

THE SPLITROCK TIMES

The newsletter of the Splitrock Amateur Radio Association.
December 2022 edition.

Welcome to the fifth 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 is back on schedule and is held usually on the second Monday of the month at the Mount Arlington Civic Center-7pm registration. Next testing is December 12th.

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.

Member Profile for this month:

Tony Spina WA2LNC

Later in this issue!!

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

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.

To Splitrock Members,
Hope to see all of you at
the Holiday Party for Food,
Fun, and door prizes.

I am lining up guest
speakers and videos for
future meetings.

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.

Subject: AMPLIFIERS

This time the subject is
amplifiers. I recently bought
some line level tube preamp
kits and have a couple of
built ones that are rather
small and also have tone
controls and this prompted
me to dig into the subject of
amplification and how it
came about.

It all started about a
hundred years ago when a
third element was

introduced into the diode vacuum tube, [we will go into later] which consisted of a loop of wire, that was heated when an electric current was passed through it and it was called the filament, [the same as a light bulb] but at a lower voltage so it glowed reddish orange and lasted a much longer time than the light bulbs of the time. Edison noticed that there was a darkening on the inside of the vacuum bulb, most noticeably near the end of the filament that was connected to the positive terminal of the battery. Edison tried several things including adding a second element in hopes of eliminating the dark deposits that ended up on the inside of the evacuated bulb. Edison also noticed that when this plate was made positive, a

current would flow but if negative, none would flow, [using a galvanometer]. Edison made some effort to find a practical use for his effect which he named 'The Edison Effect' including a type of telegraph sounder control device but nothing further was done with the discovery until Fleming came along. However, physicist Owen Richardson did research and coined the term 'thermionic effect', but it took John Fleming, another British Physicist to develop the Edison/thermionic effect into something practical.

In 1904 Fleming used the principle of the Edison Effect to deliberately make a diode, that is an evacuated bulb with a glowing filament and a plate which could be used as a detector of amplitude modulated signals.

In 1906 American Lee De Forest added a third element that was able to control the amount of current flowing from the filament/cathode and the plate. This was done by controlling the voltage impressed upon it and thence the name control grid—which was a screen like affair like a ladder. This meant the one could control current flow in the ‘tube’ by changing the voltage applied to the grid of the tube. This is all very elementary, but this column is written for someone new to electronics or you the casual reader. There is veery much more if you care to do the investigation. This leads us to the subject of amplifiers.

Very simply amplifiers consist of two circuits, signal in, with the proper components targeted for the

frequency to be amplified and signal out with frequency and impedance matching for the output or next stage. Remember that impedance is AC resistance at a particular frequency, and frequency means cycles [changes in polarity] per second.

Taking audio amplifiers in particular, the input is usually connected to the amplifier elements through a capacitor of some value to isolate the audio signal from the direct current used for the tube or solid-state device. The input is usually of a high impedance so as not to load down the input device or the detector stage if used in a radio. How it very basically works is that the AC audio voltage impressed on the tube’s control grid varies the plate current in response

to the input voltage on the control grid and the voltage drop between the plate and its positive supply produces an output voltage many times greater than the input voltage on the tube. The voltage drop in the early years was placed across a transformer which changed to high impedance to a lower one that could be used by a speaker. There were some very early radios that had a high impedance horn that was connected directly between the B+ [high voltage plus] and the plate of the tube. This practice was infrequent as a user could be hurt by the high voltage while connecting the speaker horn. For safety's sake and esthetics, speakers were self-contained within the radio cabinet. There have been very many changes over the

years, from tube amplifiers to solid state, from individual component amplifiers to amplifiers on a chip on printed circuit boards to amplifiers on chips with many other functions as in your cell phone. There are several classes of amplifiers such as class A, AB, and C to name a few and now class D and T digital amplifiers. Class D and T are similar, but the main differences are the method of sampling the input signal which is then processed in a digital manner. Class T is the more expensive and better of the two. The digital amps are extremely small and powerful for their size. But as of late TUBE amplifiers have become the thing in audio as the tube circuits depart a warmer, more inviting sound that their solid-state

counterparts. I have several small tube type preamplifiers which I put in the audio chain to warm up the sound from TV, computer, and recordings [mostly 78's and 45's! Amplifiers are all the same in the respect that they take a small signal, be it audio or radio frequency and 'make a big one out of a little one'. There are a myriad of engineering calculations and design parameters that go into amplifier design, so if you are interested do further research even if you never design or build one from scratch.

