



QST NFL



Sharing information of interest to Radio Amateurs in North Florida

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From NFL Section Manager, Kevin Bess, KK4BFN



RON DESANTIS
GOVERNOR

AMATEUR RADIO WEEK IN FLORIDA

WHEREAS, for more than a century, Amateur Radio Operators across Florida have been broadcasting over the airwaves; and

WHEREAS, over the years, Amateur Radio has served as a bridge between peoples, societies, and countries by creating friendships and allowing for the sharing of ideas; and

WHEREAS, Amateur Radio Operators provide support and critical situational awareness to our state's emergency managers and other local organizations in times of emergency or natural disaster; and

WHEREAS, Amateur Radio Operators also serve as weather spotters in the Skywarn program of the U.S. Government Weather Bureau in Florida; and

WHEREAS, the Florida Division of Emergency Management values the partnerships Amateur Radio Operators have provided during hurricane season by allowing the state to maintain constant communications with impacted counties; and

WHEREAS, Amateur Radio Week in Florida is an opportunity to honor and recognize the valuable work of those operators who provide communication and disperse information to people across the world.

NOW, THEREFORE, I, Ron DeSantis, Governor of the State of Florida, do hereby extend greetings and best wishes to all observing the June 20 – 26, 2021, as *Amateur Radio Week in Florida*.



IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Florida to be affixed at Tallahassee, the Capital, this 19th day of June, in the year two thousand twenty-one.


Governor

THE CAPITOL
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Email your QST NFL input to n4gl.marty@gmail.com, Marty Brown, N4GL, Editor. All submissions are subject to editing prior to publication.

2021 Field Day Results Loften High School

Bob Lightner, W3GJ

Two intrepid HAM operators braved the air-conditioned elements to engage in the annual Emergency Exercise called "Field Day."

Noah, W4IEI and Bob, W4GJ, both participated in a CW only endeavor. Our group goes by the name **BEANOs** for the Brotherhood of Every Amateur North of Orlando. *We supply our generators with gas from Sonny's BBQ Baked Beans!*

40m: 438
20m: 984
15m: 65
Total: 1487



Bob/W3GJ



Noah/N4IEI

Disappointing UHF Emergency Repeater Range, Part Two

Gordon Gibby KX4Z

Part One of this white paper on UHF deployable emergency repeater range ended with data from a semi-urban Florida city (Deland) with buildings and vegetation, resulting in a measured 464 MHz signal attenuation of 27 dB/mile. *This is far, far larger than the loss predicted for free-space* (no obstructions):

$$\text{FreeSpaceLoss(dB)} = 20\log_{10}(d) + 20\log_{10}(f) + 32.44 \quad (\text{Free Space Loss Equation})$$

where d = distance in kilometers
f = frequency in Megahertz

The first term in that equation, $20\log_{10}(d)$, is the free space loss due to the spreading out of an expanding signal filling a spherical volume, and for 2 miles would be only 6.02 db -- tiny in comparison to our measured 27dB/mile loss! A few comments were made in Part One to express the enormity of the discouragement that figure brings to the goal of increasing the range of an emergently deployed repeater. That means to add one more mile we would need to increase our transmitter power by a factor of 500 times! Our range might be better in a hurricane-ravaged area...or distressingly similar to this in a flood-damage area with most structures still standing.

How can we begin to predict what level of improvement might be obtained by a higher repeater antenna?

Answer: We start with a **Path Loss Budget**. **Path Loss Budget** is a way to understand whether a communications goal will succeed at a certain distance, given the transmitter power, antenna information, and receiver sensitivity. In our case, we start with a four-watt hand-held transceiver power feeding presumed lossless vehicle rooftop antenna giving us (roughly) +36dBm radiated power. Our target receiver is typically sensitive all the way to -100 dBm, presuming a 10dB (S+N)/N ratio to make the voice signal readable. The difference, 136 dB, is the maximum total path loss allowable.

From the Free Space Loss equation above, the second term $20\log_{10}(f)$ indicates we have an obligatory loss of $20*\log_{10}(460) = 53$ dB related to physics and our typical dipole-type antennas. The third term in the equation gives us another obligatory constant, a 32 dB fixed loss. So even without any obstructions, have to whittle down our allowable 136dB path loss by (53 + 32) dB, giving us 51 dB that must cover all our absorption and obstacles to give us "range".

With our 27 dB/mile observed loss in forested urban environment demonstrated in Part One, it is now clear why we had a measured range of less than 2 miles.

¹ See Part One article on page 2 of <https://arrl-nfl.org/wp-content/uploads/2021/05/QST-NFL-June-2021.pdf>

² https://en.wikipedia.org/wiki/Free-space_path_loss

Creating a Model to Answer What Antenna Improvement is Worth Attempting

In order to estimate what improvement more height might make, a very simple model (with some attendant inaccuracy) was created. Millions of dollars have been spent by many researchers trying to do this same task for cell-phone companies and the military -- often struggling to get 1/2-mile coverage at cell-phone microwave frequencies in downtown metropolises with high-rise buildings door-to-door. Data from one research paper suggests an incremental path length loss of 30 dB *in only 900 meters* (approximately 1/2 mile) at 437 MHz in city environments. By contrast, getting high enough to create "free-space" conditions, ham radio operators have successfully lofted tiny cross-band UHF/VHF repeaters with weather balloons and verified communications in the hundreds of miles -- the free-space effect. In good winds, kites have been used with similarly useful results. Weather balloons may be well beyond what we can normally achieve for Florida Baptist Disaster Relief. Designed for our more practical case, the simple model below may not be perfectly accurate, and certainly didn't consume \$illions of research dollars, but it may be good enough for allowing reasonably accurate estimations of what tactics have a positive cost/benefit toward increasing the repeater range.

This is a fairly conservative model for Florida near-coastal cities with single story buildings predominating and a heavy tree canopy.

Passive Materials

Remember that in general, the atmosphere, buildings, trees, antennas, and the air are PASSIVE substances. They cannot tell whether a radio wave is going left or right. They act the same whether it is coming from, or going to, the user. They have a specific absorption per distance, and although it is granular based on the exact positioning of trees and buildings, over larger distances, it probably evens out, because radio waves don't travel in a "pencil point" like a laser beam, but instead occupy a football shaped volume known as the Fresnel Zone. Over larger distances, the density of houses, trees etc could be assumed to be tolerably homogeneous.

