



North Fulton Amateur Radio League NFARL eNEWS

January 2018

*Celebrating 40 Years
Service | Friendship | Education | Fun*

www.nfarl.org



President's Message / Daryl Young, K4RGK

Welcome to NFARL in 2018! We have a fantastic year ahead of us at NFARL and for Ham Radio in general.

The annual GARS sponsored TechFest is coming up soon, Saturday January 20th at the Gwinnett Medical Resource Center in Lawrenceville. NFARL always makes a big impression at the TechFest with our hands-on kit building sessions. This year will be no exception. Attendees, especially youth, get a chance to learn soldering techniques, learn about basic radio components and experience the wonderful team of mentors we have at NFARL. If you would like to participate please contact Mark, KJ4YM, your new Activities Chairman.

Mill Springs Academy has been scheduled for an ARISS contact! This is an opportunity for students to ask questions directly to an astronaut aboard the International Space Station via amateur Radio! The contact is scheduled to occur the week of April 30 - May 4, 2018. NFARL is the radio support club and we are intimately involved with this contact. Additionally, we as NFARL are in a unique position to provide radio demonstration and educational activities for all in attendance. We will be looking to our membership for help in these areas. If you would like to participate we will find a way for you to help. Please [contact us](#)!

In 2014 ARRL had a year long W1AW centennial celebration contest. In 2016 we had the National Parks on the Air contest and then our NFARL US Islands 40th anniversary contest took place in 2017...what is there for us this year? ARRL has risen to the occasion with the year long [ARRL International Grid Square Chase](#). This will be great fun for all operators, casual or serious. Those of you not already familiar with chasing grid squares, as we VHF/UHF and satellite operators are, you'll have the opportunity to learn about Maidenhead Grids and have fun keeping track of your contacts based on grids.

Your executive team has been busy over the holidays preparing activities, organizing programs and looking ahead to another stellar Field Day effort in 2018. There is so much more to learn about and participate in NFARL throughout 2018. Thanks for being a NFARL member. Get involved, participate with us and have fun in 2018. You'll be pleased you did and you'll get more enjoyment and reward from Ham Radio. I know that has been true for me.

73,

Daryl ~ K4RGK

NFARL Upcoming Events and Dates

- **Every Sunday — NFARES net** - 8:30 PM - 147.06 MHz (+) PL 100
All licensed Hams are welcome, you do not need to be an ARES member!
- **Every Monday — Tech Talk** - 8:30 PM - 145.47 MHz (-) PL 100
NFARL's flagship technical based "non check-in" net. The net is always better when using the web based chat room but Internet is not required to join the net.

**** January is Tech Talk Emphasis Month ****

Check NFARL Nets [website](#) for more information and "how to".
- **Every Wednesday — Hungry Hams Lunch Bunch** - 11:15 AM
Meet with your fellow club members every Wednesday!
Slope's BBQ, 34 East Crossville Road, Roswell.
- **Every Thursday — YL Net** — 8:00 PM - 145.47 MHz (-) PL 100
Check NFARL Nets [website](#) for "how to."
OM's (guys) are welcome to listen in to this YL net.
Great opportunity to get your YL's on the radio!
- **Every Saturday — Royal Order of the Olde Geezers (ROOG) Lodge No. 1**
9:00 AM - Reveille Café, 2960 Shallowford Road, Marietta (at Sandy Plains and Shallowford). Everyone is welcome: You don't have to be "old" or a "geezer" to join this breakfast get-together.
- **Second Tuesday — NFARES Meeting** - 7:00 PM - 9:00 PM
Fellowship Bible Church, 480 W. Crossville Road, Roswell.
Check [NFARES.net](#) for more information.
- **Third Tuesday — NFARL Club Meeting** - **January 16, 2018**, 7:30 PM.
Pre-meeting activities begin at 7:00PM.
Location: [Alpharetta Adult Activity Center at North Park](#)
13450 Cogburn Road, Alpharetta, GA 30004
Program: Catherine, AC4YL & Melanie, AG4YL present
"Women (YLs) in Amateur Radio - Who We Are, What We Do, and Where We're Going"
- **Fourth Tuesday — NFARL Executive Team Meeting**
January 23, 2018, 7:00 PM
Location: [Arbor Terrace at Crabapple](#)
12200 Crabapple Road, Alpharetta, GA 30004
Meetings are open to all NFARL members. Space is available on a first arrival basis. Please contact the [President](#) to ensure available space.

6 Meter Buzzard Net / Terry Joyner, W4YBV

Looking for something new to do in 2018 on 6 meters? Think about checking into the LaGrange Area 6 meter net on Monday nights.

