## K3Y 2017

Thanks to everybody who participated in K3Y 2017. Despite the generally poor conditions I had a lot of fun; hope you did too. I just barely managed to reach the personal goals I had set for Nr of K3Y Operators Worked and Nr of QSOs logged as a K3Y op. (It was close!)

Can't say that working through QSB and noise is entirely fun but the tough contacts can be rewarding and do sharpen one's CW skills. Anyhow, we might as well get used to it for the next couple of years...

I think the propagation was uniformly poorer for everyone this time around, but our DX members suffered the most, of course. It still surprises me how difficult it is to work into Europe from USEC these days, not to mention places on the globe more far-flung. I hope we can continue to keep our DX members active through these difficult prop conditions in the days ahead...

If you have any questions or comments about the K3Y SKCC Anniversary event, please let us know. (Usually the comments come in in December when it is too late to do anything about them, then get forgotten about.)

If you have any missing QSOs to report, pls contact your area coordinator or myself. We will be finalizing the master log over coming days. You can check the latest results, log search & op map at the following links:

http://www.skccgroup.com/k3y/k3y-statistics.php
https://batchgeo.com/map/119c7ff3d38f38f293c8de8c7b77c1c9

We hope to get the K3Y "sweep" QSL cards out in Feb. More info is at the following link and on the QRZ.COM page for K3Y:

http://www.skccgroup.com/k3y/k3y-qsl-info.php

Thanks again for all the straight key action. If you're still looking for a month-long SKCC activity to participate in make sure to check out SKCC Brag:

http://www.skccgroup.com/operating_activities/monthly_brag/

...that should keep you in practice for K3Y 2018!

73,
Drew - AF2Z

The listed SPC's have logged the indicated number of QSOs.
Updated: 2017-02-02

---- US States ----

AK: 312
AL: 223
AR: 22
AZ: 198
CA: 1015
CO: 313
CT: 15
FL: 108
GA: 72
HI: 809
IA: 11
ID: 345
IL: 649
IN: 830
KS: 233
KY: 81
LA: 331
MA: 298
MD: 723
ME: 353
MI: 800
MN: 2100
MO: 445
MS: 273
NC: 502
NE: 74
NH: 437
NJ: 538
NM: 294
NV: 348
NY: 1300
OH: 917
OK: 171
OR: 50
PA: 1607
PR: 966
RI: 449
SC: 165
SD: 211
TN: 494
TX: 1114
UT: 72
VA: 127
VT: 24
WA: 328

WI: 524
WV: 524
WY: 97

---- Canada Prov/Terr ----

AB: 129
BC: 116
MB: 119
NB: 265
NS: 100
QC: 8
SK: 318
YT: 556

---- DX Entity ----

ARG: 99
AUS: 241
BEL: 42
BRA: 33
ECI: 65
ESP: 24
FIN: 42
FRA: 544
GER: 171
ISR: 90
JPN: 115
NCL: 24
NED: 396
NZL: 106
PHI: 2
POR: 19
RSA: 199
SCK: 65
URU: 31
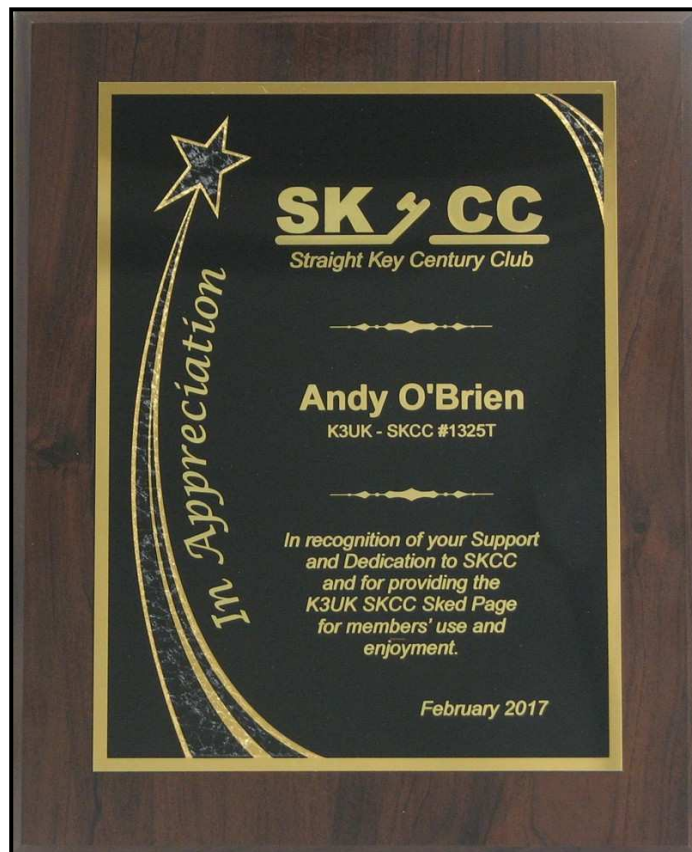VAN: 4

# A Well Deserved Salute to Andy, K3UK # 1325t

Without a doubt one of the most used and appreciated tools of SKCC has been the use of the K3UK SKCC Sked page. Whether you checked in and used the page directly or just brought it up to monitor "who" was on the air, it was a great tool for all of us.

The SKCC Board recognized Andy's contribution and wished to show the appreciation for all SKCC members. An engraved SKCC Club Key and a plaque of appreciation were given to Andy recently in recognition of Andy's efforts and support of SKCC. Thank you Andy from all of us in SKCC! You can read the "official" thank you to Andy on the SKCC home page and here.

"**Andy O'Brien, K3UK, SKCC 1325T, has been awarded an engraved straight key and a plaque in appreciation for his tireless management of the K3UK Sked Page, which included the Straight Key Century Club as one of its participating groups. The page quickly became the prime meeting place for members looking for contacts with other members during and between formal club operating events. Andy announced the page's impending closure in January, citing his desire to pursue other interests. Over the past year, a back-up site began to take shape out of concerns raised about the Sked Page's performance during a month-long celebration of the club's 10th anniversary. That page is active and is under continued refinement by Mark Glenn, K7MJG. Unlike the K3UK page, the new page will belong to the club. This eliminates the uncertainty that comes when a particular developer or maintainer hosts the page and decides to move on. We are deeply indebted to Andy for demonstrating how vital a resource a sked page can be for members.**"

*Editor: Much has been discussed regarding schedule pages on the reflector. The following is a summary and history and the reasoning of the decision to designate the K7MJG as the official SKCC sked page.*

# The Official SKCC Sked Page

For roughly a decade, Andy, K3UK, has overseen the K3UK Sked Page, a popular watering hole for SKCC members as well as members of other groups. When Andy announced in January that he was moving on to other activities and was shutting down the page, it was an "oh, no!" moment for many SKCC members, including those on the SKCC board.

N8FQ's willingness to keep the page going has eased the angst, as has the emergence of K7MJG's version of the sked page: http://sked.k7mjg.com.
Andy's announcement, however, raised an important issue: What if Jill, N8FQ, or Mark, K7MJG, decide at some point to move on? Should a tool that has evolved into a vital meeting place for the SKCC community lie outside the club's on-line infrastructure, as Andy's page has? This issue was apparent in conversations on the club's Yahoo list, in emails to the board, and in conversations board members have had with individual members.

It's not a new issue. We've had at least one other experience where a member with computer savvy set up an event and ran it on his own server. For reasons outside of ham radio and the SKCC, he moved on to other personal and ham activities, even though the event itself continued. With each succeeding month, the initial, very responsive management of the event's site became increasingly less responsive. It was frustrating for participants.

Mark's version of a sked page grew out of discussions he and Andy had during the club's anniversary celebration in 2016, when the existing page hit speed bumps handling some heavy traffic.

Given the initial uncertainties about the future of the existing page following Andy's announcement, the board recognized that the club needed a sked page that would survive changes in developers or maintainers. So, the board voted to partner with Mark. He will continue to develop and maintain his sked page. The SKCC will oversee its maintenance and continued evolution if and when Mark decides to tackle something else.

This move ensures that a key piece of SKCC's on-line infrastructure remains under the club's control as individual contributors or overseers for the page come and go.

Meanwhile, the new tools Mark is using "under the hood" have given us a far more responsive sked page.

We are deeply indebted to Andy and Jill for the page they have provided. As Andy noted in a post here, it existed before he joined the SKCC in February 2006. And it's gaining additional customers, as SKCC member Bry, AF4K, noted with the addition of his Novice Rig Roundup activity, which has been gaining momentum over the past couple of years.

We recognize that some members will use N8QF's page regardless of what the board does or does not do. We've already seen one call from a member recommending that we ask N8QF to remove the SKCC section from his site. We're not inclined to do that. Some members are quite attached to it and would resent such an action. In that sense, we're not forcing anyone to use a site they don't like. But we nevertheless will do what we can to nudge folks in the new page's direction, if for no other reason than if N8QF decides to move on, we'll be ready for it and it we'll have a group of experienced users available to help others.

# SKCC "Brag" Alive and Very Well!

I'm happy to say our little SKCC Brag group is alive and well, and has nearly doubled over the last 3 years.  During the year of 2014, we had a monthly average of 32 members participating, with a monthly average of 1654 SKCC contacts.  In the year of 2015, we had a monthly average of 49 members participating, with a monthly average of 2353 SKCC contacts.  In the year of 2016, we had a monthly average of 62 members participating, with a monthly average of 3000 contacts.  Now, here in 2017 we have started the year with a huge bang, so hopefully we can continue the upward trend.

Remember, no logs needed, no minimums, just send your total of different members worked each month (not including any of our sprint activities), and enjoy some 'braggin rights'.  A BIG note of thanks to all who have participated in this valuable part of our club, and we all look forward to seeing future reports from our members.

Curt WA2JSG 3018S

SKCC Brag Manager

# Mansfield, Ohio Hamfest with SKCC

Tony, KD8BBK 2443T and myself, Scott N3JJT255T, had a table in Mansfield, today, Feb 19th.  Not only trying to sell a few ham related items, we decided to set up our SKKC advertising.  We had our table top banner along with info sheets for the club.

We checked in about 8 members and I had a lengthy discussion with a possible new recruit.  He is starting a CW class in Massillon, Ohio (in which I reside) from one of our local CW gurus.  He will have a very thorough teaching.

As always, Tony and I had lots of laughs throughout the day.  We also got to visit with many of our friends.  It was nice to visit with Ken, AB8KT, KA8HFN, Larry, Jerry, W8HOG, and a few other locals we met for the first time.

73 for now from NE Ohio, N3JJT & KD8BBK



Left to right...Tony KD8BBK and Scott N3JJT

# W4EAB as K3Y/4

***Many stations operated K3Y this year.  Here is W4EAB's story and station...editor***

K3Y/4 W4EAB Rockingham, NC in my basement shack. Kwood 590s to ALS 600 amp and MFJ 998 auto tuner to a 24' Hustler 8btv with 40 32' buried radials. My second year as a K3Y/4 Oprah. Former USCG Radioman. Like being able to handle pileups and welcome new-members to SkCC…..  Allan W4EABSKCC 13155Sx2

Allan Brown W4EAB
"It's the journey; not the destination."

I am a former USCG Radioman, having entered the Guard in Oct. 1958 and assigned to Radioman School in Groton, Ct. for six months starting in January, 1959. After graduation in July, 1959 I was assigned to a Coast Guard Radio Station in San Juan, P.R. for two years (NMR) where we worked commercial vessels on 500Kcs CW (600 meters) monitoring for distress (SOS), medical (medico), and weather reports (OBS) in addition to our normal Coast Guard frequencies. It is here that Wes Leitch W4RUX, who had received his General ham license in January 1960, while still in RM school in Groton, introduced me to ham radio. I obtained my General license (W4SWM) shortly after and we were able to restart KP4CGB, which was the base station for the CG base in San Juan. In July, 1961 I was transferred to USCG Air Station San Diego (NOR) where we primarily worked voice with CW backup for the various rescue aircraft. After leaving the Guard in October, 1962 I went back to college, married, started a family and was not able to pursue my ham license. My license was cancelled in 1972.

I recently returned to ham radio after 52 years. I always had code in my blood and I still have my old Vibroplex Original Deluxe side paddle "bug" from pre 1960. After passing the Tech exam August, 2014, the VE accepted my previous General license documentation from a 1967 callbook and my General license was restored by the FCC. Thanks to Pete "the Greek" NL7XM for providing the callbook documentation. Upgraded to Extra in June, 2015.

I have been retired since 2003 (Computer Mgr.) and have started up a ham station from scratch while continuing to study in order to be up to date. After a 52 year layoff, I can still copy code pretty good and the Vibroflex stills works fine. Nice to be back. GOT back on the air 12/7/2014. Really like chasing DX and working SKCC. Still learning. . . still reading.... installing software, etc. :<)  73s dit-dit dit
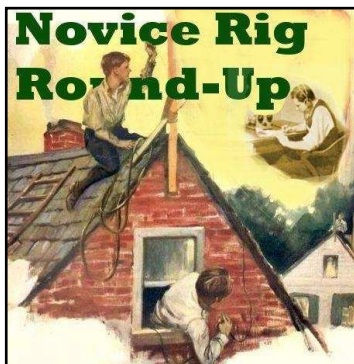
# K3Y/8...aka W3NP

I would almost be willing to bet your first SKCC QSO with West Virginia was with W3NP Dave, #3182s.  In my ten years as an SKCC member W3NP has been a beacon signal where by in Michigan I determine how open the bands are.  Always a big signal, W3NP can be found scanning and operating most bands.  If there is an opening to West Virginia, Dave will be there!

Dave operated many hours this year as K3Y/8 and along with KA8HFN Larry, #2046s they combined for two-thirds of the K3Y/8 QSOs.  When you see Dave's station there you quickly understand why he hears and is heard so well.

But Dave also operates QRP and the station on the left is his QRP station while the right side picture is his "boat anchor" station.

# Novice Rig Roundup Event

If you operated in this year's event please consider sending a picture of your station and story of your operation.  It will appear in the next issue of the Rag Chew.

