



North Fulton Amateur Radio League NFARL eNEWS

January 2019

*Over 40 Years Promoting
Service | Friendship | Education | Fun*

www.nfarl.org



US Island - NFARL Outings in 2019 ! / Terry Joyner, W4YBV

We have two US Islands club events scheduled for 2019.

On Saturday, May 11th, we will have a cook out for the One Day U.S. ISLAND Get-A-WAY On West Island. This will be a fun day for all to bring radios and antennas, make some island contacts and see what works the best from this location for working the W/VE Island QSO party in August.

At this fun full day outing you can bring your own grill foods to cook on our hot grills at anytime. We will be on this drive on island from sun up until sun down so come when you can.



Terry, W4YBV
Flying the Team NFARL Flag!

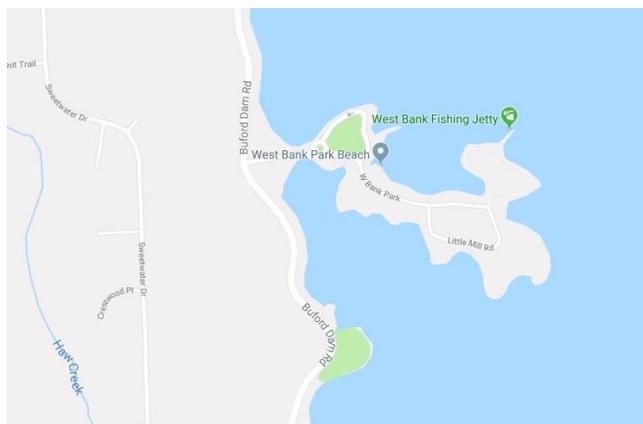
On Saturday August 24th. we will be back on West island all day for our 2nd annual club picnic and the W/VE island QSO Party contest. The club will be furnishing all food and drinks for the picnic.

We will need (3) club stations on the air all day for the island contest: SSB, CW & Digital so we will need lots of club help all day.

More information will be coming out soon in eNews.

Please keep these dates open and plan to join us for radio fun in 2019!

Terry W4YBV



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. 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 OP Net** – 8:00 PM - 9:30 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.
This is a great opportunity for YL's to get on the radio with other YL's!
- **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 Saturday – VE Testing** - 10:00 AM
NFARL provides Amateur (Ham) Radio test sessions on the second Saturday of each month - Walk-ins are welcome, no appointment is necessary. All exam modules are offered at all sessions.
Location: [Alpharetta Adult Activity Center at North Park](#)
13450 Cogburn Road, Alpharetta, GA 30004
Please check our [website](#) for more information.
- **Second Tuesday — NFARES Meeting** - 7:00 PM - 9:00 PM
Fellowship Bible Church, 480 W. Crossville Road, Roswell.
Check [NFARES.org](#) for more information.
- **Third Tuesday — NFARL Club Meeting** - **February 19, 2019**, 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: "JS8 Call" presented by Jordan Scherer
- **Fourth Tuesday – NFARL Executive Team Meeting**
January 22, 2019, 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.

A Ham in Turkey / Scott Straw, KB4KBS

As many of you know, I have a very heavy travel schedule as part of my job requirements as an Audiovisual Field Engineer that has taken me all over the US and now, internationally.

In October I traveled to Istanbul, Turkey and, thanks to the CEPT agreement, I was able to take along my Baofeng UV-82 and use a local repeater for a QSO with a few local Hams.

Istanbul is an ancient city that spreads across both sides of the Bosphorous Strait, a body of water that connects the Sea of Marmara to the Black Sea. The Sea of Marmara is connected to the Aegean Sea, which is connected to the Mediterranean Sea.



Scott - KB4KBS

The Bosphorous Strait is a vital waterway for commercial ship travel to Eastern European and Western Asian nations. Additionally, it is the dividing line between the continents of Europe and Asia. The west side of the strait is Europe, the east side is Asia. Most tourism focuses on the European side, I worked on the Asian side.

The CEPT agreement that allowed me to operate comes from the European Conference of Postal and Telecommunication Administrations (French: Conference Europeen des Administrations des Postes et des Telecommuciations). It allows Amateur Radio Operators in its member countries to operate in other member countries without additional licenses or permits. The United States is a non-CEPT nation that has been allowed to participate with a few extra requirements: Proof of License, Passport, and a copy of an FCC Public Notice printed in English, French, and German.

I was able to find on the Internet a listing of repeater frequencies for VHF and UHF in the Istanbul area. The city is so large that it is divided into two call areas, TA1 is the European side of the Bosphorous Strait and TA2 is the Asian side. My call sign was TA2/KB4KBS while I was there. (If I had operated from the Eastern side, I would have had to sign TA1/KB4KBS.)

There were several TA2 repeaters that were within range of my HT in my hotel room. I monitored several of them and while most of the QSO were in Turkish, When I gave my ID, one afternoon around 5:15PM, I received a reply from TA1OW, Kerem (CARE-um), a mobile station commuting home from work. His English was quite good. He is in the Steel industry and has visited Pittsburgh, Pennsylvania for work. We talked about sports – He went to a Pittsburgh Pirates game and was totally lost on the sport. He did enjoy the hotdogs and beer however. He said that Turkey has an American-style football team that was second-place in a European league but that games are poorly attended. Basketball is a very big professional sport in Turkey also. They participate in the European Basketball League. Of course, "Soccer" is the main sport of Turkey.

Just because you're on the road, doesn't mean you can't meet new friends over Ham radio...

(Continued on page 4)

(Continued from page 3)

More on the area:

Students of History know of the city of Istanbul and the region quite well. It was called Byzantium, then Nova Roma, then Constantinople, Konstantina, and finally Istanbul. It was first known as the dwelling place of the Hittites, and later (thousands of years later) Byzantines, then Persians, Greeks, and Romans, Mongols, and finally Ottomans through the end of World War One.

As the descendants of these peoples, as well as others who immigrated from all over



Eastern Europe and Western Asia to this crossing point of the world, melded together they were generically known as Turks and developed a common root language, Turkish. After World War One, in which the Ottomans sided with the Germans (who lost), Great Britain, Italy, and France all were poised to carve up this rich plum amongst themselves, but the Turks wanted independence and after a three-year war, they

expelled the Europeans and the Republic of Turkey was formed.

