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

Q5er – The Official Newsletter of the Skyview Radio Society

August 1, 2017

Skyview Swap n Shop

Setup for the The Skyview Swap n Shop will be on August 26, 2017

The Skyview Swap n Shop will be on August 27, 2017

Your Dues keep the Skyview Clubhouse running. The Dues only cover the fixed expenses like the utilities, taxes, insurance, and a little of the upkeep.

The income from the Skyview Swap n Shop is relied upon for improvements and the repairs to the Radio Equipment, Antennas, Repeaters, Etc.

So, if you are a Skyview Member:

Be sure to purchase the three Admission Tickets that were mailed out in advance to every Member. Even if you do not have anyone to pass them on to.

Come out on Saturday August 26th and help with the setup.

Come out on Sunday August 27th and help out wherever you can, In addition to helping to make sure that the Swap Shop goes smoothly, showing our guests around the grounds and the clubhouse, and answering any questions that they may have, there is the tear down and cleanup at the end of the day. The more hands there are helping at the end of the day, the faster it goes.

See You There !!

————> ONE DAY ONLY SPECIAL <————

At the Skyview Swap n Shop, on Sunday August 27th, Skyview will be offering a One Day Only Membership Special. Join Skyview at the Swap n Shop and get a Membership for the rest of 2017 and all of 2018 for the price of a One Year Membership.

Stop up at the Main Table for details.

- Ham Engineer Reminices
- Quadcopters
- Remembring W9UK
- VHF Roving
- Green Bank Observatory
- Battery Cycler
- FirstNet
- Tower Progress
- And Much More . . . . . .

Sunspots?

I don't need no stinking Sunspots.

I have 40 meters.

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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 Yahoo Reflector: https://groups.yahoo.com/neo/groups/K3MJW
(You must be logged in to your personal Yahoo Account to get into the Skyview Yahoo Reflector)

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

From the Editor

Various Summertime activities contributed to a slightly shorter newsletter this time.

We wait so long for the nice mild and warmer weather to arrive that we have to take advantage of it before it is gone again.

I hope you are finding a way to do some outdoor hamming. Even if it is just in your back yard.

This Summer I combined two of my hobbies by taking my motorcycle to get to the easy SOTA summits like Blue Knob and Mount Davis where I felt that it was safe to leave it parked while I went off and did my SOTA thing. Whenever I am way out on foot somewhere in the woods, I need to carry a lot of stuff to insure that once I get to the summit, I will be able to operate no matter what. But, on these motorcycle activations, I use a smaller thinned-out backpack. If I'm missing something due to my not carrying all of my 'just in case stuff', then I would just give up on that summit and save it for another day. It would not be a lost day - I would just ride some more.

I hope that you enjoy this issue.

Jody—K3JZD

ARES/RACES Report de WQ3Q

You Can Make A Difference!

Police, fire, and medical personnel immediately come to mind when the citizenry thinks of emergency responders, and for good reason. They are highly trained, highly skilled professionals who put their lives on the line in times of natural or human-caused disasters. For government agencies, an essential link consists of dispatch crews that garner information and quickly get the word out about trouble spots. That critical function can get a huge assist from a group of volunteers who perform a key role on the airwaves.

In conjunction with other ARES and other Emergency Service organizations, many hams are supporting local events that not only have the potential for emergency needs, but also gives us practice in interacting with other hams and net control operatives that would be valued, if a true emergency would occur. Fortunately, disasters are very rare where we are located, but we as operators can still get plenty of work.

Those activities include ones currently and recently active, such as the Rachel Carson Trail Run, the Westmoreland County Air Show at the Arnold Palmer Latrobe Airport, the Pittsburgh Marathon, a SET (Simulated Emergency Test) drill which takes a simulated emergency and asks for hams to set up in a location, or *Shelter in Place* for communication needs related to the proposed emergency. This is quite similar to playing Field Day. (So… you just thought FD was a way to get away from the XYL and eat good food?) We will be having a SET drill soon and it would be great to have some of you be a part of it. I'll pass along details when they are firmed up.

Agencies at the local and state level recognize the importance of the ham operators, While Allegheny County is reviving the ARES group, I am beginning to establish a more concrete relationship with the Westmoreland County ARES group. As such, I will try to integrate the Skyview Radio Society into their thinking and make them more aware of the potential benefit we can be as significant contributors for the betterment and safety of our locales.

The county's Amateur Radio Emergency Service is there for the public not only in times of calamity, it also to enable events that enhance the quality of life. We may be heard by only a few, but our presence adds a measure of safety for everybody. Please consider being a part of our efforts.

ARES - sponsored picnic will be on August 5, 11:00 am - 2:00 pm, at the Firemens Memorial Park in Aspinwall. Open to all hams and families. RSVP number attending to ab3ed@arrl.net. Bring chairs and your own beverages. "

73,

Rich WQ3Q

Quack Quack

CQ CQ CQ This is Kilo Two Mike

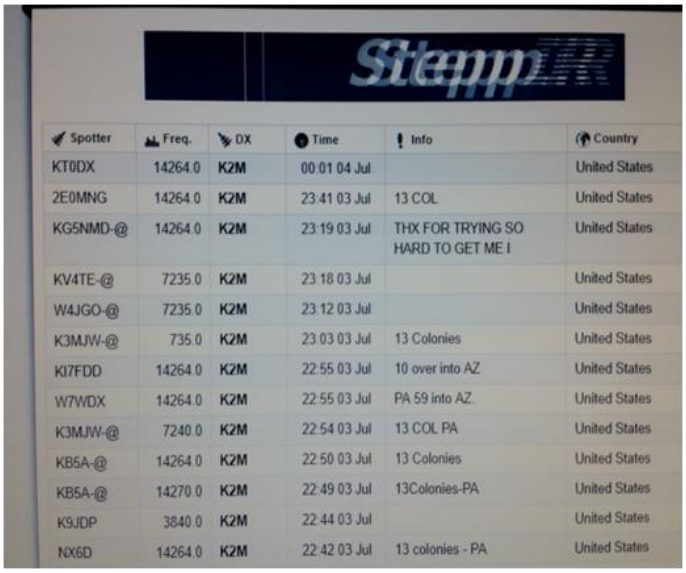
de John - K3STL

This is Kilo Two Mike Pennsylvania 13 Colonies Special Event Station QRZed? Those words were music to my ears this 4th of July weekend. Due to life's demands, I haven't operated HF in over a year and it was great to put on the headset and listen to fellow Patriots answer our calls. I definitely had some good memories this holiday.

What I enjoyed hearing back when closing with God Bless America and God Bless our Troops was hearing fellow hams say how good that this event makes them feel and thanking us for volunteering. So many of us share love for America and its freedoms.

Poor band conditions, including solar flares and thunderstorms really made things challenging for operators, but this is good practice in preparation for an emergency. I did have one ham, KG5NMD, post on the cluster a thank you for trying so hard to work him. Later that night, I emailed him a thank you for the compliment and explained how band conditions were rough with a S5-S8 noise level that night. He replied by saying "Most operators would've just moved on. So I wanted you to know I appreciated your efforts". Yeah, there are rewards for being a good operator. I also had a station from VA land calling and it was hard pulling him out of the mud. Then, out of nowhere, I heard the music of morse code through the headset. I got the "VA" part and said if ya send it again I'll get it. Sure enough he sends the code again and then I repeat it back and hear the dit dah dit, dit dah dit in return. Logged him!

The story gets better. I have a habit of having fun with the Texans and adding "and God Bless Texas BBQ" to end the QSO. Lo and Behold, Jim, K5KTF, (living in Texas) had a QSO with me and mentioned that he lived in Pittsburgh and will be vacationing here in August. I invited Jim to visit us at Skyview during his August vacation and mentioned Bob, WC3O, in the conversation. Jim contacted Bob via e-mail and plans to bring us Brisket and Texas BBQ sauce… I'm finally going to get to try Texas BBQ!



