SKYVIEW
Skyview Radio Society, K3MJW
K3MJW
2335 Turkey Ridge Road
New Kensington, PA 15068

Q5er – The Official Newsletter of the Skyview Radio Society

October 1, 2024

2024 Swap & Shop

(Lots More Photos are on Facebook)

2024 is Skyview's 64th Anniversary !!

- Bumblebees
- POTA
- More POTA
- Local QSL Card Supplier
- Microphone Windscreens
- WQ3Q SK
- N3OEX SK
- Swap & Shop Winners
- VE Testing
- And More . . . .

Sunspot Numbers Peaking

Time to exercise the 10-12-15-17-20 Meter bands While They are Hot

Inside this issue:

The Skyview Radio Society Clubhouse is the "Every Tuesday Place" . . .

Something is going on at 'the joint' each and every Tuesday evening, from about 1900 hours to whenever.

See the general schedule of Tuesday events on the Skyview Web Page: http://www.skyviewradio.net

For the latest up-to-date plan, check the Groups.io Reflector at : https://groups.io/g/K3MJW

Directions are on: http://www.skyviewradio.net Guests are always welcome !!

From the Editor

Quite a variety of articles again this month. Skyview has a lot of regular contributing authors.

But there is always room for more .

If you have been doing something, or maybe tried something outside of your comfort zone, or maybe have some new equipment or a new antenna that you can talk about, do not be afraid to send me an article. Just write it as though you were talking to me. If any editing is required, I can help with that.

Use any Word Processor or Text Editor. Email me a copy of your file. If you have photos, email them to me as separate attachments. If you note in your text where a particular photo should appear, I'll do my best to put it there.

Jody - K3JZD

Remember: The number of people older than you never increases, it only decreases

Ham Radio is a Contact Sport

From the Treasurer

The 2024 Skyview Swap & Shop was a another success story. The weather was ideal and we welcomed a lot of new and previous attendees.

We have been purchasing Government Treasury Bills (T-Bills) to take advantage of the interest rate that has been over 5% for a while now. That rate will probably come down now that the Prime Interest Rate is starting to come down.

Financially we remain well positioned for the rest of 2024. We are fortunate in that we have a high membership count and we have a very high renewal rate .

Thanks for being a Skyview Member.

Jody - K3JZD

ADVENTURE: The respectful pursuit of trouble

Skyview Radio Society is recognized by the Internal Revenue Service as a charitable non-profit organization under Section 501(c)(3) of the IRS Code. Donations to Skyview are tax deductible to the extent permitted by law.

Continue Use the Skyview Facilities At Your Own Risk - It is Not Really Totally History Yet.

Follow https://groups.io/g/K3MJW for COVID updates.

Those who don't believe in magic will never find it – Roald Dahl

September 2024 Business Meeting Minutes

de Don - WA3HGW

Skyview Radio Society

Monthly Business Meeting – Sept 3 ,2024

Call to Order: 7:29 PM by President Brian Manley, K3ES. After the Pledge of Allegiance, Brian called for a moment of silence for the passing of Rich Ryba, WQ3Q. Rich was a great asset to the club and he will be missed by all at Skyview.

Attending – 31 Members: KB3OMB, AB3GY, N3WMC, K3ES, K3FAZ, W3BUW, W3UI, NJ3R, KB3DVD, AG3I, AC3IE, N3AFS, WA3KFS, W1MP, K3JAS, KC3CBQ, KA3CBA, KC3VCX, W3UY, WA3HGW, AG3U, KC3VNB, K3JZD, WC3O, KE3IF, AC3B, AJ3O, AC3KI, KQ3S, KC3STK and N2GBR.

Prior Meeting Minutes: The minutes of the August 6, 2024 meeting were distributed for member review. A motion to accept the minutes as presented was made by W3BUW and seconded by AC3KI. The motion passed without objection.

Treasurer's Report: Treasurer Jody, K3JZD, reviewed the Financial Report of 31 August, 2024. Expenses for August were all the normally expected ones, plus property and school taxes and property insurance. Insurance and electric costs were increased slightly. We are still on track to finish 2024 with a slight excess. Other expenses were for carpeting and other minor expenses for the restrooms. Income included interest on some T-Bills, a donation from the Rachel Carson Challenge 13 Colonies QSL donations, the previous month 50/50 drawing and VE testing. There is no information on Swap & Shop expense and income as all receipts are not in. The Swap & Shop final report should be completed by next meeting. A motion to accept the Treasurer's Report as presented was made by AG3I and seconded by AC3KI. The motion passed without objection.

Membership Report: Tom, AB3GY, advised there are six new membership applications from the Swap & Shop. AB3GY made a motion to open the membership rolls. The motion was seconded by W3BUW. Applications from:

Pete Finnegan, W3WC, an Amateur Extra from Wexford, PA.

Tim Haniwalt, N3DL, an Amateur Extra from Butler, PA.

Eric Kana, KC3YEZ, a General from Harrison City, PA.

Rudy Kolencik, WB3JHC, a General from Greensburg, PA.

Kevin Lear, W3XOX, an Amateur Extra from Altoona, PA.

Dave McGuire, AK4HZ, an Amateur Extra from New Kensington, PA.

There was a brief discussion about a few of these applicants an some are already known to the club, and all remarks were positive. AB3GY made a motion to accept these applications, which was seconded by AJ3O. The motion passed without objection. AB3GY made a motion to close the membership rolls, which was seconded by AJ3O. The motion passed without objection. Membership now stands at 163.

Radio Officer Report: Bob, WC3O, reported all radios are operating well. The crank-up tower is lowered and the hornet nest at the top has been dispersed. It is now ready for the lift cables to be replaced. That is the next item on the radio maintenance schedule. Bob proposed we sell the Icom ID-880H dual band FM/D-Star radio in the radio room as it is seldom used. Proceeds will be used towards the purchase of a Yaesu FDM-500DR VHF/UHF FM and C4FM digital transceiver. W3BUW made a motion we proceed with the sale of the Icom radio and subsequent purchase of the Yaesu radio. AC3KI seconded the motion. The motion passed without exception.

Kitchen Report: Bob, WC3O, said there is $26 in the kitchen fund. Most of the kitchen funds were used to purchase supplies for breakfast and lunch sales at the Swap & Shop. When the Swap & Shop accounts are completed, kitchen supplies will be replenished.

VE Report: There were two candidates for Technician, and both passed. Our new hams are: Jennifer, KC3ZQH from Cabot, PA and Tyler Cubarney, KC3ZPX from Wexford, PA. The next VE session is on September 21.

Newsletter: The August issue of the *Q5er* is out with 45 pages of great information. Jody is looking for more submissions by September 15 for the October issue.

Facilities: No report.

Building Committee: AG3I reports that the restrooms are essentially complete. The only remaining tasks are some small fixtures and ADA compliant signs for the doors. New commercial grade carpet was installed in the hall from the entrance up to the main meeting room. There is enough extra carpet to use for the radio room. Marty did note that some concrete repair work was needed before installing the carpet. The same work will likely be needed to prepare for the radio room carpet. There is also a plan to add some additional electric circuits in the new utility room (old bathroom) for power to the linear amplifiers in the radio room.

Operating Events Recap: Nothing to report this month.

Calendar of Events:
September 21 - Fall trip to DX Engineering and the K3LR "superstation".
October 26 – Founders Day special event operation.
September 8 – Beaver County ARA W3UDX Swapfest at Unionville Fire Department.
September28 & 229 – CQ Worldwide RTTY contest.
October 5 – WPA Simulated Emergency Test.
October 12 & 13 – PA QSO Party and Skyview Apple Pie bake-off.
October 26 – Skyview Founders Day special event.
October 27 – Massillon ARC Hamfest at MAPS in Green, Ohio.

Old Business: No old business this month.

New Business: Vice President Jerry, W3UY, will run the October meeting as K3ES will be away. It was suggested that club members going to the visitation for Rich, WQ3Q, attend at 6 PM Thursday Sept. 5 and wear their PanCan purple tee shirts, if they have them, in support of Rich's efforts on behalf of pancreatic cancer research. K3ES suggested the club continue with Hams for PanCan special event next April as an ongoing tribute to Rich. W3BUW, KC3VNB and K3JAS will coordinate club volunteers for this project. The Thursday night Skyview net at 9PM will have a special remembrance for Rich.

Swap & Shop Report: John, WA3KFS, reports the Swap & Shop went very well and thanked all Skyview members for their support. The event was a success. While we don't have financial details, he feels we did very well this year. He noted all went smoothly from set-up on Saturday through the event and tear-down on Sunday. He had no complaints about anything. John also noted that the ticket pre-sale mailings were very good, with a 51% return rate. That is very good for any direct mail campaign.

Weather Night:
September 10 – Understanding weather forecast ressources.
September 21 – Southwestern PA Skywarn® Simplex Test.
October 19 – Pittsburgh and State College warning area communications exercise. Operations on HF and FM.
November 12 – Winter weather presentation.
December 7 – Skywarn® Recognition Day.
Steve, K3FAZ, is still looking for additional Skywarn® net control operators. Contact Steve for information.

Elmer Night: September 17 - Coax cable testing. September 24 – James Cribbs on World Radio League logging program.

Net Report: Check-in numbers averaged 37.8 in July. KC3TTK had the best night with 41 check-ins.

"Good of the Order" Additional comments: K3JZD reminded the members that Amy, KA3CBA, is our club supplier of Skyview clothing, name badges and other club logo products. It was also noted that Rich, WQ3Q, did most of the artwork for club QSL cards, such as 13 Colonies and Founders Day. We need to search for someone else who can keep this work ongoing.

50/50 Drawing: The 50/50 total collected was $54. The winner of $27 was Jan, AC3KI.

Meeting Adjourned: A motion to adjourn was made by N3WMC and seconded by W3BUW. The motion passed without objection. The meeting was adjourned at 8:15 PM.

Respectfully Submitted,

Don Stewart – WA3HGW
Secretary; Skyview Radio Society, Inc.

QSL ?

de Cooky - WC3O

QSL?

Recently, the ARRL log program Logbook of The World was down due to a hacking incident. I've found LoTW to be great to track awards such as DXCC, WAS and more. EQSL has similar advantages. The logging program on QRZ is also nice. Computers are involved with just about all aspects of amateur radio.

Enter the lowly QSL card:

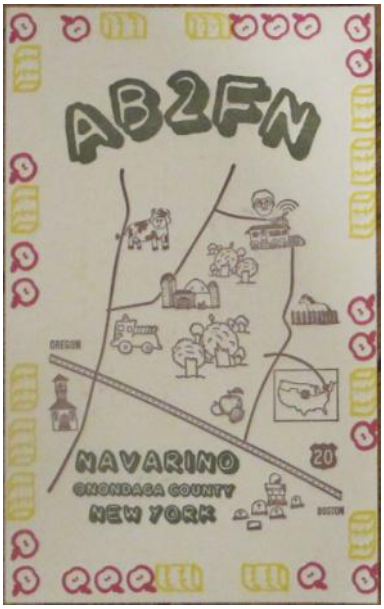
The following is a selection of QSL cards that were recently received from the 2024 K2M 13 Colonies operations.

I've heard a lot of newer hams call them QSO cards. They are QSL cards. I'm good with either, just sayin. The official name is QSL. QSL means to confirm a QSO (a contact).

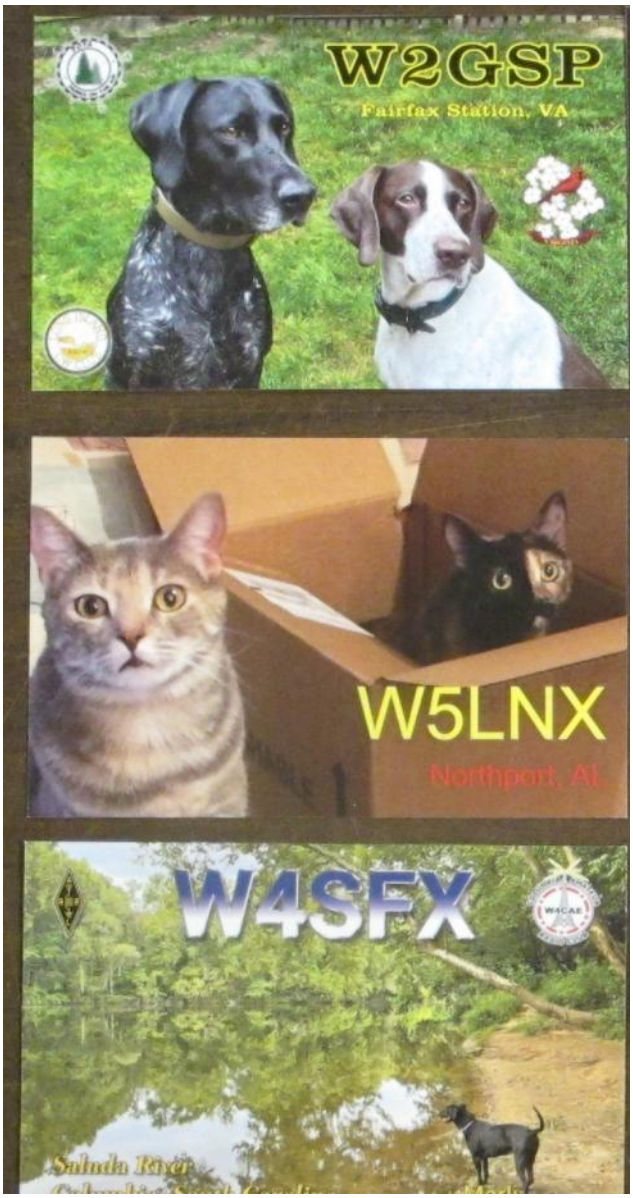
I love QSL cards. I upload my logs to LoTW, but I love QSL cards. I always get a grin when I come home from a long day of working on friggin cars and there is an envelope that arrived from some distant (or local for that matter) station. I can't wait to see what's inside.

