Alachua County ARES®/NFARC
2024 WINTER FIELD DAY
Jan 27/28 2024

After Action Report/Improvement Plan

Expanded Version for Exercise Planners

WRITTEN FEB 2024

HANDLING INSTRUCTIONS

1. Points of Contact:

Alachua County ARES®:

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APPROVED FEB 13 2024
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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 first 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 HF coaxial cable....

all of our HF transceivers had to simultaneously transmit/ receive over **this single cable**.

As a result we decided to operate 3 transmitters simultaneously. This is a smaller exercise than Summer Field Day, and our effort was much more hampered, but we still accomplished 304 contacts and 21 multipliers, leading to a total claimed score of 10,059.

Significant Advances as a Result of this Field Day Effort:

- First contest exercise in which we have operated simultaneous transmitters on a **single coaxial cable**.
- Construction of a novel 5-port "QuintPlexor" by our own design, based on a commercial 3-port device by VA6AM.
- Significant gains in electronics and filter knowledge by our group.
- Successful WIFI-connected GPS-developed private Network Time Protocol server.
- Near-100% success at MESH-microwave networking
- Success at WINLINK texting notification of outside operators.
- Installation of newer, lower-loss end-fed half-wave 49:1 commercial Balun on one of our EOC-based HF antennas.

Major Strengths

- As requested by the group, we reduced antenna setup effort DRAMATICALLY. In fact, the only antenna "set up" was a replacement of our end-fed HF antenna due to loss of the previous one.
- Significant outreach to the ham radio community via various projects helped the group attract new qualified operators.
- Both setup and tear down were accomplished in approximately 2 hours.
- Success at PSK31 data contacts
- MESH Networking and NTP server complete success.
- Success with WINKEYER and also with N3FJP-activation of Icom 7300 voice scripts.

Primary Areas for Improvement

- Remediate the issue with the PACTOR modem on EOC Station distorting voice transmissions.
- Better preparation of our volunteers for PSK data communications
- Better preparation of our volunteers to understand contest rules and techniques
- Correct outside volunteer difficulties with audio-based CW and data communications other than WINLINK.
- Further investigate the logging system stoppage.
- Reduce 6-meter interference at EOC location.
- Improve community outreach at larger community events.

Summary

Our effort this year was our First Winter Field Day and despite having little idea what techniques would be most useful, and despite being forced to run all HF stations on a single coaxial cable to a single antenna....we likely scored in the upper 4% of submitted logs, based on data from the previous year. This is a great success, but we are capable of much, much more.

Wendell Wright, KN4TWS, one of our committed VOICE operators

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)

SECTION 1: EXERCISE OVERVIEW

Exercise Name	**Winter Field Day 2024**
Exercise Dates	27-28 January 2024
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 FLEXIBLE** -- -----Winter Field Day rewards the ability to operate VOICE, DATA, CW on as many BANDS as possible.
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
Wendell Wright KN4TWS

Number of Participants

1. Earl McDow K4ZSW
2. David Huckstep W4JIR
3. Gordon Gibby KX4Z
4. Wendell Wright KN4TWX
5. Mike Hasselbeck WB2FKO
6. Jeff Capehart W4UFL
7. Lorilyn Roberts KO4LBS
8. Manish Sahni KQ4KTE
9. Rosemary Jones KI4QBZ
10. Susan Halbert KG4VWI
11. Leland Gallup AA3YB
12. Craig White KO4ZRZ
13. Eric Pleace KO4ZSD
14. Reid Tillery K9RFT (at home)

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.

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.

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

The Incident Action Plan (IAP) included:

- 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/wp-content/uploads/2024/01/ICS201WinterFieldDay2024-1.pdf

Actions, Strategies, and Tactics [5]

Timeline Summary - Significant Events

Participants often were overwhelmed by the volume of development discussions that went on during the planning phase of the event. Some of this was related to the fact that dramatic new improvements and ideas were being developed and required significant discussion to bring to success. **Participants sometimes don't understand all of the development work that is going on, and for which significant discusses of possible solutions and discovered problems are required.** *However, making these details available allows the interested participant to become more involved in the development of the exercise.* This timeline shows that the development of the Exercise proceeded over 6 months.

No.	Date	Item
1	Aug 5 2023	LabNLunch to work on the VA6AM Triplexer
2	Sept 6 2023	Approval granted for use of the EOC for the Winter Field Day Exercise
3	September 18, 2023	Talk at the Gainesville Amateur Radio Society meeting on how we constructed a QUINTPlexer

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.

