ALACHUA COUNTY
2017 ARES HURRICANE TEST

Drill Plan / Workbook

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Date of Drill: Saturday May 6, 2017	Time of Drill: 0830-1230 local (approx 4 hrs total)

All Participants are asked to read these instructions carefully
***before** the actual Hurricane Test.*

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The Goal of the Alachua County Communications Plan (broader than just one hurricane test goal)**:**

> **TO FURNISH EMERGENCY COMMUNICATIONS WHEN REGULAR COMMUNICATIONS FAIL OR ARE INADEQUATE IN THE EVENT OF NATURAL OR MAN-MADE DISASTERS**[1]

The Goals of The 2017 Hurricane Test Full Scale Exercise

PURPOSE
This exercise is designed to provide feedback on our proficiency and capabilities to achieve the likely communications tasks required in a severe weather emergency of sufficient magnitude to overwhelm or temporarily disable normal communications and normal grid power. It is also a learning opportunity for peripherally involved amateur radio operators, and local government and NGO personnel to become more aware of the abilities as well as the limitations of the local amateur radio ARES group.

	OBJECTIVES
1	Assess the capabilities of groups and individuals at EOC, Red Cross, up to 2 local shelter sites, and 1 local hospital, to create, manage, and position antennas in response to communications goals and weather-induced damage of existing antennas and repeaters; provided that during this exercise no person shall go onto any roof or use any slingshot or other lofting mechanism in the vicinity of any power line greater than 240VAC
2	Assess the capability to place an emergency simplex repeater and utilize it to provide communications between all the locations involved in the Exercise.
3	Assess the capability to utilize WINLINK text messages, ICS forms, and attachments on both VHF and HF frequencies to meet realistic emergency communications needs.
4	Assess the capability to flexibly find and employ backup power systems of any available type at all locations involved in the Exercise
5	Assess the capability to move (when travel is “safe”) to a new location and expeditiously resume communications on VHF.
6	Assess capabilities to send MT63-2000L bulletins over VHF frequencies, and to receive and store them.
7	Assess capabilities of individual volunteers to participate in PACKET CHAT.
8	Assess the capability of LINBPQ packet chat functions to serve as many as 6 simultaneous roundtable discussants trying to determine the best solution to a communications problem.

9	Provide an opportunity for participants to utilize ICS Forms 211 (Incident Check In Form) and 214 (Activity Log), using handwriting, and inside WINLINK, Form 213 (General Message Form), as well as refer to Form 205 (Incident Communications Plan) to facilitate communications.

SCOPE --- in multiple aspects[2]

DIMENSION	LIMITATIONS
Kinds of Exercise Participants	Primarily ARES-associated licensed amateur radio operators with prior training but flexible enough to allow untrained amateur radio operators to join, either as participants or as evaluators; EOC personnel from the Emergency Manager's office where possible; local Red Cross personnel where possible; Ebbin Spellman of Shands Hospital.
Geographic Area	Physical locations limited to Red Cross Gainesville Office Alachua County EOC Maximum of 2 Shelter sites: Newberry Sports Complex and Gainesville Senior Citizens Center Shands Hospital specific sites: such as: a) North facing picture window 11th floor of Dental Wing connector to main hospital building (an area accessible by the public) b) Archer road stairway (top landing, helipad level) open to the public of the Shands South Tower (door to the helipad is of course locked) c) Any open-to-the-public Shands parking deck Safe inside location on top floor of Ayers Building (to be determined)
Number of Participants	Not any real limitation on the number of amateur radio operators. Need 1 observer/ evaluator per geographic site; these can be local hams or citizens with relatively little training who will fill out clipboard checklists of communications successes and issues encountered.
Responder Functions	Communication of messages of several different kinds is the bottom line outcome, with process measurement of intermediate functions to achieve the end-goal of communications.
Hazard Type	Hurricane/Tornado severe weather event, with loss of normal cell phone / telephone / Internet / 700-800 MHz police/fire systems, and widespread

	loss of conventional power.

WHAT TO DO IF A REAL DISASTER STRIKES DURING THE EXERCISE
*If there is a TRUE emergency during our Exercise, any station needing to communicate that fact please state, "THIS IS A **REAL-WORLD** MESSAGE". The key words "**REAL WORLD**" mean that the message is FOR REAL and not a test.* *A large emergency during our 4-hour window would be extremely unlikely, but you might want to check with your loved ones to see what arrangements need to be made, and otherwise follow directives of law enforcement and emergency management (Incident Commander etc) officials to see how best you can be of service.* *For any normal emergency, do not hesitate to dial 911 and obtain assistance. Notify the rest of us of your problem using the "REAL WORLD" keywords as above, using any antenna, frequency, modality that is appropriate.*

SCENARIO OVERVIEW

Our exercise runs on a clock starting at 0000 at the start. The following Time Periods are defined.

TIME FROM START	**EXERCISE SIMULATED TIME**
0000	Day 1 Noon (May 1) (dayight) Storm approaching
0030	Day 1 2359 (Midnight) [DARK] Storm has passed
0130	Day 2 Noon (May 2) (daylight)
0230	Day 2 2359 (Midnight) [DARK]
0330	Day 3 Noon (May 3) (daylight)
0400	"Hot Wash" Participant Feedback at Lunch

SCENARIO START -- Day 1: Noon "May 1"

:Hurricane ARES with Cat IV sustained winds and heavy rain is expected to arrive in approximately

4 hours. Alachua County has been preparing for several days, and 4 shelters have been opened including the Newberry Sports Complex and the Senior Center in Gainesville. Amateur radio operators are in position at both these shelters and also at the EOC and Red Cross facility. Power outages are expected as well as possible telecommunications losses.