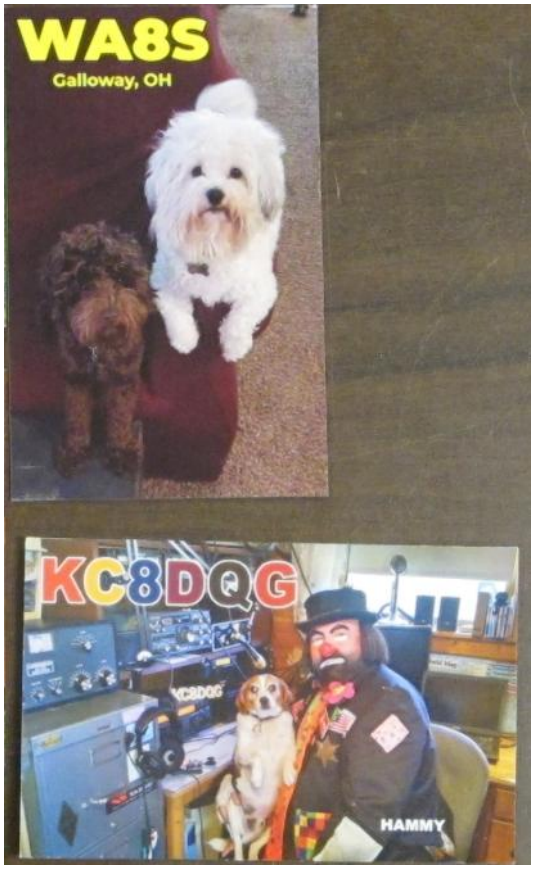
Many QSL cards are just standard stock. Just the facts mam. Name, call, address. Maybe an outline of the state the operator is on. Those are nice. However, I love the ones that tell a story.

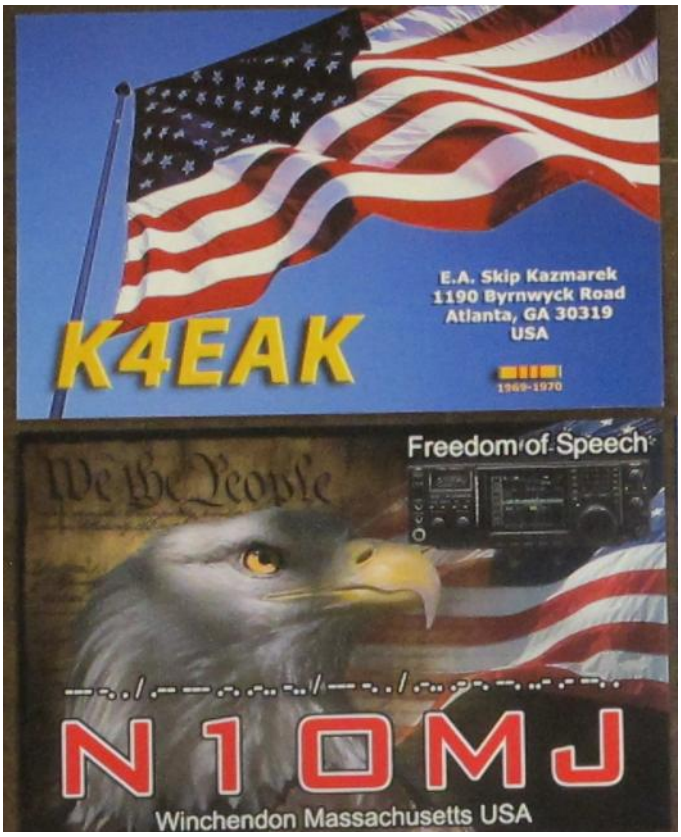
I especially like the ones with home made artwork.



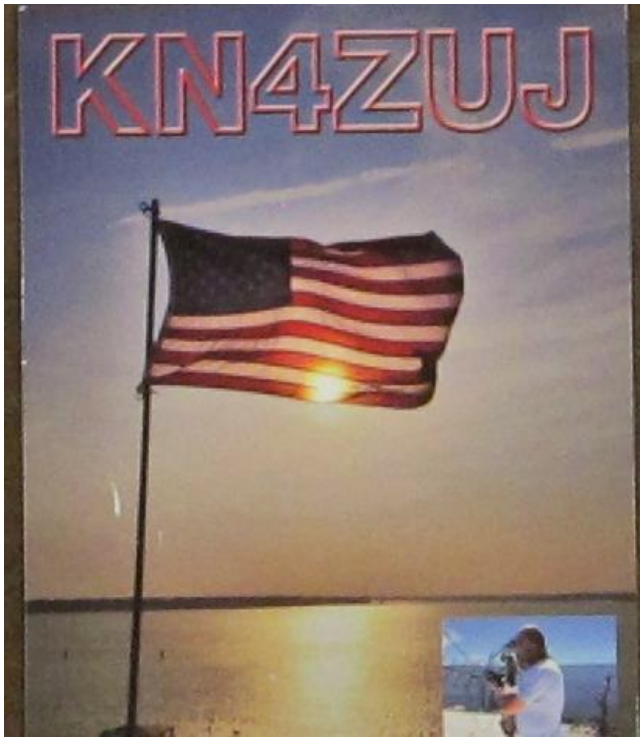
MANY cards have the operator's pets picture. Dogs, Cats, who knows.

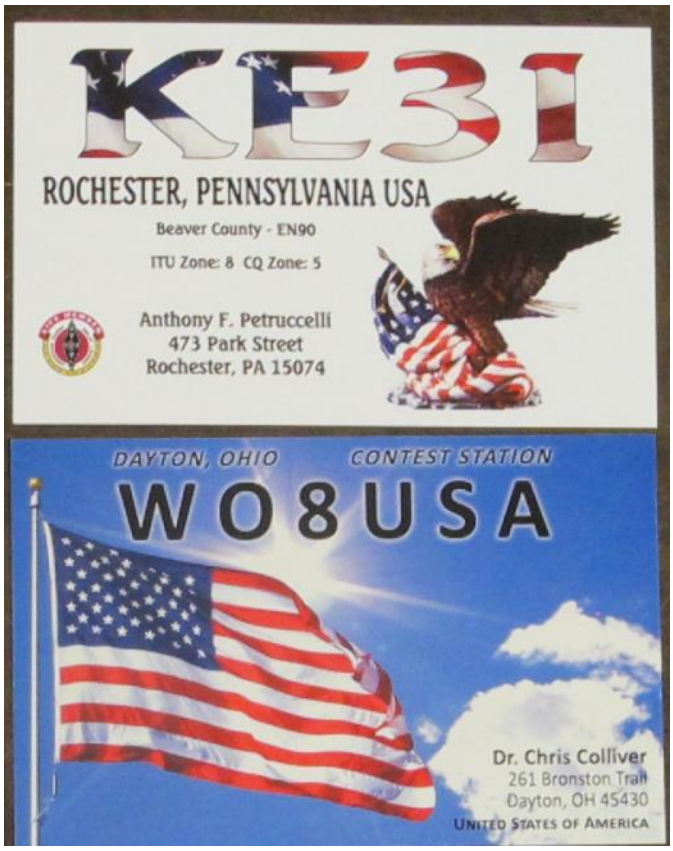




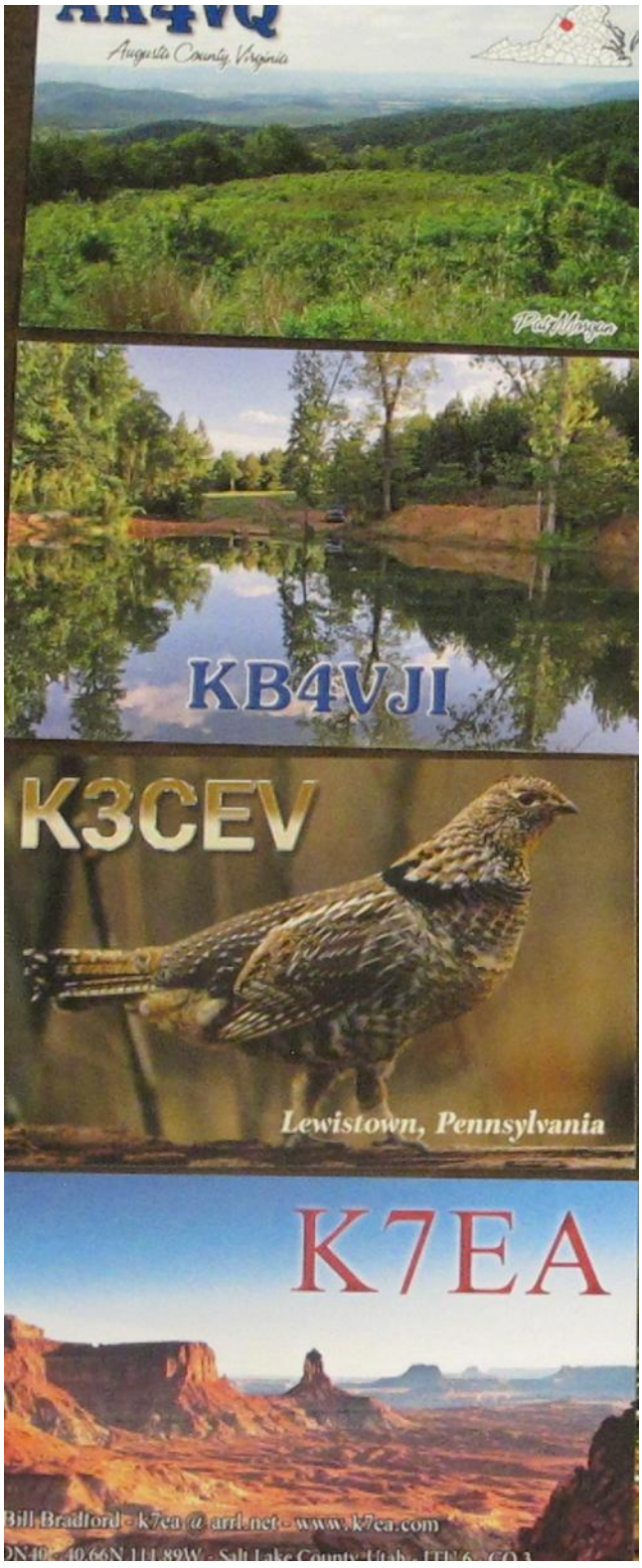


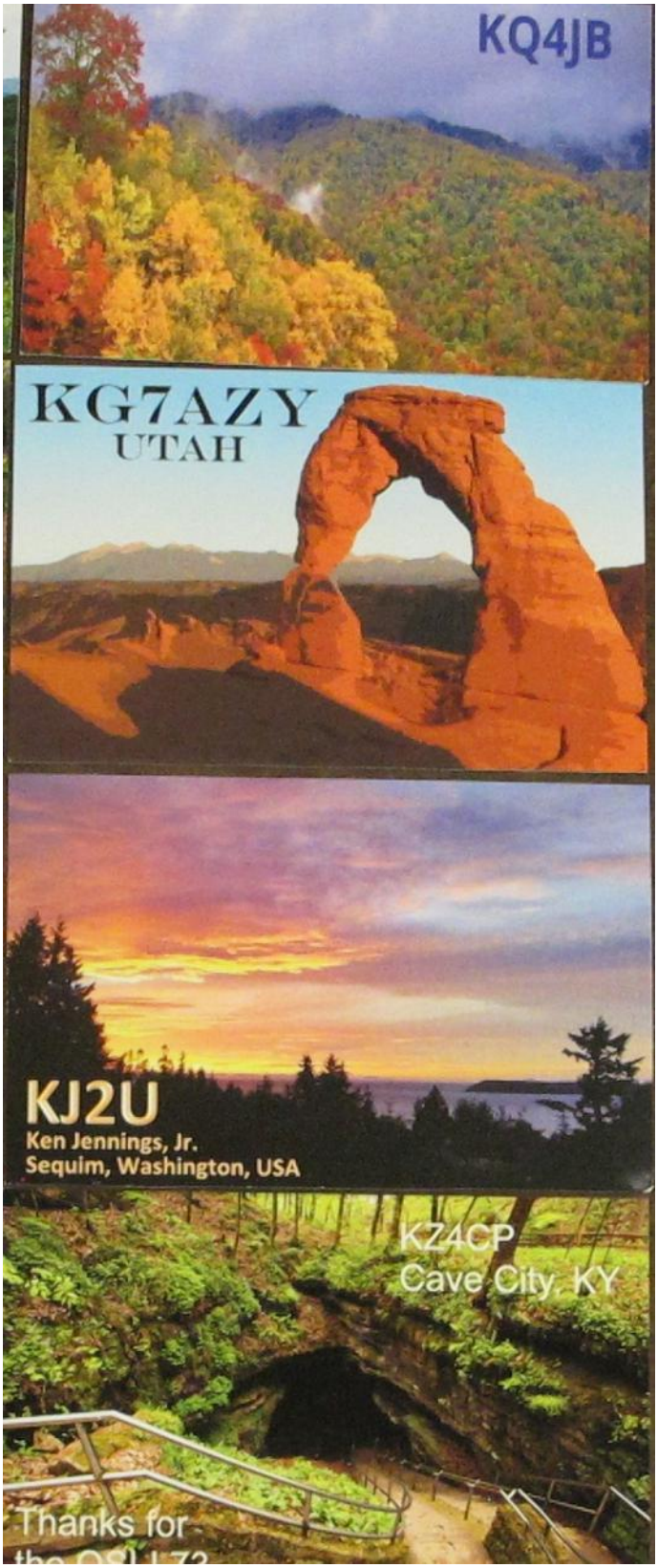
Many cards have a patriotic theme.