MODEL SPECIFICS

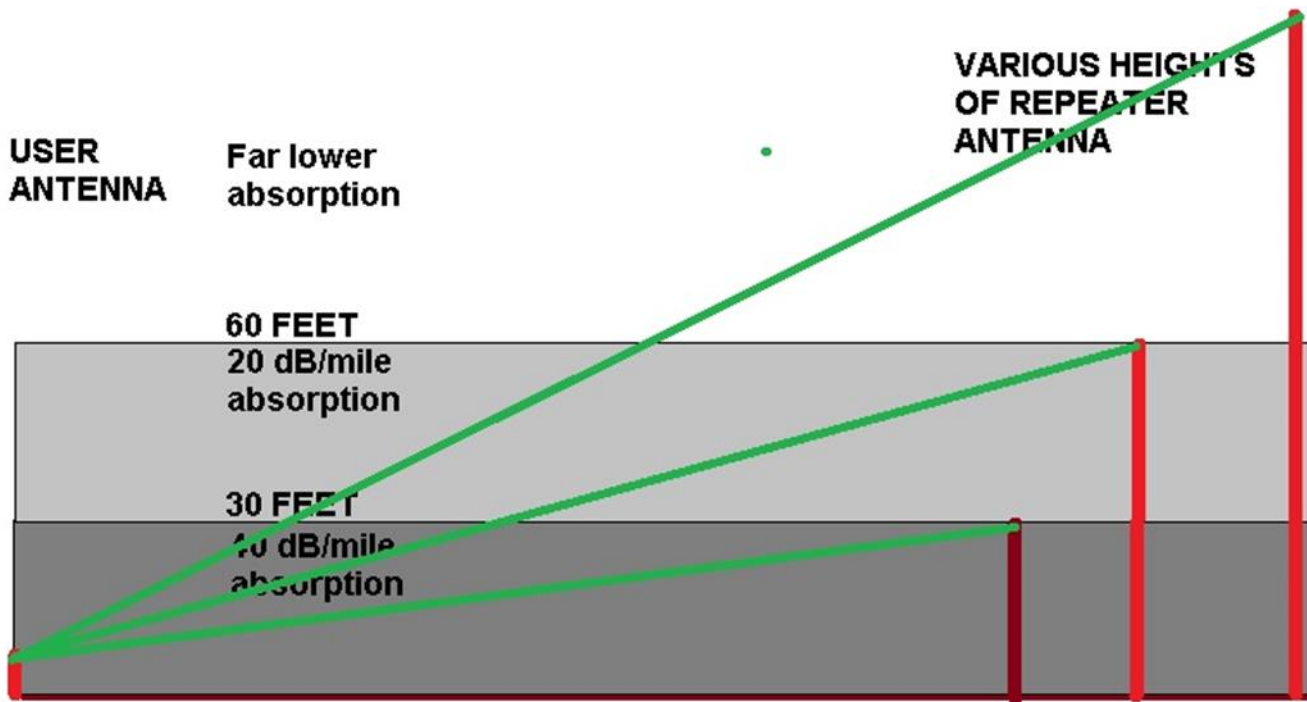
Heights	User antenna at 6 feet, 12 feet, or 20 feet Repeater antenna R feet above ground
Elevation angle	alpha elevation angle above ground in point-to-point transmission from user antenna to repeater antenna
Building attenuation below 30 feet	40 dB/mile
Foliage attenuation 30-60 feet	20 dB/mile
Free space attenuation	2.5 dB/mile (linear approximation to the non-linear term in the free space equation, appropriate for distances of a few miles)
Distance traversed	D = horizontal distance on ground D _{slant} is the total slant distance to the antenna

³ See: <https://erdc-library.erd.dren.mil/jspui/bitstream/11681/37554/1/ERDC-CRREL-TR-20-8.pdf>

⁴ See: <https://kv5r.com/ham-radio/balloon-repeater/>

⁵ See: <https://apps.dtic.mil/dtic/tr/fulltext/u2/a484750.pdf> -- A lengthy paper with quite a bit of information on options, noting the types of balloons and their advantages and disadvantages.

Continued on next page...



SIMPLIFIED MODEL OF URBAN/FORESTED TERRAIN WITH LAYERS OF LOSS

CAUTION: Very Small Alpha Angle at Distances of Miles

Because the horizontal distances of interest are so much greater than the vertical height of the Repeater antenna (E.g. 5280 feet versus 40 feet) the elevation angle *alpha* is very small, and D is approximately equal to D_{slant} . *At maximal range, all of the entries in the table below are within a degree above horizontal!*

The full derivation of the model is given in Appendix One.

Using the results of the Model, for the case given above, the following estimated predicted ranges are calculated.

It is important to note again that if theoretical FREE SPACE applied, the range of our repeater for **all** of these various heights of Repeater Antenna R, and User antenna U, would be $\gg 100$ miles. Our problem is remaining obstacles that absorb or deflect radio energy.

KEY DATA POINTS for UHF emergency repeater in urban/ forested area			SUPPORTING INFORMATION <i>for the curious</i>			
Repeater Antenna Height, feet	User Anten- na Height, feet	Maximum range D for 51 dB distance- term loss (Total path length loss 138dB)	Elevation An- gle <i>alpha</i> , de- grees	Estimated loss through build- ings, etc below 30 feet (40 dB/mile)	Estimated loss through foliage etc 30-60 feet (20 dB/ mile)	Estimated loss through air (2.5 dB/ mile - line- ar ap- prox.)
30 feet	6 feet	1.25 miles	0.208 degrees	51dB	N/A	N/A
60 feet	6 feet	1.76 miles	0.331 degrees	4142 feet 31.4 dB	5178 feet 19.63 dB	N/A
	12 feet	1.85 miles	0.281 degrees	3672 feet 27.8 dB	6120 feet 23.19 dB	N/A
	20 feet	2.04 miles	0.212 degrees	2693 feet 20.3 dB	8078 feet 30.61 dB	N/A
90 feet	6 feet	2.6 miles	0.35 degrees	3952 30 dB	4941 feet 18.7 dB	4941 feet 2.3 dB
	12 feet	2.85 miles	0.30 degrees	3474 feet 26.3 dB	5791 feet 22 dB	1.1 miles 2.7 dB
	20 feet	3.3 miles	0.23 degrees	2505 feet 19 dB	7515 feet 28.5 dB	1.4 miles 3.5 dB
200 feet	6 feet	5.2 miles	0.4 degrees	3383 feet 25.6 dB	4230 feet 16dB	3.7 miles 9.3 dB
	20 feet	6.8 miles	0.28 degrees	1995 feet 15 db	5984 feet 22.7 db	5.3 miles 13.1 dB
500 feet	6 feet	9.5 miles	0.57 degrees	2430 feet 18.4 dB	3037 feet 11.5 dB	8.4 miles 21 dB