Perhaps AF4K and company will send along an article on this year's event for the next Rag Chew.  The NRR sounds like a perfect match for our straight key cw!

# "A Resonant Speaker for CW"

From KD1JV.qrpradio.com…"*What is a resonate CW speaker?*

Its a physically tuned speaker system which peaks a tone at a certain frequency (generally 600 Hz for CW) and attenuates other frequencies, similar to what a tuned electrical circuit does.

The resonate frequency of a cylinder can be calculated with a formula similar to that used to find the resonate frequency of a dipole antenna, but instead of the speed of light, the speed of sound is used. The speed of sound is 1100 feet/second, so the formula is L=1100/F. This is for a cylinder open at both ends. For a cylinder which is closed on one end, the length is 1/2 or L=1100/2F."

The February issue of QST saw terrific interest in the article "A Resonant Speaker for CW" by Bill Sepulveda, K5LN. The SKCC reflector was ablaze with talk on PVC length regarding cw pitch, amount of drive required as some headphone jacks used as inputs to the unit just couldn't give enough audio and even various construction techniques and questions. Checkout this reflector post. Talk about technical...but very worthwhile information!

*According to the math... Using the formula F=122.4/(L=(0.3\*D)) where F is frequency, L is length of the tube and D is diameter of the tube, as you decrease the length of the horn the resonant frequency will increase. So, if you decrease the length to 5.73"the frequency should be 759 Hz. If you were to have a length of 5.73" and increased the tube diameter to 2.25"you would have 750.5 Hz. I've uploaded a simple spreadsheet for this to the Files Folder..*
*73,*
*Ed - ad7gr*
*skcc #30T*

Here is a great tip from Dana, AD5VC 1555S….now this is cool!

*If you have a top-firing speaker on your rig, simply buying a 4'PVC elbow and setting it on the speaker produces a resonance in the 650-750 Hz range. I call this the "Passive Vocal Clarifier"speaker accessory, or "PVC"for short (grin). If you want to lower the pitch. try setting the elbow on a ring of styrofoam, or just spacers. To raise the pitch by 50-75 Hz, cut off about 1/2 inch from the lip of the elbow.*
*Dana Browne AD5VC*

Another site was given that had a resonant speaker design:

http://kd1jv.qrpradio.com/resonatespkr/CWSPKR.HTM http://kd1jv.qrpradio.com/resonatespkr/CWSPKR.HTM

The following are articles submitted from several members who have built the resonant speaker from the February QST article. I think you find some very interesting results and construction techniques used by the contributors of these articles….editor

# K5LN's Resonant Speaker
## By W4RQ, Rich #8699s

I read the featured article in the February 2017 issue of QST Page 43 "A Resonant Speaker for CW" by Bill Sepulveda, K5LN. The Hook that got me was his statement, "The more you use it, the more you will appreciate the clear and crisp signals, and feel that using a regular speaker for CW is no longer acceptable."

### The Build: ( about two Hours)

I followed the instructions in the article, cutting a one inch long piece of 2" schedule 40 PVC pipe. To get the ends cut square, I wrapped a sheet of paper from my printer around the PVC, perfectly squaring the paper's edges, then using a magic marker, traced the cut line, measured down 1" along the PVC and repeated with the paper and marker. Then used my Dremel tool and its cutting wheel to cut along the ascribed lines. I'm sure there is a better way, but I have only hand tools, and this worked well. I sanded the ends smooth.

Instead of carefully measuring, I used the 1" long piece of 2" PVC I just cut, to scribe it's inside diameter onto a clear jewel case CD cover, then ascribed the outside diameter of the PVC, res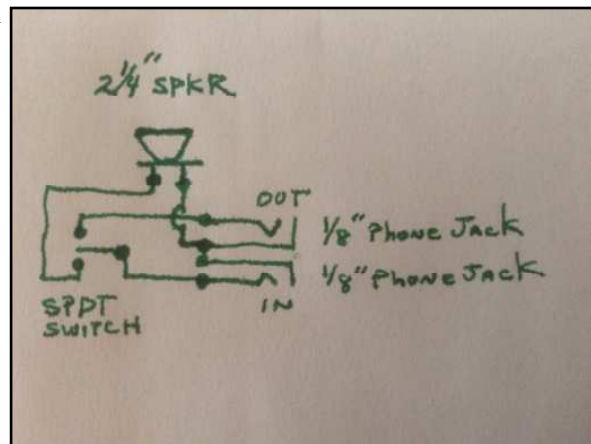ulting in two discs ascribed on the CD cover. I easily cut the two disks out of the cover with my Dremel and cleaned up the edges of the two disks with a grinding attachment.

I laid the **smaller** of the two clear plastic disks over the front of the speaker to locate the exact center of the speaker, then drilled a 1/8" hole in the exact center of the disk. Make sure the hole is clean and smooth.

Next, I drilled 3 each, 1/4" holes around the 1" long piece of PVC, centered 1/4" inch in from the edge. Don't get these holes too close together, the two mono 1/8' jacks, and the SPDT Switch will be mounted in these holes, give them a good separation.

I ground the PVC wall around the three holes, from the inside, to thin the wall thickness enough to mount the switch and jacks (the wall is a little too thick to mount them and get the nuts on).

I glued the speaker frame to the top edge of the PVC, making sure of a good seal, mounted the two phone plugs and switch, and wired them up using 22 awg wire and soldered the connections (see the wiring diagram).

I tested the speaker to make sure it worked and the wiring was correct (better done now). I ran a thin bead of glue around the edge of the speaker and glued the smaller disk(the one with the 1/8" hole) to the face of the speaker. Make sure the disk is sealed all the way around the edge of the speaker.

Loosely stuff 8 one inch cotton balls behind the speaker then glue the larger clear plastic disk to the bottom of the speaker cavity. Again, Make sure the disk is sealed all the way around the edge of the PVC. I modified Bill's build. I did not make cutouts on the edge of the street elbow for the switch and plugs. I set a 2" PVC coupling onto the speaker cavity, then inverted the 2" Street Elbow and mated it to the coupling. Slide the coupling and/or the Street elbow in and out to find the correct resonance. To do this I key the radio with Break-in turned off so all I get is the CW Side-tone on key down.

### Conclusion:

The author was absolutely correct, in my not-so humble opinion, I will never use a regular speaker to listen to CW again! This little gem is better than an active filter! Background noise (Yeah, even on 80 & 40 meters) is really attenuated, and the signal pops out to you. Bill's description "Clear and Crisp" is right on!

### Notes

If you don't purchase the Philmore #TS21 2-1/4" speaker, make sure your substitute is physically exactly the same.

You may not need the coupling at all, I did to get the resonant frequency down to the 600 Hz I listen to with my old ears.

I used 1/8" mono phone jacks instead of RCA jacks, because that's what my radio uses for its external speaker jack.

==================================================

73, Rich-W4RQ-SKCC 8699s

# More resonate speaker projects…….

### *This is from Jeff, K9JP #3008S………*

I finished the Resonate CW Speaker today.  It works well with my Drake 2B.  The ICOM 756PROIII did not have enough audio output at the phone jack to drive the resonate speaker.

So, for me it works.  There may have been things I did or did not do to get mine to work as well as others.  I will watch the swaps for another speaker or two and try again some day.  It was fun to build and experiment using it! It was much less expensive than buying a 2BQ for my 2B.



### *...an update from Jeff*

Here is my Resonate CW Filter Update:  I removed the original 1/8" home speaker cover plate made from the front cover of a CD case. (1/8 inch Hole) picture.
I made a new speaker cover plate using the backside of the CD case. See: (NewCoverPlate) picture.

(CDcaseBackPlate) picture shows the air space in white, while the case is in orange. (Note the three holes at the molding of the disk holder).
The attached video shows demonstrates now the filter greatly reduces out of resonate audio frequencies and the audio level of the speaker is as loud or better that the little book shelf speaker.

*Jeff sent a great video and I'm thinking that he would pass it on to you if you dropped him an email (address available from QRZ.com).*


***Andy, K2OO also built a resonate CW speaker…..***

*I followed Andy through the reflector and in emails.  One of the great things about amateur radio operators is they never give up, Andy is a great example of how we "get the job done."  Well done Andy!*

My first attempt was a failure. I am trying again.

**Andy k2oo**

I finally got it to work.  It does have a very narrow frequency response (good!).  However, the audio output level is so low that I have difficulty hearing it..  Hopefully others will have better success than I had.

**Andy, k2oo**

*Andy got several ideas through posting on the reflector...good job!*

I had it connected to the speaker jack on the back of my Flex 6300. When I used the headphone jack on the front, **<u>EUREKA!!!</u>**

**Andy k2oo**

I added a 2" extension to the elbow to get it to resonate at a pleasant tone.
As built, with no extension, the resonant frequency was ~900 hz.  With 1" extension, the resonant frequency was ~750 hz With 1.5" extension, the resonant frequency was ~650 hz   With 2.0" extension, the resonant frequency was ~600 hz



**Andy, k2oo**

I made a second speaker.  I only put one RCA jack on it.  No need for a switch as I almost
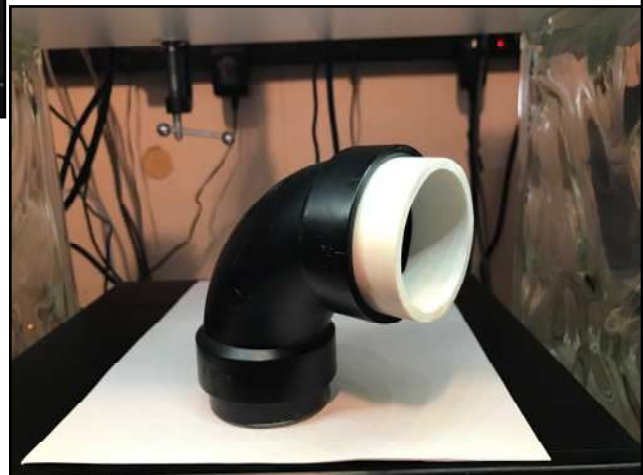
NEVER use my speaker for anything except CW.  I decided to use black pvc with the white extension (for adjusting the resonant frequency) for its good looks (grin).  BTW, the second build works a bit better.  Notice I used a 90 degree bend instead of the 45 degree bend.
Andy, k2oo

## *Karl, KN0KN #13831c built a resonate speaker*

Here are a few pictures of my resonant speaker. I took a simplified approach and just have a single line in, with no additional line out. Therefore I used a single sliding switch that I can turn off easily without having to unplug the speaker in the back of the radio. The first picture shows the top view of the base with the 1/8$^{th}$ inch hole cut in the cd case carbonate.

The next picture shows the view of the bottom of the base. Several things to note include the fact that I forgot to take a picture before I glued the base on, but more important you will notice I forgot the cotton balls. Just got carried away with the glue. The resulting sound does not seem to be adversely affected.

Here is a picture of the 45 degree elbow with the notches cut for sliding switch and the audio in cable…

And finally two pictures showing the final assembly. One looking down the throat of the elbow and the other showing the switch at the base.

# K5ZOL's Resonant Speaker Project

*Bob, K5ZOL # 3945s also got into the resonant speaker project and sent along his work and ideas….thanks Bob!*

Like a number of SKCCers, I was fascinated by Bill Sepulveda's (K5LN) resonant speaker for cw. What a clever idea and it works great! I couldn't leave well enough alone though. None of my equipment had RCA phono plugs. Also, I thought it would be convenient if I could switch between the cw speaker, ear phones, and my usual external speaker that goes with the IC746Pro. So, time for a little typical ham modification.

Instead of an SPDT switch I used a SP3T rotary switch and 3.5mm mono jacks. Now I have (for me) the best of all worlds.  Another adjustment required to accommodate the larger SP3T rotary switch was lengthening the base unit from 1 inch to 2 inches.  Because it's below the speaker, the additional inch doesn't affect the resonance of the pvc tube. I didn't have to notch the street elbow to accommodate the phono jacks when adjusting it to change the resonant frequency.  The 3.5mm jacks obtained at Fry's weren't long enough to go through the wall of the pvc, so I counter sunk the clearance holes and that solved the problem nicely.

Finally, the 1 inch length of pvc originally called for was too short to accommodate the SP3T switch. Now I use it on top of the tube to change the resonance to a slightly lower frequency.  Of course the cw pitch can be changed with the pitch control on the IC746Pro. Lots of flexibility.

I am looking forward to seeing what others have done to customize this neat device to their specific station requirements.

*Seems everyone has a mod or two designed into their resonant speaker.  But the unanimous thought on the speaker is it works well and well worth the building effort*

# W3NP's Resonant Speaker Project

*Dave W3NP #3182s, that famous signal and great ears from West Virginia, has jumped in with his resonant speaker project. With the equipment shown here on the operating desk it's no wonder we hear W3NP on the bands when they're usually closed and that he hears us! With the addition of his resonant speaker Dave will not miss a single "dit!"*

*Dave's test bench shows he is very serious about getting his resonant frequency "just right."*



I don't get QST so I found what I believe to be the same speaker and author in an on-line article by Bill Sepulveda, K5LN. Google: "k5ln resonant speaker" and a .pdf file with all info necessary to construct the speaker will be available to print.

