FLORIDA SUNSHINE STATE

QST NFL

Newsletter for the Northern Florida Section

Come join the FUN!

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From the Shack of the Section Manager

Scott Roberts, KK4ECR (kk4ecr@gmail.com)

When All Else Fails: Why Amateur Radio Must Grow

Living in North Florida means living with weather. Hurricanes, tropical storms, flooding, and severe thunderstorms are not theoretical risks here. They are a regular part of life. When those events occur, communications infrastructure takes the first hit. Cell towers fail. Internet goes down. Power grids collapse. In those moments, the question is not whether we need backup communications. The question is whether we are ready to provide them.

Amateur radio has answered that question for nearly a century. It continues to answer it today. But the hobby faces a challenge that threatens its long-term strength: fewer people are getting licensed, fewer licensed operators stay active, and too many of us wait for someone else to carry the load. That needs to change, and every operator in the North Florida Section has a role to play.

Emergency Communications: The Record Speaks for Itself

Amateur radio operators use their training, skills, and equipment to provide communications during emergencies when all else fails. Hams serve communities when storms or other disasters damage critical communication infrastructure, including cell towers and wired and wireless networks. Amateur radio operates completely independently of the internet and phone systems, and a station can be set up almost anywhere in minutes.

That independence is not a minor feature. It is the entire point. Unlike commercial systems, amateur radio is dispersed throughout a community without choke points such as cellular telephone sites that get overloaded. Operators are experienced in improvising antennas and power sources, and most equipment can be powered by an automobile battery.

We do not have to look far for proof of what this means in a real disaster. Hurricane Helene's impact in 2024 was a clear reminder of amateur radio's importance. In the Asheville, North Carolina area, widespread flooding damaged the power grid and roads, and left many residents without cell service. Amateur radio operators stepped in to establish emergency communication channels, providing real-time updates on storm conditions and damage reports to authorities and the public.

In North Carolina, operators used repeaters on Mount Mitchell to coordinate road closures and relief efforts when traditional communications were completely down. Individual stories from that event showed the personal weight of those communications. One woman listened to ham radio traffic and wrote down every street her family could use to safely reach relatives. Reports were coming over the air saying specific roads were closed, and she used that information to navigate through the disaster.

That is not a demonstration exercise. That is a family reuniting because an amateur radio operator was on the air.

ARES has responded to disasters since the 1930s, including the attacks of September 11, 2001, and Category 5 storms including Hurricane Katrina, Hurricane Michael, and the Joplin tornado. During Katrina, more than one thousand ARES volunteers assisted in the aftermath and provided communications for the American Red Cross, the Salvation Army, and other relief organizations.

Following Katrina, Congressional hearings highlighted the amateur radio response as one of the few examples of what went right in the disaster relief effort.

Here in North Florida, this is not a distant concern. We sit in the path of Atlantic hurricane season every year. ARES groups across this section maintain partnerships with served agencies, participate in training exercises, and stand ready to deploy when called.

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That readiness depends on operators who are trained, equipped, and active. It depends on enough of us showing up.

The ARRL Simulated Emergency Test exists precisely to find the strengths and weaknesses of ARES and related groups, to demonstrate to served agencies the value amateur radio provides to the public in times of need, and to help operators gain experience using standard procedures under simulated emergency conditions. Participating in these exercises is not optional if we are serious about being ready. It is how we stay sharp. It is how we earn the trust of the agencies and communities we serve.

The Licensing Trend We Cannot Ignore

Emergency communications readiness depends on having enough licensed, active operators. That is where the news gets uncomfortable.

The Technician class, the entry point into amateur radio, has been shrinking. Analysts examining FCC data found that the decline in Technician numbers raises serious questions about the pipeline of new operators entering the hobby.

The number of new licenses issued has decreased, which raises questions about the health of the amateur radio community. As licensees age, the renewal rate dips, emphasizing the need to attract younger individuals.

ARRL has seen a notable membership decline in recent years, with many licensed operators expressing frustration with rising dues and a perceived reduction in value. These factors contribute to a feeling of disconnection within the community, and a lack of connection directly affects future recruitment and retention rates.

There is also a subtler issue. The FCC's $35 licensing fee, introduced in 2022, appears to have pushed out a category of operators who were casually interested but not deeply engaged. These operators getting their license but not actively participating left a gap that dedicated replacements have not yet filled.

None of this means amateur radio is dying. As of September 2025, approximately 737,000 active U.S. amateur licensees support emergency communications, public service, and scientific experimentation. The foundation is strong. But strong is not the same as growing, and a hobby that does not grow will eventually shrink.

The question for every operator in this section is direct: what are you doing about it?

What You Can Do Right Now

The answer to the licensing and engagement problem is not a national program or a policy change. Those help, but they start with individual operators taking specific steps. Here are three of them.

Attend a club meeting and stay engaged. Active participation in clubs and local events is one of the strongest factors in engagement and retention. Many operators find lasting purpose in the social and operational dimensions of the hobby, but fewer are joining organized groups. Your club is the front door of amateur radio for your community. Show up. Bring energy. Help run events. If your club hosts a license exam session, volunteer to help. If it does not, work to change that.

Encourage someone to get licensed. Think about the people in your life who would benefit from this hobby. A neighbor who is interested in emergency preparedness. A coworker who enjoys technology and tinkering. A teenager who wants something real and practical to do with their time. The entry-level Technician class license requires passing a single 35-question written exam with no Morse code requirement. The barrier to entry has never been lower. Your job is to tell people it exists, why it matters, and that you will help them get there.

Become an Elmer. The term "Elmer" is amateur radio's word for a mentor, an experienced operator who takes a new licensee under their wing and helps them grow. Every licensed amateur, regardless of ARRL membership or any other affiliation, is eligible to support ARES and public service work. That same open door applies to mentoring. You do not need a special credential. You need patience, a radio, and the willingness to share what you know. A new Technician who has a mentor becomes an active operator. One who does not often becomes a silent key in an entirely different sense: licensed but inactive, never realizing what they could have done with that ticket.

Our Responsibility as North Florida Operators

Living in this section means we know what storms look like. We have seen what happens when the power goes out and the cell service fails and people cannot reach each other. We know, in a way that many people do not, exactly why this hobby matters.

That knowledge carries a responsibility. We have something worth sharing, and the people around us need us to share it. Not someday. Now.

Get to your next club meeting. Invite someone to come with you. Find a new ham and offer to help them get on the air. Participate in the next ARES exercise in your county. These are not large asks. They are the specific, practical steps that keep amateur radio strong in North Florida, keep our served agencies confident in our capabilities, and ensure that the next time all else fails, we are on the air and ready.

From the Section Emergency Coordinator

Arc Thames, W4CPD

Hard to believe that hurricane season will be here in only 2 months. Where has 2026 gone already? I hope everyone is taking the "blue skies" season to practice and prepare.

I wanted to take a moment to share a bit of sad news that I had received here locally in the panhandle. I was recently made aware of 2 silent keys that were active in our local communities. Steve Godby-KQ4IRH and John Blaisdell – W4CJB.

Steve was a very active member of our CERT & ARES team. He had just recently gotten his ham radio license along with his wife and daughter. Steve exemplified the highest standards through his unwavering commitment to service, having served his country for more than forty-five years in numerous distinguished assignments.

John served as the ARES Emergency Coordinator in Walton County for many years. John was extremely dedicated and built a fantastic relationship with the Emergency Management team there in his county. John built a strong foundation that those within the ARES group have certainly benefited from.

Times like these remind me how short life can be. Both men were still in the prime of their lives. We never know when our time has come so it's so important to do what you love and take time with those who mean something to you.

Rest in peace gentleman and thank you for your many years of dedicated service to your communities and country.