IMPLICATIONS

Base Camp: With a 50–60-foot repeater antenna we will easily cover the typical base camp. In fact, it is likely the area would be covered by simplex use of our 5-watt Baofeng licensed units.

There isn't a huge advantage for the base camp area of even working to get the repeater antenna any higher than 30 feet.

Surprisingly, 90 feet -- using some sort of balloon or kite -- doesn't give us much advantage over 50-60 feet.

Continued on next page...

Larger Range-Needed Situation

If we want coverage within a portion of a city, the goal should be to use ANY existing tall structure to mount our antenna just as HIGH and in as CLEAR a location as possible -- obtaining permission, slingshot, air-launcher, professional climber -- all good ideas. Height is likely much more important than coax size, when you're trying to overcome losses of 25 dB/mile or so. Use thick coax for the lower portions if possible, and switch if needed, to RG-8X for the top portions. Ministries or groups with trailers might wish to carry assets to make this possible. The antenna doesn't have to be fancy; it just needs to be HIGH. A simple 1/4 wave vertical a good deal higher will FAR outweigh a fancy antenna lower.

If we are able to take advantage of an emplaced 200-foot or 500-foot antenna, possibly with extant hard-line, we would have reasonable coverage for deployed units for 5-10 miles.

Deployed Units >5 miles

High Frequency NVIS communications @ 3.5 MHz are likely going to be much more reliable for units in the 10-40 mile radial range, and especially in the absence of a 200- or 500-foot repeater antenna. We have good experience with this in the Gainesville/Alachua County testing on an NVIS net, using 25-100 watts. However, this requires antennas in the 100+ foot length range, typically at a modest height of 25 feet. More height is NOT necessary.

Easy Alternative: High Frequency point-to-point communications similar to CB radio efforts, with some sort of CB-similar 102-inch vertical whip on the deployed units, and a HIGH vertical whip (mounted on our HUM) on 10 meters would likely give us good communications over a city area or beyond. We've seen this go 10 miles or so in Gainesville urban environment. This is similar to the older Red Cross technique of using 47 MHz ("low-VHF" channel). In our case, we would currently need amateur radio volunteers deployed with the unit, but due to 10-meter Tech privileges, these could even be Technicians with good success. Their licensure allows up to 200 watts, and typical units do about 100 watts, which is plenty and can be operated from vehicle batteries.

In conclusion, the results of our disappointing range study are important to consider when planning possible alternatives for local emergency communications in a forested / urban setting.



The W8EK Report

Ken Simpson, W8EK,

QCWA Chapter 62, Ocala FL report

Ocala FL Chapter 62 held a real in person meeting on Thursday, April 24 at the China Lee Buffet on East Silver Springs Blvd in Ocala.

Chapter 62 of QCWA meets on the fourth Thursday of the even numbered months at 12:30 PM. Mark your calendar now!

Although attendance was not as large as normal, a good meeting was enjoyed by all of those present.

Chapter 62 of QCWA holds a net on 3940 KHz every Saturday morning at 9 AM local time. Please join us!

The next meeting of Chapter 62 will be on Thursday, August 26 at 12:30 PM at the China Lee Buffet.

Great news from the Friendship ARC in Ocala

The Friendship ARC has a new meeting location. Since we can not meet at the Sheriff's Substation, nor at Holy Faith Church, we now have a new location.

We will be using the new location until further notice. It is Calvary Baptist Temple, 21841 SW Marine Blvd, Dunnellon. It is located about 2 1/2 miles west of US 41, and is north of where route 40 joins US 41.

We want to thank Bob Toronto, KW4HU, and Charlie Lukas, W1DOH, for making arrangements so we have a meeting place.

We realize that this location is not extremely close to some of our members, but at the moment, it is the best we can do. If you find another meeting location that is better, please let me know.

Orlando Amateur Radio Club Changes Venue

John Knott N4JTK, President, Orlando Amateur Radio Club, www.oarc.org

I'm saddened to report to you that the Orlando Amateur Radio Club will no longer be meeting at the Beardall Senior Center. Another casualty of the pandemic, we learned this past Wednesday afternoon that the City of Orlando has permanently changed the operating hours for the Senior Center on Monday, Tuesday, and Wednesdays. For more than 30 years, OARC has been blessed to be able to call the Beardall Senior Center home, but due to the pandemic and cost cutting measures the City needs to take to keep the facility up and running, the city changed the hours to 9am – 8pm Mon – Wed. Beardall used to be open till 10pm on Wednesdays, allowing us to be able to start at 7:30pm with our meeting and end around 9pm.

Effective July 7, 2021 the Orlando Amateur Radio Club will now conduct it's monthly test session and the monthly club meeting at the Central Florida Fairgrounds. The test sessions and the monthly club meetings will be held in the Craft Building. The Craft Building is the same as what we call the North Hall during HamCation. Test sessions will still begin at 5:30pm and the club meeting will begin at 7:30pm. To help keep our cost down, we will be responsible for setting up all tables and chairs for both the test session and the club meetings. This includes tearing everything back down at the end of the evening by stacking the chairs and tables on pallets. The Central Florida Fairgrounds is located at: **4603 W Colonial Dr, Orlando, FL 32808**

Additionally, with the recent change in the COVID-19 status in Orange County we will be returning to full capacity at our meetings and bringing back the refreshments. Mask are not required, unless you feel more comfortable wearing one or you have not been vaccinated. Mask and hand sanitizer will be available at the meetings.