Spotter	Freq.	DX	Time	Info	Country
KT0DX	14264.0	K2M	00:01 04 Jul		United States
2E0MNG	14264.0	K2M	23:41 03 Jul	13 COL	United States
KG5NMD-@	14264.0	K2M	23:19 03 Jul	THX FOR TRYING SO HARD TO GET ME I	United States
KV4TE-@	7235.0	K2M	23:18 03 Jul		United States
W4JGO-@	7235.0	K2M	23:12 03 Jul		United States
K3MJW-@	735.0	K2M	23:03 03 Jul	13 Colonies	United States
KI7FDD	14264.0	K2M	22:55 03 Jul	10 over into AZ	United States
W7WDX	14264.0	K2M	22:55 03 Jul	PA 59 into AZ	United States
K3MJW-@	7240.0	K2M	22:54 03 Jul	13 COL PA	United States
KB5A-@	14264.0	K2M	22:50 03 Jul	13 Colonies	United States
KB5A-@	14270.0	K2M	22:49 03 Jul	13Colonies-PA	United States
K9JDP	3840.0	K2M	22:44 03 Jul		United States
NX6D	14264.0	K2M	22:42 03 Jul	13 colonies - PA	United States

Photo courtesy of dxsummit.fi

I have to admit, putting on that headset after so long felt great and diving right into the pileup without having many problems was even better. However, what I enjoyed most were the many "good operator" compliments and the new friends I made during this special event. Good memories!

73 de K3STL

Ham Radio is a Contact Sport

Reminisces of an Engineer – Ham Episode 2

de Joe – N3TTE

Over the years, there were numerous instances where my ham radio background and "ham-genuity" came in handy on the job. I've picked some interesting ones from each company I worked for to describe here

The Team Learns About VSWR

We had two experiences with coax cables on the modern control room project where my ham experience came in handy. The mockup used a proprietary LAN which was based on coax cable. The engineer who installed it used a mix of 75 ohm and 50 ohm coax components, with the results that the computers would not 'converse'. Well, I knew that when you had impedance mismatches between your coax and antennas, you got reflections, and with the mix of parts, the signals on the LAN were probably bouncng back and forth like ping pong balls at a tournament. A quick phone call verified that 75 ohm was required, and a trip to the closest Radio Shack got the correct coax. After replacing the 50 ohm coax jumpers, the computers were happy and the mockup worked.

We wanted to record the operators for later evaluation by our Behavioral Physiologist Consultant. So I purchased and installed a video system with cameras, recorder, monitors, etc. The simulator control room was about 50 ft from the video controls, and I installed two RG-59 coax runs between the two locations. One Friday after a successful test run of the system, I drove back to my office. When I got there, I had a phone call from the project manager telling me that the video system was no longer working. After a brief conversation, I found out that there were ghost images on the monitors. Since by this time it was the afternoon and the mockup was an hour's drive from the office, I told him, "No big deal, I'll come in on Monday morning and take care of it." Needless to say, he was not too happy with my answer. Since he was a mechanical engineer, I suppose the mysteries of electrons were outside of his 'comfort zone'.

When I arrived at the mockup room on Monday, there were still ghost images on the monitors. I did the first thing a good ham always does to troubleshoot: I 'eyeballed' the equipment, and discovered that the monitor in the simulator control room was missing. The Simulator Engineer locked it away for the weekend. When the monitor was reconnected, the phantoms were exorcised.

However the solution was too simple for the project manager. He wanted to know why the ghosts occurred and needed assurance they would not return. I explained that when you open a transmission line, an impedance mismatch occurs and you get reflected signals. But the verbal explanation was still not good enough for him, so I looked at the specifications for the monitors and did a calculation involving:

The approximate length of the transmission lines

The speed of light times the velocity factor of RG-59 coax

The scan time for one horizontal line on the monitors

And showed that two times the delay time in 50 ft of coax would cause a noticeable ghost image.

When I showed the project manager that my little calculation agreed with what we observed, it looked like his head was ready to explode. I suspect that if I had a Smith Chart handy and used it, his head would have actually exploded!

Gee, What a Neat Radio You Have

My second job was with a small defense contractor that did some very interesting optical instrumentation and position control projects. Since it was a fairly small company, my ham radio and electronics background came in very handy many times. However there were two instances where my ham radio background was especially useful.

On one project we installed equipment on a small warship for a friendly foreign nation and I was at the shipyard to help with commissioning the system. Our control cabinet was mounted beside the main radio transmitter and I was somewhat concerned about EMI/RFI interference. While our equipment was in a grounded, sealed metal cabinet, I wanted to know how much RF power the transmitter located beside it could put out. The system we installed on the ship aimed and fired a 30mm cannon at moving targets and if our computers and electronics were affected by a high power radio transmission, the results could be disastrous!!

During one of the overnight sea trials, I happened to meet the engineer who was commissioning the radio equipment and mentioned I was a ham. He was then very willing to show off the equipment and give me demonstrations when I hung out in the ship's radio "shack." (They had some really neat software for predicting propagation and controlling the radios that I wished I could have had for my ham shack!) When he was showing me the equipment, I was making mental notes of the manufacturers and model numbers, which I wrote down immediately afterwards. Later, when I was back on land, I went online and examined the specs for the equipment and found that none of it was particularly high power; nothing over 100 watts RF. But I suspect that if I was a bit less subtle and asked directly about EMI/RFI interference through project channels, we would not have gotten an answer.

Joe Birsa – N3TTE

Skyview Swap n Shop

Sunday, August 27th 7AM to ??

At the Skyview Clubhouse

Directions at www.skyviewradio.net

See You There !!

Green Bank Observatory

Since we had a presentation on radio astronomy a while back, I thought this might be of interest:

The National Science Foundation (NSF) has been asked by the federal government to consider divesting itself of the Green Bank Observatory in West Virginia. The NSF is conducting an environmental impact statement for the Green Bank Observatory and held a public scoping hearing in October 2016 on the future of the observatory.

The NSF will be considering five possible actions:

1. Continued NSF investment for science-focused operations.

2. Collaboration with interested parties for science- and education-focused operations with reduced NSF-funded scope.

3. Collaboration with interested parties for operation as a technology and education park.

4. Mothballing of facilities (suspension of operations in a manner such that operations could resume efficiently at some future date).

5. Deconstruction and site restoration

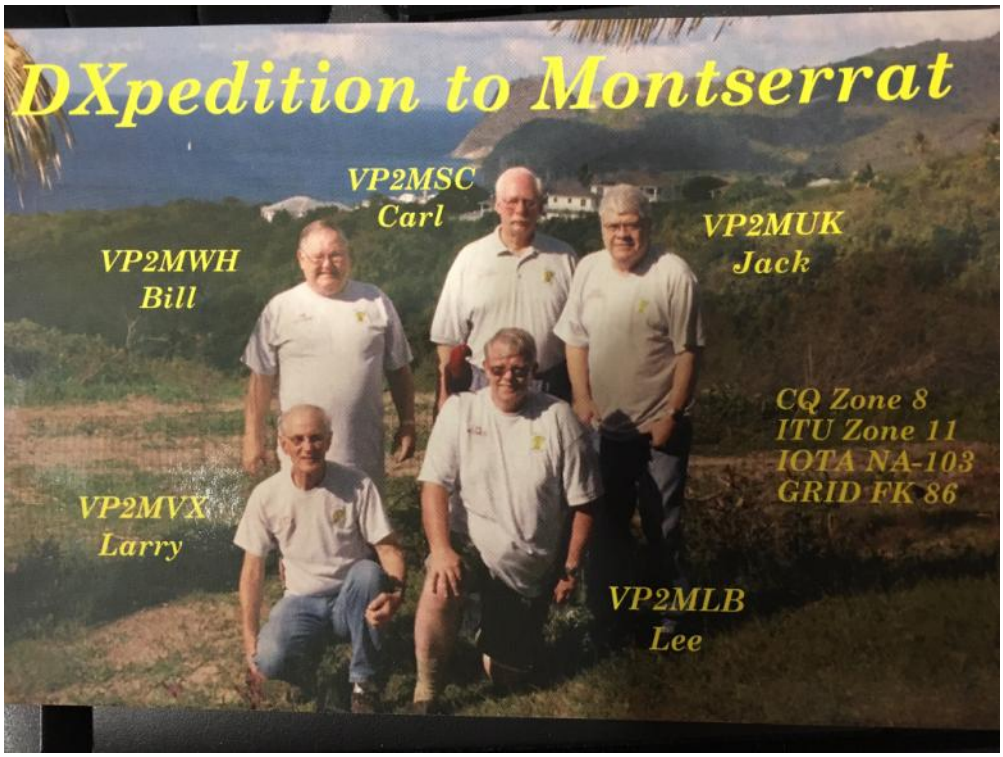
(Go to Google for more information).

