

# **ALACHUA COUNTY COMMUNICATIONS VOLUNTEERS BACKUP COMMUNICATIONS PLAN**

FILE: Bib/Projects/RedCrossHamClub/AlachuaCountyCommsPlan2022.odt

Revision	Date	Comment
1	02/16/2023	Updated VARA-FM frequency to 144.990 (administrative) Discuss switch to VARA-FM P2P
2	10/14/2023	Updates to Section 3.15 proposed by Reid Tillery and unanimously approved
3	03/27/2024	Corrected State FDEM ALE cllsign to NNA4AI
4	04/21/2024	Removed extinct resources from ICS-205 Added new contact information

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# 1. INTRODUCTION

1.1 **Basic Template.** This is a basic template for potential service to the Alachua County Emergency Manager by both badged volunteers of Alachua County, as well as potentially for member of the Alachua County component of the Amateur Radio Emergency Services (ARES(R), who are organized under a county-based Emergency Coordinator and his/her Assistants and also for other licensed amateur radio volunteers who are not already integrated into either of the above groups..

With the amendments added, this version was approved by the group on Nov 9, 2022; the amendments were made and published on Nov 10 2022.

Appropriate Alachua County officials have legal governance over volunteers serving them, but often delegate the details to local volunteers, especially those serving in leadership of the local ARES(R) group. At present, more than 50% of the ARES(R) registered volunteers (see: <https://qsl.net/nf4rc/Badging.pdf> for the most recently updated list )have completed the training and background checks to become officially badged volunteers of the County. (See: <https://qsl.net/nf4rc/WelcomeToAlachuaCountyARES.pdf> for requirements)

1.2 **Florida Statutes / Background Checks.** Because of various State of Florida Statutes and rules, only badged official county volunteers can serve in sensitive locations. Further information can be found here: <https://qsl.net/nf4rc/StateVolunteerRequirements.pdf>

1.2 **Confidentiality / Security.** Under federal regulations, the contents of messages handled by amateur radio are not divulged to unauthorized persons and such public service communications are furnished without compensation of any kind; **however, they are also without any guarantee of delivery, security, or accuracy**, other than our best intentions. News media, other amateurs, and even the general public can easily surveil many of the communications handled via amateur radio. Be aware that amateur radio communications from within the United States, by radio, over the public ham radio WINLINK system, can be viewed by any Winlink member at their US Amateur Radio Message Viewer (see: [https://winlink.org/content/us\\_amateur\\_radio\\_message\\_viewer](https://winlink.org/content/us_amateur_radio_message_viewer) which will likely require a login to reach). As a result, senders should avoid sensitive information over the WINLINK ham radio ("Public") system, and may wish to move PRIORITY or higher traffic of an official nature (not Health and Welfare) over the SHARES system. The SHARES system offers improved levels of security: Contents of SHARES communications will generally be restricted to those with a need to know, unless of a trivial nature. SHARES frequencies are not generally released to the public. SHARES WINLINK communications are NOT released through any WINLINK viewer system, and participating SHARES stations are empowered to use end-to-end encryption if desired; communications between SHARES relay stations may well be individually encrypted at the transport level.

1.3 **State of Florida Comprehensive Emergency Management Plan.** The State of Florida

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maintains an emergency plan:

<https://www.floridadisaster.org/dem/preparedness/all-hazards/comprehensive-emergency-management-plan/>

The 2022 Annexes were not available at the time of this writing. The 2020 version of this CEMP mentions amateur radio five times, and includes among the

### State Communications Systems:

- Amateur Radio Emergency System, and
- State Law Enforcement Emergency Radio System

and includes among the

### Federal Communications Systems,

- Radio Amateur Civil Emergency Services (RACES) / Amateur Radio Emergency Services (ARES) and
- Shared Resources (SHARES) High Frequency (HF) Radio Program.

However, the focus appears to be on activating these resources to provide important communications between state and other political subdivisions, and there is not detail of how to train or prepare those resources.

1.4 **NIMS:** The National Incident Management System (NIMS) provided by the U.S. Department of Homeland Security, sets the expectation that emergency responders will organize according to a national standard, making it possible for all participants to work effectively together in all aspects of an incident. The American Radio Relay League well understands the importance of meshing with the national goals and standards,

*With the advent of additional training requirements imposed upon agencies and organizations assisting them, and the development of the National Incident Management System (NIMS) Incident Command System (ICS), ARRL was challenged to align the standards of ARES with current needs of our served partner agencies<sup>1</sup>*

The American Radio Relay League has wisely included more and more formal NIMS-based training in their ARRL ARES(R) Taskbook(s). Further, the ARRL has mandated the achievement of certain levels of training and performance for their recognized field leadership, including at the local level, Emergency Coordinators and Assistant Emergency Coordinators. Florida ARES(R) leadership have additionally lead the way. NIMS training may be obtained here: <https://training.fema.gov/nims/><sup>2</sup>

1.6. **Summary.** The purpose of this plan is to provide a basic framework for emergency

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1 ARRL ARES Plan 7/1/22, viewed 10/8/22 at [http://www.arrl.org/files/file/ARES Plan Revision 7122b.pdf](http://www.arrl.org/files/file/ARES%20Plan%20Revision%207122b.pdf)

2 Brett Wallace NH2KW on behalf of the group, is working to create a draft version of the content of this communications plan in FEMA/NIMS approved formats for consideration.

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communications when needed, and specifically when requested by the Emergency Manager. While these may include a wide variety of techniques, frequencies, and modes, this plan is specifically directed toward volunteer amateur radio operators who provide useful knowledge, understanding, experience, and equipment to the mix of possibilities in our "toolboxes."

## 2. Activation, mobilization, deployments, and deactivation

2.1 **Emergency Manager Direction.** The Emergency Manager or their delegee may request activation of our local backup volunteers and specify the tasks, deployments etc. In such cases, we will endeavor to staff and perform assistance as directed.

2.2 **ARES(R) Hurricane Net.** During Hurricane season, when Alachua County is within the 3-day cone of uncertainty forecast track of named tropical cyclones, the ARES(R) net will be active each night at 8:00 PM Local. This provides a means of basic notification to volunteers of important information, and modest amount of detailed information.

2.3 **Public Switched Telephone System Notification.** The Emergency Manager may make specific call-ups using automated telephone systems (e.g. Everbridge) as well, or may ask local volunteer leaders to do so. See Table Below of **Terse Directions Delivery**.

2.4 **EMP/ Extreme Failures.** In certain very specific disasters, normal communications including many modern communications, may fail. **In this case, local amateurs may find directions being given by the Emergency Manager or their delegee over extant older vacuum tube voice equipment, on the specific frequency listed in the ICS-205 for such activations.<sup>3</sup> These messages should be relayed as appropriate through local simplex or repeater frequencies, particularly those on the ICS-205**

2.5 **Heightened Level of Attention. Terse Directions Delivery.** By definition, communications emergencies or disasters may make it difficult for local officials to alert county and other volunteers. Local volunteer leadership will provide terse directives to

- Everbridge dissemination
- volunteers providing informal net functions on local repeaters,
- local JS8 beacon stations (for storage in INFO or STATUS as appropriate)
- local WINLINK sysops for storage on SIGNON messaging
- possibly emails to be provided via WINLINK techniques

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3 These instructions may be sent in a time of emergency from the EOC. For that reason, the EMP-resistant equipment should always be left already pre-tuned to that emergency frequency, and all switches needed to bring the radio online with the proper antenna already present except the last switch (preventing lightning) -- and placards should provide easy explanation to EOC officials how to complete the turn-on sequence to be able to transmit.