We will still be using ZOOM for our meeting to bring in guest speakers and for those who would rather join us virtually. We will also still be live streaming to You Tube. You Tube is a great resource for those who rather not use ZOOM or who can't watch live. You can always watch us on You Tube later after the meeting is over.

We will let everyone know a few days before the July meeting on which gate to use. It will either be the east gate or the south gate. The east gate is off of Fairvilla Rd and the south gate will be off of Pete Parish Blvd.

This change only affects the membership meeting and test sessions held on the first Wednesday of each month. The OARC Board meeting will also be relocated to a new venue and once that is determined, we will announce it to the club. HamCation Committee meetings are currently NOT affected by this change and will remain at the Beardall Senior Center.



K4GSX Field Day Report from Marietta, GA

Dale Covington, K4GSX

My step-daughter, Becky Muller, snapped the attached picture of me working on a simple antenna on Saturday afternoon of Field Day 2021. I setup in a detached woodworking shed in the backyard. I used the driven element from a 50-year old Mosley TA33-Jr. bolted to a wooden 8-foot 1" by 2" attached to ropes and swung about 25-ft up between two saplings. Twenty-two foot wires connected to each end resulted in an antenna that raked-in nearly 100 Field Day contacts (all QRP) on 40-, 20- and 15-meters. No opening on 10-meters heard here.

Editor's Note: Special thanks to Dale for reporting in from the Georgia Section! Dale follows QST NFL after attending an EC seminar with Gordon Gibby, KX4Z. Thanks, Gordon!



A Facebook Field Day Tribute to the "DADliest" of all Hobbies

Krystal Berry, Daughter of Carl Berry, KC5CMX



"May the Morse Be With You."

Since I can remember, my dad has looked forward to an annual Ham Radio event in June called Field Day. This event has been going on since 1933.

More than 40,000 "hams" throughout the U.S. set up transmitting stations to demonstrate ham radio's science, dedication to public service, emergency preparedness, community outreach, and their technical skills.

When I was growing up, people refused to believe that I understood "computer/IT" things because I'm a girl. But my childhood involved learning Morse code, taking apart electronics to put them back together, taking classes about atmospheric radio frequencies, and reading books that taught me the importance of ground wires and understanding electric charges.

My big nerd energy came from this guy. As an adult, I couldn't be any more grateful. Field day was different this year since we had so much family stuff going on, but it's always nice to see my dad in his happy place.



Krystal this on Facebook. The Berry family was in Arkansas over Field Day weekend for a family wedding.

Below are some highlights of Krystal's responses to her post.

I need this shirt

2d **Haha** Reply

Love this post so much!! Loved watching dad do the thing he loves!

2d **Love** Reply

That is the Dadliest of all hobbies! Love it!

2d **Like** Reply



Carl Berry

[Mark Sykuta](#) dadliest. I like that.

2d **Like** Reply



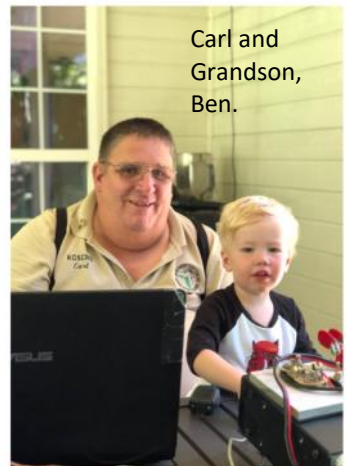
I need to trademark the name "The Dadliest Game" for the upcoming TLC series about HAM radios operating dads across America.



Carl-kid.jpeg



Grandson William honing CW skills



Carl and Grandson, Ben.

What's happening? Santa Rosa County Edition

Arc J. Thames, W4CPD, Emergency Coordinator, Santa Rosa County FL ARES

As if June wasn't already going to be busy enough with the ARRL Field Day, in comes Tropical Storm Claudette. While we didn't take a direct hit, we were on the eastern side of the storm and it generated several tornadoes, straight line winds, and a significant amount of rain in our area as it moved northeast. We activated our SKYWARN net that covers Escambia, Santa Rosa, and Okaloosa counties in Florida for 9 hours as the storm moved through our area of responsibility. We are thankful for our relationship with the National Weather Service of Mobile, AL as we have access to their Weather Chat system to provide updates over the air as soon as they are available to us. Our net control stations are all trained as Advanced SKYWARN Spotters and have had additional net control training to ensure the information they provide is accurate and that we don't speculate, only report.

Now enter Field Day, something we've all been looking forward to for months. This year we opted to setup in the parking lot of the Santa Rosa County Emergency Operations Center in Milton. This gave us an opportunity to be centrally located and readily accessible to the public.

Setup began at 0730 L on Saturday. We had approximately 12 hams onsite to assist with setup. One takeaway from this year is that we plan on setting up on Friday next year. Setting up on Saturday really takes a toll on everyone and by the time setup is completed, no one really feels like operating until later in the day. Our operations plan was done in ICS format this year to give us the opportunity to practice for a real event.

We also unveiled our brand-new mobile communications trailer. The cargo trailer was donated to us in part by Ascend Performance Materials in Pensacola as well as contributions by several hams. In next month's issue we will have pictures of the inside. This was really our "shakedown" trip for the trailer, so we have a few more things to button up. We plan to use this trailer for emergency communications deployments as well as to setup at festivals, fairs, and other events to educate the public about amateur radio. You can view the dedication video the trailer on [our website](#).

The Santa Rosa County Emergency Management team also allowed us to utilize their mobile command post to house 4 of our operating stations to help keep our operators out of the sun.



We worked hard to plan an event that would interest the public as well as to help support other organizations in the area. We partnered with a local food bank, [Food Raising Friends](#), that provides meals for children during school breaks in which they normally would not have received a nutritious meal. To encourage people to donate, we offered a raffle ticket for each item donated for prizes including hand crank weather radios and a 43" 4K Smart TV (donated by 2 of our ARES team.) In total we received close to 300 items for the food bank. Some who didn't know about the food drive even left to bring back an item to donate. The winner of the TV ended up being a new ham that was taking his license test to upgrade from technician to general, which he passed. The video of the drawing is available on [our site](#).



