# THE SPLITROCK TIMES

## The newsletter of the Splitrock Amateur Radio Association.

## October 2022 edition.

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

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

'The Splitrock Times'.

OFFICERS

President Ed W2EJR

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 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.

# Getting to Know the Club's Member at Large: Fred Wawra, W2ABE

I was licensed in 2008 as a tech and since then have upgraded up to the Extra Class License. I have lived here in Lake Hopatcong for over 35 years and have been on the Splitrock and OEM repeater during my working years while driving from job to job. I retired in 2017 and it was quite a change from working about 80 hours a week and being on call 24/7 for ten years. I worked in hospitals on patient life safety equipment and communications. My job was never over till the problems were resolved as lives were at stake. After my retirement I was able to get on the air on a more regular basis and decided to replace all of my old equipment from the microphone up to the antenna. I had all older equipment and wanted the most that was up to date so I did not have to make adjustments every time I wanted to get on the air. I am mostly a rag chewer with several nets I get onto. I get on 3855 most every night on the 'Awful Awful Ugly Net' which is what it became to be known as after the call letters of originator. I enjoy talking to people more than just making contacts. I am a life member of Splitrock and since the last couple of years, after spending a lot of time fixing up the old homestead am now able to devote time to the radio club. I enjoy writing hence 'Theoretics Demystified' where I try to boil down complicated technical subjects into something that that the average person can understand with the aim of getting them into the hobby and making it more enjoyable.

As Member at Large, I have several responsibilities, they are:

Represent the members at the meetings of the Board of Directors.

Oversee the management of Club events.

Maintain a complete and full inventory of all Club assets.

Perform other duties that may be designated and or assigned by the Club President.

This position was created to help alleviate some of the duties of the Club Vice President who is running 24/7. That is why I added 'assistant to the President' to my title in the header. It is not an official position, but it is what I am tasked to do.

Fred Wawra, W2ABE.

## Member Profile for this month:

CHRIS W3CJD. 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.

## THEORETICS DEMYSTIFIED

Theoretics is a name that I coined to describe a column that takes a complicated subject and boils it down into language that the average person with no radio or electronics experience can understand without all the complications that often discourage a new person from delving further into the fascinating world of electronics and ham radio.

The subject this time is:

## PHOTOTUBES:

This time for something again different, how about phototubes. To begin with You need to know that light is unique, it has the properties of a wave and those of a particle, thus making them different than radiation of other wavelengths. Sometimes they are called wavicles, clever, huh? Our eyes receive photons and convert them to electrical signals that our brain interprets as a picture that we see. Anyway, either way it is electromagnetic radiation that we are dealing with. We take our sight for granted, but what a wonderful gift it is! Getting back to phototubes, there are two basic types, vacuum types and those with low pressure gas inside usually argon or neon, both rare noble (think inert or non-explosive). This is where the electronics comes in.

The phototube was invented in 1893 and consists of a photosensitive cathode and an anode. A small positive voltage is applied to the anode and the negative to the cathode with usually a resistor in series with the tube. In operation there is a current that changes in response to the amount of light falling on the photocathode which needs to be in sufficient quantity to cause enough

electrons to be swept away from the cathode to the anode to make a measurable difference in the current flowing in the series resistor so that a useable voltage drop can be seen across that resistor and thereby become a useable factor in amplification or control. Phototube dynamics dictate that the cathode material determines to spectrum sensitivity—infrared, visible or ultraviolet. The type of glass used in making of the tube envelope and the incidence angle of the light hitting the tube are all factors along with the electrical parameters involved. Higher voltages can be used in gas filled tube but if too high the tube can begin to glow on their own. The higher the voltage the greater the sensitivity and therefore a larger value series resistor can be used with a resulting higher voltage drop across the resistor and a more useable parameter for measurement and or control. Then there are photomultiplier tubes which operate similarly but have multiple cathodes, how they work s this, as a photon hits the first cathode it knocks off two electrons which hit another electrode called dynodes, each time the resultant knocked off electrons hit another dynode more electrons are knocked off thereby multiplying the effect of the single photon hitting the photosensitive cathode. Up to fourteen dynodes can be used with a gain of almost ten million, seems like an astronomical amount but when you consider what the effect of one photon is, not so much. There are focusing electrodes used to keep the electrons from going astray. A photomultiplier tube is indeed a complex thing but even, so the efficiency is only about thirty percent. Besides there is the 'dark current' to deal with, which is like a bias on the output signal. Well, back to basics, the lowly phototube, it was used in 'electric eye' door openers, to 'read the soundtrack on projected movies and in very early mechanical televisions. Nowadays we have solid state devices that perform the same feats of magic. Ever wonder how that large dial on you rig tells the radio that you are going up or down the band? A photo device with a transparent wheel with clear and dark lines like spokes on a bike wheel! That is why you can turn that tuning wheel with the radio off and it makes no difference! When you think of the phototubes and what they do, then our gift of wisdom becomes all the more fantastic.