Ed Ekkebus KE4EE turns his beam 360 degrees looking for Buzzard members from Georgia, Florida, North Carolina, South Carolina, Alabama and Tennessee every Monday from 7:30 to 8:00 PM.

The buzzard net has 80 to 90 check in's each night. For more information go to [LaGrange 6m Buzzard net](#).

If you check in 6 times you receive a free certificate and a badge with your own member number .

This is a great way to keep up with openings on six. Good luck.

Terry W4YBV



EME Contest 2017 and the Digital Revolution / John Kludt, K4SQC

In a previous NFARL eNews issue I shared with you the background behind our participation in the ARRL 2017 EME contest. I will quickly go over that as some of you may not have seen the first installment of this article.

The ARRL EME contest goes over three weekends. The first weekend is devoted to microwaves 2.3 GHz and up. The next two weekends are set aside for 50 MHz to 1296 MHz. Depending on the position of the moon relative to the earth, the sun, and sky noise, all of which can be predicted in advance, there are "good" weekends and "bad" weekends. As a consequence the weekends are spread over three consecutive months. Usually this is a fall activity scheduled for "good" weekends in September, October and November.

Contest classes are CW/Phone and All Mode, Single Op or Multi Op, Single Band or All Band. I chose to operate 144 MHz Multi-op with duties shared between myself, Bob Lear W4ZST and Kim Hensley, WG8S. We ran digital, JT65b, as our only mode placing us in the All Mode category – more on that later.

EME is mostly a nighttime activity. It was a busy weekend with family and a host of other activities. For the first several hours beginning at Moonrise we have Europe, some of the Middle East and Africa in range. As Europe loses its moon we here in Georgia go through a period of Western Hemisphere possibilities. As we begin to lose our moon Asia-Pacific comes into range.

Please note a key difference with HF contesting – with EME contesting the possibility of "propagation" is determined by the geometry as calculated from orbital physics and is known well in advance. Other variables come into play but the basic issue, same as with the manmade satellites, is both stations involved in a QSO need to be able to see the moon.

So we did not keep "butts in the chair" this time and we missed the Western hemisphere and Asia-Pacific concentrating on Europe. With a rather casual operating schedule we reported 30 Q's and 20 multipliers for a score of 60,000 points. The winning multi-op 2m only station was S5500 from Slovenia with 173 Q's and 75 multipliers for a score of 1,297,500. Guess that gives a target for 2018!

Looking over the line scores some interesting things emerge. On 2m not a single CW/Phone QSO was reported.

Two meters was the single largest class with 48 logs submitted between single and multi-op if I counted correctly. All of the QSO were digital and again if I have added correctly well over 2,000 of them were digital, presumably JT65b with maybe some QRA64 QSO's added in. I did suggest to Greg Saratt, W4OZK, and our ARRL Division Director that in light of the data it might be time to consider a digital only class. Those of us on JT65 are clearly not in CW/Phone class and we are clearly not "All Mode" either.



John's EME "Cottage"
(Just Kidding - Actually SM5FRH's EME Array)

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John, K4SQC Working New Satellite AO-91 (Fox-1B)

If the goal is getting people on the air and in this case on the moon, then the digital modes and JT65 have been a huge boost for this aspect of the hobby. It has lowered the cost and complexity of entry into the fray. It allows the Little Pistols a chance to participate and gives the Big Guns more stations to work.

Some will deplore the lack of CW activity but on balance this is one area where the move to the digital modes seems to me to be hugely beneficial. Instead of monster arrays and huge amounts of power, single Yagi contacts with 500 watts or so are possible. You won't make a lot of contacts with such a minimal setup but you will be able to work the big guys and maybe more importantly you will be "on the moon." And since everyone is on during the contest it is a great time to give it a whirl.

This year the contest falls on September 29-30 (2.3GHz and up), October 27-28 (50 to 1296 MHz) and November 24-25 (50 to 1296 MHz).

And this is the year that here at K4SQC we get serious about this. And that means my butt in a chair from moon rise to moon set!

It has been an enjoyable ride with lots to learn. I hope to see you "on the moon" during 2018.

Recently, I have taken some good-natured ribbing about being "Calendar Man" as the December person on the 2018 CQ Calendar.

It all started when I decided to write an article for NFARL eNews about a Supermarine Spitfire WW II Morse key I had been given by my dear friend, Tom Calvinelli, a retired Delta Senior Captain. Tom knew that I was an ardent Spitfire fan and collector of memorabilia, books and pilots manuals on the Spit as well as being an active ham. In fact, I have an entire corner in the shack dedicated to my Spitfire collection.

