Alachua County ARES®/NFARC
2025 WINTER FIELD DAY
Jan 25/26 2025

After Action Report/Improvement Plan

Expanded Version for Exercise Planners

WRITTEN FEB 2025

HANDLING INSTRUCTIONS

1. Points of Contact:

Alachua County ARES®:

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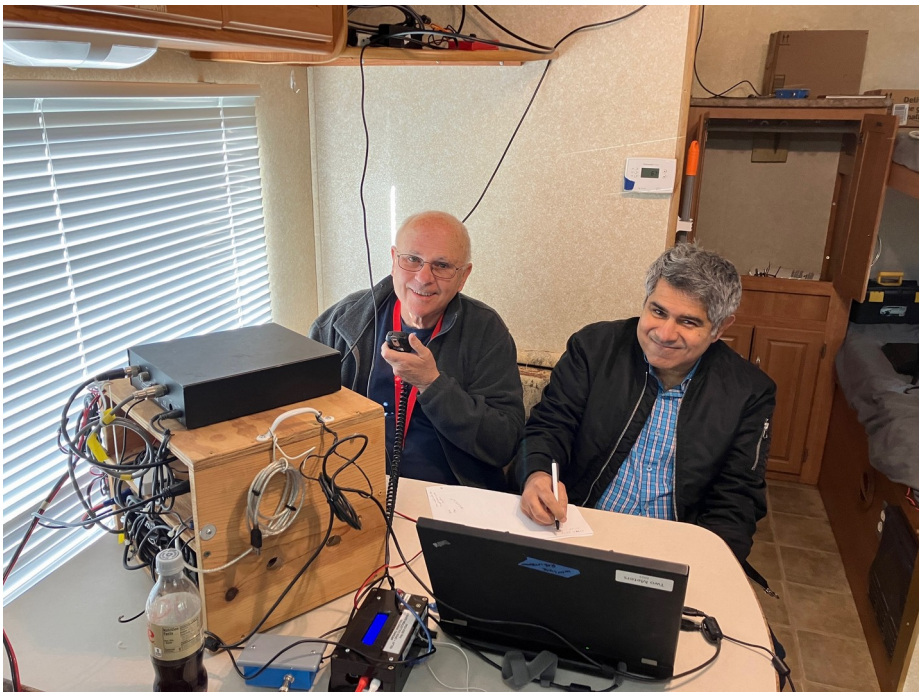
FINAL APPROVED VERSION



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EXECUTIVE SUMMARY

The Amateur Radio Emergency Service (ARES®) typically organizes at the County Level and upward. In Alachua County, multiple amateur radio clubs support the ARES® mission, including the Gainesville Amateur Radio Society, the North Florida Amateur Radio Club, and the Alachua County EOC Radio Club.

WINTER FIELD DAY is a relatively newer exercise/contest which is held the last full weekend in January to test field preparation of amateur radio for service to the nation as listed in FCC Part 97.1 **During Winter Field Day, participants attempt to make as many short radio connections with others all over the world, exchanging a simple but precise text, and doing so on as many different frequency bands, and by as many different radio techniques as possible.**

This is the second year that the North Florida Amateur Radio Club/ARES(R) group has carried out a WINTER Field Day effort.

We chose to operate out of the existing Alachua County EOC, which is challenged by having only ONE high-frequency coaxial cable. This required extensive development of filtering systems to allow multiple 100-watt radio transmitters to operate on the same coaxial cable with very delicate radio receivers without damage.

Our ONE AND ONLY EOC HF coaxial cable....

All of our HF transceivers in the EOC had to simultaneously transmit/ receive over **this single cable**.

As a result we decided to operate 3 transmitters simultaneously, and to utilize an RV travel trailer in a close grassy field, as potentially one of the three transmitters, with two ad-hoc installed antennas, giving us additional frequency diversity. This is a smaller exercise than Summer Field Day, and our effort was much more hampered, but we still accomplished 473 contacts and 16 multipliers, leading to a total claimed score of 12,368. This was a **56% improvement** on contacts compared to our effort of last year. Inside that improvement was an astonishing **128% improvement** in our digital data contacts.

Significant Advances as a Result of this Field Day Effort:

- **First time** that our group has operated such an effort in **extreme cold**. The morning temperatures on Saturday were in the low 20's! Despite that adversity we had multiple antennas available and were able to put together the travel trailer station.
- **First time** that we operated multiple hours from the trailer station from **batteries**, which previously relied on generators. This developed a new versatility.
- **First time** that we utilized multiple **LIFEPO4 batteries**, powering transmitters, MESH transceivers, and networking equipment from them, gaining new experience with their performance..
- **First known packet (AX.25) reception from the International Space Station** - packets received from Russian APRS station RS0ISS and decoded in part of our attempt to make a satellite-based contact.
- **First time that we have operated a transmitter remote controlled over WIFI/MESH** for at least one contest contact.
- Third contest exercise in which we have operated simultaneous transmitters on a **single coaxial cable,** something that we are getting quite comfortable with.
- Multiple problems, including bad solder joints and poor ground connections, corrected in our hextuple antenna multiplexer system.
- Near-100% success at MESH-microwave networking
- Success at WINLINK texting notification of outside operators.
- Added a second highly-capable CW (Morse code) operator
- Significantly improved our operators' proficiency at voice competition, as indicated by objectively improved contact numbers.
- Significantly improved understanding of canned-script PSK31 operations.
- Completed measurements of propane usage for travel trailer heating, and electrical current draw for remote MESH transceivers

Major Strengths

- All antenna systems were installed/checked out during mild conditions (50°F) the day before.
- Significant outreach to the local community brought some visitors.
- Day of operation setup accomplished within 3 hours; teardown at end inside of 1 hour.
- 128% increase in PSK31 data contacts.
- Installation of TWO Winkeyer-systems, using homemade winkeyer-emulator and homemade paddle system for the 2nd system -- both worked very well.

