QST NFL

Sharing information of interest to Radio Amateurs in North Florida

ARRL NFL Section Manager, Kevin Bess, KK4BFN, Re-elected for Two More Years!

Congratulations, Kevin!

Alachua County Daily CoronaVirus/Covid-19 Net

Jeff Capehart, W4UFL, Alachua County ARES EC
ARRL Northern Florida Section ASM

In Alachua County, we started a daily CoronaVirus/COVID-19 Information & Update net back on March 27. Since then, we have had 25 nets, 27 unique check-ins, and 174 total check-ins, averaging around 7 per net. There are three net controls doing rotating duty as NCS, John Trites, NO5X, Wendell Wright, KN4TWS, and myself. We have a standard script and a spreadsheet on Google drive plus a text-messaging group for the NCS operators. The net provides the daily World, National, State, and County numbers, with the day-to-day changes. News sources and State/County websites are reviewed for the latest information to share with the amateur radio community.

Nassau County Florida ARES

Bud Sinor EC, KA3OGG

The COVID 19 epidemic has put a crimp in Nassau County face to face activities. With the Emergency Operations Center in Level II activation, we have our members who man the radio room to perform the duties as Nassau County Watch Officers working from home. We have had a number of our younger and or non-immunosuppressed members performing additional volunteer duties at the EOC. Dr John McClane, W4LTY, working at the reception area of the EOC doing health checks before personnel enter the EOC. Tom Tice, K4BTT, one of the club AECs has been working in the EOC logistics section doing resource tracking and allocation. The county communications leader (COM-L), Thomas Kelley also a member of the club as well as being a detective with the Nassau County Sheriff's Office. We held both the AEC board meeting via teleconference and the April general meeting on the air on our VHF repeater. We have had to delay an April "Fox Hunt" we had planned, and have delayed the start of a General License Class until we get ZOOM setup for the 16 students.

Email your QST NFL input to n4gl.marty@gmail.com
Marty Brown, N4GL, Editor

Five Flags Radio Association Update

Gene Bannon, KB4HAH

Activities for the month of April.

1. The FFRA Amateur Radio class that we do in conjunction the Pensacola State College has completed it's Spring term. The last 5 of the 9 classroom presentations were conducted on the Zoom Video conferencing platform. The other 4 classes were: a field trip to the FFARA Monthly meeting, Antenna construction project, Mini-Field Day Demo, and VEC Testing that were all cancelled due to the PSC shutting down. - Side note: one of the students was able to participate in a Video Conference Testing session that happened this week, which was supported by the Hawaii Amateur Radio club, and he passed. He has has is call sign and is operating with us now.

2. Most of the local clubs here cancelled their monthly meeting due to social distancing.

3. A few folks did the Rookie Round-up from their homes. KN4VGY-Charlie reported he had gotten great many contacts and really enjoyed the Contest.

4. Our Field Day planning is still ongoing with hopes of it being able to be done in a more normal atmosphere than what is currently available for us to do it.

What's Inside….

The Net Control Station's Toolkit

Dave Davis, WA4WES, Net Manager NFL ARES Net

Net Control Stations often have a "toolkit" of items that make the job of NCS easier. Here is what some will have in their kit:

1. Preambles
    a. Opening a net
    b. Shift changes
    C. Closing the net
2. Copies of :
    a. ICS 213 message form--https://training.fema.gov/icsresource/icsforms.aspx
    b. ARRL radiogram message form http://www.arrl.org/files/file/Public%20Service/RADIOGRAM-2011.pdf
    C. ICS 309-Communications log-https://groups.io/g/WWARES/topic/30828537
3. Phone numbers/email addresses of
    a. Section Manager-Kevin Bess-KK4BFN 386 547 2838
    b. Section Emergency Coordinator-Karl Martin-K4HBN-386 756 9861
    c. Net manager-David Davis WA4WES 850 562 3660
4. SAR net map-sarnetfl.com
5. Propagation chart program link-https://www.voacap.com/hf/
6. HF frequencies
    a. Primary 3.950 MHz
    b. Alternate 7.242 MHz
    c. 60 meters- Channel 4-5.371.5 MHz

Of course, you can modify this list as your needs dictate, but this is a start. Sample preambles are at the webpage for the Northern Florida Section.

Northern Florida Section SEC Report

Karl K4HBN k4hbn@arrl.net, NFL SEC

Northern Florida Section SEC Report		March 2020
Report	Counties Reporting	Counties in NFL
Number of Counties Reporting	16	43
Total Number of ARES Members		458
	Number of Events	Hours
Exercises & Training Sessions	94	999
Public Events	4	168
Emergency Operations	1	2
Skywarn Operations	2	19
Total	101	1088
Comments		
I am following the current COVID-19 news and working closely with the WCF, SFL Sections and FL EM. The EC's and AEC's are having monthly teleconference meetings keeping everyone informed. Hurricane season is a little over a month away. Everyone should be collecting what supplies you can find. Not when the storm is arriving.		

What is a PIO? What is the job of a PIO?

By Scott Roberts, KK4ECR, NFL Section PIC

I have often been asked the question, "What is a Public Information Officer, and what are they supposed to do?" The answer depends somewhat on the industry or organization that you represent.

While passing information to the media, served agency and public is the job of a PIO, a major part of a PIO's ongoing job is to **establish good working relationships** with the media, served agencies and the public and to maintain those relationships by answering queries promptly, arranging interviews or speakers when requested and being a familiar and involved presence at community events.

Let's take a look at some of the highlights from the job description for a PIO and published by the ARRL. The complete job description http://www.arrl.org/pio-pic-job-descriptions.

Responsibilities:

- Establishes and maintains a list of media contacts in the local area; strives to establish and maintain personal contacts with appropriate representatives of those media (e.g., editors, news directors, science reporters, etc.). Understands how stories should be submitted to media outlets and knows the rules for successful media submissions by media type.

- Be a contact for the local media and assures that editors/reporters who need information about Amateur Radio know where to find it.

- Attempts to deal with and minimize any negative publicity about Amateur Radio and to correct any negative stories which are incorrectly ascribed to Amateur Radio operators.

- Generates advance publicity through the local media of scheduled activities of interest to the general public, including licensing classes, hamfests, club meetings, Field Day operations.

- Helps individual hams and radio clubs to develop and promote good ideas for community projects and special events to display Amateur Radio to the public in a positive light.

Working with others:

- Works with Local Government Liaisons to establish personal contacts with local government officials where possible and explain to them, briefly and non-technically, about Amateur Radio and how it can help their communities.

- Quickly informs the ARRL Media and PR Manager of any issue or significant event noted which may either enhance or damage the reputation of the ARRL.

- Networks with other PIOs to facilitate coordination.

Most if not all of the above points cannot and will not happen if proper relationships are not built. During non-event or non-emergency times, a PIO should work to build relationships with media, served agencies and the public so that when an event or emergency happens, the media, served agencies and public will contact you and your organization to help when and if you are needed.

So, the job of the PIO covers multiple points:

- **Build relationships** with the media
- **Build relationships** with the served agencies
- **Build relationships** with the public
- **Keep the media, served agencies and public informed** about Amateur Radio events and activations.
- **Pass information regarding Amateur Radio activities** to the media, served agencies and public as needed during an event or activation.

  It is not just about passing information – it is about **building and maintaining relationships**. Without good relationships, there will not be the opportunity to pass information.

Ham Radio Open-Source Builds An Emergency Ventilator For The World

by Gordon Gibby MD KX4Z, April 29 2020

On Thursday, March 19, 2020, the was world gripped by fear of a new, novel, respiratory virus sweeping China and then Italy and killing thousands.. On that day, my friend Dr. Sem Lampotang of the University of Florida medical simulation group, asked my help in building an emergency ventilator. Experts were predicting that our local hospital, and all others, woud be **overrun** with dying COVID-19 patients unable to breathe.[1]

We were in the opening stages of a lock-down nationally, and in our county as well. I initially ignored his plea for a couple days….

Until I looked carefully at his idea for taking components that woud NOT likely become in short supply as companies all over planet scrambled to source more ventilators. Sem, who has designed several ventilators in his long career, had a plan to build a working human ventilator out of Home Depot/Lowes sprinkler parts! And it looked to me as if it would actually work, based on my 30 years of practicing general anesthesia.

But he had almost no control system. They badly needed electrical engineering (my training before medical school).

That is where **ham radio** entered emergency ventilator development. More than a year before our crisis, an Indian digital PBX CEO, Ashhar Farhan VU2ESE, had taken an Arduino micro-controller and used it to control a digital frequency synthesizer to create one of the world's least expensive SSB high frequency radios[2] – and I had learned how to write small bits of software for the Arduino as a result, using the free open-sourced code development package developed by the Arduino group.[3]

This was the solution to Sem's lack of a ventilator control system.

Using the Arduino VFO from a uBitx radio, I whipped out some simple code that merely turned on and off a simple transistor switch to control their lawn sprinkler valve. We were in lock-down and the only power transistor I had in my house was a huge old TO-3 metal case 2N3055-- but that would do the job. On Sunday morning Dave Lizdas, their chief engineer, was setting up their PVC and lawn sprinkler system on my

breakfast table, and the VFO began controlling "ventilations" to the growl of my air compressor in the hallway. The video of that humble beginning (see: https://www.youtube.com/watch?v=IEBvye_G3T8) has been on the Center for Safety & Simulations' web page[4] ever since—and my breakfast table is quite well known, now.