4	September 23, 2023	LabNLunch to make the adapter cables that allowed us to send DATA through the Alachua County Shelter ID-4100 D Star FM transceivers so easily.
5	November 2, 2023	Tech Nite discussion on WINTER FIELD DAY
6	Dec 1 2023	Google sign-up form goes live for signing up to operate in the 2024 Winter Field Day
7	Dec 2 2023	LabNLunch to work on more bandpass filters
8	Dec 7, 2023	December TECHNite was on using JS8 in Winter Field Day
9	January 4 2024	January TechNite went over how to send DATA and CW over ordinary FM transceivers.
10	Jan 6 2024	First of 2 January LabNLunches to work on setups and procedures at the actual EOC.
11	Jan 20 2024	Final January LabNLunch to work on setups and procedures at the actual EOC -- NTP server configuration completed for most stations
12	Jan 25 2024	Special Thursday night Zoom discussion on management techniques to assist the group's effort.

EQUIPMENT Year Over Year

YEAR SUBJECT	**2024** **(Our First Year)**
Radios	4 ICOM 7300s 1 ICOM 746pro 1 Shelter Radio, ICOM dual-band D-Star (with homebrew sound card system)
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. #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) + Raspberry Pi 2 NTP server
Power systems	EOC commercial power (backed up by generator etc)
Trailer(s)	None
Winlink Emails	From EOC Shelter Go Box #1 over VHF to W4DFU-12 (VARA FM)
Incident Command Post	Main room, center table, used frequently
Meal Support	Saturday - Sandwiches & more / Rosemary Sunday - Full Buffet / Rosemary. Huge success!

David Huckstep W4JIR and Craig White KO4KRZ holding down 40 meters

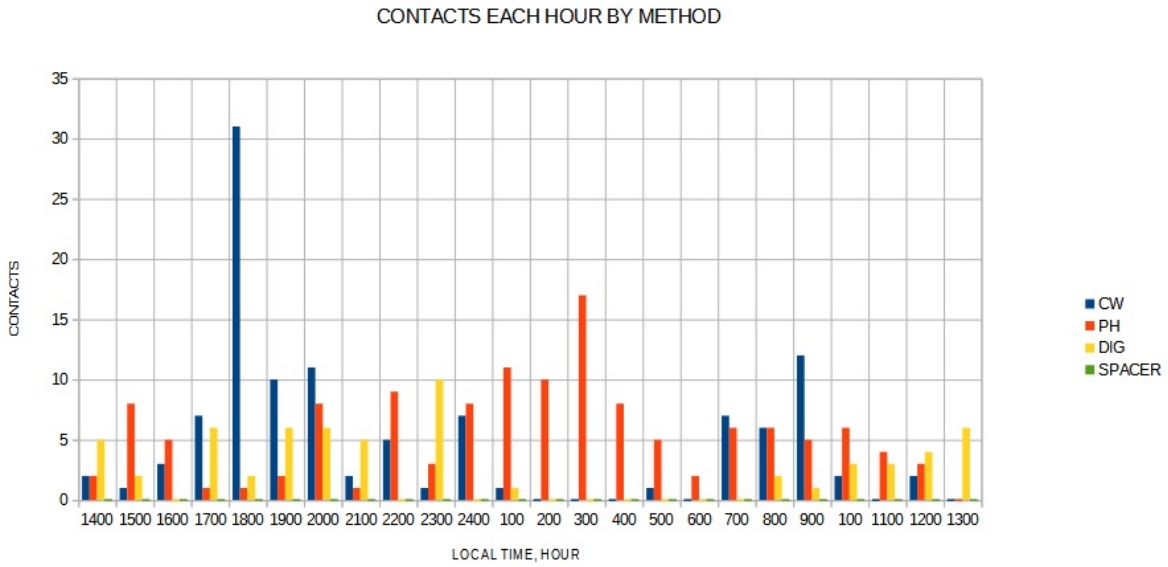
EQUIPMENT & INFRASTRUCTURE IMPROVEMENTS MADE AS A RESULT OF 2024 WINTER FIELD DAY		
1	Purchase, construction and tuning of VA6AM 20/15/10 Triplexer	
2	Extension of Triplexer to handle 40 meters, and 80/160 meters	
3	Replacement of 10m Butterworth bandpass filter with VA6AM improved performance bandpass filter	
4	Replacement of 20m Butterworth bandpass filter with VA6AM improved performance bandpass filter.	
5	Replacement of 80m bandpass filter with homebrew LPF capable of passing 80 and 160 meter	
6	Creation of new 6meter Butterworth filter providing 0.75 dB insertion loss and 39dB isolation from 15 meters	
7	Replacement of End Fed Half Wave 49:1 Balun using 2-FT-240-43 cores, with MyAntenna 49:1 utilizing special cores, with lower losses above 14 MHz.	