Primary Areas for Improvement

- Reduce large coaxial cable signal losses (as much as 4 dB) due to excessive (300-400 feet) cable lengths at the EOC
- Improve inadequate signal isolation between 28MHz (10meter) and 21MHz(15meter) ports of our Antenna Multiplexer by at least 10dB
- Reduce losses in our Antenna Multiplexer, as much as 2dB, particularly the 7MHz(40meter) bandpass filter, which needs to be replaced with a lower-loss unit.
- Improve battery supply systems for inverter, separating inverters for high-draw laptops and for low-draw MESH critical communications systems for improved reliability.
- Based on excellent performance of LIFEPO4 batteries, including Bluetooth status measurements, obtain more of these long-lived batteries.
- Better preparation for FM or SSB satellite communications.

Summary

Our effort this year was our second Winter Field Day, but our first with such bitter morning temperatures. Despite all the adversities, we performed significantly better than last year, with a 56% increase in contacts, and a 128% increase in the contacts performed using digital data techniques more suited to extensive disaster logistical communications.

THIS DOCUMENT

This document is prepared to help the group improve its emergency communications, deployment abilities, and to assist those who will be planning the next year's event. As a consequence, it is lengthy and detailed as to what were our methods, what were our results, and how they compared to our previous Exercises.

Most groups have a variety of participants, ranging from those who are planners, "movers and shakers" and ranging toward those who, for reasons of limitations, other responsibilities, or disinterest, are only peripherally involved (at this particular time). This document is primarily addressed toward the former, rather than the latter group.

For those with more limited time for review, the most important sections are probably Section 3 (Analysis of Objectives/Results), and Appendix A (Improvement Plan)

Our ad-hoc Satellite Crew studying available satellite passes

Ron Lewis KN4ZUJ (L), Jeff Capehart W4UFL (R)

SECTION 1: EXERCISE OVERVIEW

Exercise Name	**Winter Field Day 2025**
Exercise Dates	25-26 January 2025
Scope	Full-scale exercise at the Alachua County EOC. Winter Field Day is a Winter Field Day Association-sponsored national event that typically draws 2500 submitted logs.
Mission Area(s)	Response
Core Capabilities	Operational Communication, [1] Planning, Information Sharing, Public Information, and Community Resilience[2]
Objectives	1. Safety for All 2. Have fun and LEARN 3. Hone your skills at all things RADIO COMMUNICATIONS! **BECOME MORE EFFICIENT AND FLEXIBLE** -- -----Winter Field Day rewards the ability to operate VOICE, DATA, CW as efficiently as possible, and on multiple BANDS.
Threat or Hazard	No threat or hazard in this effort but **preparing for loss of normal communications**. The goal is to contact as many other stations as possible using as many different bands and techniques as possible, and to learn to operate radio gear in abnormal situations and sub-optimal conditions [3]
Scenario	Amateur Radio Contest / Communications Testing
Sponsor	Winter Field Day Association.
Participating Organizations	Winter Field Day is a US/Canada-wide event. This AAR reports on the specific details of NF4AC. NF4AC is the call sign of the Alachua County EOC Radio Club.
Point of Contact	Gordon Gibby, MD, Docvacuumtubes@gmail.com

1 https://www.fema.gov/sites/default/files/2020-07/fema_ESF_2_Communications.pdf
2 https://www.fema.gov/emergency-managers/national-preparedness/mission-core-capabilities
3 http://www.arrl.org/files/file/FieldDay/2021/2_1-%20FD%20Flier%20-%20What%20is%20FD%20generic.pdf

Event Planning Team

Gordon L. Gibby KX4Z
Leland Gallup AA3YB
David Huckstep W4JIR
Eric Pleace KO4ZSD

Number of Participants

1. Earl McDow K4ZSW
2. Mark McDow KN4POZ
3. Rosemary Jones KI4QBZ
4. Gordon Gibby KX4Z
5. David Huckstep W4JIR
6. Earl SloanKI4OXD
7. Mike Hasselbeck WB2FKO
8. Mannish Sahni KZ4KC
9. Leland Gallup AA3YB
10. Jeff Capehart W4UFL
11. Susan Halbert KG4VWI
12. Hugh Minnich KN4IIM
13. Ron Lewis KN4ZUJ
14. Eric Pleace KO4ZSD

Mike Hasselbeck WB2FKO hard at work making contacts!

SECTION 2: EVENT DESIGN SUMMARY

Event Purpose and Design[4]

Winter Field Day is a relatively recent Exercise that has undergone various changes over the recent few years, but emphasizes winter emergency communications.

A short "exchange" must be communicated from/to each contact made during a 24-hour period. There are penalties for incorrect reception. Scoring rewards communications, but is greatly tilted to reward communications over a variety of frequency bands and by multiple "techniques," which include (a) voice; (b) Morse Code; and (c) any "data" technique capable of transmitting significant emergency communications information..

For our group, we had to transmit and receive acknowledgment for the exchange 3I NFL because we utilized up to 3 simultaneous transmitters indoors at our EOC, and our location is within the Northern Florida ARRL Section.

The Callsign utilized was **NF4AC** which is the callsign of the Alachua EOC Radio Club.

For our group, this was a proof-test whether we could continuously operate more than one station combined through our single HF coaxial cable, which is a very significant hindrance, limiting our ability to perform simultaneous communications on any one band and limiting and reducing the output power that would actually reach the antenna.