Monthly Radiogram Challenge

Want to practice using the national traffic system (NTS)? instructions on using the NTS on our website at arrl-nfl.org/nts/ For the month of April, please send me (W4CPD located in Pace, FL) a radiogram via the NTS with your answer to this question "Ham radio needs more _____"

Thanks to the following hams for participating in last month's challenge:

Mark- KX4LEO
Emmett-WA5EWN

Monthly EC Reports

Out of the 33 appointed ARES Emergency Coordinators we have in the section, we only received monthly reports for 13 last month. If you're an EC and are having trouble submitting your reports, please reach out to me. This information is so critical to knowing who of our teams are still out there and also hearing about the incredible work that's being done. Last month ARES volunteers provided 571 hours of service to our communities. Thanks to the following counties for providing their reports: Alachua, Bay, Citrus, Duval, Escambia, Gadsden, Gilchrist, Marion, Seminole, Santa Rosa, Sumter, Suwannee, Walton, Washington

	Number	Person-Hrs
Exercises this month:	3	28.00
Training events this month:	12	134.30
Public service events this month:	2	16.00
Community service events this month:	1	66.00
Emergency events this month:	0	0.00
SKYWARN events this month:	1	4.00
Meetings this month:	17	248.00
Unclassified events this month:	11	75.00

Call signs of DECs reporting:
K4BJS, K4SOP, KC3DWY, KD4EZW, KD4IMA, KF4ZZ, KM4BTW, KM4QQO, KO4YGV, KO4YOL, KX4LEO, W4UFL, WA4MN

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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 contributors are their own, and may not express the positions of the ARRL.

Submissions may be made to the editor: Earl McDow earl.mcdow@gmail.com.

All submissions are subject to editing prior to publication.

Looking for Something?

Gordon Gibby, KX4Z, has taken the time to index the articles from all the 2021 issues of ***QST NFL***!
https://arrl-nfl.org/wp-content/uploads/2021/12/2021QSTNFLIndex.pdf

What's Inside…

NFL Section Member of the Month!

We are always accepting nominations for the NFL Section Member of the Month. To submit a nomination, please email Section Manager Scott Roberts at kk4ecr@gmail.com. Include the nominee's name, call sign, county, reason for the nomination, and a photo of the nominee. Arc and I will review the nominations and contact you with any questions

Digital Library of Amateur Radio & Communications

Marty Brown, N4GL

Digital Library of Amateur Radio & Communications is now archiving ***QST NFL*** issues. DLARC is a project of the Internet Archive (the not-for-profit online library best known for The Wayback Machine.) DLARC is growing to be a massive online library of the past and present of ham radio and related communications. It is funded by a grant from Amateur Radio Digital Communications. You can see what we have so far at https://archive.org/details/dlarc .

Three years of QST NFL are now online, and I am working with the curator, Kaye Savetz, K6KJN, to eventually get all the issues that I have edited since 2014. DLARC can also scan paper issues. So if you have any stashed in your attic, let me know.

GARS Ham Radio

TAILGATE *Free*

This is an OUTDOOR EVENT

April 25, 2026

8am – 2pm
(Set up starts at 7am)

WHERE
Trinity UM Church

4000 NW 53rd Ave, Gainesville FL Directions: Head to the back of church campus, turn right. Near the Youth building, across from sports fields.

For more information contact:

Pete Winters at : pete@w4ghp.net

BUY-SELL-TRADE
RADIO RELATED ITEMS

FREE ADMISSION
Families are welcome (no pets)

BRING YOUR OWN DISPLAY SET UP AND SEATING

Follow parking directions

SPONSORED BY
Gainesville Amateur Radio Society (GARS)
Serving the community of North Florida. K4GNV
Website: Gars.club

In Honor of the U.S. return to the moon after 50 years

GOOD LUCK, MR. GORSKY

ON JULY 20, 1969, AS COMMANDER OF THE APOLLO 11 LUNAR MODULE, NEIL ARMSTRONG WAS THE FIRST PERSON TO SET FOOT ON THE MOON. HIS FIRST WORDS AFTER STEPPING ON THE MOON, "THAT'S ONE SMALL STEP FOR MAN, ONE GIANT LEAP FOR MANKIND," WERE TELEVISED TO EARTH AND HEARD BY MILLIONS. BUT JUST BEFORE HE REENTERED THE LANDER, HE MADE THE ENIGMATIC REMARK “GOOD LUCK, MR. GORSKY."

MANY PEOPLE AT NASA THOUGH IT WAS A CASUAL REMARK CONCERNING SOME RIVAL SOVIET COSMONAUT. HOWEVER, UPON CHECKING, THERE WAS NO GORSKY IN EITHER THE RUSSIAN OR AMERICAN SPACE PROGRAMS. OVER THE YEARS MANY PEOPLE QUESTIONED ARMSTRONG AS TO WHAT THE "GOOD LUCK, MR. GORSKY... STATEMENT MEANT, BUT ARMSTRONG ALWAYS JUST SMILED.

ON JULY 5, 1995, IN TAMPA BAY, FLORIDA, WHILE ANSWERING QUESTIONS FOLLOWING A SPEECH, A REPORTER BROUGHT UP THE 26-YEAR-OLD QUESTION TO ARMSTRONG. THIS TIME HE FINALLY RESPONDED MR. GORSKY HAD DIED, SO NEIL ARMSTRONG FELT HE COULD ANSWER THE QUESTION.

IN 1938 WHEN HE WAS A KID IN A SMALL MID-WEST TOWN, HE WAS PLAYING BASEBALL WITH A FRIEND IN THE BACKYARD. HIS FRIEND HIT THE BALL, WHICH LANDED IN HIS NEIGHBOR'S YARD BY THE BEDROOM WINDOWS.

HIS NEIGHBORS WERE MR. AND MRS. GORSKY.

AS HE LEANED DOWN TO PICK UP THE BALL, YOUNG ARMSTRONG HEARD MRS. GORSKY SHOUTING AT MR. GORSKY. "SEX! YOU WANT SEX?! YOU'LL GET SEX WHEN THE KID NEXT DOOR WALKS ON THE MOON!"

TRUE STORY?

ANTENNAS!!!

Alachua ARES Building High Performance Low Cost HF Antenna Items

Gordon Gibby KX4Z

3D printing has made a lot of things easier -- including building enclosures for UnUn/Baluns -- so Alachua ARES(R) is holding a **monster LABnLUNCH** in February to build all kinds of HF baluns very inexpensively (in the $25 range) (These are all more properly named "un-un's" but that name just doesn't roll off the tongue so easily.)

- 36:1 or 49:1 HF Multiband End Fed HalfWave Baluns
- 9:1 Multiband Non-Resonant Wire Baluns
- 1:1 Choke Baluns

Modifying a public design, I came up with a neat box for making these devices:

These 3D designs come in 3 parts: the "box", the "cover" and a plate that holds the toroid with cutouts for the zip ties. I added holes at the end for a stainless steel 1/4" eyebolt, and a 10-24 bolt for the connection to the antenna. A wire from the SO-239 end connects to the counterpoise.

I also improved the SO-239 cutouts and built a 2nd version that has two SO-239's for the CHOKE BALUNS.

These boxes can be built for about $2 worth of filament -- takes a couple of hours. Use ABS filament to survive in Florida Sun. Always print with the FLAT SIDE DOWN on the plate, to avoid lifting up and catastrophic prints....

BIG CORE DISCOVERY

For years we've known that the performance of the FT -240-43 core falls off a bit above 20 meters and some manufacturers have (very pricey) EFHW baluns with lower loss -- but I didn't know what they were using. DISCOVERY: In 2023 two very accomplished hams published a paper revealing a specific FAIR RITE type 43 core that works with about half the loss of what we've used. https://batteryeliminatorstore.com/blogs/ocf-masters-articles/ocfmasters-white-paper-different-cores-for-end-fed-transformers I found the cores on Mouser: https://www.mouser.com/ProductDetail/Fair-Rite/2643251002?qs=MLldULe7zY21cbRcW1YXeQ%3D%3D

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MULTIBAND HF ANTENNAS

End Fed Half Wave Dipoles are multiband antennas. There are lots of tricks to make them resonate better across a very wide range of bands -- but they are pretty good in many different designs and sometimes don't even need a tuner to give you multiple HF bands.

For constrained deployments (e.g., my travel trailer) a NON-RESONANT length (e.g. 28 feet, 52 feet etc) can be better. So we're ALSO building 9:1 trifilar unun (baluns) for this purpose, using FT-240-43 cores.

CHOKE BALUNS

All these antennas can be thought of as "severely off-center fed dipoles" -- but they are very unbalanced antennas and are great for developing large "common mode" currents that play havoc with digital modes and equipment. A "choke Balun" (current mode 1:1 Balun) helps tremendously. So we're building those too! Using a purposely lossy type 31 core for this purpose. (In the future we might build an AC Line Filter to replace the MIF23 using these.)