The capitol of this **new country, almost the size of Texas**, was moved to Ankara, a smaller city more geographically centered in the nation.

73!

Scott

One-Way Propagation and EME Communications /

John Kludt, K4SQC

The 2018 edition of the ARRL EME Contest is now in the books. For those of you unfamiliar with this contest it occurs over three weekends basically one month apart in the Fall. In 2018 the first weekend was September 29-30 UTC for 2.3 GHz and up. The weekends of October 27-28 UTC and November 24-25 UTC were for stations using 50 MHz through 1296 MHz. Beyond the usual single op/multiop categories there are two mode categories; CW only and All-mode. You can pretty much read "All-mode" as JT65A,B, or C depending on the band. As I have noted in previous articles JT65 has really opened this avenue up to small stations, sometimes as small as a single Yagi and 300 watts on 2 meters.

One of the interesting things about amateur radio is there is always something new to learn. The last Sunday UTC of this contest was no exception. There is a utility called "Live CQ" that can be used to see if you are being heard in Europe. Think of it as a Reverse Beacon Network for EME. I run a pair of M2 2M20XP antennas. This antenna sports 10 elements vertical and 10 elements horizontal on a fairly long boom with the ability to switch between the two polarizations. I usually run 800 watts on JT65. On Live CQ I was being spotted at somewhere between -20 and -24 dB using vertical polarization. So I knew I was being heard in Europe. But not so much as peep was coming back. The waterfall was completely blank! Enter One-Way Propagation – they could hear me but I could not hear them. And that is really, really frustrating, especially at 3:00 AM local time!

Two things happen to the polarization of a signal as it heads to the Moon and back. The first is Geometric or Spatial polarization. This is polarization shift arising because of the relative positions of the sending and receiving station on different continents on the surface of the earth. As is noted in a paper found in the 1998 432MHz and Above EME Conference Proceedings, a station transmitting horizontally at 0 deg W will be received vertical at 90 deg W. This effect varies with the time of the Moon pass. To make things more interesting enter Faraday Rotation. Faraday rotation occurs when our radio signals, linearly polarized electromagnetic waves interact with the charged particles in the ionosphere and the Earth's magnetic field. The result is a shift in the plane of the wave. Coming back from the Moon the radio wave encounters the same environment and is rotated some more in the same direction. The shift can't be predicted and it is what it is.

Sometimes these two effects combine in very unfavorable ways. That very long Sunday night may have been an example. And it was frustrating until I tumbled to the operational fact that if I transmitted vertical and listened horizontal everything seems to work just fine. That is until a few hours later when the game changed – Tx horizontal and Rx vertical.

So it all worked out in the end. For those of you so inclined, here is the link to the paper that does a good job of explaining all of this without the need for a PhD in mathematics:

<http://www.ifwtech.co.uk/g3sek/eme/pol4.htm>

See you on the Moon!

YL's Having a Blast at the Chattanooga HamFest /

Catherine, AC4YL & Melanie AG4YL

Hello ladies (and gentlemen)! It sure was an awesome Hamfest last October 20th in Chattanooga, TN! It was so wonderful meeting and visiting some fantastic and active YLs there!

Melanie and I had received an email from Harriet KK4EAO in Tennessee at the end of August. She had heard that two YLs went to Huntsville last year and gave a YL Forum and she was inquiring if it was us. She said if it was in fact us, she wanted to invite us to be speakers for a YL Forum at their Chattanooga Hamfest coming up in October. She proceeded to tell us about their great group of YLs that have been getting together for the past two years, that they had a table at the Hamfest the previous year and that they wanted to have a YL Forum as well this year. Harriet also told us about their Echolink Net (more info below). We all got on a phone call together and had a grand time getting to know each other and learning more about their fun group of YLs! Harriet shared with us that they get together once a month and do different activities from soldering and kit building to radio history museum visits and even occasionally some non-ham related activities. We just had a fantastic conversation about YLs and ham radio activities and Melanie and I were all excited to do the forum and meet these ladies!



Harriet KK4EAO at YL Table

We had a great time. There were about ten YLs who attended which is great considering the Chattanooga Hamfest is quite small in size. One of the women in attendance isn't even licensed yet so hopefully we were able to inspire her to get her license. Harriet later mentioned to us in an email that many of these ladies were actually selling things at other tables and stopped just to attend the YL forum. They stayed longer than Harriet expected them to given their other responsibilities at the HamFest so our forum attracted some YL attention!



Melanie AG4YL Chatting at the YL Table



We did a two-part forum with the first part on YLs in Ham Radio – Then, Now, and on Into the Future. The second part was a forum on contesting tips and Echolink use focusing on then upcoming ARRL November Sweeps contest.

There was a lot of interaction, all the ladies got to introduce themselves and we enjoyed hearing their stories. One YL was the one who

brought her husband into the hobby instead of the more typical other way around.

(Continued on page 7)

We invite you to join any of the vast array of YL nets (these nets are for women amateur radio operators to participate, but OMs are welcome to listen in) throughout the week:

YL Hams Net

“The Purpose of our YL Net is to provide a forum for Licensed Female Hams of all ages and ham experience -- to meet on the air for fellowship, to discuss common interests, to discuss technical topics, to learn how to prepare for emergency events and communications, and more.”

- ▶ Every Monday Night at 8pm Eastern on Echolink N9ZEN-R Repeater (Node 68581)

Ladies on the Air YL Net – Barb KD0WAW

You will need reach out to Barb KD0WAW (her email is on QRZ.com) and let her know you'd like to participate as she will need to add your callsign to the approved group for her Echolink node.

- ▶ Every Tuesday Night at 9pm Eastern (8pm Central) on Echolink W0UUS-R Repeater

YL Meetup – Anne WB1ARU and Margaret AE7MB NCS

This is a meet up on HF for YLs to get together and chat about anything that's going on ham radio or non-ham radio related. The purpose is to simply get on the air and say hi!

- ▶ Every Wednesday Night at 9pm Eastern on either 20M at or around 14.288MHz or 40M around 7.191MHz if 20M is closed.