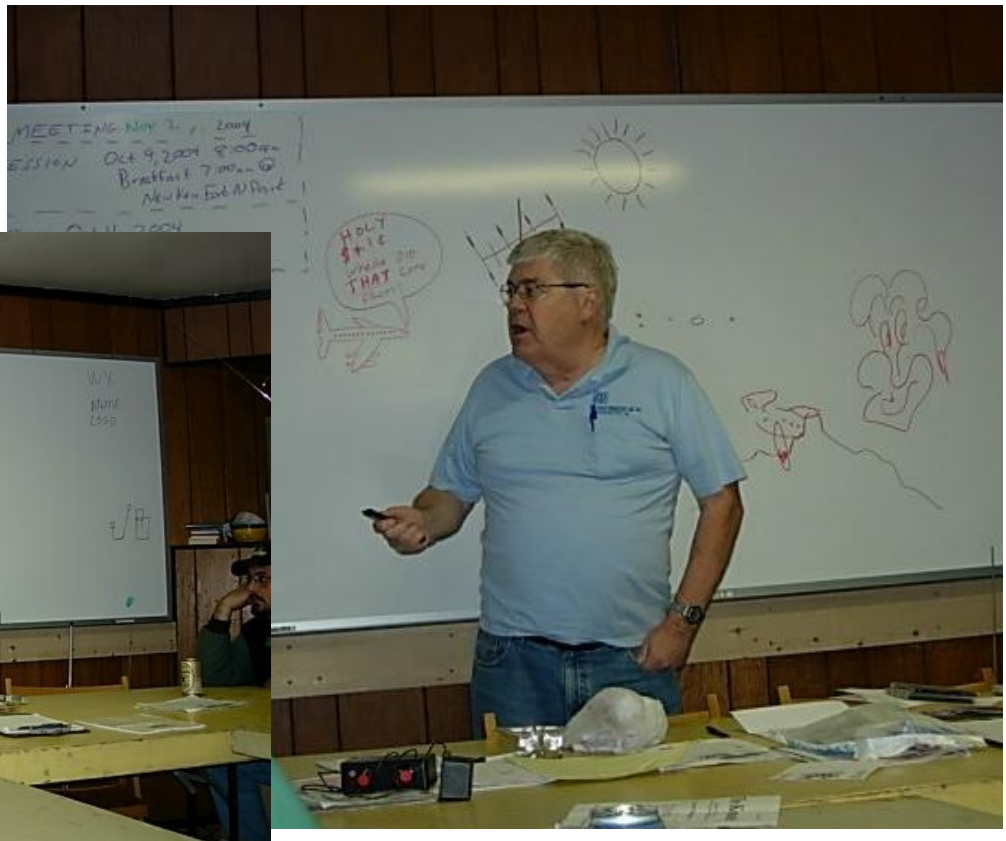
So if you have ever thought about going there, now would be the time to do it. There is not very much to see or learn in the entrance building. You have to take their minibus tour to see the facilities. That may involve some waiting around as it only runs periodically.

Jody - K3JZD

Dedicated to Jack Layton, W9UK/SK

de WC3O





Show Me Yours and I'll Show You Mine

The Featured Hamshack for this issue belongs to:

No contribution for this issue

New Tower Report de WC3O

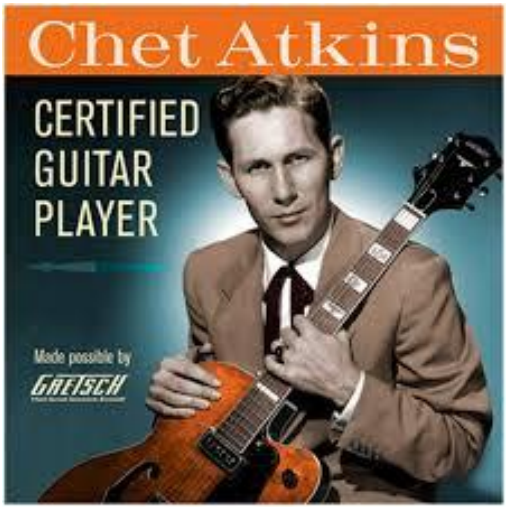
Speaking of the new tower: The base components are ready to be picked up! MANY thanks Mark, K3FY. Other aspects – The old thrust bearing has been rehabbed. TNX BUW. The collar that holds the mast in the trust bearing has been cleaned, re-threaded and plated. TNX HGW. Naturally, all the painting is done. TNX KQ3S. Moving right along!

Painter Painted Picture

----- Famous Hams -----

Chet Atkins

(June 20, 1924 – June 30, 2001)



Chester Burton Atkins, known as "Mr. Guitar" and "The Country Gentleman", was an American musician, occasional vocalist, songwriter, and record producer.

Chet was originally licensed as WA4CZD. In 1998 he obtained the W4CGP vanity call sign to go along with his self bestowed Honorary CGP ("Certified Guitar Player") Degree
https://vimeo.com/26445462
http://www.oldqslcards.com/w4cgp.pdf

Those who now hold both of his old reassigned call signs both know quite well that they were once held by Chet Atkins.

A Tale of Woe From WC3O

I like quadcopters. They're cool. I always wanted one. I've seen a hundred You Tube videos of them flying and the great video they produce. After looking at the prices I never wanted to spend that much money for something that I really didn't need.

As luck would have it, the Breeze Shooters decided to do a drawing on a quadcopter. I'm in! I bought tickets and waited. Wouldn't you know it I WON! Yipee! Now I can shoot those great videos and do all those cool things. The setup had a built-in high-def video camera and GPS tracking and all kindsa stuff.

Well, yes and no. The company that the Breeze Shooters was buying the quad from didn't actually HAVE the quad in stock. They didn't tell the Breeze Shooters this when they ordered it. I had to wait to get the quad. I waited. I waited. I waited. Then after that, I waited some more. I was starting to wonder if I was never meant to have a quadcopter. Then one fine day it came! Yipee!

The quadcopter was great, but the instructions were not written by anyone from our culture. I would read a paragraph, then read it again, then read it again. Who the hell wrote this! I did figure things out ok in time. I flew the copter with success but I could never get the video to work? I tried this, I tried that, nothing. Oh well. Maybe I was never meant to have a quadcopter.

I took the quad to a Breeze Shooters meeting once so they could see her fly. After the meeting we went out into the parking lot. I turned on the quad and waited for the GPS to lock. It did. I turned on the transmitter and waited for the quad to recognize it. It did. I moved the joy sticks to turn the quad on to idle speed. I have no idea what happened but it took off, flipped over and immediately started bouncing off the ground upside down, the propellers and guards breaking off and shooting in all directions! I ran over and hit the off switch on the quad. I am really thinking that I was never meant to have a quad.

When I first got this quad I noticed it came with a spare set of blades and guards. I wondered why they included those? Now I know. I re-fitted the little quad with all new blades and guards. I took it out in the field behind my house and it flew perfect! I flew her a few times at the club with good success. Actually, I just left it up at the clubhouse in the hope of finding time to play. Really, I didn't. It just sat unused.

That was all the back-story. Now onto the rest of the story…

On Field Day I decided to charge the batteries in the quad and the wifi receiver to give her a run during FD. I did charge the batts but I never got around to flying her, but the batts were charged. The day before the start of 13 Colonies I went up to the joint to set up all the computers and radios for the event. I got done early and thought about my old friend the quad and how I never got the video to work. Hmmm? I got out the instruction manual and tried ever so hard to decipher what they were trying to tell me. After a number of tries BOOM! I have video!!! Yipee!

The batts are charged and I am ready to dance!

So I go outside and there are clouds but the sun is shining. Not bad? I turn on the quad, we have GPS lock. I turn on the transmitter, we have transmitter lock. I turn on the wifi repeater and my iphone. We have video! I start up the quad and the blades ran at idle. I move the joystick up and she goes up! I have video. Life is good.

Well, yes and no.

So I ran the quad up maybe 80 feet and as though a Hollywood movie director queued it, it starts to rain. It starts to rain HARD. Then the wind picked up! It all started in an instant! I'm thinking I better get this thing back on the ground fast. I look up and the quad it moving away from me on its own. Despite GPS control the wind is overcoming the quad and taking it away! NOOOO COME BACK!

I am pulling on the joystick to make it return, not dice. The damn wind is too strong. So there I am standing in the rain and watching my quad blow off into the next field and out of sight! Damn!