Incident Command System / Leadership

We attempted to utilize the Incident Command System to a somewhat greater degree than before. Pre Planning was organized along the lines of an elongated ICS-201 Incident Briefing, and various volunteers served as "Incident Commander" during the event.

Because of the operation at the EOC, we did not require a separate Logistics Chief or Operations Chief. Rosemary Jones functioned for handling nutritional aspects of Logistics.

The Incident Action Plan (IAP) included:

4 Much of the material of this AARIP repeats standard information nicely summarized by Brett Wallace NH2KW in the 2021 AARIP

- Full explanation of the event and the location and equipment for each station.
- Time-scripted tasks to accomplish not only planning, but also a zoom dress rehearsal, media notification, the full-scale event, documentation and submission.
- Extensive use of links to more-detailed documents addressing specific issues of operations or setup.
- List of assets required for positioning

  The Full Incident Action Plan is available at:

  https://www.nf4rc.club/historical-exercises/2025-winter-field-day-iap-final/

Actions, Strategies, and Tactics [5]

Timeline Summary - Significant Events

For our first Winter Field Day, we began planning 6 months in advance, because we had to construct a sufficient antenna multiplexer to allow the exercise on a single coaxial cable. For this 2025 Winter Field Day we had far better equipment already in existence and were involved in both November Veterans' Day and December Santa Delivery exhibitions, as well as the Geminids Meteor Scatter attempt -- so planning for the Winter Field Day didn't begin until December.

No.	Date	Item
1	November 25, 2024	Emergency Management approval to use the EOC conference room for the Winter Field day was received.
2	December 11 2024	Half-hour discussion at the December ARES/NFARC meeting, decision to move ahead with using grassy field station.
3	December 21, 2024	Emails begin between us and David Peaton to get permission from the Sheriff's office for use of the grassy field.
4	Dec 30 2024	First iteration of a full Incident Action Plan completed -- to assist David Peaton in getting permission for use of the grassy field from the Sheriff's office.
5	Dec 30, 2024	OPERATOR SIGNUP Google document is now LIVE

5 These are taken from the 2020 IAP. Unfortunately, these objectives were not carefully reviewed in the planning for this year's event, but are generally still applicable.

		(This document turned out to be very useful) VHF Contact SIGNUP Google FORM is now LIVE (no one ever signed up that way)
6	Jan 2, 2024	TECH NITE talk on methods of remote control potential for grassy field station and on PSK31 operation (live demo from North Carolina)
7	Jan 8, 2025	Approval received from Sheriff's office via David Peaton
8	Jan 8, 2025	January ARES(R)/NFARC meeting with full discussion of Winter Field Day and decision to forego emergency power for the majority of the stations. Considerable planning decisions firmed up.
9	Jan 11, 2025	LabNLunch to work on filtering inverters for Winter Field Day.
10	Jan 12, 2025	Long-running forum discussion created on groups.io to publicize updates https://groups.io/g/NF4RC/message/7255
11	Mon Jan 20, 2025	Asked Mike H to get list of potential contacts -- Mike replied the same day with a good list. No one ever sent us any telephone number /vendor information, so we used the email addresses
12	Tue Jan 21, 2025	Publicized my list of items to "get done" in the week before Winter Field Day
13	Fri Jan 24, 2025	Crew met at the grassy field and installed antennas, starting at 1 PM, then worked in the EOC
14	Sat Jan 25, 2025	Crew assembled at both grassy field and EOC beginning at 0800 in 23°F weather to begin setup

EQUIPMENT Year Over Year

YEAR SUBJECT	**2025** **(Our Second Year)**
Radios	4 ICOM 7300s (EOC, Huckstep, EOC-go-box, and GLG) Available EOC VHF/UHF FM radios
Amplifiers	N/A this year; Limit for power is 100 watts
Antennas	#1 - 135 foot end-fed half wave, using MyAntenna low-loss 2K+ 49:1 Balun and ground rod. #2 - 270 foot off center fed dipole at approximately 40 feet, with homebrew 4:1 Guanella Balun. (Not used) #3 - 65 foot OCFD sloping vertical installed on pine tree in grassy field (new for 2025) #4 - "PVC" 6meter semi-inverted vee installed in pine tree in grassy field (new for 2025) #3-- EOC dual band VHF/UHF vertical antennas x 3 @ 60 feet on EOC tower.
Computers	Approximately 7 Windows computers (most Windows 10 but 2 Windows 11) Did NOT use NTP server in 2025
Power systems	EOC commercial power (backed up by generator etc) Generator trailer + LIFEPO4 + lead acid batteries for the travel trailer (new 2025)
Trailer(s)	GLG used 2016 24-foot travel trailer. Difficulties were avoiding frozen pipes, so kept it at least 50 deg F using propane heater. Obtained full tank of propane right before event. Measured approx 3 lbs of propane kept trailer at 55 overnight in weather down into the 20's F.
Winlink Emails	From EOC Shelter Data Radio over VHF to W4DFU-12 (VARA FM)
Incident Command Post	Main room, center table, used frequently
Meal Support	Saturday - Chili, Birthday Cake - Gordon Sunday - Breakfast muffins, coffee. Lunch Pizza from left over nutritional funds under care of Susan.
Networking	Ethernet cabling to most computers in EOC; 2.4 GHz Part 15 MESH networking to the travel trailer; wifi from the lower fence post to the computer in the trailer. 120VAC modified sine wave from battery operated inverter to feed the MESH and wifi systems. (Worked much better with LIFEPO4 battery and removing the laptop from using this power.)

