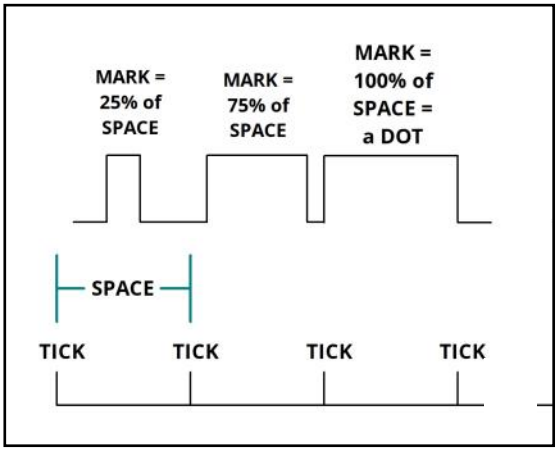
Solid Copy

The CW Operators Club Newsletter

April 2019 — Issue 111

The Structure of CW



Dave W7FB provides a primer on the structure of our favorite mode. **See story page 12.**

CWops "CWT" Every Wednesday
Start: 13Z, 19Z, 03Z (+1),1 hour each session
Exchange: name/number (members)
name/SPC (non-members)
Avoid DX pileups!
Next slow speed CWT is June 12-13, 2019

US Vanity Callsign web site:
http://cwomc.org

CWops "neighborhood": Look for CWops on 1.818, 3.528, 7.028, 10.118, 14.028, 18.078, 21.028, 24.908, 28.028, 50.098 "and up"

13+ wpm practice: Tuesday, Friday, Sunday 6 -8 pm "local time" 7.035-7.045

CWops Officers and Directors
President: Mac McDonald NN4K
Vice President: Peter Butler W1UU
Secretary: Jim Talens N3JT
Treasurer: Craig Thompson K9CT
Director: Stew Rolfe GW0ETF
Director: Nodir Tursoon-Zade EY8MM
Director: Raoul Coetzee ZS1C
Webmaster: Dan Romanchik KB6NU
Editor/Publisher: Tim Gennett K9WX

President's Message

Success stories are meaningful to those who succeed and those who are interested in what the success was about. In the context of amateur radio, you can read them in our newsletter, hear about them on the air and at club meetings plus publications that focus on our hobby provide them. The story may be about a moment or a project, a task or a purpose to name a few. Technical articles present the successful results of a person's interest in something and then developing a more complete description of the results. There are many kinds of success sto-

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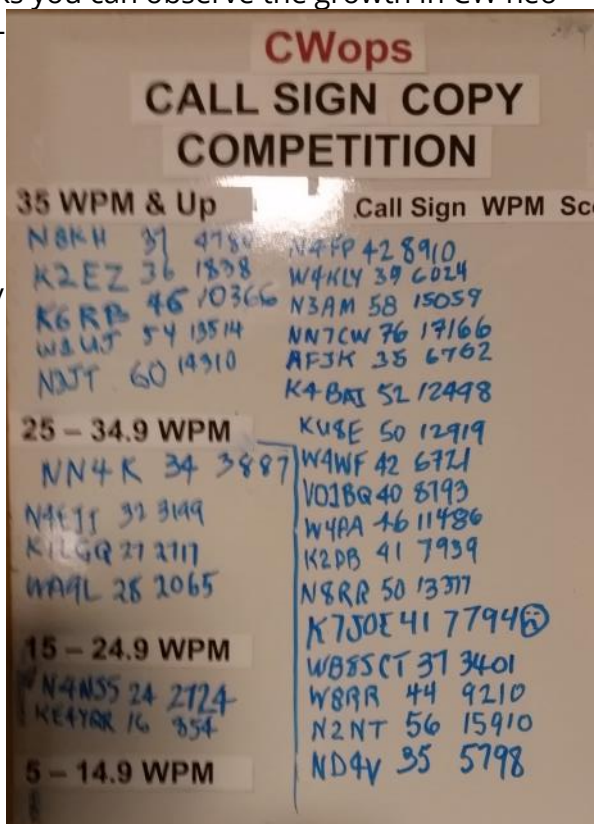
ries and within CWops, where we find folks who have accomplished enviable skills using CW. Somewhere along the successful person's timeline a goal was defined and assimilated. Constant awareness of the goal is a big driver. And I believe many members of CWops are continuing to use the drive to improve as the driving force in our useful playing in the CWTs, the CW-Open and CW Academy, not to mention the opportunities that happen monthly with large and small contest operations. Some prefer QTX type activity and that's also great activity.

President's Message . . .

"CWops is in good shape and continues to grow internationally. "

The new CW Academy students enroll with the goal of learning to operate with CW. The CWA Advisors try to learn what the students are interesting using CW for and couple that to the work that goes into achieving success. The "Work" in our CW Academy is also known as practice. And I like to tell my class that the only place that Success precedes Work is in the dictionary as I learned it from a football coach. As the class meets biweekly for 8 weeks you can observe the growth in CW neophytes into stages of development that lead to satisfaction in Levels I, II and III. Around the sixth week in Level I, the beginners find they can create words to make thoughts, they can recognize call signs and prosigns. Continuing to practice they believe in themselves and develop a good footing for more advanced skills. Observing this growth of a skill first hand makes all the effort worthwhile and very satisfying. Our CW Academy Advisors are doing excellent work and helping develop more CW operators.



The call sign competition scoreboard from the February Orland Hamcation.

The Dayton (Xenia) Hamvention is in May and we are hoping to see many of you there. We'll have a booth where we can interact with visitors and introduce them to CWops. We will have the medals for CWT and QTX activity that you can collect from Rob K6RB. If you are not attending, please let Rob know so the award can be mailed to you. Watch for a notice on the CWops group.io reflector about opportunities to staff the booth. We will also set up the RUFZxp CW Call Sign Copying Competition on Friday and Saturday.

The CWops Awards Dinner will be at the Spaghetti Warehouse in Dayton and you need to respond to Bill KC4D about reserving a seat. We have special awards to present at the dinner and hope you will be able to attend.

CWops is in good shape and continues to grow internationally. Keep up the good work.

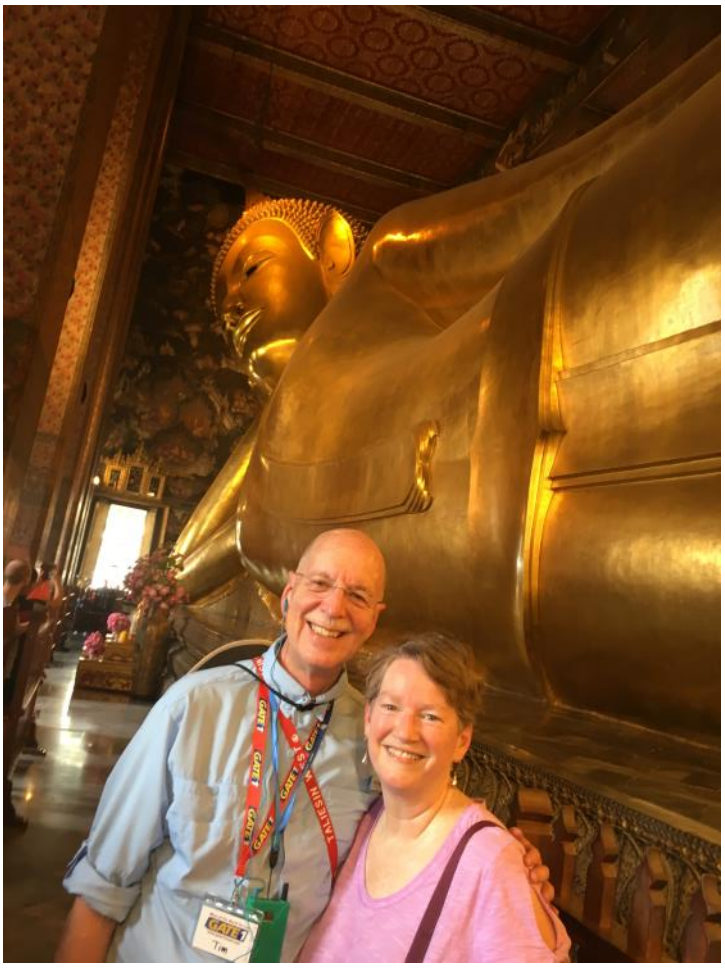
73,

Mac NN4K, President

From the Editor

Back From A Break

If you are a regular reader of *Solid Copy* (I fantasize that there are such people) then you will have noticed that this issue is late. About ten days late.


The reclining Buddha at Wat Pho, Bangkok

The XYL and I returned on April 21 from 16 days in Thailand. It was pure vacation, a package tour that included absolutely zero ham radio. As we toured the country I looked for the usual indicators of HF activity, such as a Yagi on a tower or an HF-scale vertical and nothing was seen. So I went from steady and moderate activity (at least one QSO most every day and around 15,000 or so a year) to zero activity for two plus weeks.

Did I have withdrawal symptoms? No, of course not. Did I miss some rare DX while I was gone? Probably. Did my trip give me a good excuse to have a shorter-than-usual column this month? Absolutely! Did my break from the radio change my perspective of radio and its importance in my life? Time will tell but right now my thought is, yes, taking a break every now and then is important (it's why we have coffee breaks or rest breaks at work) and taking a break from something you love and enjoy can help you come back to that activity with a renewed focus and energy.

It's good to be back on the air.

Thanks, Joe

This month's "Operating Events" column by Joe W5ASP (page 38) marks his last submission. Joe has been writing this column since May of 2014, a span of 60 months or five years if I did the math correctly, but finds that he now needs to step aside. Thanks, Joe, for your hard work and dedication.

73,

Tim *K9WX*, Editor

News and Notes

Jerry Weisskohl AC4BT

Sadly, VE2AWR, George G3RJV and Clovis PV8ADI recently became Silent Keys on April 6. Repose en paix, rest in peace, rust in vrede.

Duncan, G3WZD: I will be heading back down to ZL on 3 April and will be QRV as ZL/G3WZD for several weeks. It is possible that I will be issued a ZL callsign. I am really hoping that I will actually be able to work some CWops in the CWTs – thus far I have managed just one CWT contact during a total of 7 weeks operation!

Rig will be Icom 706 and a 3-band linked dipole.

I am also looking forward to running my second Level 1 class, commencing 8 April!

Dave, K1VUT: On May 3 I am planning to attend the ham radio flea market in Deerfield NH fairgrounds (https://near-fest.com). This is a twice-yearly event, and I believe I can safely say it is the biggest ham radio and electronics flea market in New England. I try to attend every time, unless it is pouring rain. This time I am looking for a rotor plate for Rohn 25, and possibly a thrust bearing which will handle a 2" mast.

Oh yes, and I am also expecting to possibly find that elusive item I had never known I needed but which screams out to me "Buy me!"

Roger, MI0WWB: The Special Event Station GB0GLS will be activated for one day only on Saturday 4th May from approximately 10:00 to 18:00 to mark the role played by the Y Service during WW2. Activation will take place on the site of the original listening station, just 5 miles south of Belfast. Details are on QRZ.com.

Gary, N5PHT: The RV road trips are back! Recently bought a small travel trailer and got it ham ready. I will soon be camping for some CWTs and doing Parks on the Air.

Dan, KB6NU: I will be teaching my One-Day Tech Class again at Dayton this year on Saturday, May 18, 2019. This class would be perfect for a family member who will be with you at Dayton or someone who wants to be able to say that he got his first license at the Dayton Hamvention! The class starts at 9 am and runs until 3:30 pm, at which time, the VEs at Dayton will administer the test.

For more information, go to https://hamvention.org/technician-class-ham-radio-license-course/. To sign up for the class, go to https://www.kb6nu.com/product/one-day-tech-class-dayton-hamvention/.

Roger, G3LDI: The Norfolk Amateur Radio Club continue to show presence in the CWTs each week, although we do have a job to break through the US wall! My rhombic is still broken, but hopefully the top tower will be finished this coming weekend when my son comes up to finish off the welding. Antenna work at G3LDI will start as soon as the building work is completed. I hope

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to have the Steppir and the rhombic up and running again ASAP, but there is a lot to do out there!

NARC will be operating GB0CMS on Marconi Day, April 27th from Caister-On-Sea Lifeboat station, near Gt. Yarmouth in Norfolk, UK. We will be on the air from 9 a.m. until 5 p.m. and there is a special commemorative QSL card.

Take a look at https://www.qsl.net/gb0cms/

This year we will be using a linear amplifier as propagation is so poor. CW mainly, but also SSB and possibly data. **PLEASE TRY AND WORK US!!!!!**

On Sunday April 28th Norfolk ARC will be holding the first Morse Bootcamp of the year at QTH G3LDI. We will have three organized classes, beginners, intermediates and advanced. We also hope to organize Morse Proficiency tests at various speeds. Our Bootcamp fame is spreading, and I am pleased to say that since NARC first started the idea of Bootcamps a few years ago, there are now five running in the UK. Why not try the idea in your club? They are a fun day and also provide both help and incentive to those learning the code.

The view to North America from J's farm, just north of Whitehorse, YT. The Quad is on the right foreground.

Gerry, W1VE/VE1RM: Just wanted to pass along that from March 28th through May 28th, The Yukon CanAm Contest Club, VY1AAA, members will be using the special event callsign CZ1Z. We are celebrating the 50th Anniversary of official bilingual Canada.

VY1AAA is hosted at J Allan, VY1JA's (#1234) house. The members of the club operate his station remotely over the Internet. Rich, VE3KI, #783, Cary, VE4EA, and I are the most frequent operators.

The station consists of an Elecraft K3s, Alpha 9500, 4 element quad for 20-10, including WARC, 40m phased ground planes, and 80m full-size ground plane, and a 160m Double-L.