Tom gave me a gift one year at Christmas, and I was dumbfounded when I opened the wrapping. Inside was a brand new, in the original box, Morse key for a WWII Spitfire.

Well, the article took on a life of its own, and I really got into it. I decided to submit it to CQ since they had many articles of interest on varied subjects that were fun to read. I saw Rich Moseson, the editor, at Huntsville. He told me he liked the article and would publish it in the special Morse code issue. CQ Magazine is my favorite because of the great content in it. I much prefer it to QST.

Much to my surprise, they put my shack photo in the 2018 calendar. I am holding the key. And, more to my surprise, I received an email from my friend, Mike Birmingham, K4LJG, saying the article was in the January CQ issue. And, this geezer was on the cover! I had not yet received it since Mike gets the digital edition first.

WOW....what a surprise! Knowing that not everyone gets CQ (you should), we have included an cover image (adjacent) of the January issue of CQ magazine.

It was fun to write about the Spitfire. I hope you enjoy the article as much as I enjoyed writing it. Since then, I have acquired an artificial horizon in mint condition from a Spit, and I have a source for a like-new eight-day clock that was in a Spitfire!

73,
Neil, N4FN

Editor Note:

Use the link below to subscribe to CQ Magazine.

If you sign up before the end of January your digital subscription should begin with the January issue.

<http://store.cq-amateur-radio.com/product-category/cq-subscriptions-new-or-renewal-subscriptions/>



January 2018 Cover of CQ Magazine
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Area of Neil, N4FN's, Shack Dedicated to WWII Spitfire Memorabilia.



Don't forget NFARL has an extensive QST library.

Contact W4QO if you are interested in "Checking It Out"

'Tis The Contest Season / Jim Stafford, W4QO

Well, the season began back in October but it continues through Memorial Day as far as I'm concerned!

Now contesting is not just for "contesters". As Ward Sliver, N0AX, explained at HamJam last November, contesting is a way to exercise your ham radio skills. I know you hear some folks complain about testers BUT there are always other bands or modes that are not in the contest if you don't wish to enter from your station. Speaking of that, I have a standing offer to host any of you at my station for a contest, even if I'm not interested. I have a back door to my basement and you can come in during the middle of the night and use my equipment. Or come during the day and I'll give you the tips I've learned for contesting. NFARL actually has a casual CONTESTING SIG to find those with answers!

Now here are some contests you should be putting on your calendar. But first, may I suggest your bookmark this web page: <http://www.contestcalendar.com/weeklycont.php>. WA7BNM does a very valuable service to the ham radio community by compiling a list of this week's upcoming contests. He also has contests listed for the entire year.

SKCC Weekend Sprintathon: 1200Z, Jan 13 to 2400Z, Jan 14 You do belong to the SKCC – Straight Key Century Club don't you? Even if your code speed is 5 wpm, you can enter this one, or I should say participate in this one. You do not have to send in a entry to just make some fun contacts and this one is a good CW starter.

North American QSO Party, SSB: 1800Z, Jan 20 to 0559Z, Jan 21 OK, this one is a SSB contest. Try going on and making say 10 contacts. It's easy; it's fun.

ARRL January VHF Contest: 1900Z, Jan 20 to 0359Z, Jan 22 There is even a class for working others on VHF simplex with your home station. And if you have a six meter band on your HF transceiver, try loading up your 40M dipole on 6! It works!



State QSO party contests: <http://www.contestcalendar.com/stateparties.html> These are fun and very laid back. There are folks on from that state, both SSB and CW.



Speaking of state QSO parties – Mark your calendar for April 8 & 9. That's the weekend of the GA QSO party. We try to win the club trophy each year and we need 40 members to enter to ensure victory! Oh, and come to the meeting this month (JAN) for a surprise!

There are many, many more. Stick your toe in and get it wet! Even a few minutes is enough to check things out. And don't forget... come on over to W4QO's shack. Give me a little advance notice so I can "clean it up"!

NFARES Update / Grant Register, KK4PCR

The annual statewide meeting of the Georgia Amateur Radio Emergency Service will be held on January 13, 2018 at the Georgia Public Safety Complex in Forsyth Georgia. It is an all day affair, offering instructions on several subjects:

- ♦ Advanced Storm Spotter
- ♦ Introduction to Hospital Ops
- ♦ HIPAA for Hospital Ops
- ♦ Hospital GHA911/Web EOC
- ♦ Winlink for Hospital Comm
- ♦ Deployment Basics
- ♦ Mutual Aid
- ♦ Emergency Power
- ♦ ICS Forms
- ♦ PSK
- ♦ Winlink Basics
- ♦ D-Rats Basics
- ♦ First Aid

Members of the North Fulton ARES will be attending the meeting to participate, to learn from the topics presented and to pass along the information to other members of the organization who did not attend the meeting. Attending members will be Grant Register (KK4PCR), Mike Cohen (AD4MC), Steven Hull (KW4HQ) and Dominic Profaci (KX4CO) (new member).