A ventilator was about to be birthed.

Help!

I needed help badly. I know just a little bit about a lot of things, but I'm rarely a real expert. So I posted a plea for assistance on the popular ham radio Bitx20 discussion group, and instantly drew such a large crowd that by Tuesday March 24th, Dr. Jack Purdum W8TEE had created VentilatorDevelopers@groups.io so that we wouldn't overwhelm the Bitx20 forum – and my ham radio volunteers just went wild! 872 messages back-and-forth were issued in the 7 days left in March as amateur radio operators all over the world started developing one of the most innovative ventilators ever developed – suitable for anywhere on earth that has a hardware store.

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[1] In retrospect, they were way way off the mark.

[2] The Ubitx and its predecessors: see https://www.hfsignals.com/

[3] https://www.arduino.cc/en/Main/Software

[4] https://simulation.health.ufl.edu/technology-development/open-source-ventilator-project/

Engineering

I needed someone to create a design and a printed circuit board immediately. Perhaps my most important contribution was securing the help of Ashhar Farhan, VU2ESE, who immediately did just that for the project. Marcelo Varanda VA2MVV, an experienced micro-controller programmer, had already been working with other volunteer groups working to build emergency ventilators and provided great code with which to start, with a very refined user interface. Dr. Gibson of UF hand-etched the first board to allow us to test the design. We were moving!
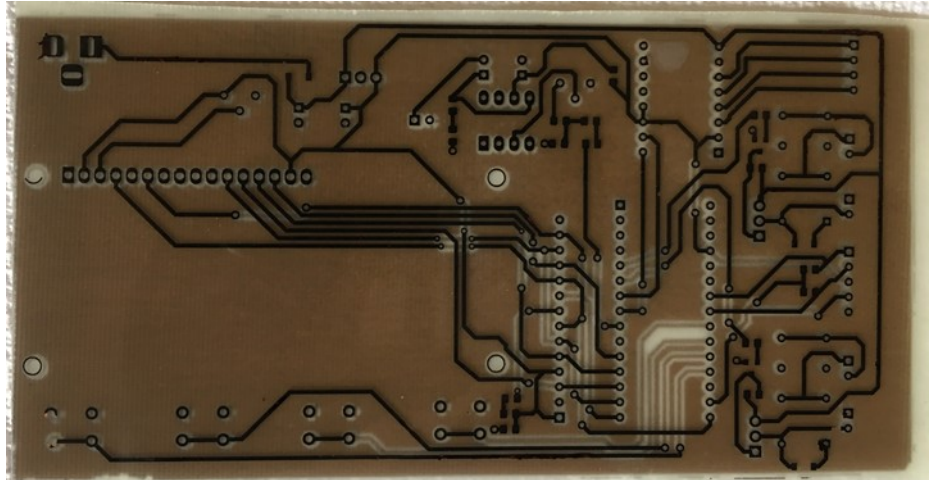
The Crucial Exhalation Valve

Ventilators are simple at heart: you carefully open a valve from a compressed medical gas source and let it gently inflate a damaged human lung *while you hold a second valve – the expiratory valve*—closed. Then you close the inspiratory valve and open the expiratory valve to allow the patient to exhale. Managing the precise flow and pressure is key to helping those damaged lungs heal. The University of Florida team knew that commercial controllable expiratory valves would quickly become scarce all over the world, so they had designed a novel system where the rush of inflation gas <u>filled a sac made from a bicycle tire</u>, to automatically close off the outflow path just at the right time, and then automatically relax and allow exhalation when the inspiration was over. But it needed to be tested.
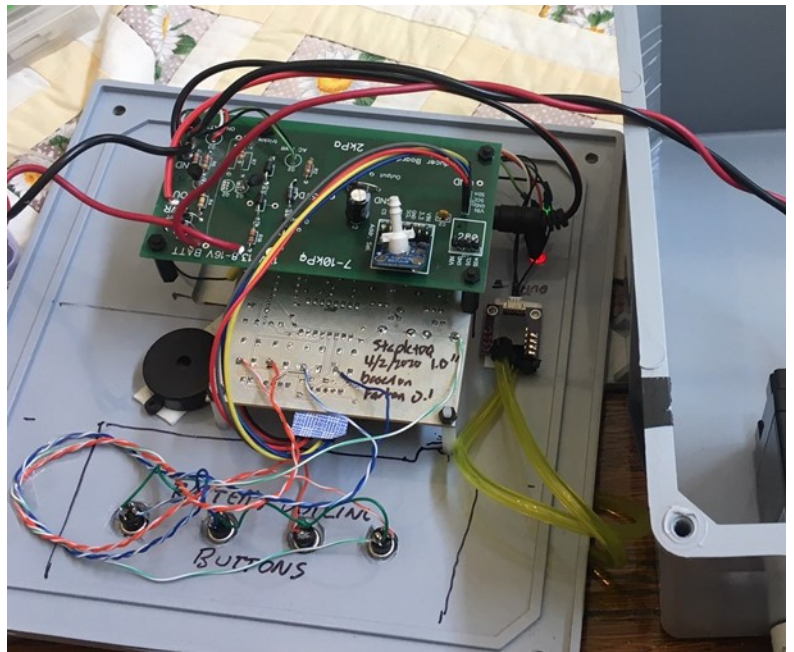
A test system was quickly built and UF began testing the durability of these valves. Patients were requiring WEEKS of ventilations, so the ventilator had to last *hundreds* of thousands of cycles --- but the bike tube valves were failing after only *tens* of thousands. Ham radio operators stepped up and created test setups all over the world, allowing improvements to how the tube was closed off, to be quickly tested. Bob Benedict KD8CGH is probably the **world leader in volunteer valve testing**; as I write this he is closing in on a grand total of 2.5 million valve operations!

Meanwhile Jack Purdum W8TEE and Ashhar Farhan VU2ESE were writing simpler code that even I could understand, to make a clinically useful ventilator controller. Every single part of the design, even down to individual connectors and displays, was furiously debated on Ventilator Developers as the first board design, dubbed Ashhar0.1 materialized. Every part had to be researched for *availability*, not just cost.

In Gainesville, Florida we were now on real lock-down, and expecting a complete inundation of the local hospital in only 2 weeks, so we had to do a rush order on boards --- but would this design work? Another volunteer, Dr. Daniel Gibson took the board design and using the old fashioned resist techniques, made a real board. He and I tag-teamed soldering the fragile traces of this double-sided board, installed the Arduino nano, and hooray --- it worked!

Meanwhile, enter Dr. Mark Stapleton WD4LHT – and his own pcb design using Ashhar's schematic – out of the blue! Dr. Stapleton is so multi-talented that he showed up on my doorstep – in mask – with a **completely assembled board**! It is the lighter-colored board in the accompanying photo of my first working prototype. Our first working controller! *He would go on to build a dozen or more*.

With the bicycle tubes now making it into the hundreds of thousands of cycles before the butyl rubber ripped, Dave Lizdas issued a plea to come up with a design for them that would go past 1 million cycles. "MA" (Marc Al Winzenried WA9ZCO) had a different idea – in a brilliant discovery, he demonstrated how to move an Orbit lawn sprinkler' metal spring from above the diaphragm, to below the diaphragm and turn the lawn sprinkler into a "normally OPEN" valve with very flow resistance, making it the perfect expiratory valve. Forget the 24VAC solenoid --- attach a tube to the drain hole on the top of the casing, driving it with compressed gas through a simple gas solenoid, and now you could have a completely independently operated expiratory valve.

Orders for boards were immediately placed with two companies, continents apart. So urgent was the perceived need that we could not rely on just one company. Ashhar had already improved the design based on scores of new comments on groups.io – through Ashhar0.2 and now Ashhar1.0 board. For $800, ten boards were build here in the USA on rush order, and for $80 ten boards were heading our way from China by DHL.

The air-way portion of the ventilator. The Green Orbit valve is there thanks to Mark Winzenried WA9ZCO. The specially designed venturi with pressure taps to measure breath size is at upper right with two thin pressure tubes. The black Rainbird valve at the bottom is the inspiratory valve, and the black and white structures below and to the left are anti-asphyxia (negative-pressure) and mechanical over-pressure valves.

The UF team was meeting twice every day using ZOOM, scattered all over Gainesville Florida. I wasn't sure about Winzenried's design and couldn't get the harried UF team to pay attention, so finally I just **built it myself** and was stunned at its performance. With independent control of each valve, enormous new capabilities were possible and the little Arduino could easily control both valves separately. Much more exotic ventilator patterns such as inspiratory-holds to help keep terminal air sacs more open, would be possible with Winzenried's discovery. Within a week, it had totally supplanted the bicycle tube just as we had perfected that design and could get well over a quarter million cycles. But Bob Benedict's ongoing work was demonstrating many hundreds of thousands of cycles were easily possible with the kinds of valves we were now going to use for the expiratory valve (and he later hit 2,000,000).