TASKS:

1. Sign in (simple handwriting) on an ICS 211p for your site. (You can use one removed from this Workbook from one of the volunteers at your location.)

2. Establish voice communications between all four sites. Use anything you wish -- all repeaters work, everything works (for the moment!). The following Tactical call signs may be utilized now and for the duration of the Hurricane Test:

- **EOC**
- **Red Cross**
- **Senior Center**
- **Newberry**

3. Determine and communicate to all other sites the email addresses by which each location may be reached by email. It is probably best that these be WINLINK (@winlink.org) email addresses. We will simulate the State EOC using the following email address: docvacuumtubes@gmail.com. (NOTE: at the actual Hurricane Test, if directed, we may also send to Robert Little of the State EOC:)

4. Please cc: (copy) any email you send to the local Alachua County EOC additionally to: jeffcapehart@gmail.com so that we have a record of the transmission.

5. Establish packet CHAT connection on W4DFU-8 (using either 145.770 or 145.030; both work identically) between all locations---presuming you are able to run both voice and packet simultaneously by some means....

6. Using RADIO as the connection method, each location should send a WINLINK ICS 213 email to the simulated Sate EOC (docvacuumtubes@gmail.com) stating their LOCATION, and whether they succeeded at both the voice and packet connections. (If they get the WINLINK email off, it will be proof that they succeeded at THAT task!)

Please fill in the following table to document the email addresses of the locations for communications during the Hurricane Test

LOCATION	EMAIL ADDRESS DURING TEST
STATE EOC	docvacuumtubes@gmail.com
LOCAL EOC	cc: jeffcapehart@gmail.com
RED CROSS	
NEWBERRY	
SENIOR CENTER	

SUBSEQUENT TIME PERIODS

At the beginning of each SUBSEQUENT time period (0130, 0230, 0330) the participant group at each location **opens a sealed envelope** which gives them their current SCENARIO, their ANTENNA and POWER status, TASKS to accomplish including Tactical, ICS-213, Bulletin and/or Roundtable messages or participation. There may be other tasks of a communications nature also involved for certain locations. Some or all of the messages or data to be transmitted will be included on a USB flashdisk so that instead of having to waste time doing actual typing, you can merely "copy and paste" into applications if you desire. Other messages may be printed out on paper within the envelope to make reading them aloud on voice transmissions quick and easy. In a REAL EMERGENCY you would be a precious resource and people will be giving you messages as quickly and easily as possible --- so this Exercise attempts to simulate that situation.

THE RULES OF THE EXERCISE

1. **Safety is paramount.** No one is permitted to go out onto any roof.
2. **Safety is paramount.** No one is permitted to launch any rope, string, projectile or any other item in the vicinity of any power line other than 120/240 volt residential power entry. DO NOT DO ANYTHING NEAR HIGH VOLTAGE LINES. THEY CAN KILL OR FRY YOU.
3. If your location is declared to have lost grid power, **it is assumed that a small number of backup handi-talkie battery packs will not be sufficient** --- so you aren't allowed to use the FIRST SIX such backup battery packs you have. However, you may use #7 and following. You may use any gell-cell or storage battery, solar power generation system, or fuel-operated generator or inverter operating out of any vehicle or any storage battery.
4. **Safety is paramount!** Do not refuel any hot generator! Allow it to cool for at least 5 minutes and then very carefully add fuel. If you suspect a propane leak, or gas leak, discontinue usage immediately and secure and ventilate the area (without using electricity). Be extremely careful with extension cords and ground generators (e.g., to building ground, copper cold water) where practicable. Consider purchasing a portable GFCI outlet to utilize with your generator, but practice with it beforehand.
5. If your location DID NOT HAVE a working antenna upon your arrival, and you had to install one merely to carry out the Hurricane Exercise, then you are granted "immunity" against further "Antenna Loss." You might note that in your opening status email during the first period.
6. If your location is declared to have experienced either Antenna or Transmission line loss -- you will have to physically (and safely) very literally install the best replacement that you can muster. If the simulated time is "DARK" then you must have flashlight or flood lights or headlamp to be allowed to proceed outside. *This is practice time --- put up the best (safest) antenna you can and see what you can do with it!*
7. If your location is given a task to emplace a new system or support a new area -- proceed carefully to carry out that task. **Do not rush and get into a traffic accident!**

Modest, Instead of Overwhelming Comms Tasks

In creating this Exercise, it was kept in mind that many of the participants are somewhat new at many of these communications tasks. As a result, the number and type of messages to be transmitted is MODEST rather than OVERWHELMING. **In a real emergency where Ham Radio was actually crucial you are very likely to be overwhelmed at several points**.....but that is something to be practiced when our group is a bit more "seasoned."