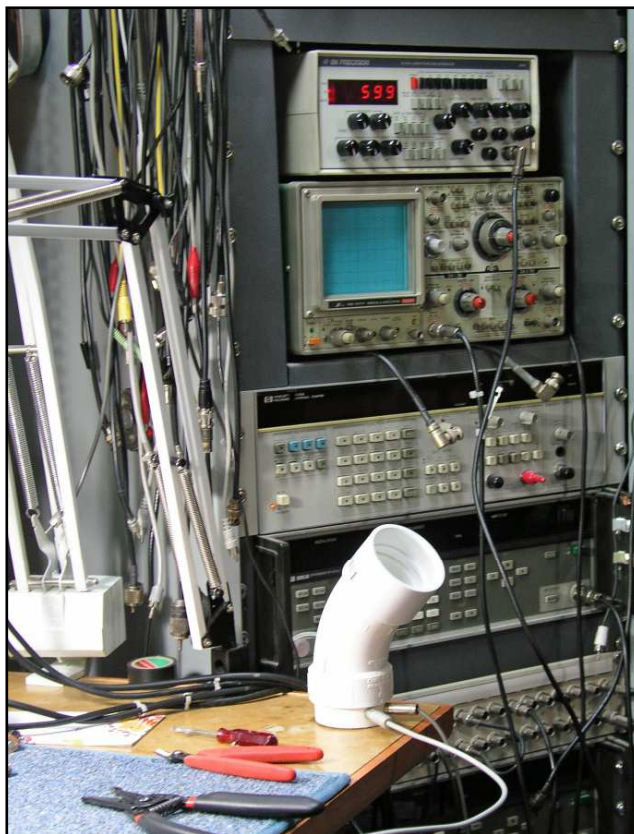The basic idea is a 2 1/4" miniature ~8 ohm speaker cemented onto a 1" long piece of 2" diameter schedule 40 PVC pipe with the opposite end covered by a piece of plastic with a small (1/8") hole drilled in it. The article I used had a bypass switch and jacks for audio in and out. This small speaker driver assembly is cemented and sealed with the exception of the 1/8" hole.

The author used the cover from a CD case to cut the small covers for the speaker driver from and I found that to be the most difficult part of the job as the plastic is very brittle and hard to cut without it cracking. I am looking to use a different material for my 2nd speaker.

The size of the cavity when a 45 deg 2" street elbow is slid onto the "driver assembly" determines the resonant frequency of the finished speaker.

I found that the speaker when built according to the plans was be resonant around 700hz which is a bit too high for my older ears (I prefer to listen to cw at around 500hz + or – ) depending on band conditions and filters used.

I did NOT notch the street elbow as called for in the plans but just pushed it on until it touched the jacks and switch.

I added a 2" standard coupler to the end of the street elbow and then by adding short pieces of pipe to the open end of the coupler



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I could fine tune the speaker to the frequency I wanted. I keep several cut pieces of pipe near the speaker and just slide in the one that I prefer. No glue is necessary for any of the cavity pieces, so they can be changed at will. The longer the cavity the lower the resonant frequency – just like your antennas.

I used an audio oscillator on my test bench to manually "sweep" the speaker but you can use the sidetone adjust on your rig to check the speaker for maximum audio and a fairly narrow peak at your preferred frequency.

　　　If you need the basic unit to be resonant at ~700hz or a bit higher, the authors plans deliver exactly that.
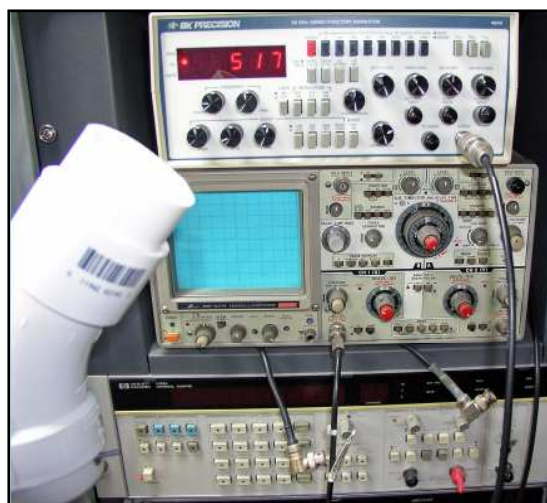
　　　My speaker with the various length additions will yield: 710 hz as described in the article, 630 hz with just the coupler, 600 hz with the short extension, and approximately 515 with the longer extension which is about 1 ½" long. This should give you a rough idea of the length to frequency ratio. There are formulas' that can be used to determine exact resonant frequency to size.

　　　I am very pleased with my first draft of this



speaker, and although I have many different filters that would seem to offer the same results, and after comparing the speaker itself to using SCAF filters and



other bandpass filters set for a similar frequency, this speaker is far superior in actual effect.

## NPOTA and KD8BBK

Well this past summer came and went, and like always, it seems like they are getting shorter. I had the chance to do some portable radio operations through out 2016. Some of these were QRP and some were at 100 watts. The one I would like to share with you is the few operations I did for NPOTA. The first activation was just before spring before anything began to bloom. I activated TR04 (North Country Trail ), which winds its' way through 7 states, North Dakota, Minnesota, Wisconsin, Michigan, Ohio, Pennsylvania, and New York. This trail runs pretty close to my location, was easily accessible and had lots of cool areas to set up along the trail. On this first activation I took along my FT 817 and a small battery and a light weight 40 meter dipole. After some scouting I set the station up on a fallen tree on the ground and strung the dipole up in the tree. Now it was time to call CQ. I started on cw and made a hand full of contacts and then moved to SSB, (I still have trouble using a mic…HI HI). I did make several contacts on SSB as well. After an hour of operating, I decided I was cold enough and decided to pack-up. It was a great day and made a lot of contacts running 5 watts from my battery and dipole. So I went home and uploaded the logs to LOTW and had lots of happy campers.

The next excursion came on June 4th and 5th. Prior to these dates I was contacted via email by a ham who was trying to put together a weekend event where he wanted all 7 states activated on the North Country Trail, all on the same weekend, and he called it " Light Up the Trail". Well it didn't take long for this idea to snowball and I was all in. So the dates were picked and the event in place with lots of participation. I did my activation in two different places. One on Saturday the 4th and on the 5th chose a different location. A lot of you know Randy N8KQ #8934s, he helped me with the Saturday activation down by his QTH in Lisbon, Ohio. We had a pretty good run on the bands but most of them were SSB.  Randy did the logging as he was a bit confused on how to use the microphone, HI HI. We had a great time and got to share some good stories. Now isn't that what ham radio is all about!

On to the next day, June 5th Sunday. This time I took trouble with me, a ham by the name of Scott, N3JJT #255t. Boy was this going to be fun. Scott and I set up at a place where the trail actually runs through part of a historic site called "Fort Laurens", the only fort in Ohio authorized by the Continental Congress during the Revolutionary war. The issue we had is that they were calling for some bad thunderstorms that day. We decided to chance it and go early to try to work as long as we could. So we found the trail and a huge oak tree that we were able to use as a natural tower. We strung up a G5RV at about 70 feet and this time we were able to use a small rustic pavilion that was beside the trail and ran 100 watts from my Icom 7200. I brought along 2 deep cycle marine batteries and that was plenty of power for us. After some tuning up on 40 we began to call CQ, yes SSB again, Ugh.  got the station hooked up.   Within a few calls,...bingo...the pile-up began.  Sweet, I love pileups!

We had another ham show up from the area where we were operating, Butch WA8SHP and he ran the radio for a while. The day turned out to be a pretty good day and we were able to operate for a couple of hours before the storms moved in. For the two day operation we made 139 contacts and had a lot of fun. It was well worth the effort and time spent researching the trail. I shot one video of the first operation on the trail when I ran QRP, you can do a search on Youtube under KD8BBK and find it there or just look up my call on QRZ and there are links there for my videos. NPOTA ended up being a mind-blowing year long celebration that set records for contacts made. It was for a great cause and a lot of fun.



Our "rustic pavilion at Fort Laurens



KD8BBK and N3JJT (on the mic!)



WA8SHP and N3JJT (still on the mic!)



Our "natural" restroom!

So if you are ever board with the hobby or looking for something different to do get out in the public and do some portable operation, it is a blast and you don't need much to do a portable operation and you can hone your skills from setting up antennas and working under different conditions. Remember you worked hard for that license you obtained to be on the air, so be active and use that call sign.
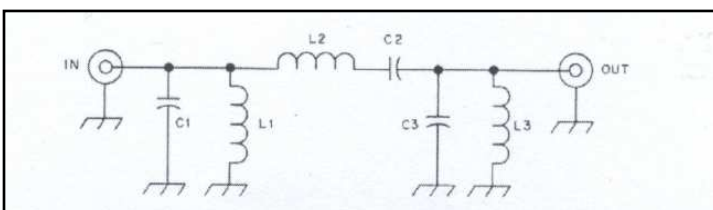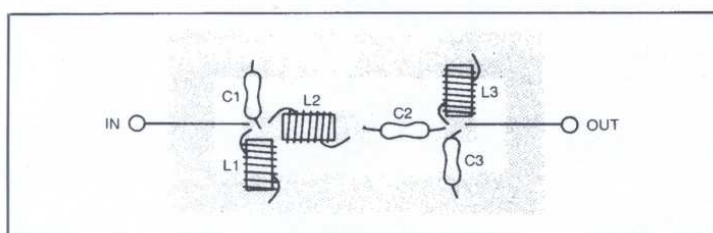
73,

Tony Schillig KD8BBK #2443t

# Bandpass Filters

Field Day; lots of fun but also some serious aggravation, nothing worse than setting up your station only to find another station in your camp "clobbers" your radio!  This is intra-station interference or "intermod."  It's a result of harmonics and spurs generated by one station interfering with another station.  So how do you get rid of that interference?  There are many ways it can be done but this article will focus on how to rid the interference with a "bandpass filter."

Many articles have been written about bandpass filters but in my opinion one of the best and easiest to understand  was written by Lew Gordon, K4VX for QST back in September of 1988.  K4VX was a major contest station during that time and was operated as a multi-multi (multiple operators operating multiple stations at the same time).  Here is the three pole Butterworth bandpass filters and schematic/layout.
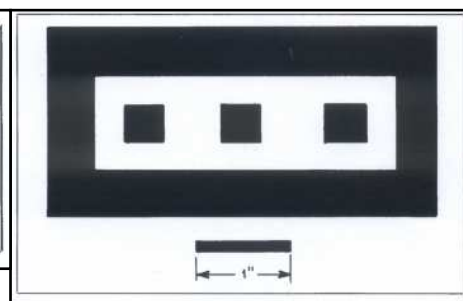


Schematic of the three pole Butterworth filter

Input and output connections can be made with small coax (RG-174) or short lengths of hookup wire.  Be sure to make a good solid ground connection from the foil of the pc board to the case enclosure.  The shaded area of the board is the unetched copper foil.



Parts layout for the three pole filter



| HF Band-Pass Filter Specifications | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | T-68-6 core | | T-80-6 core | |
| Band (MHz) | C1/C3 (pF) | C2 (pF) | L1/L3 (μH) | L2 (μH) | L1/L3 (no. turns) | L2 | L1/L3 (no. turns) | L2 | $F_r$ (MHz) |
| 1.8 | 4000 | 400 | 2.2 | 22 | 22 | 69 | 23 | 70 | 1.75 |
| 3.5 | 2000 | 200 | 1.1 | 11 | 16 | 48 | 16 | 50 | 3.38 |
| 7 | 1000 | 100 | 0.55 | 5.5 | 11 | 35 | 11 | 35 | 6.78 |
| 14 | 500 | 50 | 0.28 | 2.8 | 8 | 25 | 8 | 25 | 13.56 |
| 21 | 330 | 33 | 0.18 | 1.8 | 7 | 20 | 7 | 20 | 20.65 |
| 28 | 250 | 25 | 0.14 | 1.4 | 6 | 17 | 6 | 18 | 27.39 |

*"All inductors are wound with no. 20 enameled wire, with the exception of L2 on the 3.5 and 7 MHz filters, which must be wound with no. 24 or smaller wire if T-68-6 cores are used.  If you use T-80-6 cores, you can use larger wire for these inductors.  In winding the inductors, start with the number of turns shown in the Table, and space the turns evenly over 75% of*

*the core. Leave three or four inches of extra wire on each inductor for adjustment.*

*I use silver-mica capacitors in all the filters, but polystyrene capacitors can be substituted and they're cheaper. The capacitors you use should be rated at 500 V or more.*

*Final adjustment of the inductors requires a dip meter. Solder each capacitor across the corresponding inductor to make a parallel LC circuit. Leave sufficient space between the leads to couple the dip meter to the circuit. The values for F(t) on the Table are the resonant frequencies for C1/L1, C2/L2, and C3/L3 for each filter. Adjust the dip meter and watch for a dip. Be sure to couple the dip meter very lightly to the circuit being measured, and look for the frequency that produces a barely observable dip.*

*Final adjustment of the resonant frequency specified in the Table can usually de done by spreading or compressing the coil turns on the core. When the resonances correspond to the F(t) values, unsolder the capacitors. Then, without disturbing the placement of the turns on the core, coat the inductors with Q Dope.*

*The insertion loss of these filters across their specified band is general less than .5 dB."*
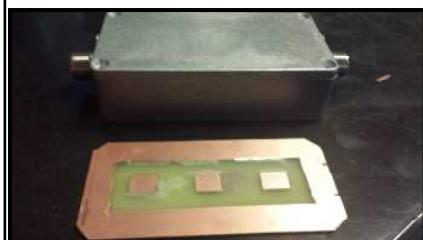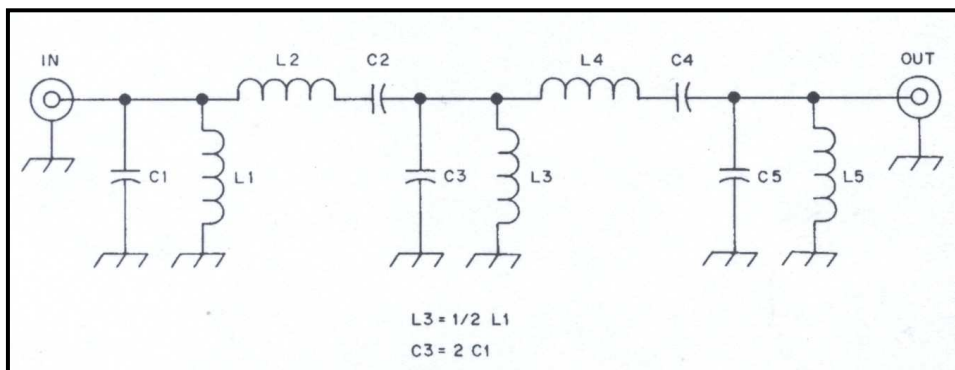
The above was directly from K4VX's article with his permission. In conversation with Lew he added:

*"I recommend that with the universal use of solid state PAs in most excites that larger inductors and larger wire be used, particularly the center coil to prevent cooking the inductor."*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# K4VX Five Pole Butterworth Filters