WHAT FUN!! It is a great chance for our participants to gain skills, renew friendships and learn more and more about this exciting hobby!

How to Construct 1:1HF CHOKE BALUN (UN UN)

Gordon Gibby KX4Z

ATTRIBUTION: The 3D box I'm using is modified from
Thingiverse user FWMoose
https://www.thingiverse.com/thing:5324418/files

The 1:1 Balun (UnUn) is a "transmission line" type device that greatly attenuates unbalanced (common mode) currents on a transmission line. (This can greatly reduce unwanted RF voltages and currents on your station!) Here is how it works: Because the correct currents on the transmission line are going constantly in opposite directions, their magnetic fields in the core completely cancel! The correct (desired) currents create zero magnetic field (if they are symmetrically wound) and experience ZERO inductance.

By contrast, unbalanced (common mode) currents aren't in opposite directions, so they do cause a magnetic field in the core and experience both inductance and resistive LOSS depending on the frequency and core material. That's why this type of device is called a "CHOKE Balun" -- it chokes common mode currents.

- Type 43 material has a very high mu and some loss above 10 MHz. It tends to work well as a choke Balun, particularly above 10 MHz.
- Type 31 material doesn't have quite as high a mu, but has considerably more LOSS and therefore may work a bit better at the 80m and 40m bands. Both cores have been used very successfully. (You would NOT want to use a powdered-iron core, because of their very low mu and very low loss....wouldn't be very useful.)

This design is not intended for VHF/UHF -- only HF! MFJ used to sell one of these and they simply used parallel wire to make the turns! You can use parallel wire if you tape it or otherwise keep it very close together, or you can twist them to keep them together, or you can even use coaxial cable (which probably works better, but is considerably bulkier).

For a simple build, just use twisted wire, with about 1-2 twists per inch. It will work fine; use Type 31 ferrite to try and get good performance all the way down to 80 meters

Instructions and .stl files for the box parts can be found here: https://github.com/docvacuumtubes/1-1-Choke-Balun-HF- I used a PS1 Bambu Labs printer, and ABS plastic filament.

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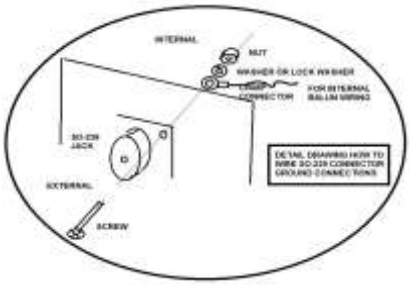
Items Required	Cost Estimate
ABS Plastic (box, cover, plate: filament cost)	2.00
FT-240-31 ferrite	8.99
Approx 5 feet of 20AWG hookup wire (you can also use Teflon wire but it isn't required)	$2?
Approx 2 feet of yellow gas Teflon tape (OPTIONAL)	0.46
2-4 #4-3/8" stainless sheet metal screws (secure toroid plate)	0.75
4 #6-3/4" stainless sheet metal screws (1/2" are too short to secure the cover)	0.77
4-6 zip-ties (2 small, 2 regular)	0.50
Teflon nickel plated SO-239 (won't melt when soldering) x 2	9.00
2 sets 6-32 screw/nut (possibly with lockwasher) to secure SO239. (6-32 required to secure normal sized ring terminals)	0.44
Solder lugs	free
TOTAL	~$25



CONSTRUCTION

1. This Balun has very low loss and so doesn't get hot and can use almost any kind of wire. Prepare two lengths of different colored wire, with enough wire for 11 turns and some spare for the connection to SO-239's at the ends. 44-46 inches.
2. Twist them (a drill at low speed helps) to get about 2 turns per inch. Don't over twist.
3. (Optional) wrap the toroid with Teflon tape. Because ferrite cores are non-conductive, this is optional but can make it look nicer and reduces chances for punctures.
4. Secure the wire with a small zip-tie at the start and then space out 11 turns around 3/4 of the toroid, and secure the end with another small zip tie.
5. Secure the wired toroid to the "plate" with small zip-ties.
6. Pick which color is going to be your "center conductor" and pass beginning and ending ends through their respective SO-239 holes in the box, and solder to the center conduct of the SO-239's.
7. Take the "ground wires" and crimp or solder them to a ring terminal at each end to mount to the ground body of the SO-239's.
8. Secure the toroid on its plate to the box with #4 sheet metal screws (1/4" or 3/8") Don't over tighten; avoid cracking the box.
9. Mount the SO-239's to their respective holes using 6-32 hardware, and mount the respective ground ring terminals to each of the SO-239's. (There is no need for an external wire in the choke Balun; it just has coaxial connections to input and output.) 6-32 hardware has a larger head and will better hold normal sized crimp ring terminals. If you use smaller hardware, add some washers as needed to hold the crimp terminals well. Dab some dielectric grease on the crimp terminal screw connections when you're finished to reduce corrosion over time.
10. I prefer to leave a "weep hole" on my outside gear so I only use 2 or 3 screws on SO-239's.
11. Secure the cover to the box with 6-32x 1/2" sheet metal screws.

USAGE: The device is completely symmetrical. Either end can be use as input or output. Most people want to put this nearer their transmitter than their antenna. Often people will put it right where their coax enters their house, or 10 feet or so away from their transmitter if they are out in the field.

Poor Man's Rotator Controller -- 3D Boxing Update

Gordon KX4Z

The Poor Man's dual-axis computer-controllable and manual rotator controller was presented in the July 2025 issue of the NFL Section Newsletter: https://arrl-nfl.org/wp-content/uploads/2025/07/01-QST-NFL-July-2025.pdf pp 13-18. This controller works with basically any DC Yaesu rotator, and with 12V linear actuators (that I'm using to create an elevation rotator from 3D printed parts) and with simple potentiometer measurement of position (as per the Yaesu rotators). I recommend any potentiometer from about 500 - 2000 ohms. You can manually move the rotator by pressing the buttons, or have it computer controlled, for example from satellite following software such as GPREDICT or SATPC32. You may have to make small changes to adjust for your particular rotation and potentiometer, but the basic model should work well with a G-450 or larger Yaesu rotator for azimuthal rotation.

PCBWAY Project

The printed circuit board is available on pcbway.com as a "project". See this pcbway project: https://www.pcbway.com/project/shareproject/K3NG_Rotator_Dual_Axis_Controller_Board_fd759cc2.html FULL DISCLOSURE -- I get a small credit in my pcbway account from downloads. On their site, you can simply order copies of the pcb board and they will fabricate and send to you. Apparently this has been viewed 1,332 times, downloaded 25 times, and 11 orders submitted to their firm -- but you can get the SAME GERBERS for free from my Github repository that I've now created.

New (completely free) GITHUB Repository

Github repository for the K3NG-based controller and 3D printed enclosure: https://github.com/docvacuumtubes/K3NG-based-Arduino-Nano-Computer-Controllable-Rotator-Controller Take the zipped file of the Gerbers, go to any pcb fabricator you prefer and have it built on 2sided boards. I get good service from PCBWAY.com, but there are other services. The US-based services tend to be far, far more expensive, but sometimes you can order just one board and get it for a reasonable price.

This repository includes .stl files to allow you to print an enclosure for the controller. I haven't printed button extensions (yet) for the recessed buttons, but you can use a pencil to easily reach them. The "bottom" is a flanged bottom at the moment which gives it better stability. When I "re-find" the ordinary (unflanged) bottom that is shown in the photo below, I'll upload it (lost somewhere in all my projects).

How to create the mounting threads

The mounts for the printed circuit board and for the back are dimensioned to allow for 3mm brass knurled inserts. That gives you permanently metal-threaded holes for 3mm screws. I use the 3mm inserts in this kit: https://www.amazon.com/dp/B0D5V3TZLB Set your soldering iron for about 250^{o}F and use the tip to press the insert to your desired depth as it melts the ABS plastic.

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Front view of the mounted project.

Bottom side with access to connectors.

Side with access to connectors.

Bottom (un-flanged version

Initiation into VHF Troposcatter

Gordon Gibby KX4Z

That isn't much of an antenna and yet it easily made a far beyond horizon tropospheric contact.

