

**Emergency Communications Notable Activities by Alachua County
ARES(R)/North Florida Amateur Radio Club
2022 Jan - Nov**

National Educational Forums/Lectures

- Emergency Communications Academy, 1-day hands-on educational forum held by the Amateur Radio Relay League in Orlando, Florida on February 10, 2022. Attended by room-capacity 120-person crowd. Speakers/leadership from our group included: Gordon Gibby MD KX4Z, Chief Instructor, "Digital Traffic Handling Skills, Winlink," "Hands-On Practice @ Digital Traffic," "Emergency Antennas"; Leland Gallup AA3YB "Hands-On Voice Traffic Net", "AUXCOMM Integrating Amateur Emergency Service Groups: Open Forum"; Earl McDow K4ZSW "Emergency Power." See: <http://www.arrl.org/news/extended-arrl-team-will-support-february-s-arrl-national-convention-in-orlando>
- "FEMA's HSEEP (Homeland Security Exercise and Evaluation Program, Nationwide Zoom lecture by Gordon Gibby, RATPAC forum, Mar 10, 2022. Documents from this lecture available at: <https://www.google.com/url?q=https://youtu.be/nkCVsSKOEQk&sa=D&source=editors&ust=1667349901434029&usg=AOvVaw2Q1sMIfc22rZzXSkmBRffc> (Vimeo download also available.)

State and Regional Emergency Preparedness Drills

- Weekly participation with national Federal DHS SHARES backup communications techniques including shortwave voice radio and shortwave radio data email systems. Addition of five "Emergency Response Personnel" this year to our SHARES DHS licensure.
- Monthly participation with Region 3/ Region 5 Florida consortium of EOC's/volunteers to develop and maintain multiple backup communications techniques, including shortwave voice radio, shortwave data email, Federal-SHARES shortwave radio, Federal-SHARES shortwave data email, Statewide Law Enforcement Radio System (SLERS), and Statewide Amateur Radio Network (SARNET)

Local ARES Operational Training Nets

- Monthly Alachua County ARES operational training sessions. The purpose of these sessions was to improve ARES' volunteers ability to establish and maintain communications in the event other communication systems fail. In this regard, ARES members practiced formal and informal methods of handling message traffic in the structured communications method known as a "net" (network). Leland Gallup, FCC Amateur call sign AA3YB, planned and executed these events as the Net Control Station (NCS) managing the nets. The training used a variety of Very High Frequency (VHF) and High Frequency (HF) voice and digital modes, lasted one hour, and had an average of 10 ARES volunteers participate in each net. Nets were conducted

every month from January through August 2022. ARES volunteers gained operational skill at participating in and conducting formal nets; at sending, receiving, and relaying formal messages (including ICS forms); at transitioning between the use of repeaters and “simplex” (one to one) VHF voice; at assessing and developing a topography of local “high points” that can be used to establish VHF communication nodes if repeaters fail, and at exploring the use of HF voice and digital methods to conduct local communications.

- Weekly VHF Nets. Thursday evening, 8 PM, 146.820 MHz. Net control stations: Jeff Capehart W4UFL, Alan West W4JD, Jim Bledsoe KI4KEA, Leland Gallup AA3YB, Gordon Gibby KX4Z
- Bi-weekly HF NVIS voice training/testing nets. Held on 3970kHz, Lower-sideband, and led by one of our badged volunteers, Reid Tillery, K9RFT, this locally-based HF training net has attracted many local volunteers and even those from 2 or 3 counties away. Attendance is typically between 5-10 stations. This is our first local, repetitive HF training / testing net.

Local Technical Night Lectures (First Thursday evening of each month.)

- "Power Supplies for Ham Radio" Gordon Gibby, Thursday Jan 6, 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/PowerSupplies.pdf>
- "Ham Radio Ancient Lore" Gordon Gibby, Thursday Feb 3, 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/RadioLore.pdf>
- "Of Microphones and Speakers" Gordon Gibby, Thursday Mar 3 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/OfMicsAndSpeakers.pdf>
- "Nuclear Attack and Emergency Communications" Gordon Gibby, Thursday April 6, 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/NuclearImpact.pdf>
- "Field Day Computer Skills" Gordon Gibby, Thursday, July 7, 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/FieldDayComputerTricks.pdf>
- "Modulation" Gordon Gibby, Aug 4, 2022. PDF copy of slides at: <https://qsl.net/nf4rc/2022/ModulationTechNite.pdf>
- "Three Step Process To Get Started with Radiograms in WINLINK" Jeff Capehart. PDF at: <https://qsl.net/nf4rc/2022/RadiogramChallenge3-STEP.pdf>
- "Wiring to Your Radio" Gordon Gibby, Sept 1, 2022. PDF at: <https://qsl.net/nf4rc/2022/WiringToYourRadio.pdf>
- "Understanding Power Amplifiers" Gordon Gibby, Oct 6 2022. PDF at: <https://qsl.net/nf4rc/2022/TechTalkAmplifiers.pdf>