SECTION 3: ANALYSIS OF OBJECTIVES / RESULTS

CALCULATED PERFORMANCE[6]

Total CW Contacts	111
Total Phone Contacts	129
Total DIG Contacts	64
Total Multiplier	21
Total Score	10,059
Total on-site operators	13
Primary off-site contacts	1 (K9RFT)

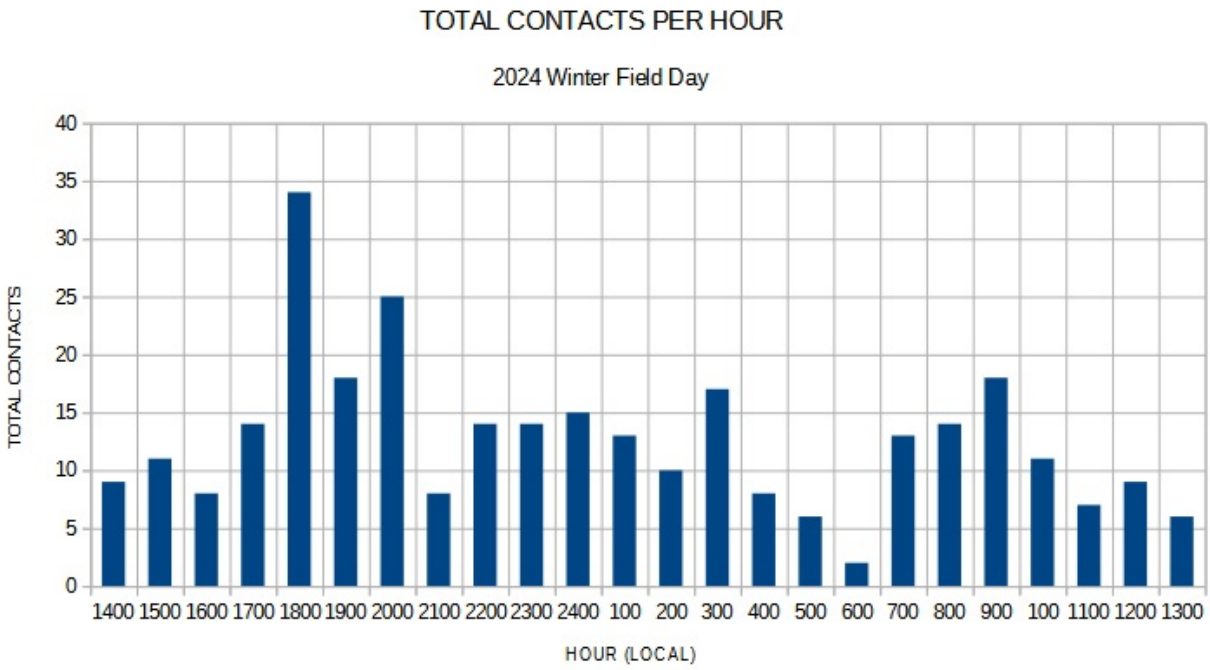
CONTACTS EACH HOUR, BY TECHNIQUE



Maximum of three stations. At times all stations might have been using the same technique. The total contacts in an hour segment equals the sum of the bars for that hour.[7] ***Note that this can be highly variable by the number of other stations out there to contact on a given band.***

6 This is prior to checking and correction by the Winter Field Day Association, which may reduce the score.
7 These data have very minor errors; the totals for phone/digital are off by "2" due to simple errors in counting.