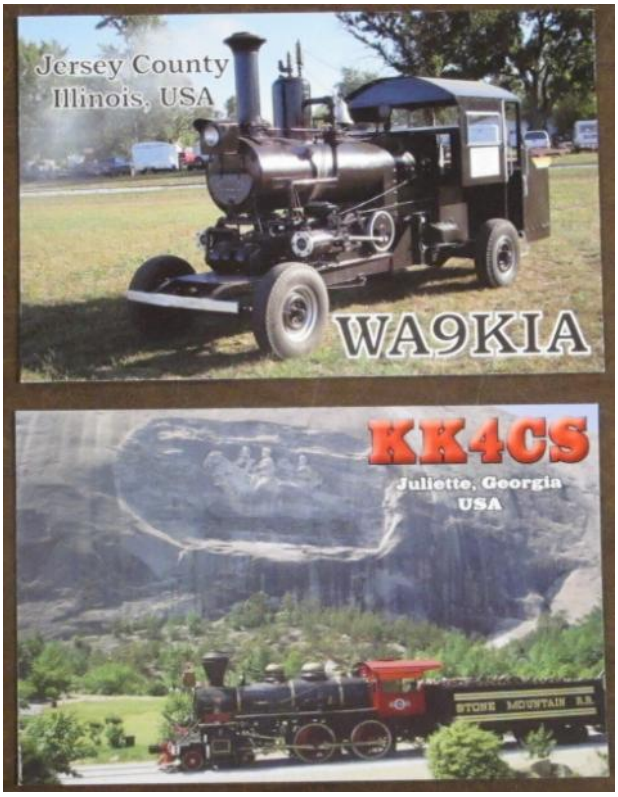


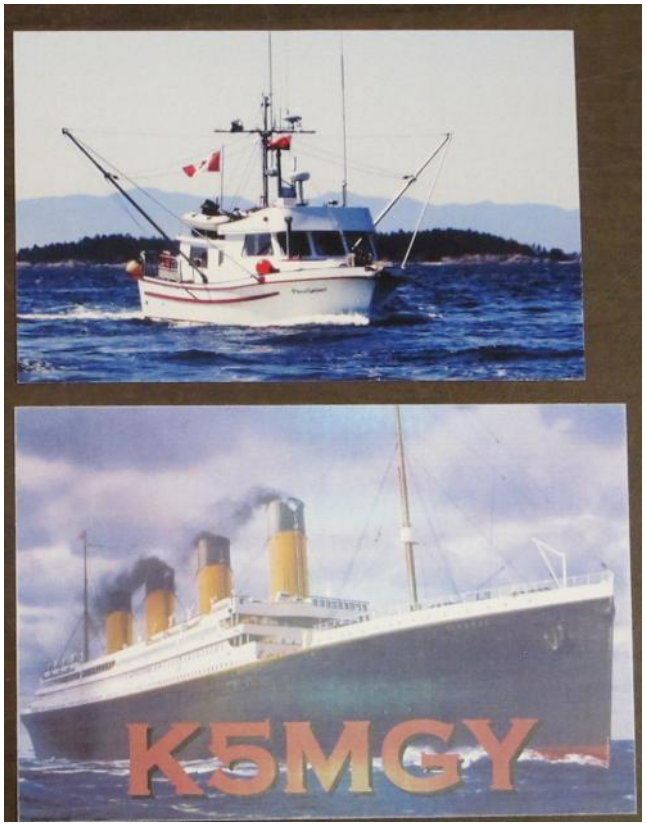
Many cards have nature pictures. Many have some amazing photography.

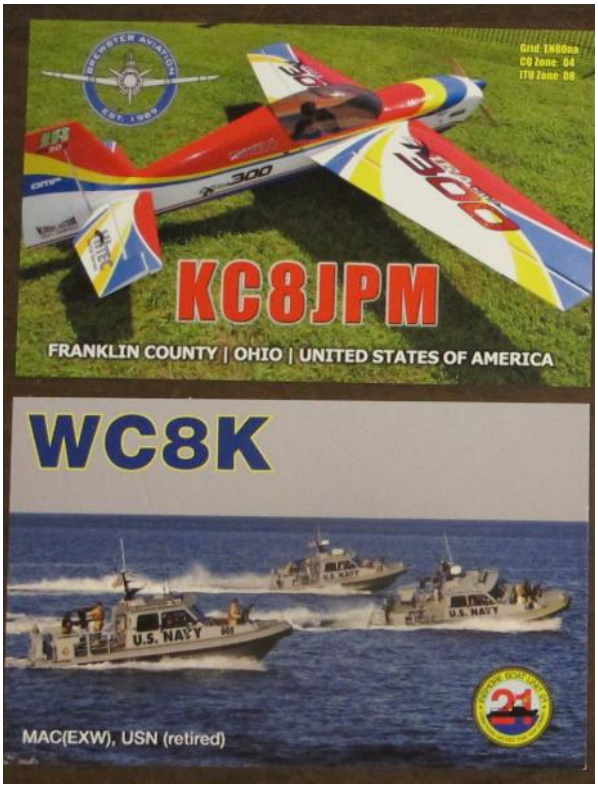




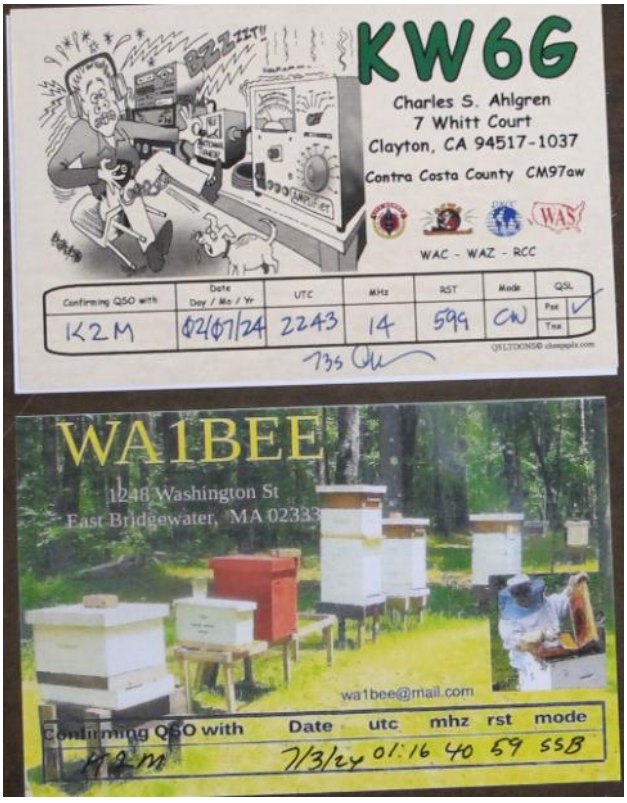
Transportation is always a great common theme. Planes, trains, cars, tractors, who knows. It's all good.



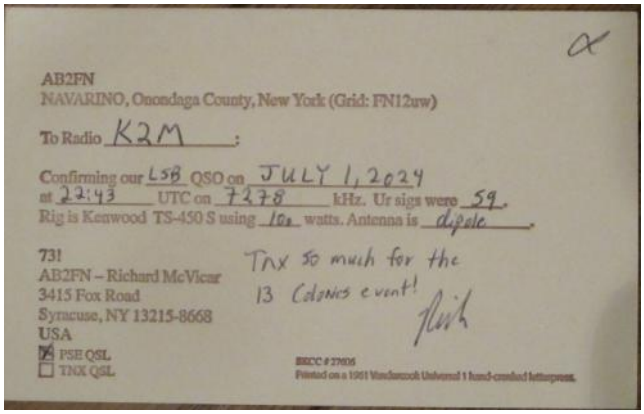




Perhaps the pictures is of the operator's other hobby/s such as bee keeping.



One of the cards we received was one I have NEVER seen before. It was embossed! One the back it states that it was made on a 1961 Vandercook Universal 1 hand-crank letterpress. I love it! Thank you Rich, AB2FN of Syracuse New York!


AB2FN
NAVARINO, Onondaga County, New York (Grid: FN12uw)

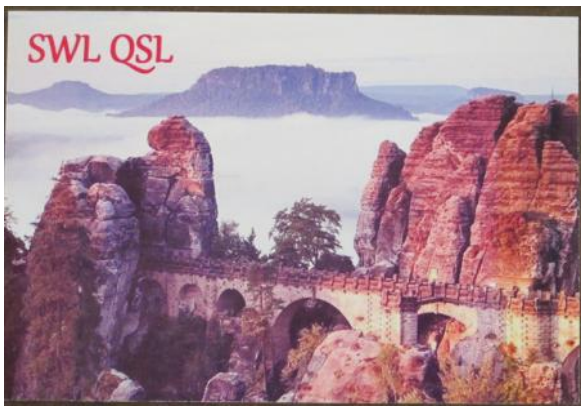
To Radio K2M :

Confirming our LSB QSO on JULY 1, 2024
at 22:43 UTC on 7278 kHz. Ur sigs were 59.
Rig is Kenwood TS-450 S using 10± watts. Antenna is dipole.

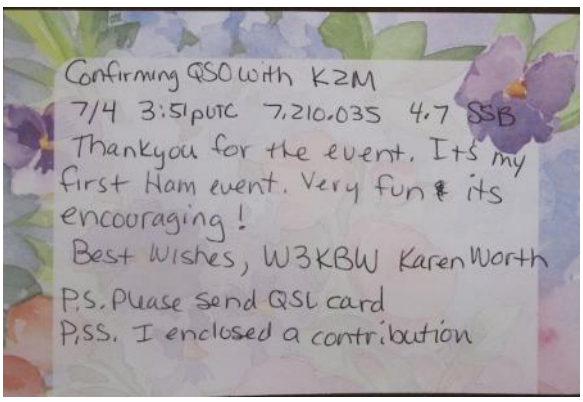
73!
AB2FN – Richard McVicar
3415 Fox Road
Syracuse, NY 13215-8668
USA
☒ PSE QSL
☐ TNX QSL

Tnx so much for the
13 Colonies event!

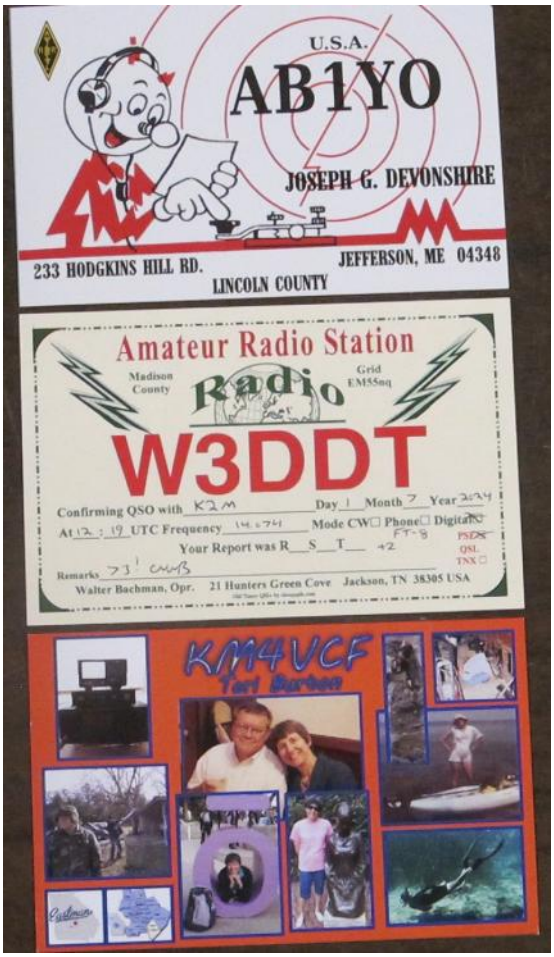
We also receive cards from SWL listeners! I always like to see those. It's good to see there are still SWLers (Short Wave Listeners) still active.



Sometimes we receive personal notes either written on the card or on a separate sheet of paper. ALWAYS appreciated.


Confirming QSO with K2M
7/4 3:51pUTC 7.210.035 4.7 SSB
Thankyou for the event. It's my first Ham event. Very fun & its encouraging!
Best Wishes, W3KBW Karen Worth
P.S. Pluase send QSL card
P.S.S. I enclosed a contribution

Some cards show family members, often also hams.



With 13 Colonies sometimes QSL requests include a donation to help with QSL costs. Recently we received this dollar shirt! That is fantastic!

Often QSL cards, the QSO details are printed with a computer program, either directly onto the card or a piece of tape. I like to fill out cards by hand and sign them with my name and call.

On all of the K2M QSLs that I fill out, I take the time to say "TNX for QSO + QSL! Bob — WC3O". It takes more time. But that card was filled out by a person, not a computer. Perhaps for a big DXpedition, but otherwise I think they should be filled out by hand.

I have many of my own QSL cards hanging on the wall in my shack. I love them.

(Click on any image for a larger view)

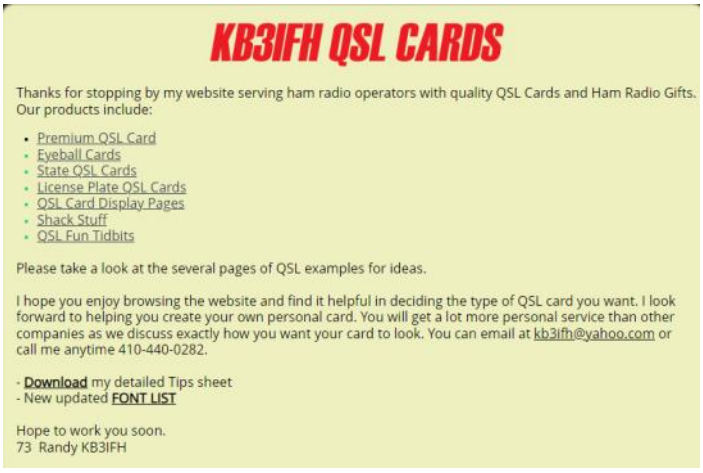
Do QSL cards wind your watch? Put this in your pipe and smoke it.

http://www.hamgallery.com/

If you've ever seen the K3MJW/W3GH QSL card you will see that they are double wide, folded cards with LOTS of pictures. I'm sure folks have asked why we would waste money on such a fancy card. These are the types of cards that you might receive from a big DXpedition such as 3Y0X. The fancy cards are to hopefully make people think that they received a card from someplace special. It's up to all of us to actually make it someplace special.

QSL?

de Cooky - WC3O



KB3IFH QSL CARDS

Thanks for stopping by my website serving ham radio operators with quality QSL Cards and Ham Radio Gifts. Our products include:

- Premium QSL Card
- Eyeball Cards
- State QSL Cards
- License Plate QSL Cards
- QSL Card Display Pages
- Shack Stuff
- QSL Fun Tidbits

Please take a look at the several pages of QSL examples for ideas.