EQUIPMENT & INFRASTRUCTURE IMPROVEMENTS MADE AS A RESULT OF 2024 WINTER FIELD DAY		
1	At least 3 volunteers purchased 100Ahr LIFEPO4 Batteries, suitable for operating a complete emergency station > 24 hours without recharging.	
2	Addition of line-filtering to several volunteers' inverters.	
3	Detected incomplete solder joints in the 14MHz(20m) VA6AM bandpass filter -- repaired near the beginning of the Exercise.	

Friday Afternoon, putting a line over the pine tree for the expedient antennas.
David Huckstep W4JIR (L) and Earl McDow K4ZSW (R) work on the electrically controlled potato gun.

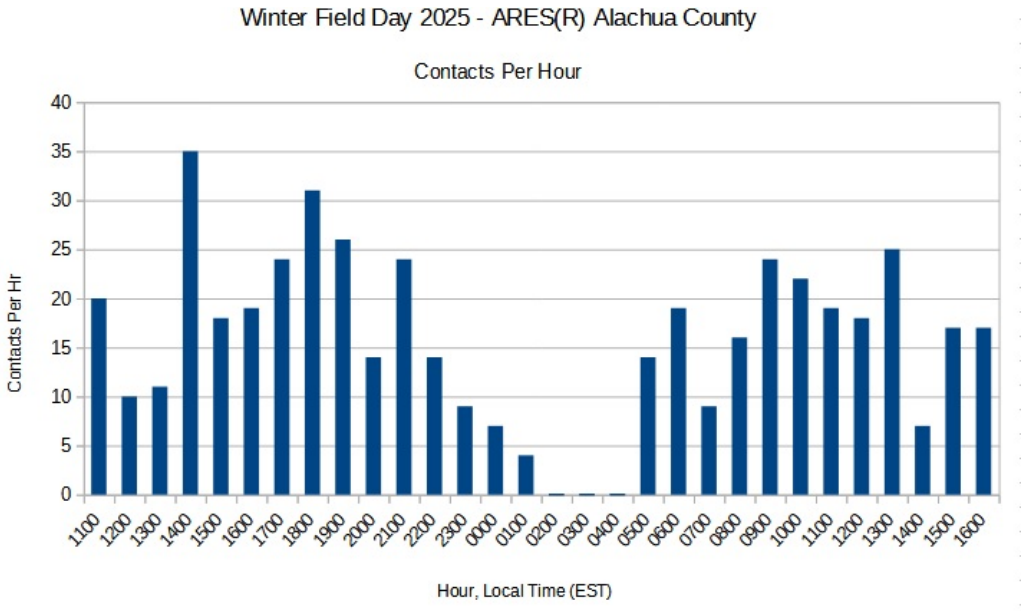
SECTION 3: ANALYSIS OF OBJECTIVES / RESULTS

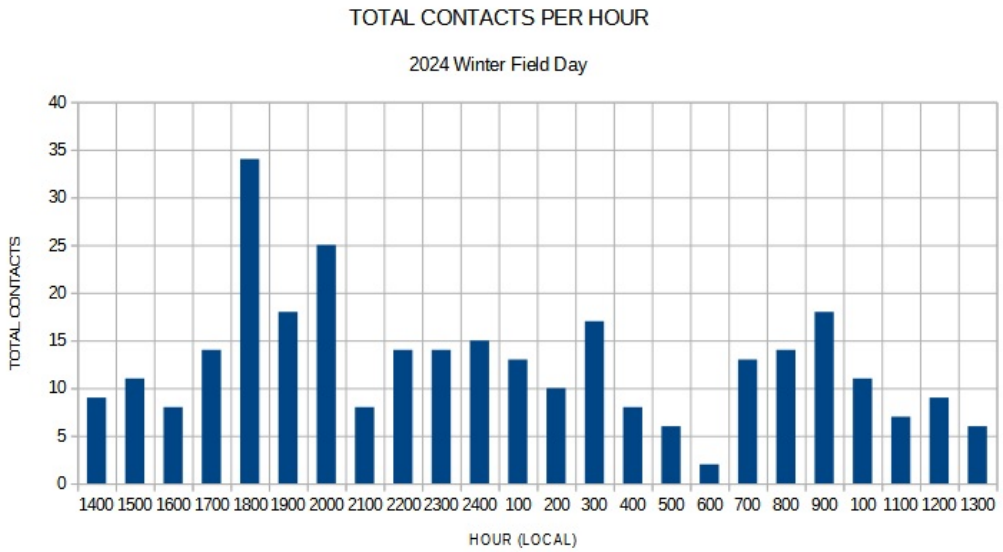
CALCULATED PERFORMANCE[6]