YL Op Net – Catherine AC4YL and Melanie AG4YL NCS

“The purpose of this net is to encourage YLs to become and stay active with amateur radio, help each other enhance our operating knowledge and skills, share our ham radio experiences, and have fun!”

- ▶ Every Thursday 8pm Eastern on Echolink ALARA Conference and locally on the NFARL 145.47 repeater!

MINOW Net – Margaret AE7MB NCS

“The MINOW Net was formed in 1963 as a group for YLs that live in Montana, Idaho, Nevada, Oregon and Washington, but we invite all YLs to join in our Nets and become members.”

- ▶ Every Thursday 10:30pm Eastern on Echolink ALARA Conference

33 & 73

de Catherine AC4YL and Melanie AG4YL

FT8 - Tipping Point For Ham Radio? / Neal Foster, N4FN

Gerald Youngblood K5SDR has penned a wonderful article on FT8. FLEX Radio has been a supporter of NFARL and HamJam for some time.

Gerald has given us permission to reprint his copyrighted article. Also attached is a link for FLEX and FT8 <http://www.flexradio.com/ft8/>

FT8 has become the most widely used digital mode since its introduction. Many will remember the presentation that Joe Taylor K1JT made at HamJam some years ago. It has become a major digital mode for DXpeditions. I am pleased that Gerald and Matt Youngblood allowed us to reprint this article.....Neil N4FN

FT8 – Tipping Point for Ham Radio? *(Reprinted here by permission of the author)*

This is a view from NASA of the sun today, October 9, 2018, and I am making 10m DX contacts one after another. Zero sunspots but working DX on FT8! Is FT8 creating a “tipping point” for amateur radio at the very bottom of the solar cycle?

Several years ago I was captivated by a book written by Malcolm Gladwell called, *The Tipping Point: How Little Things Can Make a Big Difference*. Merriam-Webster defines tipping point as, “the critical point in a situation, process, or system beyond which a significant and often unstoppable effect or change takes place.” In his book, Gladwell describes how, “The tipping point is that magic moment when an idea, trend, or social behavior crosses a threshold, tips, and spreads like wildfire.” He shows us how the phenomenon applies to everything from flu epidemics to the explosion of new technologies.

Does the FT8 mode included in WSJT-X software constitute a tipping point in ham radio for good or for harm? There are many ham radio opinion blogs on the Internet that strongly or sometimes sarcastically take one or the other stance. There is even an Internet poll asking, “Is FT8 damaging amateur radio?” At this moment it is 52% yes, 45% no and 3% undecided.[1] All of the articles and videos I have seen agree on one undeniable fact – FT8 has since its introduction in June of 2017 achieved “killer app” or tipping point status. Some think it will kill amateur radio and others believe that such innovations give the hobby new life.

The FT8 digital mode is the latest in a series of weak signal applications for amateur radio. Conceived originally for enhancing esoteric propagaint modes such as high speed meteor scatter and moonbounce, Joe Taylor (K1JT) developed a series of applications including FSK144, JT6M, JT65, and JT9. When FT8, jointly developed by Joe Taylor and Steve Franke (K9AN), was announced it was described as being designed for, “multi-hop Es where signals may be weak and fading, openings may be short, and you want fast completion of reliable, confirmable QSO’s.”[2] Being a 6 meter fan, that resonates with me.

What happened to take an esoteric mode designed for multi-hop E skip on VHF and overnight turn it into a worldwide phenomenon across all bands from 2200m through 70cm? In other words, what makes FT8 a killer app? Here are a few of my observations:

- FT8 counters the current dearth of sunspots

(Continued on page 9)

(Continued from page 8)

- FT8 opens “dead bands”
- FT8 is addictive – see em, click em, work em... Boom!
- FT8 lets little pistols work DXCC like a big gun
- FT8 lets you work the world from small or deed restricted lots
- FT8 is a weak signal – not a low power mode (power works the really weak ones)
- FT8 lets you work DX on 6m when there would be none
- FT8 is suddenly dominating VHF/UHF contesting
- FT8 lets you work weak signal DX without proficient CW skills
- FT8 decoding to -20 dB SNR is like turning 100W into 10kW
- FT8 is like having constant DX beacons on every band
- FT8 puts the DX, WAS, WAZ, etc. on the air when they might not be
- FT8 let’s you work DXCC on 160m without a big station
- FT8 let’s you call CQ and become the DX
- FT8 is amazing literally space age technology
- FT8 is probably other things I haven’t realized yet but some of you have

So, will FT8 kill ham radio as some have posed? True, it is mostly automated. True, it reduces the skill required to make DX contacts. True, it removes conversation from the QSO the same as is true of most DX chasing contacts on any mode. True, it removes some of the human factor. But does that make it bad for amateur radio’s future?

In my humble opinion, FT8 is at the very heart of what amateur radio has been about from its inception – amateurs who love the art of radio enhancing the art of radio. The FCC in Part 97 of the rules lists the following as second in the list of five tenets that define amateur radio:

"Continuation and extension of the amateur’s proven ability to contribute to the advancement of the radio art."

In my humble opinion, what will ultimately kill amateur radio is not FT8. To the contrary FT8 is an example of what will keep it alive and relevant. What will kill amateur radio is if we cease to innovate, become old and grumpy, and no longer bring new blood into the hobby. I received my novice license over 50 years ago (rock bound CW on a 6L6) and still find new and exciting things to peak my interest. Frankly, technical innovation in amateur radio directly led to my career in technology just as for many of you. I hope that continues long after I am gone.

Amateur radio is alive and well. FT8 is one just one element of keeping it that way. Hope to work you soon on FT8, some other new mode, or maybe a ragchew on SSB when the sunspots come back.

73,
Gerald, K5SDR
CEO, FlexRadio
<https://www.flexradio.com>
COPYRIGHT FLEXRADIO(TM) 2018

Shack Visit at W4QO's / Jim Stafford, W4QO

Our 2018 Activities Chairman, Mark Coleman, set up several shack visits for last summer. This brings back memories of our Mid-Month Madness events of the past, events that take place between club meetings. I volunteered my shack for an "open" period on Sept. 29 from 10AM to 1PM. This was open to hams of varied experience. No RSVP was required so I was not too sure of how many would "drop in". Someone pointed out that this event fit nicely with Old Geezer breakfast on Saturday mornings held not far from my house. Sure enough we had a few folks stop by after breakfast.