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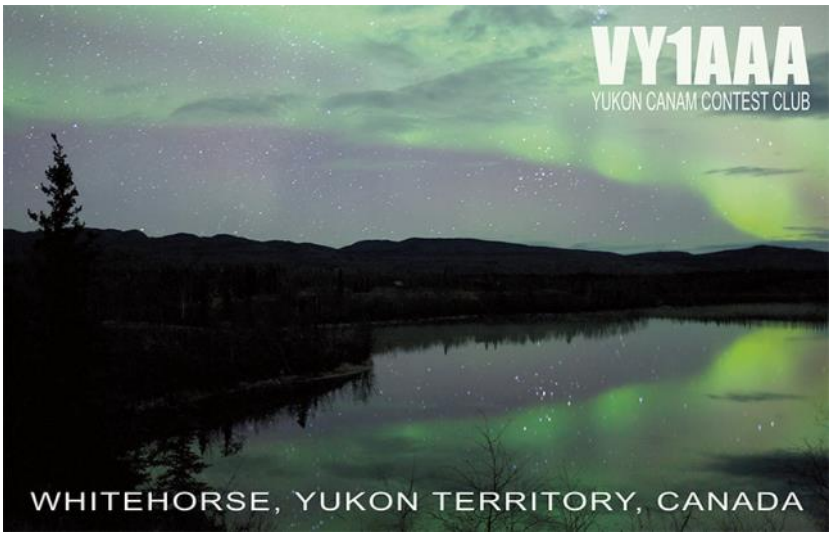

We started out in 2017, and our QSO total (97% CW) is currently around 33,000 for VY1AAA and special callsigns XO1X and XK150YUKON.

Membership in the club is free: If you'd like to try operating from Zone 1 in the Arctic, there are only a few requirements:

You must hold a Canadian Advanced Amateur License. (Canadian regulations stipulate you must have an Advanced license in order to operate a remote station.) If you want to operate from another country, this requirement still applies. (We think it is the best practice in a fuzzy regulation space at the moment.)

You must have a RemoteRig RRC 1258 box and K3 or K3/0 or K3/0 Mini to control the remote.

You must do as much CW as possible. This is the reason J and I came to an arrangement.

For those who may be wondering, J's health has been up and down. He is now 73 and does EVERYTHING around the station (and the farm) by himself. He is one amazing fellow! He still loves to get on and ragchew around 14.050... all with a straight key. He leaves the contesting and QRQ to us.

So, don't be surprised in the next 60 days if you hear me in CWTs signing CZ1Z -- no, it's not Chile! :-)

Jim, G3YLA: I have been very much enjoying the CWT sessions and recently took the step, after a lifetime of simple wire antennas, of getting something with gain on HF up into the sky!

It turned out that my long term wish of trying a Hexeam came into play when I heard of one available second-hand. This is not an antenna for a small garden, they say... and mine, being smaller than most, meant that when I did eventually assemble the beam on the lawn, it would only just fit in the width of the plot. It was manhandled up on a short stub mast on the side of the gar-

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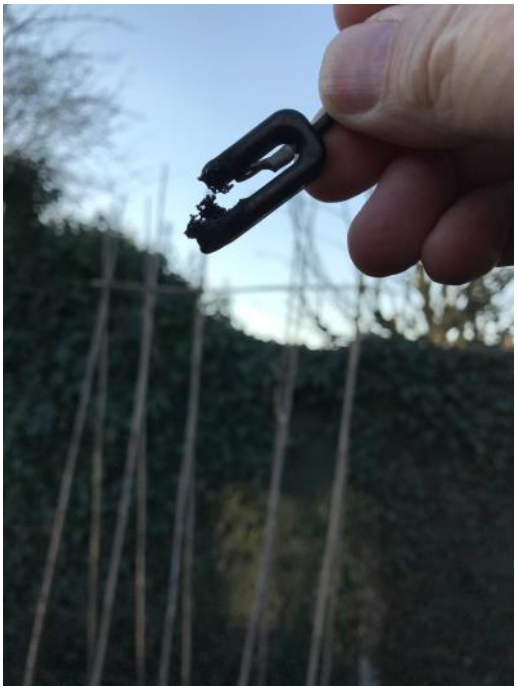
age to place the bottom of the 'inverted umbrella' at the height of the garage roof, putting the 20m element at about 4m. At present, it is tied off (moored) by rope to align roughly with the States, which does make 'I'll just turn the beam' a bit of a mission!



I did consider hanging some washing on it, which would have been a waste, since it is a surprisingly good antenna, even at very low heights and to prove a point, I have managed a few decent ragchews across the pond with it, so it promises well when on a mast (awaiting planning).

I have tested it with a linear, also a recent second-hand addition, but after a nice start to a QSO with Steve W7QC in Seattle, and running 400W, I noticed the 20m dipole element suddenly drop and swing in the breeze. Grrr, the insulator had melted, I suspect due to arcing from the end of the dipole driven element.

A phone call to Ant, MW0JZE, who makes the Hexbeams in the UK, was very helpful and supplied the missing end caps which should have been fitted over the ends of the elements. This should allow it to handle UK power levels with ease. Excellent service from antenna and, as a result, I have followed this with an order for a 40m element add-on, plus a tilt plate.

Take away points about the Hex beam:

1) Works well at low heights

2) Multi-band and just the one feeder

3) Hoping it doesn't look so big when on a taller mast...

4) Hope it will be a good 'doer' for Sporadic E on 10m and 6m

All part of the station upgrade and now that I have recently retired there's even more time to play radio! See you in the CWTs.

Photos show a frosted Hexbeam, burnt insulator, repaired insulator with added end cap.

Chas, K3WW: I have been doing CWTs SO2R for some time now, but more recently started concentrating on dueling CQs, listening full time with one ear on each radio.

I never thought I could operate with one ear devoted full time to one radio, but the wonderful

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practice has let me get to the point where I can do it fairly comfortably even for longer periods of time in contests. It has been impressive to see so many CWops making great progress, operating faster and smoother in the CWTs.

There is a legitimate complaint about working folks that are SO2R, especially when they are dueling CQs and slow in responding to callers while their radio is locked out while transmitting on a second band. I kept raising my speed and amazingly most of the gang seemed to keep up, I even have been working quite a few CWA folks while running at 38 wpm. While this helps, there are still times that folks are left hanging. It is agonizing waiting to respond to a caller, hoping, they don't send their call just as I reply. It is annoying to call someone and not get a response, do you send your call again, or move on or what?

I decided to try multi transmitter. I have a third station which I was able to configure so I could use it without completely disassembling my SO2R/lockout arrangement. A few weeks ago, I tried doing the CWTs with no lockout, responding to callers as fast as I could type in their calls. This is not realistic practice for real SO2R timing, but the CWT exchange is longer than a lot of big events where SO2R skills can be maximized. It is excellent practice for listening to two radios at once, and requires some adjustments in listening technique, but still is a good mental exercise. I first used multi transmitter the week before the slow speed CWT and again for the 20 wpm CWT. I went back to pure SO2R the last week of March. I also reduced my speed to 34 or 36 when multi transmitter, since there was no longer a need to finish one QSO before responding to the next.

It would be nice if there was an easily visible way to indicate multi transmitter on the 3830 form.

Peter, GM0EUL: A combination of a few hours of heavy wet snow and strong winds managed to snap the ends of a couple of spars of my fishing pole Hexbeam. It's out of commission for a while and now I'm back to using a wire dipole on 20m. Breaking tips is a recurring problem and I've perfected a technique of going up the mast and swapping individual poles in situ in a few minutes, repairing the breaks and putting the pole back into stock until next time. However, over the last year or so since building it, I've learned a great deal about construction and performance of home-brew Hexbeams through research, familiarity and trial and error. As it is spring and the weather is improving I've decided to get it down, implement all my learnings and put it back up. I'll document what I do next time.

I thoroughly enjoyed K3PP, Glenn's article last month about building a QCX. I've recently built two, one for 20m and one for 40m, and they are remarkable radios. I've also got quite involved in the QCX community and I've been involved in organizing a monthly QCX activity day. It was actually started by a suggestion from fellow enthusiast Harv, K2PI, (#1456) on the QRP labs reflector. The activity follows the basic format of our own CWT with three sessions at 1300z, 1900z and 0300z on the last Monday (and the following Tuesday morning) of the month. The rules are still evolving but there are points for every QSO and extra points for every QCX worked. QCX or not, all are welcome and it's a good ambassadorial event because a lot of QCX ops are fairly new (or completely new) to CW and even more are completely unfamiliar with contest operating but keen to get on the air when there are sure to be other like-minded folk about. At the other end of the spectrum there a lot of very competent, very experienced ops, including a number of our own CWops members, using QCXs so please check it out and give out a few points if you hear anyone.

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More info here: https://www.qrp-labs.com/party.html

And finally- I will be away on a short vacation from 28th April to 4th May in Tideswell, Derbyshire, near where my wife comes from. I'm planning to be QRV as G0EUL/P with my QRP station-in-a-bag for the CWT that week so let's see how that works out, please keep your ears peeled for me! This will be the first trip out with the two QCXs in the bag rather than the YouKits Ek-1C which I sold as part of my new philosophy to keep stuff moving rather than accumulating.

Oh, and I spent about two hours yesterday troubleshooting a radio that wouldn't transmit, before I remembered I'd switched it to practice mode for my CWA class! Doh.

Frank, NF8M: Chuck WD8JZI, Jacob KW4EV and myself all served as counselors at a STEM Merit Badge day sponsored by the College of Engineering at Michigan State University for the Boy Scouts of Mid-Michigan on Saturday, March 23. We worked with twenty-five Scouts to complete many of the requirements for the Radio merit badge.

The Scouts toured MSU's club station W8SH, seeing the assortment of HF and VHF equipment in operation, meeting the merit badge requirement to visit a radio installation and discuss the equipment they saw. They also had fun completing another requirement by communicating with each other in groups of four in a round-robin net over UHF simplex radio using actual HTs, moderated by NF8M as net control.

In the brief time we had, we didn't have a chance to get into Morse Code, though it was mentioned and discussed briefly. Both NF8M and WD8JZI are alumni of the MSU College of Engineering and KW4EV, an Eagle Scout, is a Mechanical Engineering and Mandarin Chinese major at MSU.

Chuck, NO5W: Get Ready for the Dayton KCDXC Pile Up with a Few Runs of Pile Up Practice

Just a reminder that Dayton is coming up soon and if you plan to visit the Kansas City DX Club's hospitality suite at the Crowne Plaza to test your pile up copying skills you might want to warm up your ears with a few sessions of my Pile Up Practice application. The application currently contains eighteen competitions going back as far as 1998 as well as the one held at WRTC 2014 and includes the same user interface as the one used at Dayton as well as additional features.

Even if your plans do not include a trip to Dayton this year you can still use the application to test your skills against those that attended in past years and see how you would have done against the leaders as well as the average attendee.

To obtain the application just follow the instructions on my website: (http://www.no5w.com/PileUpNetPractice.php).

If you want to read more about the features and use of the application before doing the download there is a link on that page to a small document describing the application in detail. If you have questions, feel free to contact me either at the CQ/X support address given on the web site or directly via my QRZ address.

Ed, W2LCQ: After 9 months being QRT while facade work was done on my apartment building,

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the scaffolding is finally coming down next week. I expect to be QRV by the end of April.

I can't wait to get my 25' end-fed wire out the window and back in the CWTs!

Wayne, N4FP: A couple more Hamcation pictures.

Marty N4GL and John K4BAI (right) and then **NN4K, N3JT, K6RB, N4PF, and N4GL** (below).

Kit, G0JPS: Morserino32

I saw this intriguing new kit mentioned by someone on Twitter and decided to take a closer look.

So a quick email to Wili OE1WKL in Austria, and one affordable PayPal payment later, I was wait-

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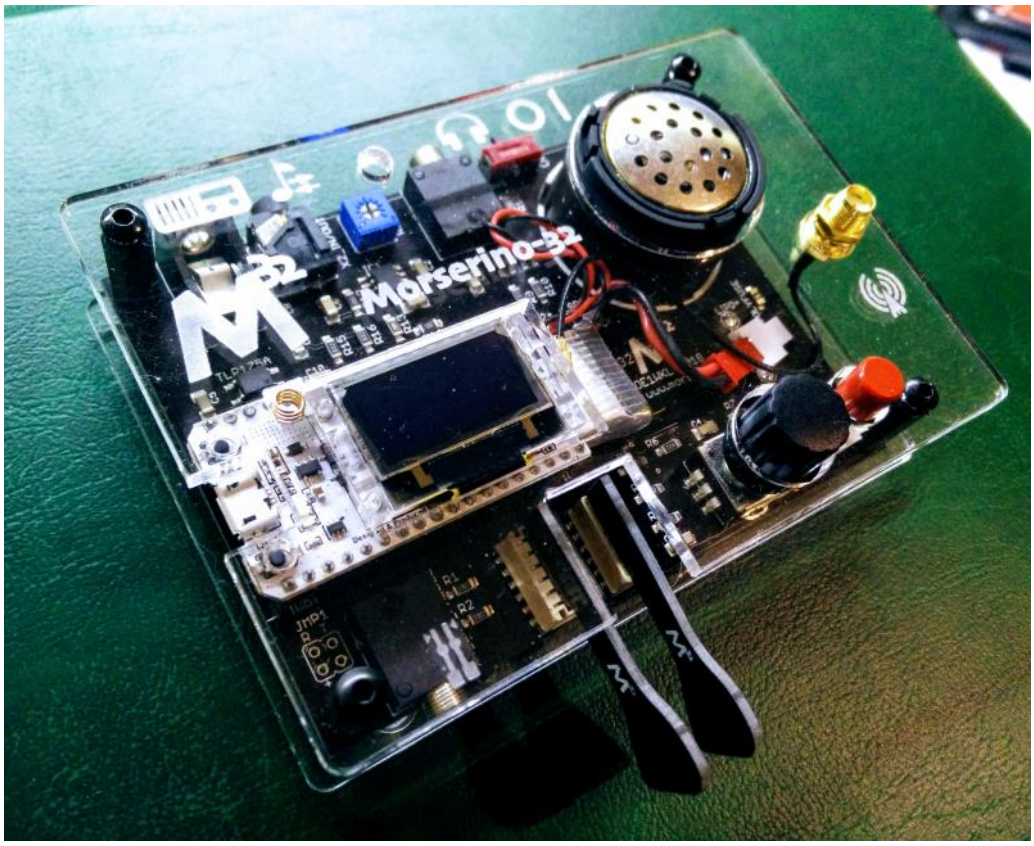
ing and within a week a small package arrived.



The kit comes as a couple of boards with SMD components pre-populated, all I had to do was solder on the speaker, connectors, and controls. A small LiPo battery was sourced from a toy helicopter (ok, drone if you insist) I no longer used; the total assembly took less than an hour from start to finish, following the excellent build instructions downloaded from the internet.

So, what does it do then? Well, first off you get a 5 to 50 wpm keyer that connects to a radio. The Morserino also has audio in and can act as a decoder; audio out so it can be used on iCW or similar internet based Morse chat systems. A separate headphones socket so it can be used for quiet practice. You can use your own single or dual-lever paddles or use the supplied capacitive touch paddles (which I find I quite like, having made a couple of QSOs on air using them).