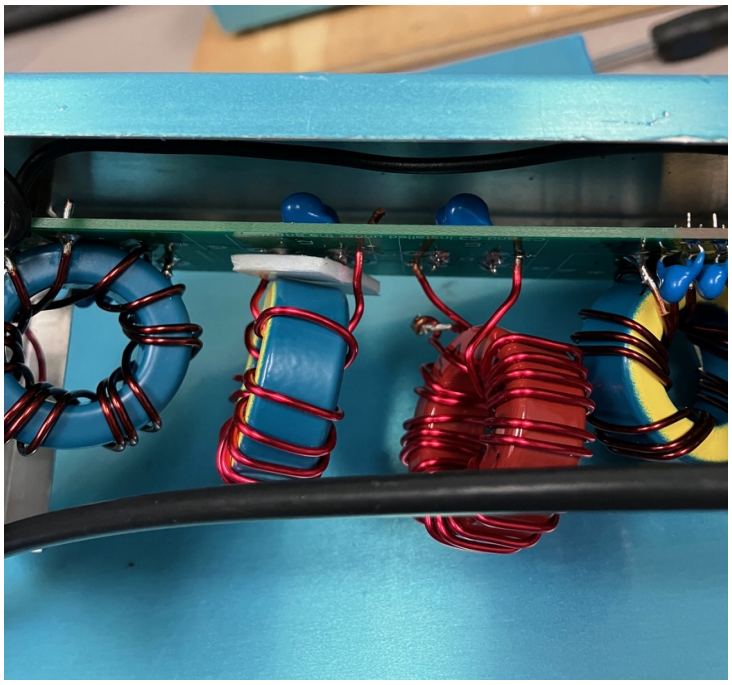
	2024	2025
Total CW Contacts	111	154 (37.5% increase)
Total Phone Contacts	129	173 (31% increase)
Total DIG Contacts	64	146 (128% increase)
Total Multiplier	21	16 (Vastly different calculation 2025)
Total Score	10,059	12,368
Total on-site operators	13 (counting some not in logbook) Log: 12	14 (counting some not in logbook) Log: 11
Primary off-site contacts	1 (K9RFT)	N/A this year

6 This is prior to checking and correction by the Winter Field Day Association, which may reduce the score.

TOTAL CONTACTS BY HOUR 2025 VERSUS 2024







The solder-deficient joints that took us off the air at the beginning are the four wires from the center blue and red ceramic toroids.

CONTACTS PER OPERATOR

Total Contacts by Operator:

Operator	Total	%
KX4Z	107	23
W4JIR	107	23
KI4OXD	66	14
WB2FKO	64	14
KZ4KC	49	10
AA3YB	28	6
W4UFL	15	3
KG4VWI	14	3
A3YB	11	2
KN4IIM	8	2
KN4ZUJ	4	1

Total = 11

The plywood bases hold the hextuple Antenna Multiplexer and its various bandpass filters, most using the VA6AM designs. These were much better organized this year.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Perform-ed (U)
1. Safety for All	Community Resilience	**P**			
2. Have fun and LEARN	Operational Coordin-ation; Operational Commun-ications	**P**[7]			
3. Hone your skills at all things RADIO COMMUNICATIONS! **BECOME MORE FLEXIBLE** ----Winter Field Day rewards the ability to operate VOICE, DATA, CW on as many BANDS as possible.	Operational Coordin-ation; Operational Commun-ications	**P**			

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

Table 1. Summary of Core Capability Performance

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team.

7 The majority of our members had great fun and learned.

OBJECTIVE 1: SAFETY FOR ALL

CORE CAPABILITIES: COMMUNITY RESILIENCE

Strengths

Strength 1: *Significant planning efforts led to a simple 3-hour setup for participants without a dress rehearsal.*

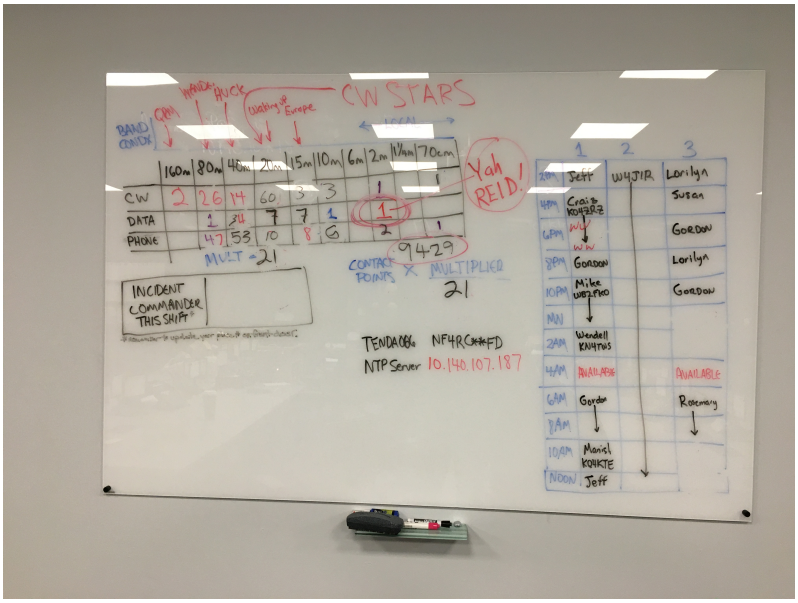
Strength 2: *The facility was air conditioned and quiet spaces were available for rest.*

Strength 3: *Plenty of snacks, food, drink were readily available thanks to volunteers.*

Strength 4: *Our volunteers better routed the coaxial cables and reduced trip hazards this year.*

Areas for Improvement

Area for Improvement: *Missing lightning arrester for Trailer.*



Our "management whiteboard" with diagrams to show our progress by band and mode, and schedule for operators. This photo is from 2024, but our management in 2025 was similar

OBJECTIVE 2: HAVE FUN AND LEARN!