Other hams, including Dr. Bill Schmidt K9HZ , were hard at work designing the mechanical flow resistance needed to allow a differential pressure transducer to measure the size of each breath delivered to the patient. Topic after topic blossomed on the hamradio discussion forum as teams automatically divvied up and conquered each part of the design. It is impossible to list all the volunteers who contributed – but there are all there on VentilatorDevelopers@groups.io.

The expected peak in virus deaths was being pushed back by the nationwide lockdowns and now the full legal risk of building a ventilator that would be used on desperate cases where 4 out of 5 patients died, hit home. How would all these hams be protected legally from suit? They were not covered b the University of Florida's sovereign immunity. After I initiated a small "strike" of design efforts, UF Attorney Dan D'Alesio swung into action and with Dr. Nick Gravenstein (MD) managed to get full volunteer legal coverage for ten of our most prodigious volunteers on groups.io, whose work was clearly going to be in the final ventilator – now headed toward an official FDA Emergency Use Authorization submission.

We wanted this ventilator to be usable anywhere on earth, so every part was being documented as openly as possible, with where to find the parts, freely downloadable schematics, board designs, parts lists, assembly instructions – everything. The software was advancing by leaps and bounds --- conquering problems with the tiny digital airway pressure sensor, the Bosch BMP280 used in automobiles and vaping cigarettes, smaller than a grain of rice. Ashhar completely rewrote the user interface to give us huge new flexibility in a 72-hour programming binge, and Jack Purdum sliced our usage of the limited dynamic RAM on the Arduino by a third to give us badly needed breathing room as the code was close to crashing.

The result was an incredibly cheap and capable ventilator – one that will likely see usage all over the world in bush hospitals for anesthesia and ICU care never before possible. It can electronically provide not only inspiratory holds, but can maintain a continuous positive pressure in the airway ("PEEP") by modulation of the expiratory valve on 23-millisecond intervals. Thanks to Jack and Ashhar it has a wealth of alarms and protections. LIFEMECH, a spin-off volunteer group in Oregon from a major microprocessor manufacturer (who wishes not to be named) is acting as the first approved manufacturer for the FDA submission. Unfortunately that has been pushed back and back and back --- but the contributions of amateur radio operators – who can design, solder, build and test all by themselves – will long be remembered.

Prototype #2 prior to manufacturing by LIFEMECH

Press Release

Gordon Gibby MD (KX4Z), North Florida Amateur Radio Club

HAM RADIO OPERATORS PROVIDE WORKING DESIGN, HARDWARE, AND SOFTWARE FOR EMERGENCY VENTILATOR FOR FDA SUBMISSION

(Gainesville, FL) Amateur radio operators have succeeded in providing a full working ventilator controller to assist researchers at the University of Florida who plan to make an Emergency Use Authorization submission to the FDA. A successful submission would blaze a bright path for volunteers and manufacturers the world over to create low-cost, highly functional ICU or anesthesia care ventilators with many features of modern ventilators, at a small fraction of the normal cost.

Amateur radio operators were continuously at the forefront of the development of the ventilator. Bob Benedict KD8CGH has provided incredible volunteer testing, now exceeding 1.6 million cycles on one crucial valve, and >300,000 on another. Jack Purdum W8TEE is the main "code-cleaner" for one of multiple teams building software, following the initial lead of Marcelo Varanda VA3MVV. Ashhar Farhan VU2ESE not only created the ventilator controller schematic, but also the printed circuit board layout that will be part of an expected University of Florida submission. Other hams worked on mechanical designs for flow measurements, and others cranked up potential manufacturing capabilities normally used for transceivers. Thanks to UF lawyer Dan D'Alesio, a core group of mostly amateur radio operators came under significant legal protection when volunteering to help UF. Marc Al Winzenried WA9ZCO brilliantly modified a readily available lawn sprinkler to make it "normally open" and it became a more-durable replacement for the UF-designed bicycle-tire-based expiration valve. Marc's discovery made the ventilator able to go more than 1 million breaths before significant valve issues, and the part can be replaced for under $15.

These important contributors are only a small subset of all the amateurs and others who have contributed on VentilatorDevelopers@groups.io, posting over 1,800 design messages in five weeks. It is impossible to list all of the hams who have done huge research, design, and hundreds of thousands of cycles of testing of 3D components, valves, and electronic systems.

The completed prototype in Gainesville, Florida was constructed by an amateur using normal tools and assembled boards provided by one of the associated manufacturers (LifeMech) who have signed on to help UF. It offers a complete range of breath sizes to fit all adults and degrees of lung injury. Pressures are adaptable to fit any patient, up to a peak pressure of 60 cmH2O, and alarms for out-of-limit pressures are included. An extendable menu structure to the Arduino Nano-based controller was crafted in 72 hours by Ashhar Farhan, building on work by Marcelo Varanda. Measurements of gas flow are made every few milliseconds by an I2C-based differential pressure transducer capable of measuring tiny fractions of a psi. This allowed the design to accurately track patient-induced variations in the volume of delivered medical-grade gasses. Using Wenzenried's expiratory valve, electronic on-off control at the rate of 30 Hz allows modulation of the valve to set the continuous airway pressure used to keep the patient's lung alveoli open against virus-induced water-logging of the connective tissue. However, the on-off nature, and the mechanical air hose system and patient lung mechanics, created damped exponential "ringing" within the hoses. Two days of effort went into understanding the complex mechanics, leading to an improved software design allowing much faster monitoring (at the suggestion of UF team leader Sem Lampotang PhD) that correctly measures patient breaths in spite of the perturbations in the gas flow. The design avoids any need for external spring- or ball-based "PEEP Valves" making it an even better design for underprivileged nations. The only part of the va1ves that shows wear and tear after almost a million cycles is the nitrile diaphragm – and inexpensive replacements for that part may reduce the costs even farther. The entire controller system is built around a simple Arduino nano and uses less than 75% of the available code space.

Perhaps the most surprising development was the addition of the ability of the ventilator to sense patient effort to take a breath, and immediately switch to assisting the patient with that breath, known as "assist-control" ventilation. This is expected to allow far lighter sedation of patients – potentially even no sedation – and allows patients' crucial respiratory muscles to keep up their strength. Triggering levels for that were made adjustable to allow precise clinical adjustment to fit each patient. The design goes far beyond the FDA's guidance document for emergency ventilator development..

The successful control system in completed form, with basic manufacturing instructions, software, and software explanation, was delivered to UF by the amateur radio volunteers today, April 24. The amateur radio community has done incredible work to design a very capable ventilator out of common parts in only weeks.
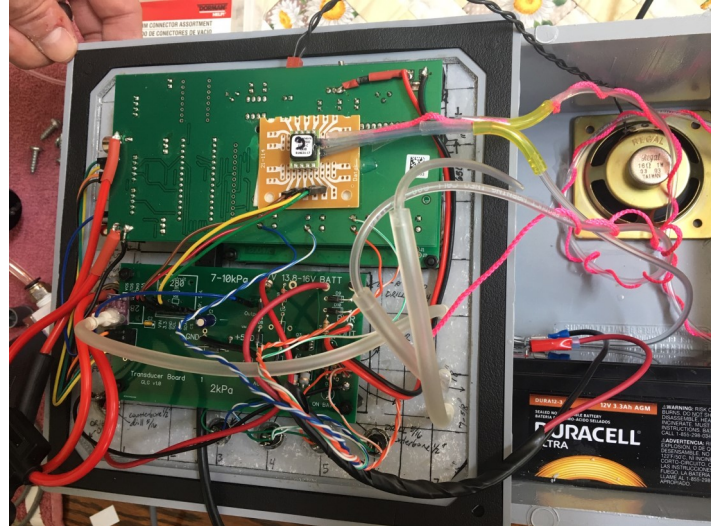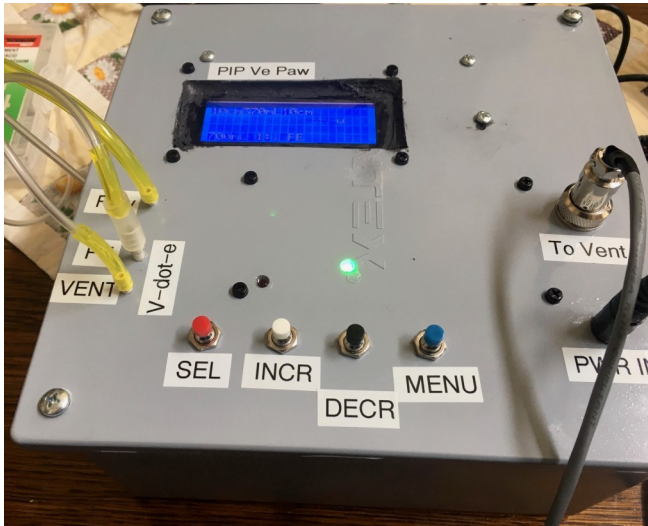
Updates form W4GJ

Bob Lightner, W4GJ

Since our "Stay at Home Order" came about, our North Florida DX Association (**NFDXA)** has been meeting on the air on 75 meters. It's not as much fun as meeting in person and enjoying a nice meal together, but it works.