K4VX also has a five pole version of the Butterworth filter. The schematic for the five pole is below. Here at K8AQM, KD8VSQ, Jeremy (#13072T) enjoys the label "bench rat." Jeremy has build three of the five pole filters covering 80m, 40m and 20m and they are used here at the K8AQM multi-multi operations. Below is Jeremy's five pole 20m K4VX Butterworth filter. It is basically the same as three pole version but has a bit more rejection and becomes important when in a QRO environment as they are here at this station.
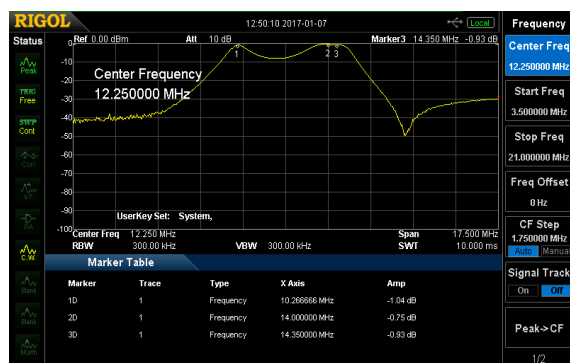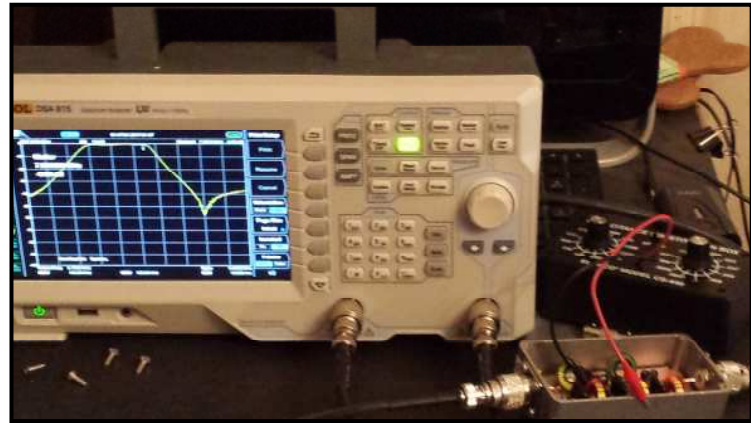
As a "bench rat" Jeremy has access to some seriously good test gear and used it to peak these filters. A Rigol signal generator was used to "tweak and peak"

the filters.  An examination of the screen-shot graphs show the important data from the signal generator.

## Summary

These filters work very well, intrastation interference is not a problem when we have five stations at 500 watts or more at the same time.  Each filter comes at a cost of less than $30 while commercial filters "begin" at nearly $70.00 and some are more than $150.00! Silver-mica capacitors are used in these units and they have a very well built and rf shielded case.  The cost would be less if three pole filters were built and polystyrene capacitors were used, most lik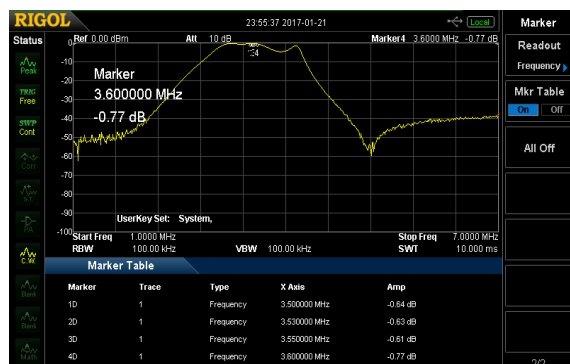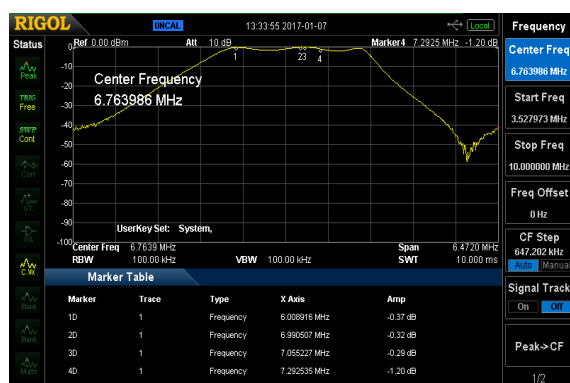ely at $15.00 each.  In most cases where the power is limited to a typical transceiver 100 watt situation, a three pole filter would work just great.



From experience I would add this to the bandpass filtering effort, "If anything has a ground lug on it (and my filters do), ground it!" You have fewer issues in the long run if everything is bonded to a good ground and you use good grounding techniques.

Thanks to K4VX Lew Gordon, for his permission to present his article in an abbreviated form.  Thanks to Jeremy KD8VSQ for his efforts to improve the operation at this station.

Finally, give these a try and start enjoying multi-multi SKCC operations with your friends, it's "exponentially" operating  fun!

73,









**80m bandpass filter showing the smaller wire used to get the correct number of wraps on the toroid...made by KD8VSQ**

*The following is an article written by Jody, K3JZD #13330T.  It is an article every SKCC member should read and be sure to pass on to those who haven't read it and are new to SKCC.  With the tremendous support of the free logging program "SKCC Logger," provided by Ron AC2C and available on the SKCC homepage, Jody has written an article to encourage all new members to try the scheduled SKCC event.  Feel free to pass on this wonderfully written article to all…..editor*

# Use SKCC Events For Gaining CW Experience
## By Jody K3JZD

Most people who are learning to use CW tend to shy away from organized CW events. The general concern is that they lack the necessary skill to participate.    Well, with the big CW Contests, that is probably true.   Those big contests will move along at a fast and furious pace, and are often using computer generated CW that is sent at a speed that cannot be copied by mere mortals.

However, organizations like the Straight Key Century Club (SKCC) cater to those who are new at using CW.  The SKCC sponsors frequent operating events (Sprints) to encourage getting on the air and gaining that CW experience.   These SKCC Sprint Events are 'fun events', not 'contests'.    Yes, you can keep score and yes you can submit your score if you want to, but the submitted scores just get posted on the SKCC Web Site for 'bragging rights'.   So, they are low pressure CW events, where people will slow down to match your speed rather than shun you for being inexperienced or slow.

There are several things that make these SKCC events good for inexperienced CW operators.   First of all, they use a fixed format exchange.   So, you know what to expect.   Knowing what to expect next helps you a great deal whenever you are copying CW.   I find that whenever I assume what is coming next, and then get something different, that generally throws me a curve and gets me flustered so that I then miss a bunch of stuff.  The SKCC exchange consists of: [RST] [STATE] [NAME] [SKCC NUMBER].   The State will be just the two letter abbreviation.  And, each will be repeated.  So, you will actually receive:  [RST]  [RST] [STATE]  [STATE]   [NAME] [NAME]   [SKCC NUMBER]  [SKCC NUMBER]  giving you two tries to copy each component.  And, asking for a repeat on something is OK.

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The second thing that helps a great deal is that you can use the free SKCC Logging program that utilizes the membership database.   Whenever you type in a member's call sign, you will see the information for that member displayed.   So, you can instantly confirm what you have copied.    For example, here is what gets displayed in the 'Add Log Entry' form after I have typed in only:   **AC2C**

His Name, State, and SKCC Number are displayed here for me.   Most folks will have the name that they use on the air entered into the SKCC database.   But some will not (ie: you may see 'David' here, and then they will send 'Dave' just to test you).

So, with the slow speed operation, casual attitude, the exchange data being repeated, and the support from the free SKCC Logger program, these SKCC events are ideal aids for improving your CW skills.

If you have not figured it out by now, you do need to use a Straight Key during these SKCC events.  No Electronic Keyer with Paddles.   For those of you who learned to send CW using an Electronic Keyer with Paddles, this may be a step back for you.  The SKCC defines a 'Straight Key' as a non-electronic, manual mechanical device, which includes traditional straight keys as well as Sideswipers (cooties) and bugs.   Using your Paddles jumpered together and connected directly to your transmitter (instead of to your keyer) as a type of 'Sideswiper' is also permitted and is often used as a way to get started without investing in a straight key right away.  Transmitters with built-in keyers have to be re-configured for Straight Key use.

To participate in these SKCC events where SKCC Numbers are exchanged requires that you have a SKCC Number (duh).   Not a big deal.   You can request your free lifetime SKCC Membership and Number from the SKCC website:   http://www.skccgroup.com/    Just choose "Request SKCC Number" from the menu on the main page.    No real obligation, and does not result in any spam emails.   However, you will get an emailed reminder for each SKCC event.

There is a monthly 'SKCC Weekend Sprint' that runs from 1200 UTC on a Saturday until 2359 UTC on Sunday.   This lengthy event allows you to get in and operate whenever you have a little time available during the weekend.  There is a monthly two-hour 'SKCC Sprint' that runs from 0000 UTC to 0200 UTC on a Wednesday (that's on a Tuesday evening for us). There is a SKCC Straight Key night that occurs on the first day of each month.  And there are other annual events that will occur throughout the year

If you want to submit your scores and see how you are doing with respect to the others who participate in an event, you should operate the whole event within one of the power-based entry classes available: QRPp (under 1 watt), QRP(1-5 watts), QRO (6-100 watts) or QRO+ (over 100 watts).   However, if you are new to CW, I would recommend that you leave the QRP and QRPp operation for later on, and use some more power for now.    It will make your life much easier whenever others can hear you better.

As you know, CW is no longer required.  Those of us that had to learn CW in order to get licensed (way back when) couldn't wait until we got a class of license where we did not "have to use CW".   But, now many of us old timers are "rediscovering" the satisfaction one gets from using CW.   And many newcomers to the hobby are trying CW just see what they are missing.   Participating in these available SKCC events can help you get up to speed in either case.

The SKCC offers many other 'recognitions' for your efforts, as well as CW learning aids, CW operating advice, and support.   Spend some time exploring the SKCC web site. Get a SKCC number.    Get a mechanical key hooked up.    I'll be listening for you during the SKCC Sprints.

# K3Y/9 Multi-multi Operation

       Five SKCC members from the Fort Wayne, Indiana area gathered for a "first" of hopefully many future multi operating events for SKCC in January as they operated as K3Y/9 for a Saturday during the regular January WES SKCC event. Hosted by Ken – N8KR (7559S), Joe – WB9EAO (12021T), Josh – W9HT (7474T), Mark – KK9U (3818T), and Carl – K9LA (14633) kept the small two-station multi operation going throughout the day with, of course, many breaks to "shoot the breeze" to get to know one another and share ham stories and the love of CW! (Interesting, while we all live in the same community, most of the guys present hadn't met each other personally.) Friendships were made, though, and fun was had.  The N8KR station with a tribander and several wire antennas was sufficient to support two operating stations, each with an amplifier and protected from each other with individual band pass filters from DX Engineering. Even with poor propagation that Saturday and having to deal with a RTTY contest's QRM, the two stations managed 215 contacts and its operators consumed two pizzas and several cans of pop . . . and Joe's tea!  Straight keys were preferred by all but Joe – WB9EAO who brought his bug of unknown make. (check the pictures. If you know what it is, let him or me know.)

   While this operation in no means compares in size to the K3Y/8 operation in Adrian, MI, it does illustrate how simple it is to get a small multi going for a special event AND with that event, the fellowship of hams, SKCC members, and friends. With the outlook of expansion of operators for next year builds the camaraderie of our SKCC community here in northeast Indiana.  73 from Joe, Josh, Mark, Carl and Ken. See you on the air!



**Joe - WB9EAO  at the IC-756PROIII and Josh – W9HT at the TS-590SG**

**Carl – K9LA enjoying the Vibroplex straight key**



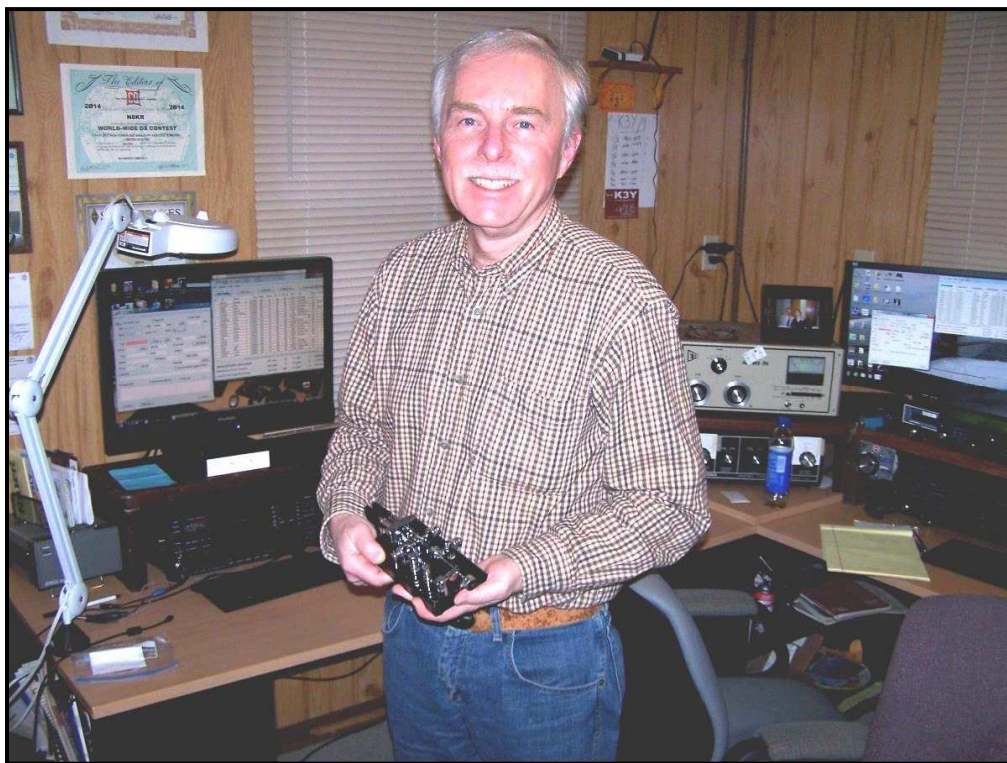**Joe – WB9EAO and Mark – KK9U (a "lefty")**

*Editor….*
    *N8KR is right! There is so much fun to be had in multi-multi operating with friends. It's great to see another multi-multi team getting together for fun.*
    *Get together with some friends and give it a try, you'll be glad you did!*

**Joe – WB9EAO and bug of unknown make.**
**Nice looking and feeling bug but who made it?  Help!!!!**

# K3Y/8  Mini Multi as K8PRC

Well, last weekend we spent the K3Y/8 at Ted's house, K8AQM, the big Multi Multi K3Y/8 Operation.  Let me tell you, at one time there was so many operators in his shack, it should have been called, The Pressed Ham Under Glass Multi Multi!