It certainly was fun for me and I hope it was for the visitors. We looked at wiring, various rigs, on the air demonstrations, antennas and software. Most everyone stayed for over an hour and the last group left at 1:30 or so.

Below I have only estimated the visitor's tenure as a ham so don't be too critical if I'm way off! I did this estimate because we wanted to know if this is something of interest to new and old hams alike. 13 hams stopped by. Here is the list and estimated time for each in ham radio.

Alem	Unlicensed (<i>Kennesaw University Club</i>)	Bruce, KN4LSI	1 year
Michael, N4ABI	2 years (<i>Kennesaw University Club</i>)	Russell, N1ILC	45 years
Larry, AA4QO	5 years	Don, AE4DD	1 year
Steve, AE4TT	25 years	Fred, KK4JYO	5 years
Ian, KM4IK	10 years	Wayne, KE4WYU	10 years
Walt, W0RON	25 years	Val, WD4EXI	45 years
Scott, KB4KBS	25 years		

Some of the visitors gave me some great tips and my tenure is 60 years! So next time there is a ham shack open for visits, take advantage of the offer. If you missed the visit to my shack, just send me an email w4qo@nfarl.org and we'll set up a time and date.

NFARL Supports MSA in SCR / Martha Muir, W4MSA

ARRL's Fall School Club Roundup was held during the third week of October. The School Club Roundup is a one week long opportunity for schools with a radio station to try to contact as many other schools with radio stations as possible. The schools involved range from elementary schools to colleges. Thanks to the efforts of Jim W4QO, Mill Springs Academy was among them.

The scheduling of the SCR this year hit at an inopportune time. The last two days of the event occurred when the students in grades 7 to 12 would be involved in student-parent conferences, so they were unavailable to get involved in SCR on those days. Once again, Jim to the rescue.

Jim and Mark KJ4YM brought in equipment that would allow us to access Mack's W4AX equipment remotely on Monday and set it up in the Great Room of the PreUpper School. (This is our lunch room and is where refreshments were set up at HamJam.) Amid the din of the very vocal students eating lunch, Jim and Mark helped students make contacts. Jim came back on Wednesday and helped some other students as well as students who wanted a second experience at making contacts.

On Friday, when the rest of the school was involved in conferences, Jim and Mike KN4OAK set up the equipment in the Middle School's Great Room and helped students in grades 5 and 6 make contacts. Some students even gave up 'club time' to come back and get on the air again. Teachers commented on how much the students enjoyed these experiences and can't wait to do it again.

HF Split Operation – What is it and why use it?

Not that long ago, I had no idea what Split Operation or “Working Split” was, but I found out soon enough that it is very important to know how to put your HF radio into Split Operation and set the proper frequencies and modes.

So, just what is split operation? Well, simply said it is transmitting on one frequency and listening on a different frequency (or listening over a range of different frequencies as you will see in a bit). But how is this possible? Well, most modern HF radios have two (2) VFOs (Variable Frequency Oscillators). You set your radio’s VFO usually to a band and a particular frequency on that band and attempt to make a QSO. The first VFO is usually called VFO A, and when you are running Simplex operation, you only use the one VFO where you transmit and receive on the same frequency using that VFO.

But there are times when it is an advantage to transmit on one frequency and listen on another, and that is where the second VFO in your HF radio comes into play which is usually designated as VFO B.

You will have to refer to your particular radio’s manual, but please do figure out how to enable Split Operation for your radio, which basically enables one VFO for transmit only and the other VFO for receive only. The other thing you need to know is which VFO will be used for transmit and which one will be used for receiving. Normally you use VFO A for receiving or listening, and VFO B for transmitting, but there is no rule that says it has to be that way, which is why it is so important for you to know for your own particular radio which VFO is receive and which is transmit when using Split Operation. You can always go to some currently dead band (like 10 meters late at night) or use a dummy load to run tests and figure it all out.

So, assuming you now know how to put your HF radio in Split Operation, and set a frequency and mode (e.g. SSB) for VFO A and a different frequency and same mode (e.g. SSB) for VFO B, let us investigate how you would use Split Operation in real life.

First, let us look at chasing DX stations. One of the biggest problems with DX pile-ups is that many of the stations calling can’t hear the DX station because of the QRM caused by other stations calling (yes, some people can be very inconsiderate – read the DX Code Of Conduct sometime) a DX station that is operating in Simplex (i.e., the DX station is calling and listening on the same frequency).

To avoid this mess, many DX stations will operate “Split”, where they transmit on one frequency and listen on 1 or more other frequencies. If the DX station is listening on just one particular frequency, then they will announce “Listening UP 5” or “Listening DOWN 3” or “Listening 225”.

“Listening UP 5” means the DX station has tuned their listening VFO to 5 KHZ up from where they are transmitting, so that is the cue for you to tune your transmit VFO to the frequency 5 KHZ up from where you are hearing the DX station. Example: you hear the DX station on 14200 KHZ, so you tune your transmit VFO to 14205 KHZ.

(Continued on page 12)

(Continued from page 11)

“Listening DOWN 3” means the DX station has tuned their listening VFO to 3 KHZ below where they are transmitting, so that is the cue for you to tune your transmit VFO to the frequency 3 KHZ down from where you are hearing the DX station. Example: you hear the DX station on 14200 KHZ, so you tune your transmit VFO to 14197 KHZ.

“Listening 225” means the DX station has tuned their listening VFO to the frequency ending in 225 on the band you hear them on, so that is the cue for you to tune your transmit VFO to the frequency ending 225 on the band you are hearing the DX station. Example: you hear the DX station on 14145 KHZ, so you tune your transmit VFO to 14225 KHZ.

NOTE: A good DX station can transmit on a non-USA frequency (which you are allowed to listen to but not transmit on), but listen on a USA GENERAL CLASS frequency to allow the most USA hams an opportunity to contact them. They will do the same for Japan and Europe hams, etc.