I hope you enjoy browsing the website and find it helpful in deciding the type of QSL card you want. I look forward to helping you create your own personal card. You will get a lot more personal service than other companies as we discuss exactly how you want your card to look. You can email at kb3ifh@yahoo.com or call me anytime 410-440-0282.

- Download my detailed Tips sheet
- New updated FONT LIST

Hope to work you soon.
73 Randy KB3IFH

A Day in the Life of a Bumblebee

de Dan - NM3A

I heard about the Flight of the BumbleBee before - the Rimsky-Korsakov version.

(https://www.youtube.com/watch?v=M93qXQWaBdE)

But this year, Jody, K3JZD, did a yeoughman's job of advertising the Adventure Radio Society's yearly contest of the same name (https://ars-qrp.com/). So, I decided to sign up for a BumbleBee number and go out to a mountain top to find out what it was all about. The XYL, Janice, and I proceeded to have a wonderful afternoon.

The concept is for BumbleBees (BBs, or QRP CW portable ops) to go out somewhere and set up and try to work as many other operators as possible. Other BumbleBees are especially attractive, as every one worked is a new multiplier. You can work QRP and QRO ops, but only BBs give the extra multipliers.

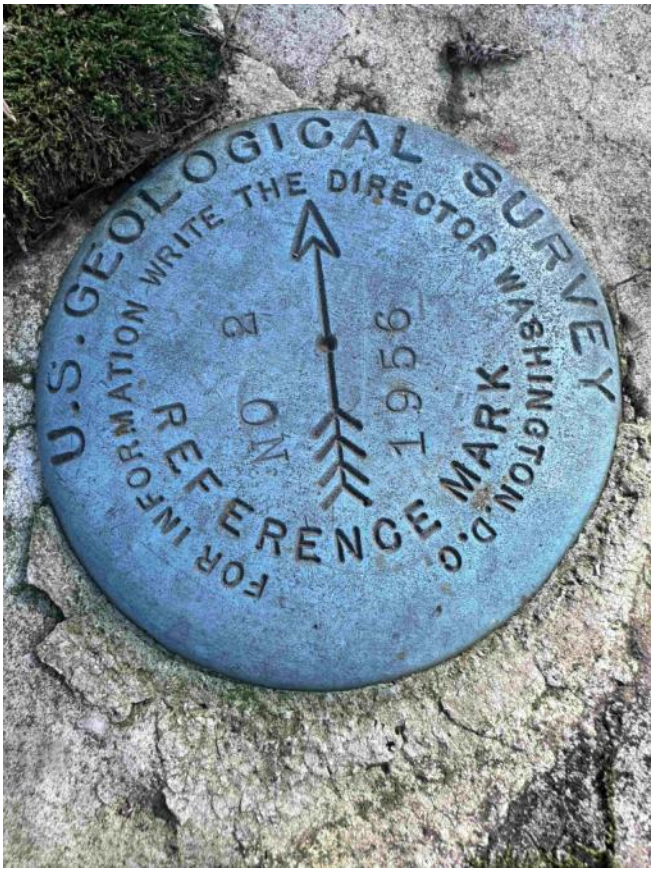
There is also a Home Station section, where QRP operators can work others from Home. Like the field ops, working BBs gives multipliers to them. There is no QRO section, so ops working QRO can give points to BBs and Home stations, but cannot submit scores.

Jody and Phil, K4PQC, got Bruce, WA7BNM to add the ARS Flight of the BumbleBees to the Contest Calendar and the 3830 Scores page.. Score summaries were simply submitted to 3830 Scores (honor system) and automatically calculated.

Over 200 BB numbers were given out and many of them went out to the field and put in a good effort. As of July 31, 81 BBs and 35 Home stations submitted their scores. Despite the relatively poor propagation conditions, most of the stations had reasonable numbers of contacts.

As it was mid summer and it can be very hot, I decided to go to a SOTA site as it would be 1) Cooler, 2) Better propagation, and 3) Quiet and peaceful. I picked a summit on Laurel Ridge about 5 miles south of US Route 40 called Pondfield 2 Benchmark (W3/PT-011).

The site is at the southern end of Forbes State Forest (POTA US-5468) and is also the site of forest service maintenance buildings, a radio tower with support buildings, and an old, fenced off and no longer used, fire tower, along with the ruins of the fire tower operator's



house. The grass is kept mowed and, as it is in the midst of the forest, there are lots of trees on site. I was right, 15 degrees cooler, decent propagation, and very few visitors. No storms, wind, or rain, so it was a perfect day.

We had one interesting visitor. About 3 hours into my operation, a Forest Ranger drove up and asked what I was doing, how long I'd been there, and if I had been there before - I had. He proceeded to tell me that I could continue as long as I liked, but that I really shouldn't be in this area near the buildings and towers. He was concerned about someone climbing towers, although I doubt that he thought we were climbers. My XYL, Janice, asked if there were any signs prohibiting using this area and he admitted that there were no signs and no fencing (other than around the towers) to keep anyone out. I thanked him and finished the event. Later I thought that maybe I should have mentioned that the tower climbers likely would not try it while I was there and maybe I was a useful deterrent. Probably better that I didn't say anything.

I set up my usual antenna - an 84 foot non-resonant wire as an inverted Vee with the apex at about 35 feet, 17 foot counterpoise, and a 9:1 balun. I used my QRP Labs QMX Mid Band (60m-15m) radio running off a small Bio-enno 12V battery.

I used an Elecraft T1 tuner for matching. I also set up my 17m vertical sleeve dipole, as I hoped to get some DX on 15m and 10m.

A comfortable chair, sandwiches, snacks, and water made for a nice afternoon outing. I usually don't bring any more than I can fit in my backpack to a SOTA or POTA site, but since I expected to be there for 4 hours and I didn't have to carry things very far from the parking lot, I made an exception for this event.

I worked 3.5 hours and came up with a respectable score despite the fact that I probably didn't have the most efficient method for looking for BBs. A little under half of

my contacts were BBs. Surprisingly, I only had one QRP contact that was not a BB. Most Qs were POTA hunters running QRO, as I was spotted on the POTA web site via the RBN network.

Despite scheduling my SOTA activation and having many RBN spots, I was never spotted on the SOTA page. I must have done something wrong in scheduling. So, while I did have one summit to summit contact, I suspect very few of my Qs were from SOTA hunters.

My vertical dipole did net a TM contact and a GB contact as well as a west coast operator on 15m. However, its low angle of radiation did not favor short skip, where most of the contacts were on 40m and 20m. These were better served by the inverted Vee wire with its higher radiation angle.

These days, SOTA and POTA are getting a lot of hams out of the shack to operate portable, many of them QRP, many on CW. The Adventure Radio Society events were established by those who enjoyed minimalistic QRP CW operations, often from out of the shack locations, in a time before SOTA and POTA existed.

I would encourage everyone to consider QRP at least some times and to try portable ops if you can. It's a fun challenge

de Dan - NM3A

They're Not My Repeaters

de Bob - WC3O

I was always primarily an HF kinda ham. I was a ham for years before I owned my first VHF/UHF radio. It was a Yaesu FT-727r dual-band handheld. Living in the Morningside section of Pittsburgh it was easy to hit many of the Pittsburgh area repeaters.

One of the first people I ran into was some guy with a monotone voice that seemed to know all about repeaters. His name was Andy and his callsign was WA3PBD.

Little did I know at the time what an important role this guy with the monotone voice would have with me, and literally thousands of hams that would use the repeaters under his oversight.

I once mentioned to Andy about how well his repeaters performed. Andy replied to me "They are not my repeaters. They belong to the Gateway FM Association''. The GFMA was organized to help fund the many Andy-related repeaters around the area.

But it was Andy up the tower replacing the antenna or feedline. Hell, it was Andy putting the tower up. It was Andy when a repeater had an issue. It was Andy scrounging the hamfests for GE MASTR II parts. It was Andy maintaining the buildings. It was Andy cutting the grass and cutting down trees. It was Andy. (He did have help over the years from a number of local hams. Many thanks go out to those folks)

One of my favorite Andy stories:

I was still living at home. Andy asked me to come up to one of the repeater sites, I forget which one, just to be there while he was doing some work up on the tower. I asked my dad if he wanted to come along. My dad had no interest in amateur radio, but he came along for the ride.

I somehow found my way up the hill and located the repeater site. My dad and I got out of the car and looked around. He asked me, I thought your buddy was going to be here? I said he is. He said where? I looked up and pointed to Andy way up near the top of the tower. My dad exclaimed

"WHAT'S THAT JACKASS DOING UP THERE!". I still hear my dad saying that every time I climb. He was a lot smarter than me.

I would often have conversations with Andy on the radio. I would bring up another subject such as roofing, door locks, lamp shades, whatever. The conversation would immediately revert back to repeaters.

Taking care of the Skyview 146.640 and 444.525 repeaters, I know what a pain in the ass repeaters can be. I have no idea how Andy beautifully maintained (11?) repeaters! Yeesh!

Not long ago, after a ham lifetime of being WA3PBD, Andy changed his callsign to K3MOB. The original K3MOB was Dan. Dan and Andy were like ham radio brothers. Dan died unexpectedly years ago. I am guessing that Andy wanted to honor Dan by putting his old callsign back into action. As far as I am concerned, Andy will always be WA3PBD.

During our morning commute time on the 64 on work days (for those of us that still work...) I am still waiting for some guy with a monotone voice to key up and ask me to ask them in Starbucks a deep question. Surely they have better answers than I do.

I often tell people that I'm not good with change. We now live in a world without Bob Heil. A world without MFJ. And now we live in a world without Andy Pato, WA3PBD. I don't like it.

And by the way Andy, they're your repeaters.

Our deepest condolences go to Susan and Andy's family.

Until we meet again OM

Thanks

Bob - WC3O

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BUILDING YOUR SHACK - Part 5

(OR HOW NOT TO BE RELEGATED TO THE BASEMENT)

de Bill - NY9H

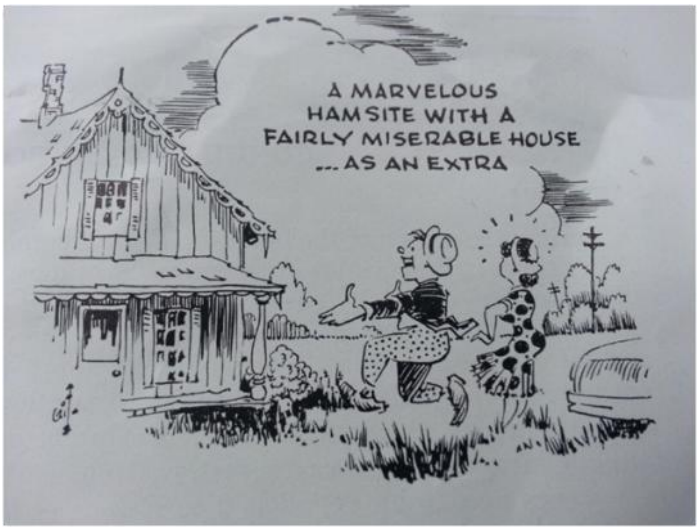
So then we decided to move in 2009, to Prosperity Pennsylvania, home of wife N9SOJ's family.

I get to do it all over again....from scratch…

LEAVING OUR 5 BEDROOM DEERFIELD HOME IN CHICAGO.

HELLO PROSPERITY, PA

A SMALL TWO BEDROOM COTTAGE on 12 acres, atop a 1450 foot ridge-line. Marvelous Radio Hill



There is an adjacent even smaller home on the lot which many believe would be a great location for the radio stuff.

However N9SOJ decided that the radios would not go into an adjacent building but in the first floor bedroom that we would change into a den.

So first we remove three closet spaces and enlarge the room into what is now called DEN.

Around the room, this wall is awaiting the paneling and chair rail.

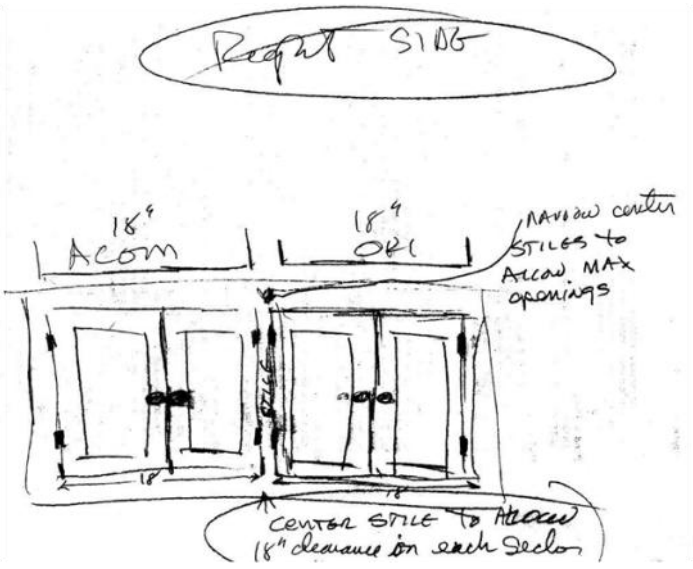
Turning to the opposite wall , where the big cabinet will go housing the computer and radio station.

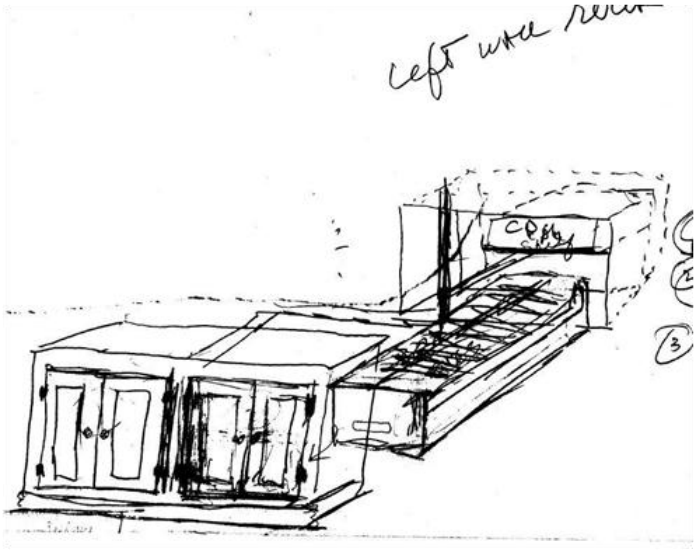
This is the pre-cabinet wall, with the tall cutout showing the area for the center equipment cabinet, the shorter side cutouts for the scanners, printers and computer all requiring depth over the typical 10" shelf depth.

