

Exercise Hot & Cold 2020

After-Action Report & Improvement Plan

North Florida Amateur Radio Club
Gainesville Amateur Radio Society
Gainesville, Florida
March 1, 2020



Susan Halbert, KG4VWI sets up while Team Leader Carolyn Tann-Starr checks on progress.

Gordon L. Gibby KX4Z

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DEDICATION

This text is dedicated to all the leaders who made it possible to hold the 2020 Amateur Radio Emergency Communications Conference.





Wow – even a pactor modem! What a portable go-box!!

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Greg Lueck KN4VJL, FLBDR-1 participant

ACKNOWLEDGMENTS

Just like last year, we had a large number of people jump in to help to bring about a new and different Conference on amateur radio emergency communications. In the effort to acknowledge them, I'm certain to miss some (my apologies). The most striking difference was the effort on the part of **traffic operators in Florida, Georgia, Ohio, Michigan and potentially other states** to join in and give practical experience to our fledgling formal traffic operators. I can't say enough for the work that **Matthew Curtin, James Wades, Leland Gallup and others** did well in advance of the conference to work out the plans, and study the propagation. One the day of the Exercise, we had excellent local intrastate coverage provided by the able efforts of **Helen Straughn and John Wells**, handling 80 and 40 meters, as well. Although our volunteers had weak signals and in some cases even more feeble skills, these dedicated traffic operators encouraged them and made messages move! (I have already heard from at least one volunteer who found a new interest in 7 AM morning traffic nets as a result!) I'm hoping this inter-relationship will continue and serve the public well during disasters. **Mickey Baker, new Southeast Division ARRL director and the ARRL staff in Newington, CT** were huge helps in so many ways, listing our conference on national news releases over and over, and assisting us to carry out a truly hands-on EC-001 course as well. **Rick Lindquist** gave us great billing in so many ARRL venues. **Rick Palm** attended again and was a stalwart member of his Unit.

Matthew Curtin came all the way from Ohio to assist our efforts at teaching voice formal traffic handling, and brought **Nick Valentine** with him as well, another very capable HF operator. **The Alachua County Emergency Management group turned out in full force to provide our Evaluator function**, along with another of my mentors, **Dave Welker W2SRP** of Marion County. The teaching, suggestions, and improvements made by **Hal Grieb, Alachua County Emergency Manager**, just can't be over-stated. His goal to assist any volunteer citizen effort that improves emergency preparedness is right on. **Susan Halbert** was, as usual, the most efficient Finance & Accounting Chief one could hope for! **Jim Bledsoe** jumped in to help with the EC-001 instructing and will soon be handling that as chief instructor, and **Jeff Capehart** provided wise guidance on many issues as usual. **Leland Gallup** was everywhere, handling all sorts of details. **Danny Austin, Pastor of Oaks Church and his church leadership gave us the all-crucial VENUE for the Conference** and provided sound and audio visual equipment for both tracks -- without their generosity this would not have been possible.

All these people came together to allow a very unique kind of hands-on training that will hopefully reach out to the larger community of local ham radio groups and spur formal training and exercises in many home groups. **Thank you!**



1 EXERCISE HOT & COLD 2020 OVERVIEW

In all of our Emergency Communications Conferences, there will always be a deployment exercise! Last year our scenario was that of a novel respiratory virus, complicated by a coordinated attack on computer network systems. At least the first part now seems prescient as the world deals with Covid-19. Let's hope that the scenario of our 2020 Exercise doesn't come to fruition!

This text serves multiple purposes. It presents a formal After Action Report/Improvement Plan for the Exercise conducted on March 1, 2020. Information is also included to assist others who might wish to hold a full-scale type deployment exercise, which doesn't have to be large at all, in order to be effective. As much detail as possible about the planning of the Conference and Exercise has been added to assist other people wishing to hold such exercises. In response to a primary flaw discovered in the Exercise (the failure to adequately explain how amateur radio operators can operationally capture traffic from survivors wishing to contact loved ones), in an Appendix, a suggested form and additional information is provided.

Exercise Hot & Cold 2020 was the deployment exercise of the 2020 Florida Amateur Radio Emergency Communications Conference, held at Oaks Church in southwest Gainesville, Florida and sponsored by the North Florida Amateur Radio Club and the Gainesville Amateur Radio Society, on Feb 29 and March 1, 2020. The full ICS-201 for the exercise was made available by email to all the participants Saturday morning Feb 29th. All participants were advised on all check-in sheets of their assignment Unit and a formal explanatory lecture was delivered right before the Exercise by Jeff Capehart. The ICS-205 had been released for weeks prior to the exercise on our web page¹. The ICS-201² served as the primary **participant manual** for the exercise, but there was additionally a formal **Exercise Plan**³ on our web page⁴ and released to the news media in two sequential news releases.

The scenario and exercise were written in standard HSEEP format, with multiple injects using envelopes marked with information as to when they should be opened. Each team, once assembled, elected their Team (or Unit) Leader, who received one initial envelope of instructions.

1 <https://qsl.net/nf4rc/2020Conference/ExerciseICS205.pdf>

2 <https://qsl.net/nf4rc/2020Conference/ICS201.pdf>

3 <https://qsl.net/nf4rc/2020Conference/2020Hot&ColdExercisePlan%28Particpant%29.pdf>

4 <https://www.qsl.net/nf4rc/>

All other injects delivered in written format went to the "Shelter Manager" or other Supervisor, who was appointed for each team. This was to model the expected behavior in deployments, that the amateur radio operators are working under the supervision of NGO, County, State or Federal supervisors and following their directives.

A key point of our exercises is to be certain that the amateur radio operators, in general, are MOVING TRAFFIC handed to them.....not creating messages. We had two variances on that in this exercise:

- Supervisors were amateur radio operators as well and were allowed to function as a member of the team since we had a limited number of participants.
- All participants were instructed to also play the role of a "survivor" and generate a message back to loved ones.....but due to a flaw in the execution of the exercise this didn't play out as well as expected.

Thanks to the Alachua County Emergency Management Department, and also Dave Welker W2SRP, every unit but one had an Evaluator, who simply evaluated their progress, using a clipboard and knowing the full Master Scenario Event List. This was a significant improvement for this year.

The Situation Summary presented in the ICS-201 was as follows:⁵

With extreme cold gripping the USA since Feb 25th, 2020, utilities and the public have been straining the aging high pressure natural gas pipeline system. All across the eastern portion of the nation, emergency shelters have been opened for the homeless and those with inadequate heat, trying to reduce the number of cold-related fatalities.

At approximately 0900 Sunday Mar 1, unusual behavior of valves in the high pressure natural gas pipeline system began in a rhythmic and coordinated fashion in multiple cities and industrial connection points, including the electrical power station connections in many cities, including Gainesville Florida. These valves regulate the flow and pressure, and are controlled by SCADA (supervisory control and data acquisition) embedded computer systems. Waves of pressure irregularities began, growing in amplitude. By 1000 ruptures had occurred in several locations with resulting massive conflagrations. Multiple cities declared emergencies as power systems erupted in fireballs or went offline in preventative actions. **At 1100 a massive fire erupted at an electrical power generation station in northwestern Gainesville, Florida** and a state of emergency was subsequently declared at City and County levels, with massive power outages now sweeping the Southeast and including Gainesville. The Governor has declared a statewide emergency and requested national guard activation and federal assistance under the provisions of the Stafford Act, but so have multiple other governors.

Multiple Incident Commands are addressing the various conflagrations, power losses, and telecommunications issues.

5 In extreme irony, although we modeled a novel respiratory virus just last year, at the time of this Conference and Exercise we were generally not aware of how important Covid-19 was just about to become.

Multiple fire department units are deployed to the massive fire creating a huge plume in northwestern Gainesville. There are now scattered reports of additional structure fires near other transit locations of the high pressure gas line, which crosses I-75 near Archer Road.

Alachua County EOC is at Level I full operation. Multiple emergency shelters have been opened to provide for displaced citizens, and local hospitals are receiving multiple casualties and calling for assistance from facilities in Lake City and Ocala.

Amateur Radio Volunteers:

Alachua county EM has requested the Alachua County ARES(R) EC to immediately dispatch volunteer teams to multiple specific shelter locations (see details below), including an emergency Triage site, fearing further disruption in power and telecommunications. Statewide, multiple NGO's have also been urgently activated and at the request of the Alachua County EM, the Florida Baptist Disaster Relief has directed one or more teams to assist, to provide family notifications for shelter residents and others who are unable to make contact with distant loved ones.

TIMELINE AT THE CONFERENCE

Participants and Evaluators arrived by 1245 on the day of the Exercise and signed into the ICS-211 at the entrance, which also informed them of their assigned Unit.

At 1245 a briefing on the Exercise was conducted by Jeff Capehart, explaining the pre-assigned Shelter Managers, and team assignments. The crowd of approximately 45 amateur radio participants and 6 evaluators broke into teams to select Team Leaders, who could then open the first inject envelope, and begin to caravan to their assigned location. There were 7 assigned deployment locations (not enough participants for Shelter - 2, so it was eliminated), and all locations were listed in the associated Conference Text including directions and photograph. A hand drawn map (to avoid copyright difficulties) was provided to all participants in the Conference Text. (The map is included later in this text.)