- "AX.25 Part 1: Underlying Signals and Comparison to VARA " Gordon Gibby, Nov 3 2022. PDF at: <https://qsl.net/nf4rc/2022/AX25Part1.pdf>

Formal Radio Courses

- Federal Communications Commission Technician Amateur Radio License Course. 15 hours of training, August 27-28, Alachua County Emergency Operations Center. See: <https://www.wcjb.com/2022/08/24/alachua-county-officials-hosting-ham-radio-training-course/> and <https://alachuacounty.us/News/Article/Pages/Alachua-County-Ham-Radio-Club-Offers-Weekend-Course-for-Amateur-Radio-FCC-License-Exam.aspx>

Instructors

Jim Bledsoe KI4KEA -	T1, T2
Brett Wallace NH2KW -	T3, T0
Emily Wallace KO4JWC	T4
Eric Pleace KO4ZSD -	T5
Gordon Gibby KX4Z -	T6, T7
Leland Gallup AA3YB -	T8, T9



Figure 1: 2022 Technician License Course Participants with Homemade Antennas

Service to the Community

- Remodeling / Upgrading Alachua County EOC Radio Room. David Huckstep W4JIR, Leland Gallup AA3YB. Improved furniture, added safety antenna disconnect/grounding switches, re-cabled every radio, re-organized all wiring, reset all shelving, removed all unnecessary equipment.
- **Hurricane IAN Volunteer Deployment Service.**

Deployed Volunteers

Wendell Wright KN4TWS	Easton Archer / Newberry
Susan Halbert KG4VWI	Eastside High School
Lorilyn Roberts KO4LBS	Gainesville Senior Center
Jeff Capehart W4UFL	Gainesville Senior Center
Dean Covey KV4RL	Meadowbrook School
Rosemary Jones KI4QBZ	Meadowbrook School
Gordon Gibby KX4Z	EOC
Leland Gallup AA3YB	EOC
David Huckstep W4JIR	VHF Net Control ¹ (home)
Earl McDow K4ZSW	HF Liaison/backup net control (home) ²

Several of these volunteers submitted information for an AAR/IP that is currently in draft format, being written by Brett Wallace, NH2KW.

- **Hurricane NICOLE Volunteer Deployment Service.**

Deployed Volunteers

Wendell Wright KN4TWS	Alachua County EOC
Susan Halbert KG4VWI	Alachua County EOC
Jeff Capehart W4UFL	Alachua County EOC
Earl Sloan KI4OXD	Eastside High School
Lorilyn Roberts KO4LBS	Eastside High School
Brett Wallace NH2KW	Senior Center (Spc Needs)
Vann Chesney AC4QS	Senior Center (Spc Needs)
David Huckstep W4JIR	Community Net Control (home)

Multiple other amateurs volunteered in support roles, particularly Eric Pleace KO4ZSD

- **Adoption of detailed volunteer communication plan.** After months of revision, at the November 2022 ARES(R)/NFARC meeting, an Alachua County Communications Volunteers Backup Communications Plan was amended and adopted by unanimous vote. See: <https://qsl.net/nf4rc/AlachuaCountyCommsPlan2022.pdf> This document provides detailed guidance from volunteer training through volunteer notification (even in communications down situations), deployment, and service.

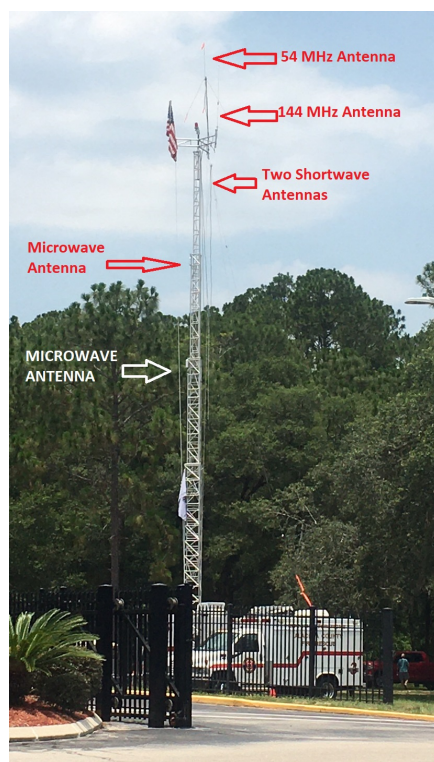
Simulated Emergency Communications Deployment