One weekend later, we, Tony, KD8BBK, and N3JJT, Scott ran a mini multi as K8PRC, SKCC #14046T.  We ran two separate times on Saturday January 14th.

We made just under 100 contacts as K3Y/8.  We ran 20,40,80 meters primarily.

Now, there are a few folks that have worked with us as a multi multi, and Tony and I are known to have a few laughs…..few, that might me calling it wrong!  We have a blast no matter what we do!

I want to tell the folks reading this article;  Get your friends together, whether it is the size of Ted's Multi Multi, or as small as our Mini Multi…pull them together and have some fun!  It does not take too much to do, just schedule your time, invite some friends or a friend and get to the job at hand!  It does not matter how many contacts you make, but the making of a great time during our Anniversary Month as K3Y/X.

73 for now from N3JJT and KD8BBK as K8PRC, #14046T



# Even VHF/UHF Towers!

Often we think of hf towers with large yagis with stacks and multiple elements as overloading a tower. KD8VSQ sent this along showing that a sturdy free standing tower with what looks like a "normal" load of vhf-uhf antennas can have too much wind load.  Always make sure you know and understand the wind load rating of your antennas and what the tower manufacturer recommends.

There is something about this picture that just begs for an interesting caption but that's another topic!

# SKCC Certificate Art Contest
## CALLING ALL ARTISTS, DOODLERS, AND GRAPHIC DESIGNERS!

Upon seeing the fabulous art-work creations that have been submitted for the annual SKCC K3Y QSL cards, and recognizing that there are some very talented 'artists' among us, we are seeking your talents as we wish to revise and upgrade the three principal SKCC certificates: Centurion, Tribune, and Senator

As you know, SKCC has those three primary awards, earned by the many contacts made among the members. For this new decade of SKCC, we would very much like to update the design backgrounds for these three principle awards. Therefore, in order to elicit the outstanding design work of our many talented members-- *IF a minimum of five individuals submit designs*, we will award a prize to the winner of the three background illustrations/images that will become the standard for future certificates. The winning certificates will also include the designer's name and call sign in an inconspicuous location on the certificate, as the creative genius.

The theme of the designs should reflect the period of the roman empire and background can be images, illustrations, photos, and/or line-art to represent the period and the level of the award. Examples: the roman colosseum, roman busts – just a few of many ideas! …"*Put your thinking caps on*" (as my old elementary teacher used to say.)

The designs should reflect the advancement from Centurion, through Tribune, to Senator; each 'package' will be displayed on the SKCC web site. The membership will have the opportunity to vote on their favorite design, as they have annually for our K3Y QSL card. A web page will be available to all members for voting on/about 15 April 2017. Check the SKCC home page for details as they become available.

PRIZE - WINNER'S CHOICE: a Vibroplex™ Standard semi-automatic 'bug' key or the SKCC Club Key™).

Standard Vibroplex "Bug"          **or**          SKCC Club Key

We strongly recommended that designers check out the three existing designs (see below) to see the artwork and text they include. Designers should plan on the text being the same or similar to that  shown.
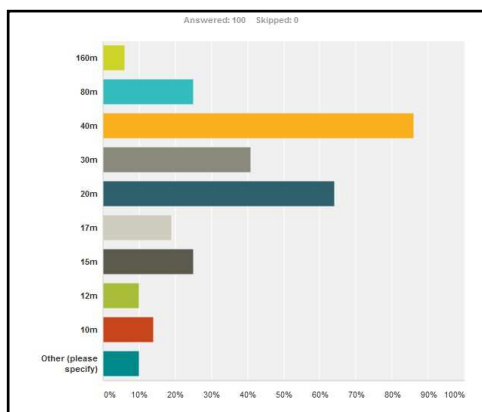
Rules:
1. Deadline for design submissions is 1 MAY 2017.
2. All submitted designs become the property of SKCC.
3. No copyrighted or trade-marked material may be used. All submissions must be free of any restrictions on their use.
4. Three (3) designs constitute a submission: one each for Centurion, Tribune, and Senator. (Multiple submissions may be submitted by an individual)
5. Each submission should include the originator's name, call-sign and an e-mail address.
6. Size: Submitted designs should be 8 ½ x 11 inches, include borders, and should be in .jpg, or .png format ONLY – no other format is acceptable.
7. Designs should concentrate on the border, background image(s), SKCC Logo, and Award name (Centurion, Tribune, Senator) as applicable and must include the following text, *somewhere* on the design:
    Straight Key Century Club – Prominently shown
    SKCC Logo – prominently shown
      *All other text will be added to the winning design by SKCC.*
8. Designs may be multi-colored – there is no limit on the number of colors
9. Designs should be e-mailed to: lpwandel@comcast.net.


   On/about May 15 the winner will be announced and the winning design will be incorporated into the SKCC web site. The winner will be notified and announced via SKCC web page and RAG CHEW.  The winner will have his/her choice one of the two keys. SKCC members may elect to print out the new certificates, if they wish.
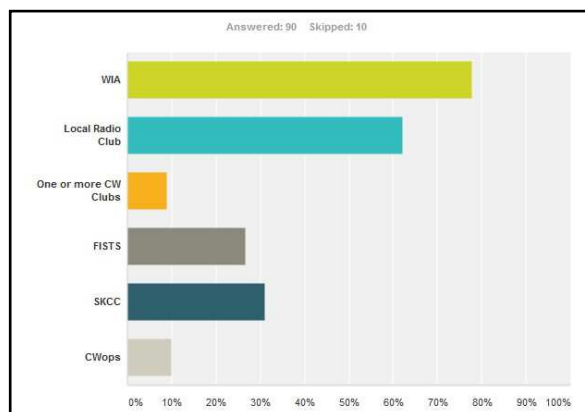Good Luck to all entrants and '*may the force be with you'*… (…just had to add that!)

# VK CW Survey

   A survey was conducted with questions being answered by 100 of the most active CW operators in  VK during the past 2 months. Individual responses were anonymous, results were as follows:  *..…tnx K8UV*
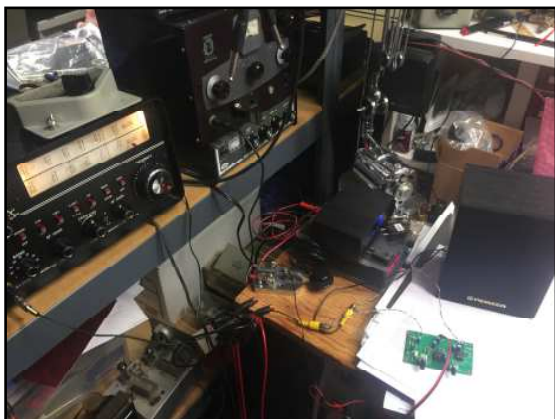


. **Which band(s) are you (mostly)**



**Are you a member of any of these clubs?**

# Easy Audio Band Pass Filter
## Jeff, K9JP #3008s

*Ed...Jeff and I were talking about audio filters (like the resonate speakers) and Jeff sent me a video of his "Easy Audio Band Pass Filter." Here are Jeff's comments on the filter.*

So, today I hooked up the "Easy Audio Band Pass Filter" from QRPKits.com  My video is simple, audio from Drake 2B set at 2.1 Kcs bandpass into the Easy Audio Filter.  Video starts with band pass wide open and then tighten it down until the audio peaks.  The second station is not heard when I open the bandpass on the audio filter but as I tighten it up that station is a clear copy at the end of the video.

*The filter is inexpensive and I'm sure Jeff would be happy to send you a copy of his video showing how well this filter works.*

*According to the features listed at QRPKits.com, these are the features of the "Easy Audio Bandpass Filter."*

- A basic audio filter kit with preamp, op-amp filter and LM386 audio amp to drive headphones or speaker
- Has a peak in response that is tunable from approximately 300Hz to 2Khz
- Tuning and volume pots for adjustment
- Build in 1-2 hours or less

*I wonder what would happen if you used this audio filter with the "Resonant CW Filter" build by K5LN?  I suspect the resonant speaker would no longer be resonant if you are "tuning the peak response" but with stations off-frequency it might be very valuable.*

# K8PRC Special Event: Cabin Fever 2017

Background: Go to QRZ.COM, look up K8PRC. This will give you a basic understanding of our club.

We are a group of 5 hams that enjoy radio. We also have started a Special Event, called Cabin Fever. 2017 was our 2nd event.

We rented a cabin at Mohican State Park in Central Ohio. 4 operators, 2 staions: One SSB, and One CW. Your friendly SKCC ops, N3JJT,255T, and KD8BBK, 2443T ran the CW station for this event.

We had a combined QSO count of just under 100 contacts. The propagation was not the greatest, and we could not run on the same band, even with filters in place. We ran 20 meters for most of the day, and did have a chance to run 40 while the phone guys were on break.

We also had a local ham that lived in the town we were staying come by and visit just to see what we were doing. So we welcomed Steve, KD8SWJ as our visitor.

Again, this is just another opportunity to have fun with ham radio with your friends. We invite QSL card with a SASE, and we have a certificate on our QRZ page that can be copied and pasted to your word or clipboard for printing. This way we do not have to worry about printing and mailing.

So, we rented a cabin, split the rent, split up the meals, shared a great experience….and oh yeah, we had lots of lots of laughs!

73 once again from N3JJT and KD8BBK.



Ped 3 KD8ENV, Ped 1 N3JJT, Ped 2 KD8BBK, Steve KD8SWJ,(Guest), Ped 5 KD8MQ

# My "Worked All States" Love Affair
# By Urb LeJeune W1UL

**Introduction**

The ARRL's Worked All States (WAS) award is the most popular award among ham radio operators worldwide. The League's DX Century Club (DXCC) is the second most popular award.

The *Worked All States Club* was first announced in QST in January 1936, during the same period as the DXCC award was being developed. Except for not offering endorsements, the rules were substantially similar to those used today. However, an operator was required to be in the same location for all contacts. (Currently one can move up to 50 miles away.) Initially, there were only 48 states – the lower 48 – until 1959 when Alaska and Hawaii entered the Union. Unlike DXCC, WAS did not start fresh after World  WW II and earlier contacts remained valid. Over time the certificate has undergone changes to make it more colorful. The WAS award is an especially attractive certificate.

If you could use some focus in your ham radio activities consider a quest for both WAS and DXCC. For the sake of this article, we'll concentrate on the WAS award. I have found from my personal experience that when I have a goal my ham radio activity increases. For me, the more difficult the goal the greater the satisfaction when the quest is completed.

**My First WAS Journey**

My first year and a half as a ham consisted of getting on the air when I got home from high school and "haming" until dinner time. My first rig was a home-brew crystal controlled transmitter operating  exclusively on 40 meters. During my first year and a half on the air, I never worked a station west of the Mississippi River from my QTH in northern New Jersey.

One night in mid-1951 I woke up about 2 AM with a toothache and couldn't get back to sleep. I turned on my rig, fully expecting no one to be on at such an ungodly hour, and low and behold, I worked Montana, Washington state, and California in fairly rapid succession. I was elated and suddenly a WAS appeared very difficult but possible. The year was 1950 and Alaska and Hawaii were not yet states. WAS, then as now, required confirmation of communications with all states. Six years after the eventful "toothache night",  I finally worked Utah to complete my WAS. There were two years away from my home rig during active duty military service.

**Who can Work All States?**

Almost anyone. Many operators have achieved WAS with 5 watts and an indoor antenna. One caveat, a Technician Class license holder can only operate HF phone on 10 meters. Unfortunately, we are approaching a minimum in the current sunspot cycle during which time 10 meters is virtually useless.

From a practical standpoint if you hold a Technician license and want to pursue a WAS you will have to do one or two things:

Learn Morse Code.
Upgrade to General.

If you learn Morse code you can operate CW in the old Novice portions of 80, 40, and 15 meter bands.

If you choose to learn Morse Code there are two really good, and free, programs:

Just Learn Morse Code at http://www.justlearnmorsecode.com
The G4FON Koch Trainer at http://www.g4fon.net/CW%20Trainer.htm

The G4FON is more versatile and my personal favorite.

If you choose to upgrade to General please check out my Ham Cram website which has three distinguishing characteristics:

Don't study incorrect answers.
Only study the questions most likely to be on the VE test.
It's totally FREE

Study smarter, not harder is my mantra. The quickest path to upgrading you license is at http://ham-cram.com

## My WAS Aftermath

After obtaining WAS I was elated but my activity started to decline and I started to miss a challenge. Shortly thereafter ARRL came to the rescue with their 5 Band WAS (5BWAS) award.  The 5BWAS requires confirmed contacts with each of the 50 states on the 10, 15, 20, 40 and 80 meter bands for a total of 250 contacts.

If you really want to learn about propagation start chasing a 5BWAS. It degenerates into working the far out states on 40 and 80 meters and states within about a 500-mile radius or your QTH on 10, 15 and 20 meters.  My last state in my 5BWAS pursuit from central NewJersey was Tennessee on 15 meters.

Shortly after starting my 5BWAS endeavor a friend told me about the Geritol Net and award. The award requires contacts with all fifty states in the Extra class portion of the 75 meter phone band, in addition, all contacts must be with operators holding Extra class formatted calls. See the net description and award rules at:

http://geratol.net

This is a difficult award if you live on the east coast of the United State. Both Alaska and Hawaii are very elusive on 75 meters. The Geratol net was fun and I was making new friends, many of whom would make schedules to give me their state on a needed band.