My high school club, **K4WTL**, is closed for the remainder of the school year. A couple of students and I will be operating for Saturday's Florida QSO Party. QSX for K4WTL.

On Sunday, my Son's of Confederate Veterans Camp 1424, will be activating our club's call, **N4SCV**, for Confederate Memorial Day. We will be operating on 40 meter SSB.

Zoom Video Conferencing
by Bert Garcia N8NN

The current Coronavirus emergency with the stay-at-home and social distancing restrictions prevent large in-person meetings like our ham radio club meetings. One alternative is holding a virtual meeting using the video conferencing service Zoom. This article will help you get started with Zoom so you can easily join a club meeting or even schedule a meeting of your own.

A Zoom virtual meeting room for your local club will look like Figure 1 on your computer. This is the April 2020 meeting of the West Virginia DX Association.

Figure 1. The Zoom virtual meeting room as displayed on your computer screen.

What do I need to join a Zoom meeting? You will need a computer with a video camera and a microphone, and of course an Internet connection. Alternatively, you can use your smartphone for video and audio by installing the Zoom app, or even use your home phone to join with audio only. If you have used Skype, you're all set to get started with Zoom. Laptops today have built-in cameras and microphones. If you have a desktop computer, you will need to add a USB camera and a computer microphone, or a camera with a built-in microphone. You may want to use a headset or Bluetooth earbuds. There are lots of choices on Amazon.com.

How do I join a Zoom meeting? Your meeting host will send you an email invitation containing an Internet address and a password along with the time and date of the meeting. A few minutes before the start of the meeting, enter the Internet address into your browser. If your host has opened a "waiting room," you will see a room like Figure 1, and you will be prompted for the password. If there is no waiting room, you will be told that the meeting will start soon, so just wait for your host to arrive. Passwords are not mandatory, but a good host will want to set a password to protect the meeting from intruders.

How much does it cost and what software do I need? If you're invited to a meeting, it doesn't cost you anything and the only software you need is the Internet browser you already have. But if you want to host meetings and learn more about Zoom, you should sign up for a free Basic account at Zoom.us. There are some limitations with a free Basic account, and you can read about the features for paid accounts on the Zoom website.

How do I sign up for a Basic Zoom account and what do I get? There is a "sign up, it's free" button on the Zoom website. You will be asked for your personal information and exchange emails with Zoom to verify your identity. Alternatively, you can use your Google credentials to establish your account. Zoom will install a client software program on your computer so you can schedule and host meetings. With a Basic account you can host a meeting with up to 100 participants. Meetings are limited to 40 minutes duration; however, during the Coronavirus emergency, Zoom has extended this to one hour. You can hold an unlimited number of meetings and there is no time limit for 1 to 1 meetings.

How can I learn more about Zoom? Zoom has a wealth of information available to teach you how to use their service. On the Zoom main page the drop-down RESOURCES menu contains three items of immediate interest to you – Video Tutorials, Live Training, and Webinars. I suggest you select Live Training > Getting Started with Zoom Meetings > Watch Recording. This 30-minute video will tell you all you need to know to get started. You will learn how to schedule a meeting and invite participants, how to control the video and audio during a meeting, and how to display documents or viewgraph slides during you meeting.

I have a Basic Zoom Account, now what? Go to Zoom.us and sign-in to your account. There are three items of interest on the navigation bar – Schedule a Meeting, Join A Meeting, and Host a Meeting. If you select Host A Meeting > With Video On, two windows will open after you click on the Open Zoom message that pops up. Click on the red END MEETING in the lower right of the video screen to get it out of your way and close all additional popups. You will now have a window that looks like Figure 2. This is the Zoom client window.

What can I do in the Zoom Client Window? In the Zoom client window, Figure 2, click on the toothed wheel (Item 1) to open the Settings window shown in Figure 3. Selecting items from the list on the left side will allow you to change how your Zoom client works. You can set various default values, test and adjust your Video and Audio, and edit your account Profile. You can set a Virtual Background using a photo or a video that will appear behind your camera image. Select each of the items on the left to see what they do. Caution, if you select "Mirror My Video," others in the meeting will see a mirror image of your video and any written text in your camera will appear backwards to others!
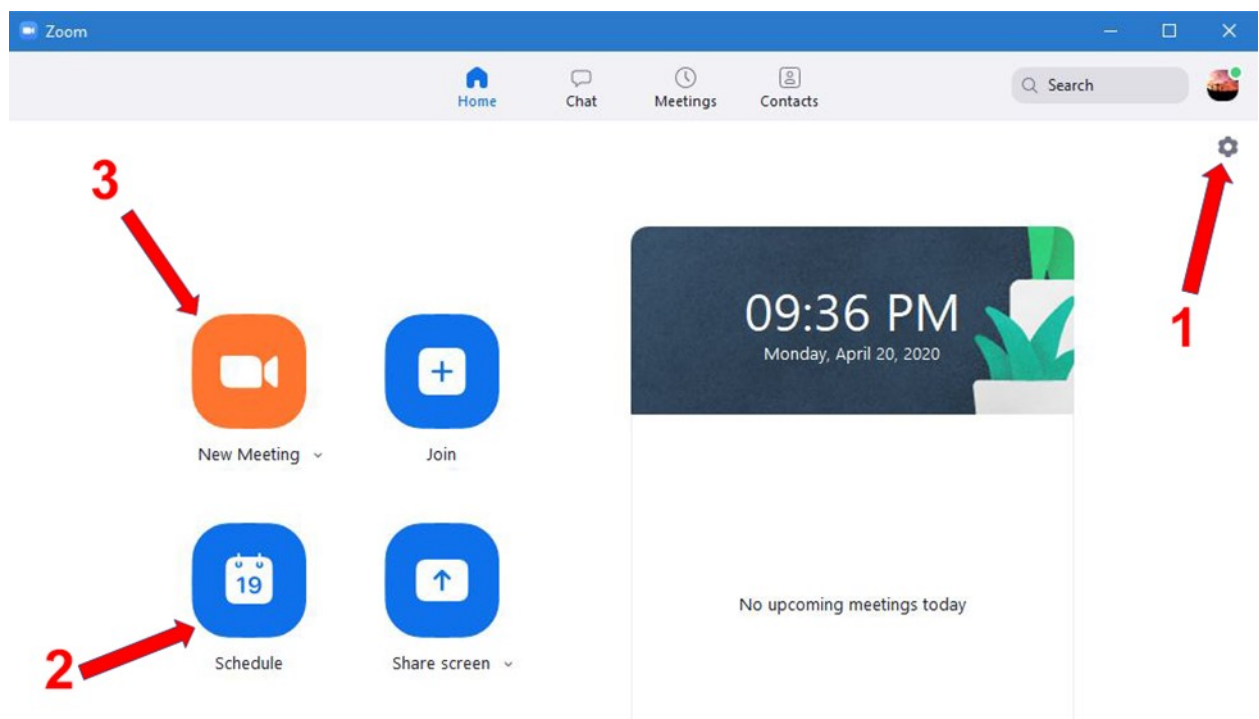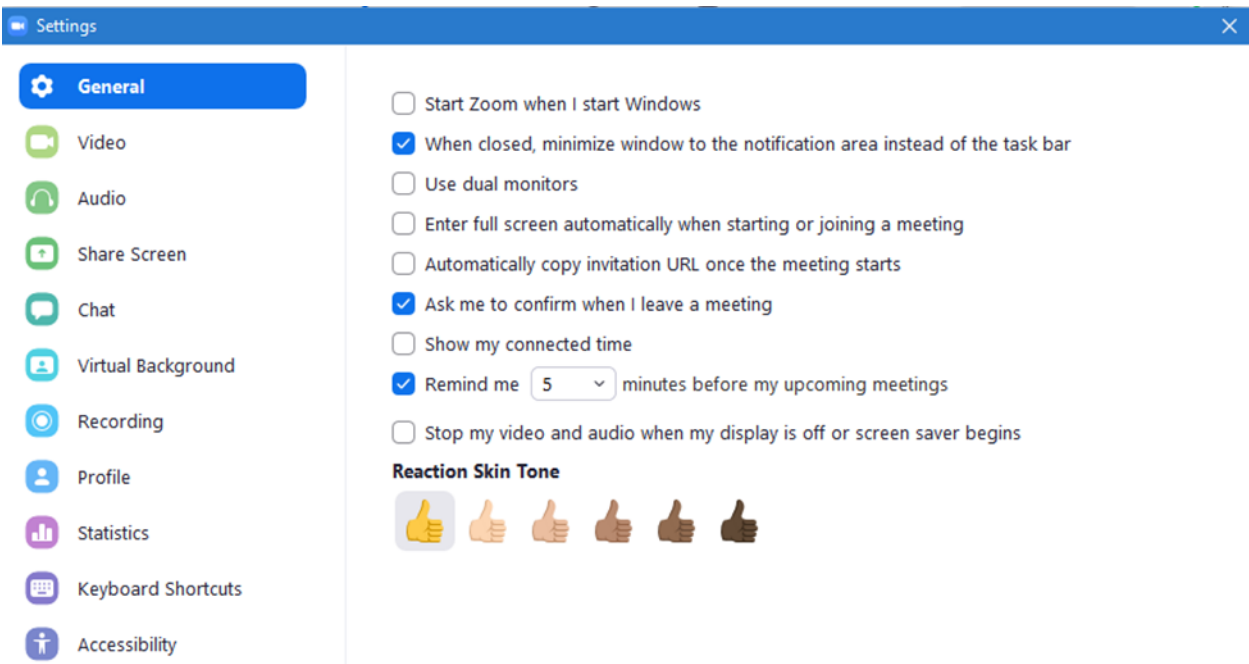

Figure 2. Zoom client window.