But the fun doesn't stop there; also built-in are some learning modes too, such as a Koch trainer, random groups, Q codes, common words, and a fun 'echo' game where the keyer sends you something and you have to send it back (this can also have a RUFZ-like setting where it gets faster or slower depending on your errors).

Oh and a couple more surprises; it has built-in Wi-Fi and you can update the firmware or upload your own text files to it using nothing more than a simple web browser - no more 'windows only' or hunting for obscure drivers nonsense, this is pure cross-platform genius.

And the final surprise - if you're with (or near) someone else who has one of these, you can have an over-the-air QSO with them. Wait, what? Yes - there's even a built-in transceiver which uses LoRa (long range Wi-Fi in the ISM band). I've put a few CQ's out, but no replies yet…

In summary, a great kit to build and use, and support is excellent with an online user group. It's well worth a look; check out Willi's page at http://www.morserino.info/morserino-32.html

A Comment on Morse Code Structure

Dave Fisher W7FB

At a very young age (6 or 7) I learned the code listening to an old Zenith upright ... it "hissed" and "thumped" CW. When I finally heard CW with a BFO it became the most beautiful sound in the universe. A bit later, after I got my ticket, my Elmer W0OJC (SK) took me aside and said something like this ... "Young man I see you really like CW, so let me tell you this. CW IS SENDING! Receiving is what you do when you're not doing CW!" I got the message ... SENDING is the hard part for sure! I've learned to send over the years. Practice is the word!!

Manual spacings and poor ratios are the issue ... along with poor weight allows those famous Lake Erie Swings, etc.

Now they are OK, but they are not correct CW ... All I'm pointing out is what is FORMAL Morse Code ... which is seldom used or heard when sending manually and also most often using a poorly set keying device violating either weight or ratio rules, or both.

Anything other than 100% weight is not MORSE CODE!

And there is another serious issue: **A DIT is NOT a DOT and a DAH is NOT a DASH!**

A clock runs at a uniform fixed rate R (ticks/second).

The time between ticks is called a SPACE or a TIME SLOT (see Figure 1).

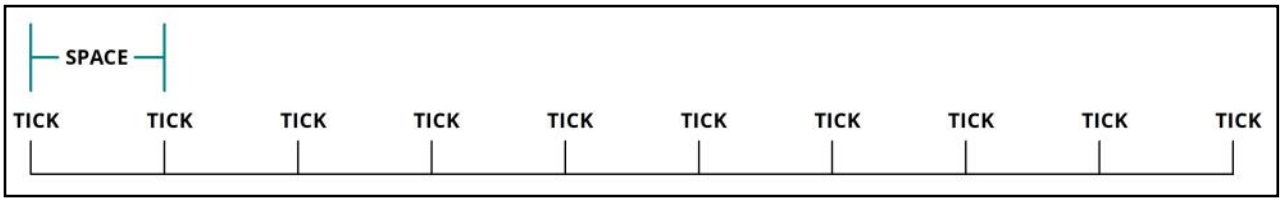


Figure 1: A clock ticking at R ticks per second

R remains fixed, a constant for this discussion and R determines the maximum sending/receiving speed.

A signal that exists in a time slot is called a MARK.

The percent of time the signal (MARK) exists in the time slot (SPACE) is the WEIGHT.

WEIGHT runs from 0% to 100% (see Figure 2).

>>>>>> WEIGHT is the measure of the percent fill of one time slot/space by a MARK.

A mark lasting for 100% of a space is called a DOT.

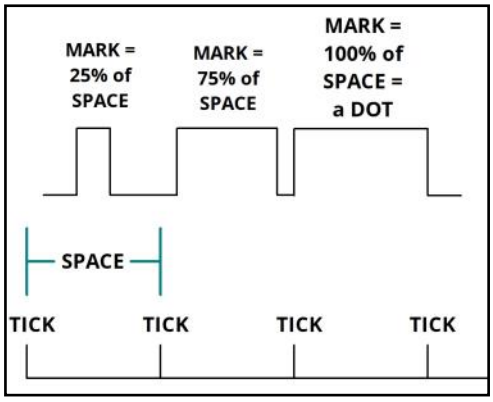


Figure 2: Three signals , each with a different weight. The far right signal fills 100% of the space (weight = 100%) and is a DOT.

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>>>>>> Any other weight is NOT a DOT!!!! <<<<<<

- A DASH is three consecutive DOTs (see figure 3)
- A DIT is a DOT followed by a SPACE and
- A DAH is a DASH followed by a SPACE (see figure 4)

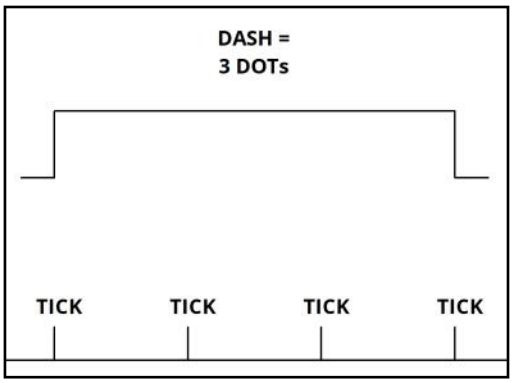

Figure 3: A DASH is 3 consecutive DOTs

There is no spacing when using only DOTS and DASHES. Such is just one solid "key down" from start to finish.

Therefore, we send Morse Code using DITS and DAHs ... not DOTS and DASH-ES.

The length (in time) of a dot is denoted by L(DOT) = 1 (time slot or SPACE)

It follows that L(DASH) = 3.

Thus, the DASH/DOT RATIO is 3/1 = 3.

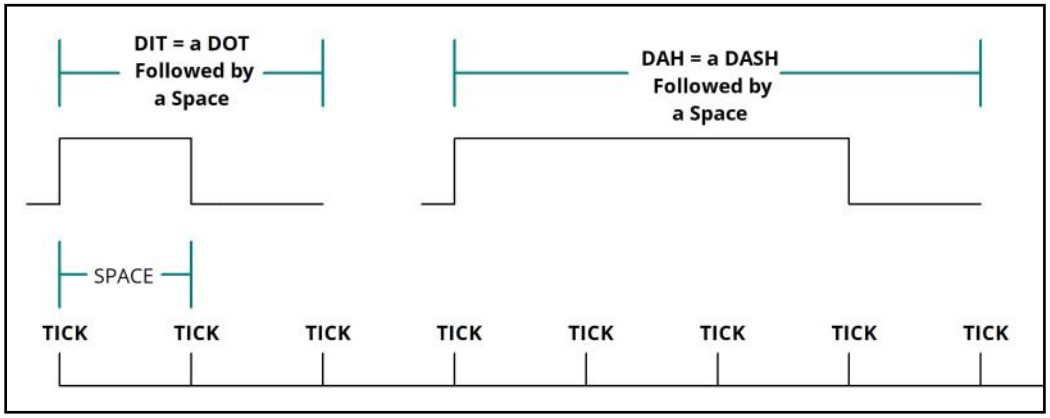

Figure 4: A DIT is a DOT followed by a space and a DAH is a DASH followed by a space.

The length of a dit is L(DIT) = 2

It follows the length of a dah is L(DAH) = 4

Thus, the DAH/DIT RATIO is 4/2 = 2.

Which says the length of two consecutive DITS is 4.

Thus, L(ditdit) = 4 = L(dah), two dits last as long as a single dah.

There is the very common ERROR of equating DOTS with DITS and DASHES with DAHS. This leads to very poor "timing" .... because the DIT is NOT a DOT and the DAH is NOT a DASH. The DASH/ DOT RATIO of 3 leads to this very error when folks confuse dits with dots and dahs with dashes.

The primary units in Morse Code are thus the empty SPACE and the 100% filled SPACE or the DOT. Everything else is constructed from these two elements.

The spacing between LETTERS (et.al) is 2 spaces (not three as is always claimed) and the spacing between WORDS is 6 (not 7 as is also so claimed!)

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Keyers do not send dots and dashes, they send DITS and DAHS!!!

The keyer designers use these two secondary "elements" (DIT and DAH) in their coding and use these codings to create the actual output code (and code the 2 and 6 spaces as described above) Our minds hear dits and dahs, not dots and dashes with no spacing.

The error in the literature on letter and word spacing is counting the space of the ending dit or dah as part of these spacings.

Confusing RATIO with WEIGHT is the problem as well. Sending with RATIO violations most often results in very choppy and unpleasant code!

The letter V (ditditditdah) is often used as the "timing letter" and follows from the incorrect (DASH/DOT = 3) assumption that three dits equals a dah in time. WRONG! (not Beethoven however!)

>>>> THE "TUNE UP" letter is U ... ditditdah since L(2DITS) = L(DAH)

Not V!! ... L(3DITS) = 6 while L (DAH) = 4

Timing your ear to this wrong ratio of "6 = 4" sets you up for errors and poor sending. Using the letter V will eventually cause one to lengthen the "dah" in this letter to equal the length of the 3 dits ... thus the dah becomes 6 long instead of the correct length of 4.

Folks hear this on the air because you have trained your spacing for the wrong ratios!

Dave W7FB (aka "W")

It has also been pointed out that the natural trot of a horse is the letter U.

Also, many believe they increase their sending speed (speed up) by shortening the letter and word spacing. It's an illusion! It's not Morse Code .... thus, a very bad practice.

The only way to change speed is to change the time rate R.

The MAIN challenge to CW is correct SPACING! (PERIOD!)

The word PARIS: L(PARIS) = 44 + 6 = 50. It is often used by repeatedly sending it to calibrate sending speed. It's the popular 5-letter word.

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If you send consecutive DITS the average time the signal (DOT) is present is 50%. A DIT is "on" half the time and "off" half the time. A DAH is "on" 75% of the time and "off" 25% of the time. Thus, you could define the “weight” of a dit to be 50% and the “weight” of a dah to be 75%. ... provided the ratios are set/sent correctly. So, set dit and dah “weights” according to these measurements.

Setting CW weight of an RF signal must be made from the actual RF signal.

Build a simple field strength meter (FSM) from a meter, a diode, a capacitor and a pot. Then key down solid, set the FSM for full scale, then send a dit string and the meter should quickly settle at 50% full scale if your weight is correct. A dah string should settle at 75% full scale.

If you don't want to use or build a FSM, then put a VOM on a high resistance scale, place the VOM leads across the device that is sending the CW then key down solid and set the VOM meter full scale. Then send dit and dah strings to observe the dit and dah weight. This will also work but is not "perfect" or "pure" because your keying can be affected by transmitter circuits.

There is some evidence that at about 45-50 wpm and up the dot weight should be set at a bit lower value ... something like 98%-ish or so ... due to the inertia of eardrums or old brain cells.

The most difficult sending instrument is the hand key. Don't attempt its use until you have been CW active for about 4 or 5 years or so .... and bugs and other manual keys aren't very far behind in this ban. Today, first learn to send correctly on a properly set electronic keyer.

Morse Code is both an art and a science. One must first learn the fundamentals (science) extremely well and then you can venture into the artistic domain (art)... it is seldom done the other way. Even if some artist appears to begin in the art form, you discover they built some rules (science) on how to do it after all!

FARNSWORTH: It's improper code, of course, but is thought to enhance the ability of beginners to learn the code. Code is MUSIC, it has a beat (R) and if R is really slow it is very hard to waltz with a beat of 1.....2.....3. Even old timers can have trouble copying at such slow speeds! So, FARNSWORTH sends letters & characters at faster fixed speed with the spacing between them exaggerated ... too often this longer space is TOO SHORT, and students begin to learn the code with such poor timing/spacing...which is a big disservice to the student!!!

If FARNSWORTH is going to be used, the letter spacing should be very much increased so that the student doesn't learn such spacing as the proper timing!!!! Do not send text for copy using "short" Farnsworth, send only single letters or single words, etc.

SWR = Speed Weight Ratio!!!! .... it's Morse Code!

End of comment ...

... de W (my infamous 1x0 ULTIMATE VANITY call!)

Side Tone and Code Practice Oscillator

Stu Mitchell, W7IY

Sometime in 1976, when I was 14, I started showing some interest in ham radio. My Dad bought a Heathkit HR-10B receiver kit to help fuel the fire. This was my first major kit above and beyond an Erector Set. I spent hours following the instructions, bending wires and soldering components into place. After it was all done, I was amazed at all the signals I could hear.

At 15, I finally decided to take the Novice test, which I passed. My call came in the mail and I was excited to have WD4ECK. Naturally, I wanted to get on the air FAST, so I talked my Dad into letting me use his SBE-36. After that, my HR-10B went into the closet and I never used it again. I carried around with me on all my moves around the US, but it still gathered dust.

Then one day, my good friend W4IY decided to sell his DX-60B and I bought it. After 32 years, I finally had the matching transmitter! So, I decided to get them on the air. W3LW, Larry, helped me get started by using a Variac to gently bring up the supply voltage. Luckily, all the capacitors worked. Nothing popped. With the T/R relay and muting circuits hooked up, I made my first contact using the rigs and my K3 (in a dummy load) as my side tone. Crazy! Obviously, I had to get this fixed.

Stu W7IY

I have several Vibroplex bugs and decided it was a great time to start learning how to use them. Now I needed a code practice oscillator, too! What a great opportunity – build a small box to function as both a side tone oscillator keying my DX-60 and a code oscillator for practice.

Using an Arduino Nano ($7), I wrote a simple script to generate a pulse width modulated (PWM) tone to drive a small 8-ohm speaker. Then, in order to run the Nano from 3 AA batteries, I figured out how to put the Nano to sleep during dits and dahs. I removed the Nano's LEDs, regulator and USB interface chip to decrease the sleep quiescent current to less than a tenth of a milliamp. Of course, it's probably better to just use a bare bones Arduino, but I happened to have the Nano on hand. Depending on usage, the batteries should last about a year.

I used a Prusa 3D printer to print up a box and then installed the 1/4" jacks and battery pack. I designed the box using OpenSCAD, which is a great tool for designing enclosures. It's a parametric computer aided design application that runs under Linux and it's very easy to use. Once the design is complete, you can save the design to a STL file and import it into Slic3r to generate the gcode for the printer.