We are looking forward to an exciting year in amateur radio learning, testing, practicing and spreading the excitement of our organization.

Shack Stories ! / Jeff Otterson, N1KDO

It has been kinda slow in my lab. The soldering iron is cold. The only thing I have built recently was a new antenna, a 20&17 2-band "fan dipole" I put up that is aimed approximately at Bouvet. I also disassembled and parted out 12 GE MASTR IIs, I got \$35 for the scrap metal (steel and aluminum castings) from North Fulton Metals. Talk about your bad ROI...

My focus for Q4-17 was operating. I finally got 5BDXCC with the 3 WARC band endorsements. Yay! That, and DXCC Challenge, were my 2017 goals.

"Interesting" DX worked include T2AR in Tuvalu (ATNO!) 5A1AL Libya (ATNO!) and E44WE Palestine (ATNO!), all on 30m FT8. I don't believe I have "fished out" the 30M FT8 fishin' hole yet.

Happy New Year,

Jeff, n1kdo

Editor Note: We would like see your "Shack Stories" in eNews. Email: eNews@nfarl.org

Digital - What SideBand ? / Neil Foster, N4FN

Recently, there was an offline discussion that had originally started on the NARFL reflector as to what sideband to use in RTTY and Digital modes. I decided to do some research and the following information is what I discovered. This was not a simple yes or no subject, so here goes.

Let's start with some of the basics. The usual RTTY AFSK Mark tone is 2125Hz. The Space tone is 2295Hz for 170Hz shift. The older 850Hz RTTY shift used the same 2125Hz Mark tone, but the Space tone was 2975Hz.

Changing sidebands, USB to LSB or LSB to USB, does not cause a change in the software or terminal unit AFSK Mark and Space tones. Think of it this way. If you are operating on 40 meter phone (LSB), then decide to switch to 20 meter phone (USB) to chase some DX. Does your voice change/reverse when changing band and sidebands? No, it doesn't. The same applies with the RTTY AFSK tones when changing sidebands. The Mark tone remains 2125 Hz and the Space tone remains 2295 Hz. The "transmit" signal changes, but NOT the software or terminal unit Mark and Space tones. What causes the change to occur is a change in the sideband "carrier generator" frequency by the MODE switch. The RTTY AFSK tones from the computer digital software/sound card or terminal unit flow through the same speech amplifier your microphone voice does on phone.

LSB had been the standard RTTY sideband for many years. There are MANY stations that operate RTTY on USB. The key is both stations must be operating on the same sideband. However, if one station operates RTTY on USB while the other station is on LSB, for the two stations to communicate, one station must "reverse" the tones but not the tone frequencies. Normally, in RTTY, with no data being transmitted, a steady Mark is transmitted. However, by using "Reverse", with no data being transmitted, a steady Space is transmitted. Turning "diddles" ON causes a constant mark/space shift to be transmitted when there is no data being transmitted. The same occurs in "reverse" except the diddles produce a constant "space/mark" shifting signal when no data is being transmitted. This is accomplished in the computer software configuration or with older terminal units by selecting "Reverse" or turning TX Reverse and RX Reverse "ON". This change allows both stations to communicate with one on USB and the other on LSB. The default TX Reverse and RX Reverse setting is "OFF" in terminal units or reverse is left "unchecked" in computer software.

Normal PSK (BPSK) does not care what sideband you are on. If you are on LSB BPSK, a station on USB BPSK can copy you without making any changes to his/her software configuration. This is the only digital mode with this characteristic. QPSK, however, requires BOTH stations to be operating on the "same sideband".

DM-780 is from the same author of HRD and DM-780 is included with HRD. I use DM780 and have for many years.

The old definition of AFSK is a set of tones, modulating a carrier, such as in FM AFSK, or AFSK tones on an AM radio.

The use of a sound card to produce tones that are fed into a SSB transmitter produces two RF

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carriers that are separated by the difference between the modulating tones in the tone pair. For all intents and purposes, the RF that is transmitted over the air is identical to that which would have been produced by a directly keyed and frequency shifted VFO.