EXERCISE OBJECTIVES

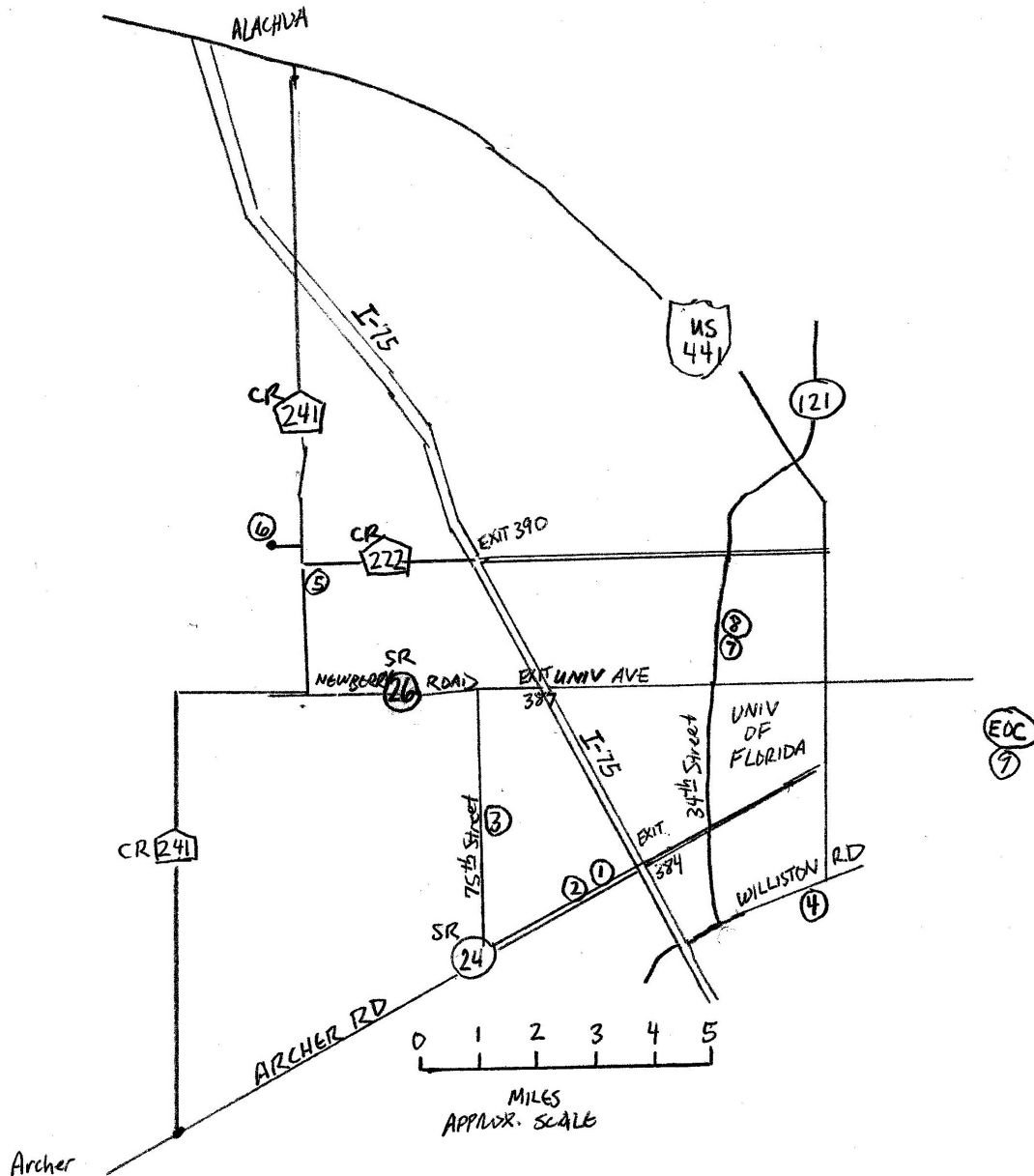
Organizational Capability Target	FEMA Core Capability
SHELTER COMMUNICATIONS (1.1) Deployment: Each team to reach their assigned location without the use of internet-based navigational aids.	MASS CARE SERVICES
(1.2) Join Command Net.. Each deployed team to join (or commence) Command Net within 30 minutes of site arrival [Record time.]	MASS CARE SERVICES

Organizational Capability Target	FEMA Core Capability
(1.3) Alternative Antennas: Each deployed team given a handicap of failed primary antennas, to replace such antenna(s) within 45 minutes. (Option: groups are free to provide secondary antennas.)	MASS CARE SERVICES
(1.4) Emergency Power: Each deployed team to have emergency power supplying both HF and VHF/UHF radios, sufficient for transmission; documented by notice of joining nets	MASS CARE SERVICES
(1.5) Alternative Emergency Power: Each deployed team comprised of 4 or more licensed volunteers, if given a handicap of primary emergency power fail, to come up with a second emergency power within 45 minutes of primary failure.	MASS CARE SERVICES
(1.6) Voice net: Each deployed team to make contact with one or more HF nets per ICS-205 within 45 minutes of arrival to assigned site. [Record time.]	MASS CARE SERVICES
(1.7) WINLINK Connection: Each deployed team to make contact with at least one WINLINK HF gateway within 1 hour of arrival to assigned site. [Record times of first three WINLINK connections]	MASS CARE SERVICES
(1.8) WINLINK Assessment: Each deployed team to determine at least 3 possible WINLINK HF Gateways that are successfully reached within 2 hours of arrival to assigned site. A VHF gateway may be substituted for 1 of the HF gateways.	MASS CARE SERVICES
(1.9) ICS Chain of Command: Any team targeted with an "inject" to ask them to take some un-approved action, to contact their supervisor for clarification.	MASS CARE SERVICES
(1.10) ICS-309 Documentation, Team: Each deployed amateur-radio-based team to turn in a completed ICS-309, upon returning from the deployment, to the "Documentation Unit" (This document may be in separate parts, and some may be submitted by email to FLEXDOCUNIT@WINLINK.ORG as long as < 100kbytes)	MASS CARE SERVICES
(1.11) ICS-214 Documentation, Team: Each deployed team to turn in a group ICS-214 that gives the major events. This may be done "per session" and fill-in-the-blank versions may be provided to make this easier.	MASS CARE SERVICES
(1.12) ICS-214 Documentation, Individual: Each licensed deployed individual to turn in a completed ICS-214, upon returning from the deployment, to the "Documentation Unit"	MASS CARE SERVICES
(1.13) Net Control Procedures, Assumption of Command: Net control stations (whether assigned or ad-hoc) to assume net control within 40 minutes from beginning of exercise for each specified net.	MASS CARE SERVICES
(1.14) Net Control Procedures, Vigilance: Net control stations (whether assigned or ad-hoc) to detect missing or disappeared stations within 30 minutes of loss.	MASS CARE SERVICES
(1.15) Net Control Procedures, Recordkeeping: Net control stations (whether assigned or ad-hoc) to keep written record of net activity sufficient to determine sending and receiving stations of each formal traffic	MASS CARE SERVICES

Organizational Capability Target	FEMA Core Capability
transferred and approximate time of transfer.	
MESSAGE SKILLS (1.16) Radiogram Construction. Where permitted and applicable, every non-FLBDR-related deployed team members to successfully create one or more radiogram messages	MASS CARE SERVICES
(1.17) Voice radiogram transmission: Every team to transmit at least 3 voice radiograms.	MASS CARE SERVICES
(1.18) WINLINK text emails: Every team to transmit at least 1 winlink plain text email.	MASS CARE SERVICES
(1.19) WINLINK FORMS: Every non-FLBDR-related team to transmit at a minimum, the following WINLINK Forms (template) a) Clay County Extended Shelter Report b) SHARES SpotRep2 c) ICS-213 d) RRI-Radiogram	MASS CARE SERVICES
Applies primarily to FLBDR-related teams. However, depending on specific instructions given to each deployed team, may apply to agency-related teams. (2.1) FLBDR Initiation Speed FLBDR-related teams to organize and deploy volunteers to capture family notification messages within 30 minutes of being instructed to do so.	MASS CARE SERVICES
(2.2) FLBDR Parallel Effort: FLBDR-related teams to operate at least 2 data entry stations to input WINLINK messages within 1 hr of being instructed to initiate family notification messages	MASS CARE SERVICES
(2.3) HF Distant Voice Net: FLBDR-related teams to make contact with one or more representatives of receiver nets for family notification messages on HF within 45 minutes of arrival at assigned sites.	MASS CARE SERVICES
(2.4) WINLINK UPLINK: FLBDR-related teams to begin to move family notification traffic by way of WINLINK within 30 minutes of receiving first such messages, by one or more techniques.	MASS CARE SERVICES
(2.5) SPEED OF WINLINK UPLINK: FLBDR-related teams to achieve a throughput of at least 15 messages per hour.	MASS CARE SERVICES
(2.6) Voice Radiogram Throughput: FLBDR-related teams to achieve a throughput of at least 10 messages per hour	MASS CARE SERVICES
(2.7) Documentation: FLBDR-related teams to keep ICS-309 documentation for all family notification messages transferred, suggested one sheet for voice and one sheet for digital.	MASS CARE SERVICES
Provide backup capability to reach outside county and state authorities (3.1) Situational Reports: (all deployed teams) Each deployed team to successfully send at least two situational reports to the simulated Alachua County Emergency Manager within the Exercise time period, by any radio means they wish, maintaining documentation and optionally sending a copy to FLEXDOCUNIT@WINLINK.ORG ("Florida Exercise Documentation	OPERATIONAL COMMUNICATIONS

Organizational Capability Target	FEMA Core Capability
Unit") Suggested, but not required, is the SHARES SPOTREP2 Winlink Template.	
(3.2) SHARES connection: SHARES licensed sites encouraged to try using SHARES for digital emails	OPERATIONAL COMMUNICATIONS
(3.3) TRACKING STATION PRESENCE: Net Control Station of COMMAND NET is expected to maintain a continual awareness of the stations involved in the net and note any disappearances. For this reason, they are expected to perform a "roll call" at least twice each session. [Added Feb 26 2020]	OPERATIONAL COMMUNICATIONS

Map of Deployment Locations





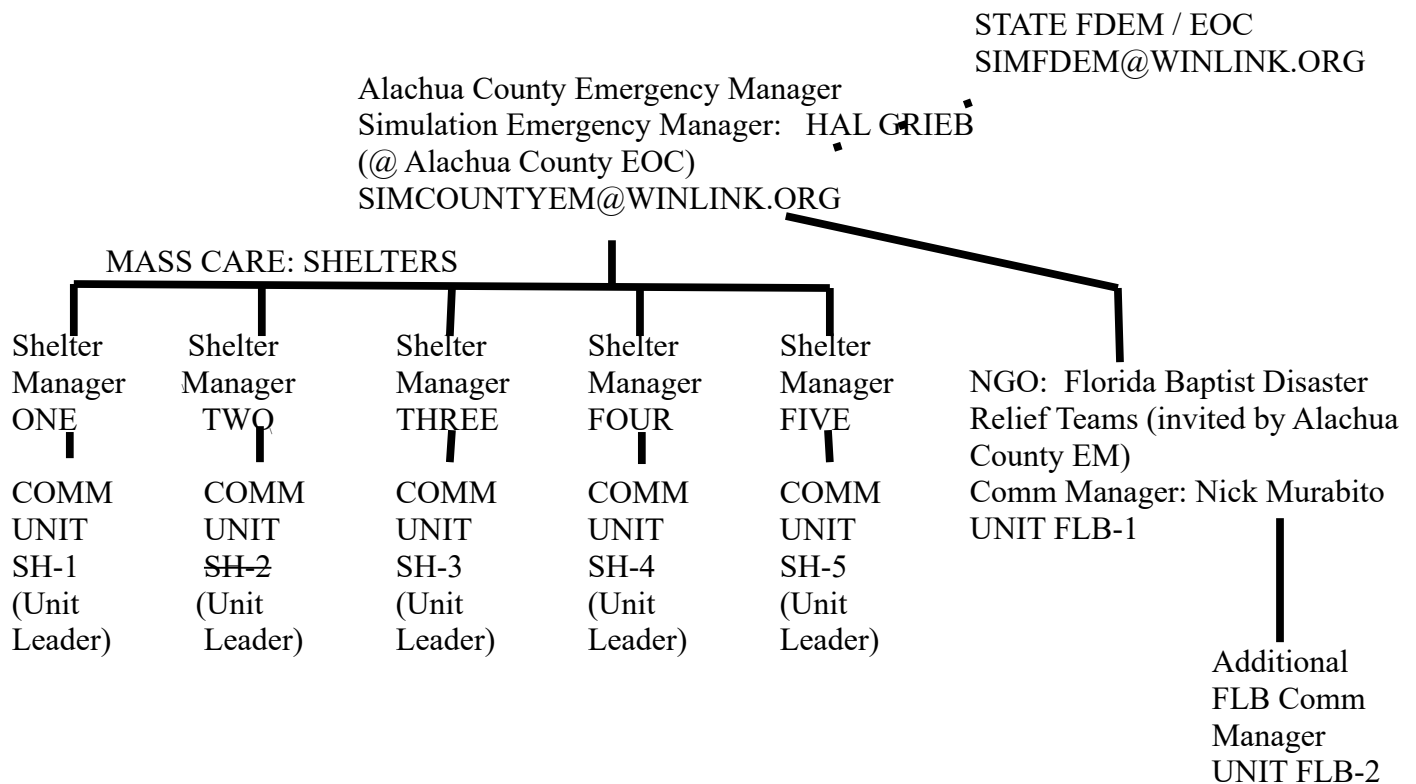
Larry Whited AB4NX from Atlanta.