I grew up on Novice license CW, 90 watts *input* and a ton of fun. My only testing equipment could barely get past audio frequencies -- eventually I got an oscilloscope with the ("huge") bandwidth of 5 MHz. With these meager capabilities, even as I advanced to the Extra Class license in high school, VHF/UHF was never even a thought.

Fast forward to retirement years, and I head a truly fascinating talk at the excellent 2026 WCF Section TECHCON in Tampa Florida, where WB4OMG Buddy Morgan of Lakeland, FL, reviewed how troposcatter gave him what he deemed "reliable" communications of hundreds and hundreds of miles on any frequency from 2 meters to the GHz range. Amazing!

Researching, I found that ionscatter (high power low-VHF frequencies scattered by irregularities in the lower ionosphere) and troposcatter (scattering of VHF and UHF waves by changes in temperature or density of water vapor in the troposphere well below the ionosphere) were well known to the military after WWII and were some of the most reliable means of trans-oceanic communications. Using massive systems and multiple relays hundreds of miles apart, they easily spanned both major oceans and claimed reliability of as much as 99.9%. Whoa! Can this be real?

Useful References

Troposcatter	https://www.qsl.net/oz1rh/troposcatter99/troposcatter99.htm Fascinating ancient charts predicting the power required for various distances using troposcatter.
Troposcatter	https://fairlawnarc.com/eme-info/PDF/W3SZ-2.pdf (My friend Mike Hasselbeck WB2FKO says the justification for some of the formulae is suspect.)
Troposcatter	https://www.bobatkins.com/radio/troposcatter.html
Ionscatter	https://www.qsl.net/oz1rh/ionoscatter/ionoscatter_lecture_2002.htm
Trans-Pacific Links	https://www.rfcafe.com/references/radio-electronics/pacific-scatter-radio-electronics-november-1961.htm Explanation of the millitary systems spanning vast Pacific distances with extremely high reliability.

My friend and mentor Mike Hasselbeck WB2FKO confirmed that indeed, these amazing feats are not only real, but there are hams in the Florida and Southeast literally doing these feats every Monday at 7:30PM starting at 144.174 FT8 and going up the bands!

So I decided to give this a whirl. I have a lowly ICOM 820H VHF/UHF all mode older radio, with about 40-50 watts SSB output, and I know how to connect up a Signalink and do FT8. I had just built what I called the "spider-legs" three-cement pot support for a Yaesu rotator, and I had a 10 foot mast and a homebrew 2m beam I constructed for satellite comms. I could use just one of the two yagi's and try for horizontal polarization. The Brewster angle and other issues make vertical propagation undesired.

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Throwing all of this together, it didn't even occur to me to know how to read Maidenhead locators and convert to beam headings -- that will come later. But I got the beam up, got a makeshift station going in time for the 7:30 Monday meeting.

VISIBLE SIGNALS!!

I could actually see signals on the FT8 plot! Not just the booming point-to-point direct signal from WB2FKO about 30 miles away on a huge tower -- but I could see several other signals as well! Even with the battery on the laptop dying and my other new-user mistakes, I had a satisfying FT8 contact with a station a hundred miles away in Jacksonville Beach, and I heard stations even farther! I clearly decoded WB4JWM in between Atlanta and Augusta -- he was coming into High Springs at WB2FKO's house at -9dB S/N! These are far beyond radio horizon for a 12-foot high antenna....this is truly amazing. My own signal was decoded not only in Jacksonville Beach but also in Tampa at -12 dB S/N. For FT8 those signal levels are more than adequate. That means that JS8 would also likely work for conversations.

Conclusion

I'm going to try more of this. The ability to do *far-beyond-the-horizon* VHF/UHF tropospheric communications thanks to SSB and digital signals is very attractive, even for emcom purposes -- zero dependence on the ionosphere or any other infrastructure other than water vapor! See you on 144.174 FT8!

Keeping Powerful Transmitting Tubes Gas-Free and Happily Transmitting

Gordon Gibby KX4Z

Running a power transmitting tube plate hard enough to "show color" (dull red) can actually extend the life of the tube -- and this article explains why and a technique to safely accomplish it.

As a teen, I built a high power HF linear amplifier and have refurbished 3 Heathkit "half-gallon" kilowatt input, 600-watt output SB-200 HF amplifiers, including modifying one to be able to operate on a federal SHARES frequency. Recently I took delivery of a very old Hallicrafters Loudenboomer amplifier supplied with the well known 3-500Z vacuum tube. Vacuum tube amplifiers aren't always as popular these days as LDMOS chips have begun to produce really higher power in several commercially available amplifiers, but vacuum tube amps still have many advantages. While tubes often require a pi-network to transform their thousands of ohms plate impedance down to 50 ohms, **they are quite tough against high voltages and temporary high currents.** Many don't need any special protective circuits beyond generating an ALC (automatic level control) voltage to limit the drive from an exciter transmitter to stay in their linear range. They may easily survive accidents that instantly destroy solid state devices.

The Arc-Over Destructive Hazard

There is one specific risk in lightly used vacuum tubes or those stored without use for many years -- the slow ingress of gas molecules (e.g N_2, O_2, and others) past the Kovar alloy seals bonding their high-vacuum area exiting filament/cathode, grid and plate pins, to their special glass. No seal is perfect, and moisture in the air is apparently one of the culprits, damaging the Kovar.

Charles Rauch Jr, W8JI, is considered one of the world's experts on the care and feeding of power transmitting triodes and tetrodes, having designed some of the most popular Ameritron amplifiers. He explains (and the literature supports and agrees) that many of these internal anode, glass enclosure power transmitting tubes with zirconium coating on their plates, need to be run "hard" (e.g. high temperatures on the internal anode) to keep gas down.

When vacuum tubes are first manufactured under high vacuum, a "getter" metallic material (e.g. Barium) is "flashed" to a high temperature inside the exhausted tube to capture the last molecules, and then some of that remains as a shiny coating on the inside glass to help capture stray molecules. (If it all turns white, the tube is gone.) But for a lot of high power glass, internal-anode transmitting tubes, like the 811A, 572B and 3-500Z and larger, it is a coating of zirconium on the surface of their metal or graphite plate, that shoulders most of the long-term load of continuously capturing new molecules of gas. Zirconium gettering is most effective between 1000^{o}C and 1600^{o}C. (Because of graphite's extremely low thermal expansion coefficient, the mechanical connections to the plate remain intact at these temperatures. https://blog.ohiocarbonblank.com/3-thermal-properties-make-graphite-ideal-material-high-temperature-applications/) If high temperatures aren't reached by the plate over long periods of time, it is possible that the next time RF plate voltage adds to the DC applied voltage to hit a peak, there may be a very destructive massive arc from plate to grid, or cathode. Ionized gas molecules within the tube provide the charge carrier for many many amperes of arc current. RF plate voltage can reach many times the DC supply voltage in cases of improper load and high drive. (See demonstration of this here: https://www.w8ji.com/demonstation.htm

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Judging temperature by color: Google Artificial Intelligence Google resources indicate that graphite turns dull red at 500-600°C; bright red at 700-900°C and yellow-orange at 1000-1200°C.

Preventative Maintenance

W8JI advocates running zirconium-covered plates to dull red or beyond **on a regular basis** (every few months at a minimum) to capture stray gas molecules and prevent arc-overs. He explains one technique to do this is to intentionally de-tune their output matching network, while providing RF drive to cause elevated plate current. Using a dummy load prevents transmission over the air, and the detuning of the pi network causes elevated dissipation by the plate. With a tube on unknonwn length of non-use, this could be carried out with a plate voltage substantially lower than mormal; with an in-service tube, it could be done using the normal circitry. (He indicates approximately a 50% "save rate" for unused 3-500Z tubes operated for an hour up to a day at low plate voltage but adequate plate current due to positive bias applied to the grid.)

My Effort

I replicated Rauch's exhortations with a refurbished SB-200, using 80-meter CW drive from an sBitx (only 40W avaiable). Detuning the plate tuning capacitor resulted in nearly zero RF output, and 250 mA of plate current @ approx 2700 watts -- resulting in a plate dissipation of 675 watts divided between two tubes. The 572B s typically considered to tolerate a continuous plate dissipation of 160 watts, so this was *definitely* above the dissipation rating, and within 10-15 seconds I was rewarded with a nice glowing plate (red to orangish red) along the longer flat side of the plate, on both tubes. Tube manufacturing literature suggests at some level of red, this can be continued for many minutes, but my sBitx exciter won't likely tolerate that -- so I settled for several 15 second periods of heating to try and capture more gas molecules.