Is that the end of the story? no no

So I remember reading that if the quad is on GPS control and it loses the transmitter the quad will fly to 200 feet and return to the point it started, on the driveway of the clubhouse, in the open.

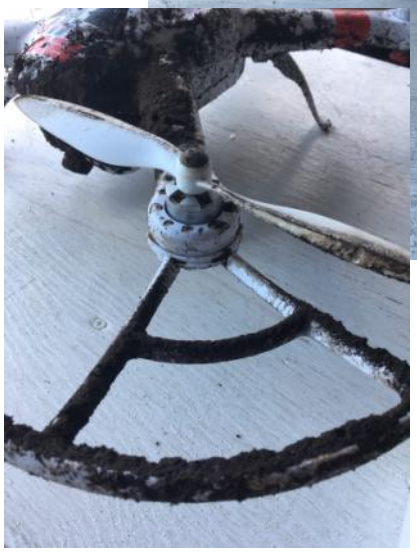
So I decide to switch off the transmitter. There is only silence, I mean other than the heavy rain…

I wait. I wait. I wait. Silence. Finally, I think I hear my quad! It's getting stronger! But where is it?

At this point I am soaked and in the pavilion trying to dry off a little. So I walk out of the pavilion and look over the driveway. No quad? Where is she? I look up. It is RIGHT smack-dab above the crank-up tower and staying there. No wait, it's coming down! NOOOOO! I run and turn on the transmitter, but it will not regain control. The quad is slowly coming down, down, down… Finally I hear BING-BANGBONKBANGBINGBANG. I look up, the quad is beating up the snot out of the tribander! Plastic flying in all directions. I run for cover under the pavilion! Finally the horrible noise stops and thunk. The quad lands right beside me on the far side of the pavilion!

Is that the end of the story? no no

The quad is now upside down and the blades are running at full speed! I'm standing there being pummeled by grass, dirt, rocks, old beer can tabs, stink bugs, PL-259s, you name it, it's shooting it at me! AND there is no easy way to turn it off! So now I'm cautiously working my way to the quad, covered in dirt, to hit the power switch while not getting cut by the now serrated blades and not getting dirt in my eyes! Finally I was able to turn the power off. The little quad, a total mess. As soon as all this was over, the rain stopped…



I was never meant to have a quad…

deWC3O – A former quadcopter owner…

Roving in the VHF Contest

de Richard - N2GBR

I had decided a while ago that I wanted to 'have-a-go' at Roving in the VHF contest.... as you know, it's just like summits on the air but without the walking…

Due to commitments on Saturday, I only rove'd Sunday and in an attempt to "keep it simple" I chose to visit only two Grids.. FN00 and FN10.

Finally after acquiring another load of equipment I had enough stuff to fill the wife's CX-9.

Equipment set-up consisted of attaching a PVC pipe to my hitch mounting Bike-rack that I could insert a 2" mast into. The mast I have is two pieces of 5' each. At the top of the mast I had earlier built a 6M Moxon of Fiberglass Driveway markers and 2" PVC.. tuned well and had a 1.2:1 SWR with a 3Mhz bandwidth.

Below the Moxon was mounted a 10el beam for 2M, delivered from Cushcraft // aka MFJ missing hardware of course...

Finally below the 2m beam I had 17el on 432Mhz

Feed-lines consisted of RG8X for the Moxon and Times LMR400 ultra-flex for the 2m and and 432 beams.

No issues were experienced having the beams separated by only about 24-30"

Set-up and Break-down took approx. 20-30mins and wasn't too difficult, everything broke down to good sized chunks and then into the back of the vehicle.

Radios were a pair of Yeasu FT857D's. This transceiver is a Multi-mode with VHF and HF band coverage.

I connected 2m and 50Mhz to one radio and 432Mhz into the other. This made it easy to chase bands around when communicating stations also had multi-band capabilities.

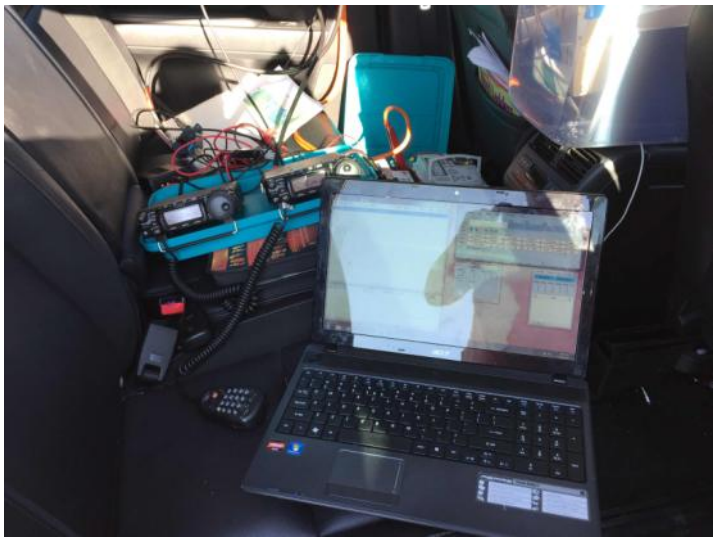
50Mhz: 100W into the Moxon (2el beam)

144Mhz: 50W into a 10el Beam

432Mhz: 20W into a 17el Beam

DC Power: I used a pair of ~100Ahr batteries in parallel and then jump leads to the Vehicle battery. A much nicer solution would have been a small Portable genny and regular AC/DC as a battery charger.. although this worked and the car didn't use too much gas sitting idling.

Logging: I used N1MM+ which had a format for this contest and Roving.. I'm a basic user of N1MM+ but it would have been nice to have CAT control of the two radios and all the other niceties of N1MM+ running. No issues with Logging.



Operating position: From the rear seats.. The battery bank was located in the foot-well behind the drivers seat (but had to be broken down for moves), Radios on a box-lid in the center of the seats. I sat at the right rear passenger seat with the logging lap-top on my lap. I had to jump out and use the "Armstrong" method to point my beams.. Rotator would be very nice.

Sites:

#1 Blue Knob Ski area, FN00rg (This is a well used Rover Site)

#2 On the roadside Rt 26 below state college, FN10ar (now known as a very dark place to disassemble the system at 22:30!!)

Activity: I made 88 QSO's across the bands SSB (and one QSO on 432 exchange being completed on CW). A Large portion of Q's being made on 6m at the end of the day.

I need to plot the q's for further data points

Issues:

First issue... The mess of wiring and poor ergonomics / operating position in the passenger seats of the vehicle and my lack of prior planning.. had me pushing 2m signals into the 432beam for a while and vice versa...DUH!! and yet I was still making QSO's...

SOLUTION>> Next time I will mark Tape and stick it on the top of each radio.

Second issue... Inverter to recharge the battery in my Laptop kept shutting-down on Overtemp.

SOLUTION: place the inverter so that the cars AIRCON could blow though it

Commentary:

This was an interesting challenge to get set-up in time to take part in the event... not enough time taken to figure out layout and operating constraints etc. I enjoyed the event and will have another go in September but I will go south and probably pick-up three or four grids as after a while.. things just dry-up as you have limited range on VHF.

Special thanks to K2EZ for her Elmer assistance, Mark NK8Q for his support and bringing me Dinner on the mtn nr State college and, Bob WC30 for loaning me some bit's and bobs...

Richard // N2GBR

Homebrew Battery Cycler

de Jody - K3JZD

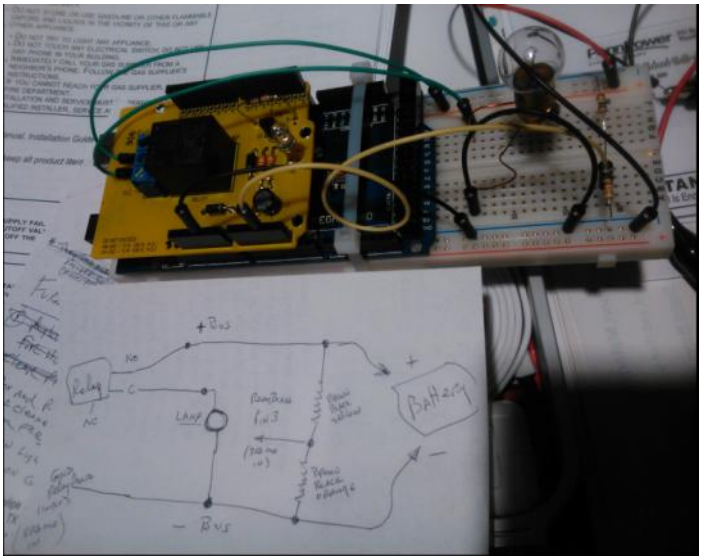
I have always felt that it is best to cycle rechargeable batteries. By 'cycle', I mean to run them down before putting connecting them to a battery charger. Guess that started with the Nicad batteries, which if were typically recharged after they had been run down only 25%, would develop a 'memory, and would begin to behave as if they were dead whenever they were discharged to that 25% point.