Shoan Butler KN4TXM, traveled from Georgia to participate!

2 INITIAL TASKS

The hierarchical organization of the Exercise was designed to replicate a County EOC, multiple deployed units at various shelters, and also include 2 units with a focus more specifically on providing outbound communications from displaced survivors wishing to reach loved ones outside the communications disaster area.



Each deployed team included one person playing a dual role including that of a supervisor within the County shelter system. The purpose of this was to model the typical situation that the amateur radio volunteer reports to a County Employee who is managing a shelter. For the teams modeling Florida Baptist Disaster Relief teams, a similar "supervisor" position was created.

All major injects were provided through this supervisory person in the form of injects concealed within closed enveloped until the appropriate session.

Here, for example, are the initial instructions provided to the **Team Leader** (selected by the group) of **SH-1**. Others were similar:

SESSION	Session ONE	
UNIT	UNIT SH-1	
Assigned Location	Veteran's Memorial Park – Find a suitable pavilion or other operating position near the back of the park as much out of the way of other patrons as possible.	
Supervisor		
Mission #	2000	
Assignment	Instruction	Objective
	Follow general instructions in ICS-201.	
	Obtain more specific instructions for each session from your Supervisor	
	As you gain information about other units, you will probably want to fill out the attached ICS-205A.	
Additional Information		

Here are the initial instructions given to the **Shelter Manager** (assigned) for SH-1, to be opened at arrival to the assigned location:

SESSION	Session ONE																	
UNIT	Supervisor for UNIT SH-1 -- An ARES-background unit																	
Assigned Location	Veteran's Park – some suitable spot toward the back of the park, pavilion or suitable.																	
Supervisor	(no change)																	
Mission #	2001																	
Assignment	<p>You are to supervise Unit Two⁶, a team of trained communications volunteers with ARES-type backgrounds. Below are their specific instructions for Session 1: (You can share this with them any way you wish)</p> <table><tr><th>Instruction</th><th>Objective</th></tr><tr><td>Every volunteer must maintain an individual ICS-214.</td><td>1.12</td></tr><tr><td>Team keeps a group ICS-214. A suggested one with relevant entries and blanks is provided with this page.</td><td>1.11</td></tr><tr><td>Team keeps one or more ICS-309's. It may be easier to have one with each radio; they don't need to be combined, just put call sign on each log and turn in at end.</td><td>1.10</td></tr><tr><td>Deploy to the rear portion of the Veteran's Memorial Park at or near the Pavilions. Record time when everyone has arrive. Not allowed to use any electrical power from the site.</td><td>1.1</td></tr><tr><td>Set up emergency power for all of your stations/operations.</td><td>1.4</td></tr><tr><td>As per the ICS-201 general instructions, immediately check into the Command Net – to any subsequent net control station taking command Record time of your check-in on Unit ICS-214</td><td>1.2</td></tr><tr><td>Whomever is first to show up on working Command Net Frequency by default becomes the Net Control Station until someone else assumes that duty. (Check other frequencies to avoid "two" command nets!) If you are Net Control Station, keep a record of stations checking in, their time of check in and # of pending message if any; this information must be passed to any station assuming net control duties.</td><td>1.13</td></tr></table>		Instruction	Objective	Every volunteer must maintain an individual ICS-214.	1.12	Team keeps a group ICS-214. A suggested one with relevant entries and blanks is provided with this page.	1.11	Team keeps one or more ICS-309's. It may be easier to have one with each radio; they don't need to be combined, just put call sign on each log and turn in at end.	1.10	Deploy to the rear portion of the Veteran's Memorial Park at or near the Pavilions. Record time when everyone has arrive. Not allowed to use any electrical power from the site.	1.1	Set up emergency power for all of your stations/operations.	1.4	As per the ICS-201 general instructions, immediately check into the Command Net – to any subsequent net control station taking command Record time of your check-in on Unit ICS-214	1.2	Whomever is first to show up on working Command Net Frequency by default becomes the Net Control Station until someone else assumes that duty. (Check other frequencies to avoid "two" command nets!) If you are Net Control Station, keep a record of stations checking in, their time of check in and # of pending message if any; this information must be passed to any station assuming net control duties.	1.13
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6 Error: should have read Unit SH-1

	Set up multiple HF/VHF stations..	1.2
	Direct your team to attempt to locate at least one of the HF Voice Nets -- if one is found, record information on group ICS-214	
	Notify the Command Net net control station of at least one, and possibly two WINLINK email callsigns that your team will monitor during the exercise.	
	WINLINK GATEWAYS: ASAP determine at least three Winlink gateways you can reach (max 1 can be VHF). Note time of each new success on ICS-214.	1.7 1.8
	File a situation report ("sitrep") during First Session, addressed to the Alachua County EOC (Emergency Manager) Voice may be used, or digital email to SIMALCTY-EM @ WINLINK.ORG. Optionally file copy to FLEXDOCUNIT@WINLINK.ORG. SHARES SPORTREP2 is suggested but not required; voice, report similar items.	3.1
	File a formal shelter status report via the communications team (precedence PRIORITY), to the Alachua County EM, (if by voice) or to SIMALCTY-EM@WINLINK.ORG (if by digital) using either Radiogram or ICS-213 indicating (you will have to compose this for them) that you have 34 single males, 43 single females, 73 members of family units, 3 persons with minor injuries, water pressure is low and dropping, available food stores good for only 24 hours at this occupancy.	
	Direct your team to participate if and when couriers from any Florida Baptist Disaster Related unit arrives to facilitate outbound messages to friends and family.	
Additional Information		

3 EXERCISE INJECTS



Craig Fugate, KK4INZ, at work.

The Master Scenario Event List gives a blow-by-blow listing of all expected events during the entire Exercise. All Evaluators were provided with this document, but it was not released to the Participants. This document is extremely important in the construction of an Exercise, and allows the Exercise Director some chance of keeping track of the various Units and their activities.

Inject No.	Delivery Time	From	To	Means Inject Method	Description	Expected Player Action	Threads
1	1330	ICS-201	ALL UNITS	ICS-201	Deployment Unit FLB-1 -- Oaks Baptist Church South Unit FLB-2 -- Rotary Park at Jonesville Unit SH-1 -- Veterans Memorial Park "Shelter" / Unit SH-2 -- Squirrel Ridge Park "Shelter" (LEAST USABLE LOCATION) Unit SH-3 -- Oaks Baptist Church "northern end" Unit SH-4 -- Pole Barn back of KX4Z Unit SH-5 -- Westside Park "Triage Location" Unit EOC-COMM -- Alachua County EOC --	Deploy	
2	Arrival	Exercise director	All units	envelope "arrival"	All units join command net	Locate and join command net-- stay there!	
3		Exercise Director	All units	envelope "arrival"	All units report winlink address(es)	Report your winlink addresses	
4		Exercise Director	All units	envelope "arrival"	All units except EOC set up emergency power	Set up emergency power	
5		Exercise Director	FLB-1 & FLB-2	envelope "arrival"	Both FLB units create messages to friends and family.	members create formal messages	
6		Exercise Director	FLB-1 & FLB-2	envelope "arrival"	FLB units send couriers to other units except EOC	Send couriers to all other units except EOC	
7		Exercise Director	All units	envelope "arrival"	All units set up HF stations	Set up antennas, with cautions, for HF voice/digital	
8		Exercise Director	All units	envelope "arrival"	All units determine HF gateways reachable	Test for reachable gateways, record.	
9		Exercise Director	All units except	envelope "arrival"	All units except EOC file SitRep to EOC EM (voice or	File SitRep to EOC EM by any	

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Inject No.	Delivery Time	From	To	Means Inject Method	Description	Expected Player Action	Threads
			EOC		winlink)	means	
10		All Units Except EOC	EOC COMM	radio (voice or winlink)	Sit Rep's flowing in	Copy Sitreps by voice and check & capture WINLINK	
11		Exercise Director	EOC-COMM	envelope "arrival"	EOC EM files SitRep with FARPOC	Winlink report to tactical address	
12		Exercise Director	FLB-1 & FLB-2	envelope "arrival"	FLB units begin dispatching couriers to SH Units	FLB units dispatch multiple couriers	
13		Exercise Director	All SH units	envelope "arrival"	Formal shelter report from each SH-x unit	Formal shelter report to EOC-COMM by any means.	
14		All SH-Units	EOC-COMM	radio	receiving formal shelter reports	Copy formal voice reports and capture WINLINK reports	
15		Exercise Director	SH-5	envelope "arrival"	Formal triage report ICS-213 from SH-5	File formal ICS-213 by voice or WINLINK	
16		SH-5	EOC-COMM	radio	Formal ICS-213 Triage Report	Receive report by voice or capture from WINLINK	
17		Exercise Director	EOC-COMM	envelope "arrival"	EOC-COMM tests SARNET	Test SARNET	
18		Exercise Director	All Units	Envelope arrival	Frequent checks on stations are expected by NCS	NCS make at least TWO checks on stations	
19	Session TWO	Exercise Director	All Deployed Units	Command Net	Announce the time has arrived for Session Two to begin.	Supervisors & Shelter Managers open envelopes.	
20	Session TWO	Exercise Director	FLB-1 Superv.	Envelope Session 2	FLB-1 VHF antenna failure	Replace antenna	
21		Exercise Director	SH-1 Sh. Mgr.	Envelope Session 2	SH-1 seizure / emergency tactical request to EOC/EM	Tactical request to EOC COMM	
22		Exercise	SH-1	Envelope	SH-1 30 minute transceiver	Disappear for 30	

