



QST NFL

Newsletter for the Northern Florida Section

Come join the FUN!

Volume 11 Issue 6

www.arrl-nfl.org

June 2024

From the Shack of the Section Manager

I am extremely grateful and honored to have been re-elected to serve a second term as YOUR Section Manager. Your trust and support mean everything to me, and I am committed to working tirelessly to serve you and our community over the next two years.

Looking ahead, we have exciting plans to enhance our Section and better serve our members. One of our key initiatives, which I believe is of utmost importance, is the launch of regular 'Town Hall' meetings. These meetings, to be held on Zoom every other month, will provide a platform for all members to receive updates on Section activities, ask questions directly to me and our Section Emergency Coordinator, and share feedback and ideas. It's not just a meeting, it's an opportunity for us to stay connected, feel involved, and work together to make our Section even stronger.

As we gear up for Hurricane Season 2024, I want to stress the importance of ensuring that your equipment is tested and ready to go. Our role in supporting our served agencies during emergencies is crucial, and being prepared is the key to our effectiveness. Let's all take responsibility and do our part to be ready to help should the need arise.

Field Day, a much-anticipated event, is just around the corner, and I am inviting each of you to participate. It's not just an event; it's a celebration of our shared passion for amateur radio. It's a chance to showcase our skills, connect with fellow enthusiasts, and most importantly, **have a great time**. Invite your local community to visit your Field Day site. It's a fantastic opportunity for them to learn more about amateur radio and witness firsthand the amazing things we do.

In the coming weeks, we will be reviewing and evaluating the appointed positions within our Section. You may receive an email from me requesting information about the positions you currently hold. Your input is vital as we strive to ensure that our Section is structured effectively to serve our members and community.

If your club would like me to speak at one of your meetings, whether in person or via Zoom, please don't hesitate to reach out. I would be delighted to participate and connect with as many of you as possible.



In closing, I want to again express my sincere gratitude for the opportunity to continue serving as your Section Manager. I am excited about the road ahead and am committed to making the next two years even more successful and fulfilling for our Section. Thank you for your trust, your support, and your dedication to our amateur radio community.

Thank you for allowing me to be YOUR Section Manager.

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Newsletter, *QST NFL*

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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>

Alachua County Government Can Not Access WordPress Web Sites

It came as a shock to us, since we recently revamped our group's web site (<https://www.nf4rc.club/>) into a WordPress site (thanks to Steve Panaghi!) -- and now our Emergency Manager's department **can't see it!** Due to security concerns, Alachua County computers are restricted from WordPress.

It might be worth checking your local agencies?

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 m know.



From the Section Emergency Coordinator

Arc Thames, W4CPD

Welcome to hurricane season! The Amateur Radio Emergency Service (ARES®) plays a vital role in ensuring effective communication during emergencies. Being prepared means having a reliable means of communication when traditional systems fail. Hurricanes often disrupt commercial power and overload cellular networks, making ham radio an indispensable tool for emergency response and coordination. YOU are a vital part of providing these disaster communications services to our communities.

ARES® volunteers should ensure their equipment is in operational condition. This includes testing radios, checking antennas, and ensuring backup power sources like batteries and generators are ready and functional. Being able to deploy quickly and efficiently can make a significant difference in an emergency. Don't expect that you can let your equipment sit for months or years at a time and that it's going to just work when you need it, especially your batteries.

Now is a great time to encourage your neighbors and community members to have a personal communication plan in place. This might include having a battery-powered radio to receive emergency broadcasts, knowing local emergency frequencies, and understanding why having a ham radio license can help them be prepared. By fostering a culture of preparedness and resilience, we can ensure that our communities are better equipped to handle the challenges of hurricane season. Together, we can enhance our collective response capabilities and provide a vital lifeline during emergencies.

****ARES® Emergency Coordinators****

We will have a communications test with the State EOC on Saturday June 8 from 0900-1100 eastern. The state EOC will be monitoring SARNET as well as HF frequencies and Winlink. Additional information will be provided before the event on <https://floridaemergency.net/>

Feel free to utilize this as a SET for your county as we will accept and respond to as much traffic as possible.

Monthly ARES® Statistics

The ARRL is currently experiencing server issues, so we are unable to provide the monthly report at this time.

Lofton High School

Bob Lightner, W4GT



- Making serious contest contacts.
- School is almost over for 2024
- Racking up more points
- Hurricane Season and Schools out for the summer— time to take down our antennas.

Special thanks to Bob Lightner W4GT for mentoring future first responders many of whom are also HAMS.

Students demonstration their capabilities.

<https://alachuachronicle.com/pamloften-students-create-video-about-100-deadliest-days-for-teen-drivers/>





Sumter County ARES®

Amateur Radio Emergency Service
Mark Newby, KX4LEO
Emergency Coordinator



Sumter County ARES® – Hurricane Expo

May 3, 2024

On Friday, May 3rd, 2024, Sumter County ARES® had a presence at the 17th Annual Hurricane Expo at the Savannah Center located in The Villages, Florida. Each year at this time, private businesses, governmental agencies, and non-governmental organizations participate in this exposition to show how their products and services help prepare for hurricanes, mitigate losses caused by these storms, and recover following them.

Sumter County ARES® Operations Section Chief Jeff Taffuri, KO4NCC, and Emergency Coordinator Mark Newby, KX4LEO, presented the ARES® program to a multitude of people who attended the event.



Complete with a video presentation, ARES® literature, and a display of radio equipment, our representatives explained or demonstrated how ARES® can provide emergency communications through a variety of means wherever needed when normal public safety communications is interrupted because of severe storms or sabotage.



For more information about Sumter County ARES® and how to become a member, check us out at www.sumterares.org.



Florida HOA Law Changes May Help Hams

Williams, N4UF

"New laws to limit Florida homeowner associations (HOAs) take effect on 7/1/24. HB59 includes a variety of topics and generally benefits owners who apply to make changes to their property and those who receive violation notices."

Those cited for violations will be given time to remedy without being fined. This could be an opening for easily removable antennas.

And all violation notices and rejected applications must cite specific CCR or bylaw references that support the denial. Prohibiting changes not specifically cited in CCRs and bylaws is discouraged. If a subdivision's documents do not prohibit outdoor antennas, it should be more difficult to deny permission for at least a basic antenna, especially if not visible from the street or other lots.

There are also limits on fines and placement of liens on homes for unpaid fines.

A possible benefit to Amateur Radio operators living in HOA communities is addition of an appeal process for those who are denied permission by architectural reviewers after applying to make changes or improvements to their properties. The appeal panel must be independent of other HOA officials. And it will have the power to overrule architectural reviewers that deny applications.

See [nofars.net - Homeowner Associations](http://nofars.net) for hints on installing antennas in HOA communities.