Continued on next page...

And if all that wasn't enough to draw the public in, what goes better with "ham" radio than barbeque? A local food truck setup in the parking lot offering some amazing barbeque to the public. Since it was there, we gave away close to \$600 worth of free BBQ meals to any dispatchers, firefighters, EMS, or law enforcement members that stopped by to visit.

While visitors were welcome anytime, our main public event was published as 1-6PM local time. During this time our focus was on meeting and greeting the public and introducing them to ham radio. We wanted to make sure that everyone that came onsite got the opportunity to speak with a ham and get on the air if they chose to. *Gary-KF4JK speaking to one of our visitors in front of the local CERT team's booth.* In addition to the food drive, the local .

In addition to the food drive, the local Air Force recruiting office contacted us and asked if they could set up a booth.



At the end of it all we had around 40-50 visitors that came throughout the event. We may not have made the most contacts on the air, but we definitely made a significant amount of contact with the visitors that stopped by. We are already beginning to talk about our plans for Winter Field Day as well as the ARRL Field Day again next year. The EOC parking lot turned out to be a great location and we are thankful to the Emergency Management team for allowing us to host it in their parking lot.



July is already looking like a very busy month for our team. Our next training session is on Saturday July 10 at 3:00PM local time focusing on SKYWARN nets and reading weather radar. It will be at the Santa Rosa County EOC (4499 Pine Forest Road in Milton, FL.)

On Saturday July 24 at 4:00PM local time we will also be participating in a Red Cross Shelter Simulation at the Milton Community Center. Pre-registration is required and more details can be found [online](#).

We are currently trying to coordinate with other ham radio clubs, teams, and individuals in Escambia, Santa Rosa, and Okaloosa counties for ham education, support, and public events. You can read more about our mission on the Rural Radio Preparedness Association [website](#). The goal of this effort is to provide a club agnostic team of people to help new hams as well as educate the public on ham radio via several different methods. For those in the local area interested in participating, we will have a meeting at Florida Town Park in Pace, FL (at the end of Floridatown Road) on Saturday July 24 at 11:00AM local time. Lunch will be provided.

For more information on our Santa Rosa County ARES team or to get involved, please visit us online at srcares.org, check us out on [Facebook](#) or email info@srcares.org.

Alachua EOC / North Florida ARC Double Last Year's Field Day Contacts

by Gordon Gibby KX4Z



Our group in Alachua County was able to significantly streamline our Field Day effort by working through our **Improvement Plan** items from last year. A lot of little "gotchas" were eliminated. We found new volunteers for ICS leadership positions and utilized last year's leaders as "deputies" in many cases. Our enthusiasm in zoom meetings and exercises/activities during the year gained us new faces as well. We held multiple training sessions before the date to get people accustomed to the ICOM7300's and our old vacuum tube amplifiers and taught FT8 and voice operation.

The result was a **dramatically improved Field Day effort that netted twice the number of contacts as last year**, 513 versus 249. Operators went from 9 last year to 15 this year, big improvement! We trained several new operators on the nuances of FT8 during the event. Our stations were better organized, the logging from digital mode FT-8 was seamless and automated. Our volunteers had a better grasp of hunt-and-pounce versus calling CQ and moved quickly between them whenever there was a dry spell.

One of our new members, **Brett Wallace NH2KW**, served ably as Operations Chief with his extensive Navy experience. His wife **Emily KO4JWC** almost single-handedly served us the most amazing "home-catered" meals you could imagine!! Complete with those fancy wedding-reception warming trays! A huge hit!

Another new member, **Craig Fugate KK4INX**, opened up the world of 6-meters to us, and we finally understood what we could do with the "freebie" VHF transmitter -- 62 contacts!! **Ron Lewis KN4ZUJ** brought satellites alive for us.

Jim Bledsoe KI4KEA was PIO for us and got us huge coverage, along with Craig Fugate's huge Twitter following. We had press coverage from two newspapers, and our I.C. **Dave Huckstep W4JIR** was our designated "reporter-target" during the event--so I got more operating time (and got to try some CW)!

Our Emergency Management dept (new ham **Dalton Herding KO4RGT**) got a ruling from the ARRL that their weekly documented tests of their huge generator were sufficient for the Class-F emergency-power generator test requirement -- so we ditched last-year's 2kw inverter and triplicate car batteries we had to use last year to operate the EOC 150-watt derated amps. We had a new solid-state amp....but its power supply let out the "magic smoke" 2 months ahead of Field Day and isn't yet back.



During the event we corresponded with Columbia County and found similar results - FT8 operators were outpacing voice operators 2:1 in both counties. One of our stalwart voice operators switched to FT8 to avoid being beat by **Amy Woods KO4IDO**, our newcomer! Ah, friendly competition!

The Improvement Plan (61 items) from last year was key to most of our improvements this year. Getting FT8 to auto-log was huge for us. (See: <https://www.qsl.net/nf4rc/2021/N3FJPLoggingConnectionInstructions.pdf>) We're in the process of building a consensus AAR/IP from this year's effort that will hopefully guide us to even more fun next year. The Draft can be viewed at: <https://qsl.net/nf4rc/2021/AlachuaCountyARES2021FIELDDAYAfterActionReport.pdf> Already up to 38 improvement plans!

Our homebrew 6-meter antenna mount from an abandoned basketball pole. Worked Ireland on that antenna!