COMMUNICATION METHODS & GOALS

It is important to explain that there is NO SET ASSUMPTION of the method by which a given type of message should be transmitted (other than the requested email status reports during the very first 1/2 hour, via WINLINK email to docvacuumtubes@gmail.com)

During this test, communications obstacles of several types will afflict various locations. Loss of grid electrical power will possibly occur; presumed loss of Antenna/Transmission Line will possibly occur. These problems will need to be addressed by the participants at the location so affected, and will present sufficiently important obstacles such that the Exercise does not ever mandate that any message must be transmitted by this or that "pet" mode favored by the Designer. Instead, the goal is to GET THE MESSAGE ACROSS as best as possible given the circumstances. (And obviously some messages will be far more amenable to certain techniques.) Familiarity with multiple techniques simply gives the participants "more arrows in their quiver" to get the job done! Some types of messages naturally lend themselves better to one mode of transmission than others. The following explanation of the expectations for each type of message class may be helpful.

MESSAGE TYPE	**TRANSMISSION GOALS**
Tactical	Short bits of crucial information, or commands, requests, control requests -- often transmitted by VOICE and not necessarily transmitted letter- or word-perfect: the goal is to get the sense of the message across quickly. For many of these messages, it will be important to know that the message WAS received. You might use voice, a broadcast digital technique, an email (with read receipt) in unusual circumstances, or even packet roundtable in unusual circumstances. **Simple voice net communication is probably the most common for Tactical communications.**

ICS-213	These are considered "record" traffic and should be logged and transferred word-perfect as much as is possible. If the message is of modest length, this can be done by any of many methods, including voice, CW, PSK31, RTTY, WINLINK Peer to Peer, MT63 to a local recipient, but if addressed to a distant recipient, transmission may require SARNET, an NTS or Disaster Net, WINLINK client-Server system, WINLINK peer-to-peer (if you are lucky enough to find the counterparty!) or even packet BBS system (legacy). **The WINLINK client-server system is uniquely amenable to larger messages with attachments.**
BULLETIN	Bulletins are informational messages broadcast from one location to many others simultaneously. Reception is not normally confirmed for every recipient, but if the message is of sufficient gravity, a poll of recipients could be taken to verify receipt. **Messages are often transmitted by VOICE, or by digital broadcast techniques such as PSK31 or MT63,** but could also potentially be sent in unusual circumstances by WINLINK (email to multiple recipients) or by PACKET CHAT . If you are going to use FLDIGI over VHF/UHF for BULLETIN, please consider using **MT63-2000L** **with an audio center-frequency of 1500 Hz** **as your protocol** so that others don't have to guess what protocol to expect.
ROUNDTABLE	A roundtable is an interactive discussion to reach a decision. **Voice works well for this, other techniques can be pressed into service, particularly packet CHAT.**

COMMUNICATING TO THE OUTSIDE WORLD

"All Disasters Are Local" is a common mantra, and for good reason. When disaster strikes, the chances are good that your local resources are the closest and most likely to be of assistance. That's why short-range VHF communications are so vital to Common Operating Picture and command/control. *Without communications....chaos ensues.*

However, sometime your community needs the assistance of "higher ups" in State government, or in nearby mutual-aid counties, or from the Governor, or someone whom you just can't reach using short-range communications. Ham radio WINLINK email works when the Internet and cell and regular telephone don't. And so does HF SSB -- and lots of other modes!

In this Exercise, local WINLINK RMS GATEWAY KX4Z is going to be placed into "Simulated Internet Outage" mode....which means that all emails destined to radio users who have NOT checked into KX4Z-10 (and thus are deemed as "distant") , will be sent outbound by computer-controlled RADIO email connections to neighboring states for further transmission over presumably "working" Internet connections. This can be slow but it is exactly what would happen in a real communications disaster! If the computer senses a "busy" frequency, it is programmed to seek elsewhere....in a real emergency the frequencies can be jammed (the FCC allows automated operation only in a narrow slice of most bands) and working gateways may be overwhelmed. We'll hopefully test this function during this exercise! **Ordinary client users of the WINLINK system can often outperform automated systems by quickly jumping around and FINDING a suitable gateway in an unaffected area of the nation to accept their email traffic -- but this requires that you have capable HF gear.**

You have multiple ways to get emails out of Alachua County during a complete communications failure -- and even more ways of making contact out of town. Here's the beginning of a list:

BAND, Method	Description	Mode
VHF, Winlink	KX4Z-10 auto connects to KX4Z which will auto HF FORWARD outwards	1200 Packet
VHF, Winlink	Any MARION COUNTY vhf gateway that still has Internet service: W2SRP-10 KG4NXO-10 K4LSB-10 KI4UYM-10 W3HII-10	1200 Packet
VHF, WINLINK	Via lucky propagation to any other VHF server in the State (see the WINLINK MAP). Put your receiver on 145.070 and see whom you hear!	1200 Packet

HF local	via KX4Z on any of its frequencies	WINMOR on 80/40; PACTOR on all
HF Distant	via ANY of the scores and scores of WINLINK gateways all over the US and the world	WINMOR/ PACTOR
UHF, SARNET	Using the SARNET you can reach stations all over the state and get them to send information for you	FM Voice
HF Traffic Nets	There are many traffic nets you can utilize; a small listing includes: Florida Phone Traffic Net 3.940 6:55 AM Florida MidDay Traffic Net 7.242 Florida Amateur Sideband Traffic Net 3.940 6 PM Northern Florida ARES Net 3.950 8 PM SouthCars 7.251 Lower Side band In general, in an emergency if you just spin the dial through bands that are open and find ANYTHING that sounds like a “net” --if you can hear THEM, they can probably hear YOU --- and announce you have emergency traffic (if you really have an emergency) and they will help you.	LSB USB
VHF SEDAN CHAT	If you reach any CHAT station on any SEDAN connected computer, you may find help there.	1200 Packet

EMAILING LOCALLY WITHOUT AN INTERNET

How do you send email locally when there is no internet? While an HF connection to a WINLINK server five states away with working Internet will easily get your email out to Washington DC, how do you get email to another served location in your own city?