North Florida Amateur Radio Club /Alachua ARES®®

Gordon Gibby KX4Z

After Action Report FL QSO PARTY



Our Alachua County team used the Florida QSO Party as an excuse to mount a training tour for Field Day as an expedition to both Levy and Dixie Counties, with air conditioned travel trailer and generator trailer with mast. We had GREAT TIMES chatting around the circle (and at Hardees!) while dual teams worked on contacts through our antenna multiplexer. Our crew developed amazing 14-minute setups and teardowns with everyone working in parallel on detailed checklists. Our contact rate...not quite so stellar, but people LEARNED, new people got EXPERIENCE.

At the May monthly meeting we worked on the IMPROVEMENT PLAN (<https://www.nf4rc.club/draft-florida-qso-party-aarip/>) -- and added a few things, particularly since several of us got TICK BITES. *Permethrin and picaridin will be the order of the day next time we visit Fanning Springs State Park!!*

Notable Improvement Items

- Better delay/change notification system (a hospitalization delayed us 2 hours and some didn't know)
- Build "teams" for tasks with more experienced leading.
- Antenna mast was balky - investigate
- More CW paddles! -- and retrain how to memorize canned text on radio for both voice & CW
- Safety flag on generator trailer
- ALWAYS put a power meter on output of antenna multiplexer -- discovery of bad coax jumper was significantly delayed without this.

Diesel Fuel Filter Missing Something

Even after replacing the stuck electric fuel shutoff solenoid (that had something oddly fibrous in part of it), our 5kw diesel generator just wasn't running smoothly..... see anything in the photo below that might explain it?



Left: new fuel filter with paper element visible
Right: old fuel filter.....missing something???

Apparently the paper element disintegrated and clogged up part of our fuel system! Disassembling and air-bleeding the system THREE TIMES got it running again and new diesel-compatible filter on order... FIELD DAY preparations prod us so effectively to do maintenance!

MERT Exercise After Action

KUDOS!! The report of the March 27th MERT Training exercise caught my eye in the NFL Section May Newsletter p 23 (<https://arri-nfl.org/wp-content/uploads/2024/05/QST-NFL-May-2024.pdf>)

What a great job our brethren to the south in Marion County are doing!! Sounded like a real **deployment exercise**, with real ICS forms, great suggestions, **objective analysis** of successes/failures, and a fantastic HOTWASH list of items to improve in the future! Lots I could learn from their efforts!

Lab'N'Lunch Builds Field Day 160-meter Band Pass Filter



One of the defining characteristics of Amateur Radio in Part 97, is our goal and privilege to build our own equipment and become a reservoir of technical experts. In our exercises, firemen are better communicators in many instances, but our crew may be able to troubleshoot and fix a failed comms system. For >6 years we've been doing "building sessions" now called LabNLunches -- and the May LabNLunch worked on building a 160meter bandpass filter to go with our SextuplePlexor....giving us 3 working bands



even at night--and ability to be on multiple HF nets simultaneously.

As usual, our crew had FUN and taught each other. Eric Pleace was the impromptu leader as the group wound toroids, put capacitors in parallel and soldered on connectors The supporting cast were hard-working! With a few "tweaks" the tuned circuits fell into alignment and the result was a great 160-meter bandpass filter for our group. Construction instructions can be found here:

<https://www.nf4rc.club/how-to-docs/county-ares-docs/160m-bandpass-filter-construction/>

The result will work very well for our Field Day exercise! The filter response is shown to the right-->



TRIBAND BEAM

Meanwhile another contingent focused on the final stages of getting our new-to-us triband three element Yagi/Tower/Trailer in working condition. With front to back measurements completed that evening thanks to Earl McDow K4ZSW, we have our very first working directive HF antenna! It can be assembled on site in about 30 minutes and allows three simultaneous HF stations to get on the air.

UltraSharp Receiving Filter

Our last project for this month has been our first-ever **ultra-sharp RF receiving filter**, based on Nelson Sollenberger KA2C's design (<http://www.ka2c.com/wp-content/uploads/2021/01/Field-Day-Ultra-Sharp-RX-Filters.pdf>) I went with T80-6 toroids (on 20m) and #20 magnet wire and hit a Q of 280 on 20 meters. With two sections, I got a receiving filter for the voice or FT8 op that clearly separates voice & cw, and even provides helpful separation between 20-meter FT8 and 20-meter CW. Nelson recommends air core inductors on 20 meters but I found them harder to construct.

The primary goal of these is to help if we don't have enough separation between the YAGI and the Cabin antenna on 20 meters, so that operating two stations on 20 is difficult. These filters can make it EASY to operate CW and voice simultaneously, and somewhat easier to do even CW and FT8/FT4 together. One goes in the antenna line of the station running voice or digital, and the other in the antenna line of the station running CW. These are IN ADDITION to the bandpass filters and multiplexor. These filters are relay-bypassed during transmission, which is why they are called "receiving filters"

The "instruction manual" Link:

<https://drive.google.com/file/d/1m-yuzHADaAPb9iValviOWIDTQa1Ejvqp/view>

Next will be a 2 or 3 section filter for the CW op.



NFARC/Alachua County ARES® Yagi Antenna Saga (Part II)

by Gordon Gibby

History

Last month (<https://arrl-nfl.org/wp-content/uploads/2024/05/QST-NFL-May-2024.pdf> page 30 of an amazing Section Newsletter) we told you the never-ending saga of how our Alachua County group came to have a tower, tower trailer, and beam and rotator - all requiring huge amounts of WORK to get going. When we finished, we still did have the thing WORKING.

Ill-Fated Antenna Range

So we created an "Antenna Range" with a small receiving antenna about 200 feet (several wavelengths) from the beam antenna, and fed the beam with the spectrum analyzer tracking generator output and tried to measure its transmitted signal with the small antenna. Unfortunately, it turns out that this gave us apparently erroneous results. Not sure why! Maybe all the other metal reflectors in the yard (metal solar power pole barn, aluminum pool safety fence, house, other antennas??).

It drove us NUTS. We stood up and walked down that tower several times (doing our "Iwo Jima Flag-Raising Imitation") as we tried various adjustments to director and reflector. Our measurements and knowing that we had broken off one turn of some of the coils led us to lengthen the inner elements of both parasitics by about 2"

Real On The Air Measurements

Finally, after our May LabNLunch, we got Earl McDow K4ZSW, who lives just a few miles east of where the antenna was, to send us some solid HF tones over the air --and we made measurements of forward and reverse strength with a spectrum analyzer.

These are not exacting measurements! We did *not* carefully tune for perfect null in the reverse direction -- all we did was try a few choice angles and try to prove directive/reflective evidence. (Which, absent unexpected losses, would indicate the presence of at least some forward *gain*.) And we were able to do just a limited number of frequencies.

HOORAY!! We got proof that the truly ancient TA-33Jr works! It may not be the greatest, and certainly a bit of a compromise, especially on 20, where the elements have TWO loading coils and are likely at a compromised distance, but we finally obtained real front-to-back proof:



TA-33Jr on nested tower. We don't have guy lines yet. Or a winch, either! We "walk" it up and down. 2-3 people make it easy.