Some of the newer types of rechargeable batteries may not require that, but I have always figured it would not hurt to cycle them as well. I an presently using Li-Ion batteries whenever I am doing my SOTA and other portable operation. These Li-Ion batteries are rated at 3.6v, and hold their voltage quite well for a long time. Then they go over the edge and drop rapidly. If they are allowed to drop below 2.5v, they can be damaged, and will never fully recover. Some of the more expensive battery chargers will automatically do this cycling before charging, but my inexpensive Li-Ion charger will not.

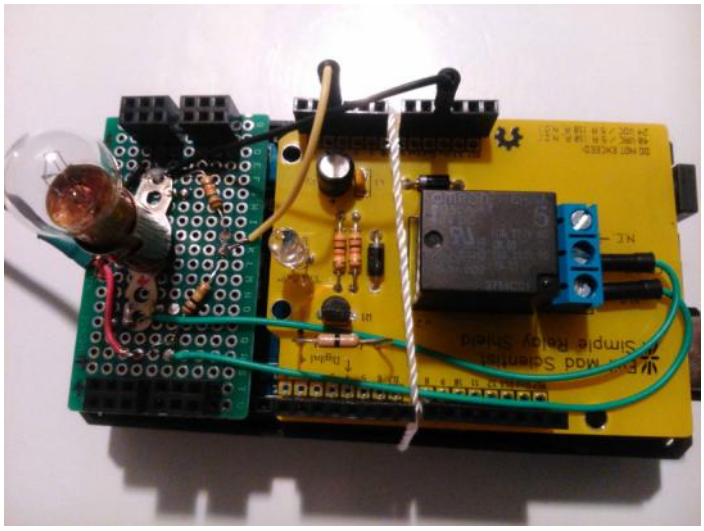
My first attempt at cycling my 4-pack of Li-Ions was to connect them to an 12v automobile headlight. That ended up exceeding their normal discharge rate, and trashed that set of batteries. My next attempt was using a a 12v automobile taillight. That gave me a slower discharge rate, but it was still at a higher current than my radio drew. I was periodically checking the voltmeter I had connected, but that did not work.. It rapidly dropped down below the 10v level in between my periodic checks, and damaged those batteries also. Clearly I needed something better. Something automated that I did not have to be watching.

My solution was to use a small Ardino computer. I had a small relay that was on an Arduino Shield (a board that plugs right into the Arduino) that I had purchased some time ago, thinking that I would surely need it some day. Although they are getting scarce, I found a small 12v automobile dashboard light bulb that draws a little more current than my FT-817 does whenever it is receiving. The Arduino computer has an analog input that I could use to monitor the battery voltage. Seemed like enough parts to do something with.

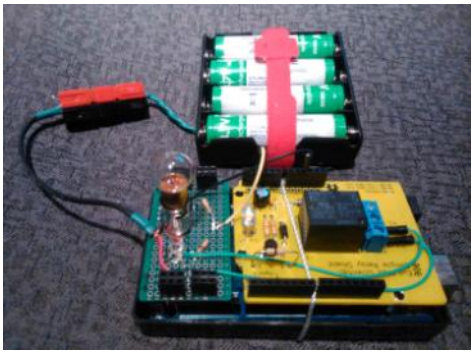
I had to use a 10 to 1 voltage divider because the Arduino analog input is 0 to 5.0v. A 1k and a 10k resister in series across the battery gave me 1.0v at the junction of those resistors whenever the battery voltage dropped down to 10v. I then wrote a small Aduino Sketch (program) which energized the relay which connected the small 12v automobile dashboard light bulb to my battery to illuminate the bulb. My program then continuously monitored the voltage that was being seen on the Arduino analog input, and de-energized the relay to disconnect the bulb whenever it saw that input voltage drop down to 1.0v. So after doing a proof of concept using jumper clips, I then breadboarded it.



It took a little fine tuning of the drop-out trigger point, but it did the job. I did have to modify the program to have it ignore the battery voltage after it had de-energized the relay because the battery would go back up over 10v shortly after the load was removed from it.



The last steps were to put the small 12v automobile dashboard light bulb into a socket, mount that socket and the voltage dividing resistors onto a small blank Arduino perf board that I could plug into unused expansion pins on my Arduino Mega. I put half of an Auduino Mega case on the bottom, but I left the top unprotected. Used string to hold that half of a case on there. I am the only one who uses it, and it lives in a cardboard box when it is not in use. So, that was good enough.



Now, whenever I came back from a portable operation with run down or partially run down battery packs, they go right onto this Automatic Battery Cycler. I do not have to watch it at all. Whenever I happen to walk by and notice that the bulb is no longer illuminated, the battery pack then goes onto the charger.

Got to design something. Got to build something and melt some solder. Mission accomplished.

Jody - K3JZD

Stay Tuned de Bob - WC3O

I wanted to write something about radios, antennas and antenna tuners. This is mostly geared for our newer hammies but is good for everyone.

Every now and then a member comes to me about something not working right with one of the radios at the club. We get together in front of the rig to see what's going on. When I ask what the SWR on the antenna is, the person might look at the SWR meter on the radio and say it looks good, it is showing near 1:1. When I look at the radio I see the built-in antenna tuner is turned ON.

NEGATIVE! NEGATIVE! (There's a funny story surrounding NEGATIVE! NEGATIVE!)

The idea of the built-in auto-tuner is to make the radio happy with a good SWR. The tuner takes whatever load (Complex impedance) the antenna system presents (good or bad), and make it look good. In other words – If the antenna has a GOOD SWR the tuner makes it look GOOD. If the antenna has a TERRIBLE SWR, the tuner makes it look GOOD – But the fact very much remains that the antenna has a TERRIBLE mismatch and it is not going to work very well. But the radio is as happy as can be because the internal tuner makes the antenna look great, despite the antenna being REALLY bad!

The radios internal antenna tuner has two conditions. In-line and out of line. When the tuner is in-line you really have no idea what the SWR really is. The tuner will always want to make things look good, even when they are not. If you want to see the SWR of your "antenna system" the internal tuner MUST BE out of line, or by-passed.

Let's say you have a typical tri-band yagi for 20, 15 and 10 meters. If the antenna is working properly you likely will not need the internal tuner at all, and the tuner should be out of line. If you don't need the tuner you are best to simply turn it off. If the true SWR is below around 1.6:1 or better just leave the tuner out of line (OFF) and everyone is happy.

Let's say you have a 40 meter dipole and you want to talk in the phone portion of the band. Let's say the SWR is 2:1. Hit the tuner and it then shows 1:1. A 2:1 SWR is not great, but it is within a reasonable range.

Now let's say you have a 40 meter dipole, built for 40 meters, and your SWR is 8:1. You hit the tune button and BOOM! You have a 1:1 match! Everything is great. The radio is happy, right? But wait? 8:1 SWR with the tuner out of line? That ain't no good? What happened? You my friend have a problem in your "antenna system".

Why do I say "antenna system"? Because it all starts at the antenna connector on the back of your radio. Anything you have between the connector on the back of your radio to the antenna is part of "the system". Every connector, external watt meter, linear amplifier, external antenna tuner, lightning protection, antenna switches, band pass filters, EVERY PL-259 along the way is ALL part of the "system" and a problem in ANY (one or MORE) of these items can cause SWR problems.

If you are seeing a 8:1 SWR on your 40 meter dipole while on 40 meters you REALLY need to STOP and ask why, DO NOT just hit the TUNE button and smile. Your "system" has a problem and it is in everyone's best interest to fix the problem before moving on. By rights the SWR on 40 meters, on your 40 dipole should be 2:1 or below.

So what am I saying?

If I ask you what your SWR is, be SURE the internal tuner (or external for that matter) is OFF or in bypass mode. THAT is the SWR of the antenna.