If you're looking for a major challenge, add a twist to the existing rules to make your goal tougher.  I decided to pursue my 5BWAS using only extra class formatted calls with the same operator on all five bands. A 5BWAS with only 50 operators all with extra class formatted calls! When I finally accomplished my lofty goal and send the League my confirmations my plaque looked like everyone else's wall fixture. However, I know I had done something special and that was good enough for me. Over the ensuing years, I have pursued many variations on the WAS theme.

The second most difficult certificate I ever earned was WAS YL. Work a YL in every state, it does not sound difficult but most YL hold a Technician class license or are inactive. This award took me over five years. Toward the end of the trail, when I worked an OM in a state where I needed a YL QSO I would ask him if he knew of a YL in his state who was active on HF, several times he said, "sure, my XYL!"

My most difficult award was Phone WAZ for working all 40 CQ Magazine Zones on two-way phone. I have certificate number 18, US number six and W2 number one. At the time there was only one station available on the two-way phone in zones 19 and 23.

**WAS Resources**

There are many resources to help on your path to WAS. Here are some of the resource and their accompanying websites.

### The North American QSO Party (NAQP)

The North American QSO Parties are favorites of beginners and seasoned operators alike. The NAQPs are low-power only (no amplifiers allowed) which makes for a lot more breathing room on the bands. Small stations can generate very effective "runs" in the NAQP  contests. Multipliers count once per band, which makes for an exciting format, as mul-tipliers can be "moved" from band to band. The NAQPs allow stations from all parts of North America to be in the running for the top spots. The 12-hour format allows participants to do some great contesting, and still have time for other activities during the weekend. Participants can enter in the single op or multi-op categories and also have the opportunity to combine up to five separate single op scores into a team score.

There are "parties" for CW and SSB in January and July and RTTY in February and August. As the name implies, stations in North America, as well as Hawaii, can participate. The exchange is your name plus your (State/DC/Provence or Country.)
Schedule and rules at http://www.ncjweb.com/NAQP-Rules.pdf

The 2017 NAQP calendar

| Mode | Times/Dates | Logs Due | Log Submittal |
|------|-------------|----------|---------------|
| CW | 1800 UTC Jan 14 to 0600 UTC Jan 15 | January 20 | |
| | 1800 UTC Aug 5 to 0600 UTC Aug 6 | August 11 | *NCJ* website: |
| SSB | 1800 UTC Jan 21 to 0600 UTC Jan 22 | January 27 | |
| | 1800 UTC Aug 19 to 0600 UTC Aug 20 | August 25 | www.ncjweb.com/naqplogsubmit.php |
| RTTY | 1800 UTC Feb 25 to 0600 UTC Feb 26 | March 3 | |
| | 1800 UTC Jul 15 to 0600 UTC Jul 16 | July 21 | Alternative submission methods: See Rule 16 in text. |

# State and Province QSO Parties

Almost all state have a representative QSO party. The seventh call area has one QSO party for all states in the seventh call area. This event is great for picking up seventh call area rare states.

N5NA maintains a wonderful State & Province QSO Party Calendar, with over 160 events, at http://qsoparty.eqth.net There are QSO parties for almost all state, typically in the summer months. These tend to be low-pressure operating events. You might even win a certificate.

Another list of State QSO Parties is maintained by VA3RJ at http://www.qsl.net/va3rj/contest_usa.html

## The ARRL Sweepstakes

The ARRL November Sweepstakes is a major contesting activity. It is highly competitive and the exchanges are long. Having said that, it's a great event to pick up missing states. Schedules, descriptions and rules at http://www.arrl.org/sweepstakes

## WAS Nets

A great way to fill in missing slots in your WAS quest is participating in a WAS Net. In general, you get a membership number to participate in net activities. The nets meet at specific times and frequencies. The normal sequence is to sign in with the Net Control Stations (NCS.) After the login period, the individual sign-ins receive a chance to call other logged in stations.

## OMISS

One of the oldest WAS nets is the Old Man International Sideband Society (OMISS.) OMISS has been operating a list-type awards nets on the amateur bands since 1981. If you are chasing your WAS this is one resource you'll find useful. Full information at: http://www.omiss.net/

### OMISS OPERATES ON THE FOLLOWING FREQUENCIES AND TIMES, PLUS OR MINUS QRM AND PROPAGATION:

The OMISS All Band Coordinator is AI0A, DAVE, #8641

| Band | Net Time & Frequency | Day | Net Coordinator |
|------|---------------------|-----|-----------------|
| 160m | 0400z ---> 1.930 MHz (+/- 7 kHz) | Sat & Sun * ** | W2FDB, FRANK, #8897 |
| 80m | 0300z ---> 3.825 MHz (+/- 7 kHz) | Daily | N2HTL, AARON, #8751 |
| 80m Late | 0500z ---> 3.825 MHz (+/- 7 kHz) | Sat & Sun * ** | N2HTL, AARON, #8751 |
| 40m | 0100z ---> 7.185 MHz (+/- 7 kHz) | Daily | K9WVL, TIM, #8881 |
| 40m Late | 0400z ---> 7.185 MHz (+/- 7 kHz) | Sat & Sun * | K9WVL, TIM, #8881 |
| 20m | 1830z ---> 14.290 MHz (+/- 7 kHz) | Daily | KJ5IM, JIM, #8016 |
| 17m | 1900z ---> 18.158 MHz (+/- 7 kHz) | Sat & Sun * | K8MPW, CLAUDE, #9757 |
| 15m | 1700z ---> 21.395 MHz (+/- 7 kHz) | Sat & Sun * | W7WSB, WILLIAM, #8513 |
| 10m | 1800z ---> 28.665 MHz (+/- 7 kHz) | Sat & Sun * | WB6RAB, DAVID, #7380 |

\* And Monday if it is a Legal Holiday, plus New Years Day, 4th of July, Veteran's Day, Thanksgiving, and Christmas.

\*\* The Winter schedule will begin the last week-end in October and complete the 1st week-end in April.

**Days and times are in UTC. Nets that are Friday night local are displayed as Sat UTC.**

We are in need of volunteers to become NCS stations for OMISS. If you would be willing to help please contact one of the above listed Band Coordinators for more information.

## 3905 Century Club

The 3905 Century Club is an international amateur radio club founded during February 1977 and is one of the premier Worked All States, DX and awards nets on our amateur bands. The

purpose of the 3905 Century Club is providing all amateurs—foreign and domestic—interested in WAS, or other awards with organized nets populated with like-minded amateurs for making the necessary contacts and receiving the necessary QSLs.

## 3905 Century Club Net Schedule

Last Schedule Update: 12-Dec-2016

| UTC | | LOCAL (UTC-5) | | This is the Standard Time Schedule THE "LOCAL" TIME/DAY SHOWN IS BASED ON YOUR COMPUTER'S TIME ZONE SETTING | | | |
|---|---|---|---|---|---|---|---|
| Time | Day | Time | Day | Freq | Net | Coord | Remarks (UTC) |
| **SSB Nets** | | | | | | | |
| 01:00 | Daily | 8:00 pm | Daily | 7.2675 | 40m Early | W5DMT | DO NOT interfere with the YLISSB net, which runs before our net! Alt Freq: 7.243 |
| 03:00 | Daily | 10:00 pm | Daily | 3.902 | 75m Early | WA9DIY | Alt Freq: 3.898 |
| 03:00 | Daily | 10:00 pm | Daily | 1.926 | 160m Early | W9ROG | Alt Freq: 1.933 |
| 05:00 | Daily | 12:00 am | Daily | 7.188 | 40m Late | N5MIG | Alt Freqs: 7.178, 7.208 |
| 06:00 | Daily | 1:00 am | Daily | 3.902 | 75m Late | KG4ZOD | Alt Freqs: 3.897, 3.895 |
| 07:30 | Sat | 2:30 am | Sat | 1.926 | 160m Late | WG0I | Net Restarted Sat Nov 12 @ 07:30Z |
| 11:00 | Sun | 6:00 am | Sun | 1.926 | 160m Late Late | WG0I | Net Restarted Sun Nov 13 @ 11:00Z |
| **CW Nets** | | | | | | | |
| 04:00 | Sat | 11:00 pm | Fri | 7.045 | 40m Late | WN1F | Slow Speed |
| 21:00 | Sun | 4:00 pm | Sun | 14.053 | 20m | WN1F | |
| 04:00 | Mon | 11:00 pm | Sun | 3.5475 | 80m Late | AC7XF | Slow Speed |
| 03:00 | Tue | 10:00 pm | Mon | 7.045 | 40m Early | WN1F | |
| 03:00 | Fri | 10:00 pm | Thu | 3.5475 | 80m Early | AC7XF | Slow Speed |
| 04:00 | Fri | 11:00 pm | Thu | 1.818 | 160m Early | K9EA | 2nd & 4th Friday |

The 3905 Century Club Digital Net Schedule

| **PSK Nets** (USB, approx 1500 Hz Offset - see helpful hints below) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19:00 | Sat | 2:00 pm | Sat | 14.0680 | 20m | WN1F | The Christmas Eve day net (Dec 24 UTC) will move to Mon Dec 26 UTC ——— The New Year Eve day net (Dec 31 UTC) will move to Mon Jan 2 UTC |
| 03:00 | Wed | 10:00 pm | Tue | 7.070 | 40m | AD5XD | 1st & 3rd Wednesday |
| 04:00 | Thu | 11:00 pm | Wed | 3.572 | 80m | AD5XD | 1st & 3rd Thursday |
| **RTTY Nets** (LSB, approx 2125 Hz Mark Tone - see helpful hints below) | | | | | | | |
| 21:00 | Sat | 4:00 pm | Sat | 14.084 | 20m | WN1F | The Christmas Eve day net (Dec 24 UTC) will move to Mon Dec 26 UTC ——— The New Year Eve day net (Dec 31 UTC) will move to Mon Jan 2 UTC |
| 03:00 | Wed | 10:00 pm | Tue | 7.084 | 40m | AD5XD | 2nd & 4th Wednesday |
| 04:00 | Thu | 11:00 pm | Wed | 3.586 | 80m | AD5XD | 2nd & 4th Thursday |

## Net Listing

The W1YZ HF Net Listing has pertinent information on over 160 active nets. The URL is :

http://www.n1yz.com/HFNET_LIST.HTM

## Real Time Sked Page

No compendium of WAS resources would be complete without a mentioning the K3UK real time sked pages at http://www.obriensweb.com/sked/index.php?board=skcc
Andy has several "boards" including SKCC, Log Book of the World, and digital to name a few. If you operate CW, even at very slow speed, the SKCC board is a must.
The K3UK webpage is comprised of four frames. The right side shows the calls of people currently logged onto the system. Run you mouse over a specific call for additions information. The right frame also shows available boards and a listing of states and countries of the current logged in people.

The top frame has information pertinent to the currently accessed board. The bottom frame is where you enter a text message to communicate with a logged in user, as an example, "w1ul could you meet me on 7050?"
The left center frame is a listing of previous posts.
Just watch the action of the page for a few minutes and you'll get the flow of information.
You establish an account (it's free) only one time and on subsequent logins your call appears on the right frame. Andy's sked page is proactive while nets are reactive. Try it, you'll like it.

## Epilogue

Well, there you have it, an introduction to the lore of chasing a WAS certificate, including some of the available derivative certificates. If you have never set a ham radio goal for yourself, try it and experience the thrill of completing a difficult goal. Completing one ham radio challenge may give you the confidence to try increasingly difficult goals in other areas of your life, who knows where that could lead?
**73 and good luck**
**Urb W1UL  urb@w1ul.com**

*When not writing articles or looking for new bridges to cross and mountains to climb, Urb can be found working on his free ham radio license preparation website, http://ham-cram.com. It's the quickest path to a license or upgrade.*
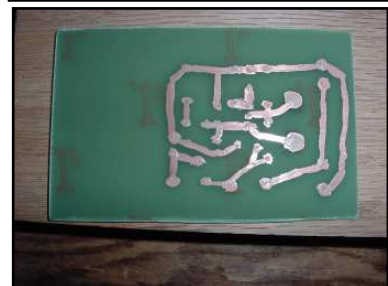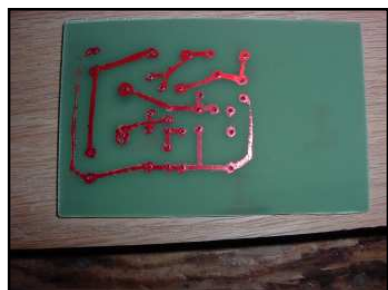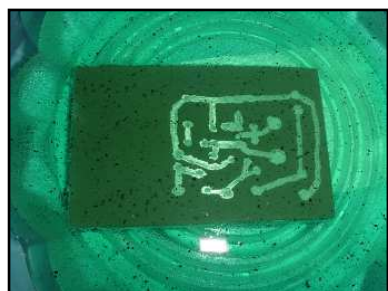


Rich, K8UV #2250T sent these along. If you do a web search of World War II posters you'll come across these and many many more posters. I wish there were still female military cw ops, actually I'm hoping they would be SKCC members too!
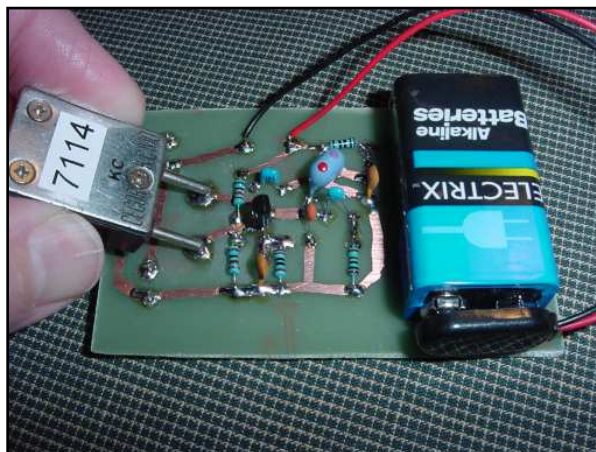
# Getting My RX On Frequency
## Jeff, K9JP #3008s

The Crystal Spotter is an oscillator the when you press the FT-243 type crystal on the PC board there are two switches on the bottom of the board which activate the oscillator. The oscillator circuit is from the original TT2 or Tune Tin transmitter from the early 70's.  So, the oscillator generates about 50 mW output an in on a vintage receiver you can find where you will be transmitting with that crystal.  This tool is helpful for use with regenerative receivers and older HF receivers where the dial is not well marked or easy to read.  Anyway, the crystal spotter would be useful to someone using a separate vintage type receiver, a homemade receiver that does not have a digital dial, or not using a transceiver.

