

Alachua ARES/NFARC/NF4AC Clubs

MINUTES

SEPTEMBER 9, 2020

Meeting held via ZOOM, instead of in person at the American Red Cross, Gainesville Red Cross, 6th Ave NW and 16th St

Attendance: 16 altogether

Mike KN4YGT

Earl McDow K4ZSW

Gordon Gibby

Jeff Capehart

Leland Gallup

Vann Chesney

Tommy Boyd

David Huckstep

Judy Gardner K4DF

John KJ4PZ

Craig Fugate KK4INZ

John, KJ4YPZ

Susan Halbert

Rosemary Jones

John Trites NO5X

Wendell Wright

Introductions. From 1830 until 1900 when the meeting commenced. August 2020 Minutes approved.

1. **UPDATES ON CREDENTIALLED VOLUNTEERS AND PATHWAY FOR NEW VOLUNTEERS (RACES).** W4UFL reports little change in the list of badged volunteers for the county...there are 17 volunteers for whom the badging is correct. If volunteers are wondering why they haven't "advanced" on the list, the IS training must be done...100, 200, 700, and 800, as well as ECO1, which is now online. EM asks that "only sincere volunteers," or words to that effect, go through credentialing, because actual willingness to deploy/perform is importance. There is a "TAPR" conference this Friday, 11 September. Tucson Amateur Packet Radio group...now instead of live, they're doing an online for the schedule. Google on tapr.org to get to the site. Watching is free. Don't need to register. It's in the ARRL news.
2. **LAB'N LUNCH AUGUST REPORT.** Great crowd, even masked. Approximately 8 people, practicing crimping PL-259s, two hf rigs on the coffee table, got ARDOP working and digital levels worked out.
3. **GENERAL CLASS COURSE FOR NOVEMBER 2020 PLANNING.** November 14/21 is target date for the course's second weekend day. Gallup and Gibby appealed for folks to sign up to help teach the license modules. Encourage people to get the ARRL books for reading before the classes; the Google Forms link on the website is used to sign up. KX4Z has some ideas about antenna builds. Chance that there will be testing at the conclusion of the course,

although that is tentative. Location TBD; this depends on how many people sign up. Sign up is on the NFRC web site.

4. **NFARC CLUB LIABILITY INSURANCE.** Our insurance (for NFARC) is \$200 per year; there have been offers to pay whole thing and pledge for half. Susan asked for emails of help, and to perhaps mail \$\$ to her (she gave no address to which \$\$ could be mailed). She provided her email address.
5. **BEATY TOWER UPDATE.** Susan KG4VWI today discovered that it's possible to get in to Beaty Towers for access. We have to give advance notice of who would be coming, and who would be authorized with valid UF ID or other ID's. OK with driver's license but better with UF ID. Asked for those interested in being on the access list email Susan. By next week those who would like access and/or donate to the insurance fund should contact Susan. 030 works on port 8; other is not working. Not sure why the whole station failed. Power issue? Beatty Tower equipment diagrams by Earl McDow show the configuration of what's in there now. We are totally dependent there on ac power currently. Earl showed a second proposed architecture that has a 12v operational base, with the potential for solar to really be resilient. The monitor can be run off 120ac. KX4Z recommended a commercial transfer switch for going ac to dc. Don't want any possibility of fire. Consensus seems to be that 30a fusing good; KX4Z recommended two controllers so that 50a could be max. 30a would just cover if both transmitters were operating at same time. Earl would like a hands on test to see how much power is really being used. Saturday not open until 10:00 am and that is a good time. KG4VWI looked up specs for equipment and said that 30a probably ok. Earl proposed that he reconnoiter during the week alone and then take it from there on the access notification.
6. **ALACHUA COUNTY G-400 SIGN UP FOR OCTOBER 2020.** The G 400 course for Alachua County has been canceled. KX4Z showed on screen how SERTRAC works and how courses can be researched/located, how sign ups work. KX4Z actually signed up for the course on screen and later in this meeting he showed that the "higher ups" had approved his taking the course already...pretty slick!
7. **EOC WEEKLY ACTIVATION AND CLEANUP OF RADIO ROOM; PUBLIC SAFETY.** The go box public safety radios have had the "panic" buttons disabled. KX4Z spoke with W4JIR about authorization and training for ARES members to use the public safety radios. COL Huckstep will train KX4Z and AA3YB on the radios, then we'll train the trainers for the public safety systems to be used by the badged volunteers. KX4Z described the current status of the go boxes. Trying to get polarity protection systems installed. These go boxes are expensive; 14 shelter go boxes are nicely done. Boxes also have meter for current and voltage measurement; polarity protection not yet working. That has to be fixed.
8. **CAN RADIO SAVES LIVES.** Leland, AA3YB, gave a presentation on whether Very Low Frequency (.01-50 kHz) RF can actually affect the lower Van Allen Belt. The presentation covered the ionosphere and the magnetosphere: where they are, what causes them, how they are used (ionosphere for skip HF refraction), and the risks they present (radiation in the lower Mid Earth Orbit region of the first Van Allen Belt at 400 miles altitude and above). Leland described the Air Force's 2019 launch of the DSX satellite with the Wave Particle Interaction Experiment (WPX) on board a Falcon Heavy vehicle. The DSX is in lower MEO, and with its 80m antenna will test the concept of VLF injection to mitigate the radiation hazards of the Van Allen belt: so can RF save the lives of astronauts in higher than LEO orbits? That's the implication of this

ongoing experiment. Bottom line: RF in fact DOES modify the environment (ionosphere and perhaps the magnetosphere/Van Allen Belt).