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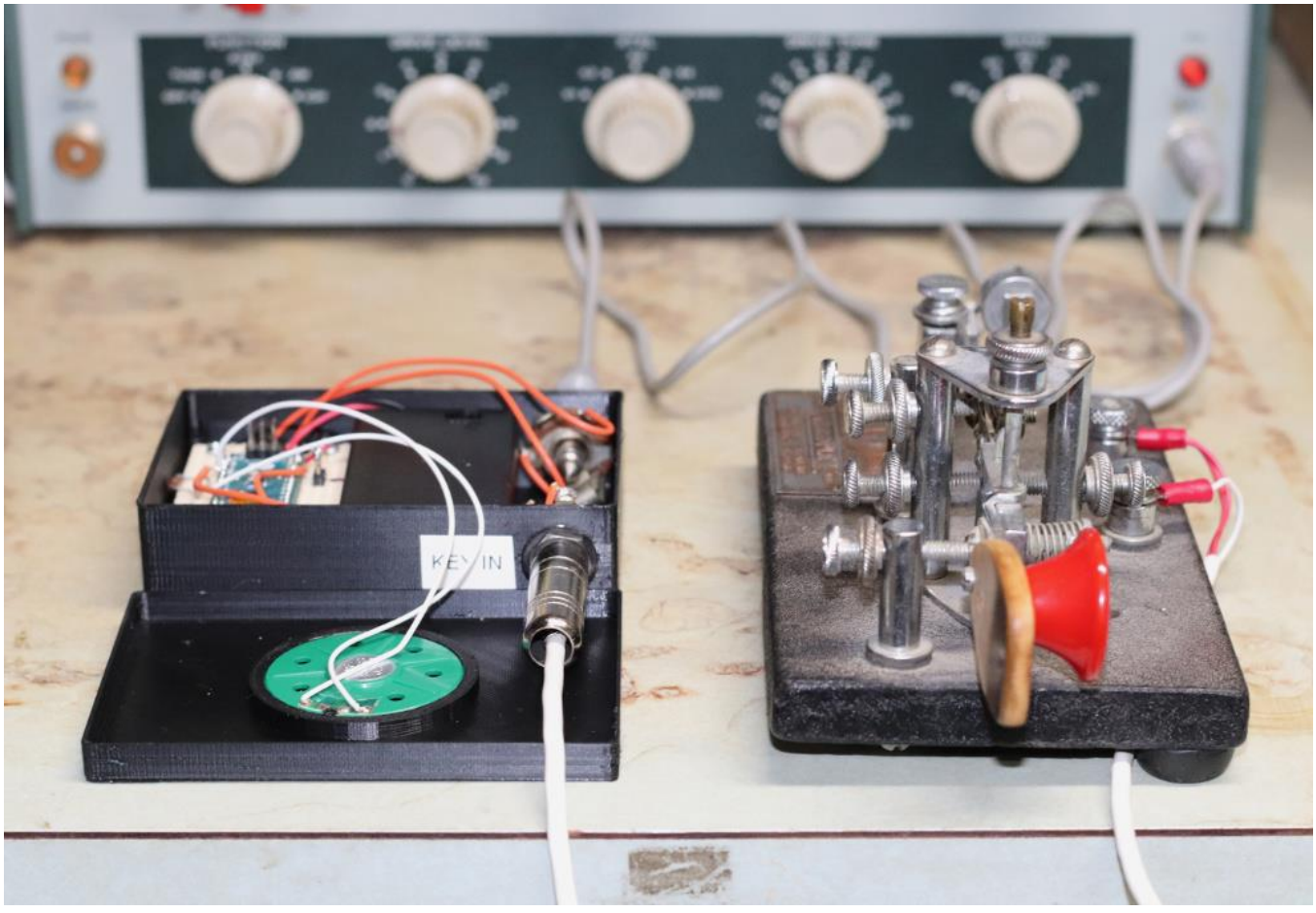
For the keying circuit, I used a Vishay VOR1142 solid state relay. The DX-60B uses grid-block keying and the voltage at the key is -85VDC. The Arduino drives the solid state relay using one of the digital I/O pins and the relay draws 5mA. Using the relay has the added benefit that the higher keying voltage is NOT exposed on the CW key terminals. By the way, I was able to obtain the solid state relay as 'samples' from the Vishay web site. This is a great way to obtain parts for prototyping circuits.

For my purposes, I didn't add any Push to Talk (PTT) circuits or volume controls. Instead, I just fiddled with the resistor in the PWM circuit to get the right volume and changed the tone frequency in the Arduino script to my liking. (650Hz) I use a foot switch to run the T/R relay.

In the picture (below), you can see the enclosure with the Nano and AA battery pack. The Champion Vibroplex bug was manufactured in 1944. (s/n 130271). I'm using a Baumuster T1 straight key until I get up enough nerve to use the bug on the air! Of course, it works just fine with the side tone generator, much to the chagrin of my family.

The project is very straight forward to build. Since it's battery powered, it's easy to bring the bug and oscillator to the family room and practice CW while you're watching TV. If you would like the Arduino code or more information, send me an e-mail. I can post it on my web site at http://www.stu2.net. At the moment, I'm rockbound on 7.046. If you hear me calling CQ, please stop by! Now – to find a good condition HG-10B or at least another crystal!



Ragchewing 101

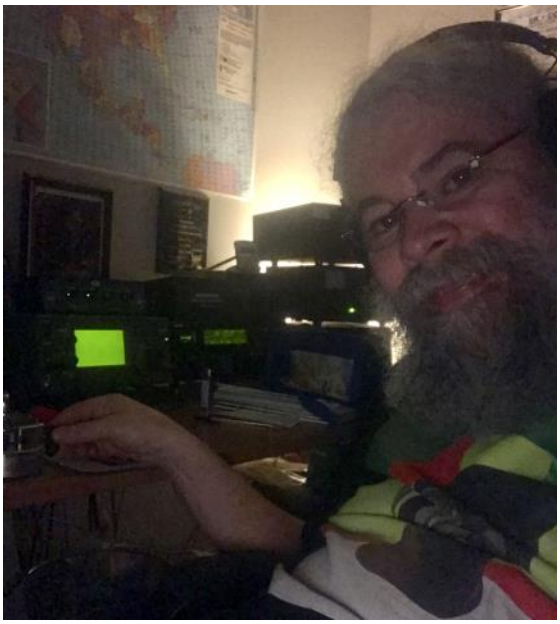
John Silzel N6HCN

Ragchewing by CW is a pastime that has been enjoyed since telegraph operators surreptitiously used idle time on their wires to share jokes, scuttlebutt, and build friendships (and romances) by telegraphy. For us hams, with the airwaves at our disposal but with no commercial traffic to get in the way of recreation, the joy of conversing freely with another operator using only the paddles endures as a unique form of communication that must be experienced to be appreciated. But, especially for those whose CW skills and shacks are fine tuned for contesting, ragchewing can require a different mindset, different skills, and maybe even a different station setup. It is not surprising that even top contesters occasionally ask questions like "How do you get started ragchewing?", "How do you get past 'RST, QTH, Name, WX and Rig'?", or "What do you talk about?". As Terry, N7TB says, contest operators have all the skills needed to be ragchewers, all it takes is the desire to do something different during a part of their on-air time. For Terry it is the enjoyment of getting to know other hams as *people*.

Part of what makes ragchewing interesting is that there are as many ragchewing styles as there are ragchewers. To write this article, I sought advice from top 2018 QTX scorers as well as the regulars on my own ragchewing "traffic list", all of whom are operators with the gift of gab, relaxing fist, and a gift at projecting their human side through the ether. I asked them to share some of their on-air experiences and some secrets for great QSOs, increasing enjoyment, as well as how they got started, the skills and equipment they use, and what keeps them coming back to the rig with all the stamina normally attributed only to champion contesters.

Relax

Steve, K2KRG, was not alone in saying that the number one tip for ragchewing success is to *relax*. Ragchewers hone the ability to sit back in a comfortable chair, close their eyes, and converse just by moving two fingers on the paddles. Once you learn to relax and operate from "the zone", you will find this kind of mental connection to be effortless. Misspelled words are no big deal, and most of us don't even bother correcting our mistakes unless they interfere with the meaning. If a correction is needed, skip the dots, just pause a second and resend. Don't worry about making errors. Says Steve "I can't remember how many times I have called somebody by the wrong name, and we've had a good laugh about it." A good ragchew feels like the exact opposite of that first CW QSO we all remember sweating through, and it's downright lazy compared to the fighter-pilot focus demanded in contests like CWTs.



W9EBE at work in the shack.

Chip, W9EBE reminds that we must *allow time* for ragchew operating. Our fast-paced lives can make this difficult, and perhaps it is part of why Rob, N6KIX and Shin, JA1NUT worry that real ragchewing is becoming a lost art

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in our distracted society. Conversation requires relaxation, and it's hard to relax at the rig when you're watching the clock, or you know the XYL is about to ask you to QRT and go shopping. Lots of us have had the experience of just "getting into" an interesting chat and one of us has to cut things short. Sometimes it's inevitable. A short "Q" is better than none at all, but as Chip points out, planning to be at the rig and on the air for an hour or more helps to build stamina in sending and receiving, because this kind of stamina comes not by sweat or concentration but by practiced relaxation. For the best ragchewing, the focus is on the conversation underway, and what the other station is saying between the lines. This focus can be hard to obtain if you are fiddling with your rig or distracted by what is going on around the QTH.

Station Setup

The N6HCN station is the very definition of arm-chair copy.

You would laugh if you saw my station. My operating chair is one end of the sofa in our family room, complete with domestic QRM when my kids stream Netflix. The rig sits off to my right, with the paddles on the sofa arm, and a nice view of our backyard directly in front of me. It is horrible for CWT, with me hunched over the rig, my spine twisted 90 degrees. But it is perfection for ragchewing. I can watch the birds nesting in the birdhouse or feel the breeze while chatting during a day off. I can lie down with the paddles beside me and practically doze while catching up with a friend on 40m before bedtime. While it's not imperative, consider equipping your contest shack with an alternate operating location for ragchewing. Maybe a recliner or sofa with paddles in easy reach, and the rig accessible but not front and center. Unplug from your panadapter and the attention deficit caused by DXSpider. Silence your phone and close your email so you can relax. You'll probably want access to your log and the QRZ site, but these mostly get checked early in the QSO, as will be discussed.

As for rigs, ragchewing might give you an excuse to fire up that older rig (maybe a trusty TS-520S sitting in a closet). Why not? In ragchewing there are no pileups, hopefully little QRM, and every reason to avoid weak signal paths, which make life difficult for both operators. More than one great ragchew has started by discussing the vintage rig in use. Not that some modern bells and whistles don't add anything: Chip, W9EBE points out that "QSK is a wonderful thing" in ragchewing. A lively QRQ with full QSK can be a real adrenaline rush, it frees us to laugh at each other's jokes in real time, interrupt with an idea, or generally banter back and forth just like speech.

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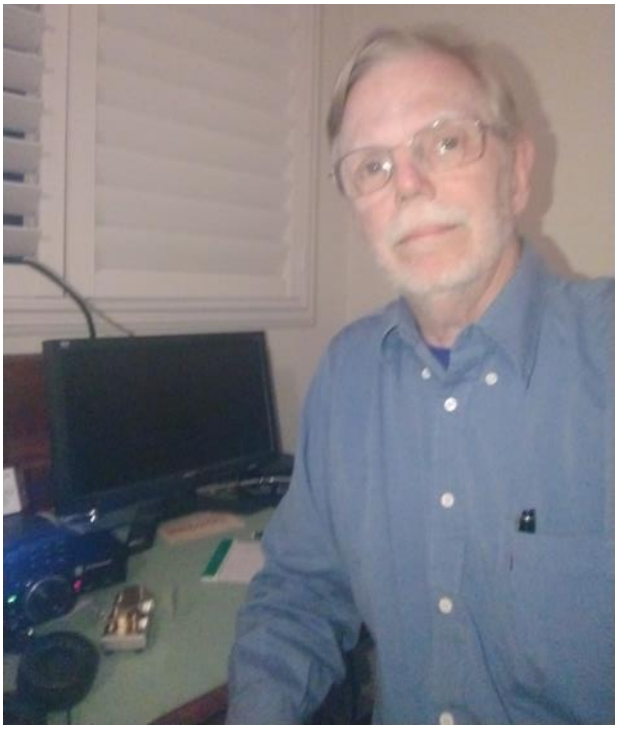
However, Chip points out that we should first establish and agree on QSK usage with the other operator. Some people have never tried it, and some find interrupting rude or disconcerting, because they are used to "having the floor" in a QSO until they turn it over to the other op.

Consider moving beyond the conventional two-station back-and-forth. Bob, AB5X, laments "...one thing we have lost in the last six decades is the round table rag chew. In the 50s and 60s, 3-5 party ragchews were common and very interesting. We need to bring this back." But, says Bob, it will likely take a cultural change so that we can accept another person into a CW ragchew. The payoff, says Bob, is "lots of fun, and good CW practice," as well as building fine operating skills. I, for one, am resolving to get into an old-fashioned round robin in 2019 and hope that Bob can set me up with a sked.

Another piece of important ragchew gear was mentioned by Steve, K2KRG, who said, "Run an amp if you have one!" It's hard to relax in head copy if the other station is in and out of the noise. Steve points out that stations inevitably tend to answer the CQ that has the highest signal to noise, making it easier for the QRO station to find a ragchew in the first place, which is often half the battle! In a contest it is enough to maintain the path for ten seconds. In ragchewing we want to be able to hold the frequency as long as an hour or more, or until we are "talked out." Having a few extra watts in your pocket is great insurance. Don, W6JL gave me a hard time once for making him work hard to copy my homebrew 1W QRP signal for an hour, while I was enjoying armchair copy from his 200W station. He was right, it's great fun to ragchew *from* a QRP station, but the propagation has to be there for it to be fun on both ends. So, if you're running QRP, consider answering only stations with signals at S7 or better, particularly if everyone on the band is griping about QSB, which is so troublesome in this minimum in the solar cycle.



WB6TOU

CW Skills

Ragchewers are unanimous when it comes to copying with a pencil: **"Don't**." If you had to write down verbatim what was said over coffee with a good friend, you would spend all your time frantically writing and none of it being present in the conversation. Head copy is an essential skill for relaxed ragchewing. As you learn to hear *words*, rather than characters, and assemble these in your mind unconsciously, you will find that missing 2-3 words in copy is not a problem-- context fills in the whole sentence. The key is to relax and live with the ambiguity mentally, until the whole idea being sent by the other station becomes clear, and trusting that it will. Dave WB6TOU and I as well as others have improved our head copy by reading Morse code eBooks (see the May 2018 CWOps newsletter for a how-to). At first this kind of copy may feel sloppy to contesters, but it seems to be a key to connecting the speech center in the brain, rather than the spelling center, to the stream of conversational CW.