This was a completely new experience for me -- never before having intentionally de-tuned a pi network to cause INCREASED heating of a tube's anode! However, it seems pretty easy to carry out on an occasional basis. In the future I may try dull red (rather than red-orange) for a longer time period. To recondition the used 3-500Z that I've received, I'll use a VARIAC to reduce the plate voltage (to reduce chances of an arc) and then drive the tube (keeping grid current within limits) and raise the temperature of the anode to dull red for some time, before allowing the tube to see normal plate voltages.

Safety Plate Supply Design

The main limit to the arc current is resistance in the plate wiring circuit. While earlier designs from the 1970's didn't often have protection against these arcs (no "glitch resistor"), many refurbishers and current manufacturers include a 10-ohm high power resistor in the high voltage lead of power tube amplifiers to at least limit the arc current and spread out the discharge over a longer period of time. This along with cleverly placed diodes and possibly also some gas discharge tubes, can protect the power supply components and various grid current and other meters from destruction, and also protect a solid-state driver exciter from damage. (See, for example: https://www.w8ji.com/arc_protection_al572.htm and https://www.wireless-girl.com/Projects/Heathkit-SB200-Mods/) I have personally experienced ***one*** such arc -- and thankfully my amp survived. Charles Rauch Jr W8JI states that oddly, the tube may now have less gas as a result of the arc! But far better is to PREVENT such arcs by using the gray granular zirconium coating on the tube plate to absorb those stray gas molecules before any arc can happen.

"What are you working on?" From the Desk of K4LWM

DJ Stewart KI4ZER

A very common question at any of the Playground Amateur Radio Club meetings, Pile-Ups or importune events is "What are you working on?"

It seems to come from any member, because everyone is looking for something interesting, potentially for their next project. I have even asked that question, of other members, when I hear snippets of conversation that pique my interest.

In the past year I have been asked the question several times and have not really had a good project to talk about. Not because I have not been busy or not looking for things that I wanted to work on, but mainly because I have been listening and taking notes and investigating, that is if you consider watching YouTube videos investigating. Yes, I have been looking for what I want my HAM radio experience to be.

Let me digress, I have had my license for over 25 years, but I came from a club in Birmingham that was very active in the weather warning scene. The club (BARC) had networked repeaters that covered the entire five county area that made up the Birmingham metro area. Lots of members that were active on the VHF bands at all hours of the day and night. I was content to be just one of the members and because of a job that kept me mobile most of the time, I was one of the Ratchet Jaw operators you found on the bands during the normal workday.

In 2013 I purchased a home in FWB to serve as a vacation home with the intent to retire there or at least in the area in the future. While I was working on the house trying to get it ready for that retirement day, I monitored the bands but was very disappointed because of the lack of traffic. I did make a few contacts and enjoyed having breakfast with a few of the operators that I met on the local repeater. Those were few and far between because I was still traveling back and forth to Birmingham for work. Of course, the restaurant, Mother Earth, closed and I lost contact with the few HAMs that I knew from this area.

When I retired in 2017 and moved to FWB full time I had lost interest in Amateur Radio and to downsize I sold my tower and most all my gear. I thought this area was void of radio activity. Unfortunately, I had just not met the right people.

All of that changed when I connected with Bill, KQ4ATC, which led to an invite to PARC's field day, where I met several operators and had a very good time. That activity earned an invitation to Tech Night at the PARC club house and then to membership and then to that question, *what are you working on*? I did not really have a project to talk about.

That led me to ask myself, *what do I want my HAM experience to be?*

I became an active participant in the club, attended tech night, business meetings and the Swampfest, along with other club activities. I found that my interest in Amateur Radio was renewed and I started looking for what I wanted to do to enjoy this hobby.

I dusted off the old Icom IC 7000, built a LiFePo4 battery box, purchased a wolf river coil vertical antenna and started making contacts on 20 meters (chasing POTA) something that I had never done in the past.

That was fun but, hearing the other club members discuss the projects that they were working on still left me with a feeling that I was not really embracing the experience yet.

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Other members were creating things with 3D printers, experimenting with an assortment of antenna, incorporating digital modes of operating and then trying to bring the information to the club members at tech night. Wow, what a varied assortment of activities they were involved in. I started making notes in my little black book. I made list of components that were used in the various projects, websites for sources of components and/or YouTube videos describing similar projects.

I would take my list to the hamfests, tailgates or swap meets that I attended. I ordered torriods, enameled wire, printed project boxes and began to build transformers, balun, ununs and chokes. By collecting the various parts and pieces an idea of a project that would allow me to expand my radio experience formulated in my mind. I wanted to build an antenna that would allow operation on the low bands that would work within the confines of my lot size and the HOA restrictions.

I assembled an antenna mast out of chain link fence gate post, used push-up antenna mast and 1" Lowe's PVC pipe that combined to form a 30-foot base for an EFHW 40-10-meter antenna. This was installed in the back yard next to my storage shed. The 20-foot flagpole in the front yard anchored the other end of the 63.5-foot 18-gauge EFHW wire. This arrangement did fit into the 38×150-foot lot size of my property and kept the antenna wire behind the front of the house.

The tuning process required raising and lowering the wire many times pulse adding a counterpoise and trying to compensate for the metal roof on the shed which is under the feed point of the antenna. Finally, after two days of tuning, an acceptable antenna SWR was achieved for the 40-10-meter bands, and the IC 7000 was hooked to the coax and powered on. When the 40-meter band was selected the radio came alive with Net traffic at 7.185 LSB. I was able to join the net and made 35 contacts on 40 meters, which I had never operated on before. Those contacts ranged from Wisconsin to Connecticut down the east coast to Virginia and even one in ST Augustine Florida, all within 20 minutes. I was operating mobile from a patio table on my deck, on an antenna that I built. This was quite an accomplishment for my first project build, made possible by the influence from the members of Playground Amateur Radio Club that renewed my interest in the core activities embraced by the HAM radio community, *Experimentation* and *Implantation*.

So, can I ask you, "*What project are you working on*?"

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Up next, Jeff, N2VLV doing some predatory work for the PARC Allstar Link. AllStarLink is a network of Amateur Radio repeaters, remote base stations and hot spots accessible to each other via Voice over Internet Protocol. AllStarLink runs on a dedicated computer (including the Raspberry Pi) that you host at your home, radio site or computer center. It is based on the open-source Asterisk PBX running our app rpt application. App_rpt makes Asterisk a powerful system capable of controlling one or more radios. It provides linking of these radio "nodes" to other systems of similar construction anywhere in the world via VoIP. Expect this to come online in FWB during April.

N2VLV also worked with Ed, AA0EU and Mark, NC4MR to restore WIRES-X after an unknown impact took out the older radio supporting the communications system. That radio is being troubleshot as we type!

What would we talk about if we didn't talk about prep for Hamfest! PARC Activities Director KQ4FRB along with Zach, KR4FWK and Shane, KQ4yxy literally making and pressing the buttons you wear on your shirt! More details on the Hamfest will be below!

What is POTACAT?!

Pota cat (found at potacat.com) is a specialized, 1-click hunting and logging application for Parks on The Air radio operators. It uses CAT control to instantly tune radios, allowing users to quickly find, log, and chase activators. It specifically features watchlist notifications, park filtering, and Hamlib integration for over 200 radios!

Usage Examples & Features:

- **1-Click Hunting:** Directly tune your radio to a POTA activator's frequency by clicking a spot in the app.
- **Efficient Logging:** Automatically log contacts and manage Park-to-Park (P2P) contacts.
- **Filter & Track:** Hide previously worked parks and set watchlists for specific activators or rare locations.**Usage Examples & Features:**
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- **Real-time Data:** View live spots and POTA, SOTA, and DX information in a dedicated, often compact, interface.
- **Radio Control:** Integrates with software like Hamlib, rigctld, flrig, or OmniRig to manage radio settings

How it works:

- **Launch & configure** — A first-run welcome dialog walks you through radio setup: FlexRadio, Hamlib rig, or no radio. Set your Maidenhead grid square for distance calculations.
- **Browse live spots** — Seven sources stream in automatically: POTA, SOTA, DX Cluster, RBN, PSKReporter FreeDV, WSJT-X decodes, and DX Expeditions. Filter by band, mode, source, and spot age.
- **Pick your target** — Sort by distance, use split view or pop-out the map to a second monitor, or set up a watchlist and get desktop notifications when friends come on the air.
- **Click to tune** — One click sends the frequency and mode to your rig. CW XIT offset is applied automatically. You're on the air and ready to make contact.