Adding a 6th Band to the Alachua County QuintPlexor

Gordon Gibby KX4Z

Problem & Proposed Solution

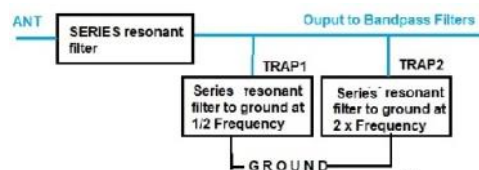
The current Alachua County EOC has only one coaxial cable available for HF antennas. (We're moving and we hope to have more at the new location!) Also, we would like to be able to operate as many as 4 HF stations on one HF antenna during our annual FIELD DAY EXERCISE. Setting up multiple antennas far apart from each other to reduce inter-station desensing in the hot Florida Sun in June is NO PICNIC!

The VA6AM line of antenna multiplexers <https://va6am.com/> created by Pavel has been our solution and has worked well when combined with external bandpass filters to boost the total isolation between stations on different bands to 70dB. Our Quintplexor allowed operation on 10 or 6 meters/ 15 meters / 20 meters / 40 meters and 80 or 160 meters. Because there aren't many bands left working after midnight, we desired to provide a 6th output and have separate connections for 80 meters and 160 meters.

Technology

Pavel's very successful design for the individual filters that connect directly to the common antenna always starts with a series resonant filter at the band of interest. This immediately reduces the parasitic loss of power that otherwise would be drained away from the antenna by other bands' filters.

Pavel then places two series resonant tuned circuits to ground to act as TRAPS. One is set to the band that is about 1/2 of the frequency of this filter, and the other is set to the band that is twice the frequency of this filter. The impedances X_L and X_C of the L and C that make up these filters is selected so that at the in-



Calculations

A bit of scaling from other bands and calculations come up with the following prescriptions for an 80-meter and 160-meter individual multiplexer filters.

80 Meter MultiPLEXOR	Series Tuned Input	40 meter series trap to ground	160 M series trap to ground
Inductor	~ 6mH*	760 nH*	2.8 uH*
ACTUAL TURNS in our instance	24 turns T130-6	8 turns T130-6	17 turns T130-6
Capacitor	~320 pf >= 1kV	~550 pf >=1kV	~2500 pf, >= 1kV

* = tune to desired performance

160m MultiPLEXOR	Series Tuned Input	1/2 F trap 0.9 MHz	2F trap (80m) 3.6 MHz
Inductor	~ 12mH*	6 uH*	1.5 uH*
Turns	35 turns T130-6	25 turns T130-6 or 37 turns T80-6	13 turns T130-6 or 18 turns T80-6
Capacitor	~580 pf	5200 pf	1300 pf

* =

* = adjust to desired performance

Continued on next page...

PARTS

Toroids can be easily obtained from <https://kitsandparts.com/> There are many other sources.

Silver Mica capacitors can be used if 500V or more, but I have had good success using 3kV "blue dot" type ceramic capacitors obtained on amazon:

<https://www.amazon.com/BOJACK-Voltage-Ceramic-Capacitor-Assortment/dp/B08HZ21X8L>

I use fairly large enamel-insulated magnet wire (enamel to reduce inter-winding capacitance) - 14AWG for small number of turns, 18AWG if more turns. Learned this from Pavel.

I use either the T130-6 or T80-6 iron powder cores, nothing smaller for 100W

I use my own printed circuit board design, originally created to build Butterworth bandpass filters. I have now "shared" this design on PCBWAY.COM so others can get it easily if they wish (Disclaimer: they may send me a small remittance):

https://www.pcbway.com/project/shareproject/Ham_Radio_Butterworth_BandPass_Filters_6421b6db.html

TUNING

My approach to tuning is to first electrically separate and tune the input series tuned filter to pass the desired band well. Get it centered up on the desired band! Then add the 2F and 1/2F trap filters and look at where the notches are located and how much isolation is being provided at the extreme ends of those bands, and compare to the passband their interaction creates. If a notch is unacceptably far off, it can be nudged back to the desired position while observing for any undesired impact on the desired pass-band.

The toroid turns can be "scrunched" to raise inductance and lower resonant frequency, or "spread out" to reduce inductance and raise resonant frequency. However, if there is a large discrepancy, a turn or two can be removed or added. Because of the way the math works, the turns to remove or add are proportional to the frequency change needed.

This worked out much easier than expected. The 80-meter filter was built and tuned (using a spectrum analyzer) in less than two hours; the 160-meter filter in one hour. Good performance (for my limited skill-level) of passband loss in the 0.4dB range and very impressive next-band notches. The ultimate rejection of Pavel's filters is somewhat more limited to about 20dB -- necessitating the use of an external bandpass filter of a different design (eg. a Butterworth) that has a steadily increasing isolation farther away from the design frequency. The well known ARRL design works well.

<https://www.arrl.org/files/file/Technology/tis/info/pdf/8809017.pdf>

OUTCOME

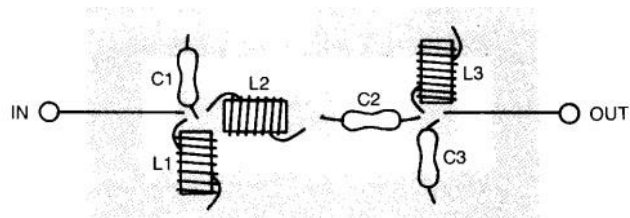
I was very pleased with the results.

160 Meter Butterworth Bandpass Filter Construction

Gordon Gibby, KX4Z

Suggested construction technique. Your methods, techniques, and results may vary.

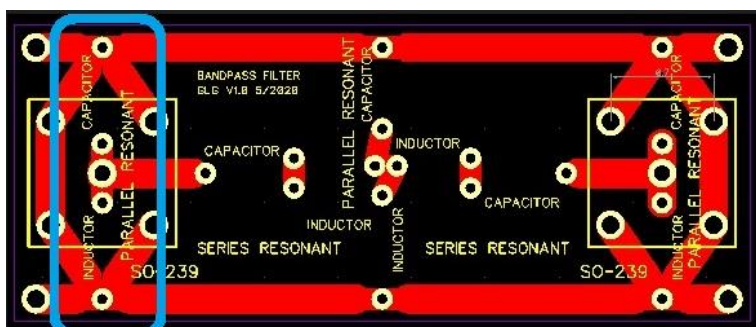
1. Solder SO-239 with pigtails to the left side of the printed circuit board (center, ground) This will allow you to provide a signal INPUT.