Figure 3. Zoom client Settings window.

In the client window, Figure 2, click on Schedule (Item 2) to schedule a meeting. In the popup window that appears, enter the meeting topic/name, date, time, duration, and other items as needed. I recommend you require a password for all your meetings.

In the client window, Figure 2, click on New Meeting (Item 3) and the video window will appear. This is the window you closed earlier. Along the bottom of the window you will see the controls you will use when in a meeting. Starting from the left, you can mute your audio, stop your video feed, set the security features, manage the participants in your meeting to turn on or off their audio or video, open a text chat window to a participant or to everyone, share a screen with every-

one, and start or stop recording. In the security features you can lock your meeting so that no one else may join and you can enable a waiting room and other options. The share screen icon opens a popup window where you can navigate to the screen image you want to display to everyone. The screen image must already be open on your desktop so it can be displayed.

There are many more features in Zoom. To learn about the features, you can have a 1 to 1 meeting with a friend and try using all the controls before you host a live meeting. Most of the program features are intuitive, but you may need to hunt through the menus to find what you want. Good luck with your next meeting.

LARA Adapts to Social Distancing Restrictions
Frank Anders, KK4MBX

Each month LARA has a club luncheon at a local restaurant. In April the restaurants were open for takeout only. In its place, we had a bring your lunch and chat net on the club repeater. The folks who normally attend the luncheon joined out informal net and had an interesting conversation while we ate lunch at home.

Our April club meeting was another radio net event. We opened a special Saturday session of our tri-weekly Information Net and 43 LARA members joined in and we conduct-

ed our monthly meeting as we would have in person, including spirited discussions on some topics.

Another unexpected, but happy, outcome of the restrictions is increased participation in our tri-weekly information nets. Throughout April we averaged 26 members signing into the nets.

In May, we are planning to continue club meetings on the radio.

FLORIDA QSO PARTY – 2020

Wayne Brown, N4FP

After 7 years of mobile roving during the Florida FQP, I was really looking forward to my 8th year. For the first 5 years, my xyl, Marty, N4GL, had driven me around the state while I operated single operator mobile CW, with driver. The last two years, to Marty's delight, I had partnered with Pete, K2PS, and we operated multi operator mobile CW. We alternate between driving and operating and had a great time both years. We were planning the same thing for 2020.

Covid-19 changed everything and, with the state shutdown, mobile operation in Florida was not allowed for the FQP. I was asked by Jim, KM4HI, if I was interested in working N4FP as a multi operator multi station entry under the distributed category that was added this year to allow each operator to operate from his own station within the same county, in our case Marion. Andy, K2ADA was asked if he would like to join us, and he did. We decided I would operate CW on the available bands, 40, 20, 15, and 10. Andy chose to operate 40 meters SSB using his two elements rotatable beam, and Jim agreed to operate 20 meters SSB. Andy also would look for opportunities that might become available on 15 or 10 meters SSB.

We decided to operate in the low power mode, 100 watts, since it offered a score multiplier of 2 over running high power, and we felt it would be difficult to double the number of contacts made by running high power.

Saturday was a very active day, with many pileups. We mainly ran a frequency rather than doing search and pounce, and we found many stations wanting to work Florida. Band conditions were quite good on 40 and 20. I made one DX contact on 15 meters CW Saturday afternoon. Sunday was much slower. Without the mobile stations providing new contacts every time they entered a new county, there simply weren't a lot of new stations to work. Andy had his Flex radio set to monitor 15 and 10 meters SSB, and Sunday afternoon he saw a band opening on 15 meters and made 41 contacts.

Bottom line, we had 431 non duplicate CW contacts on 40, 604 on 20, and 1 on 15. We had 680 SSB contacts on 40, 823 on 20, and 41 on 15. We had 77 multipliers on CW and 75 on SSB. Final score was 1,108,944 points. Our score contributed to the Silver Springs Radio Club overall entry. Other Silver Springs Radio Club entries on 3830Scores.com included KC5CMX, KN4MIV, KQ3K, N4GL, N4LZ, N8NN, and WA4IPU. Thanks to everyone for their great effort.

Check out the NFL Website! Our thanks to Brian McClure, NW4R, web master!

Choosing QSO Logging Software

by Bert Garcia N8NN

In 1983 the FCC eliminated the requirement to maintain a log of amateur radio transmissions, but today hundreds of thousands of hams still maintain a logbook. A logbook serves as an historical record of your activity reminding you of the people and places you have talked to, allows award tracking, and serves as a reference for completing QSL cards. While some hams still keep a paper log, most logging is done with software on a personal computer. This article serves as an introduction to computer logging to assist you in selecting a program that meets your needs.

Asking the question, "Which logging program should I use?" is like asking the question, "Which car should I buy?" The answer is "It depends!" By describing what many popular logging programs can do, this article will help you determine your needs and preferences. With dozens of logging software programs available, this article can only get you started on an Internet search for a product that meets you needs.

Two categories of logging software to consider are Free and Paid. Free is always nice! Just because it's free, don't assume it won't have many of the features you desire. Most Paid programs are packed with features, but some are not. If you are just starting out, I recommend you try a Free program to help you determine your requirements. Many Paid programs have a free trial period for you to evaluate the program. All popular logging programs provide a method for moving your log to another program if you decide to change. The common log interchange format is .ADI, so check for that feature.

The following are brief descriptions of the main features you may want in your logging software in addition to the usual time, date, frequency, mode, and report information:

Radio Control – A USB or serial connection between your radio and computer for sharing frequency and mode information automatically. This helps avoid logging errors. Radio control may even allow controlling the radio from the computer screen with a mouse or keyboard.

QSL Tracking – A record of cards sent and received, printing mailing labels, printing complete QSL cards, and tracking QSL managers.

Callsign Lookup – Integration to databases of callsign data, preferably on-line.

Award Tracking – A record of progress toward awards such as DXCC, WAS, WAZ, IOTA, and many specialty awards.

DX Spotting – An interface to DX Cluster services that announce stations on the air in real time.

Digital Modes – Transmitting and receiving using CW, RTTY, PSK, FT8 and many other digital modes.

Log Sharing – Integration to other software programs such as JT65 and FT8 to maintain a common log.

Contesting – Logging contacts, maintaining serial numbers, checking for duplicates, sending digital and voice contest messages, generating Cabrillo logs, and other items required for specific contests. Sharing a common log among several operating positions.

Automatic Log Uploads – Interfaces to LoTW, ClubLog, eQSL and other services for tracking QSOs and awards.

Rotor Control and Antenna Selection – The ability to automatically turn your antenna toward a specific station based on the callsign and selecting antennas based on the radio frequency.

Multiple Radios – Managing two radios to operate SO2R contesting.

Band Map – A graphical display of stations on the air from DX Cluster spots or CW Skimmer.

World Maps – Maps to display sunrise/sunset grey lines, azimuth and distance to DX stations, propagation paths.

Some logging software is tailored for specific tasks such as contesting, award tracking, or operating digital modes. You may want to use more than one logging program because a program that is great for contesting may fall short on award tracking. For example, N1MM is a top-notch contesting program while ACLog by N3FJP may provide everything you need to record your day to day contacts.

Here is a brief list to get you started on your search for a logging program that meets your needs.

Paid Programs
Amateur Contact Log ACLog http://n3fjp.com/aclog.html $24.99
Ham Radio Deluxe V6 HRDLog https://www.hamradiodeluxe.com/ $99.95 to $124.94
DX4Win https://dx4win.com/ $89.95
DXextreme https://www.dxtreme.com/index.htm $89.99