If you can reach the other station (but still need to send email, e.g., an attachment), then peer-to-peer (P2P) WINLINK works well. Packet P2P on VHF; Winmor P2P on HF. Marion County hams use this very effectively.

What if you can't make contact and want to just leave (store) an email where it will be later found? You can always send their email out of state using HF and it will be stored for them, but if they are a VHF only station there's a better solution: WINLINK gateway stations running the entire suite of software (such as KX4Z) have an additional feature: their software will observe who is connecting over VHF and recognize that those stations are "local" and will begin to cache their software on-location --- so that they can pick up replies (both local and distant replies) by simply re-connecting on VHF. Even email from across the country will begin to be cached for them at the local hybrid WINLINK gateway. KX4Z will be set to continue to perform this function for 1 day after each successive VHF winlink connection. This feature is NOT available on simple VHF WINLINK gateways that do not include HF Hybrid service.

STRATEGIES

If you've done any amateur radio "contesting" or been involved in real emergencies, you know there is a bit of STRATEGY involved. You generallyl want to know

- the **goals** --- what am I trying to do?
- the **capabilities** -- what skills & equipment do I have at my disposal? -- can I run two frequencies simultaneously? Will my radio reach XYZ if ABC happens?
- the **situation** -- both mine and of the counterparties I'm supposed to reach

In this Hurricane Test, you're expected to get four different kinds of messages accomplished at various times: a) Tactical Messages, b) ICS-213 "record" traffic, c) email and attachments, and d) some sort of roundtable discussions. But SENDING MESSAGES is not your only responsibility, just as it would not be your own responsibility in an emergency: You have to be RECEIVING messages that others are desperately trying to get to YOU. You have to be available to receive important messages as well. It turns out that can be even more difficult that sending messages....

What are the ways that other hams might try to reach you?

a) Through a net, such as the ARES net

b) Directly by calling on a frequency listed in the ICS 205 as your Primary or Secondary frequency

c) Checking to see if you are available on a packet CHAT system

d) Sending you a WINLINK or other email

Can you be reached?
During a recent Florida emergency, it was difficult to impossible to reach some ARES units -- in some cases due to valid overriding safety issues. What do you need to do as an emergency communications volunteer to insure that others are able to REACH YOU? Pilots face this problem in many different types of airspace, where they need to be "reachable" by other pilots as well as ATC-- and thus often they have two radios going simultaneously, listening to Air Traffic Control on one, and monitoring another for urgent or local traffic.

As a ham emergency volunteer, here are some suggestions:

a) **Monitor the local ARES net** if it is in operation
b) **Periodically check a WINLINK server** to see if you have traffic waiting for you there -- 2 or 3 times an hour is suggested. This can be over HF or VHF, but remember if the Internet is down in your area, the only VHF-accessible station that will be receiving WINLINK email is an HF HYBRID STATION WITH AN ATTACHED VHF GATEWAY.... **a normal VHF WINLINK gateway without Internet....has zero access.**
c) **If there is a standard CHAT station in your area**, and listed on your ICS205 as a Secondary or Tertiary for you, check it a couple times per hour.

Just as pilots do, you may have to request permission from the ARES net control station to leave the net for 5 minutes to check another source, if you don't have two radios or two antennas..... If you do have secondary radios and assisting hams, you can do this automatically on your own --- and ARES Net Control should suggest it periodically.

Types Of Messages

These are real types of communications that would really be needed in a REAL emergency --- which is why we practice them! Each has strengths & weaknesses.

Tactical Messages can be delivered quickly by voice, or bulletin digital techniques --- or could even be emailed or sent over packet chat! --- and don't have to be "letter perfect" copied, **but you DO have to know (if possible) that the recipient GOT THEM if at all possible. Don't just broadcast them into the air!** So if you're going to try them over voice, you have to make voice contact with the intended recipient. A voice net will greatly facilitate this! Package up all the tactical messages BY INTENDED RECIPIENT, and arrange to get them across quickly if you're on voice net with intended recipients. Probably the FIRST THING you want to do at any given time period is to see if there is a voice net, and to find out WHO IS ABLE TO ATTEND THAT NET!

What if a voice net is impossible for some or all of the people you need to reach? TRY SOMETHING DIFFERENT! Can you reach the "missing people" on a packet CHAT channel? Does your ICS205 list a packet channel? You don't want to go hunting for a needle in a haystack, so pay close attention to the FRQUENCIES and MODES listed in your ICS 205 to increase the chances of

making contact.

If you simply can't find the needed recipient at all (they've "disappeared") , then maybe a WINLINK EMAIL sent by you will be stored locally or distantly and they will find it later when they make contact. Perhaps their antenna is down, or their power is out --- email has the nice property that they can retrieve it at THEIR convenience, allowing you go move on to other tasks. If they suddenly show up -- you can ask them if they have retrieved your email or you can commuunicate a duplicate over voice if need be.