2. Solder SO-239 with pigtails to the right side of the printed circuit board (center, ground)

3. Install C1 and L1 as shown in the above Layout. They form a PARALLEL TUNED CIRCUIT that does not short out 160 meter signals, but tends to short out other frequencies. It isn't very sharp. Set them on the input connector shown in the image below:

Use paralleled capacitors as necessary to construct C1 (2 or 3 is a good choice and will spread out the RF current) and try to come close to the recommended values:



(For our purposes, use the T80-6 and 22 turns of AWG #18 wire if it will fit; if not, use AWG #20; avoid overlap.) Use the solder-drop technique to tin the last 1/4" of the wires from the inductor, making them about 3/4" long.

160m ARRL Butterworth BPF	end parallel filter
Inductor	~ 2.2 uH*
Estimated turns	15 turns T130-6 22 turns T80-6
Capacitor	4000pf >=1kV

You'll notice these are relative low impedances, because the purpose of this filter is to SHORT OUT undesired signals

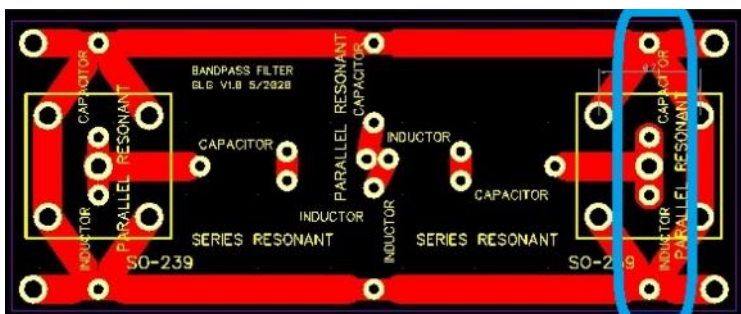
NOTE: *Our experience is that it is quicker to just wind up the toroid and solder in capacitors stating a total of 4000pf and then measure the resonant frequency and make any adjustments required, rather than trying for "exact" L or C values -- there is so much error in every part of this, that merely getting the result to the correct frequency is a lot more important and expeditious than effort at getting exact L or C.*

3. Temporarily solder a jumper wire from the center of the left SO239 to the center of the right SO239.

4. Using a spectrum analyzer or nanoVNA, find the resonance frequency of the parallel tuned circuit. The goal is to get it about 1.75 MHz (according to the original author) **NOTE: Our experience suggests boosting this up to 1.85 may be better.** Pushing turns together raises inductance and lowers resonant frequency Spreading turns apart reduces inductance and raises resonant frequency. If the frequency is way off, use the mathematical proportion of the measured frequency to 1.75 Hz to predict the % change to turns on the coil.

5. Replicate your tuned circuit on the other end of the printed circuit board, installing **L3, C3**, using the combination that worked for you on the left side. Hopefully this will make it be pretty close from the start.

It isn't that important whether you put the capacitor or the inductor on the up or down side, when you are using toroids, because they are fairly "self-shielding".

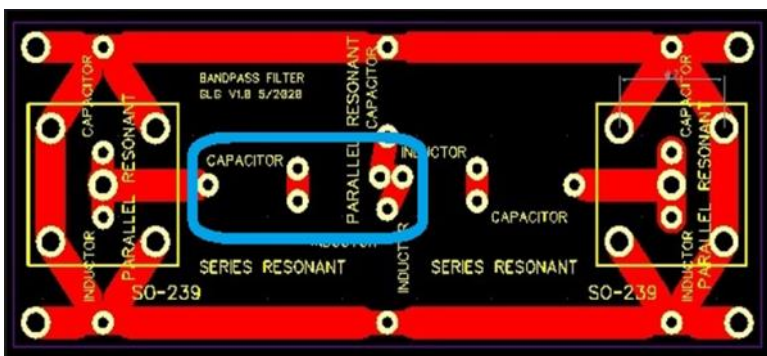


6. De-solder the center conductor of the LEFT SO239 and using a short jumper wire to connect it to the center of the RIGHT sided tuned circuit you have just created. This eliminates the influence of the LEFT tuned circuit that you have already tuned, and allows you to measure just the RIGHT hand parallel tuned circuit you have created.

7. Using a spectrum analyzer or nanoVNA, find the resonance frequency of the newly constructed parallel tuned circuit. The goal is to get it about 1.75 MHz.

- Pushing turns together raises inductance and lowers resonant frequency
- Spreading turns apart reduces inductance and raises resonant frequency
- If the frequency is way off, use the mathematical proportion of the measured frequency to 1.75 MHz to predict the % change to turns on the coil.

8. Install L2 and C2 on the "left center side as shown in the image below: These form a SERIES tuned circuit that passes easily 160meter energy, but provides impedance to resist the flow of other frequencies. You'll notice that the impedances used here are significantly LARGER than those used in the parallel tuned circuits created earlier. That's so they can resist undesired frequencies.



160m ARRL Butterworth BPF	Series Tuned center
Inductor	~22uH*
Calculated turns	48 turns T130-6
Capacitor	400 pf >= 1kV

9. Use AWG #18 wire if possible (#20 if that won't work) and place the turns so you don't overlap any. Use the larger T130-6 core to give enough room for 48 turns.
 10. Re solder the left SO239 to its proper connection on the board.
 11. Connect a short jumper from the right hand side of the series tuned resonant circuit over to the center conductor of the right SO239, so that you have the entire filter now soldered together.
 12. Study the frequency response of the filter using a spectrum analyzer or nanoVNA and make adjustments as needed to get the center passband evenly across the 160 meter band (1.8-2.0 MHz). The loss should be on the order of 0.5 dB.
- There is room left on the printed circuit board for adding another series tuned circuit and another parallel tuned circuit if the sharpness of the filter is judged inadequate for your needs. For the first construction, we're just building this single-section filter.*
13. Remove the pigtail SO239's, install the board in the aluminum case using about 1/2" brass standoffs and 3MM screws.
 14. Using two 3MM screws and nuts on each side, install an SO239 on each end.
 15. Using short jumper wire, connect each SO239 to the proper center conductor on the printed circuit board
 16. Recheck the performance of the Filter and fill in this table:
Your're shooting for a passband loss < 1 dB, preferably at 0.7 dB or lower. With #20 wire we ended up with 1dB passband loss, a little higher than we hoped, suggesting we may have to limit FT8 power to about 50 watts to avoid overheating (temperature measurements not completed at this time of writing)

Frequency:	1.8 MHz	2.0 MHz	3.5 MHz	7.0 MHz	14.0 MHz
dB loss:					

UPDATE: Blue-drop BOJACK capacitors turned out to have significant equivalent series resistance. To increase power handling capacity, make capacitances out of multiple caps in parallel. For C1, C3 try 560pf x 7 in parallel. For C2 try 4x100pf in parallel. Handles 50W x 15 seconds with some noticeable warmth. Consider limits such as 25W FT8, 50W CW, 100W SSB.☑



Getting over "mic fright" and jump into the fray of Field Day

Robert Logan, NZ5A

<https://www.arrl.org/field-day-basic-training>

Great reading - and ideas for enjoyment!
Gordon KX4Z

PARC & NOARC

DJ Stewart, KI4ZER

Assistant Section Manager, NFL, ARRL

President, W4ZBB, W4AAZ

Welcome to Summer! As things start to heat up while we approach solstice so does the activity in ham radio! Each and every one of you is a part of it so be proud of what you have accomplished and share your knowledge with others and be sure to learn from all you cross paths with!