Free Programs
Logger32 https://www.logger32.net/index.html
WinLog32 http://www.winlog32.co.uk/index.htm
Log4om https://www.log4om.com/welcome/
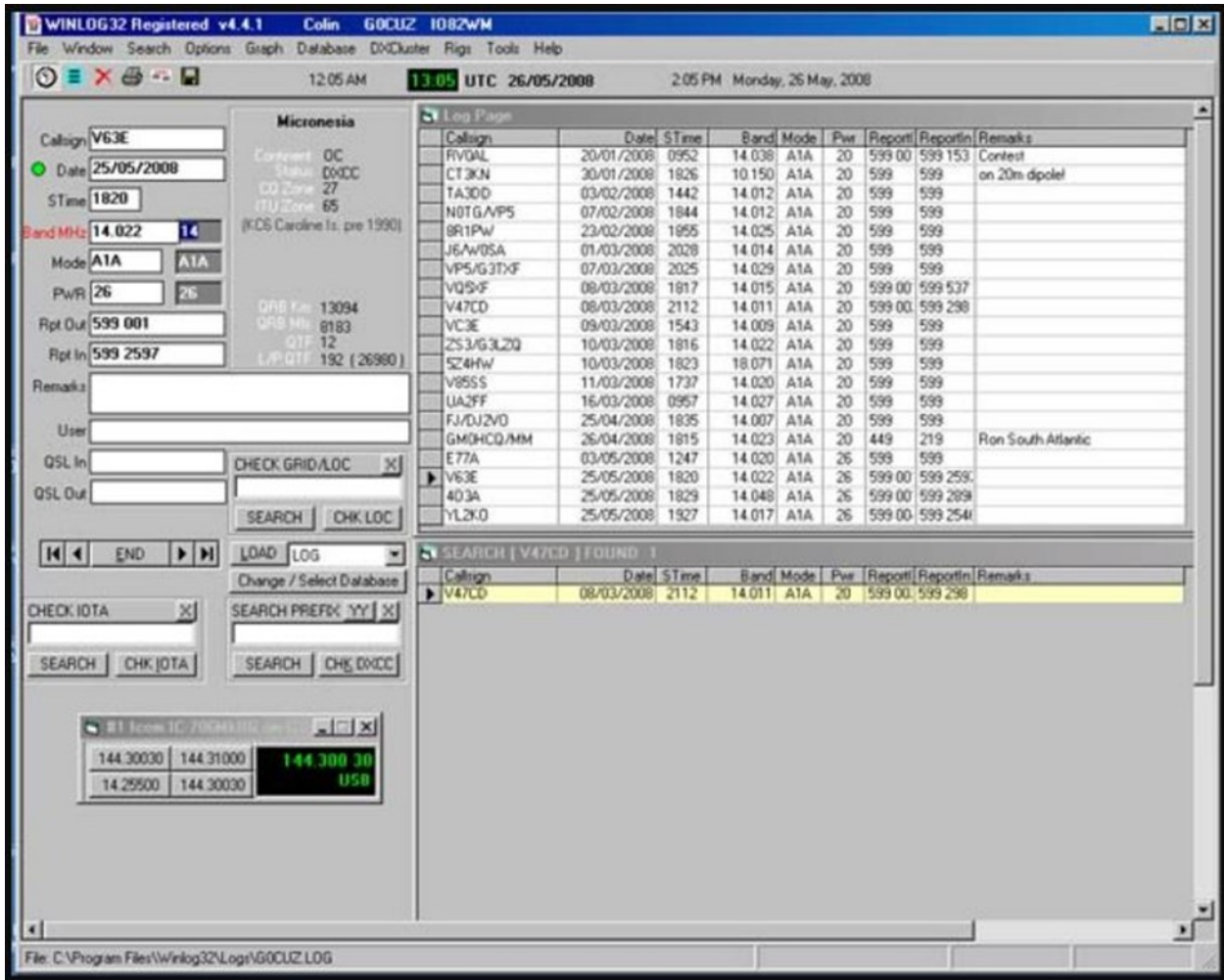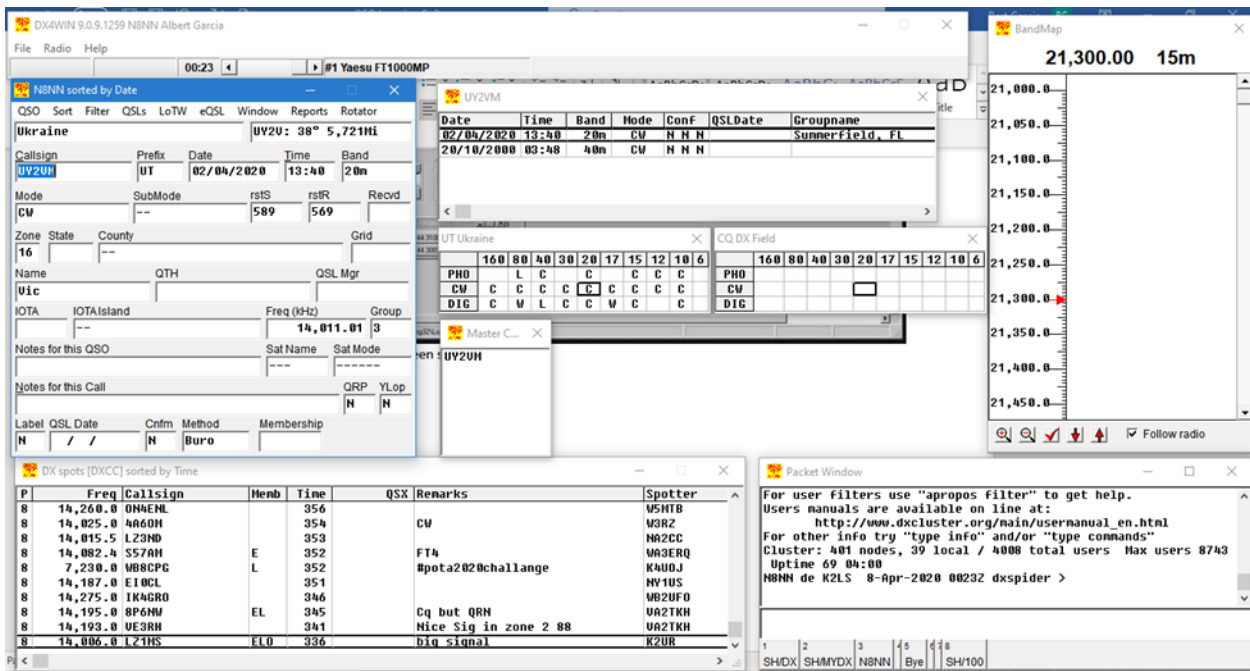N1MM Logger+ https://n1mmwp.hamdocs.com/
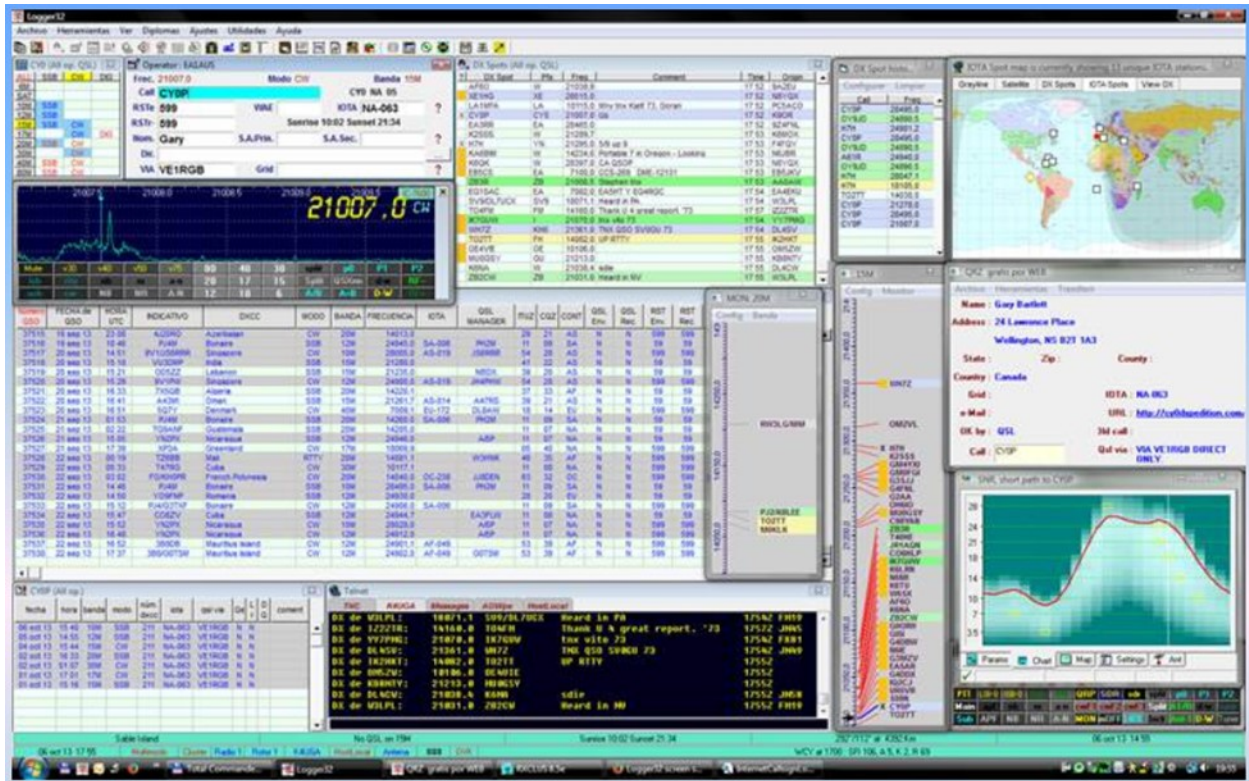
Logger32 screen shot, one of many configurations the user can arrange.
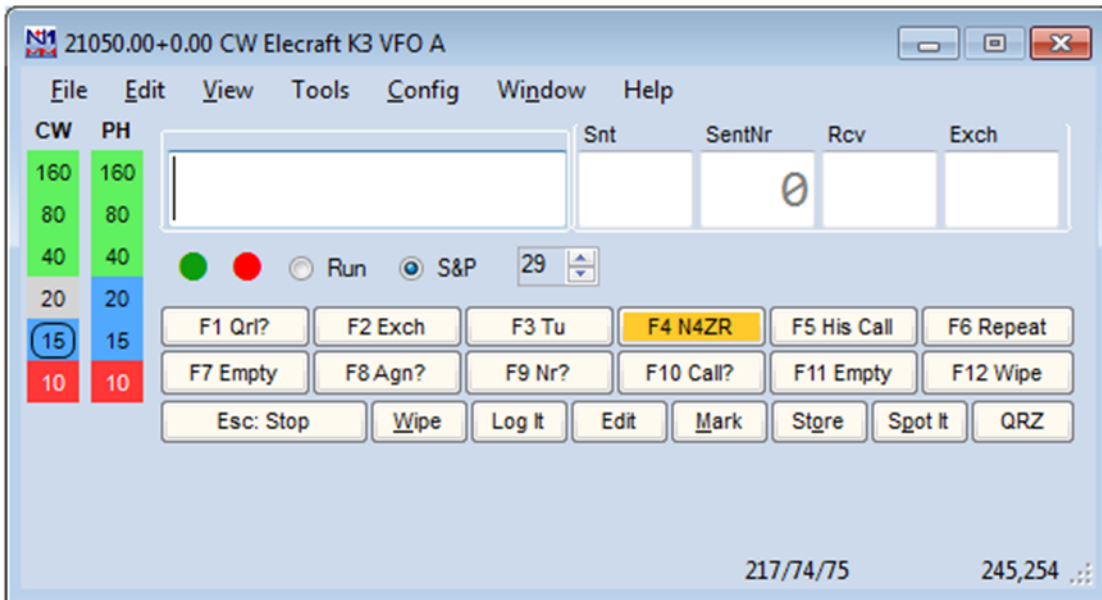
N1MM Logger+ contact entry screen, one of many screens available.