Other solutions for a counterparty who can't be reached directly: Can someone do voice relay for them? Or establish a simplex store-and-forward repeater that would allow them to communicate over a greater distance? Can they make a digital (e.g. Packet Chat) connection? Can someone liaison between a voice mode and another that they are capable of?

What Works For Whom?
If you have different types of repeater assets, offering different modes (eg. Duplex FM Voice, Simplex FM Voice, Packet) -- you may want to create a little Venn Diagram (like in high school math class) to keep track of ***who*** can be reached ***how.*** And remember --- that can CHANGE with changing conditions.

Different Bands
Some of your counterparties may have HF capabilities as well as VHF --- you may want to run simultaneous nets on both FM and SSB to try and keep everyone connected. Or simultaneous packet and voice --- or all three!

ICS-213 Messages: If you are skilled at WINLINK, these may be the easiest of all to discharge during any time segment --- simply make contact with a digital gateway server, and bingo! your job is done faultlessly. But what if you CANNOT? Then you may have to send an ICS message over voice, over RTTY, PSK31, --- anything that you can do to reach the desired party! If there is a map, photo, or spreadsheet that needs to be transmitted, these are going to be a LOT HARDER to get across without WINLINK capabilities, so make a judgement call whether you can get something like WEFAX working, or send a text version using a bulletin technique, or ---worst case --- have to READ a long text attachment over voice. WINLINK sure makes these easier to send!

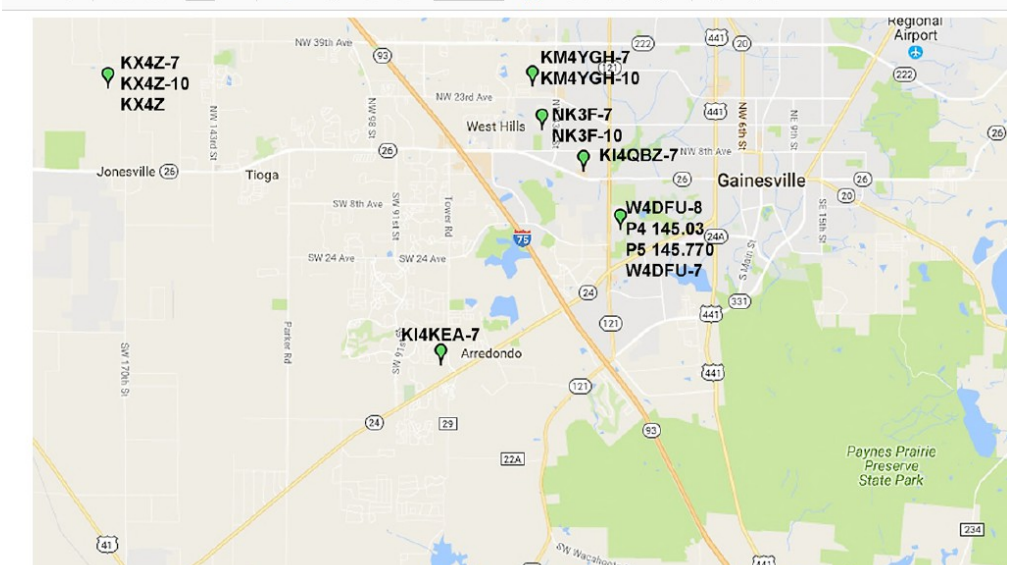
Roundtables --- where leaders of different ESF or other groups need to pow-wow. If you can set up a VOICE net, that is certainly the easiest, but a packet CHAT system is a close 2nd. Relays may make a voice net work if there is one person who can be reached directly. A roundtable can also be easily done over digital broadcast techniques --- PSK31 works great for this and can get through on HF bands when little else can. Use your ingenuity to make these communications work!

BULLETINS --- If you can possibly get everyone to be able to copy a digital technique such as MT63-2000L, that is by far the fastest way to get bulletins out! If there is one person who can't be reached that way, perhaps they can accept WINLINK EMAIL? If you're very busy and someone else isn't, maybe you can digitally send the bulletin to as many as possible and then have someone with fewer duties take the time (on a different frequency) to read themessage to people who can't copy digital? Or

relay to people who can't hear you directly? Again, be flexible and find ways to make things as efficient as possible!

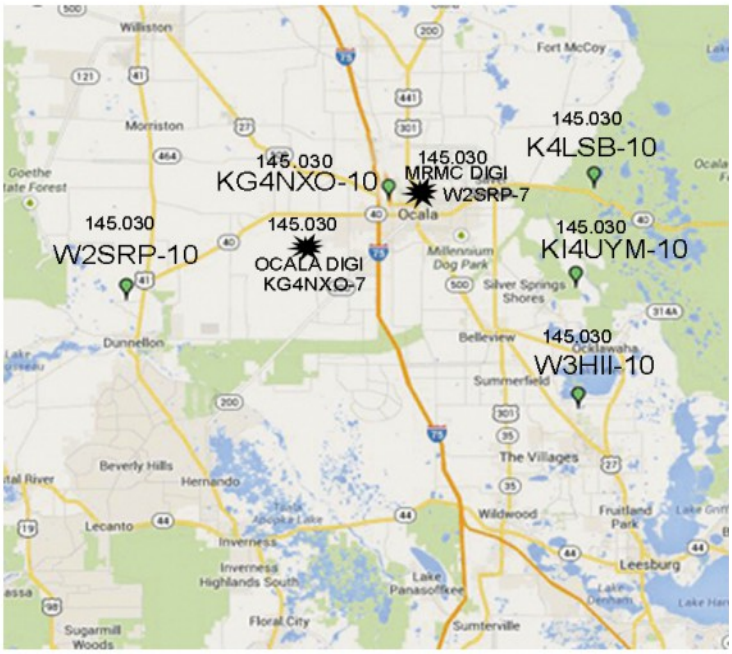
There are usually more than one way to get communications done! Try to use the most efficient method so that everyone has a chance to get all their tasks accomplished. Everyone else's messages are important, too! WORK TOGETHER!!