Room side view of cutout with AC Lines for the ceiling down lights.

I built a 'concept' cabinet to check dimensions, and was able to use all the materials later. This also allowed full usage of the NY9H K3 & 7800 station, antenna switching and rotor control.

Plans for the right side cabinet changed from these original 'drawings'.... eventually the ACOM AMP was shifted to the cabinet behind the wall.

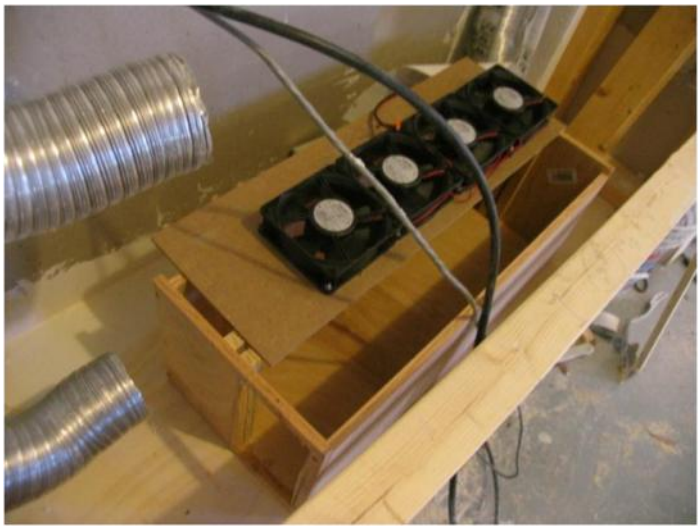




Super deep 30" file drawer extends past wall into cabinet in garage.

All the boxes are lined with sheetrock - critical to exhaust heat from equipment pulling air from CPU compartment into the main cabinet with a muffin fan.

This later would evolve into a total of seven fans operated by three thermostats to protect an ICOM 7800, Elecraft K3/P3 ...etc ...and both an Elecraft KPA500 & ACOM A2000 amplifier



The thermostats control three zones providing cooling for the 7800 & ACOM amp & cabinet.

In the winter the heat is directed back into the den, while in summer the output goes to the garage.

This is what NY9H/3 looks like now, with the radios concealed.

The crown molding at the ceiling was homemade....as was the paneling below the chair rail. I even had to do some routing on the vertical spans between the wall panels. All a learning process.

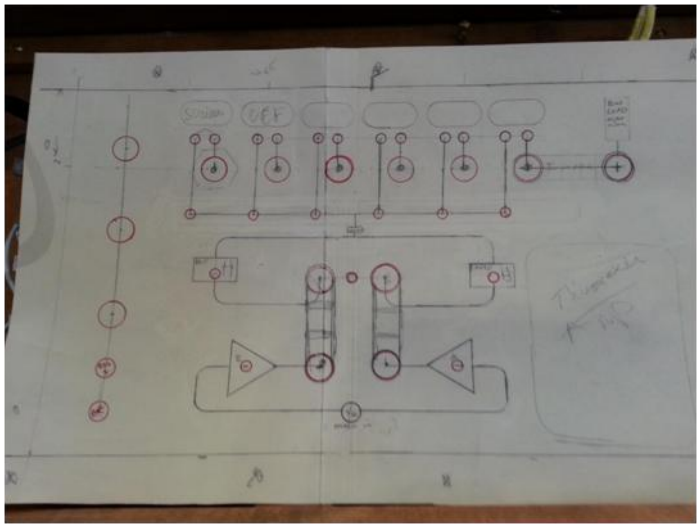
TV can function as a 4th monitor on station computer, for logging as well as streaming computer video.

I have learned from these experiences that now I feel I could do this sort of project MYSELF. I learned on my project many 'cabinet' makers BUY the doors pre-made, only to stain/match them with the face frames, boxes, and other components.

Someday I may order matching pre-made facings for my under TV cabinet replacing the lateral file & drawers faces which were homebrewed.

Here I am installing one of the two 'tool drawers" above the lateral file cabinet, all garage made !

ANTENNA TIME



The antenna & amplifier control panel. LEDs also at the coax connectors indicate status.

TopTen Antenna Relay devices before installation and placed behind the panel. (poor location)

Main air cooling system.... with front panel zone thermostats & revised antennas status display. Since the RFKIT amp has a 4 antenna smart tuner/matcher, I re did the antenna switching so the four antennas can directly access the RFKIT tuner outputs, again with LED status indicators.

One of the most critical dimensions again is the height of the main work surface. If it is too low, you have no room for your legs. If the surface is too high, your arms cannot comfortably rest on the surface as you tune your radios. If you use the computer to completely run your radio, you need not worry about having the tuning controls on your radio within reach of your wrist.

You might wonder , what happened to the RAID system, ACOM AMP, and UPS that had been in the old basement ! It is located to the rear of the cabinet, in the adjacent space...which is AN ENCLOSURE... IN the garage..

SUMMARY

I hope that you have enjoyed this series. Not everyone will get to create a Ham Shack as often as I have. But maybe by seeing how I have done it in houses with a lot of space and houses with little space will give you some ideas.

I guess the key idea here is : If you can make your Ham Shack attractive enough, then it can be located in some comfortable part of your house, not tucked away in the corner of the basement.

Email comments or questions to NY9H@ARRL.NET

de Bill—NY3H

A Great Day For Parks On The Air

de Steve - K3FAZ

Today has been one of those days that one dreams about when being battered by summer's stifling temps & humidity…sunny with temps in the 60s, lower dew points and somewhat breezy air…positively delicious weather indeed.

POTA has been an absolute joy whether hunting from the home QTH or activating from the field. What had begun as a leisurely pursuit has become a pileup busting challenge at times since the program has evolved and grown over the past several years. Is that a problem? Nope.

Is it fun? Heck yah, it's a blast. Whether activating or hunting SOTA, SOTA, IOTA, WWFFA, etc the best part is that you're on the air and having big fun. Getting out to activate is crazy fun and that's what I'll advocate in this missive.

So, I'd been pondering where I'd like to go this weekend and decided to return to one of my favorite spots that I hadn't been to in a while, US-9010 SGL 310 located in southeastern Jefferson county. Why is it one of my favorites? I'm unable to put my finger on exactly why, however I simply like the general area, the parking is quite spacious with trees all around, it sits back from the township road and it's quiet. Well, I suppose that is why I like it…eh?

So, the evening prior I did my due diligence to prepare so as not to leave any necessary gear behind and was ready to head out in the morning. The drive up was a delight while making my way through rural Armstrong county past farms, fields and Amish buggies towards the small village of Porter before turning onto the dirt township road that leads to the game lands. Darn little comes to mind that would beat such a morning.

My field ops HF rig travels in my truck at all times so upon arrival it makes for a very easy setup. After getting the 33 foot vertical antenna set up, attaching the coax to the tuner, I took a sip of coffee and was ready to go. The forty meter band is pretty much money for POTA so I hunted for a bit before finding a frequency to work and put out my POTA CQ (yes, I did call to see if the freq was available). Forty meter contacts were made in OH, WI,

NC, IN and PA before the band played out for the morning.

Then QSYing to 20m which was fairly busy as usual, my first contact was NL7V in Alaska, Paul is a frequent POTA contact and we exchanged greetings before moving on to work GA, IL, TN, MO, CO, MN, AR, FL, GA, OK, AL, NY, MS, IA, Nova Scotia plus an aeronautical mobile contact with a 747 over Cuba while flying from the Dominican Republic to Calgary Canada

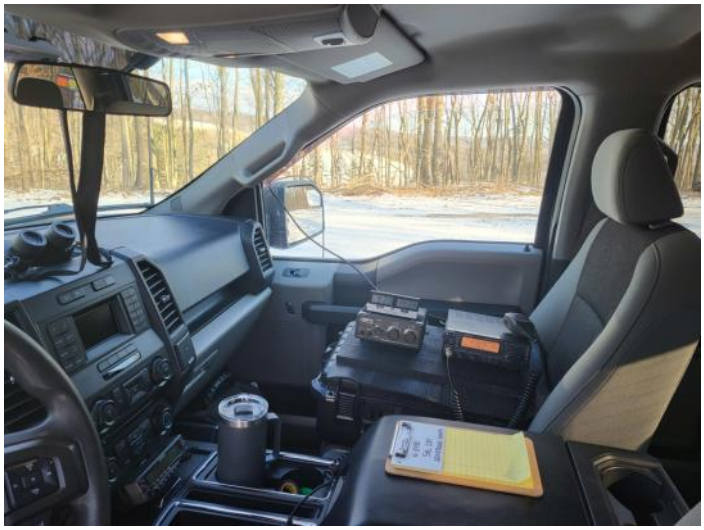
Now here's where the bonus fun comes in…10m was open providing contacts to AZ, WA, OR, CA, NV plus DX to Barbados, Mexico, Colombia and Spain. The 8P5KM & ES1PA contacts were park to park which was way cool, eh?

Overall it was a great activation on a really nice day with 79 Qs in the log consisting of 23 park to parks, one aeronautical mobile, several mobile HF, four DX and a brief

QSO with an operator's granddaughter who was having fun on the radio with her grandpa.

In a nutshell, these are some of the elements that make POTA so enjoyable. It's just as great to get out and get on the air as it can be to hunt from your QTH. One doesn't need to have a contest or DX super station to participate; a rather basic station setup (100 watts and a wire) will do just fine providing you have the interest in having fun on the radio.

For those interested, here is my portable POTA gear list that travels with me:



- Kenwood TS50 HF radio
- Kenwood AT130 manual tuner
- Dakota Lithium 18Ah battery
- 27ft RG8X coax
- 33ft vertical fiberglass antenna that mounts to hitch receiver…no radials or ground clamp, etc it just works well 10-80m :)
- Some support items (wire antenna, throw line, bungees, adapters, etc) stored in an Apache case
- The radio gear is stored in an Apache case
- The antenna stores beneath the back seat of my truck
- The battery rides beneath the front passenger seat.
- Notepad & clipboard for logging.
- Coffee

There you have it, straight up, no smoke and mirrors only the anticipation of having an enjoyable afield.

Amateur radio is the greatest hobby in the world, very enjoyable, filled with options, lots of great folks plus that giddy squeal like a girl feeling when busting a pileup after chasing a much desired QSO.

Get out and get on the air…you'll be glad you did.

de Steve K3FAZ

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https://docs.pota.app/

POTA is suitable for new and veteran hams. POTA is an excellent way of developing your skills as a portable operator. Not only with making contacts on the radio but with antenna selection and design, power, logging, public interactions, and general preparedness.

New POTA participants benefit from working with experienced POTA elmers, but doing research and homework on your own is also a part of improving your skills.

POTA might seem daunting at first—but it doesn't have to be, especially with some forethought and planning. With practice, your skills will improve.

I've Got a Brand New Keyer

de Charles - KC3TTK

I am sure everyone knows the song by the Seventies one hit wonder "Melanie" but when it came time to write my article for this issue of the Q5er I was feeling like a one hit wonder. I wasn't sure what I was going to write about this issue or if I would even have anything to write about. But I figured I would take the time and put something together for a little project I have been working on. This is (hopefully) going to be a multi part article.

This project may be of interest for anyone who can send CW faster than they can type on a computer.

I was away for work in June of this year at a conference. At that conference I had the pleasure of meeting another ham: Howard, AC9TR. It was impressive to meet another ham in an unexpected place. I was really disappointed that I did not bring any of my gear to the conference with me.

Howard told me he was not an HF guy, but I won't hold that against him. Hi-hi. I am learning more and more that everyone gets something different out of the hobby. Howard showed me a tool he built. It was a straight key connected to a microcontroller that would print ASCII characters onto a computer screen. You tap out your dits and dahs then real text appears on the computer screen.

This idea intrigued me. I did some internet sleuthing and found an open-source project the K3NG keyer.

https://github.com/k3ng/k3ng_cw_keyer/wiki

So, I cannot and will not take credit for creating this from scratch. However, as anyone who has ever used open source code and BYO hardware knows, it's never as straight forward as it seems. But the bulk of the hard work was already done.

If you use your favorite search engine and type in "K3NG Keyer" you will find swarms of people selling these at the usual places you can go for all your finest knock off goods.

The keyer project is based on the Arduino family of microcontrollers.

Here is a list of all the available features of the K3NG Keyer.