CORE CAPABILITIES: OPERATIONAL COORDINATION, OPERATIONAL COMMUNICATIONS

Strengths

Strength 1: *We had amazing improvement in Digital contacts, suggesting that our training for that was more effective than ever before. This was an "Area for Improvement" the previous year.*

Strength 2: *A very modest amount of "coaching" early on with the digital "flow of canned text" made a lot of improvement.*

Strength 3: *Our crew overall were making contacts at a better rate than the previous year in all categories and we picked up a new CW operator.*

Strength 4: *Aligned with the Improvement suggestions from the previous year, we set up our training to focus on PSK31 and on contest rules and scoring.*

Strength 5: *This year, all of our computers WORKED right from the start! Networks were up and working; logging up and working; canned text for PSK31 up and working on all computers. N3FJP canned (CW) text up and working on the two applicable computers. Big improvement thanks to hard work!*

Areas for Improvement

Area for Improvement 1: *Improve our "on-boarding" of peripheral volunteers.*

Area for Improvement 2: *Despite offering additional days of training, those didn't pick up any interest; perhaps not needed?*

Analysis: *The primary mission of the Alachua County ARES (R) Volunteers, when serving as volunteers to the Emergency Management Department of Alachua County, is to serve as directed to augment communications that need backup or assistance. This supports continuity of governance and continuity of operations. This exercise demonstrated that the volunteers can come together and work through a 30-hour operational period without the need for infrastructure support, verifying that communication lifelines can be maintained after a major incident or disaster.*

OBJECTIVE 3: HONE YOUR SKILLS AT ALL THINGS RADIO COMMUNICATIONS!

CORE CAPABILITIES: OPERATIONAL COMMUNICATIONS

Strengths

Strength 1: *This exercise demonstrated that the Alachua County ARES(R) Volunteers can respond to an incident and maintain communications that is not reliant on the internet, cellular service, or any infrastructure.*

Strength 2: *Our operators demonstrated* ***year-over-year considerably improved skills at making digital and voice contacts;*** *our CW improvement likely resulted more from adding a 2nd volunteer.*

Strength 3: *There was a better match between training and available time on the part of volunteers this year. Training was mainly carried out at Wednesday weekly exercise, one TECH NITE and two monthly meetings. Some "on-the-job" training was also carried out after the exercise began.*

Areas for Improvement

Area for Improvement: *As the Alachua County ARES® Volunteers continue to show competency; further integration with the local government needs to increase.*

Susan Halbert (L) Dave Huckstep (C) and Rosemary Jones study how to make and log contacts.

SECTION 4: CONCLUSIONS

- Compared to 2024, we hit the ground running well right at the start -- but immediately had a solder joint problem in a bandpass filter. Once solved, we were off the races again. Our training on PSK31 was more effective this year. We knew only PSK31 would be prevalent and we didn't waste time training other techniques.

- Our CW crew doubled in size! We had good performance of our CW team. The WINKEYER was generally reliable (if the port had a default 1200 baud) with only a few mix ups. Best to open it, get out out of the setup and just use it.

- Our efforts to get 6M contacts paid off! That added a 6th band for us and netted us considerable additional "multipliers."

- We should work on satellite skills!

- We have a few obvious equipment issues that can be solved, and we may have a power-line or other 28MHz extraneous noise generator somewhere near the front grassy overflow parking lot that needs to be found and solved.

Overall, our team SOARED this year, with improved performance in every category, and astonishingly improved performance in the digital category. *There were no personnel frictions.* No "drama." Everyone seemed to enjoy each other. A huge crowd was there to help with teardown, which was accomplished in a record 55 minutes as a result.

APPENDIX A
IMPROVEMENT PLAN

2025 IMPROVEMENT PLAN

No.	Ranked Priority In Area	Item	Comment / Assignment / Completion
	RADIO / NETWORK / COMPUTING ASSET IMPROVEMENT		
1.	#1	Investigate and IMPROVE the 15m <--> 10m filter isolation to allow simultaneous operation again on some antenna. (*Significantly improved contact rate*)	New kits on order. Possiblity of switched additional filter.
2.	#2	Find shorter coax path (e.g. LMR400 175 feet under back door directly to antennas across road with wood protection against cars rolling over coax) (*Estimate 3dB improvement*)	Space under door!! Need to plan testing day.
3.	#3	Replace 40m bandpass with VA6AM type to reduce losses. (*Estimate 0.75 dB improvement*)	New kit being shipped as we speak
4.	#4	Separate inverter for the trailer laptop, with filtering; this can be the modified-sine-wave filter, as the laptop power supply doesn't care. (*Significantly reduce MESH network failure risk*.)	Multiple members have purchased additional inverters
5.	#5	Separate inverter for the far mesh system, with filtering, needs to be pure sine wave to allow use of the UPS. (Alternative: higher voltage battery system for POE for mesh.) (*Significantly reduce MESH network failure risk*.)	Multiple members have purchased additional inverters
6.	#6	LIFEPO4 100A batteries for inverters for remote laptop / mesh systems. Batt #1: Transmitter Batt #2: Inverter for computer Batt #3: Inverter (or direct) for MESH/WIFI *(Significantly reduce requirements for recharging*.)	Multiple members have purchased additional 100A LIFEPO4 Batteries

7.	#7	Pole to raise far MESH transceiver higher (*Potential for reducing network failures that might occur as vehicles block pathway.*)	An oversignt - better communications, CHECK LIST to combat memory failure
8.	#8	Investigate having wired Ethernet connection for remote computer in grassy field. (*Significantly improved data rate to potentially reduce network errors.*)	
9.	#9	Find/create lightning arrester(s) for the trailer station (*Safety issue for grassy field antennas*.)	NEW ARRESTER purchased and already arrived.
10.	#10	Add more verbiage to the PSK canned text, adding bit more repetition and redundancy. (*Specific for winter field day where increased message capture on first try might occur. This does not apply to Summer Field Day where FT8/FT4 are utilized*.)	
11.	#11	Investigate / reduce 10-meter (28MHz) RFI interference observed at grassy field trailer receiver (S1-S2 on 10m) (*Significantly increase contact performance on 28MHz*)	Testing hasn't found cause....
12.	#12	Encourage more purchases of the 100Ah LIFEPO4, esp with Bluetooth monitoring (*Reduced need for recharging during event*.)	SUCCESS!!
	INCIDENT PLANNING IMPROVEMENT		
13.	#1	Better notification of operators of food location (use of far designated break room not known by some participants.) Explain at planning and training meetings.	
14.	#2	Make assignment of TWO operators for PHONE (and possibly PSK) operation more obvious and more easily possible, as teams work better for op/logging combination. (*Significantly improve performance & enjoyment*.)	
15.	#3	Have more volunteers sign up for Incident Commander shifts. E.g. 3 volunteers instead of 1.	