CONTACTS EACH HOUR, TOTAL



CONTACTS PER OPERATOR

Operator	Total	%
W4JIR	102	33
KX4Z	87	28
KN4TWS	44	14
WB2FKO	27	9
W4UFL	18	6
KO4LBS	16	5
KQ4KTE	6	2
KI4QBZ[8]	3	1
KG4VWI	3	1
AA3YB	1	0
KO4ZRZ	1	0

Total = 11

8 Callsign corrected from typo entry in log.

Most Significant Local Operator: K9RFT

K9RFT provided crucial multipliers on 2meter Phone, 2meter CW, 2meter DIG and 70cm Phone. Due to weaker signals, we were unable to make 70cm CW or 70cm DIG contacts with K9RFT. We succeeded at 2meter Voice to K4GNV but no other connections.

Our collection of Quinplexer (two boxes, back) plus three Butterworth homebrew filters (paintcans) and three VA6AM kit-built bandpass filters.
Toward the end of the operational period, a capacitor self-destructed in the 15-meter paintcan filter.

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**[9]			
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.

9 The majority of our members had fun and learned. However, from comments received, one member preferred not to be coached during the event and to get a full chance throughout the event to try out their own technique. This participant was distinctly unhappy with the coaching technique.

OBJECTIVE 1: SAFETY FOR ALL

CORE CAPABILITIES: COMMUNITY RESILIENCE

Strengths

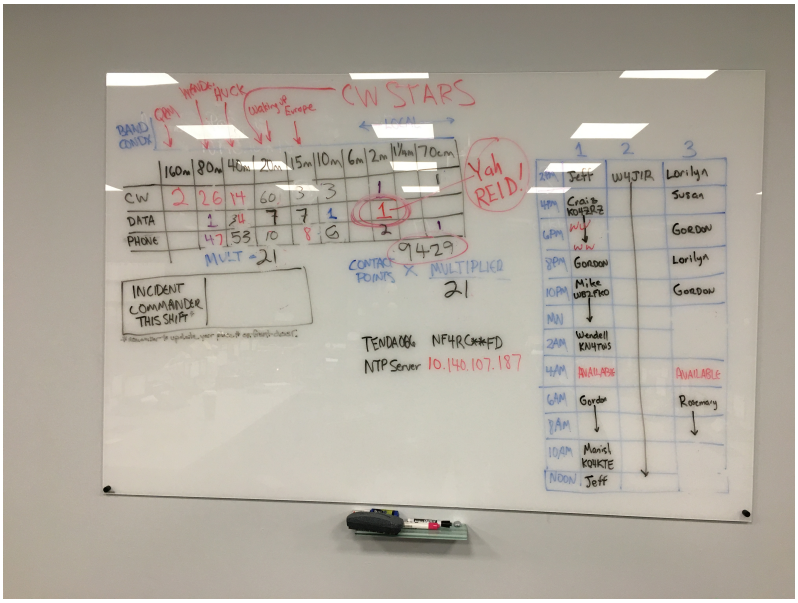
Strength 1: *Significant planning efforts led to a simple 2-hour setup for participants who had been able to attend dress rehearsals.*

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.*

Areas for Improvement

Area for Improvement: *There were significant trip hazards associated with two 50-foot, fairly unwieldy coaxial cables snaking through the facility. Better rugs and placement should be provided.*



Our "management whiteboard" with diagrams to show our progress by band and mode, and schedule for operators.

OBJECTIVE 2: HAVE FUN AND LEARN!

CORE CAPABILITIES: OPERATIONAL COORDINATION, OPERATIONAL COMMUNICATIONS

Strengths

Strength 1: *The majority of our team members felt that despite months of pre-training, they were not yet fully ready, but they were flexible and adapted well to intra-event coaching that resulted in more streamlined operation.*

Strength 2: *Having most of the operations occurring literally side-by-side in the EOC made coaching easy.*

Areas for Improvement

Area for Improvement 1: *Increase engagement of peripheral volunteers in all phases of our educational process.*

Area for Improvement 2: *Focus training on contest rules and scoring, and on FLDGI for PSK31 rather than RTTY or JS8 (which turned out to be unpopular, cumbersome and unwieldy).*

Area for Improvement 3: *Provide more* ***hands-on training*** *in advance, particularly at the facility itself.*

Area for Improvement 4: *CW skills are quite valuable and a different skillset involving timing, zero-beating[10], and significant setup to achieve smooth machine-driven assistance. Provide more in-advance skill training for CW volunteers. With proper training, CW contacts in target rich environments can reach 30-40 contacts / hour.[11]*

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 24-hour operational period without the need for infrastructure*

10 The skill of zero-beating another station (moving to their same frequency) is so important for success, that it was taught at the May TechNite 2023 prior to ARRL Field Day, and again discussed at length, with photographs to illustrate, on our Groups.IO site: https://groups.io/g/NF4RC/message/3729 Although this was a simple skill for Novice-licensed CW ops of decades ago, many current operators find this confusing.