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Therefore, any amateur who suspects a communications emergency exists, should monitor the **primary command net repeater** (see attached ICS-205) and/or other **digital beacon/bulletin system**, and utilize any remaining working communications medium (e.g. telephone, Internet) to make inquiries.

	Technique	Comment / Actions
1	Everbridge Telephone Message Delivery	Expect messages if this system still in operation, which may direct you to check email or WINLINK email.
2	Primary Command Net (VHF Voice repeater or simplex locally) (SEE ICS-205)	Make inquiries, join existing net, or if indicated initiate formal/informal net
3	Local JS8 beacon SEE ICS-205	Read station INFO and STATUS to find bulletins Also check group FLEMCOMM
4	Local WINLINK Gateways SEE WINLINK SOFTWARE	Observe SIGNON MESSAGE for possible bulletin Download email to potentially find directions from authorities
5	Winlink Radio Only SEE WINLINK SOFTWARE	Additional information may be sent via WINLINK radio-only in extreme situations

**2.6 Detailed Delivery of Instructions.** The Emergency Manager may direct local volunteers to perform certain assignments, and may delegate to existing structures (e.g. Badged Volunteers, ARES(R) leadership, etc) to create more detailed directions to accomplish the requested items.

This may entail recruiting volunteers for various assignments, and may involve several persons making the necessary connections by existing public switched telephone connections where still functioning, or over radio or WINLINK or other techniques if the disaster is already damaging normal communications.

Detailed directions may then be communicated by

- **Voice directives**, informal or formal messaging over radio channels listed in the ICS-205
- **WINLINK email** to groups, such as all ARES(R) volunteers; Badged ARES(R) volunteers, members of local clubs, as appropriate

As much as possible, these detailed delivery of instructions should be inclusive of as many potential recipients as possible, while also observing issues of privacy and security where movements of

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volunteers might give away security risks.<sup>4</sup> Discussion of these risks suggests the following template as a rough guide to promulgation of detailed directions:

Type of Direction	Sent to	By these techniques
Current Situation, Objectives, Actions and Overall Plans (items 4,5,7,8,9 of an ICS-201; or items 3,4, and "General Situational Awareness" of ICS-202 [available as a WINLINK Form])	<ol style="list-style-type: none"> <li>1. All badged volunteers</li> <li>2. ARES(R) volunteers</li> <li>3. Made available to new volunteers</li> </ol>	<ol style="list-style-type: none"> <li>1. Our groups.io</li> <li>2. Email groups</li> <li>3. WINLINK email groups</li> <li>4. Group web page</li> <li>5. Everbridge notification</li> </ol>
Specific information about shelter opening / staffing (which has information of value to thieves, etc, and may have information that the EOC does not want released to the public until shelters are actually OPEN) such as the information on an ICS-204 or ICS-205A (both available as Winlink Forms)	<ol style="list-style-type: none"> <li>1. Volunteers staffing shelters or serving in local assignments</li> <li>2. Potentially all badged volunteers</li> </ol>	<ol style="list-style-type: none"> <li>1. Direct email to only the volunteers involved, or badged</li> <li>2. Direct WINLINK to only those volunteers, or badged</li> <li>3. Even possibly by courier / "runner" via vehicles.</li> </ol>
Information about frequencies, coded SHARES assignments	<ol style="list-style-type: none"> <li>1. Volunteers staffing shelters or serving in local assignments.</li> <li>2. Potentially all badged volunteers</li> <li>3 Possibly ham radio portions to all ARES(R) members</li> </ol>	<ol style="list-style-type: none"> <li>1. Direct internet email to the involved volunteers / ARES(R) group</li> <li>2. Direct WINLINK to the involved volunteers / ARES(R) group</li> </ol>

This table can be viewed alternately as:

<sup>4</sup> If internet access is spotty or non-existent, instructions should be delivered either on WINLINK FORMS or as TEXT attachments to keep the size < 20kB

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Information Bulletins as Situation Develops	POOL(S) OF POTENTIAL ASSIGNEES				
	ARES(R) & other volunteers not yet badged		BADGED VOLUNTEERS		
	Not Available This Incident	Available and Assigned	Not Available this Incident	Available but not assigned	Available and Assigned
<p>1. Initial Notification(s) of Potential Need //</p> <p>2. Requests for Actual Deployable Vounteers for This Incident</p> <p>3. Current Situation, Objectives, Actions and Overall Plans (items 4,5,7,8,9 of an ICS-201; or items 3,4, and "General Situational Awareness" of ICS-202 [available as a WINLINK Form])</p>	<p>1. Our groups.io</p> <p>2. Email groups (where available)</p> <p>3. WINLINK email groups (those possible)</p> <p>4. Group web page</p> <p>5. Everbridge notification (badged volunteers)</p>				
<p>4. Specific information about <b>shelter opening / staffing</b> (which has information of value to thieves, etc, and may have information that the EOC does not want released to the public until shelters are actually OPEN) such as the information on an ICS-204 or ICS-205A (both available as Winlink Forms)</p>	(No dissemination)	<p>To those serving in critical positions:</p> <p>1. Direct internet-based email</p> <p>2. Direct WINLINK</p> <p>3. Possibly by courier / "runner" via vehicles.</p>	(Potentially more sparse information)	<p>1. Direct internet-based email to only the volunteers involved, or badged</p> <p>2. Direct WINLINK to only those volunteers, or badged</p> <p>3. Even possibly by courier / "runner" via vehicles.</p> <p>4. Everbridge</p>	



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Information Bulletins as Situation Develops	POOL(S) OF POTENTIAL ASSIGNEES				
	ARES(R) & other volunteers not yet badged		BADGED VOLUNTEERS		
	Not Available This Incident	Available and Assigned	Not Available this Incident	Available but not assigned	Available and Assigned
		4. Ever-bridge			
Information about amateur ICS-205 frequencies, coded SHARES assignments		1. Direct internet email 2. Direct WINLINK 3. Potentially via courier		1. Direct internet email 2. Direct WINLINK 3. Potentially via courier	
Information about coded SHARES assignments		(Not necessary)		1. Direct internet email just to volunteers potentially staffing SHARES-equipped 2. Direct WINLINK to the volunteers potentially staffing SHARES-equipped locations 3. Potentially via courier	

**These detailed delivery of instructions should be updated where possible**, perhaps every operational period, or every day. *It is important to recognize that the Emergency Manager may CHANGE their planning abruptly based on changing conditions -- so close communications needs to be maintained by local leadership, who will also likely be distracted by their pre-existing employment, and needs to prepare their own houses, families etc. This is a prime opportunity to miss crucial changes in plans prior to the incident. Likewise Local volunteers should be regularly checking the following types of communications resources for potential updates*

- Internet email if available
- WINLINK email via local and/or distant servers<sup>5</sup>

<sup>5</sup> In certain cases, it may be most appropriate for instructions to be disseminated via local post office type winlink

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It is important for local leadership to decide who/when/how updates will be created and disseminated. In the "fog" of the activation effort it is easy to forget to set up how these updates, potentially at every operational period, will be created. They may optionally include some weather or other status information.

