THE SPLITROCK TIMES

The newsletter of the Splitrock Amateur Radio Association.

February 2023 edition.

Welcome to the seventh edition of the Splitrock newsletter with its new name.

Editor: Fred Wawra W2ABE. [contact W2ABE@arrl.net]

'The Splitrock Times'.

OFFICERS

President Bruce N2XP

Vice Pres. Bob K2RFH

Treasurer Bruce N2OQX

Secretary Tracey KD2ISX

Trustee Bruce N2XP

Member at Large/'assistant to the President', Fred W2ABE.

Important note: VE testing will be on the second Monday in January. VE testing is usually on the second Monday of the month at the Mount Arlington Civic Center-7pm registration.

Remember if you are a member of ARRL [and you should be] then subscribe to the weekly email update to keep aware of conditions and activities on the bands and League announcements.

The Club Meets every second Tuesday at 7:30 at the Mount Arlington Civic Center [the log cabin building at the west end of Fern Place]. Come join us for fellowship and learning.

The Club's mailing address is: S.A.R.A. PO Box 528 Lake Hopatcong, NJ 07849 You can also contact us at: www.splitrockara.org OR

membership@splitrockara.org

The repeater is on 146.985, the offset is -600, and the PL is 131.8 Hz.

See the Member Profile Later in this issue!!

NOTICE: There will be NO zoom at the meetings for the time being due to WIFI issues

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Reminder….

Submissions for the newsletter need to be in word format or an email.

Reminder: there is a $35.00 fee paid directly to the FCC for new calls, vanity calls, and renewals. There is no FCC charge for upgrades.

THE PRESIDENT'S MESSAGE

To Splitrock Members,

We'll be showing the second half of the "Empire of the Air". The second half shows the innovations made in electronics and radio technology over 100 years.

If you monitor our repeater, please keep a look out for KD2GNZ Caz. He is not allowed to use the repeater and is not allowed come to our meetings. Please do not engage him, just ignore him and report back to me the date and time he was heard. Please email at president@splitrockara.org.

If anyone has any ideas for topics, videos and guest speakers, send me an email at President@splitrockara.org.

73,

Bruce N2XP, President.

ECLECTIC TECHNOLOGY

By: Fred Wawra, W2ABE.

This time Resonance mechanical and electrical.

This month the subject is resonance, physical, and electronic. Everything has a natural resonance, the object if free to vibrate, will vibrate at its natural frequency which depends upon the size and shape of the object. If said object is subject to a frequency of vibration which is at or close to its natural resonant frequency, it will cause the item to vibrate at

that induced frequency and will ultimately cause it to vibrate to the point of self-destruction. The Tacoma Narrows Bridge is a good example. When it was built, much less was known about resonance. What happened was that when the wind was blowing at the right velocity and direction, the bridge began to vibrate at a slow enough rate to cause the roadway to move up and down a frequent-cy that eventually tore the roadway apart leading to the destruction of the bridge. This generated a standing wave, [take a rope and tie the other [far] end to a fixed point and you take your end and shake it up and down and see the 'wave' it generates as it moves back and forth] this standing wave was at just the right frequency, albeit slow, to tear the bridge apart! This mechanical standing wave, imposed on the roadway structure generated by the wind, happened several times before the ultimate destruction giving the bridge the name of 'Galloping Gertie'. This also brings to mind the pictures of a wine glass being shattered by an opera singer belting out a loud note at the right frequency. Again, all physical items have a natural resonant frequency which can, if sustained long and loud enough can blow them apart. Resonant frequency plays a part in the electronics world and is particularly well known in the world of radio, particularly amateur radio.

In electronics, particularly in dealing with radio, resonance has to do with the ability of circuits to enhance or defeat an incoming signal or to shape it during processing. When tuning in a radio station you want only that one but not the others. How does this happen? There are a set of electronic devices that make this happen. In the early days there was a variable condenser [capacitor] and a coil of some type that were designed

for the radio band that was desired to be received.

What happened was that when you tuned the early TRF [Tuned Radio Frequency] by adjusting the variable condenser the resonant frequency of the circuit passed or accepted the desired station and rejected the others. Early radio sets often had three sets of the tuned circuits to adjust in order t hear that distant station. What was happening was that by adjusting the circuit, you changed to resonant frequency of the circuit and thereby let to desired signal pass while attenuating or rejecting the unwanted signals. The resonant frequency is where the tuned circuit matches to desired signal thereby giving the maximum response to the incoming signal [and in transmitters, the outgoing signal].

There are two types of reactance's in an electronic circuit, the effect of each is opposite of the other and equal. There is inductive reactance and capacitive reactance. Reactance is simply the electronic resistance to specific frequency. Inductive reactance of an inductor, which is a coil of wire, rather large at lower frequencies and much smaller with few turns at high frequencies, increases as the frequency applied to that coil increases. The mathematical letters are X of L, or XL. X being the react-ance. It is important to remember that capacitors store energy in an electrical field and inductors store energy in a magnetic field.