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"Head sending" is very similar. Once you hear CW as words, your sending will gradually become word oriented instead of character oriented. You already hear prosigns, ES, "NAME" and other words this way, and as your ragchew CW vocabulary increases, you will find you send words instead of characters. Gradually you will be planning what to say even as your fingers are sending what you planned the moment before. I believe this is what Shin, JA1NUT means when he says it brings him pleasure when "the tempo of CW synchronizes with thinking." Not only the fist, but also the pace of hand-sent code gives the listener clues about the sender's excitement level, or thoughtfulness, or fatigue. Some of us are tortoises, sending as steadily as a CW practice tape, while some of us send like excited jackrabbits, blurting out ideas interspersed with pauses, hopefully to think. It's a human thing.

Code Speed

Ragchewing is not necessarily about QRQ, though (let's face it) some crave the fun of rapid CW. In fact, Gary, N5PHT, Steve K2KRG, Dave WB6TOU, and others warn about sending above 20-25 WPM especially when calling CQ in hopes of a ragchew. Steve knows an operator who rarely ragchews above 18 WPM even though he can copy much faster. These veteran conversationalists are unanimous in saying that when it comes to WPM, the average QTX ragchew occurs in the low 20s. If you find this speed disappointing, don't worry--once you build a "traffic list" of ragchewing friends, you will know who likes to go fast and who doesn't. The simple courtesy of QRS has led to many repetitions of this anecdote: a high-speed operator trolling for a ragchew calls CQ at 18 WPM and is answered at the same speed by another station. At some point in the QSO, dutifully plodding along according to the "RST, Name, QTH, WX" tradition, one or the other operator checks the log and realizes they are in QSO with a station they have worked before at 30 WPM+. Suddenly both operators jump to that speed and have a good laugh about it. These are the moments that make for wonderful radio – and cement friendships.

The Original Facebook

For an interesting and even surprising history of social telegraphy, read *The Victorian Internet* by Tom Standage.

But slowing down just a little invites new ragchewers into the fold. Joe, KC0VKN related how he would enjoy weekly scheduled ragchews with several "Elmers" who gave him a safe place to QRQ without pressure, and QRS when his ears got tired. Anytime QRQ interferes with relaxation, or reasonably coherent sending, it is detrimental to ragchewing. The deep QSB we are experiencing in this solar slump also makes QRS wise-- the inevitable dropouts in copy affect fewer words and make copy easier. So, watch the WPM – you'll meet more friends, and you might just be the catalyst that brings another operator into the ragchewing fun.

We all hesitate to answer a CQ sent with a terrible fist. Spending an hour trying to copy a scratchy bug or dot-splattering machine gun of a keyer is most certainly not relaxing. But sometimes we don't know the whole story. Dave, WB6TOU tells of a rag chew with a station that had an awful fist. Turns out the other guy was disabled, and literally all he had was the radio. Says Dave: "I felt honored to encourage and spend time with another ham who could not leave his home. That day will come to us all. I hope I have a radio when I get there." And to that I'd add that I hope on the other end will be an operator willing to endure my shaky sending.

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Getting Started

Joe, KC0VKN, says he was initially shy in QSOs with other stations, something I am sure most of us can relate to. And a scant 3 years ago, CW conversationalist Terry, N7TB was "terrified" to send CQ at 10 WPM. How did these operators become so proficient? Joe attributes his ragchew skills to those regular one-on-one skeds with "Elmers", and later to regular involvements in 80m nets and groups of CW operators that "bump into each other a lot and know what is going on in each other's lives." The constant banter brought tremendous improvement in his speed and copy. Joe observes that, "Rabid ragchewers are always on the band" prowling. A great way to identify these operators is to "read the mail" as they work others. Write down their calls and start your own personal traffic list of stations to call or answer when looking for a conversation. Reading the mail lets you practice relaxed head copy and will also give you a lot of background on the operators who you are "stalking." As Joe remarks, these stations will accept a "tail-end" 99% of the time, even if they are on the way to dinner, and the next time they are on, they will call or come back avidly to you and you'll have another regular for your traffic list. And you will be on *theirs*.

Reading the mail also gives you an opportunity to study how different ragchewers work. One may be brash and opinionated and very entertaining. At the other end of the spectrum, you might hear a station "run" a frequency asking each caller for an update about specific things, obviously from prior QSOs-- a spouse's illness, a move to a new city, a cancer diagnosis, etc. and offering sympathy and encouragement. The result is a kind of pileup of humanity and kindness. Reading the mail, you will learn how your own personality and style can find outlets in QSOs. Maybe it's your sly sense of humor, or ability to tell a story, or quote movie lines. I once worked a station in NC who could have been a standup comedian. He had me laughing so hard I could barely send.

Conversation Topics, or Reaching Out

Terry, N7TB, says the key to engaging others in ragchews is to draw them in by asking questions about things that are important to them. It could be a conventional question about their rig or antenna performance. It could be a question about their QTH and what it's like to live there. Terry finds that telling the other station how much you are enjoying the QSO and doing this long before it's time to sign off helps put the other operator at ease and foster relaxed conversation. If the other operator has a good fist, tell him. These quick comments help the other operator to stop worrying about "how (s)he's doing" and relax. Reaching out to the other op is how it starts.

A unanimous bit of advice from nearly all the hams I consulted was to check the other station's QRZ page early in the QSO. The bios on QRZ often include interesting facts and topics for further exploration. (By the way, *your* QRZ bio drops some hints about favorite ragchew topics of your own, doesn't it?) Safe topics include station gear and antennas, the "good old days" when we had sunspots, bugs, hobbies (especially unusual ones), career (past or present), or how you wound up falling in love with CW. Gary, N5PHT suggests travel, past and future, military history, grandkids (or kids for us who are not yet so blessed), projects being worked on, or retirement. If you're running off-grid, or homebrew, or mobile, or vintage gear, or something new and fancy, sure, bring it up. But the catalyst, says Joe KC0VKN, that makes all the difference between a

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NAME/QTH/WX/RIG/ANT QSO and a *ragchew* is asking questions. Years ago, before I joined CWOps and was very nervous about my CW skills, I worked a (CWOps member) station who, I gradually realized, ended every turnover with a question that underscored his interest in me and his comfort in spending his on-air time chatting. It made me feel like I "measured up", even though I was still new at using paddles and was making mistakes all the time. That QSO was a real turning point for me. You can do the same for others every time you sit down at the rig.

Stellar ragchewers not only ask these questions but *remember* the answers. Some might have amazing memories, but the rest of us can achieve something similar by taking notes in our logs. This lets us surprise the other station on the next QSO by asking about their cat or how their car restoration is going, effectively building off the last QSO. Nothing makes a ham feel more invested in the on-air, CW culture than to be welcomed by friends the moment (s)he calls CQ. And a log with these jotted personal notes and details is a wonderful thing to browse through when the bands are closed and you are feeling a little cut off from your friends. And don't forget that tradition we used to call "the final courtesy of a QSO:" the old-fashioned, unilateral, snail-mail QSL card. In this age of rapid-fire contest contacts and ever-growing postal rates, it isn't hard to see how the efficient and inexpensive confirmation of a new country, state, or county by LoTW has become the standard. But if you are only mailing to new ragchew friends, with no care as to obtaining a return card, it is painless to send a paper card with a personal note. These cards become a memento of a memorable chat and new friendship, something to fondly hang on the shack wall. And the number of cards is manageable for most of us, since ragchewing is not a high-volume affair.

Besides my log, I enjoy maintaining a "Traffic List" of particularly fun ragchewers that I update monthly and post in my shack. Every CQ heard gets checked against the sorted traffic list, and I try never to miss a chance to answer. Some of those stations are so popular that they generate a mini pileup! But if another station beats me to the paddles, I relax and read the mail and vicariously enjoy the ragchew that inevitably follows. Be patient with new stations. Sometimes it takes several repeat QSOs for things to "happen:" I enjoy discussing jazz with fellow musician Dave, W4CI, but we didn't discover this common ground until our second or third QSO. You never know what will come up. Dave WB6TOU, ran into another chemist on the air, and shared the tale of how he once cornered the world market for high purity trehalose from a lab in his backyard. Truly anything can happen in a CW ragchew. There are certain topics Dave and other ragchew veterans generally steer clear of, though: politics (too much anger) and sports (hard to hold up one's own end of the QSO if you run into a real expert) and global warming. We ragchewers need to remember that others around the globe are reading our mail and deciding whether they want to call <u>us</u> at the end of the QSO.

Wrapping up

Not everybody is a ragchewer, and that is fine! Surely it is enough that we enjoy the bond of CW together in whichever forms strike our fancy. But hopefully this article will encourage those interested in spending at least a portion of their on-air time in the relaxing pastime of conversational CW. Ragchewing is rewarding, whether it's chasing QTX points every month on the CWOps website, working toward a ragchew WAS, rediscovering the "lost art," or even practicing *off the air*, by deepening your conversations with people in safe social settings. I am sure that the ragchew-

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ing community would welcome your CQ and willingness to share yourself through the wonderful connection of CW. In this time of limited propagation and antenna restrictions, a fine ragchew can turn even a short-hop QSO within your own county into a memorable event and build life-long friendships as well as strong operating skills.

Acknowledgements

Thanks to ragchewers Joe KC0VKN, John K1ESE, Chip W9EBE, Steve K2KRG, Gary N5PHT, Dave W4CI, Rob N6KIX David WB6TOU, Bob AB5X, Terry N7TB, and Shin JA1NUT for sharing their tips and ideas. Thanks also to many others whose wise advice escaped, by my own omission, being jotted down next to their call in the pages of my antiquated paper logbook. Any spurious resonances, attenuation, distortion, or omission of their suggestions surely occurred at the receiving station, for which I apologize.

CWops Breakfast at the 2019 Visalia International DX Convention

Rick Tavan N6XI

We had 26 attendees and everyone had a good time and some good food. OZ0J and SM7IUN posted pictures here and here.

CWops Activated DXCC #341

Bill Salyers AJ8B

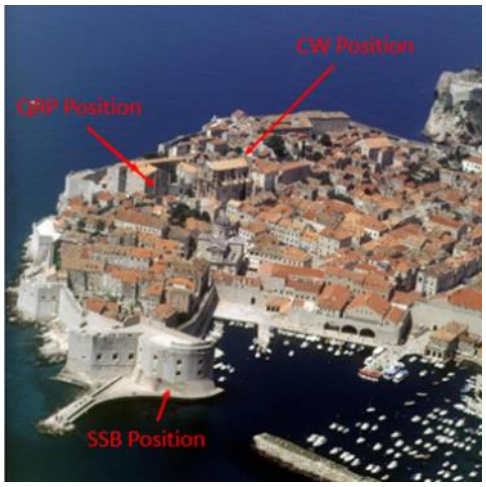
On April 1, 2019, six members of CWops activated the newest DXCC entity, Freedonia. As expected, there was a lot of excitement and activity surrounding the announcement by the DXCC desk of this new entity and CWOPs was the only organization allowed to operate from this Mediterranean country. The petition for this new entity was based on the criteria found in DXCC Section III, rule #2B,

> "In countries where Amateur Radio operation has not been permitted or has been suspended or where some reluctance to authorize amateur stations has been noted..."

Freedonia, DXCC entity #341 activated on April 1

There had been no activity in Freedonia since 1933 when two brothers operated GR0UCH/0. Zeppo manned the AM station and Harpo handled CW chores. (Click here for more information about Freedonia.)

Freedonia is located on the Ionian Sea; a peninsula off Albania. This year's DXpedition was co-led by Jay K4ZLE and Tim K9WX. Other team members included Steve N8BJQ, John N8AA, and Bill AJ8B. The IARU agreed to allow the same call sign to be used for this inaugural DXPedition, GR0UCH/0.



The DXpedition was in the capital city of Chicolini. The Prime Minister of Freedonia, Rufus Firefly, has made it his agenda to bring Freedonia up to par with his neighbors in the region. He viewed this amateur radio event as great for public relations and put his whole-hearted support behind the project.

Quite a bit of planning had gone in to this event and CWops was thrilled to be a part of this. There were three stations setup for this event but none of us brought along a microphone! We still had three CW positions in operation for the one-day activation. The picture (center) shows the capital of Chicolini with its beautiful harbor and the operating positions. GR0UCH/0 was QRV on 04/1/19 at 0000Z and shut down at 2359Z.

QSL via AJ8B and visit the website to make donations or inquiries about this important event. Below is the breakdown by continent of the nearly 24,000 QSOs. Special thanks to Vaporware Inc. for the logging software and to Hasbro for the Slinky antennas.

Continent By Band

Band	160	80	60	40	30	20	17	15	12	10	Total	Total %
AF	1	5	2	21	19	13	9	0	0	1	71	0.3%
AN	0	0	0	0	1	1	0	0	0	0	2	0.0%
AS	231	655	3	998	875	1315	1323	816	781	872	7869	33.6%
EU	246	820	49	1869	2730	1739	786	28	1	0	8268	35.3%
NA	308	983	15	1356	628	590	1323	701	175	53	6132	26.2%
OC	42	89	0	155	99	161	128	29	8	8	719	3.1%
SA	10	39	1	96	85	58	68	20	7	3	387	1.7%
Totals	838	2591	70	4495	4437	3877	3637	1594	972	937	23448	

New Technology Removes the Tedium of Contesting

Jim Talens N3JT

Competitive contesting today increasingly involves using techniques not commonly available even a decade ago. SO2R, which permits a single operator to simultaneously use two radios and two antennas, is an example. QSO rates for those adept at this are impressive, but it requires considerable practice to master. Some do it very well. But for multi-operator situations, a different set of approaches is used. Those stations typically have multiple antennas, one antenna dedicated to each operator position, though sometimes with a second person listening on a separate receiver for multipliers. It is now even possible to use the same antenna, like a tribander, on three different bands by three operators at the same time. Filters with steep bandpass skirts are used, though reportedly there are some noise and artifact issues. The latest idea now under development, which should eliminate these problems, involves application of principles of sampling that have been used in telegraph, telephone and data networks for a long time. It is referred to as Time Division Individual Unlimited Multiplexing, or TDIUM.