WinLog32 screen shot.

DX4WIN screen shot, one of many configurations a user can arrange.

A 40+ YEAR TRADITION, JAX HAMS ASSIST AT GATE RIVER RUN

Billy Williams, N4UF

Twenty Jacksonville Amateur Radio operators assisted at the 2020 Gate River Run on March 7th. In the main event, the nation's largest 15K, runners follow a nine-mile course that winds through scenic neighborhoods and historic streets near the St. Johns River bank and finally back across the tall Hart Bridge to the finish line near the football stadium. Morning temperatures were warmer than usual for late winter. No rain threat.

Over 20,000 runners participated and a net on the W4IZ 146.7 MHz repeater relayed a call for assistance for an injured runner. Three operators rotated as net control. This year, Coronavirus was an emerging threat but another week would pass before reality started settling in as sports leagues and golf tournaments closed shop.

Gate River Run race director Doug Alred complimented Duval County ARES Emergency Coordinator John Reynolds, W4IJJ. Doug states "we are very appreciative of the services we receive from the Duval County Ham Radio Operators during the Gate River Run. With operators stationed all around the course we are able to receive timely information about the leaders of the race at the finish line and are also able to keep a watchful eye on any problems that may develop on the course. We are very proud of our 42 year partnership with this great organization!"

Over the decades, hundreds of Jacksonville's hams have honed their communications skills by participating in River Run. Since 1994, Jacksonville-based Gate Petroleum has been the title sponsor.

During the early years, hams with handheld and mobile units shadowed race officials, sag wagons, supply trucks and rode in the lead vehicle. As cellular telephones became mainstream, hams shifted to being course spotters, assisting with logistics (cups, water, signs, etc.), watching railroad crossings, reporting injuries and looking out for stragglers.

"Virtually every year we have assisted with getting someone up out of the street and into a Rescue! And 2020 was no exception," states W4IJJ.

APRS came to River Run in 1997. Small transmitters attached to the lead truck and other support vehicles showed on a monitor near the finish line for the public to see. Hams at mile markers reported numbers of top runners passing by in each category for relay to the race PA announcer.

NOFARS Meets Online

Billy Williams, N4UF

The May 14th NOFARS meeting "venue" depends on crowd size and travel restrictions then in force. NOFARS could meet in person, online or on W4IZ/R 146.7   Watch nofars.net

Thanks to Rajesh, K4SK and Brandi, K4PL for their help in setting up NOFARS first online meeting on April 9th. During the meeting, John Reynolds, W4IJJ reported on 2020 River Run. Hams stationed along the race route reported numbers of leading runners and watched for problems.

Wayne, WB4YTJ reported on the 2 meter WWD net. Brandi reported on the new Ladies Net which meets twice monthly on the 3rd Tuesday and last Sunday on W4IZ/R 146.7   A discussion on program ideas for future online meetings. Maybe two or three presenters (@10-20 minutes each) with equipment reviews, QSL displays, specialty mode introductions, etc. Also, longer presentations on popular topics with good speakers.

Members are invited to develop proposals for new NOFARS activities & projects. Volunteer to be a chairperson or asst. chair. Develop a brief proposal with items needed, cost estimates and benefits to pitch to the Board.

JOHN CANTRELL, WB4MBU: A NOFARS Life Member, John passed away unexpectedly in April. John was widely known and respected as a pioneer in constructing early Jacksonville repeater systems and as a DX operator from rare countries including the Comoros and Chad in Africa.

John's career included repairing radios and televisions in Jacksonville during the 1960s, two-way communications systems design in the 1970s and eventual worldwide assignments working as a telecommunications engineer. John owned and operated several businesses.

John and his family lived in Middleburg for many years before relocating to Hawthorne around 2000. He was a seller at many hamfests.   John Reynolds, W4IJJ noted that "many of you may have met him at hamfests. He always had some sort of equipment that was usable and desirous. He seemed to specialize in Motorola equipment although he also frequently had other brands."

Steve Barber, WA4B said "he was a great guy and did a lot for ham radio. We went by to see him a few months ago and he was doing well. I didn't think it was the last time that I would see John. He sure helped out NOFARS when he gave up his coordination on the Middleburg 146.70 MHz repeater which was a very clear and desirable frequency. He also donated lots of radio stuff to NOFARS. He will be missed."

Our condolences to John's family and his many friends.

Let the hunt begin…

By Scott Roberts, KK4ECR

Let me begin this article by saying "KUDOS" to Miller Norton, W4EMN and members of Duval ARES and NOFARS.

Early one morning in March, I was on my way to work when I heard a CW signal come across the repeater in Clay County. I personally do not know CW but did notice that it was not our usual repeater ID that was being broadcast.

A few minutes later I received a text message telling me that the CW that I was hearing was a GMRS ID. After doing some research, we determined that the CW ID belonged to W4EMN. I called Miller and he assured me that he was not broadcasting that signal and began assisting in determining where the signal was coming from. Within a few minutes there were several Amateur Operators from Duval County assisting – the hunt was on. Ham operators set out to pinpoint the location of the CW transmission. With the signal only transmitting for a few seconds every 10 minutes, the hunt proved to be slightly challenging.

It took a couple of hours and about 6 ham operators out looking, but operators Richard Clemons, AJ4FR and Ken Martin, KE4UIG we able to find the signal. The hunt led them to the parking lot of a business on the west side of Jacksonville and to the vehicle of a Ham operator.

The owner of the vehicle was contacted, and the problem was quickly resolved. The "interference" was in no way malicious -- a simple error in setting crossband frequency on a radio had caused the radio to crossband from a GMRS frequency to a Ham Frequency.

Again, "KUDOS!" to Miller Norton, W4EMN and the other operators who helped find this unintentional interference. This shows that with a little bit of work and the right equipment, both intentional and unintentional interference can be located. Great job!!!

Delta Loop Antenna for DXing

by Bert Garcia N8NN

I want to work DX, but I don't have a beam and tower or even a vertical antenna. I live in an HOA community where outside antennas are not permitted. To work DX, I need to find a suitable antenna that I can hide outside. Yes, I could use a flagpole antenna, but that is a discussion for another day. My antenna should be inexpensive, relatively easy to put up, and somewhat stealthy. I am going to tell you about the low-cost wire antenna I built to work DX.

First, I needed to choose a band. We are at the bottom of the sunspot cycle and the higher 15 through 10 meter bands are seldom open. 20 meters is good for daytime DX; 40 and 80 meters are good for nighttime DX. Wire antennas for 40 and 80 meters are too large for my small lot, but a 20 meter wire antenna is of reasonable size. I am fortunate enough to have a tree in my backyard for a support and to hide the wire. If you don't have a tree, we can get together later and discuss that flagpole antenna.