You really need to be aware of SWR. It's important. If you see red lights flashing when you transmit you really need to stop and figure out what is wrong. It's important.

All this is assuming we are talking about you having a radio with an internal auto-tuner and an antenna at home.

Up at the club the antenna system is more complicated. The "antenna system" at the clubhouse goes radio -> band-pass filter -> linear amplifier -> external watt/SWR meter -> external high-power manual antenna tuner -> antenna. My next article on this subject will be called "The view from here".

It will look at SWR from a "view" standpoint. The view depends where you are looking FROM. The view from the radio looking into the band-pass filter. The view looking INTO the linear amplifier, the view into the external antenna tuner and so on. I might need some help with graphics to make this all make sense. Stay tuned.

I am going to end with a saying that I first heard from Jack Layton, W9UK/SK. Jack said "When things go wrong with high power stations they usually end with a bright flash and a loud BANG".

Jack, you will be missed.

de Bob - WC3O

Will "FirstNet" Make Ham Radio EmComm Obsolete?

The federal government is in the early stages of building a nationwide, hardened, wireless network expressly for use of first responders in emergencies and disasters. According to the ARRL Letter, the First Responder Network (FirstNet) is being developed by an independent authority within the U.S. Commerce Department's National Telecommunications and Information Administration (NTIA), which parallels the FCC for federal government spectrum users. The network will initially focus on providing data and video, with "mission-critical voice communications" at least a decade away.

According to Ralph Haller, N4RH, chairman of the National Public Safety Telecommunications Council (NPSTC) and former amateur radio chief at the FCC, the full implementation of FirstNet "will likely be as significant as when public safety first began using radio." He also predicted that it will diminish ham radio's role as a backup for public safety systems because fewer of them will fail in emergencies and disasters. However, Haller said there should be an ongoing role for amateurs as "eyes and ears on the ground" during emergencies and particularly during the recovery phase of disasters. He advised amateur radio emergency groups to speed up their adoption of digital modes and DATV (digital amateur television) and to continue working closely with public safety organizations. "Be sure," he said, that these organizations "never forget how valuable the amateurs are!"

de ***CQ Amateur Radio***

Richard Jones – N2GBR Is The First W3 Area SOTA Mountain Goat

Dateline June 3, 2017 Richard Jones – N2GBR has become the first W3 Area Summits on the Air (SOTA) 'Mountain Goat'. And with a 'Unique' Endorsement. His quest started on Dec 20, 2015.

So, what does that mean? Well, to become a SOTA Mountain Goat, you have to 'Activate' enough SOTA Summits (mountain tops) to accumulate 1000 Points. And to get the 'Unique' Endorsement, you cannot ever repeat any of them.

What do you mean by Activate? That means to carry your radio, accessories, batteries, antennas, antenna pole, and everything that you need to protect your body and your radio from the elements up to a 'Summit' (to the top of some mountain). Then, once you get there, you to set everything up, make a minimum of four contacts from there, and then repack everything and carry it back down.

So, where are these SOTA Summits? The world-wide SOTA organization has identified them. The SOTA Summits in the W3 Area (the W3 Association) have to be a minimum of 152.4 meters (500 feet) in elevation. And they have to be prominent. So, not any hill or rolling ridge qualifies. Most of our W3 Area Summits are out to the East, in the Laurel Highlands and the Appalachian Mountains. Further South you have the Blue Ridge Mountains. Further North you have the Adirondacks. So, it does take some driving to get to them. (The minimum elevations and the rules for Point assignment in the W2, W4, and W8 Associations will be different).

How do you get up to these SOTA Summits? It takes some planning. You need to study a lot of different kinds of maps and create an access plan. There are some easy 'drive up' Summits like Mt Davis and Blue Knob. There are some more difficult drive up Summits that require a Jeep or other high ground clearance FWD vehicle. But most of the Summits involve finding some place at the approach to leave your car and then heading out from there on foot. Some Summits may have a telecom tower access road or some other kind of a trail that you can take advantage of. But many involve making your own way through the woods, following your GPS. Some are on private property that you can only get to if you can find the property owner and obtain their permission.

OK, how do you get Activation Points? The 'Points' for each qualifying SOTA Summit have been assigned based strictly on the Elevation of the Summit. Not how hard or easy it is to get to the Summit. Summit Points range from 1 to 10. There is a Three Point Winter Activation Bonus available for the Summits that are worth 4 or more Points. So, you have to Activate a lot of Summits to get to 1000 Points. Being out there in the Winter to obtain the Bonus Points helps. (Richard Activated 132 Unique Summits, many of which had never been Activated by anyone else before. And he has 150 Winter Bonus Points)

So, where is Richard in the overall SOTA pecking order? Well, as of this date (June 3, 2017), there are 330 Mountain Goats in the whole world. Richard is the First and Only W3 Area Mountain Goat. As of this date, Richard is tied for the 316th position worldwide with his Points Total of 1015 [this will have changed by the time that you read this]. OK2PDT is in position number one, with an amazing Points Total of 12,157. The highest ranking US station is KE5AKL who is in 11th place worldwide with his Points Total of 5624. (KE5AKL Activates Summits in New Mexico and Arizona). So it looks like Richard has more goals that he can set if he wants to!!

Trivia: As of this date (June 3, 2017), there have been 5311 unique SOTA Activators worldwide who have submitted Activation logs. The 438 that are below position 4873 in the ranking each have 1 Point and the 339 that are between positions 4535 and 4874 in the ranking each have 2 Points. (Just to put it further into perspective, Chris – W3CDW is currently tied for 780th place worldwide with his 43 Summits and Points Total of 318 and I am currently tied for the 1471th place worldwide with my 13 Summits and Points Total of 91). So actually just a small percentage of the worldwide ham community participate as Activators in this worldwide activity.

Is this for everyone? The short answer is 'maybe'. Getting up to some of our East Coast Summits involves a lot of walking. Frequently measured in miles. Uphill and downhill. Often quite steep hills. And often through some rough wooded terrain. To chase after the coveted Mountain Goat status, you really need to be in pretty good physical shape so that you can try to Activate most of our nearby Summits.

If you are after the Points, then doing multiple Summits in a single day makes sense due to the drive time required to get out to where the Summits are. It takes some stamina to do multiple Activations in a day.

But there are enough of the easy 'drive up' Summits around to allow anyone to go out and have some fun by doing some SOTA Activations. You cannot operate from a mobile radio in your car and you cannot use the mobile antenna on your car. You must do at least a 100 yard carry and walk and setup away from your car.

You only can claim Activation Points for each Summit once each year. So, whenever doing just the easy drive up Summits, accumulating Activation Points would have to secondary to just having fun. That said, there are quite a few folks who will go out and Activate the same easy nearby drive up Summits repeatedly, just to get out in the fresh air and have some fun 'feeding the SOTA Chasers'.

http://www.sota.org.uk/

Jody - K3JZD

(Yes, there are some wet days)

An Interesting Kit Build — Jody - K3JZD

This Spring I built a 'Bayou Jumper' 40 Meter QRP Transmitter-Receiver. The Bayou Jumper (BJ) is a kit that was designed, kitted, and sold by the Four States QRP Group. http://www.4sqrp.com/

The Bayou Jumper is a modernized version of the famous WWII Paraset spy radio. It retains that great retro look but with modernized circuitry. The name "Bayou Jumper" is a play on "Ocean Hopper", a famous regenerative receiver of a bygone era. With it's distinctive panel and wood box enclosure, it pays homage to this famous WWII Paraset spy radio. The BJ is not a transceiver. It is a receiver developed by W5BI and a transmitter developed by N0MS that have been put onto the same PC board along with a T-R switch. The BJ's regenerative receiver covers all of the 40 Meter CW segment. The BJ's QRP transmitter is very a simple 5 watt 40 meter crystal controlled CW-only circuit.

An Original WWII Paraset

I built my Bayou Jumper as a personalized version right from the beginning. I sacrificed a little authenticity to gain some conveniences. I had started out in this hobby using a Knight-Kit 'Space Spanner' as my ham receiver back in the late 1950s. (That was the deluxe version of the basic Knight-Kit 'Ocean Hopper'). I had put a vernier knob on that receiver's tuning control back then, so I

knew that I would need one here. While I had used an open knife switch for my antenna changeover along with a toggle switch to mute the receiver whenever I was transmitting back then, I really did not want to return to doing manual Transmit-Receive switching using the BJ's built-in T-R switch. I'm spoiled – I wanted an automatic semi-break in operation. And I wanted an easier way to tune my receiver to my transmitter crystal's frequency than what the base BJ provided.