GEOGRAPHIC LAYOUT OF ALACHUA COUNTY PACKET NODE / WINLINK GATEWAYS



STATION	WL2K VHF	WL2K HF	TECH	PORT	FREQ	NOTE
W4DFU-7	NO	NO	TNC-2	(DEFAULT)	145.770	TEMP UNAVAILABLE
W4DFU-4/8	NO	NO	LINBPQ	PORT 4-50W PORT 5- 1W	145.030 145.770	
KI4QBZ-4/8	NO	NO	LINBPQ	PORT 4-20W	145.770	
KI4KEA-4/7	NO	NO	LINBPQ	PORT 4-20W	145.770	
NK3F-4/7/10	YES	NO	LINBPQ	PORT 4 50W	145.770	VHF ONLY
KM4YGH-4/7/10	YES	NO	LINPBQ	PORT4-20W	145.770	VHF ONLY
KX4Z-4/7/10 KX4Z	YES	YES	LINBPQ RMS TRIMODE	PORT 4-50W	145.770 (HF:5 BANDS)	

GEOGRAPHIC LAYOUT OF MARION COUNTY PACKET NODES / WINLINK GATEWAYS



Marion County RMS WINLINK GATEWAYS:
W2SRP-10 145.030 MHZ
KG4NXO-10 145.030 Located at the Marion County EOC (MERT)
KI4UYM-10 145.030
W3HII-10 145.030
K4LSB-10 145.030

Marion County DIGIPEATERS/NODES:
KG4NXO-7 Alias OCALA 145.030 Located at OCALA Airport Tower
W2SRP-7 Alias MRMC 145.030 Located at Munroe Regional Med Cnter.
(note: W2SRP-7 Digi will be shut down during hospital activations)

ICS FORMS

We will utilize several ICS Forms in this exercise. They are pretty simple and almost self-explanatory.

ICS211p	Personnel Check In Form -- sign in when you arrive
ICS 205	Frequency (and email address) form --- use this to find how to reach stations or groups when you need to.
ICS 213	General message form, including reply -- allows you to send a formatted message as well as a reply that includes the original message. Built into recent version of RMS EXPRESS automatically.
ICS 309	Communications Log -- keep track of all your message traffic sent/received as best you can on this form.

Suggestions for Troubleshooting a Digital Connection Not Working

This happens to all of us. Digital techniques can move huge amounts of data accurately and faster than simple voice --- but they aren't SIMPLE! You really have to gain some skills to use digital techniques. There are just so many places things can go haywire! You might even think of other things to check beyond what is in this list. I tried to put them in somewhat "logically" so you can work through your issue....my last time, it was #1....computer speaker turned off...

Just like with hospital patients, you usually have to first know the "anatomy" (what the pieces are and in what order they connect) and the "physiology" (what each piece is SUPPOSED to do) and pay a bit of attention to the SYMPTOMS.

ANATOMY

The collection of software & connections depends on whether HF or VHF, which mode, etc....but here's a rough overview....of several different ways to do it....

Com puter	**Software**	**(Packet)**	**soundcard**	**interface**	**cable**	**radio**	**Trans missio n line**	**Ant.**
VHF								
Windows	FLDIGI to USB Codec	(none) (modems included in FLDIGI)	Signalink/ C-Media	vol ctrls	RJ45	transc	coax	2 meter
Windows	WINLINK to TCP/IP	soundmodem	Signalink/C Media	vol ctrls	RJ45	transc	coax	2 meter
Windows	EasyTerm to TCP/IP	soundmodem (AGWPE interface)	Signalink/ C media	vol ctrls	RJ45	transc	coax	2 meter
Rasberry	linbpq	direwolf	Cmedia	vol ctrls	RJ45	transc	coax	2 meter
HF								
Windows	FLDIGI	(none)	Signalink/C Media	vol ctrls	RJ45	transc	coax/t uner	dipole?
Windows	WINLINK	WINMOR for HF	Signalink Cmedia	vol ctrls	RJ45	transc	coax/t uner	dipole

you're on the way to being an expert when you have this internalized and it starts to seem OBVIOIUS....

1. RECEIVING ANYTHING AT ALL

It is often easier to get receiving working. You have to HEAR signals coming from the receiver first of all (or you have the wrong frequency, wrong antenna, etc). They you have to SEE SIGNALS on a waterfall fft display, and then you have to have LETTERS show up on some screen, and finally letters from the DESIRED STATION show up.