Capacitive reactance of a capacitor, which is a set of plates [in whatever shape], separated by an insulator. The reactance, or AC resistance of a capacitor, is very high at low frequencies but quickly decreases at higher frequencies and approaches zero resistance [react-ance] at frequencies near infinity. The mathematical letters are X of C, or XC.

Where capacitive reactance equals or cancels out inductive reactance there is the resonant frequency. There are no imaginary impedances existing. For resonance to happen there must be an inductor and a capacitor.

Capacitors take many shapes largely depending upon the frequency that they operate, the larger the value the larger the size, and the higher the frequency the smaller the size, therefore many sizes and types exist. The same holds true for inductors. They range from almost man-sized monsters to almost microscopic as in surface mounted devices!

Early radios used a simple sandwich condenser [capacitor] that was hinged on one side and folded together to increase the capacity and thereby aid in tuning the radio. There was also a set of flat 'spider web' coils that were inductors used to set the amount of coupling between the two to control the amount of regeneration in the radio. Regeneration is a technique used whereby the signal output is reintroduced at the input and controlled by coil spacing or resistance at the input almost to the point of oscillation thereby reamplifying the radio signal many times to increase sensitivity. You would adjust the regeneration control so there would be a squeal [oscillation] and the back it off till is just stopped and that would give you a boost in signal!

There is MUCH more to resonance, but the purpose of this article is to put technical information into easily understandable terms and explanations.

Fred Wawra, W2ABE, 73's

IF you are up early in the morning and want to get on the air there is the 'friendly net' on 7.235 from 7am to 8am 365 days a year. It is a non-political "G' rated net open to all.

There is also the 'Awful Awful Ugly net on 3855, with check ins and rag chewing at 8pm and net starting at 9pm.

REMINDER: VE sessions are back on schedule being the second Monday of the month!

Don't forget the 'Swap n' Shop/Tech net every Sunday night at 8 pm!

The history of The Splitrock Amateur Radio Association (SARA) this is intentionally being repeated this month in case you missed it!

The club was formed in 1972 when a group of Hams got together, built a 2-meter repeater, and installed it near the Splitrock Reservoir, hence the club's name. They then registered the club with the IRS and the state of NJ as a non-profit entity.

The repeater was moved a number of times to unique locations, and over that time, underwent several technical upgrades. The repeater is FCC-authorized to operate on 146.985 MHz, with a PL of 131.8 Hz and an offset of minus 600 kHz.

Today we have a commercial grade repeater located in Roxbury Township at the Mooney Mountain cell site (since 2001) where the antenna is atop a 125-foot cell tower, and the repeater electronics are housed in a secure, climate-controlled building, with emergency backup power. A remote receiver is being installed in Randolph, NJ to improve the repeater's coverage to the East.

The repeater has been registered with the FCC over its lifetime using a number of callsigns, including: WR2ADB, WR2AKI, K2RF, KB2UGK, NJ2SR, K2GG, N2XP and currently: WS2R. The FCC license is maintained by the club Trustee.

SARA offers its members technical communication activities related to the amateur radio service, as well as volunteering communications support to local communities, and non-radio member social activities. This is through sponsoring events such as the ARRL Field Day (an emergency exercise), the Northern NJ Hamfest, Olde Succasunny Day, the March of Dimes Walk, and our SARA Holiday Party. Many members participate in emergencies through the FEMA-sanctioned Radio Amateur Civil Emergency Service (RACES) or

the ARRL-sponsored ARES program. (The ARRL is the ***National Association for Amateur Radio*** in the United States, headquartered in Newington, Connecticut.)

Some members participate as Volunteer Examiners conducting monthly FCC license exams (to become a Ham) and license upgrade exams for all Hams.

SARA holds a Swap'n'Shop and Technical Net on Sundays at 8 pm local time on the club repeater, which is open to all Hams in our coverage area.

SARA is an ARRL-affiliated club, meeting monthly on the 2nd Tuesday at 7:30 pm in the Mt. Arlington, NJ Community Center (the log cabin located at 1 Fern Place).

This month's member profile is from Darryl Voight KD2MNN !

MEMBER PROFILE - Darryl Voight, KD2MNN

I received my bachelor's degree in Electrical Engineering from Bucknell University in 1985, and then served six years on active duty in the Air Force before leaving in 1991 to pursue a career in optometry. I then graduated from the Pennsylvania College of Optometry (PCO) in 1995. In Feb 1996 I rejoined the U.S. Air Force Reserves at McGuire Air Force Base, NJ as the Chief Optometrist for the 514th Aerospace Medicine Squadron. I was promoted to the rank of Lieutenant Colonel effective October 1st, 2006, and retired effective October 1, 2013, after 29 years of service. Since 1997, I've been self-employed and work fulltime in my private optometric practice in Wayne, NJ.