The activity in the area is just ablaze and so many things are occurring! Capturing more, we now look at the next phase of NOARC! Joe, KN4UDS has been busy as a beaver with a microphone on a good propagation night exciting the bands! When he's not making radio contacts, he is building the NOARC Trailer! Have we talked about this before? YES! Well, the trailer was utilized in a test form at the Crestview Florida Community Unity Flashlight Walk! IT performed flawlessly and served as a focal point for the events' communications and safety coordination! What a launchpad this is as the roles are endless touting 4 operating stations, heating and cooling, and self-contained power capabilities! NO-ARC has big plans to incorporate this unit into its community support plans for all things they volunteer with and set the gold standard for how to make things easy! Best part, NOARC gets to take it out to contests, POTA, Field Day, and more! Be sure to go and find out what is going on at NOARC and take part in their operational capability!

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But wait! There's more! NOARC has continued with their volunteering to help the Live Oak Baptist Church Community Food Pantry! Even during that last cold snap! We all know that once you acclimate to the Florida temps, 70 degrees can be cold at night! Well. How about 34 during the day?! Yes, that happened in the middle of March. Wow the chill but the best part of it, was the ground safety coordination offered by NOARC via the Activities Director and Vice President, John, N8JDD! He also has had multiple participants helping to support the LOBC and the City! Pictured with John is Don, KR4YXX. They braved the temperature drop and took care of our community! Putting people and the community first is a rewarding and joyful way to give back to the LOBC Team that supports NOARC and it's Amateur Radio Journey!

Did you attend the PARC Hamfest? For 56 years PARC has been on point, and their show is, as always, a wonderful experience! Folks come from all over the country. Accounts of travels range from Tennessee, Alabama, other parts of Florida, New York, Missouri, Georgia, Kentucky, and Louisiana! Do not let the pictures below fool you, the attendance was awesome and PARC was so busy making sure a pleasurable experience was occurring that the included pictures here were shot during a brief rest period before the show opened at 8am on that Saturday.

PARC would like to acknowledge a large thank you not only internally to its team, but its vendors, patrons, guests, test takers, and officials from the community! PARC partnered with a hotel, Rise and Swine Food Truck, Proper Espresso Coffee Truck, and Okaloosa County to make this event another success! PARC even had comms going the entire time to coordinate communications on sight for those that required or asked for assistance in unloading, setting up, and breaking down after the show. You could not look in any direction and not see PARC helping with its fellow operators! In the end, that is what this is all about. Being there to participate as a group, honoring the legacy, and moving forward into the future.

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Many of the articles I or others write for the QST bring the positive and encouraging ideology to the table for advancement and sustainment of this great hobby! Take note of where you are, what you do with amateur radio and encourage participation. Don't cast people aside, find their interest and keep them coming back. It is the ones who find value in your experiences and willingness to share! Building a thriving amateur radio community requires active mentorship, finding individual interests, and moving beyond simple "rag-chewing" to engaging, hands-on activities. To keep people involved, the focus should be on creating a supportive, welcoming atmosphere that offers tangible value through technology, emergency services, or community outreach. You never know what you and your organization will accomplish working together.

What's Happenin' in Alachua County ARES!

Gordon Gibby KX4Z

Efforts to build traditional ham radio skills (continued):

Started off the month with a TechNite Talk on two subjects to improve home stations -- how to buy used gear safely and successfully, and how to get feedline out of the house, via walls or windows. Good discussion on ways to conquer the last 6" of getting feedline from out to in! You can see the slides here: **https://www.nf4rc.club/how-to-docs/tech-nite-compendium/technite-buying-used-equipment-for-hf-geeting-feedline-outside/**

Social Time!

We've started a first Saturday evening of the month social dinner and we had a great time on March 7 at Dave's BBQ on 39th Avenue. For April, we're going to Los Pollos on 43rd Street at 6PM Saturday April 4th -- join us!! https://qsl.net/nf4rc/CALENDAR.html

March Meeting

Counting everyone we had 16 at the March meeting, which almost didn't happen because a watchman locked us out of the room without realizing we were about to meet! We did real-time testing of some of the unun/baluns that we constructed last month. The 36:1 baluns aren't performing at higher HF frequencies as well as we would like -- next move is to try pushing the turns closer together, recommended by some writers. The 9:1's are doing fantastic and the 1:1's show good performance at the lower ends and somewhat higher SWR than we would like at higher ends. I'm going to do a test with some RG316 coax and see if that works better.

Senior Center Preparedness Exhibit

We sent 3 of our crew (Gordon KX4Z, Jeff Capehart W4UFL, and Susan Tipton K9PDL) to a local preparedness talk. Our Asst EM, Dave Peaton, gave a great talk and we had quite a few inquiries about the ham radio end of things, the kinds of questions you'd expect from the general public.

SHARES Exercise

Since the only HF coax we had at the EOC was cut, we have moved to having HF SHARES exercising at local volunteers' houses, with the approval of our local manager. We succeeded at Gordon's house and today we'll be at Brett's for the monthly exercise including SHARES connections. During Spring Break between school quarters, I was up in Black Mountain, NC, and even more easily checked into the National and Southeast Regional SHARES nets. These are on unpublished federal frequencies. My off-center-fed antenna up in Black Mountain is working well even on those frequencies.

Serving the Public With Starlink

There has been a lot of interest in STARLINK locally, with Reid Tillery K9RFT offering to teach a segment on how these useful devices work -- we've scheduled that for our Florida POTA effort on Saturday April 18th. The topic came up of how we could serve the public need for communications in a disaster, if directed and sent by the Emergency Manager to an outlying location, like a Fire Department. Expert volunteers in our group provided some useful solutions to limiting bandwidth for each user. Apparently using some modestly priced routers allows both bandwidth limiting and can serve 40-60 users simultaneously. However, we discovered that a significant number of our volunteers are adverse to offering this service to the general public. A lot of discussion on what it means to be deployed as a volunteer and what service volunteers are willing to offer ensued.

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VHF Tropospheric Scatter

At the TECHCON 2026 conference, for the first time I learned about the amazing ability of tropospheric scatter to enable VHF/UHF communications over hundreds of miles, using SSB and simple digital techniques such as FT8. Like many in our group, I thought that barring ducting, VHF was limited to line-of-sight communications.

I put together a simple outdoor Yagi on a rotator and on my very first try at this (Monday nights, 7:30 PM and following, 144.174 FT8) I easily contacted a station in Jacksonville and even heard and clearly deciphered a station almost up to Atlanta! These guys even have their own groups.io to discuss these propagations: https://groups.io/g/VHFlorida

This mode depends only on water vapor and turbulence in the atmosphere and **has nothing to do with the ionosphere**, so it is independent of nuclear attack ionization or sunspot cycles. Just another thing to bounce signals off of!

Next I positioned an indoor antenna in my attic, because getting the lowest angle toward the horizon possible is supposed to give even better results. Despite the losses from walls etc., after I got the right wires connected to the right places, I made multiple tropospheric 2 meter FT8 contacts over as much as 200 miles -- to Jacksonville, Lakeland and Ft Myers. Wow! Who knew 2 meters can do this?

Satellite Go-Box

Over spring break I worked to better assemble my fledgling satellite station built around an older ICOM 820H. Others in our group are building their own go-boxes using more standard commercially available techniques. All is wonderful!

Upcoming Portable Events

With all the building, we are getting better prepared for portable or disaster events. Ron Lewis is heading up our Florida POTA effort on Saturday April 18 at the San Felasco park pavilion in Alachua. Earl Sloan is heading up an ARRL Open House at that same event. We also plan to have a showing there for the Florida QSO Party, right after the GARS tailgate.