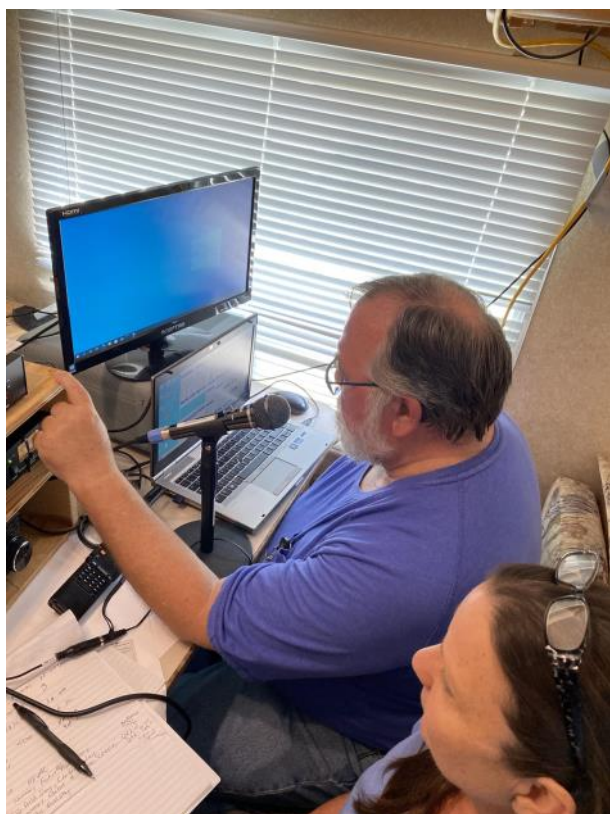
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Standing water after the deluge early Saturday afternoon. That blue canopy blew over.



Amy Woods KO4IDO holds up the list of FT8 contacts they made on solar-charged batteries at Station Two. **Dean Covey KV4RL** is busy making contacts.



Earl Sloan KI4OXD gives another valiant try at voice competition. After Field Day was over, he loaded FT8 at his home station and announced he had gone to the "Dark Side."



Hoyt Inman (no call) became the **youth sensation** by making all kinds of 6-meter FT8 contacts for us under the watchful eye of control operator grandpa Craig Fugate KK4INZ. Together they made 61 contacts on 6-meters. Grandpa said this was the first time Hoyt had expressed any interest, but was beaming from ear to ear at being recognized as a solid component of our effort! Guess it's like computer games?

Duval County ARES Holds Equipment Inspection

Brian Schultheis, K4BJS, Duval ARES, Emergency Coordinator

During June, Duval ARES inspected and tested radio systems and antenna systems at 28 City of Jacksonville evacuation shelters. A team of 16 Duval ARES members volunteered to repair antenna systems, test the installed shelter radio systems, and measure antenna performance. Using test equipment and amateur radios, measurements and performance tests were done on the amateur radio systems located at 26 Duval County schools, a college building, and a community center. The team's efforts identified a few malfunctioning radio systems and equipment needing maintenance. These inspection results provided the City Of Jacksonville Emergency Management Division with up to date information for shelter management.

Silver Springs Radio Club Tries New Approach for Field Day

Wayne Brown, N4FP

In years past, The SSRC set up individual station in large open areas with every operator working the event on his/her own. The club category was frequently 6A+. This approach is big on optics with impressive with tents, canopies, campers and antennas arranged over a wide area. However, interference was a big issue.

This year the Field Day Team, chaired by Elbert Wilkinson, KQ3K, put together a new plan. The club worked out of the regular meeting place in Ocala with three radios, one each on SSB, CW and digital. They also used a GOTA station. (The regular club station and antennas were not used.) The FD stations were powered by a generator, and antennas were installed for each station. 6 meters opened big-time Sunday morning.

Members signed up for time slots to work their favorite mode(s), and the turnout from the membership was good.



Above: SSRC FD Chair, Elbert Wilkinson, KQ3K (right) with former Marion County EC Ron Viola, KS4SW.



Top right: Allan Burgess, KN4NSA, who is visually impaired, makes some SSB contacts on the GOTA station.



Bottom right: Wayne Brown, N4FP, operates CW

Jacksonville Amateur Radio News

Billy Williams, N4UF

JULY MEETING: CBS 47/Fox 30 Chief Meteorologist Mike Buresh speaks about the upcoming hurricane season at the July 8th meeting of the North Florida Amateur Radio Society (NOFARS) at Hogan Baptist Church, 8045 Hogan Rd. The meeting starts at 7pm.

Since arriving in Jacksonville a dozen or so years ago, Mike has spoken annually to NOFARS and his talks are among our most popular meeting programs. Families, friends and visitors are invited.

At the June meeting, John Reynolds, W4IJJ spoke on power generators and their proper uses during outages. Calculating loads and duty-cycling are critical to using generators effectively.

FIELD DAY: At Jacksonville's Field Day last month, it was OUT with mechanical generators and IN with solar panels. Plans by Duval EC Brian Schultheis, K4BJS and NOFARS Activities Manager Todd Lovelace, K1KVA to emphasize solar power paid off. Instead of the usual noisy spinning machines, a large bank of industrial-grade solar panels provided much of the juice. A bank of storage cells compensated for cloudy skies and kept rigs going during the evening. Temperatures about ten degrees cooler than usual due to frequent cloud cover. Occasional drizzle but not bad wx overall

This year was by far the most solar-powered Jax Field Day. Centralized operations date back to post-war 1940s outings by the now-defunct Jacksonville Amateur Radio Society. During the 1960s and 1970s, the Florida Skip Field Day trophy attracted intense competition among Florida ham groups to post the highest score. The trophy was usually presented just prior to the main prize drawings at Miami's Tropical Hamboree. Jacksonville, Gainesville, and West Palm Beach were among the fiercest competitors.

Florida Skip was a monthly magazine started by Andy Clark, W4IYT in 1957 as a sideline to his regular job with Aeronautical Radio in Miami. Besides awarding FD trophies, Andy started annual Florida QSO parties with very nice trophies and plaques. As a business, Florida Skip was probably a break-even activity for Andy. Skip's diverse columns, club news, photos and a generous selection of swap ads made Florida Skip a premier publication to many.