OK, but what does “Listening UP 5 to 10” or “Listening 250 to 260” mean? Well, that means that the DX station is using their listen VFO over a range of frequencies looking for a contact. So, “Listening UP 5 to 10” means they are tuning their listening VFO from 5 KHZ to 10 KHZ up from where you are hearing them looking for contacts. Example: you hear the DX on 14200 KHZ, so you would pick a frequency between 14205 KHZ and 14210 KHZ to set your transmit VFO to. (Here is where it is good to go listen in that range and see where the least number of stations are calling the DX station to give you the best chance of being heard by the DX station!) Obviously, if you are not being successful at making that QSO, you can just try another frequency in the announced range.

Similarly, “Listening 250 to 260” means that the DX station is tuning their listening VFO on the frequencies ending from 250 KHZ to 260 KHZ on the band where you are hearing them. Example: you hear the DX on 14200 KHZ, so you would pick a frequency between 14250 KHZ and 14260 KHZ to set your transmit VFO to before calling the DX station.

When working a rare DX, you will hear the “DX Cops” breaking into the DX station’s transmit frequency to chide the people calling on the listen frequency pleading “UP 5 UP 5”! Imagine the embarrassment of interfering with the DX station’s transmission. It seems there are many hams that still don’t understand Split Operation, but now hopefully you do and will have a much better chance of landing that rare DX contact and not be that QRM!

Good DX, and 73.

Bob

What Time Is It? / Neil Foster, N4FN

I have been a subscriber to the K9YA Telegraph for a number of years and enjoy each monthly issue. It is available by subscription only and is a free publication. Yes, Josephine it is free and I know hams HATE free! One only needs to go to the link below and sign up. The editorial staff, Phillip Cazar-Lazar K9PL, Mike Dinelli N9BOR and the author David Reynolds G3ZPF have graciously given NFARL permission to reprint his excellent and informative article in eNews. David and I have had a very interesting exchange of information. I think this is a great newsletter and you will enjoy each issue. Don't forget to sign up [http://www.k9ya.org/....](http://www.k9ya.org/) and select subscribe under the K9YA Telegraph drop down.....Neil N4FN

What Time Is It (QTR?) **What's That Got to Do With Ham Radio?**

By David Reynolds, G3ZPF

Having a standard time throughout the world is a fairly recent introduction. I only became aware of just how recently it was (1847) after watching one of the What the Victorians Did for Us TV series.

With my curiosity aroused sufficiently to read more I quickly became aware that GMT, UT, and UTC, are not different terms for the same thing as I had always assumed and that time passes slightly more slowly at sea level than on top of a mountain, according to Einstein.

Local Time

To begin with, each community in the UK set its own time based on the sun. It was noon at their location when the sun was highest in the sky. Alternatively known as "apparent solar time", it was most often measured using a sundial.

A Standard Time throughout the country became essential when the railway networks started to be built. Travelling long distances became so rapid they could not operate properly without it. Standard time throughout the world only became possible after the invention of the telegraph, and later, radio.

After lobbying by railway companies, Britain became the first country to have its time set to one standard. The Great Western Railway was first to adopt GMT across its network in November 1840. In September 1847 the Railway Clearing House (the UK Railways Standards Institute) recommended that Greenwich Mean Time (GMT) be adopted at all stations. By 1855 most public clocks in Britain were set to GMT, but it would take another 34 years before all USA railroads agreed on a common time standard.

Despite how logical and useful a countrywide time system was, resistance to adopting GMT was indicated by the fact that for a few years after its introduction, some enterprising souls in the UK made a living supplying clocks with an hour hand and two minute hands. One was set to Local Time, and the other to GMT.

The Royal Observatory at Greenwich in the UK was established in 1675 as the centre for

(Continued on page 14)

(Continued from page 13)

timekeeping, to serve the maritime interests of the UK. Mariners kept their navigation timepieces on GMT in order to be able to calculate their longitude relative to the Greenwich Meridian, but still used solar time to determine “ship-borne time”. GMT was formally established as a world time standard at the International Meridian Conference in 1884, mainly because mariners of all nations already used Nevil Maskelyne’s “method of lunar distances” (based on observations at Greenwich).

Although they do not affect the local time directly, “Time Zones” are based on this reference as a number of hours ahead of, or behind, GMT.



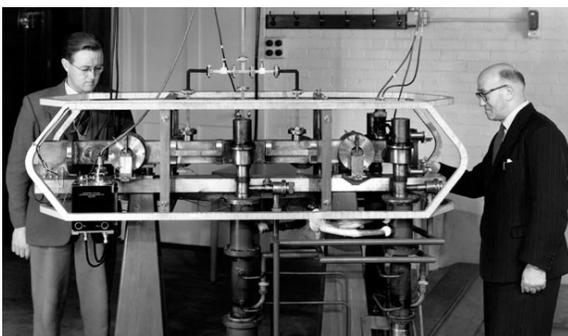
Royal Observatory in Greenwich

GMT, UTC, and UT

There is more to GMT than everyone using the time of day the sun is directly over the Greenwich Meridian. The earth’s orbit is elliptical, and its axis is tilted, so solar time can be plus/minus about 15 minutes at certain times of the year. This non-linear timescale was transformed into a linear one (mean solar time) by averaging time over a year, based on the position of an imaginary sun that moves across the sky with uniform speed. GMT is the mean solar time on the Greenwich meridian based on the position of this ‘mean sun’ and NOT on the position of the real sun. The difference between apparent solar time and mean solar time is known as “the equation of time”. Greenwich was certainly not the first location to use “mean solar time” instead of “apparent solar time”. Many methods have been used to simulate mean solar time throughout history. The earliest were Clepsydras (water clocks) used from the second millennium BC until the early second millennium.

Before the middle of the first millennium BC they were adjusted to agree with apparent solar time and were thus no different from the shadow cast by a “gnomon” (a vertical pole), except they could be used at night.

Most people use the terms GMT, UTC, and UT, as if they were different expressions for the same thing, but they represent different standards. In 1928 astronomers introduced the term Universal Time (UT) to indicate time measured from GMT midnight. To be entirely accurate, they actually introduced three different variants of Universal Time (UT0, UT1, UT2) but as the maximum difference between all of them is around 50 milliseconds it is hardly surprising most people are unaware of them. The term UT is generally used without any qualification.