11 True experts routinely make more than 60 CW exchanges per hour.

support, verifying that communication lifelines can be maintained after a major incident or disaster.

OBJECTIVE 3: HONE YOUR SKILLS AT ALL THINGS RADIO

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 4: *Our operators demonstrated* ***year-over-year improved skills at multiplexing antennas and significant hardware infrastructure development.***

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.*

Area for Improvement: *There is a need to better match the volume of planning materials and updates to available time and comprehension of our volunteers.*

SECTION 4: CONCLUSIONS

1. We started with considerable confusion and lower performance, indicative of less than fully effective pre-training and preparation, despite large efforts.
2. Confusion abated with time and with additional coaching.
3. Participants rapidly gained new skills in utilizing "canned text" and migrated away from unproductive techniques (JS8, RTTY) toward PSK31, which was the primary digital technique observed in use on the bands.
4. CW, particularly on 20 meters, easily outpaced any and all other techniques. One trained CW operator could easily outpace two other solid operators using phone and/or data. The astonishing capability of CW to provide contact after contact should be further leveraged. One suggestion is to alternate CW and phone every hour, 90 minutes or 2 hours, on a given band, to optimally harvest other potential contacts. (During the "off" time, the CW operation can potentially harvest a different band.)
5. More operators need to become proficient at CW[12]
6. Operators who cannot do CW should become very proficient at Voice and PSK31 as contacts in these modes were also in significant supply.
7. Efforts to improve Multipliers should be made to allow 6m contacts, 70cm data and CW, and 2.4 GHz and 5GHz.
8. A concurrent 160meter CW contest made obtaining multipliers on that band quite difficult. We should check contest schedules in advance as part of our planning, and be aware of what other items may occur during future Exercises.
9. A lot of our relatively high-scoring outcome was the result of **intensive coaching by Incident Commanders**, and **repetitive effort on our part** to make contacts by on more and more bands, and more and more techniques. Skillsets and equipment in the peripheral ARES(R) group are somewhat more scarce. One northern Florida group went so far as to have microwave (ham band) transceivers available for community hams and their Winter Field Day operation to get more multipliers! As long as contacts aren't pre-scheduled, this is in keeping with Winter Field Day's stated objectives. Extra attention here brought us a much higher score, as it did that group.

12 Actual time in practice or CW lessons is much more effective than empty resolutions to do so....and also more fun!

APPENDIX A
IMPROVEMENT PLAN

2024 IMPROVEMENT PLAN

No.	Item	Comment / Assignment / Completion
1	Our Prior Training for this event was less effective than desired. Improve our pre-Exercise Training by holding earlier hands-on training at the EOC that emphasizes the goals and techniques of Winter Field Day so that participants understand the operation, and scoring objectives.	
2.	Our Prior Training was ill-informed because we didn't know which techniques would be most important. Improve our Prior Training by emphasizing the three most important techniques: CW, VOICE and PSK31	
3	Our engagement with peripheral ARES(R) members was poor, and was noted in our Written Evaluations. Work to improve skills and engagement by asking the ARES(R) Net Manager to hold simplex-only net sessions, to a total of 8 over the calendar year 2024, scattered throughout the year.	
4	Our capture of willing volunteers' cell phones and cell vendors for text-notification was quite limited. Work to improve this by asking the Net Manager to emphasize the need for having notification techniques in the Net Script and the "why" until we have achieved 60% of the ARES(R) volunteers, with attention to privacy concerns.	
5	Our field of WINLINK-capable volunteers for notification appears quite limited. Improve this by a) Asking the EC to survey all ARES(R) members for whether they can succeed at this ARES(R) PLAN skill; b) Providing 2-3 training sessions throughout the year to assist willing volunteers in improving their skills	