The original circuit board that I copied was posted on the BayouJumper yahoo group by Jim, N5IB.  I contacted Jim via email to see if I could purchase a board.  He said, because the original circuit came from the TT2 transmitter, he could not sell the board.  But, he was so very nice and helpful. He sent me the board layout and schematic as well as many tips on how to easily etch my own boards using a simple technique.  Jim, will be teaching how to etch PC boards at the OzarkCon QRP Conference this April 7-8.

I have attached a few pictures of how I started my etching:
- Black Marker -  is my first attempt using a black Sharpe marker.
- EtchedBLKmMarker - is how the board turned out.  What happened is the black traces from the marker lifted off the board and the whole board etched.
- Etching - this is the nail polish board almost finished. Note the black flecks from the first black Sharpe marked board.
- RedMarker - The Red Sharpe Marker seemed to do better, about 95 percent of the traces where OK.
- NailPolish - This worked very well, but was very hard to paint the traces using the brush in the bottle.  A better brush would have made a cleaner looking board.
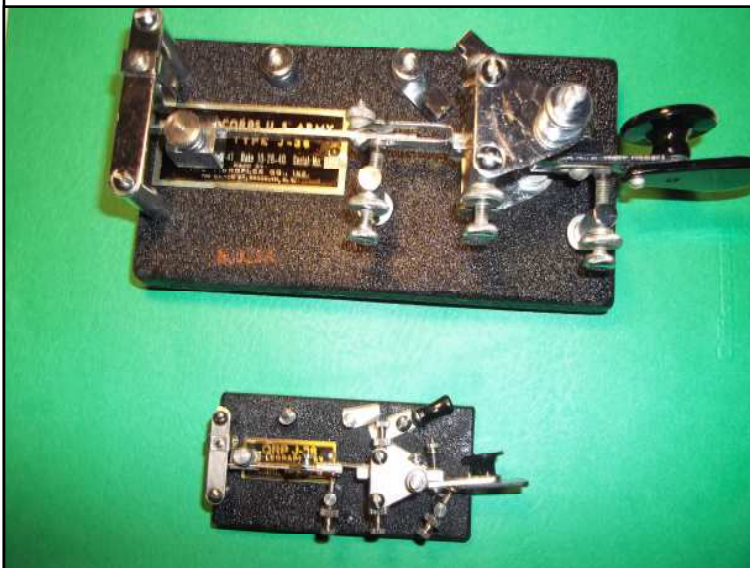
# The QRP J-36 Telegraph Key



*"The QRP J-36 Telegraph Key traces it's history to the famous signal corps J-36 of World War II, often called a BUG."This device, well known to radio operators throughout our amateur community, is now being produced in a miniature, or 'qrp,' version.*

*The QRP J-36 has all of the adjustable features of its larger ancestors. Constructed of over 100 component parts, all tension limit and contact elements are present. Bright nickel-plated brass furniture, solid silver contacts, an operating 'shorting switch' and many other features make this key truly unique."*

So says the ad by KA6IRL at www.qrpj36.com, and since I have been a <u>very good boy</u>, "I" decided "I" needed a Christmas present!  It sure is a "cutie" and you can tell in the picture of my "official" Vibroplex J-36, the QRP J36 an exact copy except for where the paddle and dah side make contact.

So does it work and can you send descent CW with it?  Yes it does!  I connected it to the rig and with a dummy load antenna began my sending.  Wow!  This thing is fast!  The action was smooth but my bug cw doesn't lend itself to the 25-30 wpm pace this little J-36 gives me with the "weight" all the way forward for the slowest speed.  Until I can add some weight I think I'll stick with using my original J-36.  It is a heck of a conversational piece!

# The W1UL Ham Radio & Technology Trivia Trilogy

By Urb LeJeune W1UL

This article is a little different from my normal fair.
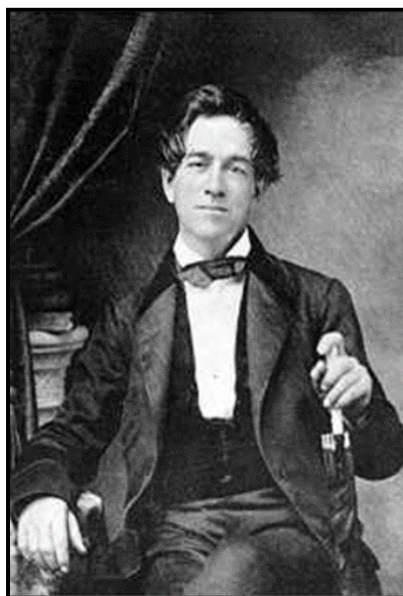
There are three vignettes:

    Who really invented Morse code?

    Hedy Lamarr's inventions that made cell phone possible.

    How Morse code was instrumental in the development of barcode technology.

If you like these let me know and I'll do do more in the future.

## Is the Code We Know and Love Morse Code or Vail Code?

Samuel Morse, in conjunction with Joseph Henry and Alfred Vail (pictured on the left), invented a telegraph system, before the invention of telephones. Their system was capable of sending messages over long distances using pulses sent to a machine which, in turn, made marks on a moving paper tape.

It is irrefutable that Samuel Morse invented a code based on dots and dashes which subsequently became dits and dahs to more closely resemble the actual sound of transmitted code. However, Morse's code is not what we use today on the ham bands.

## Joseph Henry

Henry was a scientist who served as the first Secretary of the Smithsonian Institution and he was highly regarded during his lifetime. While building electromagnets, Henry discovered the phenomenon of self-inductance. He also discovered mutual inductance. Henry developed the electromagnet into a practical device. He invented a precursor to the electric doorbell that could be rung at a distance via an electric wire and the electric relay. The unit of inductance is the henry, named in his honor. Henry's work on the electromagnetic relay was the basis of the practical electrical telegraph, invented by Samuel Morse and Sir Charles Wheatstone, separately.

## Albert Vail

**Alfred Lewis Vail** was an American machinist and inventor. Along with Samuel Morse, Vail was central in developing and commercializing American telegraphy between 1837 and 1844. Vail and Morse were the first two telegraph operators on Morse's first experimental line between Washington, DC, and Baltimore. Additionally, Vail took charge of building and managing several early telegraph lines between 1845 and 1848. He was also responsible for several technical innovations of Morse's system, particularly the sending key, an improved recording registers and relay magnets. Vail also created the modified Morse's concept of code which is virtually unchanged with the code we know and love to this day.

### The Controversy

Morse's concept of a code for use on his telegraph system required a three part process. A message first required that the individual words be converted to a series of numbers contained in a codebook. The sending operating send the numeric sequences corresponding to the original message. The receiving operator first copied the numeric codes and then converted them into plain English words from the codebook the transmitting operator used. Vail composed a code system virtually the same as we use today. He demonstrated the code to Morse. At a press conference, later that day Morse dubbed Vail's code "Morse Code."
Unfortunately, Vail was a shy and retiring person and never claimed the code he developed. The only thing that the Morse and Vail codes have in common is that both codes sent characters using dits and dahs.

Fort Monmouth New Jersey, for decades the home of the Signal Corps, was originally named Camp Vail. Will history ever give Alfred Vail the credit he so richly deserves? Probably not!



**Hedy Lamarr in 1944**

**Hedy Lamarr** was an Austrian and American film actress and inventor. After an early and brief film career in Germany that included the controversial 1933 film Ecstasy in which she is seen swimming in the nude and running naked, she fled from her husband, a wealthy Austrian ammunition manufacturer, and secretly moved to Paris. While in Paris she met MGM head Louis B. Mayer who offered her a movie contract in Hollywood, where she became a film star from the late 1930s to the 1950s.

Lamarr appeared in numerous popular feature films, including Algiers (1938), I Take this Woman), Comrade X (1940), Come Live With Me (1941), H.M. Pulham, Esq (1941), and Samson and Delilah (1949).

# UNITED STATES PATENT OFFICE

## 2,292,387

### SECRET COMMUNICATION SYSTEM

Hedy Kiesler Markey, Los Angeles, and George Antheli, Manhattan Beach, Calif.

Application June 10, 1941, Serial No. 397,412

6 Claims. (Cl. 250—2)

This invention relates broadly to secret communication systems involving the use of carrier waves of different frequencies, and is especially useful in the remote control of dirigible craft, such as torpedoes.

An object of the invention is to provide a method of secret communication which is relatively simple and reliable in operation, but at the same time is difficult to discover or decipher.

Briefly, our system as adapted for radio control of a remote craft, employs a pair of synchronous records, one at the transmitting station and one at the receiving station, which change the tuning of the transmitting and receiving apparatus from time to time, so that without knowledge of the records an enemy would be unable to determine at what frequency a controlling impulse would be sent. Furthermore, we contemplate employing records of the type used for many years in player pianos, and which consist of long rolls of paper having perforations variously positioned in a plurality of longitudinal rows along the records. In a conventional player piano record there may be 88 rows of perforations, and in our system such a record would permit the use of 88 different carrier frequencies, from one to another of which both the transmitting and receiving station would be changed at intervals. Furthermore, records of the type described can be made of substantial length and may be driven slow or fast. This makes it possible for a pair of records, one at the transmitting station and one at the receiving station, to run for a length of time ample for the remote control of a device such as a torpedo.

The two records may be synchronized by driv-

Fig. 2 is a schematic diagram of the apparatus at a receiving station;

Fig. 3 is a schematic diagram illustrating a starting circuit for starting the motors at the transmitting and receiving stations simultaneously;

Fig. 4 is a plan view of a section of a record strip that may be employed;

Fig. 5 is a detail cross section through a record-responsive switching mechanism employed in the invention;

Fig. 6 is a sectional view at right angles to the view of Fig. 5 and taken substantially in the plane VI—VI of Fig. 5, but showing the record strip in a different longitudinal position; and

Fig. 7 is a diagram in plan illustrating how the course of a torpedo may be changed in accordance with the invention.

Referring first to Fig. 7, there is disclosed a mother ship 10 which at the beginning of operations occupies the position 10a and at the end of the operations occupies the position 10b. This mother ship discharges a torpedo 11 that travels successively along different paths 12, 13, 14, 15 and 16 to strike an enemy ship 17, which initially occupies the position 17a but which has moved into the position 17b at the time it is struck by the torpedo 11. According to its original course, the enemy ship 17 would have reached the position 17c, but it changed its course following the firing of the torpedo, in an attempt to evade the torpedo.

In accordance with the present invention, the torpedo 11 can be steered from the mother ship 10a and its course changed from time to time as necessary to cause it to strike its target. In

The spread spectrum patent issued in her maiden name Hedy Kiesler.

At the beginning of World War II, Lamarr and composer George Antheil developed a radio guidance system for Allied torpedoes, which used spread spectrum and frequency hopping technology to defeat the threat of jamming by the Axis powers. Although the US Navy did not adopt the technology until the 1960s, the principles of their work are now incorporated into modern Wi-Fi, CDMA, Bluetooth and Cell Phone technology. This work led to their induction into the National Inventors Hall of Fame in 2014.

The Patent award is shown above. It's interesting to note that the US Navy took over the patent in the early part of WWII but never used it until the Cuban Missile Crisis in 1962. The US Navy never returned the patent rights to the inventors and as a result, they never made a nickel on their inventions.

## Morse Code's Role in the Invention of Bar Code Technology

In 1948 Bernard Silver, a graduate student at Drexel University  Technology in Philadelphia, PA overheard the president of a local food chain asking one of the deans to research a system to automatically read product information during checkout.  Silver told his friend Norman Woodland about the request, and they started working on a variety of systems.


Urb LeJeune W1UL

**A Real Modern Bar Code**

### The Rest of the Story

The first working barcode system implemented by Silver and Woodland used ultraviolet ink, but the ink faded too easily and was expensive. Convinced that the system was workable with further development, Woodland left Drexel, moved into his father's apartment in Florida, and continued working on the system. While sitting on the beach and running his fingers through the sand Woodland had a eureka  moment. He had learned Morse code as a boy scout , and he formed his first barcode from sand on the beach. "I just extended the dots and dashes downwards and made narrow lines and wide lines out of them." Woodland them made a prototype barcode on a strip of paper. To read the code, he adapted technology from optical soundtracks in movies, using a 500-watt incandescent light bulb (removed from a movie projector) shining through the paper onto an RCA935 photomultiplier  on the far side. He later decided that the system would work better if it were printed as a circle instead of a line, allowing it to be scanned in any any direction.

On 20 October 1949, Woodland and Silver filed a patent application for "Classifying Apparatus and Method", in which they described both the linear and bullseye printing patterns, as well as the mechanical and electronic systems needed to read the code. The patent was issued on 7 October 1952. In 1951, Woodland moved to IBM and continually tried to interest IBM in developing the system. The company eventually commissioned a report on the idea, which concluded that it was both feasible and interesting, but that processing the resulting information would require equipment that was some time off in the future. IBM offered to buy the patent, but its offer was not high enough. Philco purchased their patent in 1962 and then sold it to RCA sometime later.

If it were not for Morse code we could possibly stand in long lines when checking out at the supermarket.

### Epilog

When not searching for interesting ham radio and technological trivia Urb is probably working on his ham license preparation website.

Ham-cram.com

The site has two distinguishing characteristics:

We don't study incorrect answers

We only study the questions most likely on the test

# Bet You Never Saw This!

Recently I was given a rather unusual catalog, a 1940 Sears Radio Amateur, Test Equipment, Sound System catalog! This of course is before my time as I am a WWII baby-boomer. What a treasure this is! Looking through at the gear available and the prices is truly a look back into our radio history. Little would the buyer know that in just two short years his "new" equipment would be locked down for half a decade until the end of WWII.