		(*Significantly improve problem detection & management*.)	
16.	#4	Spread out food duties a bit more: e.g. 4 volunteers instead of only 2. (*Reduce overload on key volunteers*.)	
17.	#5	Encourage newer operators and those looking for some training to sign up EARLIER and work toward having high-volume opportunities (e.g. daylight and early evening time slots.) Possibly reserve a few slots for such opportunities. (*Significantly improved training opportunities*.)	
	INCIDENT PRE-TRAINING IMPROVEMENT		
18.	#1	Do more explaining of the"rhythm" of PSK31 contacts (*Significantly improve contact rate*.)	
19.	#2	Pre-event practice on Satellite contacts. (*Significantly improved chances of success on this key multiplier*.)	Dual band SSB transverter arrives Saturday.
20.	#3	Train on how to record CQ verbiage for phone operators. (*Significantly reduce voice strain & provide some thinking-time.*)	
21.	#4	Emphasize need for avoiding conversations right around high-concentration CW efforts. (A single missed "dit" means wrong callsign.) (*Significantly increased comfort of CW ops*.)	
	INCIDENT EXECUTION IMPROVEMENT		
22.	#1	More availability of Incident Commanders. (*Quicker recognition of opportunities and problems, quicker resolution*.)	
23.	#2	Continue goodies for the 911 operators (*Maintain goodwill*.)	
24.	#3	Maintain quiet area around CW operators, provide more conversation space grouped a bit farther away.	

		(*Significantly improve comfort of high-concentration operators*.)	
25.	#4	Utilize Icom7300 and N3FJP techniques for canned VOICE recordings. (*Significantly reduced PHONE effort and voice strain*.)	

NETWORKING EXPERTS - MARK MCDOW (FRONT) AND EARL MCDOW (BACK)

APPENDIX B

HOTWASH FULL DOCUMENTATION

WHAT WENT WELL – AND OTHERWISE

	First material from observation during event & discussions therein
1	Sheet cake for everyone apparently went over well with the 911 operators
2	Chili: 3lbs ground beef, 1.5 qts tomato juice/beans/spices -- also went over well
3	Rosemary did great job with plates utensils etc - THANKS
4	ECO-WORTHY 12V 100Ahr LIFEPO4 with Bluetooth - still 55% after running trailer station the entire event.
5	Cannot run laptop PLUS mesh system on modified sine wave inverter into UPS - the UPS will not be happy with that voltage. Either ditch the UPS or get a sinewave inverter, and use LIFEPO4 batteries instead (2x 23 worked fine)
6	Documented MESH failures: 2PM Sat, 6PM Sat (then improved power system) went until 11:30 AM Sun, failed again; but reboots with power off for a minute, takes several minutes to reload to the trailer station. (? hardwired next time?)
7	Was the far MESH high enough on a pole for good contact?
8	Lots to learn to be savvy on PSK31. groups of 4 buttons; logical rhythm of using them for run-cq versus hunt/pounce. Understand difference between browser and received pane. How to click on stations. Adjusting modulation level goes over the head of some ops. Some difficulty keeping receive pane scrolling; sometimes it wouldn't log for mysterious reasons? Nevertheless we had an ENORMOUS improvement in PSK31
9	Big improvement in VOICE savvy as well! Good phonetics, etc.
10	Catching solder/connection issues in multiplexer even an hour in -- but little after that.
11	Still stayed 3I because limited signups in timely fashion.
12	When bands died, trouble even fielding THREE stations with our antennas...so why would we need 4?
13	Satellite skills our next big need.
14	CW ops were TERSE and my skinnied text worked well.

15	PSK folks were VERBOSE and adding to the text made for better.
16	Phone folks are often polite and even slightly "chatty"
17	Our losses in 300+ feet coax (reaching 3-4 dB @ 30MHz_) + up to 2dB in multiplexer -- CONSIDERABLE DISADVANTAGE. Need to shorten coax...
18	White board was useful.
19	Schedule "aspirational" instead of dogmatic
20	10m station badly interferes with 15m receiver; the reverse is also an issue but not quite as bad.
21	Significant 10M RFI on trailer receiver. Not sure why
22	OCF at trailer had VERY USABLE SWRs -- worked GREAT
23	Missing lightning arresters for trailer (oops!)
24	Operational location at EOC on weekend is great!
25	Don't run laptop on same inverter as mesh system.
26	After about 8PM the bands were very lightly occupied.
27	The 1PM (local time) bulletin was STRONG on 20meters on digital.
28	Rosemary arrived Saturday night - "bands are dead" wants to know a BETTER TIME (solution: sign up for the AFTERNOON earlier!!) If you see someone with nothing possible, warn them before they drive in, to save gasoline!
29	(need more volunteers for IC)
30	Overnight folks took all the food summer ; Mike couldn't find food entire time he was there. (We didn't advertise the chili in the break room adequately)
31	Conversations beside struggling CW operators make it REALLY DIFFICULT. Avoid conversation near them. (Eric agrees)
32	Eric: Really "missed" not having an Incident Commander. Could shift folks around, warn people.
33	Eric: Incident Commander could monitor what is happening on the band.
34	Eric: Thought we were so "thin on the ground" -- he would have appreciated having 4 stations this time around.
35	Ask the group how to get more IC volunteers; maybe "field promotions"
36	Dean had 14-year-old with him; got him on the air for 1.5 hours, 5 contacts -- conversations behind people was a problem at Waldo also.
37	Hugh - everyone was great; was only there the last few hours; seemed like rolling smoothly. Has done it before with GARS.
38	Manish: having a TRAINING station. Having someone free to help newcomers