Initial Customization

My initial customization consisted of adding the following as I built my BJ:

6 to 1 Vernier Tuning Drive and Dial Pointer (Xtal Set Society https://www.midnightscience.net/)

Easy TR Switch Kit (Pacific Antenna http://www.qrpkits.com/ezseries.html#ezlpf)

Electro-Resales Crystal Tester and RF Generator (eBay http://tinyurl.com/ma6wdtf)

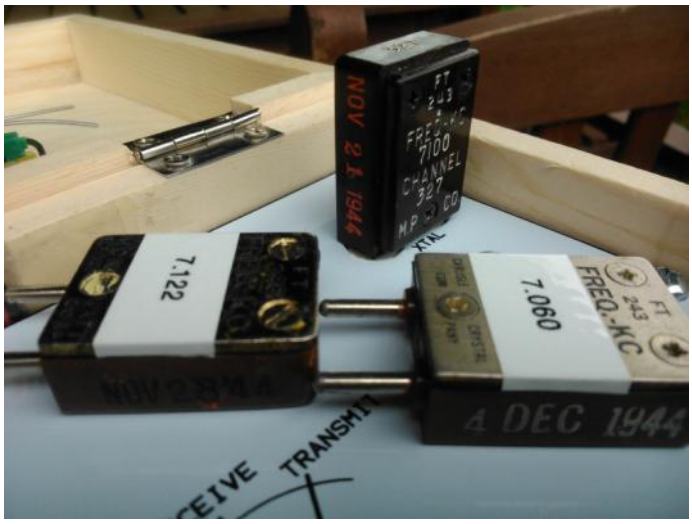
Ceramic FT-243 Crystal Socket (AF4K http://af4k.com/crystal_sockets.htm)

Set of 40m Crystals (KC9ON http://kc9on.com/), all put into FT-243 holders that I found on eBay

I am quite happy with the automatic semi-break in operation that the Pacific Antenna Easy TR Switch provides. The hang time on it is not adjustable, but it is right about where I would set it if it was adjustable. It has an Aux Contact that I use to mute the receiver whenever I'm transmitting. (My cabling to that external TR Switch board is a bit long because I originally had it mounted in the bottom of the box rather than bolted to the BJ's mainboard like it is now. I may reduce the length of those cables some day).

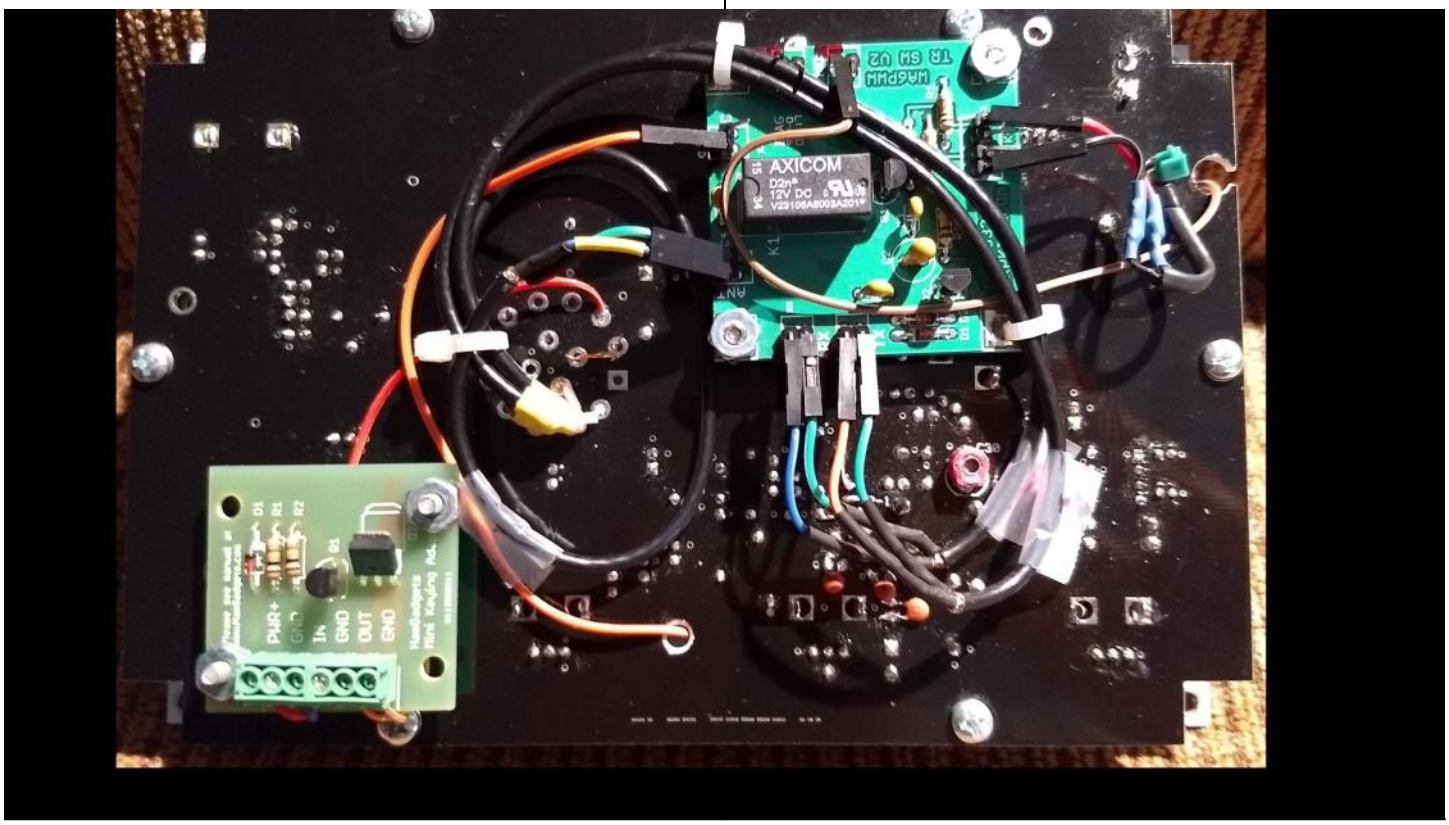
I use the external Crystal Tester and RF Generator board for spotting (setting my receiver to my transmitter crystal's frequency). I wanted to power that spotting board from the BJ's incoming power jack to keep it simple. All it really needed was 9v, but the specs said that I could use 12v. But whenever I had it connected to the BJ's 12v jack, and held a crystal onto that external board for spotting, I guess it pulled down the incoming 12v power because doing that stopped the sensitive regenerative receiver. So, I reverted to simply using a 9v alkaline battery and an On-Off switch to power my spotting board.

Some of the FT-243 crystals that I found on eBay had 1944 date stamps on the side of them – and one of them was already in the present current 40m CW band - how cool is that? The rest of my crystals are modern HC-49S form factor crystals that I installed into FT-243 housings. But, as you will notice in the pictures, adding some kind of finish to the box like many other BJ builders have done is on my someday (maybe) list. It seems to work just fine as it is :-)



I wanted to do one more customization, but the BJ's regeneration circuit was too delicate for my other idea. I wanted to utilize a QRPguys "Digital Dial / Frequency Counter" (http://www.qrpguys.com/) to be able to see my receiver frequency displayed on a digital readout. But connecting that device to the BJ's receiver circuit stopped the receiver. So I abandoned that idea. After all, I guess all that I really care about is having my receiver being tuned to my current transmitter crystal's frequency.

Since I purchased and built my BJ kit, the Four States QRP Group came out with a BJ Version A, and an optional auxiliary board called a "Soup'er Up'er" that adds some additional features. While it is a pretty straight forward job to add this Soup'er Up'er to one of these non-customized BJ Version A board, this Soup'er Up'er board would not work real well with the customizations that I have made to my unit.



Using the Bayou Jumper :

Since this regenerative receiver is very broad and since there is not any calibrated dial, I have not had very much luck in answering CQs that I think may be on or near my crystal frequency. While I think that my transmitter's crystal is very close to the caller's frequency, I may very well be outside of their 500 Hz CW filter. Or, they may not be listening for a QRP signal. (No one really tunes around for a reply like we used to when most of us were crystal controlled). So, I call CQ most of the time. The 40 Meter band has not been the greatest lately. But, in spite of that, I have had success in making several good solid ragchew QSOs with this radio into New England, the South and out into the Midwest.