- CW speed adjustable from 1 to 999 WPM
- Up to six selectable transmitter keying lines
- Programming and interfacing via USB port ("command line interface")
- USB or PS2 Keyboard Interface for CW keyboard operation without a computer
- Logging and Contest Program Interfacing via K1EL Winkey 1.0 and 2.0 interface protocol emulation
- Optional PTT outputs with configurable lead, tail, and hang times
- Optional LCD Display – Classic 4 bit mode , Adafruit I2C RGB display and I2C Character Backpack or YourDuino I2C LCD Display
- Up to 12 memories with macros
- Serial numbers
- CW keyboard (via a terminal server program like Putty or the Arduino Serial program)
- Speed potentiometer (optional – speed also adjustable with commands)
- QRSS and HSCW
- Beacon / Fox mode
- Iambic A and B modes
- Single lever paddle mode
- Straight key support
- Ultimatic mode
- Bug mode
- CMOS Super Keyer Iambic B Timing
- Paddle reverse
- Hellschreiber mode (keyboard sending, memory macro, beacon)
- Farnsworth Timing
- Adjustable frequency sidetone
- Sidetone disable / sidetone high/low output for keying outboard audio oscillator
- Command mode for using the paddle to change settings, program memories, etc.
- Keying Compensation
- Dah to Dit Radio adjustment

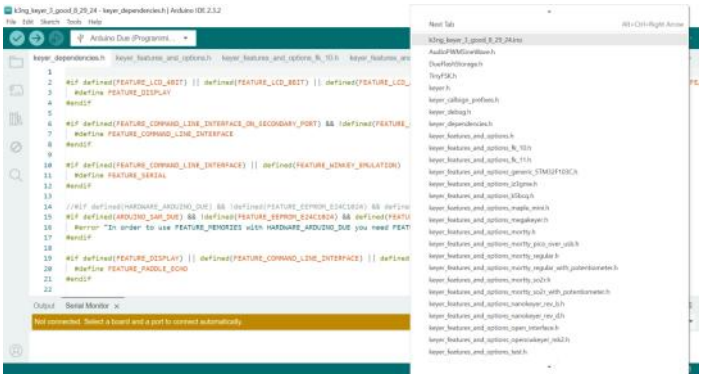
- Command mode for using the paddle to change settings, program memories, etc.
- Weighting
- Callsign receive practice
- Send practice
- Memory stacking
- "Dead Operator Watchdog"
- Autospace
- Wordspace Adjustment
- Pre-configured and Custom Prosigns
- Non-volatile storage of most settings
- Modular code design allowing selection of features and easy code modification
- Non-English Character Support
- CW Receive Decoder
- Rotary Encoder Speed Control
- Sleep Mode
- USB Mouse Support
- Mayhew LED Ring Support
- Alphabet Sending Practice
- QLF / "Messy" Straight Key Emulation
- USB Keyboard HID (Human Interface Device) Interface (Keyer = keyboard for your computer)
- TX/RX Sequencer
- Training Module

As you can see, there is quite a bit that can be done with this keyer. The GitHub page for this project is one of the nicest GitHub pages I have ever seen. There is an extensive wiki with descriptions of almost all of the features. You really have to hand it to this guy. There was a ton of effort put into this project.

I plan to cover additional features in future articles. Because there are some interesting features I want to investigate. The CW Trainer mode seems fascinating and I am interested in the Hellschreiber mode as well. Perhaps it could make for an interesting Elmer night. Though with my short amount of time in the hobby I would not consider myself any sort of Elmer. But if anyone wanted to fill an hour or so of the club's time on a Tuesday evening, I would be happy to present some of my progress.

The one caveat about this article and this project is that if you have no experience with the Arduino IDE this is not designed to get you started from scratch. If anyone wants to get started and wants some advice or guidance on how to start, feel free to reach out to me. I would be glad to give a rundown of where to get the software, how to install it and how to get started.

Back to the project and which direction I chose to go with. When you open the Keyer.INO file there are about 40 ".h" files that are connected with this. Each one of these .h files contributes to a different feature of the keyer.



For the features I am after there were really only a few of these files I needed to interact with.

- K3ng keyer.ino
- Keyer Features and Option.h
- Keyer pin settings.h
- Keyer settings.h

These will be the main files where any adjustment will be made. Though this was not immediately clear in the documentation. It also helps to have a little understating of what you are looking for when making adjustments.

Before going much further I needed to decide which Arduino board I was going to use. The basic set of features I chose uses 66kb of flash memory. This right here limits which boards you can use. The Arduino boards have flash memory ranging from 16 to 256 kb.

You can see a "not quite" comprehensive list here: https://docs.arduino.cc/learn/programming/memory-guide/

Based on the size of set of features I chose, I am limited to a few boards. Beyond flash memory we also need EEPROM memory to save settings. If you do not have EEPROM, each time the keyer starts up, at a minimum (depending on how you are using your keyer) have to re-set the speed. If you are using the memories or adjusting any other setting this could get really old really quick and reduce the user experience of using the keyer. Depending on how minimum you want to go with this, you might be able to fit the basic keyer without any display, command features or USB keyboard interface onto a smaller board. But what would the fun in that be. Go big or go home is what they say.

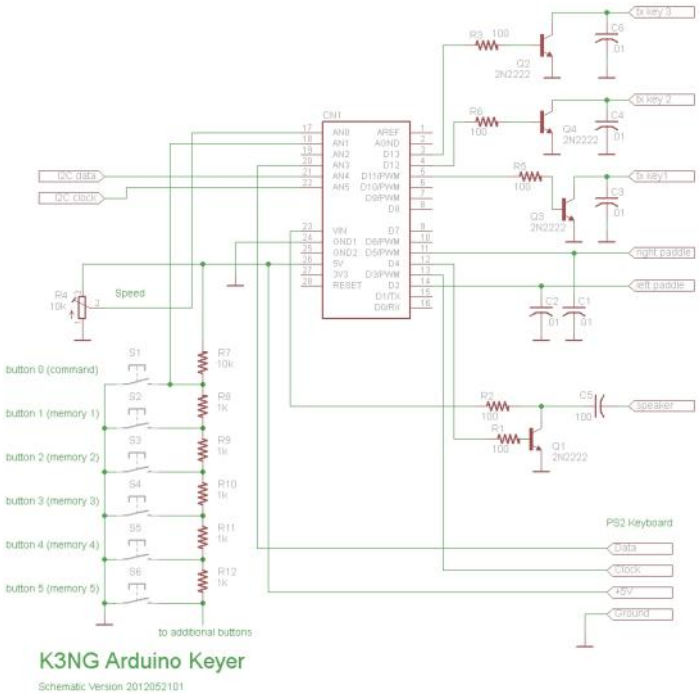
For my purposes this is where the project took an interesting turn. The feature I wanted most to use and the reason I was building this keyer was to use it as a CW to text keyboard. This required HID (Human Interface Device) support. This really limited my board selection. I could only find two or three Arduino boards that had native HID support. While its possible to get other Arduino boards to work as HID devices I really did not want to go this route. This parameter limited me to the Nano, Leonardo and the Due. Looking at the flash memory requirements though this left me one option. The Due.

The Arduino Due is one of the more expensive boards clocking in at a hefty $47, when you can get a 3 pack of Nanos for $10. This left me with another problem. The Due has no EEPROM. It looked like there was no good solution for my situation.

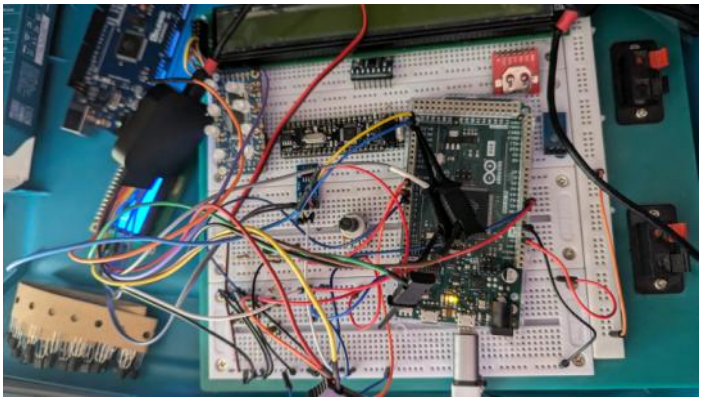
Some of this is documented on the K3NG website. For instance, if you want to load all the code, it requires use of one of the boards with 256k memory. There are also a few notes on adding EEPROM to boards like the Due. However, this was not as straight forward as it had seemed. This did not deter me from pushing forward, at least for a proof of concept.

For the initial trial, following is the schematic I used to start the project with.

I put all the components onto a breadboard. Keep in mind that the pins numbers on the microcontroller in the schematic may not match up to the specific micro controller you are using. The pin descriptions are what is important. (D1, AN0 etc)



Here is my first run at putting this on a breadboard.



This breadboard set up looks messy and it is, it is a complete disaster. But this setup allows us to change pins and connect test equipment (oscilloscope, logic analyzer, multimeter) for troubleshooting when our first attempt inevitably does not work.

Now it is time to compile the code with the features we want. Uncomment the features that you want to incorporate by deleting the "//" in front of each line. This is what enables the features in the keyer.

For my keyer I enabled :

#define FEATURE_BUTTONS

#define FEATURE_COMMAND_MODE

#define FEATURE_COMMAND_LINE_INTERFACE // Command Line Interface functionality

#define FEATURE_POTENTIOMETER

#define FEATURE_CW_COMPUTER_KEYBOARD

#define FEATURE_LCD_MATHERTEL_PCF8574

#define FEATURE_ROTARY_ENCODER

#define FEATURE_EEPROM_E24C1024

I will get to the EEPROM in a later article. Here is where a little bit of programming experience really saves some time. The LCD for instance, is on the I2C bus. Each device has an address. The default address in the code for the LCD was 27. Reading the data sheet for my device the default address was 20. Also based on the feature set I was using, I only needed one TX key, one PTT Key, a single button and Iambic paddles. I also wanted to customize the splash screen.

As a funny side note, the creator of the K3NG keyer never produced any for sale. As mentioned above, several people took his code, created a box, loaded the software and started to sell it. The funny thing is none of these people even bothered to change the splash screen. So all of these keyers, from all of these different manufactures when they load read “K3NG Keyer”

Plugging the keyer into my computer for the first time was quite a thrill. The DUE has two USB ports. One for programming and one for the HID. When I switched to the HID I got the typical Windows message recognizing a new USB device. I was beyond thrilled. I opened a notepad document and tapped out a few letters. So far so good.

This keyer does quite a bit. Once you have your keyer built and programmed there are different sets of adjustments you can make. Through the keyer using the “Command Mode” you can adjust a few settings. For command mode, you press the button and navigate through the different setting using the CW letter for that setting.

- A Switch to Iambic A mode
- B Switch to Iambic B mode
- C Switch to Single Paddle Mode
- D Switch to Ultimatic mode
- E Announce speed
- F Adjust sidetone frequency
- G Switch to bug mode
- H Set weighting and dah to dit ratio to defaults
- I TX enable / disable
- J Dah to dit ratio adjust
- K Toggle Dit and Dah Buffers on and off (Ultimatic Mode)
- L Adjust weighting
- M Change command mode speed
- N Toggle paddle reverse
- O Toggle sidetone on / off
- P#(#) Program a memory
- R#### Set serial number to ####
- S Alphabet code practice (FEATURE_ALPHABET_SEND_PRACTICE)
- T Tune mode
- U Receive / Send Echo Practice
- V Toggle potentiometer active / inactive
- W Change speed
- X Exit command mode (you can also press the command button (button0) to exit)
- Y#### Change memory repeat delay to #### mS
- Z Autospace On/Off
- '#' Play a memory without transmitting eg. enter '1' with the paddles to play the first memory without transmitting
- = Enable / disable PTT Line

You type your letter in, the setting changes and then you press command mode again to exit to go back to using your keyer

There are some more in depth setting you can adjust using the "Command Line Interface" This requires connecting the Keyer to the computer via USB interface and opening a terminal window or using the serial monitor in the Arduino IDE

Setting that can be adjusted using the Command Line Interface:

\? Help
\/ Paged Help
\# Play memory #
\a Iambic A mode
\b Iambic B mode
\c Switch to CW (from Hell)
\d Ultimatic mode
\e#### Set serial number to ####
\f#### Set sidetone frequency to #### hertz
\g Bug mode
\h Switch to Hell sending
\i Transmit enable/disable
\j### Dah to dit ratio (300 = 3.00)
\k CW Training Module
\l## Set weighting (50 = normal)
\m### Set Farnsworth speed
\n Toggle paddle reverse
\o Toggle sidetone on/off
\p# Program memory #
\q## Switch to QRSS mode, dit length ## seconds
\r Switch to regular speed mode
\s Status
\t Tune mode
\u Manual PTT toggle
\v Toggle potentiometer active / inactive
\w### Set speed in WPM
\x# Switch to transmitter #
\y# Change wordspace to # elements (# = 1 to 9)
\z Autospace on/off
\+ Create prosign
\!## Repeat play memory
\|#### Set memory repeat (milliseconds)
* Toggle paddle echo
\^ Toggle wait for carriage return to send CW / send CW immediately
\~ Reset unit
\& Toggle CMOS Super Keyer Timing on/off
\%## Set CMOS Super Keyer Timing %
\. Toggle dit buffer on/off
\- Toggle dah buffer on/off
\: CW send echo inhibit toggle
\{ QLF mode on/off
\> Send serial number, then increment
\< Send current serial number
\(Send current serial number in cut numbers
\) Send serial number with cut numbers, then increment
\[Set Quiet Paddle Interruption
\= Toggle American Morse mode (requires FEATURE_AMERICAN_MORSE)
\@ Mill Mode
\}#### Set potentiometer range - low ## / high ##
\" Hold PTT active with buffered characters
\] PTT Enable / Disable
\; FUTURE
_ FUTURE - Set Clock
\\ Immediately clear the buffer, stop memory sending, etc.

\: Extended CLI commands
eepromdump - byte dump of EEPROM for troubleshooting
saveeeprom <filename> - store EEPROM in a file
loadeeprom <filename> - load into EEPROM from a file
printlog - print the SD card log
clearlog - clear the SD card log
ls <directory> - list files in SD card directory
cat <filename> - print filename on SD card
pl <transmitter> <mS> - Set PTT lead time
pt <transmitter> <mS> - Set PTT tail time
af ### - Set autospace timing factor; 100 = 1.00
pf ### - Set paddle echo timing factor; 100 = 1.00

For now, the keyer is up and running. The USB interface works surprisingly well. I have tried it with multiple PCs and connected it to my phone. Each device thinks the keyer is a regular USB keyboard. I 3d printed a simple case to house all the components and connections.