*Please see subsequent section on documentation and dissemination of contact information for deployed individuals during disaster (e.g. ICS-205A).*

**2.7 Staffing Plans.** As has been so wisely pointed out by Brett Wallace, the most damaging storm impacts may lead to severe communications outages that extend far beyond the onset of damaging weather itself. Therefore, staffing must consider not only the acute staffing of assigned locations during the immediate adverse conditions, but also the need for longer term staffing. Our typical finding is that outside agencies and corporations begin to provide replacement and other communications 48-96 hours after a disaster. Those first 2-3 days have needed significant volunteer assistance in several historical events. Further, as was pointed out by Craig Fugate, the need often is less acute in the larger cities (e.g. Gainesville), but more of a problem in the smaller outlying communities where large corporations and huge agencies may not be sending such great resources. Therefore there may be a need for ongoing volunteer assistance for several operational periods / days in the outer-lying portions of the county. Volunteer recruitment should take these possibilities into account.

Balanced against these needs are the concerns that travel/transportation may itself be a problem if there has been such significant damage. Personnel already deployed may have difficulty leaving; newly on-service individuals may have difficulties reaching the desired points of service. There may be advantages to staging a pair of volunteers at some locations as a result.

**2.8 Avoid Self-Deployment** Other than as directed by local County officials or their delegees, volunteers should not make travel plans for service, and specifically never to within law-enforcement-restricted areas. Instead, monitor and gain further information to see directions from legally authorized individuals.

**2.9 Local Nets.** In the event normal amateur radio repeaters and other communications systems are still functional, volunteer "nets" should commence when there is a disaster and specifically when assistance is requested by local County officials. See the OPERATION section for more detail.

**2.10 Documentation.** Documentation is very important for both financial and legal reasons. The County is able to count documented volunteer hours as part of its "match" to federal reimbursement,

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systems where normal internet access is very limited and some members may have difficulty finding information from distant HF WINLINK gateways. In this case, the local leadership should determine which local VHF winlink server or servers will be populated with updated emailed instructions, and make those plans well known via local communications channels. It is important that such emailed detailed instructions be limited in size to < 20kB and hence TEXT type files are encouraged, rather than PDF's or .DOC or .ODT ICS documents. For some users, the WINLINK FORMS may be an excellent choice.

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and this can be quite considerable.

ICS-214. This form is used to document events and hours for both financial and legal purposes. Volunteers should maintain timely ICS-214 documentation of all of their significant activities, particularly as relating to assigned tasks. These should be completed individually, except perhaps in the case that two person are assigned to the identical tasking (in which case be certain to list both persons and be clear about how the hours are recorded.) These should be provided to the County as soon as possible **after each operational period**, and signed by whatever means possible, in as timely a fashion as possible. There is an advantage to being able to sign and send these in via Internet when possible.<sup>6 7</sup> Otherwise, we may be able to send them in as Winlink forms<sup>8</sup>, and later be contacted to provide a physical signature if needed.

**Requirement: By explicit direction from EM staff: these forms must be completed and filed prior to demobilization. Therefore, should volunteer leave temporarily from a site for an operational period, a relevant ICS-214 must be completed prior to leaving the site.**

The Alachua County Emergency Operations Team (EOT) website for finding forms and submitting forms is here: <https://alachuacounty.us/depts/em/Pages/eot.aspx>

Included at that page are links for extremely useful tasks including:

ICS218 (Equipment/Vehicles)

Submission of ICS214

Sbmission of other Files

Significant Updates

Resource Requests

Emergency Timesheet

ICS214 Activity Log (**Online Fill-In Form;save and submit using link above**)

Monday.com Training

Report Issues using Monday.com

Monday.com Login Page

ICS-309. Volunteers are also requested to keep an ICS-309 log of formal traffic transferred. ~~Submission systems for this form should be similar to that of the ICS-214 in the absence of specific instructions.~~<sup>9</sup>

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6 Volunteers may wish to create a small .jpg file of their signature, which might be added to a screen shot of a form, avoiding the need for a physical PRINTER.

7 Volunteers are requested if possible to gain their own cell-phone or other "hotspot" and become familiar with its use to provide their own personal access to the Internet when cell phone services are working.

8 At the time of this writing, the County did not have an "email address" specifically for submission of ICS-214 forms, but only a "link" on a web page. However, we are advised that [acem@alachuacounty.us](mailto:acem@alachuacounty.us) may be a way to send in ICS-214 forms when there are no other means. The submitter can expect to be contacted later for a physical signature of a physically unsigned WINLINK form.

9 Nov 10 2022: Jenn Grice, Emergency Manager, has found from the county Documentation expert that FEMA does not need these 309 documents. Instead, Jeff Capehart (EC) recommends that we capture them ourselves and keep them, along with keeping our own copies of ICS-214's in a notebook at the EOC for any review etc.

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ICS-218 / 210e. In our experience, the County utilizes the ICS-218 form to acquire information on personally-owned vehicles and other equipment utilized in the service of a disaster. This form is more suited to vehicles, than amateur radio equipment. There is not a version of the ICS-218 within the WINLINK system. A screenshot copy is provided within the Appendix, or volunteers can obtain copies prior to deployment. Volunteers are requested to file these forms as soon as possible for volunteer equipment utilized.

**2.11 Legal Liability Coverage.** Determining the legal liability protection of volunteers who provide service to the State and its political organization, and volunteer organizations, is a complex legal issue beyond the expertise of this document. Those interested are encouraged to review Florida Statute **768.1355 Florida Volunteer Protection Act** which can be viewed at: [http://www.leg.state.fl.us/Statutes/index.cfm?App\\_mode=Display\\_Statute&URL=0700-0799/0768/Sections/0768.1355.html](http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0700-0799/0768/Sections/0768.1355.html) This is a good reason that volunteers might wish to be officially recognized by the County and officially given request and missions.