Subsequent customization and tuning:

I added the HamGadgets Mini-Keying Adapter board (http://tinyurl.com/l82tzd4) after I had completed my initial build to address a variation that I was seeing in the power output whenever I was using my various external keys instead of the built-in key. Each of my external keys happen to use a different kind of cable, with each cable being a different length. In the BJ, the key switches the entire transmitter on and off. So, the current through the key is rather high. It turned out that the resistance in each of my external keys and key cables was different, and each was reducing the transmitter current by a different amounts, resulting in the lower transmitter output power. (When you only have 5 watts, you do not want to lose any of it). So, by adding this Mini-Keying adapter board, and using a very short length of cable from it to the transmitter keying circuit on the main board, my power output remains the same, no matter which of my keys I use.

I used to send CW with a straight key quite well without having any sidetone. Just listening to the key clicks was enough. I figured I could return to doing that. But it turns out that I have now become too accustomed to having a sidetone. My original thought was to put a small code practice oscillator and a keying relay that would key both the transmitter and that oscillator in parallel into the bottom of the box to obtain my sidetone. But since I had to lower the mainboard a bit to add my Vernier Tuning Drive, that did not leave enough room for me to put that additional stuff into the bottom of the box. So, I ended up reverting to using a small external HamGadgets PicoKeyer (http://www.hamgadgets.com/ULTRA-PICOKEYER) to obtain my sidetone (that keyer does require the HamGadgets Mini-Keying Adapter, or equal, to be there because the PicoKeyer will not switch the BJ's full transmit current).

Why not try some lightweight contesting with the Bayou Jumper:

Just for fun, I tried to use the BJ during the July Straight Key Century Club (SKCC) Weekend Sprint. 40 Meter conditions were just so-so with some fast QSB. And there was some larger DX event going on at the same time. Finding a clear frequency to use is hard whenever you only have a handful of transmitter crystals to use. However, I found one that was in the clear and began to run the frequency. But I soon found out that the BJ is not the greatest radio for an event like this. The switching from transmit to receive was not fast enough to allow me to get the calls of the stations who only sent me their callsign once. And the receiver was drifting, so I had to be tuning all of the time. So, with these problems, I did not work this SKCC event for as long as I usually do.

After obtaining some guidance from Jim – N5IB, the Bayou Jumper receiver designer, I made some more modifications. The slow switching from transmit to receive turned out to be a result of the BJ's design for muting the receiver during transmitting. As designed, some electrolytic capacitors were allowed to discharge while transmitting and then they had to recharge whenever you switched back to receiving. It was the recharge time on those larger electrolytic capacitors that was causing the 2 second delay whenever switching from transmit to receive. I rewired the muting circuit using an approach that Jim suggested to keep these electrolytics charged all of the time. After doing that, my transmit to receive delay problem was totally gone :-)

I suspected that my receiver drifting was related to the regeneration circuit. In a regenerative receiver circuit, the regen loop affects the frequency. In fact, the regen control knob can often be used as a fine tuning control. So, any instability in the regeneration circuit could cause receiver drift. My regen threshold trigger was occurring at a point on the regen control knob that was not where the build instructions said to expect it to be, making me even more suspicious of that part of the receiver circuit. Jim suggested where I could try adding some additional capacitance to the regen circuit to make it more robust. After I added two additional capacitors in parallel with existing ones, my receiver drifting was reduced to just a small amount during the first few seconds after switching back to receive. While more tweaking may be possible, I'm going to try it that way for a while to see if it is now good enough, or if I need to tweak the regen circuit even more. (As I am finalizing this article [25JUL17] this, I see that Wes – NA1CC has just posted a message on the BayouJumper Yahoo forum suggesting that the small air variable capacitor in the regen circuit could be contributing to some of the drift. Wes made a few suggestions for eliminating the drift. And Jim – N5IB then concurred and made some additional suggestions. So, I may be doing some more tweaking on this receiver.)

Summary:

I find it quite enjoyable to make QSOs using simple QRP equipment that I have assembled from a bag of parts. And I find it to be even more enjoyable whenever I have customized it and tweaked it to make it suit my needs better. Somehow that gives me more of an 'ownership feeling'. I will now be trying my QRP Bayou Jumper again during future SKCC, FISTS, NAQCC, and 4sQRP SS events.

de Jody - K3JZD

Cell Phones and Ham Radio

"Cell Phones allow you to talk to your friends.

However, Ham Radio allows you to make new friends."

Ashton Feller - KD9HRG - Age 13

(From June 2017 CQ Magazine)

**** Skyview VE Testing ****

Skyview Radio Society Contact person: Bob Worek, AG3U
e-mail: ag3u at arrl.net 724-410-1028

Location: Skyview Radio Society clubhouse. 2335 Turkey Ridge Road. New Kensington,PA 15068.

Please schedule in advance, walk-ins accepted. Exam may be cancelled if no candidates are scheduled.

Testing schedule, what you need to bring, directions, and map are all on http://www.Skyviewradio.net

Welcome New Members !!

Welcome the following Skyview Radio Society Members who have joined us since the last newsletter:

We had one new member join in July. But I do not have the full information - sorry - will be welcomed in the next issue.

If you are a reader who is interested in becoming a 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.

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

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

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 . . . . .

Need to learn how to master the art of soldering? Here is a pretty thorough tutorial to help you:

http://tinyurl.com/ydeulwnq

Here is a really cool link - this one is coming to you courtesy of the Beaver Valley ARS eQRM Newsletter:
Check this out. Just put the crosshairs on the green dots and hear radio stations all over the world.

http://radio.garden/live/clarion-pa/91-7-wcuc-fm-the-clutch/
From Adam KG3L

Unlocking Mysteries in the Sun's 11-Year Cycle

http://tinyurl.com/y8kh2uwz
(discovered by Mike - K3FH

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

Next Newsletter will be October 1, 2017
Closing Date For Submissions : Sept 15, 2017
K3JZD AT ARRL DOT NET

Issue Wrap-up

I'm sure that you skipped over some of the stuff that you were not really interested in. Hopefully there was enough in here to make it worth opening.

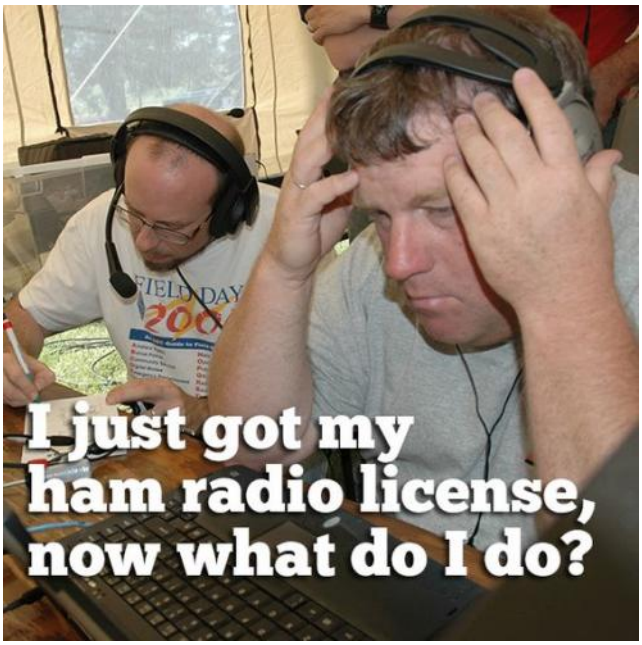
Some blank spaces here and there in this this month's edition—too many other Summer things used up a lot of my time and kept me from refining the formatting to get rid of the extra spaces.

As usual, not much real club boilerplate or club news in here. The club web page, the club Facebook page, and the K3MJW Yahoo reflector all have the basic club info and timely club news. This newsletter is really for 'all else'

Jody - K3JZD

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 !!!

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

See Yahoo Reflector for All Current News & Activities : https://groups.yahoo.com/neo/groups/K3MJW
(You must be logged in with your free personal Yahoo Login ID to get into the Skyview Yahoo Reflector)
If you want to keep up with what is going on NOW, this is the place - have it forward msgs to your email

Is this how your dining room looks ??

Where are the pictures of your shack ??