In the beginning of May we started off our month with tech night at the Playground Amateur Radio Club! The night was filled with excitement as they covered simple ground plane antennas for 2m, 1.25m, and 70cm! For the slides presented that night please see the attached product:

Following the awe and wonder of a simple antenna [which is easily convertible for multiple bands], we found ourselves at the North Okaloosa Amateur Radio Club for their business night! One of the items on the agenda was the Annual Hamfest! See the details below and plan on attending as this show is always 'Top Notch'! W4AAZ.ORG



Flying into the next week, the Playground Amateur Radio Club business meeting did not disappoint! They finalized their plans for their Fox Hunt [appears later in this write up] and went over their ideas for summer Field Day! This will occur at Fred R. Gannon State Park in Niceville, Florida!

With Field Day all the rage, the North Okaloosa Amateur Radio Club held a technical night covering their location and plans for yet another awesome event located at Spanish Trail Park in Crestview Florida!

As Field Day rapidly approaches, Hams of all interest and ages are gearing up in Okaloosa County to take part in this event which highlights amateur radio's value in providing communications during nominal times as well as during disaster when passing vital traffic to assist communities is paramount as most traditional or advanced communication systems may or will be inoperable for an undetermined amount of time.

Off we go into the city of Fort Walton Beach Florida for a Fox Hunt! Operators using handheld radios, homemade Yagi antennas, and signal strength meters had to locate a hidden micro transmitter by taking its bearings from different points, outlining a map, and communicating on a team frequency. This is as fun for beginners as it is for experts! The best part, was a BBQ after all hunters found the fox up a tree at a local public park after traversing the city from the initial departure point [which was the Playground Amateur Radio Clubhouse! It was so fun, the participants even climbed the trees!



We are having a lot of fun supporting all hams and we have a very large group of dedicated volunteers who value each others company and time! If you are ever in the area, or even looking for a club, consider checking out either the North Okaloosa Amateur Radio club or the Playground Amateur Radio Club or even both! You will not be dissatisfied with your choice in the north or the south of Okaloosa County and will be greeted with a smile and a handshake!



Until next time, 73's and be sure to take part in your Amateur Radio Hobby with pride!



Suwannee County ARES® News

J. Gordon "Gordie" Beattie, Jr., W2TTT

The month of May was a mixed bag of activities and operations for Suwannee County ARES®.

First, we missed several of the weekly net coverage from the EOC station, KK4RQY in some weeks. This was a setback from our improved performance over the past few months. This was due to a number of factors including member travel, building access problems and health issues. We will focus on improving during the month of June.

On the morning of Friday May 10th we had a tornado going across the Panhandle and enter the Big Bend up to the Suwannee River in Madison County just south of Interstate 10. The plot ended there, but we experienced high winds, downed trees and flying debris. Many lost power in the morning and it did not return until Saturday or later for some people.

We did activate the EOC station on Wednesday 22nd for both the morning ARES® net on 40 meters at 9 am ET and the afternoon . A thorough check of the station and adjacent and remote repeaters was completed and logged in the station log for future reference.

The Suwannee County ARES® Net at 8:30 pm on Sundays on the 145.27 MHz repeater ran weekly because there were dedicated net controls who pitched in.

In June, we will seek to complete the installation of the new 80/60/40 meter fan dipole that our EC Mike Meador KM4BTW made for the EOC station. In the meantime the other 40m dipole put up in anticipation of Hurricane Ian, two years ago continues to function well. We will also get Anderson PowerPole connections on the cables from the second 30A power supply in the EOC station to better be able to support the Insertion of additional equipment should we have a storm.

A further activity in June will be the third annual joint Suwannee-Madison June Field Day operation at St. Francis Xavier Roman Catholic Church on US 90. This has become a lively event where members of both ARES® teams operate together, show each other new gear and have some fun!

To close, we are all working hard to get our stations and portable gear squared away for what promises to be a busy hurricane season. Have your gear, personal needs and those of your family organized and checked out. Should you need to hunker down, flee or support others, being prepared can help take discomforts in stride.



Suwannee Amateur Radio Club

Steve Kostro, N2CEI



On April 20th the SARC finished the installation of our new (but very old) Mosley 34 XL Tri-Band Yagi. The original KT-34 that was on our East tower was blown apart by last year's Hurricane and deemed un-repairable. Yes, we are slow in getting things done but since we had other antennas on 10, 15, and 20 Meters, it was not an emergency. We spent the three previous weekends rebuilding the 34 XL to spec, testing it and verifying that we could build it in place on top of the tower. Because of all of the side mounted 6 Meter Yagis, and the club not able to hire a 120 foot crane (not that we would be able to get it into the property) It was hauled up to the top of the tower in 6 pieces, 4 elements and two boom sections. The assembly went well as predicted but was time consuming. It was a great way to spend a day at the clubhouse with a crew motivated to get the job done and our motivation was because this antenna was required for our operation in the Florida QSO Party.

In our spare time, we have been active in general maintenance and tree removal that was decided by membership to be necessary to avoid tower and Guy wire damage. The last storm of a couple of weeks ago here in North Florida had some excessive straight line winds that helped us with our tree removal project but not without some additional minor damage. So the Month of May has been a cleanup month with the additional tree trim/removal required to ensure the safety of the Clubhouse grounds. Our main project for the month of May was to upgrade our electrical service ready it for a larger permanent generator installation. This upgrade is near completion and will accommodate a larger air condition unit and better line regulation for our clubhouse radio equipment.

As for operating our station at the clubhouse, the Florida QSO Party team operating as N4S, made 2,145 QSO's within the 20 Hour operating period on both SSB and CW. We had two guest ops and some contest Rookies that filled in for the standard crew and all did a fantastic job keeping two independent positions on the air besting our last year's score. Its always fun handing out Suwannee County for the county hunters and the QSO Party "aficionados" and our new Yagi worked great in doing it!

April is also the month of the VHF/UHF sprints of which N4SVC operated in the 2M Sprint working stations from Puerto Rico to the East and Texas to the West. It was a very good opening! There was also plenty of casual operation during our lunch and heat breaks during our work parties. It's nice to have and air conditioned Oasis with radio equipment in the wilderness of Suwannee County.