RATPAC Talk

With all the work I've been doing to try and create a new Technology textbook for high school students, I got invited to give a RATPAC talk on how to bring Technology to high school students, especially built around ham radio. Robotics is what many schools do -- but our ham radio robotics is real-world, chasing fast moving satellites with real antennas! We have lots to offer students to further their education and life potential!

Antenna and Pass Through LabNLunch

To finish out the month of March we're going to have a dual LabNLunch and build antennas to go with our recently constructed baluns, and also window pass thu's. We held a signup at the March meeting and hundreds of feet of FLEX WEAVE have arrived for the effort. We'll also cut 1x4 boards to fit windows and affix with holes for SO-239 bulkheads.

JOIN US at our April 18th and April 25th outings to FL POTA and FL QSO at the San Felasco part in Alachua!

Alachua County ARES® contact: docvacuumtubes at gmail.com	https://groups.io/g/NF4RC	https://www.nf4rc.club/

MERT

Marion County Sheriff's Office
Division of Emergency Management

COMMUNICATIONS UPDATE

March 2025

Next Bimonthly Meeting

Saturday, May 16th, 10:00 am at the EOC

All are Welcomed!

Meetings conducted in Jan, March, May, July, Sept. and Nov.

MERT's primary role is to support all open Evacuation Shelters throughout Marion County (FL) during declared Emergency events. We also support the Emergency Operations Center Incident Commander & staff, all cities in the county and other EMCOMM groups (CERT, HEC, ARES, MBA) with voice, image & data communications locally, statewide and across the United States.
"*Call MERT… When all else fails*!"

Harlan Cook (KN4VRM) MERT Coordinator

I was born in a time we got to enjoy the entertainment skills of a wonderful comedian named Shelly Winters. She once said… "It was so cold I almost got married." Well, for me, that happened 47-years ago so I now remember winters… as something to avoid. (Really – just kidding honey!)

I can't express how happy I am that Spring is here. As the sun moves higher in the sky and the first hints of warmer weather settles in, I'm reminded how this season has always symbolized renewal. It seems natural to get some sun on the face, shake off the slower pace of winter, and reconnect with our individual routines keeping us moving forward.

For MERT, Spring is much more than a change in Florida's weather—it's a reminder of why we train, why we check in, and why our mission matters. Many of our members stay active through meetings and our Thursday evening radio training Nets, keeping their radios exercised and their operator skills fresh.

But I also know that life pulls each of us in many directions. If you haven't keyed the mike in a while, or if your radio hasn't been powered on since last season, this is the perfect moment to rejoin the rhythm! A few minutes on the training Net each week strengthens your confidence, verifies your radio equipment, and reinforces the skills learned as licensed radio operators.

Of course, later this year, our mission becomes real when the Marion County Division of Emergency Management may activate us ahead of an approaching hurricane. When we staff a school shelter, we are often the calmest voice in the room—the ones who maintain communication when the outside world feels uncertain to most. That level of readiness doesn't happen by accident. It grows from the many small steps we have done together to train and prepare - which includes attending a meeting, checking in on the training Nets, reviewing your home and personal Go Kits, or simply reconnecting with fellow volunteers.

"When we strive to become better than we are, everything around us becomes better too." - Paulo Coelho

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Spring gives us a chance to renew those habits. To tune up not just our radios, but our sense of purpose. To remember that every voice at a shelter and on the air strengthens our team and our mission that will stand together when later this year, winds may rise to levels that humans cannot tolerate alone.

Each Spring is when we reverify all the school shelter antenna and cable systems are still in good quality. If you haven't contacted Deputy Coordinator Ray Woody to help out, please do as soon as possible as he is finalizing the schedules for Tuesday and Wednesday, March 17th and 18th.

And speaking of strengthening our skills, I'm excited to share that on April 18th, MERT will renew **MERT 22**, our Special Event Station focused on expanding our HF (high frequency) capabilities. This will be a hands-on opportunity to practice long-distance communication, experiment with antennas, and build confidence on the bands that we are responsible to use in addition to our local auxiliary communications (AUXCOMM) on 2-Meters and 70-cm's.

If you are an experienced HF operator, please join us and Elmer our members learning this new skill. If you have never been on the HF bands, please join us and step into a whole new universe of amateur radio that opens the WORLD to enjoy! Everyone's participation
(members and guests) will result in growing our individual and collective skills. It will also strengthen bonds by helping each other; building relationships fostering trust and
connection; and enhancing personal well-being by having good times with good people.

As Spring unfolds, I hope you'll take this new season as an invitation—renew your connection,
refresh your skills, and rejoin the mission that makes MERT such a vital part of Marion County's emergency preparedness in service to all Marion County residents.

Your presence matters. Your skills matter. Your voice matters. And together, we make MERT and Marion County stronger. With sincere appreciation,

Harlan Cook
MERT Coordinator

"Remember that the happiest people are not those getting more, but those giving more." - H. Jackson Brown Jr.

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From the Deputy Coordinator

Ray Woody (WB6FKJ)
Deputy Coordinator

MY FIRST SIX MONTHS WITH MY FIRST HANDY TALKIE

Kenwood TH-D72

About six months ago, I was pleasantly surprised when I received a very nice gift: a used but like-new Kenwood TH-D72 Dual-Band Handy Talkie.

This is the very first HT that I can call my own. Other than my very limited experience with the MERT Baofeng's, I had never touched an HT before. I am one of those ham types that grew up with HF, back in the days of large transceivers filled with glowing vacuum tubes and plenty of ergonomic knobs and switches on the face panel to control things. Now I found myself trying to learn how to use a feature-rich HT filled with tiny multi-function buttons with my "ten left thumbs".

After six months, I'm still not a savvy user yet, but I have made a lot of progress. Initially, I decided to forego the Kenwood Operating Manual (boring, tedious and overwhelming) and resort to YouTube videos (my YouTube search inquiry was "DH-72 tutorials for dummies"). This turned out to be a good way to get started, as I discovered a number of video channels created by other TH-D72 users and experienced HT hams demonstrating practical uses and features in action. I learned how to set up basic functions like frequency selection, power adjustments, and storing channels (manually).

Other helpful tools are the "Quick Start Guides" that I found online, which are akin to cheat sheets that highlight the basic operations needed to help beginners get started right away. Just playing around with the various buttons and functions is educational.

After a few weeks, I was eager to start using the HT in a real-world scenario. Around that time, Phil Lewis (W4EVV) was looking for volunteers to provide comm. support for our community 5K charity race held on Halloween morning. I'm happy to report that the radio and its operator both worked fine on race day. I'm looking forward to using the HT next month during our school Shelter Radio Testing Audits, as well as our field exercises this spring.

Although I am much more comfortable now with the TH-D72, I've only scratched the surface with becoming familiar with and using its many features. It has Automatic Packet Reporting System (APRS), built-in GPS, Cross-Band Repeater capability, advanced scanning functions, among others. For an HT whose technology is now over 15- years old, it remains a very powerful and versatile device, and one that will keep me in learning mode for quite some time.

Ray Woody, WB6FKJ
MERT Deputy Coordinator

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Annual Shelter Tests Announced

Ray Woody announced details of the annual school shelter tests focused on 14 sites being tested on March 17th & 18th (Tuesday and Wednesday).

The tests are conducted each year in confirming the quality of the antenna and cable systems along with inventorying the radio operator site resources needed should MERT's Operators be deployed to that school facility.

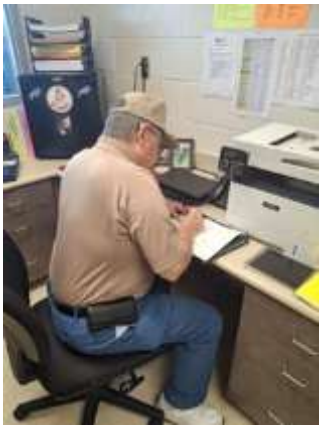
This years' tests will include voice & digital communications from each location over multiple D-Star and open FM repeaters along with MERT's Winlink Gateways. Members are encouraged to participate and help test locations near your residence to become familiar with them should the school be activated. Training classes are scheduled for March 3rd & 11th.

Please contact Ray Woody to sign up for the testing schedule.

We thank ***Ms. Logan Stamp***, Div. of Emergency Management Coordinator for her assistance in securing MCPS support for this year's testing exercise.