Atomic Clock - Jack Parry & Louis Essen
with Caesium-133 Atomic Clock

Artificial time standards became more accurate than standards based on astronomers’ observations when atomic clocks were introduced in the 1950s. In 1967 the standard (SI) second was re-defined, based on the time generated by a caesium atomic clock. The international timescale based on this SI-second is International Atomic Time (TAI). This timescale was synchronised with UT at the beginning of 1958, but UT and TAI gradually drift

(Continued on page 15)

(Continued from page 14)

apart as they are based on different principles.

Universal Co-ordinated Time (UTC), often referred to as "zulu time" is a compromise between TAI and UT. It was introduced in 1972 but runs fractionally faster than UT. To ensure the difference is never more than one second, "leap seconds" are added whenever UTC gains about half a second. Leap seconds are "added" by pausing the UTC clock for one second. Standard time signals are all based on UTC.

The National Physical Laboratory (NPL) broadcast UK time on 60kHz from Rugby for many years, but in 2007 transmissions were relocated to Anthorn in Cumbria. Central European Time is broadcast on 77.5kHz from DCF77 at Frankfurt.



NPL at Rugby

Space Time

Time is now based on an SI second, which is based on the atomic resonance of caesium and has nothing but coincidence to do with a fraction of a 'real' day. Newton's laws of motion depend on time for accuracy, but we've fudged the definition of time. Nevertheless, for everyday use, the differences are of little consequence, but what about space travel? Enter Barycentric Dynamical Time" (TDB). Apparently, this form of atomic time is now used when calculating the orbital positions of planets and other solar system objects.

Historically, positions were given as printed tables of values, given at regular intervals of date and time. The orbital position tables (ephemerides) used to be tied to direct observations of planetary motion. Fragments of Babylonian tablets containing such tables have been discovered from as far back as the 1st century BC. More recently, printing tables of ephemeris was one of the first tasks assigned to mechanical computers.

Modern ephemerides are usually computed electronically from mathematical models of the motion of astronomical objects instead of observation but printed ephemerides are still produced as they are useful when computational devices are not available. The TDB timescale is then 'fitted' so that Newton's Laws of Motion (with corrections for General Relativity) are followed. It seems to me that whichever of the multitude of time standards you use, a 'fiddle-factor' has been applied. Maybe there is no such thing as the 'correct' time.

Reprinted here by permission of the K9YA Telegraph (<http://www.k9ya.org>).

2018 W/VE Islands QSO Party Results! / Terry Joyner, W4YBV

Our NFARL came in 2nd place this year!

Canadian team VE3TIC came in 1st place besting us by only 360 points.

VE3TIC had a total of 10,485 points and we (NF4GA) had 10,125 points. We needed just a few more Q's this year.

A bit of history for our club in the US Islands QSO party: We placed 4th in 2017 and 2nd in 2016.

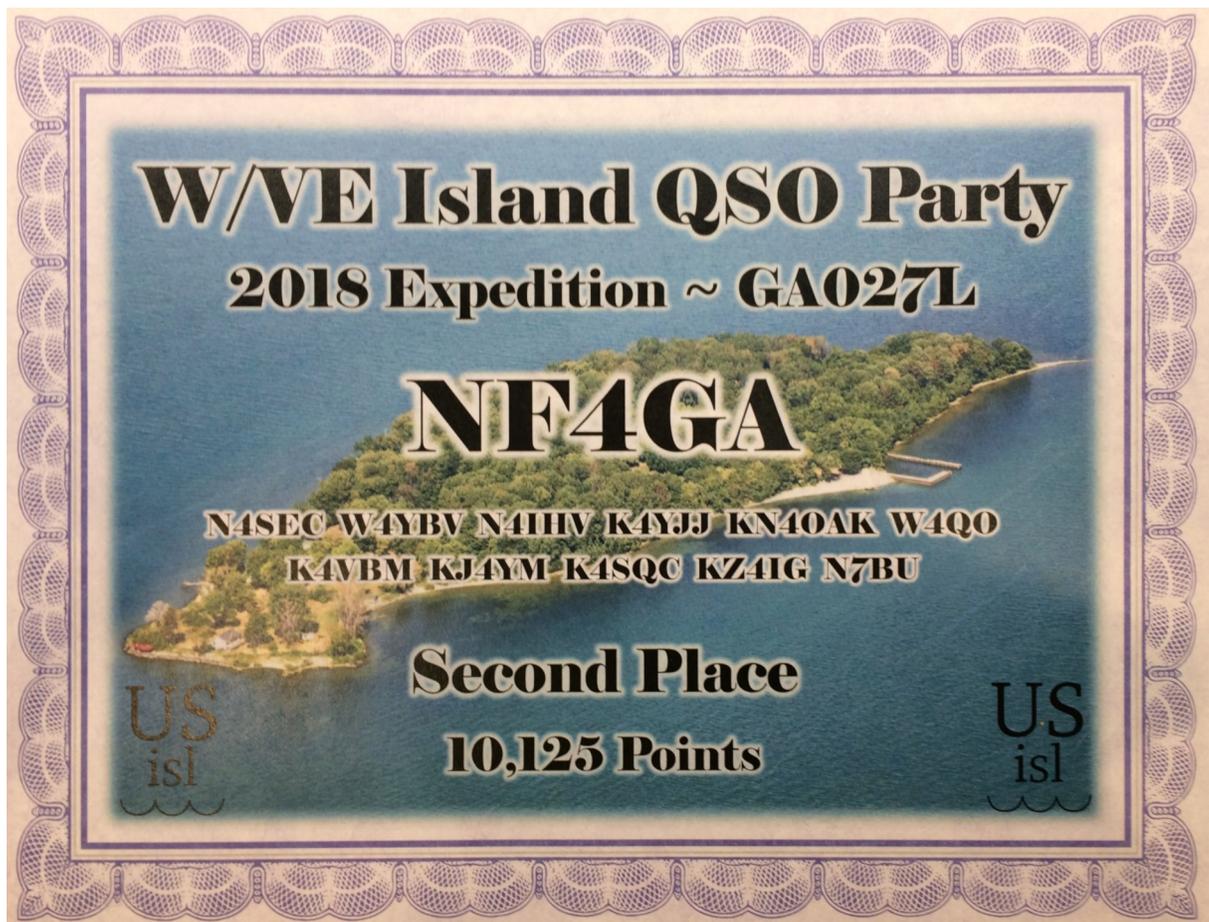
I think we are truly recognized as a competitive US Island QSO party club in the USA.