With a single tree as a support, my choices for a wire antenna are a vertical, an inverted-V dipole and a delta loop. A quarter-wave vertical on 20 meters is 17 feet (L=468/f MHz). I could suspend a 17 foot wire in the tree, but installing the radials required for an efficient vertical antenna is too much work and expense. I could suspend an inverted-V in the tree, but the feedline is heavy and it might be visible. I chose the delta loop configuration in Figure 1 because the feedline is near the ground and only the thin antenna wire is in the tree.
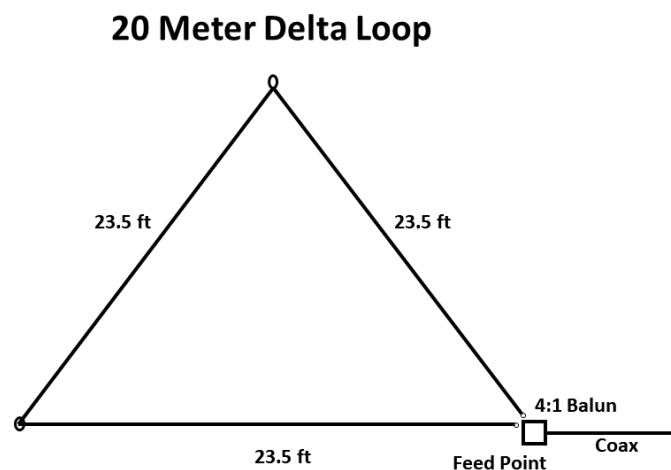

Figure 1: 20 meter Delta Loop Diagram.

The 20 meter delta loop is a full-wavelength loop 70-1/2 feet in circumference or 23-1/2 feet on each side (C=1005/f MHz). I cut my wire slightly longer to allow for tuning. This delta loop configuration has a low angle of radiation and an omnidirectional pattern – both good for DX. One disadvantage of the delta loop is the horizontal side could be a tripping hazard. I was able to raise the horizontal side high enough to walk under it, and a convenient shrub hid the feedpoint.

At the apex I firmly attached an insulator to the wire and used it to haul the loop up into the tree. On the lower left corner, I allowed the wire to pass freely through an insulator so that the shape of the loop could be adjusted to fit the space available. At the feedpoint I used an insulator to provide a convenient method of attaching the feedline. When installing the loop, the goal is to maximize the area of the loop while keeping the wire somewhat hidden and out of the way of people.

Depending on what articles you read, the feedpoint impedance is said to be from 100 to 200 ohms. I used a 4:1 balun at the feed point and by adjusting the length of the loop wire, I was easily able to achieve a 1:1 SWR at the feedpoint. You can use a commercial 4:1 balun or you can build one. I chose to build one because a very inexpensive balun kit is available on-line. The balun information is listed in the References. Figure 2 shows the 4:1 balun I built.
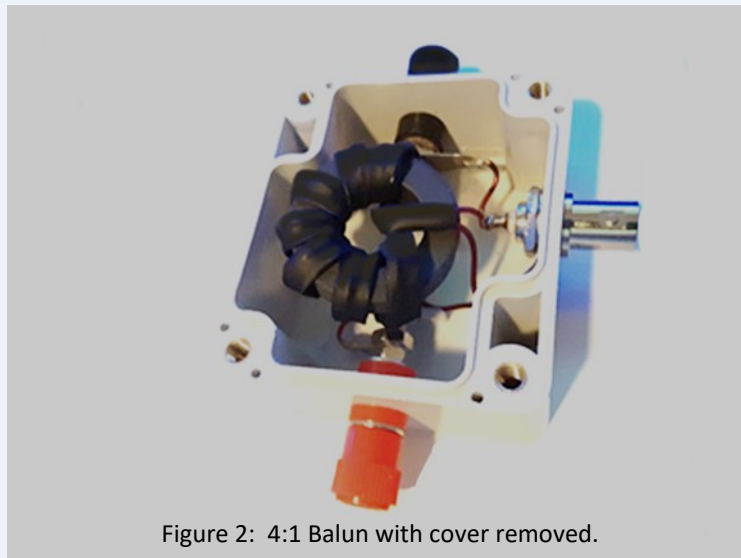
Figure 2: 4:1 Balun with cover removed.

This delta loop antenna is a single band antenna, although the second harmonic at 28 MHz presents a reasonable impedance that can be matched using the antenna tuner in your transceiver. But what about using it on 17/15/12 meters? You can do this with a remote antenna tuner at the feedpoint such as the MFJ-993BRT. This automatic antenna tuner is powered through your coax, so you don't need power or control wires to the tuner. I recommend removing the 4:1 balun if you use the remote tuner since it can match 6-1600 Ohms. And if your situation allows you to scale the antenna up to 40 meters with 47 feet of wire on a side, you will be able to cover all bands 40/30/20/17/12/10 with the remote tuner.

Does the delta loop antenna work? Yes! As they say, I can work anything I can hear. One way to measure antenna performance is to use the Reverse Beacon Network. Call CQ and observe where your signal is received and the relative strength of your signal compared to other stations. Good luck building your delta loop.

List of Materials
72 ft wire for 20 meters, 145 ft for 40 meters, #532 "silky" AWG 18, The Wireman
    https://thewireman.com/product/antenna-wire-13-awg-copper-clad-steel-stranded-jacketed/
3 ea. antenna insulators
100 ft nylon rope cut to suit your needs
2 ea. eye-terminals to fit your balun or tuner
1 ea. 4:1 balun or remote antenna tuner
Coax feedline as needed

References
1. Balun Kit, $11.08 shipped from Ebay
https://www.ebay.com/itm/1-30Mhz-Shortwave-Radio-Balun-Kit-Click-to-View-Larger-image-HAM-Equipment/182548628320?hash=item2a80bf0360:g:h78AAOSwYmZXH2Rg

2. Balun Designs Model 4110 4:1 Current Balun, $53.95 + shipping
https://www.balundesigns.com/model-4110-qrp-4-1-current-balun-3-5-54-mhz-300-watts/

3. H5ANX Mk4 Delta Loop Design, Sajid Rahim
http://www.designerweb.net/Antennas/deltaloop.pdf

5. 40-10m Delta Loop Antenna, Mike Sloan
https://rsars.files.wordpress.com/2013/01/40m-10m-delta-loop-antenna-gu3whn-iss-1-3.pdf

6. One Stealthy Delta, Steve Ford WB8IMY (May 2002 QST)
http://www.sgcworld.com/Publications/Articles/237qst0502.pdf

7. Quad Element, Charles Rauch W8JI
https://www.w8ji.com/delta_loop.htm

8. MFJ-993BRT Automatic Antenna Tuner, $339.95 + shipping
https://mfjenterprises.com/products/mfj-926b?_pos=4&_sid=8f06fd90e&_ss=r

9. Reverse Beacon Network
http://www.reversebeacon.net/main.php

FCC Testing Information

4 Corners Radio Club, Davenport FL

- First Saturday
- 10:00 AM
- Polk County Firehouse, 50945 US 27
- Walk-ins welcome
- Info: WA2FRW@aol.com

Hog County Amateur Radio Association, Bushnell FL

- First Saturday, 11:00 AM, starting September 1, 2018
- Cross Connection Church, 1451 West County Road 476, Bushnell, FL 33513
- Info: sumterVE@gmail.com

Lake ARA, Leesburg FL

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

Lake Monroe ARS FCC Testing, Sanford FL (LMARS)

Cancelled until further notice due to loss of venue because of COVID 19

- For more information and registration, contact Bob Cumming, W2BZY, 407-333-0690 or w2bzy@cfl.rr.com

Milton Amateur Radio Club, Milton FL

- Second Thursday of each even numbered month
- 6:30 PM
- Walk-in
- West Florida Hospital Rehab Institute, 8383 N Davis Hwy, Close to Johnson and N. Davis
- Info: Robert Speser, nb8s@icloud.com

Orlando ARC FCC Testing (OARC)

Cancelled until further notice due to loss of venue because of COVID 19

- Info: https://oarc.org/events-ve-testing

QCWA Chapter 45, Orlando FL

- Second Thursday
- 11:00 AM
- Golden Corral, 5535 S. Kirkman Ave, Orlando
- Walk-ins welcome
- Info: WA2FRW@aol.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.

Suwannee ARC, Live Oak, FL

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

Tallahassee Amateur Radio Society (TARS)

- First Tuesday of each even numbered month
- 7:00 PM
- American Red Cross, 1115 Easterwood Drive, Tallahassee, FL
- Contact TARS : tallyamateuradio@gmail.com with questions
- Info: http://www.k4tlh.net

West Volusia Amateur Radio Society

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

Due to the COVID 19 restrictions on gatherings, please check with the organizations listed for changes or cancellations.

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

NFL Web Site

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

NFL Officials

Section Manager – *Kevin Bess, KK4BFN*

Assistant Section Managers

> *Joseph D. Bushnel W2DWR*
>
> *John C Reynolds W4IJJ*
>
> *Dave Davis WA4WES*
>
> *Jeff Capehart W4UFL*
>
> *Neil Light KK4VHX*
>
> *Ray Crepeau K1HG*
>
> *Steve Szabo WB4OMM*

Section Emergency Coordinator – *Karl Martin K4HBN*

Section Public Information Coordinator— *Scott Roberts KK4ECR*

Assistant SE Coordinator – *Robert A. Mitchell W4HKG*

Section Technical Coordinator – *Frank Haas KB4T*

Affiliated Club Coordinator – *Appointment Pending*

Section Traffic Manager – *Helen Straughn WC4FSU*

Official Observer Coordinator – *Robert Leasko, WB8PAF*

State Government Liaison – *Darrell Brock N4GOA*

QST NFL

Newsletter of the Northern Florida Section of the ARRL

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

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