#	Check	Issue
1 - PTT	❒	Is the transmitter failing to turn ON? If the transmitter won't turn on, and you're using a sound-card based system, check and see that your computer's sound output ("speaker") is turned ON and high enough to work (usually 100%)
2 - Receiver	❒	**Do you hear signals at all** when you listen with your ears to the VHF receiver audio? If not, you may not be on the right frequency or the antenna may be disconnected.
3 - waterfall	❒	**Do you see signals** on your SOUNDMODEM / FLDIG / WINMOR waterfall display? If not, then maybe the receiver volume, either at the radio or at the Signalink/ $10TNC interface is turned down -- or alternatively too high? -- or the receiver SQUELCH might be set too high:
4 - receiver squelch?	❒	Note that for most digital signals, you can just turn the RECEIVER squelch full wide open (hiss continuously) if you have a way to disconnect the speaker. and all our software works fine.
5- soundmodem DCD (data carrier detect) setting?	❒	If you're using SOUNDMODEM, I usually set the DCD threshold (sort of a digital "squelch" down just a hair above the far left.
6 - decode	❒	If you see signals on your SOUNDMODEM / FLDIGI / WINMOR waterfall, **are they being decoded in the browser window?** (Or for WINMOR, are protocol types flashing up periodically to demonstrate the signals made sense.) If not, then perhaps you have accidentally selected the wrong PROTOCOL (packet is 1200 AFSK AX.25)....or your packet audio FREQUENCY center has been knocked from 1700, or your FLDIGI signal center set on the wrong spot?
	❒	

Once you get the receiver system to detect characters, you have to get the Client Software Working for Receive and Transmit

2. CLIENT SOFTWARE: RECEIVING

1- Winlink SESSION TYPE	❒	If you are using WINLNK, do you have the right connection type selected? For VHF it would be OPEN SESSION: PACKET WINLINK if talking to a gateway, or Packet P2P if doing a peer-to-peer packet connection
2- Packet WINLINK	❒	If you are trying to do WINLINK PACKET on VHF --- you'll need either to use a real TNC (like a Kantronics KPC) or else a soundcard interface and soundcard software such as UZ7HO's soundmodem.exe. Often the software will connect over a tcp/ip PORT, and using a protocol such as AGWPE or KISS. We have typically used KISS to connect between WINLINK and soundmodem, usually on port 8100.
3. WINMOR WINLINK	❒	If you're using WINMOR on HF, you don't need the packet software UZ7HO soundmodem.exe suite. WINLINK provides WINMOR to operate a soundcard on HF. You just have to SELECT the proper soundcard in the Setup Menu. Adjust the sound interface and receiver so that the signals appear on the FFT watterfall.

3. TRANSMITTING

1. Getting the TNC light to come on	❒	If you're using a soundcard (FLDIGI, often for PACKET or WINLINK) you must be sure to intiate a Push-To-Talk. This will normally be indicated by the RED LED turning on, in the interface hardware.
2. How to initiate a test solid tone-- to test transmission.	❒	Different software has different ways to initiate a test tone / transmit / etc. • SOUNDMODEM -- has a Calibration menu item that will allow you to cause transmisson of tones • WINLINK HF WINMOR -- menu on winmor dialog offers a test transmission • FLDIGI -- includes a “TUNE” button upper right menu
3. WINLINK -- OPEN SESSION	❒	When you write a message on WINLINK, you don't “SEND”-- instead you “Post to Outbox” because unlike a normal email program, WINLINK can send it any of multiple paths. You must CHOOSE the type “Session” you wish to conduct, and then OPEN the “Session”

9 - Packet WINLINK session gateway callsign	❒	If you are trying a PACKET WINLINK Session connection using DIRECT or DIGIPEATER, do you have the right gateway call sign in the box?
4 - Packet WINLINK session: digipeating	❒	If you are trying a PACKET WINLNK connection using DIGIPEATER, do you have the gateway first, then the 1st digipeater next, and any 2nd digipeater at the rightmost end?
5 - Packet Winlink session: Connect Scripts	❒	If you are trying a PACKET WINLINK connection using SCRIPTS, have you examined your script to make sure it makes sense? Here's an example Script to remind you of some of the Syntax (what will work is HIGHLY dependent on what your local nodes transmit and respond to) !TOTALTIME 600 !CONNECTIONTIME 120 C W4DFU-8 C !CONNECTIONTIME 180 C 4 W2SRP-7 CONN !WAITFOR ? C KG4NXO-10 MADE
6 - WINLINK Session (of any type) START	❒	Did you hit the Start command?
7 - WINLINK Session confusion	❒	Did you abort a session & retry so quickly that computerized systems haven't reset properly?
8 - RFI	❒	Is your computer touchpad having RFI issues? If so, try a wireless mouse instead; keep antenna far away, use loops and ferrite beads
9 - frequency	❒	Are you on the right frequency for the station you wish to contact?

EVALUATION

There are two parts to the evaluations:

a) the subjective “facility” with which you carry out different kinds of communications on a 1-10 scale.

b) a checkoff for every message that you are tasked to transmit. If you can't get a message transmitted during the assigned time period, you need to try and get it transmitted in the next time period (perhaps with an explanation that it is late, if that helps). Do the best you can to get as many of the assigned messages transmitted as you can. If you have EXTRA TIME, and you see a real benefit to the Exercise to add additional realistic and reasonable communications, go ahead! But please avoid making a joke of the exercise or sending anything other than what would fit with a real disaster -- and mark all of your messages as TEST MESSAGE.