- ARRL Field Day participation with 3 complete shortwave radio stations, emergency power systems, State of Florida MARC Unit deployment, simulated emergency antennas, microwave MESH networking system, 22 hours of continuous radio operation by up to three simultaneous stations. 25+ volunteers, over 700 documented radio connections. All directed using Incident Command System techniques, and reviewed using standard HSEEP After Action Report/Improvement Plan: <https://qsl.net/nf4rc/2022/FieldDay2022/2022 Field Day AAR IP FINAL.pdf> Multiple news coverages, including live TV-20. See:

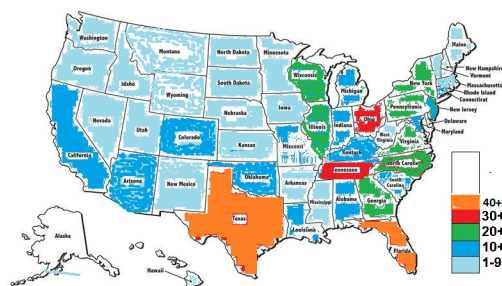
¹ Due to recent surgery in the family, David was not a candidate for deployment.

² Due to family medical issues, Earl was not a candidate for deployment.

<https://alachuacounty.us/news/Article/Pages/Alachua-County-Amateur-Radio-Emergency-Services-Field-Day.aspx>



*Figure 2: Field Day Exercise
Antenna Mast*



*Figure 3: States Contacted 2022 Field
Day Exercise*

North Florida Section Newsletter Technical Publications

Alachua County NFARC/ARES(R) Adds Key Protection to Pricey Go-Boxes, Gordon Gibby KX4Z.
<https://arrl-nfl.org/wp-content/uploads/2022/01/00-QST-NFL-January-2022.pdf>, pp 11-12.

Small Circuits that Add Big Life Extension to Older Electronic Keyers, Gordon Gibby KX4Z, <https://arrl-nfl.org/wp-content/uploads/2022/02/00-QST-NFL-February-2022.pdf>, p5

Alachua County LunchNLab Builds Skills & Sound Card Interfaces, Gordon Gibby KX4Z, <https://arrl-nfl.org/wp-content/uploads/2022/02/00-QST-NFL-February-2022.pdf>, p 14.

Extension Cord Antenna at ARRL 2022 Emergency Communications Academy Emphasizes Amateur Can-Do Spirit, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/03/00-QST-NFL-March-2022.pdf>, p 9.

NFARC Sets Up JS8 Relay/Cache Station to Assist Emergency Communications, Gordon Gibby. <https://arrl-nfl.org/wp-content/uploads/2022/04/00-QST-NFL-April-2022.pdf>, p 11.

NFARC JS8Call Cache Station Matures, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/04/00-QST-NFL-May-2022.pdf> p 9.

Florida Baptist Disaster Relief Confronts The Alerting Problem, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/04/00-QST-NFL-May-2022.pdf>, p 11.

Slingshot Tips, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/06/00-QST-NFL-June-2022.pdf>, p 12.

Quick/Dirty Homebrew Project: RF Common Mode Current Meter, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/08/00-QST-NFL-July-2022.pdf>, p 14.

D-Layer Absorption and 75-Meter Morning Traffic/Emergency Nets, Gordon Gibby KX4Z. <https://arrl-nfl.org/wp-content/uploads/2022/08/00-QST-NFL-July-2022.pdf> p 7

Telescoping Fiberglass Mast for HOA, Deployment, or Field Day Antennas. Gordon Gibby KX4Z, <https://arrl-nfl.org/wp-content/uploads/2022/08/00-QST-NFL-August-2022.pdf>, p 13.

Hands-On Asset Construction / Repair

- Creation of a GPS-based extremely accurate LOCAL NTP server independent of the Internet, and able to function even when the Internet is damaged or non-working. Jim Bledsoe, KI4KEA. (See documentation: <https://qsl.net/nf4rc/2022/GPSNTP.pdf>)
- SoundCard Construction / Connection: January 22, 2022 Multiple members worked on technical construction and gained soldering, diagnostic and repair skills, that make them stronger volunteers. (See: <https://arrl-nfl.org/wp-content/uploads/2022/02/00-QST-NFL-February-2022.pdf>, p 14)



Figure 4: Group Radio Equipment Construction, Jan 2022

HF/VHF Data Communications Upgrades. Nov. 12, 2022. A packed house of volunteers again assembled to work on a variety of projects to upgrade their individual data radio communications capabilities, from installing new computer software, to correctly setting features of their radios, building interface systems and cables, and completing on-the-air testing to verify capabilities.