June is a very active month at the Suwannee ARC Clubhouse. The first weekend we will be participating as part of the team competition in the ARRL International Digital Contest. Look for N4SVC along with KO4VFA, KE4PWE, K1UHF and N4UTX in the FT-8 and FT4 portions of the HF bands. This is the first time we will be trying this so it most likely will be a "Hoot" for our club members pitting their home stations against each other and combining our scores for the Team Competition. The very next weekend is the ARRL June VHF contest and then there is field day where we operate the Clubhouse on emergency power and



operate 5 separate transmitters on all bands with the 5E exchange on all modes!! That weekend is always fun with Rookies operating and veterans instructing while enjoying each other's company and great food! So, if you get a chance, stop by on the air and say Hi!

So, if you are passing through the Live Oak area, take time to say hello on our 145.410 repeater (-600, 100 PL) and as always, if you hear us on the bands 160M through 3cm, give us a call and say HI! Then if you worked us in any operation event, or just in a casual QSO, you will find your QSO information on LOTW. We are "back to normal" at the station and enjoying this great hobby of ours! We hope you are enjoying your favorite aspect of the hobby and maybe catch you on the bands some day! See you soon and all the best from all of us at the Suwannee ARC!

Suwannee County ARES® Net - Sunday Evening 8:30 pm

J. Gordon "Gordie" Beattie, Jr., W2TTT

The Suwannee County ARES® Net will be on the 145.27 MHz repeater using FM at 8:30 pm.

If the repeater goes down during tonight's net, we will move to 146.55 MHz FM SIMPLEX.

W2TTT/R

Frequency: 145.27 MHz

Offset: -600 kHz

Tone: 123.0 Hz

ALTERNATE

146.55 MHz

SIMPLEX

BACKUP

Frequency: 443.775 MHz

Offset: +5.00 MHz

Tone: 107.2 Hz

It is recommended to use tone squelch on your radio for FM on 145.27 MHz, as we have enabled the automatic support for the Yaseu Fusion digital modes.

Also, remember the Suwannee County ARES® Net is followed by the Madison County ARES® Net at 9:00 pm on the Lee 145.19 MHz repeater. The offset is -600 kHz and the tone is 123.0 Hz.



Compass For Portable Operation

J Gordon "Gordie" Beattie, Jr., W2TTT

A frequent concern when operating VHF-UHF POTA, SOTA, hilltopping, roving, EMCOM and other activities in the field is that you may not know what direction is where. Further, you may not be able to align your vehicle-mounted rotator and antenna array with magnetic, let alone true North.

A magnetic sensor and an Arduino with Wi-Fi could provide a straightforward method for determining your antenna direction by simply aligning the antennas with the sensor on the mast.

The readout could be via a terminal program from a device on the Wi-Fi network. That device could be an old phone, a tablet or a computer. Resolving magnetic declination can either be manual and use a simple terminal program or automated by implementing a software solution.

Another possible application might be to provide a directional indication for a rotation system that lacks an inboard indication system. When coupled with a wireless inclinometer, you could create a wireless AZ-EL indicator system for satellite, Moonbounce or meteor scatter operations.

Take a look at the article, consider your options and let others know what you've developed.

This information from a past QST article is courtesy of a posting on another list by

Mike Wechsler N4OFA in EM86

https://televideo.ws/images/docs/COMPASS/2022-02_QST_Bussola.pdf

Finally, build something, get on the air and share your experiences.

Tallahassee Amateur Radio Society donates Antique Radio to WFSU

Todd Clark, KN4FCC, Treasure for the Tallahassee Amateur Radio Society (TARS) received a donation of a Westinghouse Aeriola Senior radio. The radio was received in great shape. A motion was made and passed to donate the radio to WFSU (Florida State University) to add to their collection of antique radios.



During the TARS May club meeting which was held at WFSU studios. Todd Clark, KN4FCC on behalf of TARS presented David Mullins, General Manager of WFSU with the Westinghouse Aeriola Senior radio. After the presentation David Mullins and Taylor Cox, Broadcast Operations Manager, gave everyone a tour of their full antique radio collection.

Fun and amazement were had by all.

Westing House Ariola Senior David Mullins receiving the radio



A small sample of WFSU's radio collection.

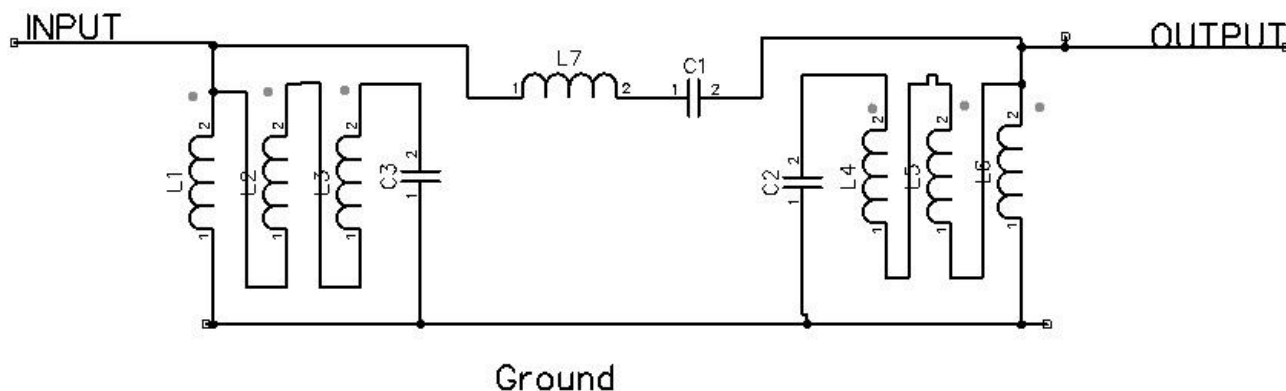


3rd Time's the Charm -- Higher Power 160m Bandpass Filter

by Gordon Gibby KX4Z

Our Alachua County group just keeps churning out filter systems to allow us to operate more stations on fewer antennas & coax lines. However, **Version 1** and **Version 2** of our 160m Butterworth bandpass filters (<https://www.arrl.org/files/file/Technology/tis/info/pdf/8809017.pdf>) had one or more capacitor banks that got hot with power over 50 watts for 15+ seconds. Not good for FT8!

Pavel VA6AM uses *auto-transformers* in several of his advanced bandpass filters. (See also: <https://www.arrl.org/files/file/Technology/tis/info/pdf/9805044.pdf>) I struggled to understand his reasoning, and finally grasped it. In the primitive schematic below, 50 ohm power arrives to 1/3 of an auto-transformer, such as L1. (I selected L1 to have approximately the desired inductance specified in the QST Butterworth article, 2.2uH on 160meters.)



L2 and L3 are "in phase" so their voltages ADD, resulting in 3 times the voltage being applied to C3. The 3:1 auto-transformer has accomplished a 9:1 impedance transformation and while the voltage on C3 is 3X the input voltage, the current flowing through C3 is 1/3 of what it would have been had it been in parallel directly with L1.