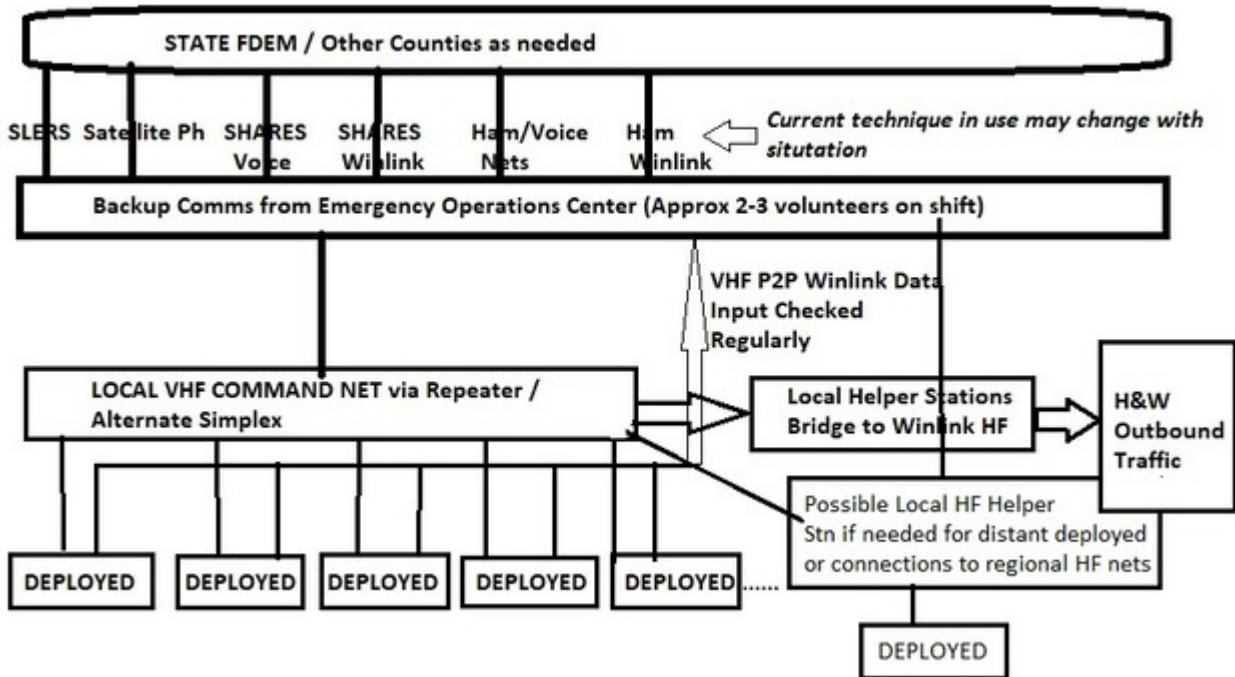
**2.12 Amateur Radio Good Practice / Good Faith.** Generally, volunteers are covered for liability under the Florida Volunteer Protection Act (768.1355) but the amateur radio operator is cautioned to always act in a manner that is consistent with commonly accepted good practices for amateur radio operations and FCC rules and regulations; and to operate in “good faith” within the scope of their duties. **We remind you NOT to transmit on frequencies assigned to other Services (e.g. law enforcement, forestry, airborne fire fighting, etc) unless authorized by a legal authority, or in situations of immediate loss of life/property where there are no other means whatsoever of obtaining help.** Recent conviction/punishment actions underscore that warning. Acting with wanton or willful misconduct, exceeding their scope of work may exempt Florida Volunteer Act protections. Workers' Compensation, meals, lodging and other benefits are enumerated under Volunteer Benefits FS 125.9504 which can be viewed at: [http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App\\_mode=Display\\_Statute&Search\\_String=125.9504&URL=0100-0199/0125/Sections/0125.9504.html](http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=125.9504&URL=0100-0199/0125/Sections/0125.9504.html)

**2.13 Continuance of Assigned Presence.** Volunteers assigned to a facility, task, or station by a County official or their delegee should not normally abandon that assignment without prior notification to such official; however, in the event of safety or emergent concerns, the safety of the volunteer and those around them take priority.

**2.14 De-mobilization.** De-mobilization will be as directed by the Emergency Manager, and as noted above, ICS-214's must be completed AND FILED prior to demobilization. Filing may be via Internet, hand delivery to the EOC, or by WINLINK.

### 3. Operation

3.1 **Communications Layers.** The basic communications layers as noted in the accompanying Figure, provide for quick response to acute situations when other communications are inoperative, tactical direction of local volunteers through voice communications; forwarding of health and welfare messages through data systems/voice systems, aggregation of local situation reports to the EOC, and distribution of work load so as not to overload any particular area.



3.2. **Quick Response To Acute Situations.** As illustrated by Iowa dereccho's and other historical situations, when normal telephone/internet communications are lost, the loss is often "silent" and unobserved. Without radio alternatives, the loss may be unrecognized and acute situations cannot be communicated. One of the purposes of our backup communications assignments to peripheral locations such as shelters, fire stations, etc., is to provide *immediately available alternatives that are not dependent on typical infrastructure*. Whether the communications is to/from a shelter, or a fire station, or other public service asset, it is important to provide for quick response, providing direct or quickly-relayed tactical communications in either direction between peripheral service locations and centralized locations. For this reason, it is advisable to have ongoing monitoring at such locations as our volunteer net control as well as our EOC, even if the command net is in "informal" mode. To be concrete: It may be advisable to always have a squelched speaker operative at the EOC if a volunteer isn't already listening on a headset. This is one reason to assign 2 or 3 persons to the EOC and to have a volunteer net control available 24/7 even if just sleeping net to a radio during a "quiet time."

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3.3 **Avoid Regional Net Control from EOC.** Although not a hard-and-fast rule, experience has suggested that it is difficult for a volunteer at the EOC to be a volunteer net control for any "HF NET" operated for ham radio volunteers (staffing EOC's or assisting response) in the NFL or Florida section(s). At the request of the State FDEM, such nets provide an additional lowest-common-denominator voice analog HF method by which a beleaguered EOC with no other working communications can reach out for help. They may be staffed by volunteer net control operators from around the State, and suffer from changing propagation conditions. Volunteers at our EOC can certainly **check in** and/or assist with such worthy activities, and certainly utilize this as one of the possible techniques to send messages toward the State etc., but experience suggests that our local EOC volunteers may well be assigned tasks by the Emergency Manager or their delegate that make it difficult to divert the full-time attention necessary to provide quality service as a net control station on an HF net, or even to remain "checked into" such a net. This may or may not apply to SHARES nets; we don't have any experience there.

3.4 **Avoid Local Net Control from EOC.** Also not a hard-and-fast rule, but our experience has shown that it is often better for any local command net on VHF (which may be formal, informal, or alternate between the two) to have a net control station located either at home (optimal) or at a deployed location other than the EOC.

3.5 **EOC Assignment.** It is suggested that EOC volunteers be limited to 2 or at most 3 persons, that they be of Alachua County communications volunteer Level 2 or Level 3<sup>10</sup>, and that they attempt to attend the twice-daily briefings (which seem to occur at 5 PM and 5AM) -- and take copious notes of weather information and other information to pass along to volunteers who may not have the same level of resources. Likewise, it may be a good idea for EOC volunteers to make updates on a periodic basis to all the other deployed volunteers of weather or other pertinent information.

These updates might be "scheduled" at intervals, such as every 4, 8 or 12 hours. They might include both voice updates over a voice command net, entries to the operational plan for each operational period, or special emails via WINLINK or other systems. (This makes the importance of an ICS-205 or 204 assignment document acute..)

3.6 **Additional County Methods of Communication.** The EOC has additional means of communication, including the SLERS (Statewide Law Enforcement Radio System, which has an FDEM set of channels), SHARES licensure, SHARES data and voice communications to nearby counties, the State and other entities and satellite telephony. Volunteers are encouraged to become knowledgeable about these options through participation in local and regional Exercises.

3.7 **Credentialing** In order to provide information about the qualifications of various volunteers, we will be observing the progress of volunteers through the Florida ARES(:R) Taskbook (see <https://arrl-nfl.org/wp-content/uploads/2020/01/Florida-ARES-Training-Task-Book-2020-R1.pdf>), and the Alachua County EOC Taskbook (see:

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10 See our local Alachua County EOC Taskbook:  
<https://qsl.net/nf4rc/2022/AlachuaCountyEmergencyVolunteerTaskbook.pdf>

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<https://qsl.net/nf4rc/2022/AlachuaCountyEmergencyVolunteerTaskbook.pdf>, )which is specifically oriented toward our local capabilities.