Inject No.	Delivery Time	From	To	Means Inject Method	Description	Expected Player Action	Threads
		Director	Sh. Mgr	Session 2	failure	minutes	
23		Exercise Director	SH-2 Sh. Mgr.	Envelope Session 2	SH-2 water pressure failure, formal req -->EM	File formal request to EOC-COMM	
24		Exercise Director	SH-2 Sh Mgr	Envelope Session 2	SH-2 30 minute transceiver failure	NCS hunts for station	
25		Exercise Director	SH-3 Sh Mgr	Envelope Session 2	SH-3 observes new plume of smoke.	Report to EOC COMM	
26		Exercise Director	SH-3 Sh Mgr	Envelope Session 2	SH-3 formal precise report of fire	Formal Report	
27		Exercise Director	SH-3 Sh Mgr	Envelope Session 2	SH-3 tests receiving settings for IR-1	Program Radio (do not transmit)	
28		Exercise Director	SH-4 Sh Mgr	Envelope Session 2	SH-4 "expects" request from EOC-EM	Await request	
29		EOC-COMM	SH-4	Radio or email	SH-4 receives request to send VHF email to N5CBP-10	Send VHF email to N5CBP-10	
30		Exercise Director	SH-5 Sh Mgr	Envelope Session 2	SH-5 voice report of new smoke plume	Make report	
31		Exercise Director	SH-5 Sh Mgr	Envelope Session 2	SH-5 power fails	Replace power	
32		Exercise Director	EOC EM	Envelope Session 2	EOC-COMM sends formal request to SH-4 to forward to N5CBP-10	SH-4 to forward	
33		SH-5	EOC-COMM	Radio	Report of new smoke plume	Receive report, acknowledge	
34		SH-3	EOC-COMM	Radio	Tactical report of fire	Copy & acknowledge report	
35		SH-3	EOC-COMM	Radio	Formal fire report	Copy formal fire report	
36		SH-1	EOC-COMM	Radio	Seizure report	Receive, indicate help is on the way.	
37		SH-2	EOC-COMM	Radio	Water pressure issue	Receive, respond	
38		SH-1	NCS	Absence of Radio	SH-1 disappears for 30 minutes	NCS detects this and makes alternative efforts to locate	
39		Exercise Director	All teams except EOC	Envelope Session 2	ALL teams send out formal sitreps to EOC-EM	Send out SITREP by voice or winlink	

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Inject No.	Delivery Time	From	To	Means Inject Method	Description	Expected Player Action	Threads
40		Exercise Director	All teams	Envelope Session 2	All teams check winlink mail	All teams check winlink email	
41		All Teams	EOC-COMM	Radio (voice or winlink)	Formal Sitreps	EOC-COMM capture all Sitreps. EM notice if any are missing.	
42			NCS	(previous)	Frequent checks on stations	NCS expected to make at least TWO checks on stations	
43	Session 3	Exercise Director	All teams	RADIO	Announce the arrival of SESSION THREE	Supervisors and Shelter managers open envelopes	
44	Session THREE	Exercise Director	FLB-1	Envelope Session 3	FLB-1 primary power source fails	Replace power	
45		Exercise Director	FLB-2	Envelope Session 3	FLB-2 primary power source fails	Replace power	
46		Exercise Director	SH-1	Envelope Session 3	SH-1 begins moving survivor messages	Begin moving survivor messages by voice or digital	
47		Exercise Director	SH-2	Envelope Session 3	SH-2 begins moving survivor messages	Begin moving survivor message by voice or digital	
49		Exercise Director	SH-3	Envelope Session 3	SH-3 begins moving survivor messages	Begin moving survivor messages by voice or digital	
49		Exercise Director	SH-3	Envelope Session 3	SH-4 begins moving survivor messages	Begin moving survivor messages by voice or digital	
50		Exercise director	SH-5	Envelope Session 3	SH-5 receives courier message from Levy County addressed to EM	Forward to EM	
51		Any SH unit	NCS	Radio	Potential request for help on best way to forward messages	Note if someone asks for advice.	
52		NCS	All SH-Units	Radio	Provide information on best practices to send out survivor	Note if spontaneous	

Inject No.	Deliv- ery Time	From	To	Means Inject Method	Description	Expected Player Action	Threads
					messages	assistance	
53		SH-5	EOC-COMM	Radio	Forwarded message from levy County	Receive forwarded message	
54			NCS	(previous)	NCS to make frequent checks on stations	NCS makes at least TWO checks on stations	

4 RESULTS

SAFETY

The Exercise was carried out without any known injuries or serious events.

HOTWASH EVALUATION

Having learned from last year's overly-hurried Hotwash, significant time was allotted for input from participants in a session expertly moderated by C. Matthew Curtin KD8TTE. *Choosing a different person to conduct the Hotwash from the Exercise Director turned out to be very useful.*

WRITTEN PARTICIPANT EVALUATIONS

	Way too difficult	Difficult	Perfect	Easy	Way too Easy
2020	0	8 50%	5 31%	3 19%	0
Previous Exercise 2019		32%	57%	11%	

Most Difficult

- Documentation
- HF working, winlink on HF
- Establishing HF voice/winlink problematic until after 1500
- Unclear on some procedures
- Setup
- Learning to move packet traffic
- Getting EFHW antenna to work
- Understanding some of the instructions
- "The Field Exercise"
- Getting HF antenna erected, winlink was backed up for much of time
- Had new antenna that was difficult to setup and raised a safety issue
- So much traffic on frequency had to wait in line
- Awareness of communications received on headphones
- Getting winlink working
- Children tried to play around the two HF antennas that were deployed
- program HT on the fly

Easiest

- Setting up
- set up and take down
- vhf packet by far
- radio communications on vhf/uhf and hf
- setting up radio equipment
- injects were well written and appropriately
- group relationships
- checking into command net
- lunch
- getting on HF

Best features

- testing equipment, learning how to complete forms
- having 205 ahead of time
- Sunday – antennas and power
- establishing effect task organizational teams with HF op, VHF op, scribe. Having scribe is critical
- finding out what things I need to improve
- deployment
- working with] operators
- learning that more/better training is needed to respond quicker to changes/understand what's expected
- see all will work
- finally we passed H&W messages
- real propagation issues to work around
- listening to Matt on HF
- providing all the forms needed for documentation! [Ed.: each team received a baggie FULL of forms]
- great mentoring on tech aspects
- very challenging – so performed beyond own expectations
- Learning Weak Points
- seeing guys that hadn't done exercise before and doing well-being
- Sep. classes for EC and leadership roles. Instructors made it easy to understand

Wished I had done

- “Read every twice” [sic]
- Understand forms better in winlink
- brushed up on winlink & local frequencies
- Test my equipment before leaving home. Works in the shack but did not all come together in the field.
- Digital modes
- Practice some packet
- a) 12/24V E-pwr for radio equipment/laptop
- b) 80m/40m/20m antennas for NVIS → 800 miles
- c) Practice voice scripts before exercise with FLB-1 team
- Packed about 500 lbs of equipment that I didn't get to use any of it!
- More winlink options for different radios/freq
- Prior preparation, develop more comprehensive checklist
- Should have brought a tool bag.
- More prep on HF/WINMOR
- Control of paperwork

Exercise Hot & Cold 2020

- All gear was OK
- Read more of the Text.

Satisfaction

	Very Poor	Poor	Neutral	Good	Very Good
2020 Hot & Cold		1 6%	2 12%	4 24%	10 59%
Last Year 2019 Exercise			11%	40%	50%

Suggestions for Next Time

- Explain forms and samples created in class
- Better communication on paperwork required
- Longer time to execute
- Provide the envelopes to each team supervisor and leader 3-days before exercise to review with team.
- Pick areas without a lot of civilians in area – only open area @ SH5 was next to playground
- Superb job in developing exercise
- better spell check on docs
- Next time add in some rogue/community operators to check in on 82, with specific reports...
- Clearer Instructions – no messages from FLBDR. Hold exercise later in the year.
- Publish text again, that was helpful.

See later chapter for analysis of each Objective

TRAFFIC PASSED

(self-report, not checked; includes both formal and informal traffic)

UNIT	VHF		HF	
	Voice	WINLINK	VOICE	WINLINK
FLB-1	4	0	0	3
FLB-2	4	2	2	3
SH-1	?	1	3	4
SH-3	7(tactical)	0	1 (tactical)	4
SH-4	2	0	1	0
SH-5	5	0	0	6
EOC	13	3	?	2
TOTALS	28	6	7	22
Grand Total	63			

For comparison, here were the reported results from the 2019 Exercise:

2019 TRAFFIC COUNTS	INFORMAL	FORMAL	
VOICE	18	12*	Total Voice 30
DIGITAL	0	48	Total Digital 48
Total	18 Informal	60 Formal	78 Grand Total

COMMUNICATIONS LOG		TASK # Exercise Director WINLINK ICS-309	DATE PREPARED: 2020-03-17 TIME PREPARED: 08:06
OPERATIONAL PERIOD # Mar 1 – All incoming exercise period msgs		TASK NAME: 2020 Hot and Cold	
RADIO OPERATOR NAME: Gordon Gibby			STATION ID: KX4Z
LOG			
TIME	FROM	TO	SUBJECT
2020-03-01 14:10	W9TAX	SIMALCTY-EM	Test Exercise Message
2020-03-01 14:20	W9TAX	SIMALCTY-EM	213-Exercise 2020 Hot and Cold-Check in - 2020-03-01 14:14
2020-03-01 14:28	K4BJS	SIMALCTY-EM	Exercise shelter 5 test Exercise
2020-03-01 14:28	K4BJS	COLCTY	Exercise shelter 5 test Exercise
2020-03-01 14:44	NF4AC	FLEXDOCUNIT	Eoc report
2020-03-01 14:47	AB4NX	KX4Z	213-Florida Emergency Conference E-We are up and running with all modes and all
2020-03-01 14:50	KG4VWI	SIMALCTY-EM	EXERCISE FLB 2 TEST MESSAGE
2020-03-01 14:50	KG4VWI	KX4Z	EXERCISE FLB 2 TEST MESSAGE
2020-03-01 14:53	NF4AC	FARPOC	sitrep report
2020-03-01 15:08	K4BJS	SIMALCTY-EM	//WL2K P/ SPOTREP 012002Z MAR 2020
2020-03-01 15:08	K4BJS	COLCTY	//WL2K P/ SPOTREP 012002Z MAR 2020
2020-03-01 15:15	KG4VWI	SIMALCTY-EM	exercise sitrep
2020-03-01 15:15	KG4VWI	KX4Z	exercise sitrep
2020-03-01 15:21	W9TAX	SIMALCTY-EM	QTC 1 P GAINESVILLE FL 32669
2020-03-01 15:21	W9TAX	FLEXDOCUNIT	QTC 1 P GAINESVILLE FL 32669
2020-03-01 15:31	KG4VWI	SIMALCTY-EM	EXERCISE
2020-03-01 15:31	KG4VWI	KX4Z	EXERCISE
2020-03-01 15:39	W9TAX	SIMALCTY-EM	TEST MESSAGE BUILDING ON FIRE
2020-03-01 15:39	NF4AC	FLEXDOCUNIT	213-HotCold-ICS 213 Test Send - 2020-03-01 15:36
2020-03-01 15:51	KG4VWI	SIMALCTY-EM	213-hot and cold-sitrep - 2020-03-01 15:45
2020-03-01 15:51	KG4VWI	KX4Z	213-hot and cold-sitrep - 2020-03-01 15:45

Figure: Incoming messages to KX4Z and all proxy'd tactical call signs during the exercise.