I want to thank all of our NFARL members that took part in the island outing this past year. Certificates were presented to those NFARL participants that were present at the club meeting this week.

You may see the US Islands QSO party results at usislands.org.

73,

Terry



Online QSO Logging , Part #1/ Bob Hensey, K4VBM

This is Part one of a two part series.

Some of the fun of making radio contacts is logging those contacts (you will have a record of everyone you ever talked to on the radio), and getting confirmation of those contacts from the other end. Everyone uses some type of program to log their QSOs, but what I want to talk about is using Online logging sites on the internet.

The cheapest and fastest way to get confirmations of your QSOs is to use logging systems on the Internet that have been set up for that purpose. You can also achieve awards on many of the sites. On some sites the online certificate is free, or if you want a paper certificate, you can send money for it. Some even have plaques you can buy. And you save a ton in postage costs using online logging for QSLing.

First of all, I still paper log just about all of my contacts (except contests) because I don't trust computers and all the possible disasters that can happen. It has saved me more than once having a paper log. Storing your log online just makes a lot of sense, because we all have experienced those nasty computer problems like hard drives failing.

This initial article will list some popular online logging sites that I use and recommend, along with some basic information about each one:

1. Logbook of The World (LoTW) sponsored by the ARRL

URL: <https://lotw.arrl.org/lotw-help/getting-started/>

Before you can submit QSOs to Logbook of the World (LoTW), you must install the free TQSL application on your computer. TQSL will enable you to obtain a Callsign Certificate that identifies you as the source of the QSOs you submit, and will also enable you to define a Station Location that specifies the geographical details of your operating location. Each callsign certificate can define multiple Station locations. You can request additional certificates for each call sign that you use (e.g., K4VBM/7, K4VBM/4, etc.).

Start by downloading and installing TQSL, and using it to request your first Callsign Certificate. Use the URL above. You will be sent a post card in the mail with a passcode that you will use to verify your certificate.

Cost: There is a small fee per QSO and a fee to apply for an award certificate; ARRL membership required for Worked All States (WAS) awards. Uploading and downloading is free.

This is by far the most used online logging system. More about LoTW in another article.

2. eQSL.cc

URL: <http://www.eqsl.net/qslcard/RegisterValidated.cfm>

This online logging system is free to use but to get access to some of the features, like full customization of your online QSL card and access to all the awards, they want you to donate \$12 per year or more for a membership. I am a member of the eQSL advisory board, help with

(Continued on page 18)

(Continued from page 17)

support requests and have a Platinum membership.

Use the URL to register as a Licensed Amateur, and make sure you take the necessary steps to become Authenticity Guaranteed (AG) so that your uploaded QSOs will count towards awards for your QSO partners.

Cost: Fees for membership (different levels) and access to awards, but no cost for printable online certificates once you have a membership. Plaques are available for a cost. You can create an online QSL card design (membership level gives more options), and can download the eQSL of your confirmed QSOs for free.

More about eQSL.cc in another article.

3. HRDLOG

URL: <http://hrdlog.net/>

Just register using the URL, it's free! Has a nice search feature for your QSO partners that you can embed on a webpage (see my QRZ.com K4VBM page).

4. Clublog.org

URL: clublog.org

This is another online logging system that is free. Many DXpeditions use it (it has a nice feature where you can order and pay for a paper QSL card). Just go to clublog.org and register for free. Has a nice search feature for your QSO partners that you can embed on a webpage (see my QRZ.com K4VBM page).

5. QRZ.com

URL: QRZ.com

(It's the one I started using first, and still do). It's free (100 call sign query limit per 24 hours for free users), logs are free, uploads are free, but downloading a log requires a paid membership. During contests it can bog down and get really slow. Minimally, you might use QRZ.com to look up call signs, read operator biography pages, get email contact info for operators, and QSL information. It's very popular for the info on a call sign, and the biography of the operator. Take a look at my QRZ.com page (look-up K4VBM on QRZ.com for an example). Register and start creating your Bio page.

Cost: Free, but paid membership is required to download logs.

There are more online logging sites, but my experience shows these are among the most popular.

I hope this information helps you start and enjoy your online logging experience.

Mill Springs Plays Host to HamJam / Martha Muir, W4MSA

On Saturday November 10th about 160 hams from all over the north Georgia area, including the Section Manager (head of the Amateur Radio community in Georgia), David Benoist, gathered at Mill Springs to participate in HamJam. HamJam is sponsored by our local Amateur Radio club, the North Fulton Amateur Radio League (NFARL). This is the second year that Mill Springs has hosted this event.

HamJam is sometimes described as a filet of a Hamfest, a gathering of hams that features just the best parts of such a gathering. HamJam offers an opportunity for hams from different clubs and areas to see and chat with each other (this is sometimes referred to as an 'eyeball QSO' in hamspeak), hear some great speakers on a variety of ham topics and have an opportunity to win some great prizes.

A hospitality room was set up in the PreUpper Great Room. Coffee, tea, hot chocolate, and other beverages were available along with a selection of sweet and salty snacks. (In his opening remarks, MSA Headmaster Robert Moore recommended the walnut brownies to the crowd.) The offerings in the hospitality room were set out and refreshed by MSA students Rayna Doniparthi, Lydia Bennett, and Alex Rich. As the attendees came down the hill from the parking lots, they stopped into the PreUpper Great Room, got a drink, got some snacks, chatted with old and new friends, and hopefully, bought some more raffle tickets.



Robert welcomes our guests to MSA and to HamJam while Dr. John Kludt looks on.



The Upper Great Room was filled with hams intently listening to the great presentations.

Around 8:30 that morning, hams began to leave the hospitality room to head over to get a good seat in the Upper School Great Room, where the presentations would be held. MSA students Josh Drew KM4MVK and Andrew Buchberger KN4IVE served as greeters in the lobby of the Upper School building, welcoming the hams to MSA and to HamJam and answering other general questions.