3.8 **Unattended/Asynchronous Reception of Data Reports.** Experience has shown that the unattended, error-free reception of files and attachments of peer to peer WINLINK VHF at the EOC is a valuable technique for receiving detailed reports. Other techniques that may also serve admirably include YAPP (within Easyterm) or the error-corrected routines available within the NBEMS system. The first two systems allow for digipeating, when such digipeaters are functional. Our local group is currently experimenting to better understand the potential of VARA-FM techniques within WINLINK VHF.

3.9 **EOC Winlink Addresses.** The EOC can also receive reports via regular WINLINK, and will typically expect to receive those at the callsign NF4AC. If the EOC chooses to utilize NCS181 to allow for encrypted messages, that should be widely announced.

3.10 **Encryption.** The EOC SHARES capabilities include handling encrypted SHARES messages, using encryption keys that are dispensed through SHARES on a regular basis.

3.11 **Communications with FDEM.** Our experience has suggested that it is wise to avoid sending any transmissions to the State FDEM unless absolutely necessary, even if this means we are not certain of the status of the pathway(s). If a priority or emergency message needs to reach the FDEM, then volunteers are advised to try techniques that will give immediate positive feedback of reception, such as SLERS etc., or to use multiple techniques simultaneously, guided by the seriousness of the messaging.

3.12 **Deployment Documentation/Contact Methods.** As soon as practicable, when volunteers have been assigned / deployed, a document listing the stations, individuals, locations, and methods of contact should be created by some member of leadership. **The ICS-205A (an unofficial document) or perhaps the ICS-204 may suffice if contact information is also provided. This material should be circulated throughout the authorized deployed individuals, the EOC backup radio station, local ARES(R) leadership, and the ESF#2 leadership. Be aware that there may be security issues with public notification of which volunteers have been deployed so avoid public or unnecessarily large distribution of this information.**

The WINLINK system does include a templated ICS-205A -- and this may allow a concise delivery of formatted information via the WINLINK system, in much smaller size than via a PDF. Otherwise, a TEXT version of a 205A might be applicable.
--

3.13. **Suggested Deployment Details.** Individual circumstances vary, and can change depending on family issues. However, in general, the purpose of our volunteerism includes actually serving at locations where County leadership needs help, and this unavoidably means traveling to a location of service. Individuals who are part of our badged volunteer group are encouraged to maintain some planning for such service. Items that you may wish to be able to take along include:

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

	Item	Comment
<input type="checkbox"/>	Personal laptop computer(s)	To operate data systems, receive bulletins, assist with local WIFI systems
<input type="checkbox"/>	Personal cell phone, preferably with HOTSPOT capability <sup>11</sup>	General communications
<input type="checkbox"/>	Personal VHF radio equipment, including some type of portable antenna, and data capabilities	To provide an alternative should County-provided equipment become an issue.
<input type="checkbox"/>	Modest personal battery backup	
<input type="checkbox"/>	Bedding / blankets / sleeping bag / pillow, possibly a cot, padding etc	Shelters do not normally provide any bedding
<input type="checkbox"/>	Towel(s) / toiletries / clothing	
<input type="checkbox"/>	Desired Snacks	
<input type="checkbox"/>	Desired liquid drinks, including water, but no alcoholic beverages	
<input type="checkbox"/>	Possibly some foodstuffs that do not require cooking / modest utensils	

3.14. **Suggested Family Preparation.** Many of our volunteers have family commitments that influence their availability for service. There will always be immediate circumstances (such as a family member immediately post-surgery) that will change our availability. In the Hurricane Ian (2022) experience, depending on your denominator, we had an availability in the 36-41% range. To provide for possible service, we suggest attention to various provisions.

	Item	Comment
<input type="checkbox"/>	Be aware of your NEIGHBORS who may be of help to your family.	They may have space, power generation, skills that may help your family.
<input type="checkbox"/>	FRS or GMRS may assist you in communicating with neighbors in communications / power outages.	There is a possibility of a county-wide GMRS repeater. Note that GMRS requires a family-level license; no test, but a cost.
<input type="checkbox"/>	Consider integrating your spouse with	Increase the possible pool of support.

11 It is **strongly recommended** that volunteers consider obtaining hotspot WiFi service capability for their personal cell phones, and become very facile at using and connecting to this service from their portable computers. Typically this service can be obtained at a nominal charge of approximately \$10/month, and sometimes it can be turned ON or OFF. During high-likelihood activation months, this can be a wise preparatory move.



ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

	others of our group.	Good for others to know NAMES and Call signs in advance for peace of mind and possible security.
<input type="checkbox"/>	Well-defined family plans for power backup.	Consider electric-start generator, battery powered inverter systems, possible transfer switch; extension cords.
<input type="checkbox"/>	Modest tarp availability, plus pre-cut lightweight plywood sheets to cover top or bottom half of a window, with deck screws of appropriate length and a battery operated drill to easily install.	Make it easier to deal with a small amount of house damage from flying objects
<input type="checkbox"/>	Several day supplies of food products that do not require significant cooking	
<input type="checkbox"/>	Some 5-gallon buckets to deal with water leaks	
<input type="checkbox"/>	Some local fuel storage.	
<input type="checkbox"/>	Consider modest electric chain saw (e.g. Poulon 14") well-prepared if needed to allow exit from driveway etc.	
<input type="checkbox"/>	Small window air conditioner for a bedroom that can be positioned in a window and operated at only 500 watts.	You may wish to use a furniture dolly and a bedside table to pre-position the small AC system at about the right height, so it can be easily moved into position, and duck-tape / newspaper / cardboard used as needed to seal.
<input type="checkbox"/>	Consider emergency toileting options should water/sewer/septic tank issues ensue.	You may wish to have additional water available for flushing if no water pressure; or an emergency toilet or accessory to allow use of 5-gallon buckets, etc.

**3.15 Importance of home-based support.**

There is a place in our layered communications plan for volunteer operators at home locations. Not everyone’s situation allows them to be deployed to the Alachua EOC, a shelter, or some other remote location. If these people—we’ll call them Local Helper Stations (LHS)--can operate out of their home radio shack, they can during times of communications outages fulfill a vital role in the communications plan by sending not only 911-type messages but also health-and-welfare messages.

911-TYPE MESSAGES (with ordinary comms out)

These messages are sent to the EOC and include those in which either EMS or law enforcement needs to be involved.

## ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

EXAMPLE. A 5-year-old girl in your neighborhood has a suspected appendicitis. She needs to be transported right away to a local hospital for possible surgery.

EXAMPLE. A 67-year-old male is likely having a stroke and needs to be taken to a hospital within three hours to potentially benefit from clot-busting drugs.

EXAMPLE. A local store is being looted.

### **HEALTH-AND-WELFARE MESSAGES**

These messages would NOT be sent to the EOC but to third parties and include messages relating the status of the sender.

EXAMPLE. Jesse and Diane down the street want to let their son in Charleston know they had light property damage, but are otherwise okay.