Ray Woody & Royce Hagerman at a Shelter

Royce Hagerman testing comm's using his HT.



Phil Lewis completing the testing form with results.

Example of how weather can impact MERT radio systems.

MERT 22 Coming Soon! Mark your calendar - **April 18th – Saturday – 8:00 am till 2:00 PM**

Special Event Chairman Bill Sobel (K1WLS) along with Cindy Sheffield (K9LRX) and Nick Kiddey (W4NFK) are finalizing plans for this year's… "**MERT 22**" event.

It will be a fun event for everyone to "**get on the air**" and enjoy making contacts all across the U.S. and world.

All hams are invited to participate.

"What we have done for ourselves alone dies with us; what we have done for others and the world remains and is immortal." - Albert Pike

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Deployment Recognition Certificates

During the February 25th "Check In" meeting, two members were recognized for their extended deployments of at least **24-hours of continuous duty** at a Shelter or the EOC when assigned during an emergency activation. We celebrate both members who fulfilled the primary mission for MERT service!

Bill Sobel, K1WLS receives his Deployment Ribbon for 24-hours of continuous duty at the EOC or Shelters.

Kim Shulby, KM4JMZ receives her Deployment Ribbon for 24-hours of continuous duty at the Dunnellon Shelter.

Wednesday "Check In" Updates - February

Mark Weible discusses "Meshtastek" technology.

Deputy Coordinator Ray Woody presents an excellent overview of the EOC Radio room modifications.

HEC Liaison Bruce Twiss shares details on the antenna "Hamstick's" donated to MERT.

Bill Sobel, Trustee presents an overview of the MERT 22 Special Event scheduled for April 18th (Saturday) 8 am – 2 PM

"The best way to find yourself is to lose yourself in the service of others." – Mahatma Gandhi

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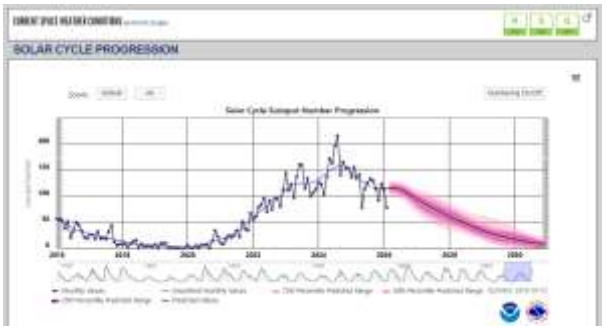
Solar Cycle Update – HF Bands Quality Forecast



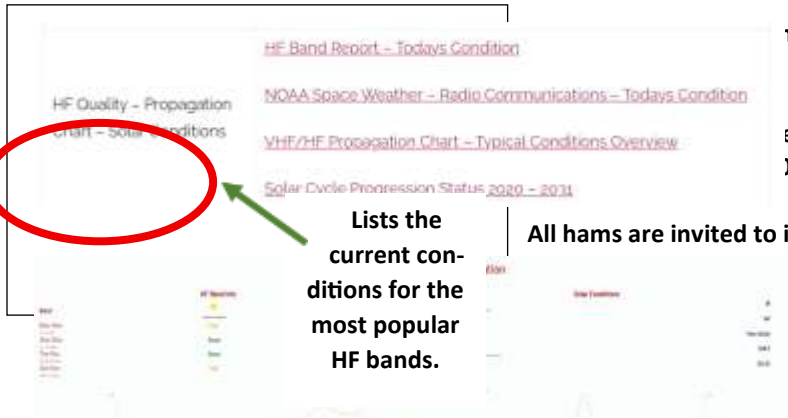
Understanding solar cycle conditions is important for MERT because the Sun directly controls how well our radios work – especially on HF bands, and knowing what the ionosphere is doing helps all operators make smarter and more reliable communication decisions when it matters most.
https://www.swpc.noaa.gov/products/solar-cycle-progression

How does the solar cycle shape radio performance?
The Sun's 11-year activity cycle (see chart above) often changes the ionization levels in the ionosphere, which determines how far and how clearly HF signals travel. Conditions can and often change within minutes.

Where can I find the current conditions quickly and easily?

In order to provide up-to-date condition reports, MERT's website **KG4NXO.com** has a "Quick Links" tab on the front page…. which goes to a page two listing "**HF Quality – Propagation Chart – Solar Conditions**" . Besides it is a link to - "HF Band Report – Today's Condition".

This resource is constantly updated with regular HF condition summaries 24-hours per day.



Lists the current conditions for the most popular HF bands.

ı for the most up-to-date conditions on High Frequency

e MERT 22 Special Event activities scheduled for April)0 am to 2:00 PM.

All hams are invited to ipate

MERT NEEDS YOU!

Please renew your participation in MERT activities, practicing Winlink messages and weekly radio Nets.

MCSO Laptop Updates

Many thanks to members Ray Sherwood, Cindy Sheffield, Santos Pegan and Jim Lowe for taking charge of seeing the MCSO laptops MERT uses during all activations have been charged with all firmware and Microsoft OS upgrades completed. These ongoing efforts keep the units ready for deployment throughout the year.

"Start where you are. Use what you have. Do what you can." – Arthur Ashe

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Member Update

Harlan Cook shares this photograph of his sister Jenith Peterson visiting from Dallas.

Besides seeing WEC, she also received a tour of the radio room and PIT and was amazed at both.

For more information on the Marion County Emergency Radio Team (MERT), visit:

KG4NXO.com

All amateur radio operators and the general public are welcomed to attend all MERT meetings every Wednesday from 9:00 am till Noon at the

Emergency Operations Center (EOC)
692 NW 30th Ave., Ocala, FL.

"Our Commitment to Service, Skill, and Stewardship"

Integrity First
We uphold honesty, transparency, and accountability in every action and decision.

Technical Mastery
We pursue excellence in radio communications, infrastructure, and emergency response systems.

Community-Centered
We serve Marion County with compassion, readiness, and respect for all.

Empowered Volunteers
We foster mentorship, training, and recognition to build a resilient team.

Clear Communication
We speak with clarity, purpose, and professionalism—on the air and in every outreach.

Continuous Improvement
We innovate, adapt, and refine our systems to meet evolving needs.

Gratitude and Recognition
We celebrate all contributions and honor the spirit of volunteerism.

We are…

The Marion County Emergency Radio Team!

"Volunteers do not necessarily have the time; they have the heart." – Elizabeth Andrew

FCC Testing Information

Daytona Beach Amateur Radio Assn (DBARA)
- Monthly, third Monday, 5:30 PM, prior to meeting
- Lehman Building, Embry-Riddle Aeronautical University
- Registration Required
- Info: https://dbara.org/testing/

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 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
- Check date at miltonarc.org
- Walk-in
- Bagdad United Methodist Church
- Info: Chuck, N4QEP, merlinman3@yahoo.com

Orlando Amateur Radio Club
- First Wednesday
- 5:30 PM, Walk-ins allowed
- ARRL/VEC
- William Beardall Senior Center 800 S Delaney Ave Orlando FL 32801.
- Info: testing@OARC.org Robert Cumming, 407-333-0690

Santa Rosa County FL ARES® Testing (Walk-in)
- Information and dates can be found at srcares.org

Testing information is subject to change. Check with the testing venue to confirm the testing session and requirements.

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 signup 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.

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://www.k4tlh.org/getting-started/license-testing

West Volusia Amateur Radio Society
- Second Saturday of each odd numbered month
- 6:00 AM
- St. Johns Lodge #37, 2557 N. Spring Garden Ave, Deland FL
- Info: https://westvars.org/testing

Gainesville Amateur Radio Society
- 1st Saturday of even numbered months
- Tech day two weeks after testing
- https://gars.club/Testing.html

Hernando County Amateur Radio Association (HCARA)
2nd Thursday of each month at 6:00 PM
For details and to register—http://www.hamstudy.org and go to **Find A Session**
Exam cost is free. FCC charges do apply

Statewide Digital Radio Resources
Designated ARES® **DSAR Reflectors & a DMR Talk group?**
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REF046A – Florida Statewide
REF046B – NFL ARES®
REF046C – NWS Mobile, AL SKYWARN
DMR Florida State ARES® TG 31127
Link your local repeaters to help create a digital repeater network throughout the state!