TABLE: Formal Reports to WINLINK PROXIES by UNIT				
TIME	Sending Station	Send-ING Unit	Address to	Comment; Related to Objective
SHELTER 1				
1447	AB4NX	SH-1	KX4Z	ICS-213 Status Report indicating SH-1 up and running on generator power. Serves for Objectives 1.7 (Confirmation of WINLINK gateways) and 3.1 (Status Report)
SHELTER 3				
1410	W9TAX	SH-3	SIMALCTY-EM	A short test message; serves for Objectives 1.7, 1.8 (confirmation of WINLINK gateways)
1420	W9TAX	SH-3	SIMALCTY-EM	ICS-213 Status Report from SH-3; Objective 3.1 (Shelter Status reports)
1521	W9TAX	SH-3	SIMALCTY-EM cc: FLEXDOCU NIT	Formal radiogram typed out with Inject Message from Session 1 INJECT (directing Shelter Manager to compose formal pre-canned message status report of medical conditions) Objective 3.1
1539	W9TAX	SH-3	SIMALCTY-EM	Formal radiogram typed out with Inject Message related to new fire, providing precise GPS Coordinates. (Great job!) Objective 3.1 This team sent THREE status reports by digital.
SHELTER 4				
No messages received to proxies or Exercise Director.				
SHELTER 5				
1428	K4BJS	SH-5	SIMALCTY-EM	A short test message; serves for Objectives 1.7, 1.8 (confirmation of WINLINK gateways)
1508	K4BJS	SH-3	SIMALCTY-EM	Formal WINLINK Form Status Report; serves Objective 3.1 (Status report) This team sent 1 status report.
EOC				
1444	NF4AC	EOC	FLEXDOCU NIT	Notification EOC is online; serves for Objective 1.7 (confirmation of WINLINK gateways) and 3.1 (Status report)
1453	NF4AC	EOC	FARPOC	Simple text indicating EOC is online; serves for Objective 1.8 (confirmation of WINLINK Gateways) and 3.1 (Status Report) -- apparently they wanted to repeat the report to FARPOC

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1539	NF4AAC	EOC	FLEXDOCU NIT	ICS-213 simple test message -- Objective 1.19 (Multiple types of forms) This team sent 2 status reports.
FLB-1				
No messages received to proxies or Exercise Director.				
FLB-2				
1450	KG4VWI	FLB-2	SIMALCTY- EM	Simple test message. Serves Objectives 1.7, 1.8 (Confirmation of WINLINK gateways)
1515	KG4VWI	FLB-2	SIMALCTY- EM	Status Sitrep Report - indicates equipment working well, but "dodging basketballs" at location. Serves Objective 3.1 (Status Report)
1531	KG4VWI	FLB-2	SIMALCTY- EM	Simple Test Message VHF packet; services Objective 1.8
1551	KG4VWI	FLB-2	SIMALCTY- EM	Formal ICS-213 status report documenting new fire situation. Objective 3.1 (Status Report) This team sent 2 status reports.

5 EXERCISE CATEGORIZATION

Exercise Name	2020 Hot & Cold Exercise
Exercise Dates	03/01/20
Scope	This exercise is a deployment, full scale exercise, planned for 3 hours throughout multiple locations in Alachua County. Exercise play is limited to volunteers participating in the 2020 Florida Amateur Radio Emergency Communications Conference, and additional interested amateur radio volunteers throughout America.
Mission Area(s)	Response
Core Capabilities	MASS CARE SERVICES OPERATIONAL COMMUNICATIONS

Exercise Name	2020 Hot & Cold Exercise
Objectives	<ul style="list-style-type: none"> 1.1 Deployment 1.2 Join Command Net 1.3 Alternative Antennas 1.4 Emergency Power 1.5 Alternative Emergency Power 1.6. Voice Net 1.7 Winlink connection 1.8 Winlink Assessment 1.9. ICS Chain of Command 1.10 ICS-309 Documentation Team 1.11 ICS-214 Documentation, Team 1.12 ICS-214 Documentation, Individual 1.13 Net Control Procedures, Assumption of Command 1.14 Net Control Procedures, Vigilance 1.15 Net Control Procures Recordkeeping 1.16. Radiogram Construction 1.17 Voice Radiogram Transmission 1.18 WINLINK text emails 1.19 Winlink Forms 2.1 FLBDR Initiation Speed 2.2 FLBDR Parallel Effort 2.3 HF Distant Voice net 2.4 Winlink Up link 2.5 Speed of Winlink Up link 2.6. Voice Radiogram Throughput 2.7 Documentation 3.1 Situational Reports 3.2 SHARES connection
Threat or Hazard	Infrastructure failure, multiple types, leading to communications failures and risk to population.

Exercise Name	2020 Hot & Cold Exercise
Scenario	Sudden widespread onset of high pressure natural gas pipeline valves leads to ruptures and multiple conflagrations, loss of electrical power during an extreme cold weather event; telecommunications failures in undersea cables then develop with widespread communications overloading and failure.
Sponsor	Alachua County ARES(R) North Florida Amateur Radio Club (NFARC) Gainesville Amateur Radio Society (GARS)
Participating Organizations	Alachua County Emergency Management Radio Relay International
Point of Contact	Gordon L. Gibby MD, KX4Z, NCS521 docvacuumtubes@gmail.com



Team 1 furious digital entry. What a wonderful little deployment computer setup!

6 ANALYSIS OF CORE CAPABILITIES

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.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
SHELTER COMMUNICATIONS (1.1) Deployment: Each team to reach their assigned location without the use of internet-based navigational aids.	MASS CARE SERVICES	P			
(1.2) Join Command Net.. Each deployed team to join (or commence) Command Net within 30 minutes of site arrival [Record time.]	MASS CARE SERVICES	P			
(1.3) Alternative Antennas: Each deployed team given a handicap of failed primary antennas, to replace such antenna(s) within 45 minutes. (Option: groups are free to provide secondary antennas.)	MASS CARE SERVICES	P			
(1.4) Emergency Power: Each deployed team to have emergency power supplying both HF and VHF/UHF radios, sufficient for transmission; documented by notice of joining nets	MASS CARE SERVICES	P			

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
(1.5) Alternative Emergency Power: Each deployed team comprised of 4 or more licensed volunteers, if given a handicap of primary emergency power fail, to come up with a second emergency power within 45 minutes of primary failure.	MASS CARE SERVICES	P			
(1.6) Voice net: Each deployed team to make contact with one or more HF nets per ICS-205 within 45 minutes of arrival to assigned site. [Record time.]	MASS CARE SERVICES		S (3P 2S 2U)		
(1.7) WINLINK Connection: Each deployed team to make contact with at least one WINLINK HF gateway within 1 hour of arrival to assigned site. [Record times of first three WINLINK connections]	MASS CARE SERVICES			M (3P 1S 3U)	
(1.8) WINLINK Assessment: Each deployed team to determine at least 3 possible WINLINK HF Gateways that are successfully reached within 2 hours of arrival to assigned site. A VHF gateway may be substituted for 1 of the HF gateways.	MASS CARE SERVICES			M (3P 3U)	
(1.9) ICS Chain of Command: Any team targeted with an "inject" to ask them to take some un-approved action, to contact their supervisor for clarification.	MASS CARE SERVICES	(not tested well)			

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
(1.10) ICS-309 Documentation, Team: Each deployed amateur-radio-based team to turn in a completed ICS-309, upon returning from the deployment, to the "Documentation Unit" (This document may be in separate parts, and some may be submitted by email to FLEXDOCUNIT@WINLINK.ORG as long as < 100kbytes)	MASS CARE SERVICES		S (5P, 2U)		
(1.11) ICS-214 Documentation, Team: Each deployed team to turn in a group ICS-214 that gives the major events. This may be done "per session" and fill-in-the-blank versions may be provided to make this easier.	MASS CARE SERVICES	P			
(1.12) ICS-214 Documentation, Individual: Each licensed deployed individual to turn in a completed ICS-214, upon returning from the deployment, to the "Documentation Unit"	MASS CARE SERVICES	P			
(1.13) Net Control Procedures, Assumption of Command: Net control stations (whether assigned or ad-hoc) to assume net control within 40 minutes from beginning of exercise for each specified net.	MASS CARE SERVICES	P			
(1.14) Net Control Procedures, Vigilance: Net control stations (whether assigned or ad-hoc) to detect missing or disappeared stations within 30 minutes of loss.	MASS CARE SERVICES	P			

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
(1.15) Net Control Procedures, Recordkeeping: Net control stations (whether assigned or ad-hoc) to keep written record of net activity sufficient to determine sending and receiving stations of each formal traffic transferred and approximate time of transfer.	MASS CARE SERVICES	P			
MESSAGE SKILLS (1.16) Radiogram Construction. Where permitted and applicable, every non-FLBDR-related deployed team members to successfully create one or more radiogram messages	MASS CARE SERVICES		S		
(1.17) Voice radiogram transmission: Every team to transmit at least 3 voice radiograms.	MASS CARE SERVICES	P (6P 1S)			
(1.18) WINLINK text emails: Every team to transmit at least 1 winlink plain text email.	MASS CARE SERVICES		S (6P, 1U)		
(1.19) WINLINK FORMS: Every non-FLBDR-related team to transmit at a minimum, the following WINLINK Forms (template) a) Clay County Extended Shelter Report b) SHARES SpotRep2 c) ICS-213 d) RRI-Radiogram	MASS CARE SERVICES	(not tested well)			

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Applies primarily to FLBDR-related teams. However, depending on specific instructions given to each deployed team, may apply to agency-related teams. (2.1) FLBDR Initiation Speed FLBDR-related teams to organize and deploy volunteers to capture family notification messages within 30 minutes of being instructed to do so.	MASS CARE SERVICES				U
(2.2) FLBDR Parallel Effort: FLBDR-related teams to operate at least 2 data entry stations to input WINLINK messages within 1 hr of being instructed to initiate family notification messages	MASS CARE SERVICES				U
(2.3) HF Distant Voice Net: FLBDR-related teams to make contact with one or more representatives of receiver nets for family notification messages on HF within 45 minutes of arrival at assigned sites.	MASS CARE SERVICES			M (1 P, 1 U)	
(2.4) WINLINK UPLINK: FLBDR-related teams to begin to move family notification traffic by way of WINLINK within 30 minutes of receiving first such messages, by one or more techniques.	MASS CARE SERVICES				U
(2.5) SPEED OF WINLINK UPLINK: FLBDR-related teams to achieve a throughput of at least 15 messages per hour.	MASS CARE SERVICES				U
(2.6) Voice Radiogram Throughput: FLBDR-related teams to achieve a throughput of at least 10 messages per hour	MASS CARE SERVICES				U

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
(2.7) Documentation: FLBDR-related teams to keep ICS-309 documentation for all family notification messages transferred, suggested one sheet for voice and one sheet for digital.	MASS CARE SERVICES				U
Provide backup capability to reach outside county and state authorities (3.1) Situational Reports: (all deployed teams) Each deployed team to successfully send at least two situational reports to the simulated Alachua County Emergency Manager within the Exercise time period, by any radio means they wish, maintaining documentation and optionally sending a copy to FLEXDOCUNIT@WINLINK.ORG ("Florida Exercise Documentation Unit") Suggested, but not required, is the SHARES SPOTREP2 Winlink Template.	OPERATIONAL COMMUNICATIONS				U (3P, 3U)
(3.2) SHARES connection: SHARES licensed sites encouraged to try using SHARES for digital emails	OPERATIONAL COMMUNICATIONS	(not we explained)			U
(3.3) TRACKING STATION PRESENCE: Net Control Station of COMMAND NET is expected to maintain a continual awareness of the stations involved in the net and note any disappearances. For this reason, they are expected to perform a "roll call" at least twice each session. [Added Feb 26 2020]	OPERATIONAL COMMUNICATIONS	P			

Table 1. Summary of Core Capability Performance

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).