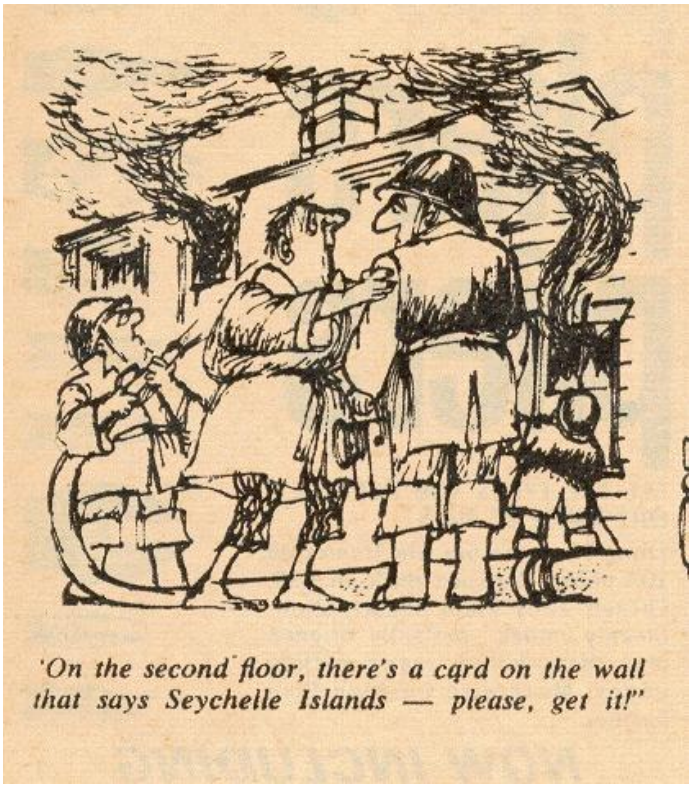
You can see both USB ports one for programming, one for the keyboard. The input and output, the PTT and a power connection. The power connection isn't necessary for the keyer to work. But if you want the speaker to be louder, you will need to plug it in. The speaker works on USB power but it is louder. On the front we

have the volume knob, the speed knob, the display, the speaker, 5 buttons (1 command and 4 memory) and 3 LEDS. Green is the output, Yellow is the PTT and red is the Command LED.

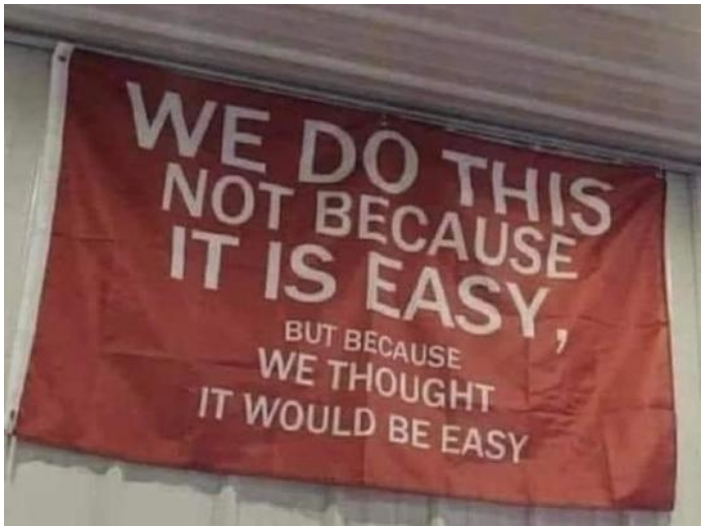
I think this article is long enough for now. I hope to experiment with more features and write about troubleshooting digital circuits. If you stayed with me this long, thank you for reading. So far this project has been a fun and rewarding learning experience.

73

de Charles KC3TTK



'On the second floor, there's a card on the wall that says Seychelle Islands — please, get it!"



After @ 20 years of being spit on, we replaced the windscreens on mics in the radio room.

Ready for another 20 years of spit!

Cooky - WC3O

Cable Characteristics **de Brian - KC3VNC**

Cable Characteristics

You probably take cable parameters such as characteristic impedance (Z_0) and velocity factor (VF) for granted, without giving much thought to the fundamental properties that drive them. For most practical uses, that's completely fine. However, in this article we're going to show a relatively simple way to derive Z_0 and VF from the distributed lump parameters of the cable. There is a little math; we'll use basic series and parallel circuit formulas, with just a tiny bit of how limits work. Since it is often possible to measure Z and VF with devices such as a vector network analyzer (VNA), the formulae derived here will let you calculate the basic cable properties of capacitance and inductance, which tend to be more complicated to measure accurately on their own.

Let's start with the so-called distributed lump parameter model of a cable. For this article, we're going to stick with the simpler "ideal" lossless cables, although the formulae really aren't too much different in the "lossy" case.

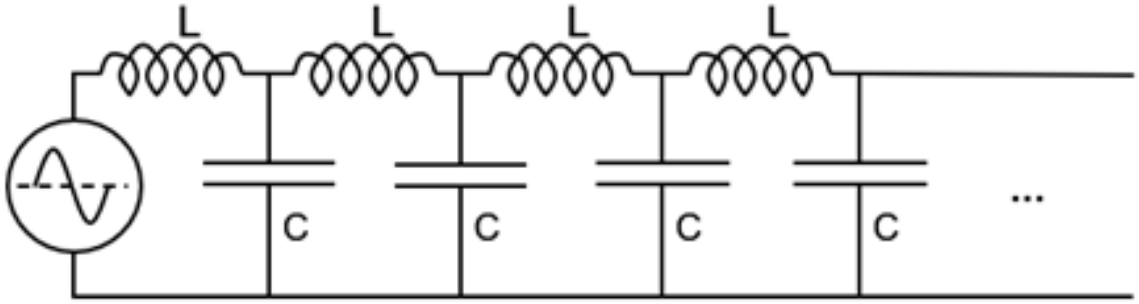


Figure 1. Distributed Lump Parameter Model of Cable

Don't be intimidated by that schematic – all it says is that our cable looks like a repeated series of inductors along the wire, and capacitors between the wires. The wires might be the two conductors of ladder line, or the inner conductor and shield of coaxial cable. Think of the L as the inductance along a small length of the cable, and C as capacitance along that same length. If we choose a sufficiently small enough length, this model will be a good match for describing a real cable. To be clear, we will use an italic *L* to represent inductance per unit length (such as per foot or per meter), and an italic *C* to represent capacitance per unit length. The choice of unit length is irrelevant, as long as we are using the same unit for both *L* and *C*. We'll use Δx to

be our small length of line in our model. So, the L for each tiny inductor along the way is given by $L\Delta x$, and C is given by $C\Delta x$.

The first thing we want to determine is the impedance of our line, as seen by the source voltage. To do that, we'll need to write the impedance of L and C and complex impedances. Sounds complicated, but it really isn't; they are simply:

$Z_L = j\,\omega\,L\,\Delta x$ and $Z_C = 1 / (j\,\omega\,C\,\Delta x)$

where j is the square root of -1 and ω is the angular frequency (given by $2\,\pi\,f$). We can treat those impedances just like we do resistance values, when used in series and parallel formulae. That is, we can add them when in series, and we can take their product over their sum when calculating a parallel value.

The next step is to make a simplifying assumption about our transmission line model. We will assume that it has some impedance Z_0 – we don't know its value yet, but just that there is a value. Now comes a slightly tricky part: We will add one L and C segment (that is, a very tiny piece of cable) to the front of the line that we assume has impedance Z0, and then compute the impedance of that combination. Since we are just making our line a tiny bit longer by adding another L and C segment, it should still have the same impedance. If we can find that impedance in terms of *L* and *C*, we'll have been successful, and our assumption will have been validated. Here's what it looks like:

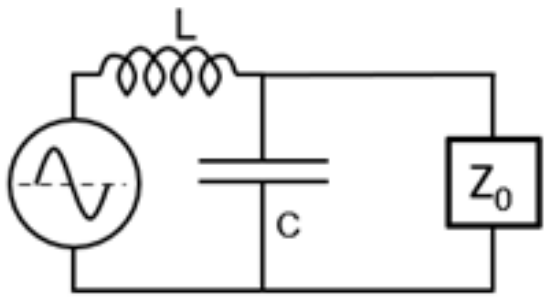


Figure 2. Incremental View of Transmission Line

We just need to solve for the Z of the circuit in Figure 2, as seen by the source. If all goes well, it is indeed Z_0. In simple terms it is just:

$Z_0 = Z_L + Z_C \parallel Z_0$

Substitute in values for our impedances and we get:

$Z_0 = j\,\omega\,L\,\Delta x + [1 / (j\,\omega\,C\,\Delta x)] \parallel Z_0$

Expanding the parallel impedance term gets us:

$Z_0 = j\,\omega\,L\,\Delta x + [Z_0 / (j\,\omega\,C\,\Delta x)] / [Z_0 + 1 / (j\,\omega\,C\,\Delta x)]$

Multiplying the numerator and denominator of the fraction on the right by $(j\,\omega\,C\,\Delta x)$ will clean this up a bit:

$Z_0 = j\,\omega\,L\,\Delta x + Z_0 / [Z_0\,(j\,\omega\,C\,\Delta x) + 1]$

We have a complex number in the denominator of the fraction – we'll multiply numerator and denominator by the complex conjugate, noting that $(a + jb)(a - jb) = a^2 + b^2$:

$Z_0 = (j\,\omega\,L\,\Delta x) + Z_0[1 - Z_0\,(j\,\omega\,C\,\Delta x)] / \{[Z_0\,(j\,\omega\,C\,\Delta x) + 1]\,[1 - Z_0\,(j\,\omega\,C\,\Delta x)]\}$

$Z_0 = (j\,\omega\,L\,\Delta x) + [Z_0 - Z_0^2\,(j\,\omega\,C\,\Delta x)] / [1 + Z_0^2\,\omega^2\,C^2\,(\Delta x)^2]$

Well, this looks a bit nasty – but now we can use the fact that Δx is very small. That also makes $(\Delta x)^2$ **extremely** small. So small, that we can ignore term that has $(\Delta x)^2$ in the denominator; 1 plus an extremely small number is really just 1. With a denominator of 1, the fraction becomes simply the numerator. That gives us:

$Z_0 = (j\,\omega\,L\,\Delta x) + Z_0 - Z_0^2\,(j\,\omega\,C\,\Delta x)$

The Z_0 cancels on both sides:

$0 = (j\,\omega\,L\,\Delta x) - Z_0^2\,(j\,\omega\,C\,\Delta x)$

Divide everything by $(j\,\omega\,\Delta x)$ leaves:

$0 = L - Z_0^2\,C$

$\boldsymbol{L = Z_0^2\,C}$

$Z_0^2 = L / C$

$\boldsymbol{Z_0 = (L / C)^{1/2}}$

Success! We've shown that if you incrementally add a small piece of cable to a long cable, you will continue to the same impedance as the longer cable had, and it will be given by $(L / C)^{1/2}$. Note that since the ratio of L to C is used, it doesn't matter if you use the total cable inductance

and capacitance, or a unit inductance or capacitance. You just need to be consistent, and use values for the same given length. Also notice that the impedance does not depend upon frequency – only that the frequency must be non-zero (otherwise, we would have a divide by zero problem when we divided through by ω). In real life, the impedance will vary with frequency, since the cable inductance and capacitance will be frequency dependent. For most of the frequencies we deal with, this effect is small, and can usually be ignored.

Now let's turn our attention to how fast a wave will move through our cable. We will use our same incremental approach as shown in Figure 2 – add a tiny piece of cable and see how long the signal takes to move along it. So, what does it mean for the signal to move through our tiny inductor and capacitor? Well, it really means, how long does it take to charge the capacitor to the applied voltage. If it takes Δt to charge the capacitor, then the wave speed (V) will be given by $\Delta x / \Delta t$.

Since we know the cable has an impedance Z_0, we know how much current flows for a given input voltage, by Ohm's law.

$$I = V_{IN} / Z_0$$

The capacitor equation relates charge (Q) to voltage (V):

$$Q = C\,V$$

Q is current multiplied by time, in our case Δt. C is given by $C\,\Delta x$. Putting it all together:

$$I\,\Delta t = (V_{IN} / Z_0)\,\Delta t = C\,\Delta x\,V_{IN}$$

The V_{IN} cancels (which is good, otherwise the wave speed would depend upon the input voltage) and we are left with:

$$\Delta t / Z_0 = C\,\Delta x$$

$$V = \Delta x / \Delta t = 1 / (Z_0\,C)$$

Since $Z_0 = (L / C)^{1/2}$, we can rearrange and get:

$$\mathbf{V = [1 / (L\,C)^{1/2}]}$$

In this formula, we **must** use the inductance and capacitance per the same unit length, for example, per meter. That way, we will get a unit length per second as a speed (again for example, meters per second). To get velocity factor (VF), we just need to divide V by c (the speed of light in vacuum, approximately 300 million meters per second).

$$VF = [1 / (L\,C)^{1/2}] / c$$

Since it is easier to measure the Z_0 and VF of a cable with instruments like a VNA, a couple of useful corollaries to get L and C are in order.

$$C = 1 / (c\,VF\,Z_0)$$

$$L = Z_0 / (c\,VF) \qquad \text{or} \qquad L = Z_0^2\,C$$

My thanks to all who it made it this far. Hopefully the journey was not too difficult, and you gained some insight into why a transmission behaves as it does. As a bonus, we did it without having to resort to differential calculus. While there is nothing wrong solving it that way, it tends to be less insightful than a circuit level interpretation, like we did here. Please do not hesitate to contact me with any comments or suggestions at kc3vnb@gmail.com.

de Brian - KC3VN

In a House For Sale Listing

You think that this was a Ham Shack ??

Skyview Swap & Shop 2024

de John - WA3KFS

The 2024 Skyview hamfest is now in the history books. I would like to thank everyone that helped and supported the event. As you well know, it takes many hands to pull this fund raising event off.

The set-up on Saturday went very well. Many members had showed up well before the 9:00 A.M. meeting time. Many hands sped up the heavy lifting, e.g. setting up multiple tents and placing those old heavy yellow wooden tables into position.

The completion of the Saturday set up was done in record time. I could not have asked for any better group of hard working hams.

On Sunday morning, the weather was great for a hamfest. As I arrived at the club at 6:0 A.M., there were several members already getting things in shape up. We were quickly set up for business. It was cool and damp, but the morning sun quickly warmed things up.

Fortunately, Skyview has the most loyal hamfest followers. The paid attendance was approximately 250 and gross dollars received were well above average. I estimate the profit to be close to the 2023 event.

The lucky prizewinners are listed to the right.

The excellent co-operation of the membership helps make this event a pleasurable experience. Again, I would like to thank everyone that helped make this hamfest a success.

