





What do ARES members do?

What equipment is required?

- Do I have to build stuff? Do I have to solder?
- Well, a little. National ARES standards recognize the ability to provide basic configuration and repairs—connecting power fittings
- No soldering, no tools—other members will get you set up



What's the commitment?


- Every ham determines how much to participate, subject to minimums needed to attain and maintain proficiencies
- Presently required
 - 4 FEMA-sponsored online courses, free (<https://training.fema.gov/emicourses/>)
 - Active Technician license with an eye to upgrading to General
 - Remember, Clark Co is huge, you may need to use an HF radio (no need to buy one)
 - Obtain and operate the Objective Station
 - ARES will negotiate in-place equipment with served agencies
 - Never know where you'll be needed, BYO equipment
 - Can substitute for a mobile (car) installation
- Near-term activation opportunities: F1 races Nov 2023, Super Bowl 2024



What's the commitment?

- Winlink system account, free at Winlink.org
- Level 1 in the national ARES Task Book completed with plans to complete Level 2; CCNVARES has adjusted some of the national req's

ARES® STANDARDIZED TRAINING PLAN



**ARES® EMERGENCY COMMUNICATOR
INDIVIDUAL TASK BOOK**

Task Book Assigned To:

Name: _____ Call: _____
ARES Group: _____
Phone Number: _____ Email: _____

Task Book Initiated By:

ARES® Leader's Name: _____ Call: _____
Title: _____ ARES Group: _____
Phone Number: _____ Email: _____


Initiated Location & Date:

Location: _____ Date: _____

Version: 1.0.2 March 2019

Winlink Express | Winlink Global x +

winlink.org/WinlinkExpress



[My Account](#) [Tools](#) [News](#) [Positions](#) [User Programs](#) [Book of Knowledge](#) [Download](#) [Support](#)

Winlink Express

Winlink Express (formerly RMS Express) is the preferred Winlink radio email client because it supports all new system features, and it is the only client supporting the [Winlink Hybrid Network](#) for email delivery with or without the internet. Winlink Express is designed to be easily used by single users with a single call sign but it may also be used to simultaneously send and receive mail with one or two more tactical addresses or alternate Winlink accounts. It supports a wide selection of transceivers, TNCs and multimode controllers, sound card modes using the ARDOP, and VARA HF and FM virtual TNCs (ARDOP software TNC included), Pactor, SCS Robust Packet, VHF/UHF AX.25 packet radio, and direct telnet to CMS servers or RMS Relay (for amateur radio High Speed Multimedia [HSM], Broadband HamNet, D-Star DD mode, internet, and any other TCP/IP network).

Winlink Express is built by the Winlink Development Team and leverages its features with simplicity as the prime design objective. It uses the open [B2E](#) extension radio transfer protocol that supports attachments, multiple addresses and tactical addresses. Winlink Express may be used in the peer-to-peer mode (connecting directly via RF to other Winlink Express or Airmail clients). Winlink Express also contains manual and automated GPS position reporting abilities, support for the Winlink catalog of downloadable weather, information and help bulletins, Saildocs and Globalmarinet for obtaining GRIB files, and a propagation prediction feature to help determine which of the participating Winlink RMS gateway HF stations are best to connect to from anywhere on earth.

Winlink Express may be used as a client for emergency communications. It has special features for EmComm, such as HTML forms creation and compact,



What's the commitment?

- Participation in weekly Nets, monthly meeting and training events/drills. Not every such event, but most. Check in periodically via a radio-enabled mode, not just Winlink or Echolink over the internet
 - EC: "The Internet is nice but we're charged to operate without it."
 - 2023 goal to provide nets and training at a variety of times to accommodate schedules
- Commitment to continuing education, on your own and as a group
- Commitment to handling traffic for the National Traffic System (https://en.wikipedia.org/wiki/National_Traffic_System)
 - Usually phoning a local ham with Radiogram traffic
- 1 hour/week usually, up to 10 if we participate in a national event (Field Day). Expected priorities: yourself, family, employer, ARES and other community orgs, in that order.
- Operate from served agency facilities when needed; if not capable discuss with EC regarding your QTH being a capable relay station



How do I get involved?

- Contact an ARES staff member with any questions, contact info on the ccnvares.org website
- Monitor the weekly ARES net, check in as a visitor
- Complete an application downloadable from ccnvares.org
 - County OEM likely will run a background check prior to badging or approving for RACES, ARES does not control that timeline
- Ask lots of questions, on the net, via email or at a meeting
- There are no dues or other memberships required; your active participation is enough



Thanks for your interest!
We look forward to your contact