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement.

Objective 1.1: Deployment. Each team to reach their assigned location without the use of internet-based navigational aids.(P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Previous experience of many of the participants with similar exercises and innate familiarity of older participants with paper maps.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: Teams followed the paper map presented in the Text without difficulty and utilized 2 meter FM frequencies for coordination.

Objective 1.2 : Join Command Net. (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: The majority of our participants had significant experience with voice command nets and readily adapted to the objective to maintain communications with the Command Net.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: When there are messages to be moved, avoid moving them on net frequency, and avoid relaying for two stations who are both on the same repeater frequency and therefore can hear each other.

Reference:

Analysis: A bit of prodding encouraged the first station on frequency to take up the task of net control. More experience with running busy traffic nets would be advisable for potential communications volunteers

Objective 1.3 : Alternative Antennas (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Many participants in our Exercise have been involved previously and thus have made improvements in their antenna situation. Some have experience from event or incident deployments.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Better HF Antennas.

Our Michigan participating stations as well as stations in Florida noted that the signals from our deployed stations on HF were weak in comparison to other stations in the same geographical area. This suggests that improved antennas and/or improved transmitter power, reduced loss feedlines, are needed. Vertical antennas are easy to deploy, but have poor NVIS utility. Short-for-frequency antennas have reduced radiation resistance leading to very poor efficiency. Teams might wish to develop a variety of antennas, some with low angle radiation (vertical) One team reported that they installed their quick-setup antenna first -- but had a weak signal reported, then switched to a more capable (but slower to install) antenna and had an improved signal reported.

Reference: <https://www.qsl.net/w5vv/AntennaEfficiency.pdf>

Analysis: Potentially due to a lack of emphasis on long distance HF communications out of disaster areas, by local ARES(R) teams, many local groups have reduced expertise with HF antennas. Emphasis on these capabilities (while not neglecting short-range VHF/UHF capabilities) may improve the response effort.

Objective 1.4 : Emergency Power (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Florida and nearby participants have significant experience with power outages, in ordinary life as well as in our previous exercises.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: It was my impression, confirmed in hotwash and other discussions, that we saw a significant improvement in communication assets this year -- better setups of emergency stations, with chairs, tables, antennas, built-for-portable stations, and extensive alternative power capabilities. The situation appears to be improving.

Objective 1.5 : Alternative Emergency Power (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful. capability level can be attributed to the following strengths:

Strength 1: Multiple alternative power opportunities present in teams.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: See previous discussion.

Objective 1.6 : Voice Net [HF] (S; 3P, 2S, 2U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Multiple participants had significant expertise at HF voice net communications.

Strength 2: We had extensive out of town support from Florida Phone Traffic Net participants, NFL Section Traffic Manager, Central Ohio Traffic Net, and extensive organization and support by Radio Relay International, with multiple planning conferences, and suggested frequencies as well.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Improved Antennas (see previous discussion)

Area for Improvement 2: Improved transmitter power.

Area for Improvement 3: ALE techniques might make connections easier to create and allow short messaging to establish nets.

Reference: <http://hfink.com/>

Analysis: Voice HF communications to a specific location are difficult due to the constantly changing ionospheric D, E, F1 F2 layers. Single Sideband, while an improvement over AM has significant weaknesses in terms of communications success versus the latest digital techniques such as JS8, FT8, which enjoy double-digit dB advantages. A combination of improved antennas, better understanding of ionospheric properties, better transmitters, and potentially larger use of digital techniques (even including digital voice) may create more successful long distance communications.

Objective 1.7 : WINLINK Connection (M; 3P, 1S, 3 U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths The partial capability level can be attributed to the following strengths:

Strength 1: Previous experience in our Conferences and Exercises.

Strength 2: The influence of the Florida WINLINK training net on Mondays. This 24-hour "check in" net has upwards of 50 participants and >150 messages moved on a typical Monday.

Strength 3: The training and hands-on 2-hour lab during the Conference.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Packet Training. Our emphasis on AX.25 VHF was merely perfunctory during this Conference. While packet is typically a short-range tool, it is still a useful skill and in prior decades the knowledge was widespread. One participant suggested far more training was needed in this area to assure success at VHF connections.

Area for Improvement 2: WINLINK accounts. Amazingly, even after the conference a check demonstrated three participants who still did not have a valid WINLINK authorization.

Reference: <https://winlink.org/>

<https://qsl.net/nf4rc/2020/VHFGateways.jpg>

Introduction to packet radio: <http://www.choisser.com/packet/>

Analysis: Digital radio email skills are slowly growing in the emergency communications amateur radio population. During Hurricane Michael, Florida net control stations frequently had no familiarity with WINLINK and this were limited in reaching some teams. All involved including leadership should be encouraged to round out their "toolbox."

Objective 1.8 : WINLINK Assessment (M; 3P, 3U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Existing HF and VHF winlink skills

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Ability to operate both VHF and HF Winlink or other digital techniques

Area for Improvement 2: Electronic control (CAT) of transceiver frequency makes a huge improvement in the ability to test multiple HF gateways for connections quickly. For newer digital radios, this requires only a USB cable; for older radios it can require an inexpensive USB adapter cable (ICOM) or other adapter.

Reference:

Analysis: For deployed radio operators in a communications disaster, it is important to have multiple techniques at hand to suit the different needs or conditions. Finding more than one WINLINK Gateway for different time periods is an early task that should be accomplished. Some of our operators succeeded at this, others failed. Just recognizing the tactical importance is an improvement in their training.

Objective 1.9 : ICS Chain of Command (Not well tested)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1:

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: The Exercise, as written, did not test this Objective sufficiently, and therefore it isn't being analyzed further. We did, however, note that some participants were confused at times by instructions and a better response would be to ask for clarification from other teams or supervisors.

Reference:

Analysis:

Objective 1.10 : ICS-309 Documentation, Team (S; 5P, 2U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Previous experience with ICS-309.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Few if any teams realized that ICS-309 could be created using the auto function of WINLINK and printed out (if a printer were available) or emailed in.

Reference:

Analysis: It is particularly noteworthy that the volunteer Net Control Station took such care to create a nice ICS-309 written record of communications during the entire Command Net.

Objective 1. 11: ICS-214 Documentation, Team (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Previous experience with ICS-214

Strength 1: Significant emphasis on completing the ICS-214 during this Conference.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: This skill is becoming widespread in the volunteer amateur radio deployment community.

Objective 1.12 : ICS Documentation, Individual (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

The successful capability level can be attributed to the following strengths:

Strength 1: Previous experience with ICS-214

Strength 1: Significant emphasis on completing the ICS-214 during this Conference.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: This skill is becoming widespread in the volunteer amateur radio deployment community.

Objective 1.13 : Net Control Procedures, Assumption of Command (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Experience in local ARES(R) nets.

Strength 2: Explicit training provided in our local EC-001 and at the Conference

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Be able to hand off the net control duties to more experienced operators when available.

Reference:

Analysis: The volunteer station who assumed NCS duties was courageous in taking on leadership despite unfamiliarity with some formal traffic techniques. This is the kind of spirit that makes successes in emergencies. Improved skills can be added on when appropriate -- getting the job done any way one knows at the moment is the goal.

Objective 1. 14: Net Control Procedures, Vigilance (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Net control carried out frequent "roll calls"

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: When a station "goes missing" consider assigning others duties to go "hunt" for that station. In this case, multiple possible methods were available to find missing stations, including WINLINK email, SARNET queries, HF connections.

Reference:

Analysis:

Objective 1.15 : Net Control Procedures, Recordkeeping (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The successful capability level can be attributed to the following strengths:

Strength 1: Excellent records were kept possibly as a result of training provided at the Conference.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis:

Objective 1.16: Radiogram Construction (S)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Extensive training provided during this Conference.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Continue the training.

Reference:

Analysis: Team practice creating and sending radiograms from prepared text can be a lot of fun at ham club meetings!

Objective 1.17 : Voice Radiogram Transmission (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: EC001 preparatory course had participants constructing, transmitting and receiving multiple voice radiograms.

Strength 2: The main conference continued with more training on radiograms and traffic nets.

Strength 3: Some participants had previous expertise from previous conferences or other experience in traffic procedures.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis:

SH-1 3 HF P

SH-3: none reported, none in documentation (only tactical messages sent) U

SH-4: 2 VHF 1 HF reported P

SH-5: 5 VHF voice reported P

FLB-1: 4 VHF reported P

FLB-2: 6 total reported

EOC: Although 13 were reported, found documentation for only 2 in hard copy.

- this agrees with note on page2 of KD8TTE 214 S

There were a lot of informal tactical messages received by the EOC operator that might have been better transmitted as formal radiograms. However, in general, most teams moved formal radiograms as encouraged by this Objective. Formal radiogram transmission is infrequently practiced in many ARES(R) groups. Yet this has been one of the most popular training events in our Alachua County group -- by having "spiked" messages with intentional errors and "gotchas" (homonyms and difficult words to transmit) and using a fast-paced voice net training with

hand held units and multiple frequencies. Breaking the participants into teams of 2-3 each allows for a lot of camaraderie-training and is one of the most-requested training items in our group. We repeat this every 3-4 months. See: <https://qsl.net/nf4rc/2019/NetControlPractice.pdf>

Having the assistance of so many trained traffic personnel, from Ohio, Michigan, and the Florida Phone Traffic net, and others in Florida, made a huge difference here. This allowed ARES(R) participants good contact with persons in the National Traffic System and/or Radio Relay International, and has already led to a handful of new participants in local traffic nets.