EXAMPLE. Ashley, a nearby neighbor, wants to let her husband Robert who's temporarily away on business know a tree fell on their house, but she and the kids are safe and staying with the neighbors next door.

### **IMPORTANCE OF BEING IN TOUCH**

To send both emergency and health-and-welfare messages, the LHS must be in touch with those in the surrounding community. **A lone station with little or no contact with neighbors will likely be unaware of reportable situations.**

Such contact can be realized in a number of ways, including via a neighborhood radio net, a local "catchment" area which can receive messages and perhaps over a distance via Citizens Band radio.

### **A NEIGHBORHOOD RADIO NET**

A non-amateur radio net with neighbors can be an effective way to stay in touch with those in nearby areas. The General Mobile Radio Service (GMRS), Multi-Use Radio Service (MURS), or Family Radio Service (FRS) can serve as the communications medium for this net. Except for GMRS, no license is required, and in the case of GMRS, licenses are easily obtained through the FCC without having to take a test. Moreover, the license and its call sign applies to one's entire family. GMRS and FRS can share certain channels, making these UHF radio services somewhat interoperable. MURS, is a "licensed by rule" VHF radio service, meaning individual licenses are not required. MURS provides five channels on which to operate, and authorizes two watts of power.

A neighborhood radio net could be part of a local Neighborhood Watch, a crime prevention and community mobilization program. To save battery power in a disaster, one idea would be to follow the Wilderness Protocol and ask neighbors to be on their radios for at least five minutes starting at the top of certain hours, for example at 10 AM, 1 PM, 4 PM, 7 PM, and 10 PM. Messages could then be delivered directly or relayed to the LHS.

### **A LOCAL CATCHMENT AREA**

Establish a local "catchment" area, that is, a nearby public location where messages are retrieved from the public. A local fire station, grocery store, community building, or church could become a place where people know to go to get a message out. A simple card table staffed with volunteers--who don't have to be licensed amateur operators--taking messages would work. These messages could then be

## ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

couriered or transmitted via some radio service (GMRS or MURS, for examples) to the nearby LHS for delivery via radio. Ideally, such catchment areas would be publicized ahead of a disaster. If not, however, simple word of mouth may suffice to let people know of the opportunity to get messages out.

### CITIZENS BAND SCANNING

Scan Citizens Band (CB) radio channels to listen for distress calls. CB is not nearly as popular as it was before the advent of cell phones. Still, however, it is in use and is slowly regaining popularity. Those living in rural areas who have radios at all, are likely to have a CB in a vehicle or perhaps a base station.

### THE SKILL SET OF AN LHS

#### VHF

At a minimum, an LHS should have a VHF radio powered by non-grid electricity and be capable of operating an extended time. Ideally, the LHS will have an antenna height of at least 25 or 30 feet and will be able to reach either the EOC or reach another station who can reach the EOC.

The next step up would be if the LHS could connect the radio to a computer and use Winlink to deliver messages, either directly to a Radio Message Server (RMS), through a digipeater/RMS connection, or peer to peer to the EOC or other station capable or relaying to the EOC or getting the message into the internet.

#### HF

The fully equipped LHS will have in addition to the VHF resources, full HF capability, including the ability to use both phone and Winlink for delivering messages.

All HF radios should be powered by non-grid electricity and capable of operating over an extended time. HF Winlink can be especially useful for sending health-and-welfare messages out of the disaster zone.

## 4. Volunteer Vetting & Training

4.1 **ARRL Plan.** Our volunteers always operate under one or more authorities. Our local ARES(R) group is generally always required to follow the guidance of the ARRL Board of Directors in their current ARES(R) Plan. Our badged volunteers, when serving at the direction of the Emergency Manager, must follow County guidance.

4.2 **Local Badging.** Our local requirements to be recommended to the Emergency Manager for consideration of background check and volunteer Badging include those requirements listed in our documentation ( <https://qsl.net/nf4rc/WelcomeToAlachuaCountyARES.pdf> ), and also as a matter of common sense, are intended for those volunteers who have a realistic chance of volunteering for service at a location other than their home. Volunteering at their home does not require badging! We are always open to helpful volunteering from home. Every family and every situation is different.

## 5. Tools in our EmComm Tool Box and Their Application

5.1 **Goals.** *Efficiency, accuracy, and flexibility* are goals of emergency communications. Volunteers who are skilled in many different forms of communications are the most useful; flexibility, humbleness however are often more important than simple skill-set.

Techniques within our toolbox include those with many different characteristics. Here are some rough guides

	Technique	Distance	Reliability / Security
1	Telephone	As needed	Depends on level of disaster
2	Voice VHF	Modest	Limited security Beware of possible monitoring by news networks or others.
3	Voice HF (incl. SHARES)	Variable	Limited security Beware of possible monitoring by news networks or others
4	Winlink HF data	Variable	Error free, limited security Beware of WINLINK VIEWER allowing monitoring
5	SHARES Winlink HF data	Variable	Error free, high security (including available encryption)
6	Peer to Peer VHF Winlink	Modest - to significant depending on availability of digipeaters / nodes	Error free, limited security Transmissions may later be available on the WINLINK VIEWER
7	Peer to Peer alternates (YAPP NBEMS)	Modest	May be error free, limited security, no digipeating
8	SLERS	Large - state / county assets via dedicated voice repeater system	Some security
9	Satellite phone	Large	Significant security
10	Automatic Link Establishment	Variable	Ability to reach State or Government assets by discovering best frequency.

## 6. Drills

6.1 **Drills.** Our local volunteer group will attempt to hold more than one drill or exercise every year, and likely also an ICS-based Field Day effort. We attempt to conduct our drills and exercises in accordance with the Homeland Security Exercise Evaluations Program (HSEEP). (<https://www.fema.gov/emergency-managers/national-preparedness/exercises/hseep> ) Because of the expertise gained, we encourage all of our local leadership to take ownership of participation in the creation of one or more formal exercises / drills.

6.2 **Participation.** All badged volunteers should make every effort to participate, and all volunteers are invited! These provide great chances to get to know others in a slightly more stressful situation and to improve skills and understanding of a cohesive communications response, which is much more than just knowing how to turn on and utilize the "toys."

6.2 **Taskbook Sign-offs.** These training options provide chances for sign-offs of skills in one or more tasks books.