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.

THANK YOU!! Ed W2EJR for your years of service as President of the Splitrock Amateur Radio Association!!

---

THIS MONTH" S

MEMBER PROFILE:

Christopher Dix W3CJD

1. **What do you do for a living?**
   I work in the cybersecurity field, performing vulnerability management for the IBM CIO. Prior to starting this role last November, I was a full-time student. I am a graduate of NJIT's Cybersecurity Professional Bootcamp in 2021, the County College of Morris (with an A.A.S. in Information Technology) in 2020, and Morris Knolls HS & Morris County School of Technology also in 2020. While not in school over the past several summers (before starting at IBM), I entered the IT field as a support engineer for Planet Networks, a local MSP and ISP based in Newton.

2. **How did you get interested in ham radio?**
   I enjoyed playing with FRS/"toy" radios as a young kid, but never knew that any more advanced, non-commercial radio service existed. During my time in high school, I discovered repeaters completely by accident (ask me about that story at a future club meeting - it's too long to write out here!), and a couple of ham colleagues that following summer helped me study for the technician exam and sparked my interest in amateur radio.

3. **What parts of the hobby most interest you?**
   With so many facets of amateur radio to explore, I have been enjoying a little bit of everything - but, if I had to highlight a few particular areas of interest: digital modes, CW (although I'm still very much a beginner!), the technical side of repeaters, long-distance VHF contacts, and emergency/auxiliary communications. Not quite "amateur" radio, but I also enjoy doing a lot of shortwave (broadcast) listening, tuning around and finding what I can hear.

4. **What does belonging to Splitrock mean to you?**
   Between the winter and summer Field Days, hamfests, nets, repeater maintenance, and VE sessions, it is great to see a local group that is very active and involved with the community.

5. **What should the club's priorities be for the next year?**
   I would love to see more club programs or group workshops/kit builds, depending on interest, and it would also be great to have more participation in the weekly Swap'n'Shop & Tech Net. Other than that, I would second Michael KD2ZSW's suggestions from the August 2022 newsletter. I think he hit the nail on the head in suggesting (1) recruiting and training for new members (such as a "hamcram" class) and (2) public events/showcases of amateur radio to demonstrate our hobby (and its value) to the broader community.

6. **What else can you tell us about yourself?**
   Since obtaining my amateur radio license, I have been very involved in NTS and emergency communications. I am an active participant and net controller on several traffic nets, including the New Jersey VHF Net (nightly at 7:30 PM, WS2Q/R 146.895MHz), New Jersey Phone Net (nightly at 6:00 PM, 3.950MHz LSB), and United Counties Traffic Net (nightly at 10:00 PM, W2LI & W2NJR linked systems), among others. I was also recently appointed as the Morris County ARES Emergency Coordinator and have been working with RACES and NTS to determine our current capabilities and opportunities for further program development. (I owe thanks to many within SARA for their invaluable efforts, collaboration, and support of this goal: "Doc" K2PHD, Mike W2MAK, Bob K2RFH, and Bruce N2XP, to name just a few!)

7. **What other ham-related clubs or organizations do you belong to?**
   In terms of local groups beyond Splitrock, I am a member of the Morris Radio Club, Tri-County Radio Association, New Providence Amateur Radio Club, and RACES in Denville Township. I am also a member of Radio Relay International and the ARRL Field Organization (as a Volunteer Examiner, Official Relay Station, and ARES Emergency Coordinator).

8. **What are your other hobbies or interests?**
   Although I am not very involved in this anymore, I used to be the club president and student technical director for the theatre at Morris Knolls HS. This opportunity allowed me to advance the school's (previously-very-inactive) program from the ground up, while also helping to kick-start initiatives by the Morris County School of Technology. With the help of several great mentors, my skill in lighting design/implementation and audio engineering grew to a professional level, catching the attention of Broadway designers (and also having the side-effect of turning me into an audiophile!). Pending the right opportunity, I would be interested in getting more involved in this area again in the future.

---

Lou Asbaty K2AN's writeup on his GO BOX follows on the next 2 pages.