I've included here a couple of pages from Hallicrafters receivers offered at the time and the prices the gear was selling for. The catalog has gear from Hallicrafters, National, Stancor and Hammarlund; receivers and transmitters even Speed-X bugs and straight keys. Lots of tubes by RCA, Hytron, Eimac and Raytheon. There is page-after-page of parts too.

I'll try to show different equipment in the coming issues of the Rag Chew.



SEARS 1940
RADIO AMATEUR
TEST EQUIPMENT
SOUND SYSTEMS
CATALOG
SEARS, ROEBUCK AND CO.

# Looking Back in Amateur Radio- Don't Forget to Do It!
## Curtis Gidding  KC9UNL

Radio amateurs are some of the luckiest hobbyists in the world. They have a hobby that can last a lifetime and never run out of new things to learn and do. We can be consumed by acquiring new equipment, antennas, or various modes of operation. Add to those - - awards, contests and etc. One of the aspects of the hobby that I hope most amateurs do not ignore or forget is our long and exciting history. The recent (2015) anniversary of the A.R.R.L may have brought to mind some of this history and background for amateur radio. Of course, this event probably only touched the surface of the significance of the history of our hobby.

As SKCC members, we are involved with operating in CW with the straight keys and bugs. Our activities align themselves with some of the history of our hobby. But there is much more out there that we can learn about and develop an appreciation of it. I have found that when not operating, I enjoy reading about the history and development of amateur radio and CW telegraphy. This has lead me to develop a list and library of books which should not be overlooked by any serious amateur. Hopefully, this article will be read by newly licensed amateurs so that they can learn that there is more to our hobby than The ARRL Handbook for Radio Amateurs. Don't take me wrong that this is a valuable resource, it overlooks the romance and history of "hamming".  By reading some of the books that I will mention, you will learn about how the ARRL has been a valuable and integral part to forming amateur radio as we know it today. You will also find out that early radio amateurs were responsible for many of the technological advances and the development of radio communications.

The first book to find its place on your library shelf should be *The World of Ham Radio, 1901-1950* by Richard A. Bartlett. This is more of a history book than most that you will find but is very interesting reading and well worth reading. It contains a massive number of references if you want to go in depth of some of the time periods covered.

*The Golden Years of Radio, Amateur Radio Comes of Age* which was produced by the Ham Radio Publishing Group is a softbound volume of 64 pages that is a little harder to find. The First Edition was produced in 1978 and contains chapters written by William I. Orr, W6SAI and others.

*Don C. Wallace, W6AM Amateur Radio's Pioneer* By Jan David Perkins is a marvelous book covering one of the major pioneers in our hobby. It covers the lifelong activities of Don Wallace and has a lot of information about amateur activity on the West Coast.

For readers that either remember Collins Radios or have operated them, *Arthur Collins, Radio Wizard* by Ben W. Stearns is a must to read. Author Stearns does an excellent job of covering the youthful days of Art Collins as an amateur and producer of radio transmitters. The book tells the story of the growth and development of the Collins Radio Company. The book will show the reader how Art Collins via his early amateur experience developed a company that was a major supplier of radio equipment to the U.S. military and for space communications.

On a much lighter note is *The Rod Newkirk Collection* which is written by Rod Newkirk, W9BRD. Rod was the author of How's DX Column in *QST* from 1948-1978. The writings in this book appeared in the *K9YA Telegraph* 2004-2009.  The book contains entertaining stories about the activities enjoyed by Mr. Newkirk as a radio amateur.

If you haven't yet found the *K9YA Telegraph* publication be sure that you Google it. It is a very interesting monthly publication available in PDF Format. The most important thing is that a subscription is Free upon request.

It is my hope that by reading about the above mentioned books readers will at least try one of them. You will be rewarded with some very interesting reading and if you are of a romantic nature may find yourself wishing that you could return to the older days of ham radio. I am sure that you can also find many books not mentioned that you will also want to add to your library.

Cheers and happy reading & operating. 73's

# QRP the Hard Way

I tuned my radio to 14.060 MHZ then held my breath while listening in the headphones. Instead of copying Leo, KB7LOC, I heard what sounded like the War of the Worlds soundstage. But what should I expect on this frequency in the middle of the night? My being here was no chance event, but rather the result of carefully laid plans that might never produce a single positive result.

#

In April 1999 Barb, KC7BSY and myself, N7NET, traveled from Oregon to Arizona's Sonoran Desert and rented a comfortable spot to pause.

Many folks arriving at such desert locations search for stout walking sticks, large water bottles, and perhaps wide-brimmed hats. For us radio people, however, digging-in means configuring VHF and HF radio stations. While Barb doesn't share my CW enthusiasm, she enjoys two-meter radio and has more than once conducted the local two-meter traffic net when the NCS fails to show.

Our adventure began in earnest after purchasing a used fifth-wheel trailer. It came furnished with pots and pans, dishes, and silverware. Located more than a mile from the nearest power grid meant we had top generate our own power.

With limited funds, our final choice consisted of a single 75-watt solar panel and two 6-volt, deep-cycle flooded batteries wired to provide a 12-volt power source. Only then was it time to consider a radio.

My old Swan 400, still in Oregon, had served me well during the '91 Gulf War but it was a power hog. The new radio would have to be solid-state. After a day of searching the Internet at the Ajo City Library, I chose an MFJ-9420 transceiver with a CW board. And a G5RV wire antenna from AES in Las Vegas which completed the system.

MFJ reviews claimed there is no hotter receiver available. The speech processor on SSB is no slouch either. During the hours of midday sun the output to the coax measured just shy of nine-watts. It was enough signal to fetch sideband QSLs across North America, including Hawaii and Alaska. After sunset the power output reduced to a needles-width greater than five, close enough to qualify for QRP. Then, as though Leo had his ear to ground, Barb copied his message off the National Traffic System.

"It's from Leo, KB7LOC. He wants to do some CW QRP," she said.

Leo and I both attended tech school at Keesler AFB, Mississippi during 1956 - 1957. After school he went to an early warning radar site atop a Nevada mountain. I went to Charleston AFB, South Carolina. We didn't meet again until 1991 during the Gulf War while we both served in Oregon Army MARS. The reunion was mind boggling.

QRP? Not a problem, I thought. His QTH, Seal Rock, Oregon, some seventeen hundred miles to the north-northwest will be a walk in the park for this little hummer.

"So, how are we going to do this QRP?" I asked him over the payphone.

"I want to try out my newly acquired, gently used HW-8. I teach guitar and Wednesday evening is my only free time. How's your schedule?" he asked.

He pauses upon learning the only rig I owned is a 20-meter mono-bander. "Well, it doesn't sound hopeful, but let's give it a shot. I'll call you every Wednesday starting at seven, my time. I'll continue sending for one minute. If you don't respond I'll continue every quarter-hour on 14.060 plus or minus QRM. If we haven't connected by eight I'll secure my station until the following Wednesday."

We began

It was QRP the hard way, his one-watt and my five passing in the night. After several Wednesdays the escapade took on a flavor of hopelessness, but we labored on.

One night I heard his suffix, a squeaking LOC. His frequency is too high, sounding more like an Irish penny whistle than a Hot Water Eight. Catching my breath, I listen with all the strength I can muster. Then KB7LOC finds its way through the dark. I issued him a signal report of 224. He sent me a 335. Then he's gone, vanishing into the night like a wisp of cigar smoke. Highlights of our second contact have escaped me. His QSL card is my only proof it ever occurred.

Our third time the band is filled wall-to-wall with atmospheric noises. I'm reminded of a scene in the movie Apocalypses Now. Leo reports my signal as a perfect 599. His signal, however, is heterodyning with another station that's dead on. The echoes and ringing are reminiscent of a carrier fresh in from the Polar Region. I send him a 221, and I think that is generous.

Three contacts were our grand total for the winter of 2000. We should have tried harder for more QSOs. But neither of us foresaw the future.

In September 2007 Leo became a Silent Key, taking with him all our chances of another marathon.

His will left the HW-8 to me.  It needs work.  The band switches probably need cleaning. When I'm finished using it I'll be casting about for someone with good ears who is interested in doing QRP the hard way.

The photo is of the two hummers that did the work that winter - a HW-8 and a MFJ-9420.

I've had more fun with radio than any three people should be allowed to have.



**73 de Scott, N7NET  SKCC 1964**

**http://n7net.me73 de Scott, N7NET  SKCC 1964**
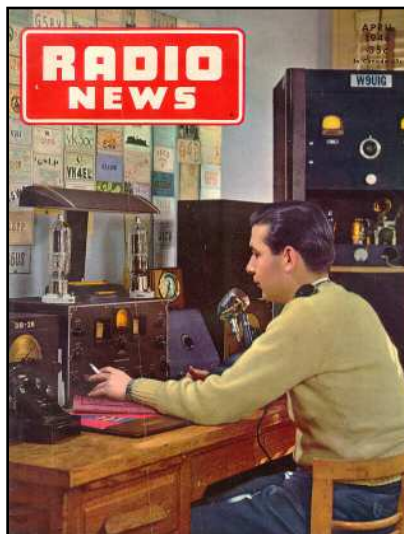
# Radio News to ??



*Radio News* was an American monthly technology magazine published from 1919 to 1971. The magazine was started by [Hugo Gernsback](#) as a magazine for [amateur radio](#) enthusiasts, but it evolved to cover all the technical aspects to radio and electronics. In 1929 a bankruptcy forced the sale of Gernsback's publishing company to B. A. Mackinnon. In 1938 [Ziff-Davis Publishing](#) acquired the magazines.

In 1904 Hugo Gernsback established Electro Importing Company to sell radio components and electrical supplies by mail order. The catalogs had detailed instructions on projects like a wireless telegraph outfit and were the predecessor of his first magazine, [*Modern Electrics*](#) (April 1908). In May 1913 he started another magazine, [*The Electrical Experimenter*](#). The magazines would have Gernsback's bold predictions of the future as well as fiction. In 1926 he started the magazine [*Amazing Stories*](#) and coined the term "scientifiction" which became science fiction.

Gernsback was an enthusiastic supporter of amateur radio. During the First World War the US government placed a ban on amateur radio and Gernsback led the campaign to lift it. Gernsback started a magazine devoted to radio, *Radio Amateur News* (July 1919.) The title was shortened to *Radio News* in July 1920.

And the rest of the story…. Radio News was absorbed by Ziff-Davis Publishing and eventually became "Popular Electronics?"



*Information taken from the internet and "Wikipedia"*

# K3Y/8 2017...Field Day in a Box!

Why is Field Day so popular; is it being outdoors, maybe, is it the chance to prepare for an emergency, maybe, is it the comradery of operating with friends..you bet it is! So why not operate a K3Y event for a weekend with friends? That's the philosophy here at the K8AQM station and what we do!

Originally designed for multi-multi contesting and DXing, the station now focuses on multi-multi operation for FUN. The ability to have five stations running 500 watts or more presents some interesting problems. Intrastation interference being the biggest issue and "operating room" the second main issue. Intrastation interference (intermod) is controlled here through the use of bandpass filters (connected to the transceivers), tuned stubs (connected on the output of the amplifiers) and good grounding of ALL equipment (transceivers, bandpass filters and amplifiers), if it has a ground lug, ground it....don't rely on the shield of coax between gear! As to space, my ham shack is a separate building but like a garage, you just can't build the big enough! One of the sayings around here is, "you just can't have too many antennas" and if you saw the property around here you'd say we live by that moto. All stations are linked and have SKCC

Logger as the main logging program for SKCC events. I haven't been able to convince AC2C to write a program to allow stations to be networked but it is easy to merge the logs at the end of an event into one master log.

This year saw twenty-two ops showing up with seventeen at one time in the room.....great fun! Food is there aplenty, with sandwiches, chili (each bean MUST be individually poked to let the gas out BEFORE it is eaten!), chips, sodas, water, meatballs, gallons of coffee, cakes, doughnuts are all there, no one leaves hungry!



K8TEZ and NQ8T



KD8BBK and AC8W



KD8VSQ and K8KIC



N8GAS Standing K8MU sitting



N3JJT and KD8BBK



K8PRG

Lucas W6LDS...HS student



Seated..W8MU KU8L standing N8GAS



N8CC "lecturing" the crew during a "chow" break



AC8JF, KU8L and KE8CEW deciding whether to have cake or doughnuts!



KG8CO and KD8VSQ trying to figure why we blew the 20m bandpass filter…...

The main 105 ft tower, log periodic, TH6, 2L 40m, 2L 30m and low 2L 40m…..one of 6 towers….you just can't have too many antennas!

## K3Y/8 Operators of KS8KCC

KD8VSQ, Jeremy 13072T   K8TEZ, Larry 8426T   AC8W, Stan 2813   N8LJ, Lee 9954
KD8BBK, Tony 2443T      NQ8T, Steve 5919   KU8L, Curt 5380S   W8MU, Don 10953T
KE8CEW, Greg 15805   N3JJT, Scott 255T   K8UV, Rich  2250T   K8QKY, Steve 7552
K8PRG, Rick 14553T   W6LDS, Lucas 14694   AC8JF, Wes 10511   K8KIC, Ken 2938T
N8CC, Jeff 7541   KT8X, Dennis 7556   NU8Z, Mark 11237   K8MU, Larry 14823
N8GAS, Greg 16455 and me, K8AQM 1629S.

        520 QSOs were uploaded for the weekend operation on 160m through17m.  Unfortu-
nately we couldn't raise any interest in trying 15-6m, conditions were not favorable from Mich-
igan.  We had a great time and look forward to next year's event already!  Many thanks to all
those stations who gave us a contact!

## Spark-gap Key

Spark-gap key, uses "dimes for improved contacts.  1912 keys had to have very serious contacts
for some very high voltage and amperage in spark-gap transmitters.  Hmm, back in my Novice
days I remember "accidentally" laying my forearm across the contacts on my cathode keyed
transmitter!  Wonder if any OT ops ever had that experience with one of the old spark-gap rigs?
I bet they didn't do it a second time!.....*de Rich, K8UV 2050T*