	would help
39	Satellite Contacts -- need more practice!!
40	David: no serious complaints; we were ready to GO at 11Am and then had technical problems that held us back for 1.5 hours (20m filter solder joint issue) WE FINALLY GOT DAVID TO TAKE A NAP!!!
41	Leland/Mannish worked as a VOICE TEAM, one talking and the other documenting -- worked VERY WELL. Eric really agrees, learn skills, cooperation, settings.
42	Dean: The 14-year-old was making the contacts, and Dean did the logging for him. Suggestion: **recruit a TEAM for each voice slot**.
43	Eric: even on PSK, Eric thinks the 2nd person learns a LOT from watching and they work together and improve performance. He really enjoyed the training exercise doing CW the previous field day with Gordon
44	Leland: key improvement is to strengthen the filters and reducing the losses! "they just weren't hearing us from the EOC"
45	Mannish: good idea to RECORD a CQ (we didn't push it this year)
46	Will there be AI code readers soon? (Haven't seen them yet, but likely would improve performance over what is available now.)

Ron Lewis KN4ZUJ (L) and Jeff Capehart (R) try to hear an amateur radio satellite.

Rather than using the condensed AAR/IP template found on the FEMA preptoolkit for HSEEP (See: https://preptoolkit.fema.gov/web/hseep-resources) this report follows more closely the previous, more all-inclusive version so that the reader can have a fuller understanding of the entire Exercise, its outcome, and improvements suggested for subsequent exercises of its type. This is in keeping with previous AAR/IP's for Alachua County ARES®/North Florida Amateur Radio Club, such as: our 2021 Field Day AAR/IP (https://qsl.net/nf4rc/2021/AlachuaCountyARES2021FIELDDAYAfterActionReport.pdf) and our 2020 Field Day AAR/IP (https://qsl.net/nf4rc/2020/AlachuaCountyARES2020FIELDDAYAfterActionReport.pdf

APPENDIX C

CW CANNED TEXT (REFERENCE)

Note that N3FJP logs whenever you hit ENTER.

	MORSE CODE SUGGESTED CANNED TEXTS YOU MAY WISH TO IMPROVE UPON THEM WITH EXPERIENCE SLOWER OPERATIONS WILL USE DIFFERENT TEXTS FROM FASTER OPERATIONS. These TEXTS are the same whether you are using a WINKEYER or having N3FJP key the 7300 directly. Numbering synchronized with other modes	
FUNCTION KEY	TEXT SENT	How this Function Key is used
F1	CQ WFD NF4AC NF4AC WFD [repeats]	repetitive CQ; station K4AAA answers "K4AAA" You type their callsign into N3FJP so you can use it with the $ in the next step.
F2	$ 3I 3I NFL NFL BK or $ 4I NFL BK if folks are being really succinct (Gordon shortened this to $ 4F NFL BK in the 2023 Field Day with good success)	ANS EXCH (We responded: K4AAA 3I NFL BK) He answers **R 1H GA**
F3	3I 3I NFL NFL	EXCH ONLY -- you can use this just to send the exchange if needed
F4	QSL TU QRZ NF4AC WFD	QSL QRZ? This allows you to confirm to the station you were working and immediately move to a new contact.

HUNT AND POUNCE USEFUL TEXTS		
F5	NF4AC	POUNCE (the other station should reply and send you their exchange)
F6	QSL 3I 3I NFL NFL	QSL EXCH
F7	AGN?	If we need a repeat
F8		
F9		
F10		
F11	DUPE	to notify someone they would be a duplicate

This Table May Be Helpful To Organize the Canned Texts:

CQ ON FREQUENCY		HUNT & POUNCE			
F1	CQ..de NF4AC K	F5	NF4AC	F9	
F2	ANS EXCH $ 3I NFL BK	F6	QSL EXCH	F9	
F3	EXCH ONLY 3I 3I NFL NFL	F7	AGN?	F10	
F4	QSL QRZ	F8			

PSK31

Canned Text Button Label	What is Sent (numbering synchronized with other modes)	Comment
RUN CQ (F1 on keyboard)	<TX> CQ WFD CQ WFD DE <MYCALL> <MYCALL> CQ WFD <RX>	RUN CQ
ANS (F2 on keyboard)	<TX> <CALL> <CALL> DE <MYCALL> 3I 3I NFL NFL <RX>	use to answer person responding to your run CQ
EXCH (F3 on keyboard)	<TX> 3I 3I NFL NFL <RX>	in case needed to send exchange again
QSL-QRZ (F4 on keyboard)	<TX> QSL QSL TU QRZ WFD <MYCALL> <MYCALL> CQ WFD <RX>	answering an exchange
There is a gap between the first four screen buttons and the second, and a similar gap between the corresponding first four Function keys and the second four.		
Pounce (F5 on keyboard)	<TX> NF4AC NF4AC <RX>	responding to a run CQ'er
Exchange (F6 on keyboard)	<TX> QSL 3I 3I NFL NFL NF4AC <RX>	
LOG CLRL (F8 on keyboard)	<LOG> <CLRLOG>	(logs immediately if required fields are entered)