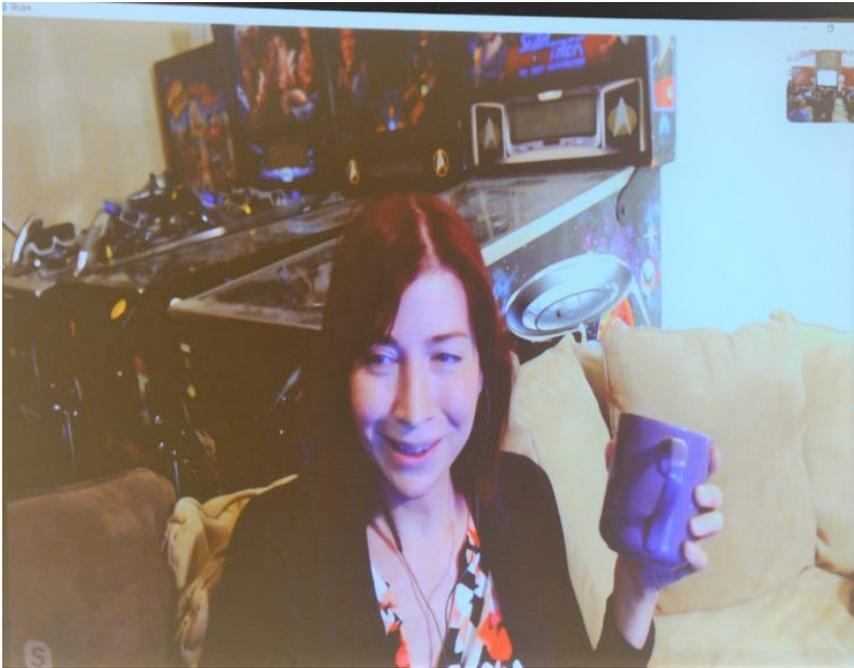
HamJam officially began at 9 AM with MSA Headmaster Robert welcoming everyone to our campus and to HamJam. He also thanked the North Fulton Amateur Radio League for the special relationship they have formed with our school, including their help with our ARISS Radio Contact last spring. NFARL has also been helpful in the establishment of an Amateur Radio program here at MSA.

The HamJam team brought in three sets of speakers. The first was Dale Parfitt W4OP from North Carolina. He spoke on "Microwave Earth-Moon-Earth Communications," which involves

(Continued on page 20)

(Continued from page 19)

sending a radio signal to different parts of the world by bouncing the signal off of the moon! Next up were Rick Boulis N4HU and Tom Harrell N4XP. They spoke of their adventures in a session called "FT-8 Baker Island and Beyond." Baker Island is a tiny speck of land in the middle of the Pacific Ocean, near where Amelia Earhart is reported to have disappeared. They



The Jeri Ellsworth spoke to the crowd via Skype. Behind her you can see 3 of her 60 + pinball machines.

went there to set up radio equipment and encouraged hams around the world to contact them – and they did! The third speaker was Jeri Ellsworth AI6TK, a self-taught space and computer industry dynamo from California. She spoke to the attendees via Skype. The title of her presentation was "My Life in a High Tech World." Among other things, Jeri is famous for her YouTube videos on different aspects of technology.

Next up, the raffle! A giant drum was brought in that was loaded with all the raffle tickets that hams had purchased in hopes of winning a great prize or two. North Fulton leaders

gave each student who was helping out at HamJam one raffle ticket each for free. Over a dozen prizes with a total value of over \$6000 were available to be won including a couple of radio systems each worth over \$1000. MSA students Josh Drew and Andrew Buchberger were selected by the prize coordinator to be the ones drawing the winning tickets out of the drum. Ninth grader Alex Rich's ticket was drawn for one of the minor prizes. Since it was not something he thought she would enjoy or get any use from, NFARL member Jim Stafford bought it from her for its stated value.

HamJam is a unique program in the ham community. Most clubs, if they host a HamFest or similar event, use the proceeds for their club's operating expenses. 100% of the proceeds from HamJam go directly to the educational outreach programs of the North Fulton club. MSA has been the recipient of those programs for over five years now.

I'd like to thank all the folks at MSA for helping HamJam to be such a success. Cindy Thorne and the ALLSET crew were very helpful setting up the A/V equipment, Jamie Fambrough helped make sure the Skype connection would work reliably, and teachers loaned us some of the tables from their areas for this event. Thanks also to Bryan Sellers and his students for their help in setting up the chairs in the Upper Great Room on Friday and my students for resetting that room on Monday.

Contact Us

President	Daryl Young K4RGK	President@nfarl.org
Vice President	Jim Stevens KJ4QVT	VicePresident@nfarl.org
Secretary	Martha Muir W4MSA	Secretary@nfarl.org
Treasurer	Fred Moore N4CLA	Treasurer@nfarl.org
Activities Chairman	Bob Hensey K4VBM	Activities@nfarl.org
Membership Chairman	Steve Kemp WB4CVB	Membership@nfarl.org
Past President	Mark Schumann KK4FOF	PastPresident@nfarl.org
Mentors / Elmers	Chuck Catledge AE4CW	Elmers@nfarl.org
Field Day Chairman	John Norris N4IHV	FieldDay@nfarl.org
Scout Coordinator	Jon Wittlin K4WIT	k4wit@nfarl.org
ARES Liaison and Community Relations	Jim Paine N4SEC	n4sec@nfarl.org
Repeater Operations	Mike Roden W5JR	Repeaters@nfarl.org
WebMaster	Bill Cobb K4YJJ	Webmaster@nfarl.org
NFARL eNews Team	Daryl Young - K4RGK Bob Hensey - K4VBM	eNews@nfarl.org

North Fulton Amateur Radio League

P.O. Box 1741
Roswell, GA 30077

nfarl.org

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 560686 NF4GA-R	100 Hz	Morgan Falls
147.060 (+) Primary ARES Repeater	100 Hz	Roswell Water Tower
* 224.620 (-) Joint Venture with MATPARC	100 Hz	TBD
443.150 (+)	100 Hz	Roswell Water Tower
444.475 (+)	100 Hz	Morgan Falls
* 927.0125 (-)	146.2 Hz	TBD

** Currently off the air*

Supporters and Affiliates

Please support our sponsors and affiliates by clicking on the logos below to visit their websites.



Arbor Terrace®
AT CRABAPPLE

Assisted Living & Memory Care for Seniors

An Arbor Company Community



KENWOOD
Listen to the Future