Figure 5: Volunteers at November Asset-Building Session



Figure 6: Volunteers at November Asset-Building Session - goboxes

- **Rebuilding of our local VHF backup data network.** Volunteers Susan Halbert, Earl McDow and Jon Simonds have rebuilt and re-installed our dual-frequency AX.25 Linux-based digipeater switch at the top of UF Beaty Tower (Antenna 164 ft AGL). This provides a VHF data repeating capability that has a strong signal at the EOC. (See our map / table of AX. 25 Assets: <https://qsl.net/nf4rc/VHFPacketInterconnections.html>)

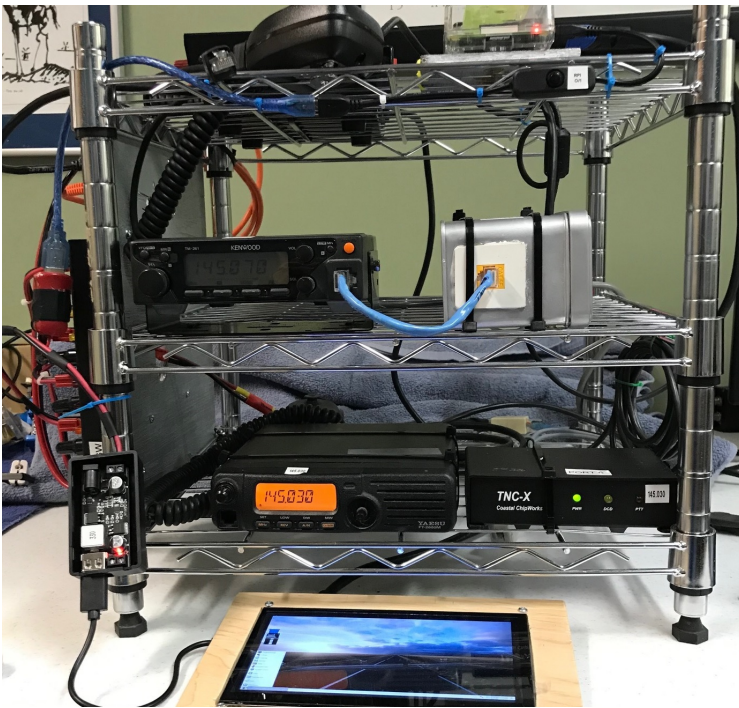


Figure 7: Rebuilt Beaty Tower Radio Digipeater Systems



Figure 8: Rebuilt Beaty Tower Digipeater power systems

- Volunteer Mike Sherrill KB4MS has engineered a way for us to re-instate our AX.25 digipeater just south of High Springs. However, manpower limitations have prevented our re-instating that system as of yet. (The land changed hands and disrupted our system.)
- Volunteers Mike Ridlon K4MVR, Earl McDow K4ZSW and Brett Wallace NH2KW have stepped forward to create and/or maintain additional data gateways to accept radio email at their homes. These are 24/7/365 stations and require a significant commitment. (See the available tables within WINLINK software, updated hourly:)

Packet Channel Selector						
Exit Select Channel Update Table Via Internet Update Table Via Radio						
Stations found within 185 miles of your grid square.						
Callsign	Frequency (MHz)	Baud	Grid Square	Group	Distance (mi)	Bearing (Degrees)
KX4Z-12	145.010	1200	EL89RQ	PUBLIC	000	000
KX4Z-10	145.030	1200	EL89RQ	PUBLIC	000	000
KX4Z-10	145.070	1200	EL89RQ	PUBLIC	000	000
NH2KW-10	145.070	1200	EL89RS	PUBLIC	006	000
K4ZSW-10	145.070	1200	EL89TQ	PUBLIC	009	090
K4MVR-10	145.770	1200	EL89TR	PUBLIC	010	074

Figure 9: A portion of the local VHF data communications fixed assets

- Volunteer Mike Shaffer has done vigilant work protecting and keeping our Trenton data digipeater W4DAK-7 / DARK up and running, which provides an alternate path from the EOC to Lake City EOC by way of 2 meter data
- Volunteer Jon Simonds KC4NWK has created a completely new VHF data "digipeater" on the University of Florida campus at the top of the Dental Tower, for the recently released new data waveform "VARA," providing us with additional new data coverage for this high speed data waveform. [See the W4DFU-10 station listed on the VARA map at: <https://qsl.net/nf4rc/VHFPacketInterconnections.html>]