John Italiano - WA3KFS

Skyview Hamfest Chairman

Door Prizes:

9:00 AM Heil T-shirt and Heil Ham Radio Ham Book: W1MP

9:30 AM $25 ARRL Gift Certificate: WW8X

10:00 AM $25 ARRL Gift Certificate: N1VA
(AG3I originally won and donated back for someone else to win)

10:30 AM $50 ARRL Gift Certificate: N3SBF

11:00 AM J-Pole donated by Art WA3BKD: KB8UNJ

11:30 AM RT Systems Programming Software (Donated by RT Systems): W3UY

Main Prizes:

Samlex Power Supply (Donated by Samlex): K3VRU

Icom IC-V3500 (Donated by WA3HGW): KC3STT

Soldering Station (Donated by WA3HGW): KC3YKT

$100 DX Engineering Gift Certificate (Donated by DX Engineering): WU3U

$100 DX Engineering Gift Certificate (Donated by DX Engineering): N3AKO

$100 DX Engineering Gift Certificate (Donated by N3MVF): N2MA

$50 DX Engineering Gift Certificate (Donated by N3MVF): KA3TFB

$50 DX Engineering Gift Certificate (Donated by N3MVF): WB3JHC

50/50:

$116: Ticket Number 4815418 KE3IF

Begali Key

Begali Key (Donated by Bruna Begali): KC3TTK

Results de John - K3STL

POTA Profile : US-8792 PA 093 Game Land

de Paul - AC3IE

Pennsylvania Game Land 093 seems to be unique among State Game Lands (SGL) in that its number is significant and was specifically used to so indicate. It is located directly north of the Flight 93 Memorial (US-0774) across US Route 30.

The following is quoted from the second page (text portion) of the SGL Map.

https://www.pgc.pa.gov/HuntTrap/StateGameLands/Documents/SGL%20Maps/SGL__093.pdf

> "SGL 093 is located directly across from the main entrance of the Flight 93 National Memorial. Following the events of September 11, 2001, the administrative number "093" was transferred to this location because of its proximity to the crash site and its location along the flight path of United Flight 93."

The Pennsylvania Game Commission (PGC) currently maintains two parking areas along Johnson Bottom Road and two parking areas along Burinda Road for this SGL.

Careful study of the POTA map for US-8792 SGL 093 showed that two of those parking areas were in the "main part" of the Game Lands. Of course, had I looked at the second page of the State Game Land map, I would have seen this.

The farthest point on SGL 093 by foot from a parking area or public road is approximately 0.5 mile. There are 1.8 miles of maintained administrative roads throughout SGL 093, providing for public access to this area by foot.

All roads are currently closed year-round to public motor vehicle traffic, and access is controlled by posted signs on all roads. A locked gate is on the administrative road that travels from Johnson Bottom Road at the northern end of the SGL. The gated roads and rights-of-way provide access for hunters and avenues for hiking, wildlife photography and bird-watching."

I was curious about the statement

> "Following the events of September 11, 2001, the administrative number "093" was transferred to this location because of its proximity to the crash site and its location along the flight path of United Flight 93."

From where was it transferred? A few searches asking the question produced no useful results. A little thought on the matter gave me an idea. After all, I spent decades of my career as an analyst working on tough problems, I should be able to shed some light on this one. The number was transferred from another Game Land, it happened "recently" compared to the time scale that game lands operate on. So, perhaps, one with a newer number had been SGL 093…

Working back from the highest numbered one on the SGL map page SGL 336:

(https://www.pgc.pa.gov/HuntTrap/StateGameLands/Pages/State-Game-Lands-Maps.aspx

SGL link	POTA	Comment
336	US-11824	Lawrence County
335	US-9024	Tioga County
334		Something odd, the map says SGL 332
333		Something odd, the map says SGL 332
332	US-11247	Indiana County. Our newest "local" POTA park
331	US-9021	We got it. In the map itself it says "State Game Land 93" but the box in the lower right hand corner says "State Game Land 331". Nothing is mentioned about its history on the second page of the map, just that it is 5,178 Acres of mountainous and forested terrain in Clearfield County.

A question remains, was the current SGL 093 a Game Land before it was renamed? I don't know.

Activation

I activated POTA US-8792 State Game Land 093 on July 25, 2024, making 16 CW contacts on 40 Meters using an EFHW antenna and an ICOM IC-705 transceiver.

I turned north from US Route 30 onto Johnson Bottom Road and continued to the first parking area and saw that it was primarily the Memorial to Richard J. Guadagno.

One of the passengers on Flight 93 was Richard J. Guadagno, a biologist and law enforcement officer with the U.S. Fish & Wildlife Service. A memorial to Officer Guadagno was constructed by the PGC on SGL 093 and is located at the parking area along Johnson Bottom Road near Route 30.

A hiking trail was constructed, starting and ending at the memorial, and named the "Guadagno Trail" in his honor. Since the family of Officer Guadagno had no remains to bury, the PGC is treating the memorial stone as a cemetery and maintaining it as such.

Whenever I got there, there was a State Trooper parked in this first parking area and whatever he was doing was most likely more important than what I had on mind. So I moved on the second parking area, which turned out to be better suited for my POTA activation. It has tall trees, plenty of room for the antenna wire and I wouldn't disturb anyone visiting the Guadagno memorial.

There are two other parking areas that are in a separate area of the Game Land a mile or so north east of where I was. They are easy to find on the SGL Map, but more tedious on the POTA Map. I haven't been to them yet.

References

The Conservation Fund
https://www.conservationfund.org/projects/state-game-lands-93

National Park Service
Flight 93 National Memorial Pennsylvania
https://www.nps.gov/flni/index.htm

PA State Game Lands Maps
State Game Lands PDF Maps
https://www.pgc.pa.gov/HuntTrap/StateGameLands/Pages/State-Game-Lands-Maps.aspx

SGL 093
https://www.pgc.pa.gov/HuntTrap/StateGameLands/Documents/SGL%20Maps/SGL__093.pdf

SGL 331
https://www.pgc.pa.gov/HuntTrap/StateGameLands/Documents/SGL%20Maps/SGL__331.pdf

Parks On The Air Maps

US-8792 PA SGL 093
https://pota.app/#/park/US-8792

US-9021 PA SGL 331
https://pota.app/#/park/US-9021

US-0774 Flight 93 National Memorial
https://pota.app/#/park/US-0774

Once you get outdoors, you will have visitors :

But my CW Moth visitor was better than a bear visitor

de Paul - AC3IE

Rich Ryba

WQ3Q

aka 'Quack-Quack'

Past President

Hams for Pan Can Organizer

SK - 31AUG24

Doug Wing

N3OEX

Long Time Member

Worked on Crank Up Tower and Pavilion

SK - 25JUL24

Skyview VE Sessions

Skyview provides VE Testing at the Skyview Clubhouse each month (Details provided later, near the end of this newsletter)

Here are some of the recent success stories

August 2024

Jennifer Carrr KC3ZQH passed the Technician exam

Tyler Cubarney KC3ZPX passed the Technician exam

September 2024

Mike Packard KC3ZVC passed the Technician exam

Bill Pascale KC3ZUZ passed the Technician exam

de Bill - N3WMC

Welcome New Members !!

Welcome the following Skyview Radio Society Members who have joined us since publishing the August 2024 newsletter:

W3WC - Pete Finnegan - Wexford

N3DL - Tim Haniwalt - Butler

KC3YEZ - Eric Kana - Harrison City

WB3JHC - Rudy Kolencik - Greensburg

W3XOX - Kevin Lear - Altoona

AK4HZ - Dave McGuire - New Kensington

Remember that something is going on up at 'the joint' every Tuesday. Sign up for the K3MJW Groups.io Reflector to get the latest news and event announcements by email.

If you are a reader who is interested in becoming a Skyview member, then go to: http://www.skyviewradio.net/ for information.

If you are a reader who is not yet a ham, and you are interested in becoming a ham, , then go to: http://www.skyviewradio.net/ for information.

Skyview Radio Society Roster as of 30 SEP 24

NM3A	KB3HPC	WC3O	KK3TM
N3AFS	K3HSE	WO3O	N3TTE
KB3APD	AK4HZ	KC3OCA	KC3TTK
NAØB	AG3I	KC3OCB	AG3U
N3BAH	AC3IE	KC3OCC	NS3U
W3BUW	KE3IF	N3OEX [SK]	WU3U
KF3C	KC3IIO	K3OGN	KB3UIO
KA3CBA	AB3IK	N3OIF	N3UIW
KC3CBQ	WB3IMB	KB3OMB	KC3UNP
W3CDW	W3IU	K4PDF	W3UY
K2CI	K3JAS	KC3PIM	KX3V
K3CLT	WB3JHC	K2PMD	KC3VCX
K3CWE	N3JLR	KE3PO	KC3VNB
N5DB	KA3JOU	W3PRL	K3VRU
K3DCG	ND9JR	KC3PSQ	KC3VYK
N3DL	K3JZD	KC3PXQ	W3VYK
N3DRB	WA3KFS	AC3Q	N3WAV
KB3DVD	AC3KI	NU3Q	W3WC
KC2EGL	ACØKK	WQ3Q [SK]	KC3WCJ
KC3EJC	K3KR	KC3QAA	K3WM
AB3ER	KC3KXZ	NJ3R	N3WMC
WA3ERT	WE3L	K3RAW	KA3WVU
N3ERW	WA3LCY	K3RMB	K3WWP
K3ES	AC3LD	W3RRK	N3XF
KG3F	KC3LHW	I2RTF	W3XOX
WB3FAE	WB3LJQ	KI2RTF	KC3YEZ
K3FAZ	WB5LLI	K3RWN	N3YJN
KC3FEI	K3LR	KQ3S	W3YNI
K3FH	KC3LRT	K3SBE	KB3YRU
K3FKI	AB3LS	WA3SCM	W3YS
KC3FWD	N2MA	KC3SDJ	KB3YYC
AC3GB	KC3MBM	KC3SKX [SK]	KE3Z
N2GBR	N3MHZ	KC3SNZ	K3ZAU
AC3GE	KC3MIQ	KB3SOU	KC3ZIM
K3GIR	K3MJ	K3STL	W3ZVX
KC3GPM	W1MP	KC3STV	
K3GT	K3MRN	KB3SVJ	
AB3GY	N3MRU	KC3TEX	
KC3GZW	KS3N	WV8TG	
NY9H	G4NFS	N3TIN	
WB3HFP	KB3NSH	N3TIR	
WA3HGW	AJ3O	W3TLN	

Notes: Only Call Signs are being published. Refer to QRZ.COM for more information. (Unable to publish those without Call Signs.)

Kul - Links

Jody - K3JZD

There is lots of stuff out on the Internet… Some of it can brighten your day. Some of it can educate you.

I can't really copy and past it all in here. But, I can point you at some of it . . . . .

There are many creative people in this world who are solving problems with technology. This is one of them.

https://tinyurl.com/2p99ry8t

Article Discussing the State of Shortwave Radio

https://tinyurl.com/5e9z8fps

I'll consider any Kul - Links that you find.
Email then to me at: K3JZD AT ARRL DOT NET
They might just end up in the next issue

Previous Issues

Previous Issues of the Q5er are available at

http://www.nelis.net

Next Newsletter will be December 1, 2024
Closing Date For Submissions : Nov 15, 2024
K3JZD AT ARRL DOT NET

Become Well Known Publish in the Q5er

The Q5er goes to other clubs and is available to all on our web site.

Submissions to : K3JZD AT ARRL DOT NET

>>>>>> WARNING <<<<<<

An Alarm System has been installed up at the joint. Do Not go in there on your own until you learn how to disarm and rearm it.

**** Skyview VE Testing ****

For Testing Dates, See :
http://www.arrl.org/find-an-amateur-radio-license-exam-session
Time: Usually 8:15 AM

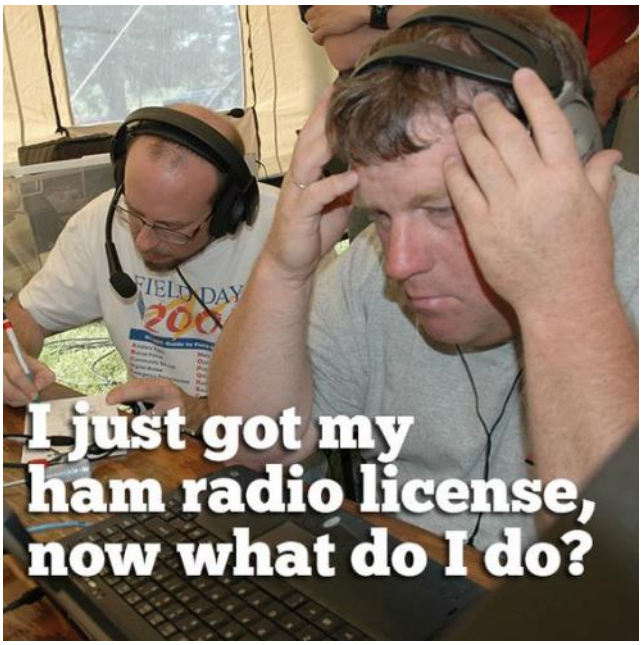
Location: Skyview Clubhouse Meeting Room
2335 Turkey Ridge Rd
New Kensington PA 15068-1936

Contact: Bill Dillen
(724) 882-9612
Email: bdillen@comcast.net
http://www.skyviewradio.net/ve-tests/

Please E-Mail or call to register!!!
While walk-ins are accepted, the exam session may be cancelled if no candidates are scheduled.

Q5er Editor & Publisher: Jody Nelis - K3JZD

email your comments and article submissions to: **K3JZD AT ARRL DOT NET**



That's Easy . . . .

Come up to the Skyview Clubhouse on any Tuesday and ask !!!

And See : https://tinyurl.com/y79tqsr8

All General Information about the Skyview Radio Society is at http://www.skyviewradio.net

Subscribe to K3MJW **groups.io** reflector for All Current News & Activities : https://groups.io/g/K3MJW
If you want to keep up with what is going on NOW, that is the place - have it forward msgs to your email

Is this how your dining room looks ??

Send in pictures of your Ham Shack