Objective 1.18 : WINLINK Test Emails (S; 6P,1U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: The hands-on real practice in the Conference probably made the biggest difference here. We had a real HF gateway set up on site (using a light-bulb dummy load) and two VHF winlink gateways. Participants could actually test their connection ability and see in real time improvements.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: We did not provide any significant training in the usage of digipeaters or nodes to extend VHF range into WINLINK VHF gateways. This was the case for two main reasons: (1) in real communications emergencies, local VHF winlink gateways don't often provide methods to move traffic out of the disaster area; and (2) expert usage of digipeaters and BPQ and other nodes does require significant training and the time available in the conference was very limited. However, it would be good to provide better access to more information on these skills for those who are interested, or who become interested as a result of the Conference.

Reference: <http://www.choisser.com/packet/> provides additional training in packet techniques

Analysis:

Objective 1.19 : WINLINK Forms (Not Tested Well)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: (Not Applicable)

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: The Exercise did not provide enough explicit need for moving WINLINK forms to allow this Objective to be tested. The limited time contributed.

Area for Improvement 2: The formal Conference lectures did not adequately cover useful WINLINK forms such as the SitRep form. Sub optimal scheduling of lecturers did not take the optimal advantage for the 2-hour hands-on laboratory for practicing WINLINK. An additional lecturer there might have move d the training forward considerably into this area.

Reference:

Analysis: For future Exercises, providing pre-canned material that can be sent via WINLINK forms might be an improvement.

[CONSIDERED AS A GROUP DUE TO EXERCISE EXECUTION FLAWS]

Objective 2.1 : FLBDR Initiation Speed (U)

Objective 2.2: FLBDR Parallel Effort (U)

Objective 2.4: WINLINK Uplink (U)

Objective 2.5: Speed of WINLINK Uplink (U)

Objective 2.6: Voice Radiogram Throughput (U)

Objective 2.7: Documentation (U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: (Not Applicable)

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Better explanation of the concept of operations and expected actions by the Exercise Director and in Exercise documentation might have allowed this objective to have far better success. Since the two FLB Units didn't really understand they needed to physically SEND COURIERS to all other deployment sites and physically hand out and retrieve messages to serve as traffic outbound from the disaster site, they did not have sufficient messages to allow measurement of these Objectives.

Area for Improvement 2: Other opportunities to explain this concept should be utilized throughout the year, outside of the Conference.

Reference:

Analysis: Participants simply didn't understand the idea that teams dedicated to moving survivor health and welfare outbound traffic needed to take an active role in traveling to the survivor sites (in this case, other deployment locations) and physically hand out and take back up, paper forms. This was a failure of the Exercise execution. This was a flaw in the execution of the Exercise -- not enough explicit EXPLANATION given to the tasks. Much more explanation and time needed to have been given to explaining this concept very carefully, as it is a big paradigm shift in the understanding of many volunteer participants. As a result of this

experience, concrete instruction on how to carry this out was provided at the St. Augustine Florida Baptist Disaster Relief Training of amateur radio volunteers -- and significant confusion on this concept was obvious there as well, but was resolved in that instance.

Objective 2.3 : HF Distant Voice Net (M; 1 P 1 U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Units had good equipment.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: FLB-1 reported difficulties with their HF Antenna, which turned out to be badly shielded by building structures and did not offer a good SWR either. A replacement antenna worked much better. Key learning point: position antennas as much as possible in the clear of buildings.

Reference:

Analysis:

Objective 3.1 : Situational Reports (U (3P, 3U))

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths: Multiple teams made WINLINK and/or voice formal communications.

Strength 1: WINLINK skills. Documentation of status reports via WINLINK is exceptionally easy by having them sent to a proxy, such as FLEXDOCUNIT (Florida Exercise Documentation Unit) or SIMALCTY-EM (Simulated Alachua County Emergency Manager) - allowing them to be kept permanently. Written Text, radiogram format and ICS 213, and SitRep formats were utilized by various Units, demonstrating that there is wide dispersion of the required knowledge base.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Multiple units appear to have failed to follow the instructions to file status reports. This may have resulted from the multiple simultaneous tasks and the stresses these placed on the participants in a short exercise. Team Leaders may wish to work at checking off assigned tasks as they are accomplished.

Reference:

Analysis:

The Exercise revealed that approximately 50% of our deployed teams were able to file two status reports by digital techniques even in this short Exercise. This is in stark contrast to missing written reports noted in the Hurricane Michael amateur radio volunteer experience. A lot of progress has been made in the digital training at our conferences, and dispersing this knowledge more widely within the ARES(R) population might be advisable.

Objective 3.2 : SHARES Connection (Not Well Tested) (U)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: [not well tested]

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None

Reference:

Analysis: This objective just wasn't well tested.

Objective 3.3. : Tracking Station Presence (P)

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Mass Care Services

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: The importance of knowing which stations are listening was emphasized multiple times in the formal training of the EC001 and the Conference lectures.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: What to do when a station is missing wasn't well taught. Participants need to be instructed on alternate ways to reach out to a missing station.

Reference:

Analysis: Other techniques include using other bands, WINLINK, other radio services, and even sending a courier to check on the status of a missing station in a net.



7 IMPROVEMENT PLAN

Note: Improvement Plans are not detailed for many items that were performed without challenges, or issues that were basically due to exercise planners not explaining the desired survivor messaging clearly enough; as has been discussed above.

Item	Core Capability	Area For Improvement	Corrective Action	Suggested Primary Organization	Outcome (FILL IN AS REPORTED)
1	Mass Care Services	1.6 Voice Net	Teach and encourage acquisition of more effective HF antennas.	NFARC – via Section newsletters and Conferences	
2	Mass Care Services	1.7 WINLINK Connection	Educate on the importance of lower loss antennas with larger structure clear of obstructions.	NFARC: via Section newsletter, and encouraging education on this topic by SECs in Florida, and by direct email to EC/AECs.	
3	Mass Care Services	1.8 WINLINK Assessment	Lower Loss antennas with larger structure clear of obstructions	(see #2)	
4	Mass Care Services	1.8 WINLINK Assessment	More teaching on packet options; update packet educational products.	NFARC -- through web site and Section newsletter	New training link established on NFARC website
5	Mass Care Services	1.9 ICS Chain of Command	More focused exercise design	Exercise designer.	

Item	Core Capability	Area For Improvement	Corrective Action	Suggested Primary Organization	Outcome (FILL IN AS REPORTED)
6	Mass Care Services	1.10 ICS-309 Documentation, Team	Teach WINLINK 309 Construction	NFARC Conference planner: (lecture choices)	NFARC carried out this again during 2020 October S.E.T.
7	Mass Care Services	1.16 Radiogram Construction	Teach radiogram construction	Conference planner: more time for hands-on practice of this skill	
8	Mass Care Services	1.19 Winlink test emails	Additional practice on HF and VHF operations	Conference planner: more lecturers, more structured goals for hands-on time.	
9	Mass Care Services	1.19 WINLINK Forms	More focused exercise design	Exercise designer: more focused injects.	
10	Mass Care Services	2.1 FLBDR Initiation	Conduct directed training of FLBDR volunteers	NFARC: more concrete explanation of this concept. FLBDR: More concrete training of this concept.	FLBDR St. Augustine 2020 training provided very concrete explanation and helpful discussion. Textbook written with further instruction. ⁷ Ongoing educational information via Florida Baptist Disaster Relief Training. ⁸
11	Mass Care	2.1 FLBDR	Better Exercise	See #10	See #10

7 <https://www.amazon.com/Disaster-Ministry-Radio-Communications-Handbook/dp/170152760X>

8 It was discovered that moving survivor messaging was one of the guiding goals of the creation of the Florida Baptist Disaster Relief PCC trailer at a donation-developed cost totaling well over \$100,000.

Item	Core Capability	Area For Improvement	Corrective Action	Suggested Primary Organization	Outcome (FILL IN AS REPORTED)
	Services	Initiation	Participant Education		
12	Mass Care Services	2.2 FLBDR Parallel Effort	Conduct directed training of FLBDR volunteers in this task.	Conference planner	
13	Mass Care Services	2.3 HF Distant Voice Net	Conduct directed training of FLBDR volunteers in welfare message procedures	FLBDR -- conduct explicit training and testing of volunteers	Some FLBDR Level II volunteers are now experienced at HF net operation; that number is growing.
14	Mass Care Services	2.4 WINLINK Uplink	Conduct directed training of FLBDR volunteers in welfare message procedures	FLBDR -- conduct explicit training and testing of volunteers	FLBDR has held multiple informal training sessions on both public and SHARES HF WINLINK connections among the Level II FLBDR Communications Volunteers However, training on moving large volumes of survivor messages has not yet occurred.
15	Mass Care Services	2.5 Speed of WINLINK Uplink	Conduct directed training of FLBDR volunteers in welfare message procedures	FLBDR -- conduct explicit training and testing of volunteers.	
16	Mass Care Services	2.6 Voice Radiogram Throughput	Conduct directed training of FLBDR volunteers in welfare message procedures	FLBDR	

Item	Core Capability	Area For Improvement	Corrective Action	Suggested Primary Organization	Outcome (FILL IN AS REPORTED)
17	Mass Care Services	1.18 WINLINK text emails	Provide better instruction prior to exercise	Exercise planners	
18	Mass Care Services	2.7 Documentation	Conduct directed training of FLBDR volunteers in Winlink 309 preparation.	FLBDR	
19	Operational Communications	3.1 Situational Reports	Directed Training messages	NFARC -- provide explicit suggestions in Section Newsletters, discuss with SEC(s)	
20	Operational communications	3.2 SHARES Connection	Directed Training Messages toward improved licensure	NFARC -- provide written materials to Section newsletters	Significant effort has occurred to make information available and several Counties are now involved.
21	Operational Communications	3.3 Tracking Station presence	Directed Training Messages on reaching missing stations	Conference and EC001 Planners: provide explicit training.	

EXERCISE DEVELOPMENT COMMENT

For the Exercise Developer/Controller, there were striking and important findings from this Exercise.

- First, **the number of Objectives was likely excessive.** Such a large number of Objectives to be addressed by participants may well model the confusion and stress that may occur in an actual disaster, but did not seem to be optimal for the participants in this training exercise. I would recommend fewer objectives, somewhat more narrowly-focused Exercises, and potentially more frequent Exercises to cover the larger number of skills that might be deemed important.
- Second, the most serious deficiency in holding the Exercise was the difficulty in preparing participants modeling Florida Baptist Disaster Relief efforts in providing outbound “survivor messages.” It was clear from the results that this goal and multiple objectives simply was not well explained to two units, and as a result was

not adequately performed. An inadequate quantity of simulated outbound disaster messages were created or transmitted, and there was therefore NO effective testing of parallel processing or multiple simultaneous outbound techniques of message movement (e.g., outbound voice radiograms moving on an NTS net, while other messages are being batched by volunteers operating multiple WINLINK input computer, then aggregated using WINLINK message import options, and moved over WINLINK resources.