Solves the Heating Problem

That solves a problem our group was having with low-cost high voltage ceramic capacitors that seem to have relatively high equivalent series resistance. The heating developed in the capacitor (from Ohm's Law & definition of power) is I^2R where I is the current flowing through its equivalent series resistance, and R is that resistance. Since I is now 1/3 of what it would have been in a normal Butterworth parallel tuned circuit, the heating is now MUCH lower.

Because of the auto-transformer impedance multiplication, C3 for 160 meters turned out to be 400 pf instead of 4000 pf in the QST Butterworth simpler design. Making it out of four 100pf high voltage ceramics in parallel ended up with no observable heating despite 60 seconds of 100W power moving through the filter! Huge improvement.

This scenario is repeated on the output side. (C2, L6,L5,L4)

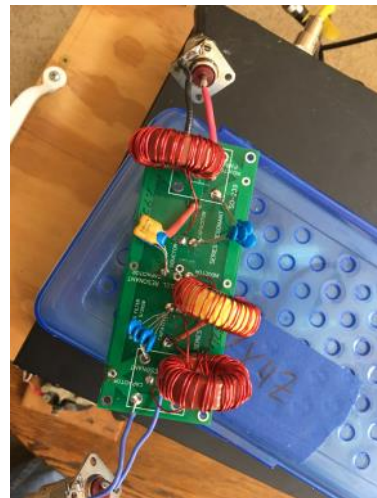
Series Filter

I used the same simple series tuned circuit in the middle, which had worked well in our **Version 2** design, rather than the more complicated Cauer set that Pavel uses. Using the filter from the QST Butterworth article, L7 is 22uH and C1 400pf. C1 was made the same way as C3, except I had a 200pf 1kV mica in the junk-box, so it went into the mix, too. The current here is only the current the transmitter provides with 100 watts @ 50 ohms -- (70.7 V RMS @ 1.414 A) and this is evidently easily handled by the four 100pf's in parallel.

Continued on next page...

In my limited experience, 500V or 1000V silver mica capacitors seem to have much lower equivalent series resistance and can be utilized in the simpler QST Butterworth design. However, they are many times more expensive compared to the high voltage 3kV ceramics. So creating the auto-transformer was worth it!

The trifilar windings on Type 2 iron power T130-2 toroids were made by winding 13 turns of the primary with #18 enamel magnet wire, and then chasing the turns to add a second and then third, out of #20 enamel magnet wire. Using a different color for the primary would have made it easier!! One can continue directly from winding #2 to winding #3 without having to cut the wire. A bit of thought gets the wiring correct for the proper polarities (if you get them wrong, the filter won't resonate where you want it to!)



Performance was as expected, with passband loss $\ll 0.5$ dB and rejection of 80 meters > 30 dB and ultimate rejection of higher bands much greater. The simple Butterworth design achieves similar outcomes, but with available ceramics, I had more heating problems with its design.

Now that I've learned how to make these myself, we can make just about anything we need in the way of bandpass filters.

CONSTRUCTION

Component	Value	Construction	Source
L1, L2, L3	L1= 2.2uH (approximately)	L1: 13turns #18 enameled, L2, L3 13 turns #20 beside L1 turns. Avoid crossing any wires Toroid: T130-2 (permeability 10)	Enameled wire from Amazon Toroid from kitsandparts.com or other sources
C2, C3	Approx 400 pf	Use four 3kV ceramic 100pf capacitors in parallel. Using either individual impedance measurements of each parallel tuned circuit (before connected by the series filter) or spectrum analyzer measurements, set resonance to approx 1.9 MHz, either by small changes in capacitors, or by pinching or expanding toroid windings.	BOJACK assortment of 3kV capacitors from Amazon https://www.amazon.com/dp/B08HZ21X8L
C1	400 pf	Construct from four 3kV ceramic 100pf capacitors in series, or 500-1000V silver mica capacitors	Same source as C2, C3
L7	Approx 22uH	Try 43 turns of #20 enamel wire, on T130-6 iron power toroid. Adjust number of turns to get lowest passband loss or lowest SWR throughout the 160m band.	Toroid from kitsandparts.com or similar supplier

□

Jacksonville Radio News

Billy Williams, N4UF

NOFARS MEETING: The next North Florida Amateur Radio Society meeting is Thursday, June 13th at Hogan Baptist Church, 8045 Hogan Rd. The meeting starts at 7:00pm and all are welcome to attend.

JAX FIELD DAY: NOFARS and Duval ARES® will participate in the annual ARRL Field Day communications exercise on June 22nd and 23rd at Hogan Baptist Church, 8045 Hogan Rd. in the recreation area.

Todd, K1KVA and Brian, K4BJS are organizing the Jax Field Day and all are invited to attend and participate. Operators will be contacting similar portable set-ups throughout North America to test the effectiveness of their impromptu installations. Solar panels and mechanical units will provide power apart from commercial mains.

Efficient antennas are critical to successful portable communications. Installation starts Friday afternoon, June 21st. The 24-hour communications marathon begins at 2:00pm Saturday.

Those interested in becoming FCC-licensed Amateur Radio Service operators and newly-licensed hams are especially invited to visit and learn more. Jax Laurel examiners will offer FREE FCC testing at 1pm Saturday at the FD site.

W4IZ REPEATER: Continuous operation from the old Jax City Hall Annex started on Memorial Day weekend 1999 when an independent group called Friends Of NOFARS provided around \$5000 in loans and donations to purchase equipment along with many hours of labor to prepare the top floor area for installation. The original concept was to use a half dozen remote receivers and links to other repeaters in Starke and Palatka to achieve coverage of the Florida Crown ARES® district which stretched from southern Putnam County to the Georgia line. This capability came in handy after an Amtrak train derailment in 2003 when W4IZ/R helped provide communications for relief efforts between agencies in Jax and the trainwreck site. Internet connection via Echolink eventually replaced the links and most remote receivers.

Henry, WB4LEQ has led technical efforts for the past decade. He and Bob, KS4CA showed slides and provided background on the present system atop the Wells Fargo Tower at the last meeting. Original members of Friends Of NOFARS at the meeting included Steve, WA4B; Chris, KF4AAF and Billy, N4UF.

WAYNE NORTON, WB4YTJ: Wayne passed away on May 28th after a long battle against multiple maladies. WB4YTJ was licensed in 1976 along with his brother-in-law Larry Barber, NI4K. Both made big contributions over the years. Wayne was a mainstay on the W4IZ repeater system from the time it was founded in 1999. He was voted Greater Jacksonville Amateur Radio Operator Of The Year for 2006.

Wayne retired from Prudential as a department head due to severe sight limitations in the 1990s and also served in the Air National Guard starting with the Cuban Missile Crisis in the early 1960s.

Wayne started the two-meter NOFARS WWD Net in the 1990s--first on the 146.76 repeater (which was W4IZ/R then) and subsequently on 146.7/444.4. Prior to that time, WWD only had a ten meter net. He served many years as the principal two-meter WWD net control station and maintained a ubiquitous presence on W4IZ/R. He also was an early organizer and participant on the W4SNN Saturday Night Net.