9. **SIMPLEX TESTING DRILLS.** 2 sessions. 3rd session next Thursday. Susan KG4VWI and David W4JIR will operate; AA3YB will operate from EOC. KK4INZ described simplex drills from the 90's and suggested that we not stop the drills with next week; AA3YB said great idea (mobiles and fire stations, e.g.) and will continue as phase two of drills. Leland suggested someone pick up sponsorship of this year's SET by activating two of the shelters with the go boxes and have folks from home use their normal VHF/UHF rigs to participate. Concept is that the SET would begin with activation of the ARES net, the EOC, and at least one, perhaps two, of the shelter locations with the County ACSO provided go-boxes. Exercise start by using the 82 repeater to establish NCS and net operations, pass first radiograms. Then the repeaters would "fail," forcing us to put in to effect the results of the simplex drill information we're developing as to who can hear whom, and who can be relays. By activating at one or more shelter and the EOC and by beginning with the 82 repeater, we could see if our new go box systems actually work. Moreover, by simulating the loss of the repeaters, we can establish if we can use a simplex relay net for message traffic. Simple SEIT. AA3YB asked someone to take up the ICS 201 and 205; simple SET, little required. No one said anything. KX4Z finished by saying this was a very timely and useful concept and that we'd do something..
10. **CHEAP LIFEPO4 BATTERIES AND BACKUP CHARGER UPDATE.** 50\$
LifePo4...these are Miady from Amazon; they say 16aH but probably are less. Have BMS on the inside...BMS limits power in and out. Limited to probably 20a out. Probably a P channel MOSFET is used for the BMS. KX4Z easily drew his at 16 aH for a long time. Need a LifePo4 charger, and doesn't come with Power Poles. Next described a battery charger system that can be used for LifePol4 battery charging. This is a Pchannel MOSFET as a charger; use a modulated signal to an Arduino to set the charging current. Arduino uses a 500 Hz pulse wide modulated system...and that's the trick. Do NOT trickle a LifePo4. Simply stops. This battery chemistry has lower loss/discharge. Lead acid likes trickle to prevent sulfation...keeps the battery running. LIFEPO4 likes to be stored less than fully charged to avoid corrosion. Some suggest leaving it 80% charged for storage. Huge number of charge/discharge cycles.
11. **PMOS POLARITY PROTECTION.** KX4Z described a simple system for polarity protection using PMOSFET as the protection gate. Showed the structure/design of what a P Channel MOSFET is and how it works. Showed simple circuit design for polarity protection
12. **APRS PROGRESS.** Vann, AC4QS, has set up an I Gate for APRS. He showed photos of the APRS gateway; APRS is automatic packet reporting system. Used for tracking vehicles/persons. It's a way to use packet radio, on a different frequency and different software, to do something different from what "normal" packet radio is used for. We'd like to set up some tests of APRS in the future to see its utility for EMCOMM. Vann's photo showed an old commercial VHF rig that he converted to a 2m ham radio. He showed the TNC and the Raspberry Pi 2 on to which he has loaded the APRS system. There is a connection to the Internet; if the station picks up and APRS transmission, it is passed to the Internet. Antenna is 45' to 50' with 35w. Vann has picked up people with trackers on the Interstate. He has lightning protection and the system has been online continuously for two weeks. Showed APRS.FI, which is the webpage with a map of the world showing APRS stations. The APRS gate also digipeats. APRSISC for Windows is what Vann uses. If you can use Windows and packet you can do APRS.

13. **FLORIDA WINLINK NET DESCRIBED.** Leland, AA3YB, described use of the WL Net to improve familiarity with Winlink and its modes, but also to improve familiarity with HF and VHF propagation. KX4Z showed website that pointed to how the Net works, and where one sends a contact email to get the weekly updates. KK4INZ also recommend the Net as a way to both practice and have fun on the digital modes.
14. **AUTO TUNER PROGRESS.** Earl McDow volunteered to build an autotuner...but didn't know that it used surface mount components...by YouTube videos Earl is learning how to install surface mount components, which “are the size of a grain of rice.” Difficult to do. Making progress. Surface mount not quite as terrible as he thought at first.
15. **TRAILER CREATION UPDATE.** Mike not in meeting, no update\
16. **FCC PROPOSED LICENSE FEES.** The FCC recently announced a proposal to impose license fees for amateur radio, with the justification that it is necessary to recoup costs; those who want to express opinion can go to a web site that KX4Z put on screen to file a comment. Some say it's foolish to charge \$...drive off newbies and we're volunteers who do public service.\
17. **SAD TALE OF 572-B TUBES.** The 572-b that are most common are made in a factory in China, which had a fire, so there are many vendors on eBay selling stuff that is bad....cracked glass, oxidized, poorly packaged and poorly made. KX4Z is the victim of such a vendor, receiving bad 572-bs. The company KX4Z bought balked...he sent back, don't know. Other designs, such as the 500s are still available. We'll see.
18. **MESH NETWORK IN WASHINGTON.** W4UFL mentioned a story from Washington State that a camera on a MESH network spotted a wildfire and was able to report to the state fire service. First time this kind of report has ever been done.

Meeting adjourned at 2054.