One thing I should clarify here. In the "old days", the tone pairs were 2125 and 2295 for 170 Hz shift, or 2125 and 2975 for 850 Hz shift. But with today's modern "point and click on the waterfall " software, the modulating tones can just about be anything within the pass band of the transmitter, as long as they are either 170, or becoming more common, 200 Hz apart! In fact, software such as DM780 will copy either a 170 or 200Hz shift

The reason 2125 and 2295 or 2795 were used in the early days of Teletype communications, was because many of the early and popular Terminal Units such as the ST 6, or the Desktop Teletype RO 28 I started with, used surplus toroid coils from the Telephone company tuned with high grade capacitors to those frequencies. It would have been very unusual to see a TU with any other frequency pairs beside those two mentioned above.

Nowadays, that is all different. Many RTTY programs can be changed at a push of a mouse button, or by typing in the desired frequencies in the "setup" screen.

It depends on your AFSK mark and space frequencies. On the RF side, mark is the higher frequency and space is the lower frequency. Some programs may produce AFSK that has the high frequency (typically 2295 Hz) for mark and the low frequency (2125Hz) for space.

Before the advent of sound card programs, AFSK was sent with the mark as the lower frequency, and space as the higher frequency. This meant that you would use LSB so that mark and space would be correct on the RF side.

There are historical reasons for this, having to do with modifying VFOs to produce mark and space in days gone by.

If you are copying and sending RTTY and you can decode the distant station and the distant station can decode you, everything is good. The only thing to remember is that the mark RF frequency is the proper way to report your operating frequency. All that being said, the majority of stations today send RTTY in USB. It is rare for me to see one using the opposite or "upside down" sideband.

There are differing opinions on the sideband issue. Sholto Fisher, the digital Guru at West Mountain, advocates USB all the way. Many others agree. In all fairness, there are others who disagree. It is like "tom-a-toes or to-mahtoes".

So now you have more info than you will ever need..... Just work some new ones. NFARL is blessed with having many members who are digi savvy, so do not be afraid to ask one of the mentors.

**73,
Neil Foster, N4FN**

VHF Contest Invitation / John Kludt, K4SQC

The ARRL January VHF QSO Party is coming up the weekend of 20-21 January.

As is traditional the FourLanders VHF Contest group will be on the air from the QTH of Bob Lear, W4ZST, in Dahlonaga, GA. We be running a kilowatt on 6m, 2m, 1.5m and 70cm with stacked beams. In addition we will be running microwave stations on 903 MHz, 1296 MHz and 2304 MHz with one or more loop Yagi's.

In addition to CW and SSB we will be active with FT8 for terrestrial contacts and MSK144 for meteor scatter on 6m and 2m. Both of these modes promise to add some grid squares that we would otherwise probably not get, especially if propagation is poor.

If you have never been in a VHF contest the rules allow us to contact a station once on any band on any mode. The object is to contact as many stations as possible. Grid squares act as multipliers so we also want to contact as many grids as is possible.

EME (Earth-Moon-Earth) is a great way to catch a few more grids and we are EME capable on 2m and 70cm. Unfortunately looking at EME predictions the contest weekend may well be the worst weekend for EME for the entire year .

The contest starts at 1400 Local on Saturday. Take in TechFest in the morning then consider joining us in Dahlonaga to help with the operating. Six and Two can get a little crazy. Most of the time 1.25m (222 MHz) and 70cm (432 MHz) are a little slower and a good place for the new VHF contest operator to start.

If interested in attending please contact John Kludt, K4SQC, at johnnykludt@gmail.com

January is TechTalk emphasis month



Join us for the 5 Mondays in January for **TechTalk**,
The unique "net" where you may check in on RF: 145.47, 444.475, 927.0125
(Visit <http://nfarl.org/repeaters/repeaters.html> for repeater details),
EchoLink, and / or in the dodropin.org CHAT ROOM!

Each Monday we'll plan to have a special guest.
Set your alarm for 8:25 PM every Monday and bring your questions to TechTalk.
We'll try hard to find an answer from another ham or from the internet. It's all about FUN!

Your Hosts: **Steven, KW4HQ & Jim, W4QO**

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eNews can be located online at:

<https://www.nfarl.org/enews/eNewsIndex.html>

Club Repeaters

Frequency—Description	P.L. Tone	Location
145.470 (-) EchoLink Node 56086 NF4GA-R	100 Hz	Sweat Mountain
147.060 (+) Primary ARES Repeater	100 Hz	Roswell Water Tower
224.620 (-) Joint Venture with MATPARC	100 Hz	Sweat Mountain
443.150 (+)	No Tone	Roswell Water Tower
444.475 (+)	100 Hz	Sweat Mountain
927.0125 (-)	146.2 Hz	Sweat Mountain

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