When applied correctly, TDIUM supports the following: A single-band antenna with multiple users (operator and spotter); a triband antenna with multiple users (and spotters); multiple antennas with multiple users. All of these are possible because time slots are assigned to each transceiver and synchronized so that no transmitter emits during a listening slot. Because the sampling is done so quickly, no operator is even aware that there is another signal on the same antenna. Of course, more than one transmitter on a band-mode is not generally acceptable in most contests, so the practical utility of TDIUM lies in using multiple antennas (even a tribander) with multiple operators and spotters without mutual interference.

Basically, each antenna-radio path is sampled at a sufficiently fast rate to permit transfer of the communications content seamlessly, for both send and receive. The sampling is referred to as the Nyquist Interval (later proved by Shannon) and is equal to the reciprocal of twice the highest frequency component of the sampled single. The communications path (cables) must be capable of transporting this bandwidth, but as you'll see this is not a problem in the typical ham radio shack.

As a basic example of how this works, consider that two voice signals can be transmitted along a single pair of wires by switching in a synchronized way between the two users at 6 kHz, with 3 kHz being the highest frequency component of typical human voice transmission. The path, meaning the cables and wires, all have a bandwidth of at least 6 kHz. This can be applied to more than two users, which is where it gets interesting. The sampling rate then must be increased linearly so that 4 users would need 24 kHz, and so on. The SSB operation may be intuitive, but how does TDIUM apply to CW? At 30 wpm there are 150 characters/minute, or 2.5 characters per second (cps). If we digitize CW we need to accommodate at least 36 characters (plus

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punctuation, etc.). This means we need 2^6 different values, or 6 bits per character, which translates to 15 bps at 30 wpm, meaning a 30 Hz bandwidth would be sufficient. Two operators could share one antenna (two bands on a tribander, or an operator and spotter on the same band) using a CODEC cable of also sampling at 60 Hz. To be safe and avoid artifacts, let's assume we sample at 3 kHz. In the TDIUM application for the shack the existing cables would more than suffice for this bandwidth under the Nyquist Interval criterion. A CODEC may soon be available to handle this encoding, too.

Imagine what this all means. At our future HF contest station we will have a tribander and separate antennas for 40, 80 and 160m. There will also be a receive antenna for 160m. With TDIUM it will be possible to have 12 operators actively sending, receiving and searching for multipliers on all 6 bands, two per band, meaning 12 transceivers (or VFOs in transceivers with second receivers – all without any problem of mutual noise or interference. Each antenna feed will of course have to be able to handle the transmit power, but that is already done with sturdy vacuum switches in other applications.

The notion of TDIUM is upon us, and soon the contesting world will be better than we have imagined it, with room for more operators and more active stations at a given location. It is not folly to think that with this system most stations in a contest can be worked in a shorter period of time, leaving Sunday afternoon for viewing sporting events or joining the family instead of passing the day suffering the tedium of calling incessant CQs!! (*Editor's note: this article will also appear in the April edition of* CQ Magazine.)

CWops Tests

Rich Ferch VE3KI

Spring has arrived in the northern hemisphere, or at least it's well on the way (it'll be a while yet here in the frozen north – the last of the snow and ice in my yard will likely hang around until late April). For many amateurs in North America, thoughts are turning towards the Dayton Hamvention in mid-May. I hope to see some of you there.

The distribution process for the 2018 participation medals is under way now. Some of you will be receiving them by mail, and some will be able to pick theirs up at Dayton.

I think the participation awards have quite a lot to do with the popularity of the CWTs – not so much the actual awards themselves, perhaps, as simply having recognized goals to shoot for. Depending on other commitments (some of us have lives outside amateur radio, jobs, families, etc.!), even if the gold medal level is not realistically achievable, one of the others may be.

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At the end of the first three months of 2019, with one-quarter of this year's CWTs accounted for, we have 19 members who have participated in every one of the 39 CWT sessions so far, and another 17 who have missed only one session. There were 106 members who were at least one-quarter of the way towards the gold medal level this year, another 97 who were one-quarter of the way towards a silver medal, and 79 more who were one-quarter of the way towards bronze. Overall, my spreadsheet count adds up to 696 amateurs who have taken part in at least one CWT during the first quarter of 2019, of whom 578 were CWops members as of April 1.

Of course, these folks don't all show up at once. Typically, there are now around 240-250 scores reported in each of the 1300Z and 1900Z sessions, and since the switch to daylight saving time, around 180 scores reported in the 0300Z session (numbers in the 0300Z session were higher during the winter). The largest single-session participation count was 288, and the smallest this year so far was 172.

That's enough participants to keep you busy for the hour if propagation and your station capabilities permit. On average, the reported QSO count is usually in the 50-60 QSO range (total number of QSOs reported in a session divided by the number of reports), except of course during the special slow-speed sessions – to no-one's surprise, holding the speed down to 20 wpm pulls down the average score. The next slow speed CWTs will be on June 12-13; note that date in your calendars!

We do the CWTs because they're fun; let's all make sure they continue to be fun for everyone.

73,

Rich, VE3KI CWT Manager

CW Academy

Kate Hutton K6HTN and Joe Fischer AA8TA

Here is the report on the January-February 2019 CW Academy semester. We had 320 students enroll and 251 successfully complete a class. We had 60 advisors who led these classes and we very much appreciate their dedication to helping all of these students succeed. Even for students who did not quite complete their advisor's goals, they hopefully picked up some things that they can use in the future.

Advisors who led three classes:

Dallas, K1DW and Rob, K6RB.

Advisors who led two classes:

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Kate, K6HTN; Ron, VE3FXX; Andy, WB7DKZ; Mark, K5GQ; Ed, K6HP; Buzz, AC6AC; Bill, K0MP; Alex, PA1FOX; Joe, KK5NA; Keith, G0HKC and Joe, AA8TA.

Advisors who led one class:

Mac, NN4K; Paul, K4JAZ; Lar, K7SV; Carl, K9LA; Doug, VE3MV; Gary, N8LR; Val, WD4EXI; Rich, K1DJ; Barry, W4LSV; Ken, KE4RG; Duncan, G3WZD; John, KM4CH; Walt, WA8KBU; Ned, K1GU; Chris, W4ALF; Mike, WB0SND; Terry, WB0JRH; Jim, AD5TT; Bill, W0EJ; Don, AK4SQ; John, K4AFE; Bill, AJ8B; Carl, W4IF; Quinton, NU7Y; Curt, K7ZOO; Art, WA7NB; Mike, AA6MK; Alan, AD6E; John, KE6K; Terry, N7TB; Tom, W8TK; John, WK5N; Tim, W7EEE; James, VK4TJF; Peter, GM0EUL; Vic, 4X6GP; Ted, WA3AER; Ed, N9EP; Joe, N3HEE; John, AJ1DM; Bill, W3PNM; John, N8AA; John, AC4CA; Bob, WR7Q; Scott, KF7GGN; Phil, G4NVR and Bruce, K1BG.

Associate advisors: Glenn, WA4YES; Nancy, KG0YL; Marcin, HB9EGA and Chris, G0JPS. Several advisors had other people, such as former students, help them out as associates.

Students who successfully completed Level 1 (145 students):

AA5TN, AC9FX, AE6DS, AE6Q, AG5QX, AJ4KR, K0PWS, K3MC, K5DDT, K5ECO, KC9THF, KC9VQB, KD9FMJ, KE5EN, KF5FZR, KG5FZ, KG5JNS, KG5SW, KG5WJZ, KG5ZTF, KJ4ZN, KM9G, KN0MES, KN4DGR, N5AAS, N5QH, N9WEW, VE4DLA, VE5LEN, W0GIN, W4DSD, WA0OIS, WU0Q, AC1EW, AC2MV, AC2VK, AE4N, AI4FH, AI4PL, HK4KM, K1LOL, K1SAC, K4CTF, K4DXX, K4ELI, K4LSK, K4MHC, K6FOD, K8KZB, K8TDM, K8TSG, K9TA, KA0TZX, KA1TE, KA3NKN, KA8D, KA9LWK, KB2GVB, KC1DPJ, KC1ECP, KC1EJD, KC3GPM, KD2CQ, KE4SND, KE8CTH, KE8IHX, KK4GGL, KN4GQB, KN4IIY, KT4RK, KX4HH, N1RKO, N4CQD, N8LAH, N8OI, N9DXP, N9VUJ, NG3P, NT4F, VE3KAH, W4BFG, W4BZM, W4GDC, W4KRJ, W4MLZ, W4WHF, W8AAR, W8EWH, W8JHW, W8SSE, W9KMS, WD8PAK, WE4NUB, WQ8Q, WT8WV, KH6FHI, KH7LM, AE7RH, AG7MZ, K7ADX, K7AMB, KC0ZVI, KE0PRQ, KG5VBX, N5JH, N7OW, NE7EE, NJ7V, Susan Archer, Kimberly Moon, VE7GPG, W7CBR, W7KZM, W7RMM, W7SKH, W9KFB, AE7TD, AJ7F, K0LRM, K2MAX, K6PVZ, K6ZGW, K6ZY, K7GTC, K7III, KB7AK, KB7BTO, KB7YS, KE7MPO, KE7MSU, KM6MYF, KM6PQD, KM6TNT, KR7F, N6MKW, N7JP, N7UFC, NA6Z, NB0X, VA7RUM, W0RD, W2HZ, W6VE, WK1V, G8URC, M0MLZ, WP3PW, 4X1DX, SQ3XZ.

Students who successfully completed Level 2 (77 students):

AB6UR, AC0I, K0EW, K6LN, KA9BHD, KD0CIV, KE0UDZ, KI9T, KY9I, N0TLW, N4DPM, N4EDT, N5AHM, NF8H, W4CMG, W5WI, W5XNA, WA4JNP, WA5M, WA9MNF, WD4CFN, WF5K, 9V1WO, AC1BS, AC2SC, HS0ZMF, K2OY, K4DME, KA3LXM, KA9OUT, KB2SVD, KC3KBE, KD2QFA, KM4CUB, KM4WHO, KS3N, KT9N, N2EIM, N3FZ, N3FZ, N8MCA, N8VAR, NJ4V, VE2SK, W1AGE, W1ND, W8JRH, WT3C, AC7FF, K0ERE, K7ROG, K8PK, KG0EW, KI7YWE, KJ6PBX, WI0V, AA7AJ, AI6XN, K6BA, K6YXH, KI7OMH, KK6M, KM6SJT, KZ6H, N6MST, N7KN, NT6F, W6BJB, W6SMF, W6VYC, W6ZDR, WM6Y, WT0F, M0NPT, PU4ALZ, IZ3NPZ, PA3GSV.

Students who successfully completed Level 3 (25 students):

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KO5USA, W5JK, AA2EA, AE4DD, KD8EDC, KF8O, KM6P, KN4VV, NY4I, W2JAZ, NS6W, AJ6DU, KE7RW, KK6NVZ, N6LRA, N7DRW, N7MU, W7BCW, W9KKN, G0JPS, M0DHP, MI0WWB, IU-3BRO, SN9MT, YL3JD/PA3ZZ.

Students who completed the Youth CW Academy (4 students):

KD9LSK, KD9LZS, WA7KVI, Asher Henry (no call)

The following students from above have become members of CWops since classes started: K8PK, KE7RW, KF8O, KK6NVZ, N6LRA, N7DRW, N7MU, W2JAZ, W5JK, W7BCW, W9KKN, WD4CFN and YL3JD/PA3ZZ. These students have been nominated for membership: KM6SJT, AJ6DU and NS6W. Hopefully, they have received the sponsorship support that they need to become members by the time you read this. If not, please check if you could sponsor one or more of them.

At this time, the April-May 2019 semester is off and running with another batch of students anxious to learn Morse code and improve their CW proficiency. Our amazing advisors are sharing their experience with their students and preparing for our future which includes bringing more members into our club.

Although the CW Academy draws students mainly from North America and Europe, we do get inquires and interest from other parts of the world. We have had many signups from the Philippines, for example. Regardless of the location of the students, there exists a high interest in the CW Academy and many students sign up commenting that they have heard that if they want to really learn Morse code, they should go to the CW Academy.

This means we can always use more advisors. We have a curriculum for all three levels and there is a lot of support available to advisors. Even if you could do just one class a year, it would be a big help.

Please consider it and go to the advisor signup page on the CWops web site: https://cwops.org/cw-academy-2/cw-academy-advisor-sign-up/. Also remember that many students will be trying to put what they learn to practical use by getting on the air. You can help them by listening for them and working them.

If you have any questions, please contact one of us.

73,

Kate K6HTN and ***Joe*** AA8TA

New Members

Trung Nguyen W6TN

With great pleasure we welcome the following new members to CWops:

CWops	Call	Name
2242	AI6V*	Wyatt
2243	N7MU	Jim
2244	N6LRA*	Laura
2245	KE7RW*	Ryan
2246	N7DRW*	Bud
2247	W7BCW	Bruce
2248	F5JVP	Didier
2249	AB7RW*	Phil
2250	N4IY*	Terry

CWops	Call	Name
2251	KK6NVZ*	Kevin
2252	K0ODF	Lynn
2253	W5JK*	Steve
2254	DJ7AO*	Steve
2255	WU4F	Rob
2256	YL1ZF*	Kas
2257	K1WGM*	Bob
2258	KB9DKR*	Carl
2259	W4SFR	Spray

CWops	Call	Name
2260	KE0TT	Dan
2261	F6ENO	Alain
2262	K5CI	Leo
2263	AA7ST*	John
2264	N2ED*	Edward
2265	KV0I*	Bill
2266	K2SD*	Scott

*Life Member

Current Nominees

Need Sponsors: KM6SJT, AJ6DU, NS6W, W7KFI

Invitations Extended: K9XV

For more details about nominees and up-to-date status, check the “Membership” then “Members only” page on the website: http://www.cwops.org.

For information about joining CWops, check the “Membership” page on the website: http://www.cwops.org

Notes: If you have updated your personal info, e.g., new qth, new callsign, or additional callsign, please send it to membership@cwops.org so I can add it to the roster. Vice versa, if your callsign becomes inactive I can remove it, too. Then the roster will be accurate and current for our usage.

Thank you.

73,

Trung, W6TN, Membership Secretary

CWops Member Awards

Pete W1RM and Peter W1UU

The Annual Competition Award (ACA) is based on the number of members worked each calendar year. You get one point per member worked, once per year. It resets to zero at the beginning of each year. The Cumulative Member Award (CMA) is based on how many members you've worked since January 3, 2010 on each band and continues to grow in perpetuity. The CWops Award Manager (CAM) software, available at no cost, will help you keep track of your ACA and CMA totals.