I earned my ham radio Technician license in 2016 after a friend and I wondered "How would we communicate if cell service was interrupted?" I was living in Rockaway, NJ at the time and I joined Splitrock Amateur Radio Association (SARA). I bought an HT & then a dual band mobile radio and learned to program them using CHIRP. I spent my time on local repeaters and participated in SARA Winter & Summer Field Days. I also tried out Echolink and made contacts there too. After moving to Pequannock in 2017, I didn't do much ham radio the next few years. My "Friend" above (who retired a few years ago and moved to Pennsylvania) finally got his Tech, General & Extra all in 2020 during the pandemic, which finally motivated

me to upgrade to General and Extra in 2021.

In hindsight, back in 2017 I wish I'd continued to use my Tech privileges more to try operating on 6M & 10M. There was certainly an opportunity for me to advance my skills in HF SSB/Phone communication as well as digital communication even with just a Tech license. But it wasn't until after I earned my General & Extra that I started looking for an HF radio. In May 2022 I bought my first complete used HF setup (from a SARA member – Pete Demas W2PJ) consisting of a Kenwood TS-50S, MFJ 949E Tuner, and an Outbacker Perth Vertical antenna, which I've setup portable in my physical QTH and made contacts, as well as during Field Day June 2022 with SARA. Then as my interest and excitement grew, in Aug 2022 I bought a used ICOM IC-718 along with a SignaLink box and added a new Wolf River Coil (WRC) Antenna. In addition, I now have a Hustler Mag Mount along with an RM-40 Antenna for my car.

I have only been operating on SSB/Phone and had been doing most of my HF operating since 2021 via RemoteHams.com on my laptop using a station very close to me (15 miles away) in Northern NJ. So, while technically I was operating "remote" it felt like my QTH, because I only used this station (even same Grid Square FN20). Lately, I've been using my own ICOM IC-718 and WRC antenna portable from home and from my car along and using Remote Hams less.

Back in 2022 I had also discovered Parks On the Air (POTA), which is a lot of fun. POTA has a FB page and I see postings all the time from Hams who've been licensed for 30-40-50 years saying how much fun they're having with ham radio again thanks to POTA. I hope to activate my first park at some point in 2023; probably Lake Hopatcong State Park. Along with POTA I'm enjoying trying to achieve the Worked All States (WAS) Award on QRZ (37 of 50). Most recently, I figured out how to run FT8 on my IC-718 using the SignaLink box and my laptop and made my first FT8 contacts in Jan 2023. I'm also interested in learning other modes (e.g., RTTY, PSK31, FT4, JT65) and logging more DX contacts. Someday I do hope to learn morse code and make CW contacts.

Overall, I give a lot of credit to and have a lot of appreciation for the many members of SARA who have helped me over the years. I've learned so much and had lots of fun during my Field Day experiences and hope all members will try to come out and participate when they can. I would also really appreciate having at least one individual members volunteer to give a very brief talk at each monthly meeting about what

they've been doing with ham radio recently so we can all get more ideas about how to enjoy the hobby.

Incidentally, my "Friend" has gone in a completely different direction from me the past couple years. He joined his local club and got his VE certification and administers VE testing. In addition, he joined ARES and is now the ARES coordinator for his county. He runs the NETs for ARES and his local club and does most contacts via FT8 and rarely uses SSB for contacts. He uses an ICOM IC-7300 and installed a permanent dipole in his backyard that runs into his house, along with a fixed VHF/UHF vertical on his roof for NETs.

THE SPLITROCK TIMES IS ALWAYS LOOKING FOR ARTICLES on kit builds, GO BOX builds, or an article about your shack or another electronic project. Ham radio experiences are also welcome. Thank YOU! Please submit them in WORD format so they can be added into the newsletter. They may be edited for space [so they fit] or clarity.

Meeting honor roll of attendance, present were:

KD2RIK Rick Rodin

KC2LTM Judith Shaw,

W2ABE Fred Wawra,

WI2Q Dave Buda,

K2GG Sid Markowitz,

WB2UFF Tom Golembiewski

KD2ZSW Mikea Smith,

KB2UNZ Ed Donnelly,

KE2ANE Brent Connelly,

N2ELC George Heddinger,

KD2MNN Darryl Voigt,

WI2R Peter Ballotta

N2XP Bruce Lordi,

KD2ISX Tracey Neidel,

N2OQX Bruce D' Adamo

WA2IMS Steve Weinerman

KE2ANA Rick Mowlay

Do not forget to go to the ARRL website and look at the 100-year handbook that is offered for sale! See You at the Club meeting on the second Tuesday of each month.