# **APPENDICES**

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS  
**INCIDENT RADIO COMMUNICATIONS PLAN ICS-205**

<b>INCIDENT RADIO COMMUNICATIONS PLAN (ICS-205)</b>										
<b>1. Incident Name:</b> BASIC TEMPLATE			<b>2. Date/Time Prepared:</b> Date: 11/4/2022 Time:				<b>3. Operational Period</b> Date From: NONE      Date To: Time From:              Time To:			
<b>4. Basic Radio Channel Use:</b>										
Zone Grp.	Ch #	Function	Channel Name / Trunked Radio System Talkgroup	Assignment	RX Freq. N or W	RX TON E / NA C	TX FREQ N or W	TX TON E / NA C	MODE (A, D, or M)	Remarks
		Command	Local Net	Ham	146.820	123	146.220	123	A	Primary local command net; simplex if repeater down
		Command	Local Net	Ham	3.970 LSB	N/A	3.970 LSB	N/A	A	Primary comms in <b>extreme comms event / EMP</b> for direction
		Logistics (VARA-FM)	GNV-VARA	Ham	144.990 FM/W	N/A	144.990 FM/W	N/A	D	Growing VARA-FM communications possibilities Note Digipeater NF4RC-7 <b>Expect EOC to operate P2P Winlink NF4AC VARA-FM</b>
		Packet	GNV-PKT	Ham	145.070 FM/W	N/A	145.070 FM/W	N/A	D	Local Winlink packet servers / digipeaters
		Command	Local Net	Ham	145.985	123	145.385	123	A	Secondary local command net
		Command	Local Simplex	Ham	146.550		146.550	N/A	A	Simplex if 146.820 not available.
		Notification	SARNET	Ham	444.925	123	449.925	123	A	Gainesville Local connection. EOC <b>may be able to connect via OCALA if GNV is disconnected</b>
		Command	Statewide net	Ham	3.940 3.950		3.940 3.950		A	Voice state networking (Check both freq.)
		SLERS	SLERS	Govt					A	Statewide FDEM comms
		SHARES			Unpub USB		Unpub USB		A	Expect coded channel names to be made available



**ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS**


**5. Special Instructions**

BASIC CONNECTIONS

<b>6. Prepared By</b> (Communications Unit Leader) Name		G. Gibby	Signature
<b>ICS 205</b>	<b>IAP PAGE</b>	<b>Date / Time 4/21/2024</b>	

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

**ICS-205A**

<b>1. Incident Name:</b>	<b>2. DATE / TIME PREPARED:</b> Date:  Time:	<b>3. OPERATIONAL PERIOD</b> Date From: Time From: Date TO: Time TO:
<b>3. Basic Local Communications Information:</b>		
Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)
Alachua County Emergency Operations Center Backup Radio Room		Amateur Call: NF4AC SHARES Call: NCS181
ESF#2 Lead		
State FDEM		NNA4FL@WINLINK.ORG (Avoid contact unless absolutely necessary.) <b>ALE: NNA4AI</b> ((corrected)) (via ION2G) (Avoid contact unless absolutely necessary) Amateur: KA4EOC
Columbia EC	Brad Swartz N5CBP	940 390 7716
Columbia County EOC		Winlink NF4CA SHARES: NNA4BP
Dixie EC	Gary Poore WW4GP	352 498 1327
Gilchrist EC	Fred Lewis KO4YOL	352 214 6557
Gilchrist EOC		NF4EC
<b>4. Prepared by: Name:</b>		
Signature: _____	_____	

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

1. Incident Name:	2. DATE / TIME PREPARED: Date:  Time:	3. OPERATIONAL PERIOD Date From: Time From: Date TO: Time TO:
ICS 205A	IAP Page _____	Date/Time: _____

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

ICS-205A TEST VERSION FOR LIMITED COMMS SITUATIONS

1. Incident Name:
2. Date/Time Prepared:
3. Operational Period:
4. Basic Local Communications Information

Assigned Position	Name	Method of Contact (Phone, radio, cell etc)
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(insert information and add lines as necessary)

Prepared by:  
Date / Time:  
ICS-205A (Text Version)

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

**GENERAL MESSAGE (ICS 213)**

<b>1. Incident Name</b> (Optional):		
<b>2. To</b> (Name and Position):		
<b>3. From</b> (Name and Position):		
<b>4. Subject:</b>	<b>5. Date:</b> Date	<b>6. Time</b> HHMM
<b>7. Message:</b>		
<b>8. Approved by:</b>	Name: _____ Signature: _____	Position/Title: _____
<b>9. Reply:</b>		
<b>10. Replied by:</b>	Name: _____ Position/Title: _____	Signature: _____
<b>ICS 213</b>	Date/Time: Date	

ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

**ICS 213**

**General Message**

**Purpose.** The General Message (ICS 213) is used by the incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. The ICS 213 is also used by the Incident Command Post and other incident personnel to transmit messages (e.g., resource order, incident name change, other ICS coordination issues, etc.) to the Incident Communications Center for transmission via radio or telephone to the addressee. This form is used to send any message or notification to incident personnel that requires hard-copy delivery.

**Preparation.** The ICS 213 may be initiated by incident dispatchers and any other personnel on an incident.

**Distribution.** Upon completion, the ICS 213 may be delivered to the addressee and/or delivered to the Incident Communication Center for transmission.

**Notes:**

- The ICS 213 is a three-part form, typically using carbon paper. The sender will complete Part 1 of the form and send Parts 2 and 3 to the recipient. The recipient will complete Part 2 and return Part 3 to the sender.
- A copy of the ICS 213 should be sent to and maintained within the Documentation Unit.
- Contact information for the sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	<b>Incident Name</b> (Optional)	Enter the name assigned to the incident. This block is optional.
2	<b>To</b> (Name and Position)	Enter the name and position the General Message is intended for. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
3	<b>From</b> (Name and Position)	Enter the name and position of the individual sending the General Message. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
4	<b>Subject</b>	Enter the subject of the message.
5	<b>Date</b>	Enter the date (month/day/year) of the message.
6	<b>Time</b>	Enter the time (using the 24-hour clock) of the message.
7	<b>Message</b>	Enter the content of the message. Try to be as concise as possible.

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<p><b>8</b></p>	<p><b>Approved by</b> Name Signature Position/Title</p>	<p>Enter the name, signature, and ICS position/title of the person approving the message.</p>
<p><b>9</b></p>	<p><b>Reply</b></p>	<p>The intended recipient will enter a reply to the message and return it to the originator.</p>
<p><b>10</b></p>	<p><b>Replied by</b> Name Position/Title Signature Date/Time</p>	<p>Enter the name, ICS position/title, and signature of the person replying to the message. Enter date (month/day/year) and time prepared (24-hour clock).</p>





ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS


**8. Prepared by:** Name:

ICS 214, Page 1

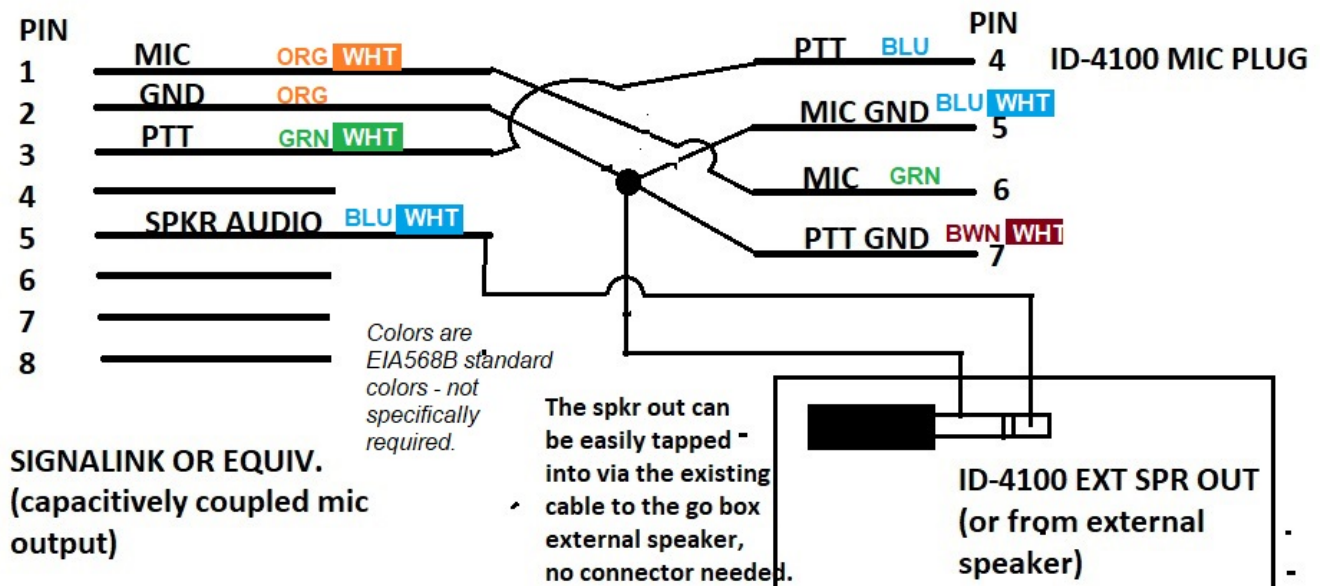
Date/Time: Date



ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

## ICOM ID-4100 Four-Wire DATA Connections

This information is provided to assist in making data transmission by non-proprietary protocols possible, with the D-STAR-equipped ID-4100. The included "data jack" on the ID-4100 on the rear panel is ONLY for D-STAR data transmission. Other protocols (e.g., VARA-FM, PACKET, etc) must use the microphone jack (which does not have receiver audio available) AND the external speaker wiring to the 3.5mm jack as noted below:



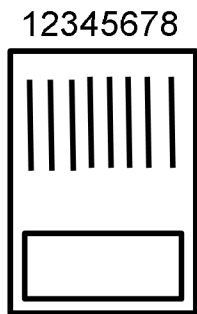
File: REDCROSSHAMCLUB/2022/OCT/ID-4100CableWiring.jpg

Microphone on the ID-4100 does not plug into the detachable front pane -- it plugs into the MAIN UNIT. This is easily accessible because the detachable front pane does not obstruct it. So it is easy to shift whether the sound card or microphone is connected. We may OPTIONALLY wish to get an "ethernet splitter" to make it easier to bring this connection out for our use. Example: <https://www.amazon.com/Ethernet-Splitter-MVBOONE-Cmpatible-Computers/dp/B09T698TY8>

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The radio audio output cable can be intercepted and a parallel "take-off" provided to go to the interface cable over to a Signalink or other sound card device, without any need for additional connectors or problems.



Pin Numbering of RJ45 Plug when viewed from the top, looking at the visible pins.

DATA INTERCONNECTION CABLE INFORMATION			
RJ-45 Plug for insertion to Alachua County Standard Signalink/ equivalent connection	Intervening Cable	Connection to ID-4100	Comment
1 - WhtOrg - Mic	A suitably altered standard Ethernet cable may be used by removing one	Pin 6	
2 - Org - GND		Pin 5 (mic ground) AND Pin 7 (PTT ground) AND to Shield portion of external speaker 3.5	Although not optimal, because the Signalink has only one ground connection, we recommend connecting to all three of these together.

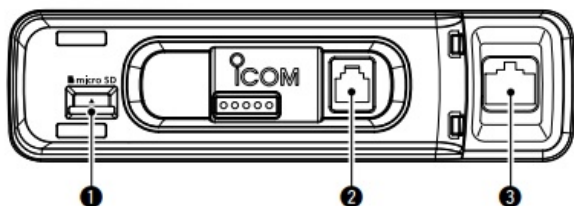
ALACHUA COUNTY BASIC BACKUP VOLUNTEER COMMS

	<p>RJ-45 and rewiring that end to comply with the required connections to the ID4100 mic jack, and speaker jack.</p> <p>This end should be somewhat obvious, but marking it may be also helpful.</p>	mm plug	
3 - WhtGrn - PTT		Pin 4	
4 - unused			
5 - BluWht - Spkr		TIP of 3.5 mm audio connector to external speaker output.	The ability to listen to a data channel can be important. You may wish to use a splitter or intervening speaker with a monitor output so that you can still monitor the audio of the data connection.
6 - unused			
7 - unused			
8 - unused			

## APPENDIX: ID-4100 Data Cable Wiring / Construction

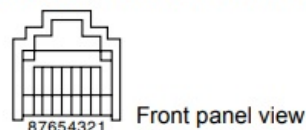
(The ID-4100 is the basic ham radio dual band transceiver included within the Alachua County-provided "go-box.")

### ■ Main unit — Front panel



- ❶ **microSD CARD SLOT [micro SD]** (p. 48)  
Insert a microSD card (user supplied).
- ❷ **CONTROLLER CONNECTOR** (p. 1)  
Connect to the controller using the supplied control cable.
- ❸ **MICROPHONE CONNECTOR**  
Connects the supplied or an optional microphone.

### ◇ Microphone connector information

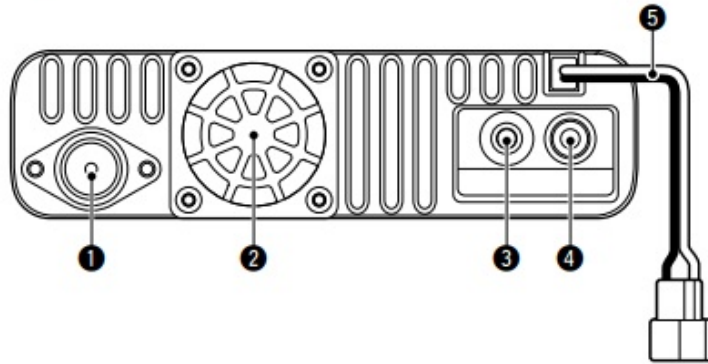


PIN No.	NAME	DESCRIPTION	SPECIFICATIONS
1	8 V	+8 V DC output	Maximum 10 mA
2	MIC U/D	Frequency Up/Down	UP: Ground DN: Ground through 470 Ω
3	M8V SW	Grounds when the HM-207S is connected	—
4	PTT	PTT input	Ground for transmission
5	MIC E	Microphone ground	—
6	MIC	Microphone input	—
7	GND	PTT ground	—
8	DATA IN	When the HM-207S is connected, inputs HM-207S data	—

Note that the removable front panel DOES NOT OBSTRUCT THE MICROPHONE JACK, which can be easily accessed from the front of the go-box.

Note that in the above information, the pin-numbering of the RJ-45 plug (8 pins) is in the same direction when viewed looking at the pins of the connector, as we have used in naming the pins going to the Signalink. Far left when looking at the pins on the top, is #1. Beware of Pin 1 of the ID-4100 - it is +8VDC power.

## ■ Main unit — Rear panel



- 4 EXTERNAL SPEAKER JACK**  
Connect to an 8  $\Omega$  external speaker.  
3.5 mm (0.13 in) (d)

Note that an external speaker with parallel 'zip cord' type wiring is already connected to the External Speaker Jack. By simply connecting into this cable, the necessary receiver audio can be obtained to route to the Signalink or other soundcard interface system.