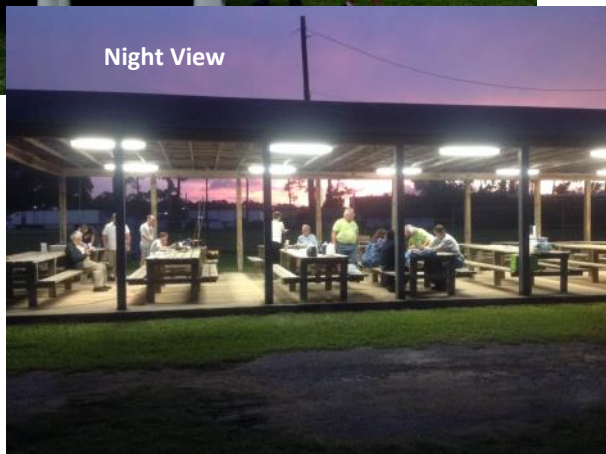
HAMFEST: The Jacksonville FREE Hamfest is Saturday, October 30th in the Terry Parker Baptist Church parking area. The fun starts at sunrise with free admission and tailgate spots.

The main Jacksonville FD "power generator." Todd, K1KVA and Eli, KO4OUI tend the solar panels.



The main station under a pavilion late Saturday.

Night View



K4BJS Setup



MADISON COUNTY AMATEUR RADIO CLUB, WORK DAY JUNE 5, 2021

Robert G. Downey, WA1TCC

The Madison County Amateur Radio Club has a VHF repeater located at the Town of Lee water tower in Lee, Florida. The Town supports our use of the land, building and a place for the antenna on the water tower. This repeater is one of the critical links for emergency communications from Tallahassee to counties to the east and south. Club members determined that the building needed maintenance attention upon regular inspections and received approval from the Town of Lee to have a work day.

When the Club was presented the issues needing attention they responded with a willingness to work in addition to providing materials required. The building was power washed, scraped and the interior cleaned. All holes were caulked, the exterior painted, and additional signage added. Improvements were made to the ventilation system and all work was completed without any expense to the Town of Lee. The building looks good and the communications equipment is more secure and continues to operate for the benefit of the Lee community as well as the North Florida area. We thank Lee for their approval for the work day and their continuing support of our communications system.



Before Power Wash



Continued on next page...

After Power Wash



The Prayer for a departed Friend for Ron Haines, KN4EIC of Suwannee County.



The Work Party

The team from left to right Gricelle W4ELE, Luis W4LAG, Bob WA1TCC, Ken KI4IMN, Pat our EC K4NRD, Dan W1JXG and Gordon W2TTT missing, but arriving in time JR KC4VPJ



Sparkling inside and out. We are ready for whatever comes our way and will continue to test and practice all year long! The club wishes to thank Lee for allowing us to have our repeater there. The repeater is known throughout the state. It gets many visits (by Radio) from Amateurs as they pass.

Photos by: Gricelle W4ELE and Dan W1JXG

Alachua County Polarity Protector LabNLunch Project

by Gordon Gibby KX4Z

Newer solid-state radios are often vulnerable to an accidental polarity reversal, which can happen in the confusion of connecting a battery or solar power system at Field Day. Shunt-diode / series-fuse systems provide a cheap measure of protection as long as the protective diode is able to conduct sufficiently long to blow the fuse. However, the provision of 14 expensive go-boxes by Alachua County for our possible service in shelters motivated us to come up with the more-advanced series MOSFET solution that just interrupts the red lead when the power polarity is reversed, and doesn't depend on burning out a fuse. Our group has previously gotten together to built 15 of a simple printed circuit board solution that will eventually find their way into our Shelter go-boxes.



Stewart Reissener KK4DXF examines his second board as others work in the background.



David Huckstep W4JIR (seated) assists Stewart in the diagnosis.

Now it was time to build some protection systems for our own gear as we approached Field Day. A simple Google Form system took orders for 14 boards from several Alachua County participants and we met for the traditional fast-food lunch and review of the project, followed by assembling in the Gibby kitchen with cardboard over the tables to solder and construct.

We have a mix of ham radio participants -- some have built kits earlier in their lives, some have never soldered a component on a printed circuit board before! The camaraderie develops intra-group teaching with informal hints and explanations being passed along from person to person around the table as the building proceeds, and moves into testing. We used a 9-volt battery as the "power supply" and verified that proper polarity sent power to the output of the circuit, while reversed power lit up the amber "caution LED" and sent essentially zero power to the output. For the first time, we had one circuit that failed the test. A bit of trial-and-error unsoldering found one of the 4 parallel-MOSFETs was the culprit. Perhaps defective or a bit too much heat during soldering? Not sure, but the circuit now works successfully.

At the same time one circuit was installed into the positive line of one of our real Go-Boxes so that participants could see how to take their precious new constructions home and add them to their own stations. A simple \$25 circuit that can protect a \$1000 radio quite well!

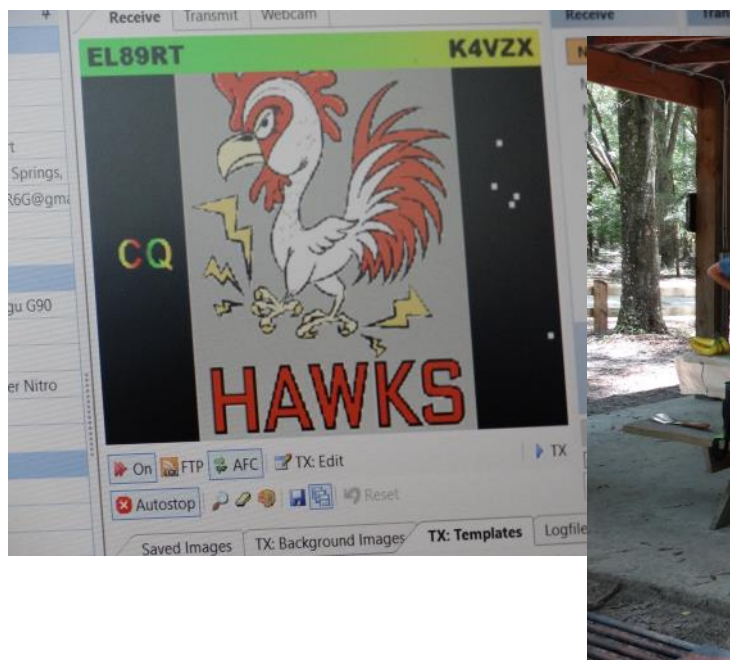
Circuit Information: <https://gsl.net/nf4rc/2021/PolarityProtectorPartOne.pdf>

Circuit Construction: <https://gsl.net/nf4rc/2021/ConstructionManual.pdf>

High Springs Amateur Wireless Club & Society

Jim Van Houten, NJ7Y

The High Springs Amateur Wireless Club and Society held its first annual field day operation on Sunday June 27 at River Rise State Park on the banks of the Santa Fe River, near High Springs Florida. The Club operated 2A, qrp cw, sstv and ft8. The antennas were mag loops and end fed long wires. We grilled hot dogs and burgers, ate lots of snacks, celebrated a member's birthday with cupcakes and chocolate fudge (supplied by Carolyn and Peggy). Our club members enjoy operating in almost every mode, experimenting, and, especially, field trips several times each month. We welcome everyone to join us for fun and hamming. Contact Jim NJ7Y via email address on qrz.com.