In the table below, members whose call sign is in **RED** have achieved a milestone: 100 DX entities, 40 WAE entities, 50 states (WAS). Members who wish to track their totals for these awards can use the CAM software developed by N5RR. It's available at no cost here: www.bbcyber.com/cam/

Call	ACA	CMA
AA3B	898	7941
VE3KI	684	5051
WN7S	673	1330
W1RM	641	5724
F6HKA	574	5270
K3WJV	558	2563
N8BJQ	525	5359
K4QS	510	2069
K8AJS	468	2430
NA6O	453	2799
DL6KVA	446	2963
K0TC	431	2358
KG9X	388	1256
K1ESE	375	3590
W9ILY	373	3654
N1DC	351	2358
WT9U	340	1253
KB8GAE	330	617
K1DJ	323	1983
K9WX	311	2922
KE4S	307	1930
AJ1DM	287	417
K4WW	280	1800
NN4K	274	1938
W4VQ	273	2827
IT9MUO	267	1921
W8DN	255	710
W1UU	252	2283
K0MP	246	1322

Call	DX
W1RM	187
F6HKA	171
W4VQ	151
N7WY	143
DL6KVA	140
G4BUE	139
N5RR	129
VE3KI	122
N8BJQ	122
EA8OM	111
K1ESE	110
AA3B	104
I5EFO	102
N5PHT	98
EA1WX	97
W9ILY	95
W0VX	94
IT9MUO	89
VK7CW	87
N1EN	86
KY7M	86
F6JOE	86
I5IYJ	83
F5IYJ	83
AD1C	83
4X6GP	83
IN3FHE	82
K5AX	79
DL8PG	79

Call	WAS
N5RR	50
W1RM	50
W4VQ	50
F6HKA	50
W1UU	50
VE3KI	50
G4BUE	50
EA8OM	50
W0EJ	50
F6JOE	50
W6KY	50
N1EN	50
N5PHT	50
F5MNK	50
K5IX	50
K3SEN	50
AD1C	50
AB7MP	50
AA3B	50
K5AX	50
I5EFO	50
VK7CW	50
DL6KVA	50
K0TC	50
KY7M	50
NA6O	50
K1DJ	50
N8BJQ	50
K9WX	50

Call	WAE
DL6KVA	50
W1RM	49
F6HKA	48
VE3KI	46
G4BUE	46
N5RR	44
N8BJQ	43
W4VQ	42
I5EFO	42
EA8OM	42
AA3B	42
K1ESE	40
IT9MUO	38
K3MD	37
IT9VDQ	36
IN3FHE	36
G4ILW	36
F6JOE	36
EA1WX	36
W9ILY	35
W1UU	34
W0VX	34
RM2D	34
HB9ARF	34
4X6GP	33
N1EN	32
KY7M	32
I5IYJ	32
F5MNK	32

Call	WAZ
W1RM	38
F6HKA	38
W4VQ	37
VE3KI	37
N5RR	37
G4BUE	37
N5PHT	36
DL6KVA	35
I5EFO	33
VK7CW	32
I5IYJ	32
F5IYJ	32
RM2D	29
W7GF	26
JF2IWL	25
N1DC	22
K8AJS	19
G4NVR	19
CM8NMN	18
WN7S	17
G4ILW	17

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Call	ACA	CMA
KE4RG	241	847
HB9ARF	239	1267
G4BUE	216	3583
KB4DE	216	494
K8RJW	209	306
CM8NMN	194	872
AA8TA	192	1396
G4NVR	191	740
W7GF	185	1490
AB7MP	176	1023
K6DGW	164	2035
NU7Y	153	1011
F5IYJ	112	835
I5EFO	88	1144
VK7CW	83	1601
M0DHP	76	199
F6JOE	65	2999
I5IYJ	64	837
MI0WWB	62	218
KB8PGW	55	277
ON4VT	49	476
SV2BBK	48	149
N5RR	0	4961
K3WW	0	4669
K6RB	0	4032
K5AX	0	3634
KY7M	0	3252
W0VX	0	3219
N5PHT	0	3184
EA8OM	0	2758
AD1C	0	2101
W6KY	0	2088
N1EN	0	1928
WT2P	0	1925
EA1WX	0	1910
N7WY	0	1838
DL8PG	0	1789
KT5V	0	1774
K3DMG	0	1773
K3MD	0	1734

Call	DX
IT9VDQ	74
RM2D	73
N1DC	71
W1UU	70
F5MNK	68
KE4S	67
K8AJS	66
NA6O	65
K1DJ	65
K9WX	64
K3DMG	63
KT5V	60
HB9ARF	59
K4QS	57
K0TC	57
W7GF	56
W6KY	56
K6RB	56
G4DRS	56
G4ILW	55
K3WJV	54
K3SEN	51
JF2IWL	51
G4HZV	51
NN4K	50
ON4VT	49
WT2P	48
G4NVR	47
G0MGM	45
K4WW	42
K3MD	41
K6DGW	39
WN7S	37
W0EJ	36
CM8NMN	36
VE1OP	32
M0DHP	32
WT9U	31
SV2BBK	31
MI0WWB	29

Call	WAS
WT2P	**50**
K1ESE	**50**
K6DGW	**50**
K3WJV	**50**
K4WW	**50**
K2QB	**50**
W7GF	**50**
WN7S	49
W9ILY	49
W0VX	49
ON4VT	49
NU7Y	49
NN4K	49
N1DC	49
KT5V	49
KG9X	49
KE4S	49
K8AJS	49
K6RB	49
K3MD	49
K0MP	49
IT9VDQ	49
AA8TA	49
WT9U	48
K4QS	48
K3DMG	48
EA1WX	48
DL8PG	48
CM8NMN	48
4X6GP	48
W8DN	47
VE1OP	47
KE4RG	47
JF2IWL	47
IT9MUO	47
I5IYJ	47
HB9ARF	47
G4DRS	47
F5IYJ	47
AJ1DM	47

Call	WAE
F5IYJ	32
K5AX	31
G4NVR	31
DL8PG	31
K8AJS	30
G4HZV	30
N1DC	29
K4QS	29
K3WJV	28
K1DJ	28
AD1C	28
ON4VT	27
M0DHP	27
KE4S	27
G4DRS	27
VK7CW	26
K3DMG	26
JF2IWL	26
G0MGM	26
SV2BBK	25
NA6O	25
N5PHT	25
K6RB	24
MI0WWB	23
K4WW	23
K9WX	22
NN4K	21
K3SEN	20
KT5V	19
WT2P	18
W6KY	18
VE1OP	18
K0TC	18
WN7S	16
W7GF	16
CM8NMN	16
WT9U	13
K6DGW	12
K7QA	11
W0EJ	10

Call	WAZ

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Call	ACA	CMA
K3SEN	0	1643
IT9VDQ	0	1516
4X6GP	0	1381
RM2D	0	1182
F5MNK	0	1111
KM4FO	0	1107
IN3FHE	0	1033
JF2IWL	0	931
K5IX	0	892
K7QA	0	777
VE1OP	0	768
W0EJ	0	754
G4DRS	0	692
G4HZV	0	603
G4ILW	0	555
KJ4M	0	498
G0MGM	0	495
VE6JF	0	376
K2QB	0	125

Call	DX
AA8TA	26
K5IX	24
K0MP	24
W8DN	23
AB7MP	23
NU7Y	22
KG9X	22
K7QA	19
KE4RG	18
AJ1DM	15
KB4DE	12
KM4FO	10
KJ4M	10
K8RJW	9
VE6JF	8
KB8PGW	5

Call	WAS
KB4DE	46
VE6JF	45
K7QA	45
RM2D	44
KM4FO	43
KJ4M	43
G4NVR	43
IN3FHE	42
G4HZV	42
K8RJW	40
KB8PGW	37
G0MGM	35
MI0WWB	29
G4ILW	27
M0DHP	22

Call	WAE
KG9X	10
K0MP	10
AJ1DM	10
W8DN	8
KE4RG	8
K5IX	8
AA8TA	8
KB4DE	7
AB7MP	7
KM4FO	5
KJ4M	5
K8RJW	4
VE6JF	3
NU7Y	3

Call	WAZ

More Pictures from the Visalia CWops Breakfast

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QTX Report

Enjoying the Art of Conversational CW

[Gary Stone N5PHT]

Welcome to the April 2019 Rag Chewer Column. We have a great many reports and comments this month – thanks for the support of this program. I am still dividing time between lots of stuff in ham radio but still able to have some great rag chews. We start camping again soon and hope to catch some of you from campgrounds.

Rag Chewer Comments: (If I missed your comment this month let me know – I had a file mishap and it took me a while to reconstruct and tried to get them all).

F5IYJ: I broke my record with a QSO of 134 minutes (with a SKCC folk: we both were using a semi-automatic key and concluded this contact agreeing we were fortunate enough to not use a straight key this time.)

WB6TOU: Finally got my storm battered OCF dipole replaced with a 6 band Hustler and a LDG tuner. With 4 radial for 40 up and 2 on 80 back in business and can tune 9 bands! Hearing new states and making new friends.

N8AI: Best QSO with Eric KK0ECT who took up CW only 14 months ago and was perfect 27 wpm op now. Won Colorado QSO party recently Low Power.

K6DGW: Better this month, haven't seen any folks dressed in scrubs and life is more or less back to normal. And in Nevada Softball, granddaughter got 15 strikeouts against New Mexico in 5.5 innings. Life is good!

MI0WWB: Just the one QTX with Marten VE2WU, he had a great signal into the UK. I find I am making more MiniQTXs than previously.

HB9CVQ: This month on 80m (500W / DP @24m) I relatively often used my Vibroplex Super DeLUX (#243113, anno 1965). This successfully triggered EU-traffic (18Wpm) /chats with G, F, I and DL.
Calling at 28Wpm with paddle (Begali Magnum) triggered less response.

W9EBE: I've had ENOUGH of these lousy band conditions! Therefore, I have installed a pole pig in the basement and I am now running a walk-in amplifier (shades of the Alligators on 3.895 MHz back in the day) running 7 kW day in, day out. So there. APRIL FOOL!

N6HCN: So many fine ragchews. I am proud to be part of the CW community and the interesting people that comprise it.

KB6NU: I finished the month with a QTX QSO at 2300Z with K1WGM, CWOps #2257, one of our newest members!

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K2KRG: Lots of great rag chews this month on 30, 40, 80 and 160M. Also a couple MQTX with Doug, NJ1T pushing/pulling me along at QRQ speed while he switched between two different keyboards, a paddle, and a bug! Great fun! To top off the month, I had a nice 1/2 hour chat with Dean, G4WQI on 40M.

W0ITT; Favorite QSO WA7A

MEDALS

Remember that we give out QTX Medals at the end of the year for 3 levels: (QTX). Maybe we can develop something for MQTX later.

Gold Medal – 400 QTX Points

Silver Medal – 300 QTX Points

Bronze Medal – 200 QTX Points

MEDALS for 2019: We have our first for QTX Bronze: KC0VKN.

QTX FOR APRIL 2019

Call	QTX
N8AI	90
KC0VKN	54
K2KRG	48
N5IR	43
W9EBE	41
I5EFO	29
KB6NU	28

Call	QTX
N5PHT	23
W0ITT	19
F5IYJ	16
K4AHO	13
N6HCN	13
K5YQF	11
K6DGW	9

Call	QTX
N4DT	8
HB9CVQ	7
AJ1DM	7
KB8GAE	5
K8UDH	5
WB6TOU	5
N4PIR	5

Call	QTX
W3WHK	4
K0DTJ	4
SV2BBK	4
GM0EUL	2
MI0WWB	1

MQTX FOR APRIL 2019

Call	MQTX
N8AI	45
W9EBE	33
SV2BBK	30
I5EFO	25
MI0WWB	25
K2KRG	20

Call	MQTX
W0ITT	18
KB6NU	17
N5PHT	15
HB9CVQ	12
GM0EUL	11
K6DGW	11

Call	MQTX
K4AHO	8
W3WHK	7
N6HCN	6
WB6TOU	6
N4PIR	5
K5YQF	4

Call	MQTX
K8UDH	3
KB8GAE	2
AJ1DM	2

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2019 Totals for QTX:

Call	QTX
KC0VKN	229
N8AI	166
N5PHT	138
W9EBE	130
N5IR	127
K2KRG	120
I5EFO	79
F5IYJ	74
KB6NU	69

Call	QTX
K1ESE	68
W0ITT	59
K4AHO	32
N6HCN	29
N4DT	24
HB9CVQ	23
K5YQF	21
AJ1DM	20
W3WHK	20

Call	QTX
K6DGW	16
KB8GAE	16
N4PIR	16
K8UDH	15
WB6TOU	11
K0DTJ	11
DL5DBY	11
W3PNM	10
SV2BBK	8

Call	QTX
N9SE	7
GM0EUL	5
WN7S	5
WA8IWK	4
N5LB	2
MI0WWB	1
K3GHH	1
W5LA	1

2019 Totals for MQTX:

Call	MQTX
N8AI	219
W9EBE	118
SV2BBK	369
I5EFO	68
W0ITT	65
N5PHT	65
K2KRG	59
KB6NU	42

Call	MQTX
HB9CVQ	35
MI0WWB	33
K1ESE	31
GM0EUL	30
K6DGW	27
KB8GAE	25
N4PIR	25
DL5DBY	24

Call	MQTX
K4AHO	22
N6HCN	17
W3WHK	12
K8UDH	9
K5YQF	8
WB6TOU	7
W3PNM	7
N9SE	6

Call	MQTX
AB7MP	3
AJ1DM	2
N5LB	2
WA8IWK	2
W5LA	1

Hope to cu on the bands. NOTE: If you ever find me with missing reports, numbers or anything on this column please email me so I can get it corrected!

73,

Gary, N5PHT, QTX Manager

Upcoming CW Operating Events

Joe Staples, W5ASP

The two more significant upcoming contests are the Japanese JIDX and the Italian ARI weekends. They give both the East and the West coast folks each a shot at some activity. One caution ... if you don't happen to read Italian, try the SM3CER site. It has the basics you'll need to handle the ARI.

Once again the state QSO parties fill the weekends ahead. For those CW adherents who are not addicted to high rates, long hours and incessant QRM, participation in these events provides a welcome and relaxing operating experience. While the intensity level may be lower than in the major contests, the requisite skill level can be every bit as demanding. This is particularly true when tracking high activity level mobiles as they dash from county to county. Looking for a real challenge ... work one of these guys in every county they traverse. Then include the other active mobiles. You'll find real satisfaction is right at your "fingertips".