Fred Wawra, W2ABE, 73.

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!

Honor Roll of club meeting attendees for November

N2ELC George,
N2OQX Bruce, K2RFH Bob,
KD2ZSW Mike, W2ABE Fred,
KC2LTM Judith, K2GG Sid,
KD2CRI Nino, Alice no call,
KC2CSV Mike, KB2ZVI Hugo,
KB2UNZ Ed, N2XP BRUCE.

The meeting was sparsely attended due to bad weather.

Member profile:

Tony Spina WA2LNC.

WHAT DO YOU DO/WHAT DID YOU DO FOR A LIVING?
I am now retired. My last job was that of a college professor.

HOW DID YOU GET INTERESTED IN HAM RADIO AND WHAT PARTS OF THE HOBBY INTEREST YOU?

I became a ham in 1960 after listening on my Knight-Kit super regen receiver to these people talking to each other around the world. I later found out that they were hams and got my license.

What I enjoyed the most was talking to others and exchanging various conversations. I wasn't much for CW in those days.

Over the years as my life changed (school, marriage, family, etc.) I drifted in and out of ham radio. I got back in the early 70's with 2-meter FM and all the repeaters at that time. Several years later I ventured back into HF on SSB and mostly interested in rag chewing. That continued until I moved into my condo in Mt. Arlington. I had to

give up HF (no antennas or room for gear). Plus, activity on the 2 meter and 440 repeaters were almost nonexistent.

I was then introduced to DMR, digital modes (voice) that would still allow me to talk to other hams around the world. So, using an HT (designed for digital as well as FM on UHF frequencies), I was able to access DMR repeaters (mostly 440 UHF) in the area that were connected to the internet. There were several DMR repeaters in the early 2000's in this area. So not only could I talk to local hams via the repeater like in the FM days, but the repeater had access to the internet which was linked to other similar repeaters and allowed me the same satisfaction as in the old days talking to hams around the world.

Most of those DMR repeaters are gone today, but using something called a “Hotspot”, which takes the place of a repeater and allows me to continue to talk using my HT. However, I figured out a way to string up a wire antenna from the balcony of my condo to a nearby tree. Now using a QRP radio (with a small 50-watt amp), I am once again on HF looking to continue to rag chew like in the old days. Albeit a bit difficult with a compromised antenna and low power.

GMRS stands for General Mobile Radio Service. You have to get a FCC license which I think costs \$35 and lasts 10 years. There are tons of radios that can be used on this service. I utilize for the people on my CERT team for my town’s encomm use. If you give me a call, I can explain more about this.

WHAT DOES BELONGING TO SPLITROCK MEAN TO YOU?

I enjoy Belonging to a ham community and sharing experiences with other local hams.

WHAT SHOULD THE CLUB’S PRIORITIES BE FOR NEXT YEAR?

Membership expansion, investigating a GMRS repeater and/or DMR repeater [more projects and activities. ED]

WHAT ELSE CAN YOU TELL US ABOUT YOURSELF?

I was involved with Roxbury RACES and CERT for 25+ years, and now with Mount Arlington. I was also in RACES and CERT.

WHAT OTHER HAM RELATED CLUBS OR ORGANIZATIONS DO YOU BELONG TO?

I am active in Mount
Arlington OEM and
EMCOMM services.
Where I am responsible
for radio communications.

WHAT ARE YOUR OTHER
HOBBIES OR INTERESTS?
I am president of my 55+
community HOA Board.
I enjoy trap shooting and
target shooting.

**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.**

The Holiday Party is Tuesday
December 13, the normal meeting
night, at the Roxbury Fire and
First Aid Company #2

110 Shippenport Rd, Landing,
NJ 07850

From 7PM to 9PM

Anyone who needs to renew their
membership can do so the night of
the party.

Please RSVP by December 6th to
Secretary@splitrockara.org, or
treasurer@splitrockara.org,

If you did not sign up for party at
the November Meeting.

The Cost of the Holiday Party Was
Donated, So In lieu of cost per
person to attend the Holiday Party,
please consider making a
donation to the club.

73 Bruce N2XP