Part of this difficulty apparently results from the fact that recent amateur radio training and deployment includes minimal to zero emphasis on outbound survivor messaging via amateur radio systems, in considerable contrast to the history of amateur radio directly serving the public (in addition to serving agencies). **Further effort to revive this understanding of an important possible service to the public is advisable.**

The overall performance of the teams in this Exercise seemed to demonstrate that there has been considerable growth in multiple areas of volunteer amateur radio service in the past 3-5 years:

SKILLS: Teams appeared to set up deployed radio systems and antennas with considerably more speed and skill than I have seen in previous exercises. Voice radiogram skills and net procedure appear to be growing, and this Exercise was our first with significant connection between ARES type volunteers and formal NTS net experts.

ASSETS: Teams appeared to have better power generation systems, better masts, antennas, and portable go-boxes. The HF antenna issue remains somewhat problematic with lower efficiency, but growth has been significant.

STRATEGIES: Better team management, division of labor, and utilization of VHF/HF voice/digital resources was apparent.

Exercises like this, and the Conference from which it proceeded appear to have a good effect on amateur radio public service preparedness.

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APPENDIX: CREATING THE CONFERENCE EXERCISE

THIS TABLE IS PROVIDED TO ASSIST OTHERS IN THE PLANNING OF LARGE SCALE DEPLOYMENT EXERCISES.

Conference: Feb 29 - Last weekend in February

Source: Exercise Plan document provided to media

Table has been reformatted to better provide information to future planners

Item No.	Description	Responsible Person	Requested by Date	Completed Date
1	Initial inquiries for interested teachers and authors		October 2019 4-5 months in advance	Oct. 3 2019: email
2	Selecting Conference Dates		November 4 months in advance	Approximately on time.
3	Securing Location - understanding requirements, insurance issues		December 2019	November 13 2019
4	Additional requests for interested teachers and authors.		4 months in advance	Oct 27 2019-email Nov 5 FL EMCOMM Facebook
5	Lining up Speakers		November	December Completed approx 12 weeks in advance
6	Chapter Deadlines [Retrospect: Kindle Direct Publishing provided copies within 2 weeks of submission, earlier than expected.]		January 15 6 weeks in advance	Last chapters in by Jan 20
7	Check deployment locations for suitability & take photos for Conference Text		Jan 20 5 weeks in advance (should have done earlier)	Jan 20 2020
8	Text submission to Amazon		Jan 20 5 weeks in advance	Jan 24 2020

Exercise Hot & Cold 2020

Item No.	Description	Responsible Person	Requested by Date	Completed Date
9	Text Ordering		Jan 30 4 weeks in advance	Jan 24 Feb 8 (more copies)
	NOTE: Typically, once the Conference Text is finalized, emphasis shifts to planning the Exercise, which can be finalized closer to the Conference than the speakers and text. Items which should be finalized early, and included within the Text include: -- Deployment locations -- Alternate deployment locations -- Map (we always presume cell phone navigation is impaired) -- Evaluation documents for Conference and Exercise			
10	Development of inter-state receiver stations-- gaining support from other states and organizations		Feb 20 Should have been done much earlier!	Feb 10
11	Creation of Voice Radiogram Response Network		Feb 20	Feb 10
12	Meet with Alachua County EM to review Exercise		Feb 11	Feb 11
13	Contact additional ham groups for additional evaluators		Feb 15	Feb 15 -- Marion and Clay Counties.
14	Initial media release		Feb 15 2 weeks prior to exercise	Feb 17 (sent to section officials in advance for comment)
15	Notify PARKS - GNV		Feb 20 1 week in advance	Accomplished in advance
16	Notify PARKS - Alachua County		Feb 20	Accomplished in advance
17	Notify GNV Police		Feb 20	Approximately on time
18	Notify Alachua Sheriff		Feb 20	Approximately on time
19	Assess EOC antenna situation & respond [a local issue this year]		Feb 20	Approximately on time
20	Create Digital Cables to assist participants		Week before Conference	Only by a few days prior to Conference
21	Meet with location staff to go over		5 days prior	Well in advance

Exercise Hot & Cold 2020

Item No.	Description	Responsible Person	Requested by Date	Completed Date
	seating, AV, alarms, keys			
22	MEDIA RELEASE		5 days prior	On time
23	Purchase Refreshments		1-3 days prior to conference	On time
24	Print Conference ICS-211		1-3 days prior	On time
25	Print Exercise ICS-211		1-3 days prior	On time
26	Print copies of State TASKBOOK		1-3 days prior to Conference	On time
27	Order lunch meal for Conference		48 hours prior to conference	On time
28	Compile List of attendees for sign-in		1 day prior	On time
29	Position specific equipment needed for exercise: CANOPY, North end of Oaks Property		Day of exercise or day before	Barely.
30	Spare Projector #1 to Oaks Church		Day of Conference	Not done.
31	Spare Projector #2 to Oaks Church		Day of Conference	Not done.
32	On-location VHF RMS gateway		Day of Conference	On time (a volunteer brought a second unit!) ⁹
33	On-location HF RMS Gateway		Day of Conference	On time
34	Name Badges		Day of conference	On time
35	Books to site		Day of Conference	On time
36	Extension cords		Day of Conference	On time
37	VOM & tools for soldering/crimping		Day of Conference	On time
38	PICK UP Sandwiches for		Day of	Volunteer – on

9 Thanks to AB4NX!!

Exercise Hot & Cold 2020

Item No.	Description	Responsible Person	Requested by Date	Completed Date
	Conference Lunch		Conference	time
39	Set local Winlink RMS to single band		Day of exercise	Barely on time
40	Disable KX4Z Solar Power (RFI interference to deployed group)		Day of Exercise	On time

APPENDIX: SUGGESTED FORM TO COLLECT SURVIVOR MESSAGES

OUTGOING MESSAGE TO LOVED ONES VIA _____	
MESSAGES MUST HAVE AT LEAST EMAIL ADDRESS -or- PHONE NUMBER FOR DELIVERY	
FROM:	PRINT YOUR FIRST NAME LAST NAME
DATE:	MONTH DAY, YEAR
INCIDENT:	GENERAL NAME OF INCIDENT
TO:	PRINT PERSON ADDRESSED TO
	PRINT EMAIL ADDRESS
	REPEAT PRINT EMAIL ADDRESS
	PRINT PHONE NUMBER INCLUDING AREA CODE ()
MESSAGE	PRINT MESSAGE TO SEND (MAX 100 WORDS) IN LINES BELOW:
MESSAGE CREATOR ACKNOWLEDGES THAT ACCURACY OR EVEN DELIVERY IS NOT GUARANTEED THERE IS NO CHARGE FOR THIS SERVICE DONE BY VOLUNTEERS. DO NOT PUT EMBARRASSING OR PRIVATE DETAILS AS THIS MESSAGE WILL NOT BE ABLE TO BE KEPT CONFIDENTIAL.	

The process of taking messages from disaster survivors and speeding them on to loved ones has a rich history of amateur radio, but the mechanics are not often reviewed. Of course, the general public has no idea of the limitations of amateur radio systems, including voice nets, WINLINK, traffic systems, etc. The Red Cross's Safe and Well system is an admirable attempt to meet this need when messages can be inserted into the system.

Amateur radio volunteers best work within some organized group to provide an organized service to send outbound messages from a communications disaster area. Inbound communications are much more difficult because finding displaced persons is a difficult task. But outbound communications via any of multiple amateur radio systems are not that difficult and provide a very public "face" for amateur radio and a great service to the public. The form on the proceeding page is an attempt to create a capture form that can be adapted to any particular group and their available techniques and strategies (whether CW, ad hoc, organized traffic nets, WINLINK, SHARES, etc) and then mass-copied.

Volunteers may need to provide tables, writing instruments, and volunteers to help explain this service and its capabilities and limitations to survivors. Appropriate signage would likely be beneficial. In some cases, translators may need to be employed. Amateurs are often unfamiliar with processing messages in a different language, but there is no fundamental reason this cannot be handled, provided a means for delivery is apparent. For WINLINK this is best a working email address. For other systems, a working telephone number may be essential.

Emergency communications groups would be wise to develop and practice techniques for this service. One fun example of just such a process is the handling of "Santa-grams" by actual or simulated ancient CW telegraphy. See:

<https://www.youtube.com/watch?v=4sXLODLvIJc>

and

<https://www.youtube.com/watch?v=mAUOK45qfEM&feature=youtu.be>



Mike Shaffer, KD4INH at work.

APPENDIX: WRITTEN EVALUATION DOCUMENT

1. The level of difficulty of the exercise was (check one)

Way Too Difficult	Difficult	Perfect	Easy	Way Too Easy

2. The most difficult part of the exercise was (write in your answer)

--

3. The easiest part of the exercise was (write in your answer)

--

4. The worst feature of the Exercise was

--

5. The best feature of the Exercise was

--

ABOUT THE NORTH FLORIDA AMATEUR RADIO CLUB

Created a few years back in order to better support and advance emergency amateur radio communication systems in Alachua County, the NFARC club obtained the callsign NF4RC and maintains the web site

<https://www.qsl.net/nf4rc/> through the graciousness of qsl.net.

This is the third emergency communications conference that our club has held. We've also held several "full scale" radio exercises, not only within our community, but even going so far as to deploy to Steinhatchee, Florida, site of a disastrous flood the year before our deployment.

Some of the texts our members have authored:



Amateur Radio Digital
& Voice Emergency
Communications - 2nd Ed.
Gordon L. Gibby KX4Z BEE M5
MD & Barry Isabelle N2DB

Amateur Radio Digital and Voice Emergency Communications

<https://www.amazon.com/Amateur-Radio-Digital-Emergency-Communications/dp/1548004340>

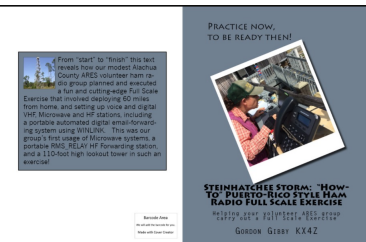
2018 Emergency Communications

<https://www.amazon.com/Amateur-Radio-Emergency-Communications-Symposium-ebook/dp/B079JRYHHV>



"The Blank Book"

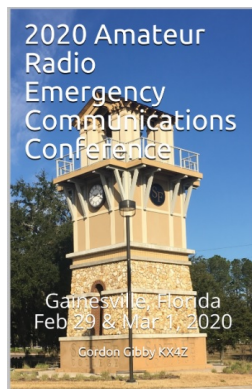
<https://www.amazon.com/Alachua-County-Emergency-Communications-Reference/dp/1724447084>



"Steinhatchee Storm"

<https://www.amazon.com/Steinhatchee-Storm-How-Puerto-Rico-volunteer/dp/1978441509>

The Conference Text for the 2020 Conference is available on Amazon:



<https://www.amazon.com/2020-Amateur-Radio-Communications-Conference/dp/B083XX3SZR>