Here's what the evaluators are filling in regarding “facility”:

SEGMENT beginning at exercise time (circle one) 0000	Communication technique utilized during segment	Apparent overall location FACILITY at using technique -- only grade techniques that were attempted 1=rank beginner 10=expert deftly handling difficulties (LEAVE BLANK IF N/A)
	Voice	
	MT63-2000L	
	PACKET CHAT	
	WINLINK	

HOT WASH FEEDBACK

Standard NIMS/FEMA Training for Exercises is that immediately after the exercise is the best time to get Feedback from the participants themselves --- on how well or poorly the exercise was planned, how it went, the problems or successes they had --- anything that will help the group gain in expertise.

We will meet after the Exercise at an agreed upon restaurant if at all possible and have this Feedback discussion.

Later, after all the Evaluations are reviewed, we will have an After Action Discussion and eventually a Report that will summarize

a) What was learned
b) Tasks, plans and deadlines to make improvements

1. Incident Name: **ALACHUA COUNTY HURRICANE TEST**	2. Operational Period:	Date From: May 6	Date To: May 6
		Time From: 0800	Time To: 1300

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized) P - Primary S - Secondary T- Tertiary SM- Simplex	Method(s) of Contact (phone, pager, cell, etc.)
STATE EOC **(mock)** (KX4Z Gibby)	SARNET P	444.925 + PL123 SARNET
STATE EOC **(mock)**	EMAIL S	docvacuumtubes@gmail.com
ALACHUA CTY EOC, RED CROSS, ALL SHELTERS, ARES VOLUNTEERS	GARS REPEATER P	146.82 - PL 123
ALACHUA CTY EOC, RED CROSS, ALL SHELTERS, ARES VOLUNTEERS	GARS REPEATER S	146.91 - PL 123
ALACHUA CTY EOC, RED CROSS, ALL SHELTERS, ARES VOLUNTEERS	SIMPLEX T, SM SIMPLEX REPEATER	146.520
ALACHUA CTY EOC, RED CROSS, ALL SHELTERS, ARES VOLUNTEERS	GNV PACKET T, SM	145.070 Packet 1200
ALACHUA CTY EOC, RED CROSS, ALL SHELTERS, ARES	EOC WINLINK T,SM	3584.0 (dial freq) WINLINK Peer to Peer

1. Incident Name: **ALACHUA COUNTY HURRICANE TEST**	2. Operational Period:	Date From: May 6 Date To: May 6 Time From: 0800 Time To: 1300
VOLUNTEERS		
ALACHUA CTY EOC **(mock)**	EMAIL T	W4UFL@WINLINK.ORG
W4DFU-7 ***currently out of service***	SM	145.770 (SEDAN) Packet1200
W4DFU-8 DUAL FREQUENCY STATION	Port 4 (west antenna) Simplex Port 5 (east antenna) Simplex	145.030 (Ocala) Packet 1200 145.770 (SEDAN) Packet 1200
KX4Z-7 KX4Z-10	SM	145.030 (Ocala) Packet 1200 (WINLINK Connection to an HF HYBRID GATEWAY)
KX4Z (WINMOR WINLINK gateway)	SM Note that these frequencies are available via the software itself.	3584 kHz (dial) 7102.5 kHZ (dial) USB WINMOR WINLINK HYBRID
KX4Z (PACTOR WINLINK gateway)	SM	3584 kHz (dial) 7102.5 kHz (dial) 10139.5 kHz (dial) 14097.2 kHz (dial)USB PACTOR WINLINK HYBRID
NK3F-7 -10 DUAL FREQUENCY STATION	Port 4 GNV Port 5 SEDAN	145.030 Packet 1200 145.770 Packet 1200 (WINLINK)

1. Incident Name: ALACHUA COUNTY HURRICANE TEST	2. Operational Period:	Date From: May 6 Time From: 0800	Date To: May 6 Time To: 1300
KI4KEA-7 KI4QBZ-7 KM4YGH-7 -10	SM	145.070 Packet 1200 (WINLINK)	

4. Prepared by:	Name: G. GIBBY	Position/Title: PLANNER	Signature:
ICS 205A	IAP Page	Date/Time: Date	

COMMUNICATIONS LOG

ALACHUA COUNTY	COMMUNICATIONS LOG ICS-309	DATE:	TIME:	PAGE _____ of _____
FOR OPERATIONAL PERIOD:		INCIDENT NAME: 2017 HURRICANE TEST		
RADIO OPERATOR:		STATION ID:		

TACTICAL MESSAGE LOG

TIME 24hr. Format (Local Time)	STATION ID		MESSAGE	DISPATCH
	TO' Call MSG #	FROM Call MSG #		

PERSONNEL LOG IN FORM

1. Incident Name	2. Operational Period (Date / Time) From: To:	3. Check-In Location ☐ Command Post ☐ Other ☐ Staging Area ___	CHECK-IN LIST (Personnel) ICS 211p-OS

Personnel Check-In Information				8. Initial Incident Check-In?	9. Time	
4. Name	5. Company / Agency	6. ICS Section / Assignment / Quals.	7. Contact Information	(X)	In	Out
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10. Prepared by: Date / Time	11. Date / Time Sent to Resources Unit

CHECK-IN LIST (Personnel) June 2000 ICS 211p-OS

Electronic version: NOAA 1.0 June 1, 2000

1 Draft ARRL Alachua County Communications Plan para. 1.7

2 Florida Hurricane Exercise Helps ARES Plan, Prepare for 2015 Hurricane Season, Accessed at: http://www.arrl.org/news/florida-hurricane-exercise-helps-ares-plan-prepare-for-2015-hurricane-season