FCC Testing Information

Hog County Amateur Radio Association, Bushnell FL

- First Saturday, 11:00 AM
- Cross Connection Church, 1451 West County Road 476, Bushnell, FL 33513
- Info: sumterVE@gmail.com
-

Lake ARA, Leesburg FL

- Monthly on the 3rd Saturday, prior to monthly meeting. (Except December)
- 8:00 AM
- LARA Clubhouse (11146 Springdale Ave, Leesburg – off of CR 473)
- For more information and registration, contact: Dave Templeton N4NG, 386-804-2806 n4ng@icloud.com in advance of the meeting.

Lake Monroe ARS FCC Testing, Sanford FL (LMARS)

- Third Saturday of every month
- Seminole County Sheriff's Office, 100 Eslinger Way, 1st Floor, Sanford, FL
- Registration Required
- For more information and registration, contact Bob Cumming, W2BZY, 407-333-0690 or w2bzy@cfl.rr.com

Milton Amateur Radio Club, Milton FL

- Tuesday, June 15
- 6:00 PM
- Walk-in
- Bagdad United Methodist Church
- Info: Chuck, N4QEP, merlinman3@yahoo.com

Santa Rosa County FL ARES Testing (Walk-in)

- Saturday, June 26, 5 PM at the Santa Rosa county EOC, 4499 Pine Forest road, Milton FL
- Additional information and dates can be found at srcares.org or by emailing info@srcares.org

Seminole County

- Every month on the third Saturday
- 9:15 AM
- Seminole County Sheriff's Office off SR 17-92, on 100 Eslinger Way in Sanford, FL
- Info: Bob Cumming, W2BZY, w2bzy@cfl.rr.com

Silver Springs Radio Club, Ocala FL (SSRC)

- Go to <http://k4gso.us/class/> to sign up for classes
- Go to <http://k4gso.us/test-signup/> for testing. Testing is held on the 2nd Tuesday of odd months at 7 PM.
- Note <http://k4gso.us/ncvec605/> is requested to be filled out before you show for testing. It is best to download the form and open it as a PDF so you can fill in the blanks.

Suwannee ARC, Live Oak, FL

- First Tuesday of the month prior to the meeting
- Saturdays available with advanced notice
- N4SVC, 9707 58th Street, Live Oak, FL 32060
- www.suwanneearc.org for more information

Tallahassee Amateur Radio Society (TARS)

The Tallahassee Amateur Radio Society (TARS) has begun limited License testing. Please refer to the following for the updated testing dates and requirements for individuals wishing to take exams. <https://k4tlh.net/faq/license-testing/>

West Volusia Amateur Radio Society

- Second Saturday of each odd numbered month
- 9:00 AM
- Elks Lodge, 614 S. Alabama Avenue, Deland, FL
- Info: <https://westvars.org/testing>

This information is subject to change. Check with the testing venue to confirm the testing session.

Remember: Bring photo ID, CSEs, copy of current license, exam fee in cash, \$15 exact change. Large print exams are available.

NFL Web Site

For net, hamfest and other events go to www.arrl-nfl.org. Webmaster Brian McClure, NW4R, maintains an up-to-date and detailed listing of all NFL nets and activities. If you need to make a change to an existing net or activity, or add a new one, you can contact Brian on the website.

NFL Officials

Section Manager – *Kevin Bess, KK4BFN*

Assistant Section Managers

Joseph D. Bushel W2DWR

John C Reynolds W4IJJ

Dave Davis WA4WES

Jeff Capehart W4UFL

Neil Light KK4VHX

Ray Crepeau K1HG

Steve Szabo WB4OMM

Scott Roberts, KK4ECR

Section Emergency Coordinator – *Karl Martin K4HBN*

Section Public Information Coordinator— *Scott Roberts KK4ECR*

Assistant SE Coordinator – *Dave Davis WA4WES*

Section Technical Coordinator – *Frank Haas KB4T*

Affiliated Club Coordinator – *Appointment Pending*

Section Traffic Manager – *Helen Straughn WC4FSU*

Official Observer Coordinator – *Robert Leasko WB8PAF*

State Government Liaison – *Darrell Brock N4GOA*

Statewide Digital Radio Resources

Did you know we have designated ARES DSAR Reflectors & a DMR Talkgroup?

- **DSTAR Reflector 046**
 - o REF046A – Florida Statewide
 - o REF046B – NFL ARES
 - o REF046C – NWS Mobile, AL SKYWARN
- **DMR Florida State ARES TG 31127**

Feel free to link your local repeaters to help create a digital repeater network through the state!



Newsletter of the Northern Florida Section of the ARRL

1. Spread the word about our website www.arrl-nfl.org and **QST NFL** on your club web-site, in a newsletter or at a meeting.
2. Send a write-up and picture of your next activity.
3. Make sure you, or the appropriate member of your club is on the email reminder list.
4. Contact: Marty Brown N4GL, n4gl.marty@gmail.com

QST NFL is a monthly publication of the ARRL Northern Florida Section. **QST NFL** is intended for wide distribution within the NFL Section, including club Leaders and all licensed Amateurs in Florida. A current issue of this publication can be found at the ARRL Southeastern Division web site, Northern Florida Section. www.ARRL-NFL.org Opinions expressed by writers are their own, and may not express the positions of the ARRL. Submissions may be made to the editor, Marty Brown, N4GL.MARTY@gmail.com. All submissions are subject to editing prior to publication.