6	Our 70cm simplex "footprint" may be limited. Work to measure why we had such limited simplex connection to K9RFT.	
7	We were unable to make FLDGI connections even on 2-meters with either K9RFT or K4GNV. Provide training and testing sessions and document the issues to solve these roadblocks.	
8	Develop further our portable 2.4 GHz radio systems and location a "mobile" volunteer who can provide 2.4 GHz voice and data contact--within the amateur band.	
9	Assess the possibility of adding portable 5 GHz radio systems to provide 5GHz voice and data contact -- within the amateur band.	
10	Study the contest calendar to assess likely additional contest interference to exercises we will be participating in.	
11	Work to develop a community volunteer who can make connections on 160 meters, voice, cw and data	
12	Work to develop a community volunteer who can make connections on 10 meters and 6 meters, voice, cw and data	
13	Hold additional training sessions on how simple CW and PSK can be decoded and transmitted using freely available software.	
14	Work to improve the understanding of ARES(R) volunteers so that flexibility and willingness to improve performance with gentle guidance from the Command Staff is better understood during Exercises.	
15	Hold additional go-box building sessions so that RF wiring issues decrease in number.	
16	Hold teaching sessions to better explain how various Amateur Radio Contests operate, and **how this enhances the skills of Emergency Communications Volunteers**.	
17	Have all radio/computer setups checked for consistency prior to start of Exercises so that canned text is consistent.	
18	Attempt to discover why some participants had	

	difficulties with Winkeyer connection "closure."	
19	Significantly improve or replace the 15meter bandpass filter.	
20	Assess what would be required to allow simultaneous 160meter and 80meter operation.	
21	Assess whether we should install a 160meter end fed half-wave antenna.	
22	Schedule the most proficient CW operators available to 20meter CW at intervals throughout the afternoon to scoop up as many CW points as possible, while rotating other modes or other bands in so that the harvest doesn't go "dry" while other bands or modes are available. Consider sending the most proficient CW operation sequentially to 20/15/10 during bright sunlight afternoon hours to gain multipliers.	
23	Schedule the most proficient DIG operators carry out comparable efforts on 20/15/10 during bright sunlight afternoon hours to gain multipliers. (Understand people capabilities and maximize outcomes. Work on operators who can do multiple things -- so they switch back and forth as needed to keep theRATE up.)	
24	Consider decreasing effort hours during the 0400-0700 hours when our contact numbers tend to be the lowest.	
25	Assess whether operation on a single coax is possible on more than TWO bands total during early morning hours and schedule appropriately.	
26	Make appropriately adjusted plans for potential operation at the new EOC on 8th Avenue, or at the Veteran's Park admin building.	
27	Work to improve collaboration with GARC/Loften	
28	Work to improve collaboration with GARS/K4GNV	
29	Investigate the apparent network or server difficulty that occurred when 20m CW was initiated at approximately 1830 Local.	
30	Develop written precise instructions to reboot the entire server system.	
31	Assess whether an auxiliary RV trailer would improve	

	our performance.	
32	Continue overview "board" and Incident Commander - provide this service at other events as well with portable whiteboard.	
33	Physically remove POWER or RADIO CONNECTIONS to the PACTOR modem to avoid interference with Voice techniques; place the power or radio connector physically visible over the PACTOR modem, and make re connection easy...or suitable alternative effective technique. Provide a PLACARD to explain the need not to have PACTOR interfere with the microphone.	
34	Provide additional training on the potential interference between the PACTOR modem and EOC Station 1 voice operations.	

Jeff Capehart W4UFL works with Susan Halbert KG4VWI to make PSK31 contacts. This was far more productive than JS8 and we didn't hear much RTTY at all.

APPENDIX B

HOTWASH FULL DOCUMENTATION

WHAT WENT WELL – AND OTHERWISE

Written Evaluations Received

Question	Topic	# Responses	Average (1-5 Scale)
1	Preplanning	4	4.8
2	Preparation of our volunteers for operation	4	3.6
3	Our equipment setup and antenna system	4	4.4
4	Training we provided prior to the event	4	4.1
5	Training we provided impromptu during the event	4	4.8
6	Food and snacks during the event	4	"5.3"
7	Physical environment @ EOC	4	4.8
8	Computer setups	4	4.8
9	Radio setups	4	4.8
10	Extra displays	4	5
11	Involvement of our larger ARES(R) volunteers	4	2.3

Written Free Form Comments Received

Suggestions you would have for future events

- *Some of our quick-texts didn't match the conventions used by the regulars. While I was pared for JS8, I did not prepare for PSK31 but succeeded anyway*
- *I hesitate to suggest anything because inevitably all prep, planning, and execution falls principally pm KX4Z poor Gordon!*
- *More overall training for FLDGI modes and setup. Maybe a few more VA6AM filters.*
- *Work to be sure folks really understand how to use software.*

