

# THE SPLITROCK TIMES

The newsletter of the Splitrock Amateur Radio association.  
SEPTEMBER 2023 edition.

Welcome to the fourteenth 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.

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**Important note: VE testing is on the second Monday of every month. Check with [Find an Amateur Radio License Exam in Your Area (arrl.org)] for any possible changes. Testing is at the Mount Arlington Civic Center- Registration is at 7pm. Walk-ins are allowed.**

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.

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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]. The Club's mailing address is: S.A.R.A. PO Box 528 Lake Hopatcong, NJ 07849. Contact info: [www.splitrockara.org](http://www.splitrockara.org) or [membership@splitrockara.org](mailto:membership@splitrockara.org)

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

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

**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.**

**No Member profile was submitted by any member this month.**

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## **THE PRESIDENT'S MESSAGE**

To Splitrock Members,  
September 9,  
2023

This month we'll be having an ARRL video about the 100 years of Amateur radio..

Our Hamfest has been sanctioned by the ARRL so check the ARRL Hamfest and conventions web page. We will need help to run the Hamfest so please sign up to help.

If anyone has any ideas for topics, videos and guest speakers, send me an email at [President@splitrockara.org](mailto:President@splitrockara.org).

73, Bruce N2XP  
SARA President

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## **ECLECTIC TECHNOLOGY**

**By: Fred Wawra, W2ABE.**

This time the subject is power supplies.

There are two basic types of power supplies used in ham radio. One is the analog using a large transformer at line frequency, and the other is the switching supply which has its own special circuitry. The analog supply uses a large transformer which makes it quite heavy when you talk about larger current requirements.

Typically, a 100-watt transceiver needs about 25 amps to put out 100 watts

RF. The supply follows the large transformer with a full or half wave rectifier and then a large capacitor which smooths out the DC ripple. When half or full wave rectifiers rectify AC, they do not entirely smooth out the DC coming out but have a little bit of up and down voltage at 60 or 120 cycles that we call ripple which can be heard as hum in an earphone, and this does not work well with today's digital circuits. After the large capacitor there is sometimes a choke which is designed to use its inductance at the 60Hz AC frequency to eliminate or 'choke off any remaining ripple. This is generally followed by another capacitor to further eliminate any remaining DC ripple so that the resulting output is as close to pure DC current and voltage as

possible. Better supplies have regulation. This usually uses a Zener diode that sets a voltage level which is fed to power transistor[s] which control the larger current output as the Zener cannot handle it. This is an over simplification of the circuitry involved. Some smaller supplies may use a voltage regulator which looks like a small power transistor, but the result is the same. There may also be an overprotection circuit called a crowbar which will kill the output of the supply if something goes wrong and the voltage rises to above a preset level. There may also be protection circuits involved that will kill the output or limit the current in case of shorts. All these measures are used to protect the user equipment. The advantage of the analog or transformer type of

supply is that it is very rugged and usually never requires service over its lifetime. The disadvantage is that it is heavy and is less efficient than the switching type of supply.

The switching type of power supply takes the AC line input rectifies, uses an oscillator to generate a high frequency at a high voltage. This is then fed to a much smaller and lighter transformer. This design keeps the current low so a much smaller transformer, sometimes made of ferrite, can be used. The high voltage signal from the transformer is then rectified and conditioned to provide the necessary output. This is done with switching transistors or FETs. The resulting high frequency output is rectified and conditioned to provide a DC output. This is the basic

design of a switching type of supply. This type of supply is VERY complicated and expensive to fix. There is a lot more to the circuitry than I described as there are special voltage regulating and protection circuits needed to protect the supply and the output. The advantage of this type of supply is that it is very small, and light compared to the analog supply and much more efficient as less energy is wasted as heat. The disadvantage is that it is more prone to failure from voltage spikes and usually cannot be fixed economically unless you can do it yourself. The failure rate in the manufacture of switching supplies can be as high as 10% and those rejects are generally used for parts. Fred Wawra, W2ABE, 73. © 2023.

Do not forget the swap n'shop/tech net on the repeater at 8pm on Sunday nights!

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## HAPPENINGS IN A NUTSHELL September 2023.

A lot has happened in August! From very hot to 20 degrees above freezing at night. Aside from that I had a switching supply go erratic and then a few weeks later my linear went crazy and is out for repair, so I am off my nets at night as net control is down south and 100 watts does not cut it through the summer storms.

Update on the linear amplifier: As it turns out a capacitor blew up on the linear's PLF board causing no output. Since it is a very sophisticated solid-state unit, I sent it out for repairs as I do not have the equipment, parts source or experience to repair such a unit. Hope to get it back soon so I can get on my favorite net!

Speaking of summer storms, it is possible that voltage line transients may have gotten into the equipment although nothing else on the property has had any problems and all the equipment was connected to

surge suppression devices. You never know when things can go awry!

Not radio related but important was all the outside work that needs to be done before the weather gets cold. It is a good reminder to finish up all your outside work including antennas, grounding and running wires etc. Because of my equipment problems not much has been happening at the shack. Looking forward to getting back on the air full strength but I was able to make a few contacts down in Florida and Mississippi! Tried Texas and a few others but the strong storms down there were much stronger than I was. Anyway, get on the air and TALK to someone! Have fun being on the air and be safe.

Fred Wawra, W2ABE, 73. © 2023

**GET ON THE AIR AND TAKE  
TIME TO TALK TO A FELLOW  
HAM!**

**SEE YOU AT THE NEXT  
MEETING. 73'**

**REMINDER: NOW is the  
time to check out all of you  
antennas and coax cables  
before the weather cools  
off.**