Wayne was always willing to assist other hams and had many friends. Our condolences to his wife Linda and Wayne's family. He will be missed!

Duval County Amateur Radio Emergency Services

Brian Schultheis, K4BJS, Emergency Coordinator

<https://www.news4jax.com/news/local/2024/05/11/jacksonville-residents-learn-how-to-prepare-respond-to-emergencies-at-jax-ready-fest/>

Hosted by The City of Jacksonville's Emergency Preparedness Division, the **Duval County Amateur Radio Emergency Services (ARES®)** played a vital role in the inaugural Jax Ready Fest. This community event took place on Friday, May 10th, from 11 a.m. to 3 p.m., and continued on Saturday, May 11th, from 9 a.m. to 3 p.m. During these hours, attendees had the opportunity to explore amateur radio and discover its impact on communication, especially in the aftermath of hurricanes and tornadoes.

Despite the rain on the first day, ARES® set up a **Wolf Coil antenna** atop a Faraday cloth within the Prime F. Osborn III Convention Center. This visual display allowed festival-goers to understand the technology behind amateur radio. Additionally, a HT radio was available for live demonstrations of two-way communication. On the sunnier second day, attendees explored the **communications trailer**, gaining insights into the essential services it provides when traditional communication infrastructure, such as cell towers and satellite networks, are compromised during a crisis.

The communications trailer, equipped with gas and solar-powered generators, boasts nine different radios. It can listen to any radio band and communicate across all amateur radio frequencies. ARES® members were on hand to answer equipment-related questions and share information on effective communication strategies. For instance, residents can visit their neARES®t community center and request assistance from a ham radio operator (amateur radio operator) to send concise yet detailed email messages to family members outside the disaster zone.

ARES® welcomes amateurs of all levels who are interested in learning about radio communications and obtaining a ham radio license. Seasoned ARES® members actively train and support those seeking knowledge and participation. Ham radio operators, always approachable and helpful, play a crucial role in fostering effective communication during emergencies.

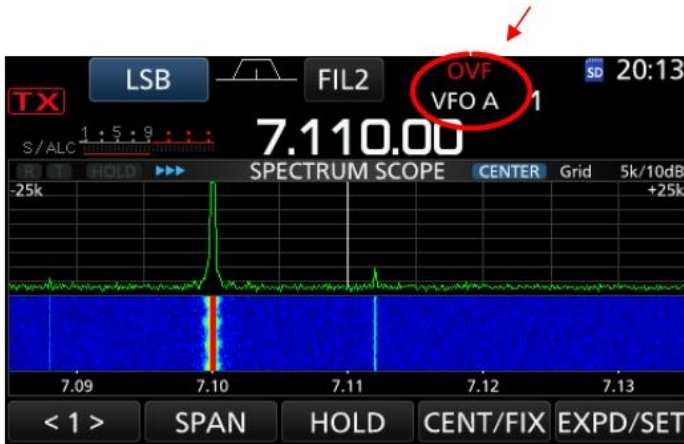
Whether you're a seasoned ham or a newcomer, there's a place for you on the Duval County ARES® team. Attend one of our meetings on the fourth Tuesday of each month at 7:00 p.m. at Hogan Baptist Church (8045 Hogan Road, Jacksonville, FL 32216) to learn more about who we are and how you can contribute to our community. [Already a member? Consider supporting us through donations or volunteering your time and expertise.](#)



If you'd like more information or wish to make a donation, feel free to [contact us](#). [The Duval County ARES team is committed to serving Jacksonville and ensuring effective communication during emergencies.](#)

IC-7300 RECEIVER OVERFLOW

Gordon Gibby KX4Z



Analog-based receivers and newer DSP (digital signal processing) receivers react differently to overwhelming signals other than the one you are trying to copy. Analog style receivers lose sensitivity ("desense") as the overwhelming signal upsets the conditions of the receiver stages -- you hear this as an undesired "quieting" that can make it impossible copy the desired signal. For digitizing receivers like that of the ICOM 7300, the analog-to-digital converter (ADC) will "overflow" when an overwhelming signal attacks it. The outcome might be extreme desensing or distortion or both. The 7300 alerts you to this problem with the letter OVF on the display. This occurs when a signal of S9+65dB (-8dBm) is seen by the digitizer.

(see: https://dc4ku.darc.de/IC-7300_and_OVF_DC4KU.pdf)

SOLUTIONS:

- Of course, press the preamp button to **turn off any PREAMP** you have selected--in the setting of overflow they only make it worse!
- **Reduce receiver RF gain:** Rotate the RF Gain counter-clockwise (CCW) from 12:00 back towards the left, reducing the RF Gain. The RFG letters will show on the display indicating reduced RF Gain. See the insert on this page to understand the dual function of this versatile control.
- A fixed attenuation of 20dB can also be added with the Preamp push button (ATT)

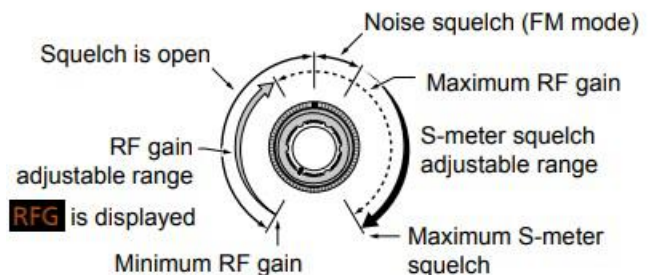
When operating in an environment including other 100-watt transmitters, typically we need a total of 70dB isolation between their signal and our 7300 receiver to avoid OVF. This can be provided by the sum of:

1. Band-to-band isolation provided by ICOM front end filters, if the other station is on a different band. These filters are fairly good between the lower frequency bands, but not so good when you get to 20/15/10 meters.
2. Multiplexer or band-pass filter systems if the other station is on a different band

RF gain and SQL level

Rotate **AF-RF/SQL** (outer) to adjust the RF gain and SQL level.

By default, rotating to left (when set to the 12 o'clock position) adjusts the RF gain, and rotating to right adjusts the squelch level as described below.



RF gain

Adjust the RF gain to decrease the noise received from a nearby strong station.

- Rotate counterclockwise to reduce the RF gain, which reduces the receive sensitivity. "RFG" appears when **AF-RF/SQL** is set to the counterclockwise from the 11 o'clock position. "RFG" indicates that the RF gain is reduced.
- ① If a strong signal is received and "OVF" (Overflow) appears, reduce the RF gain until "OVF" disappears.

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

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

- Last Saturday of the month
- Suwannee Regional Library
- Contact Gerald Guy, geraldguy@gmail.com

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>

Statewide Digital Radio Resources

Did you know we have designated ARES® DSAR Reflectors & a DMR Talk group?

- 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!

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