The BEST Part was:

- *Everyone inside roughly "together" and everyone willing to help/assist!*
- *Learning! I learned which digital modes worked for WFD and which didn't. I learned operational techniques I'd not done before.*
- *Had fun. Plenty of food or drinks*
- *Success at so many modes*

The WORST Part was:

- *Some bands were just dead.*
- *My failure to properly train up before the event was somewhat also the case with others*
- *Letting the smoke out....LOL (still learned something)....No six meter*
- *Difficulties of people learning new skills.*

Discussion conducted at lunchtime immediately after Field Day with those participants present at that time (11 by my count), and additional comments by GLG added.

	Free-form discussion
1	Considering our limitations, we did well!
2	We were very limited
3	Disappointed he wasn't more properly prepared. JS8 was difficult and PSK missing skills to find phone contacts. Lack of practical control experience. Thanks for PSK cheat sheet/FLDGI ? RTTY -- heard NOTHING (on the bands)
4	WFD site: lots talk about JS8/RTTY - them too... West Coast doing better. One R2 (solar) event this morning.
5	6m a challenge -- more noise than even 10M

6	Use a portable 6m kit? Vertical?
7	Yagi/Tower -- there were only two usable bands overnight
8	JS8 very hard to pick out in long scrolling bar / cumbersome
9	Server broke -- had to be rebooted -- need instructions for that
10	Uniformity of equipment -- big advantage
11	FLDGI mac..dit dit day very helpful
12	Outside people
13	Microwave bench - limited team, needs additional trainees
14	Cat - been in the room -- causes coughing in susceptible
15	Need CONTEST practice
16	interactive ZOOM and on the air -- train
17	Recommend interactive zoom at the EOC
18	Create your own instructions?
19	Hours put into getting ready; discord; survivalist
20	JS8 very involved; lots to it
21	Lots of information and canned text [unreadable] - entered
22	Gordon took a lot of phone calls [in being helpful]
23	"least knowledgeable" person here; wanted to contribute
24	Every meeting costing considerable sum in missing income (many hundreds)
25	Angered by concerns not to scratch screen [referring to summer Field Day]
26	All gung ho and committed
27	feels like pressured with "we've invested in you"
28	wrong band?
29	Raised 2 adopted kids / arranged daughter to care for animals - making contacts! Empowered tin what she wanted to be [unreadable]
30	[getting time system installed] caused delay
31	"used to tackling issues"
32	Felt Gordon didn't like technique, "could not do anything right" - but used to succeeding, survived 2 cancers, late stage, hard core; straight A's So upset [after coaching attempt] could think straight "bruised"

33	Emphasis on letting players continue their plan and find out for themselves how well or poorly it works out; life being short, not interested in things not bringing joy.
34	Need one-on-one time for pre-training.
35	More hands on personal training needed
36	more IT stuff like mentor
37	Need prioritization; small groups that gets the job done; can't do everything; need "how to" documents.
38	BOARD was a big help.
39	Consider adding a "sign in" on board.
40	Visual chart a big help
41	"David's Bench"
42	Consider separate 6m antenna

Many of our crew at their various operating positions.

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 PSK CANNED TEXT (REFERENCE)

	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 CQ 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	$? AGN PSE	(missed callsign to our CQ)
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	$? AGN PSE (missed callsign)		

PSK31/RTTY

Memory	Send (numbering synchronized with other modes)	Comment
RUN CQ	<TX> CQ WFD CQ WFD DE <MYCALL> <MYCALL> CQ WFD <RX>	RUN CQ
ANS	<TX> <CALL> <CALL> DE <MYCALL> 3I 3I NFL NFL <RX>	use to answer person responding to your run CQ
EXCH	<TX> 3I 3I NFL NFL <RX>	in case needed to send exchange again
CRM-QRZ	<TX> QSL QSL TU QRZ WFD <MYCALL> <MYCALL> CQ WFD <RX>	answering an exchange
Pounce	<TX> NF4AC NF4AC <RX>	responding to a run CQ'er
Exchange	<TX> QSL 3I 3I NFL NFL NF4AC <RX>	
LOG CLRL	<LOG> <CLRLOG>	(logs immediately if required fields are entered)