At the last club meeting Lou, K2AN had a presentation on a ‘GO BOX’ that he built for portable use and following is how he did it!!

# 2 M /70 cm Go Box

## Criteria for the build:

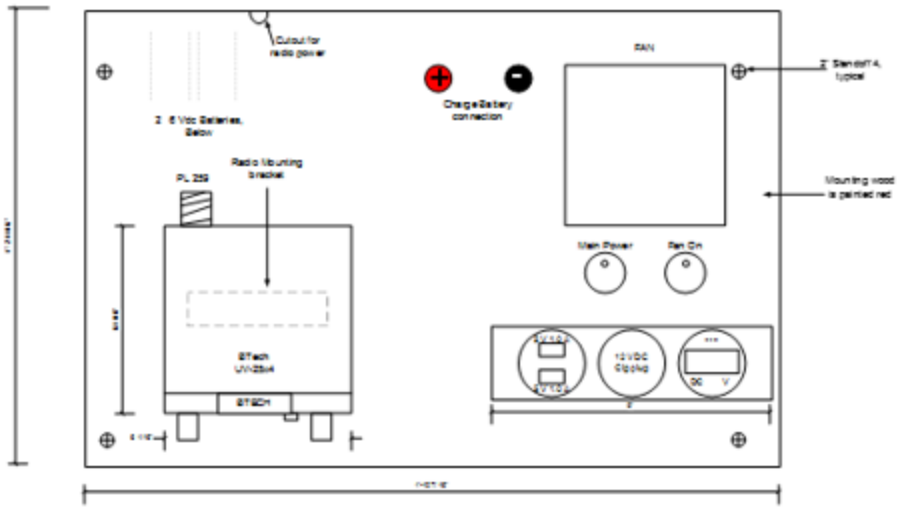
1. Use parts available
2. No drilling in the Box to keep it waterproof
3. Have a separate switch for power on and fan control
4. Use a small radio that will fit in the box
5. Find batteries that will allow for at least 2 hours of operation

## Parts for the build

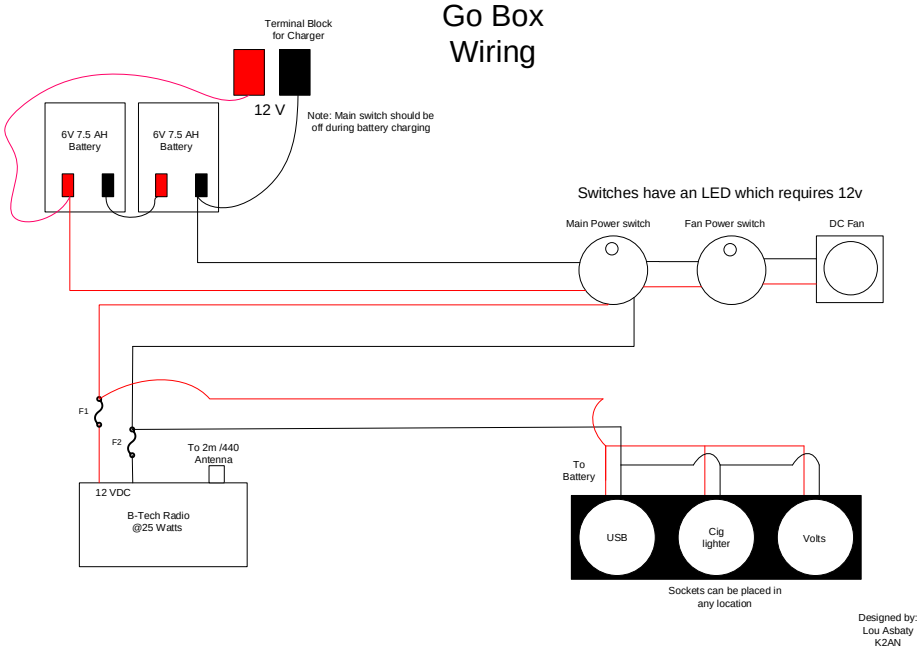
1 Tool Box- Size Box for your radio, batteries and other accessories
1 Baofeng 25X4 Radio
2 6 V 7.5 ah Batteries in Series for 12 V radio
Fuse to protect radio- Most likely provided with radio
1 Volt/USB/Cig lighter accessory
2 red Anderson power poles
2 black Anderson power poles
2 single pole switches - Main power and Fan On/Off
Fan from an old computer- Optional
1 Can Red Spray paint for wood

The fan was added because it was available.

# Go Box
# Mechanical




# Go Box
# Wiring




Designed by:
Lou Asbaty
K2AN