The NCCC Sprints, the NAQCC, and the SKCC events have all been introduced in previous issues of this column in Solid Copy. A review of the recent results of these activities confirms a reasonable level of participation sufficient to offer the established CW operator the opportunity to work both the low power advocates and the newcomers to the world of code. Your participation will be welcome and encouraging.

Although the activity level falls off after the weekends, there's still the CWT and various Sprints to provide a spark of CW activity.

Keep on pounding.

APRIL/MAY EVENTS

JIDX CW Contest http://www.jidx.org/jidxrule-e.html	0700Z, Apr 13th to 1300Z, Apr 14th
International Vintage Contest HF http://www.contestvintage.beepworld.it/rules-2012.htm	1200Z-1800Z, Apr 14th
CQ-M International DX Contest http://cqm.srr.ru/en-rules/	1200Z, May 11 to 1159Z, May 12
Yuri Gagarin International DX Contest http://gc.qst.ru/en/section/32	2100Z, Apr 13 to 2100Z, Apr 14
ARRL Rookie Roundup, SSB http://www.arrl.org/rookie-roundup	1800Z-2359Z, Apr 14
New Mexico QSO Party http://www.newmexicoqsoparty.org/	1400Z, Apr 13th to 0200Z, Apr 14th

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North Dakota QSO Party http://www.kg0yl.net/QSO.html	1800Z, Apr 13th to 1800Z, Apr 14th
Georgia QSO Party http://www.georgiaqsoparty.org/	1800Z, Apr 13th to 0359Z, Apr 14th and 1400Z-2359Z, Apr 14th
Michigan QSO Party Solid Copy April_2019.docx	1600Z, Apr 20 to 0400Z, Apr 21
Ontario QSO Party 1200Z-1800Z, Apr 21 http://www.va3cco.com/oqp/rules.htm	1800Z, Apr 20 to 0500Z, Apr 21 and
Florida QSO Party http://floridaqsoparty.org/rules/	1600Z, Apr 27 to 0159Z, Apr 28 and 1200Z-2159Z, Apr 28
Delaware QSO Party http://www.fsarc.org/qsoparty/rules.htm	1700Z, May 4 to 2359Z, May 5
New England QSO Party http://www.neqp.org/rules.html	2000Z, May 4 to 0500Z, May 5 and 1300Z-2400Z, May 5
Arkansas QSO Party http://www.arkqp.com/	1400Z, May 11 to 0200Z, May 12
7th Call Area QSO Party http://ws7n.net/7QP/new/Page.asp?content=rules	1300Z, May 4 to 0700Z, May 5
Indiana QSO Party http://www.hdxcc.org/inqp/rules.html	1500Z, May 4 to 0300Z, May 5
FISTS Spring Slow Speed Sprint FISTS Spring Unlimited Sprint http://fistsna.org/operating.html#sprints	1700Z – 2100Z, May 4 1700Z – 2100Z, May 11
NAQCC CW Sprint NCCC Sprint NCCC Sprint NCCC Sprint NCCC Sprint http://naqcc.info/sprint/sprint201904.html	0030Z-0230Z, Apr 10th 0230Z-0300Z, Apr 26 0230Z-0300Z, May 3 0230Z-0300Z, May 10 0230Z-0300Z, May 17
SKCC Weekend Sprintathon SKCC Sprint SKCC Weekend Sprintathon 1 SKCC Sprint 0000Z-0200Z, May 22 http://www.skccgroup.com/operating_a	1200Z, Apr 13 to 2400Z, Apr 14 0000Z-0200Z, Apr 24 1200Z, May 11 to 2400Z, May 12

73,

Joe, W5ASP, Upcoming CW Operating Events

My Story: New Member Biographies

Bruce Weber W7BCW

First I wish to thank Bill KE7WTR a member from the local ham club SVARC W7SKY here in western Washington who talked about learning CW and the CWops website. If he had not done that I would not have heard of this CW Academy for learning or refreshing my CW skill.

I was first introduced to ham radio from a classmate's father who was a ham (Grant K2VZX) and was the one to give me the Novice test back in 1968 and was issued my fist call sign WN2FYJ. In those days being a Novice class licensee it was CW only and "rock bound" (Heathkit DX-20 first transmitter) at that. I eventually upgraded to Advanced class and later in life moved to the west coast where I was issued call sign WB6GZW. I attended community college and became a tool and die maker but still wanted to learn more about electronics because of being a ham radio enthusiast. I moved to northern California and went to community college there and took all the electronics courses I could find. In my last year at college I was recruited by a Silicon Valley company to work as a technician on the bench (EIP Microwave) and when the opportunity arose ended up in engineering as an engineering tech.

I eventually tired of the hectic life in Silicon Valley and moved to Everett Washington where I was issued a new call sign KF7PJ. I ended up working for a company in Bellevue WA called Icom America and was a service department technician (every hams dream?) repairing Icom rigs that failed for one reason or another. I was there for 13 years and eventually left to work for Fluke Electronics in Everett for another 7 years before semi retiring, I have my own business now repairing ham radio gear. It was in 1996 I finally upgraded to Extra class license after spending many hours on the air increasing my CW copy speed to pass the CW code requirement. I changed my call sign to W7BCW after passing the Extra test.

I have always loved using CW to make contacts and I try to make at least one QSO everyday depending on band conditions.

Terry O'Connor, N4IY

I was first licensed in 1972 as a novice with the call WN4BUJ, my father was also a ham who taught me code and administered the test. Now over 46 years later I recall taking that test very clearly and even more so the day when my license arrived in the mail some weeks later. I was so excited to get the license that I met the mail man at my neighbor's house and ripped the envelope from his hands when I saw it and took off running home in great glee. My father supervised

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that first QSO as he knew I would be nervous with all the excitement, and I was. The contact was with a fellow novice in South Carolina, I still remember that well.

Operating as a novice was so exciting, the idea of the wire strung up in my back yard reaching the wire strung up in some other guy's back-yard hundreds of miles away was fascinating. Making contacts and getting QSLs for those contacts in new states was quite a thrill. My first QSL card was from WN9JKV, an Indiana station. I lost that QSL card decades ago but still recall that.

One day I heard a station calling CQ in the novice portion of the 15m band and he signed the call WN4BU... and at that point I thought someone was bootlegging my call. He finished his call as WN4BUL, I answered him and when I signed my call he too thought at first that his call sign was being bootlegged until he heard the final letter. WN4BUL, Steve and I, WN4BUJ had an eyeball QSO later that day. We both were tutored by our ham fathers and coincidentally passed our tests very nearly the same day. We became friends and studied together to get out general, advanced and then extra class licenses. We were teenagers when we got our two letter calls, Steve is N4SL and I have the call N4IY. I recall the feeling that I had when introducing myself at local ham radio club when I said I was Terry, N4IY at only 18 years old. Having a two letter call at our age was status, we thought we were pretty darn cool, that was fun. That was 1975.

Time to get serious a bit and I started at the local community college at my elder sister's urging. I hated high school and was not thrilled at the idea of being back in school immediately after escaping high school. Once I was student for a few months I thought to myself "I love this place, I never want to leave." College was great, everything I hated about high school was not there. I thought "What should I major in? I don't know, I like ham radio so I will try electronics." My plan was no more thought through than that and 41 years later I finished a career in electronics as an engineer and then finally as a professor which I retired from May 2017. It was my involvement in ham radio that was a guiding force in all of this.

My friend Steve, N4SL went to the community college in the same program as I. Steve spent 35 years as a design engineer and is retired now also. Steve and I still communicate over email daily. We have been friends for 46 years now. His one of the important friendships that I have made in ham radio. There are many others.

While a student at Texas Tech I joined the Radio Amateurs at Texas Tech (RATTS) and we held our first Field Day at the Crosbyton Solar Collector facility which uses a large mirrored parabola to

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reflect sunlight into an intense beam and superheat steam to drive turbines to generate electricity. We took a picture of our tower climbing and antenna raising with that large parabolic mirror in the background. I was on the tower passing the triband Yagi up to a friend. That picture made the cover of QST magazine in the November 1981 issue, the four of us were thrilled.

I wanted my dad to see that issue for sure as we had become a ham radio success, what fun that was. Sadly, my dad, K4BY became a silent key that same month due to a heart attack.

The legacy of ham radio continues in the next generation as my son Pat is KC9ADY and my wife Becky is KB9JLH. Becky and Pat have only used their privileges to talk to me on VHF HTs but I am very glad for that.

I had a long hiatus from having a station at home and then after marrying and getting a house with some land I started back into active operation. I operated QRP solely for the first 19 years after that hiatus using an Index Labs QRP Plus. I achieved WAS on 75M SSB with that rig. I really wanted to see if I could succeed in getting WAS SSB instead of CW. Hawaii was really challenging but an elevated radial quarter wave vertical did the trick.

I gave up QRP and now own an Ameritron AL-572 amp driven by a Yaesu FT-897D. It is fun to really be a big signal into Europe on 40 meters using the 1000 watts out from the AL-572 coupled to a good antenna. QRP was fun too but I wore it out for me.

I enjoy meeting new friends on the air with about 95% of my contacts being CW. Morse is my second language and I love to speak it.

Rob James WU4F

Special thanks to Mike N8DNA for nominating me for membership and to Hank W6SX, Tom K4TZ, and David K1VUT for sponsorship!

I got started in amateur radio because I had an interest in learning Morse code and what to my wonder there was a hobby called Amateur Radio that used Morse code as a way of communicating on air around the world. It's been 37 years ago and I'm sorry to say I don't even remember the ham operator that peaked my interest as he was a passing acquaintance at a local ham show. But I do however remember a silent key neighbor with two towers and beams galore and a couple of unhappy neighbors as well. I had to do this now!

I passed my written and code test to receive my Novice. Since I was interested in pursuing an electronic career, I built my first radio and accessories from Heath Hit (photo on QRZ.com). Off and running, my next effort was to have a tower and a beam antenna. I dug the 4x4 pad and had the concrete poured for a self-supporting 50-foot tower and a Cushcraft 3 band beam which my

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neighbor helped me put up. Boy did that make a difference!

My career, like most people, began to take off and as time went by my radio time suffered and with occasional moves and home purchases drastically fell off. I spent 40 years in the printing industry selling printing equipment and accessories with much travel. Always had my rig setup but time to operate was limited.

Today I am retired with a wonderful wife of 52 years who has put up with this hobby as well as other hobbies - a private pilot's license early on, motorcycles, photography, woodworking, played music in a band for about 17 years (drums primary) and hunting when I was able. Hi Hi!

Now I have plenty of time to operate my rig and so thankful I found this hobby early on as one that has lasted. I do work CW about 90% of the time. I work most of the major contest. My current setup is Kenwood TS590SG with SPS30DM Power Supply, MFJ 969 Tuner, Ameritron 4-position antenna switch, 2 Verticals (40 and 20m) with approximately 100 radials, and 2 dipoles (40 and 20m) and able to work 80-10m. I use a Begali Magnetic Classic Iambic, Bencher BY-1 Iambic and my original straight key from 37 years ago. Nothing extravagant but allows me to continue to pursue the hobby.

I am member of Ten Ten, FIST, SKCC and now thanks to my sponsors CWops. I look forward to seeing you all on the air and best 73's.

Paul Kent K0PK

Many thanks to Jim, N3JT, for nominating me to CWops and to those who quickly sponsored me. What a nice surprise! I've just started playing in the weekly CWTs and they sure are a lot of fun!

My first exposure to radio was with an old SWBC console radio, given to me by my grandfather. Around that time, my dad was the manager at a local 1KW AM broadcast station and I was able to get a tour of the transmitter room. The sight of those orange-glowing 4-400A's in the RCA BTA-1R was captivating!

I "fell in love" with ham radio in 1968 at age 15 starting with a General Class license (WA0UPD).

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Paul, W0AIH (SK) was my "Elmer." He had a home brew amplifier that used the same kind of glowing 4-400A's that I had seen at the radio station. I was hooked! He was instrumental in getting me involved with contesting, DXing, CW and our favorite band, 160 meters. I received my current callsign in the late 70's, before the vanity program started.

Along the way I acquired commercial First Class Radiotelephone and Second Class Radiotelegraph (w/Ship Radar) licenses. All of that combined with degrees in Electronic Engineering Technology & Management, and NARTE Master certification, ultimately led me through a 47-year career. I've recently retired after 36 years of service in local government public safety communications engineering & management, with a prior 11 years at a mining company as an electronic tech.

My 1st Class Radiotelephone ticket was "downgraded" by the FCC to a lifetime General Radiotelephone certificate quite a few years ago. My 2nd Class Radiotelegraph recently became a lifetime Radio Telegraph Operator certificate. Back in the day they were regarded as significant achievements. Now, sadly, not so much.

I learned to love CW because in my earliest ham days we lived in a TV fringe area. TVI was a constant issue and the only way I could get on the air without causing problems was by waiting until late at night when the TV was off and the rest of the household had gone to bed. Using CW and headphones kept my operations from disturbing the family and to this day my default mode is CW. I do get on SSB occasionally and sometimes RTTY in contests, but CW is, to me, "real radio."

In recent years I've been interested in antique "1929-style" radio technology and have participated in several of the old-time radio contests sponsored by the Antique Wireless Association. Building and operating with the ancient technology has given me a deep appreciation for the work of the early radio pioneers, leading to the wonderful equipment we often take for granted today. We have it so good compared to what the old-timers had!

My current home station consists of an eclectic mix of old and new equipment in a modest SO2R setup, covering 160 through 6 meters. The antenna farm consists of a single 90 ft. Rohn 25 with three stacked 3 element triband Yagis (one rotary, two fixed), rotary dipoles for 40m & WARC bands, wires for 80m & 160m and a small Yagi for 6m.

The whole tower is used as a slant wire-fed vertical on 160, tuned with a KAT500 in the shack. It plays well. I've worked QRP 160 WAS in a single weekend contest and also EU, SA and OC DX with 5 watts on Top Band. Not too bad from the Mother of Black Holes in northeast Minnesota!

Because my home QTH has a lot of neighborhood RF noise on the low bands I set up a little K2 remote station at my RF-quiet cabin QTH, 36 miles away, as a remote receive site. It's often been a big help for working weak-signal low band DX that I couldn't hear at home.

73 & see you in the CWTs.

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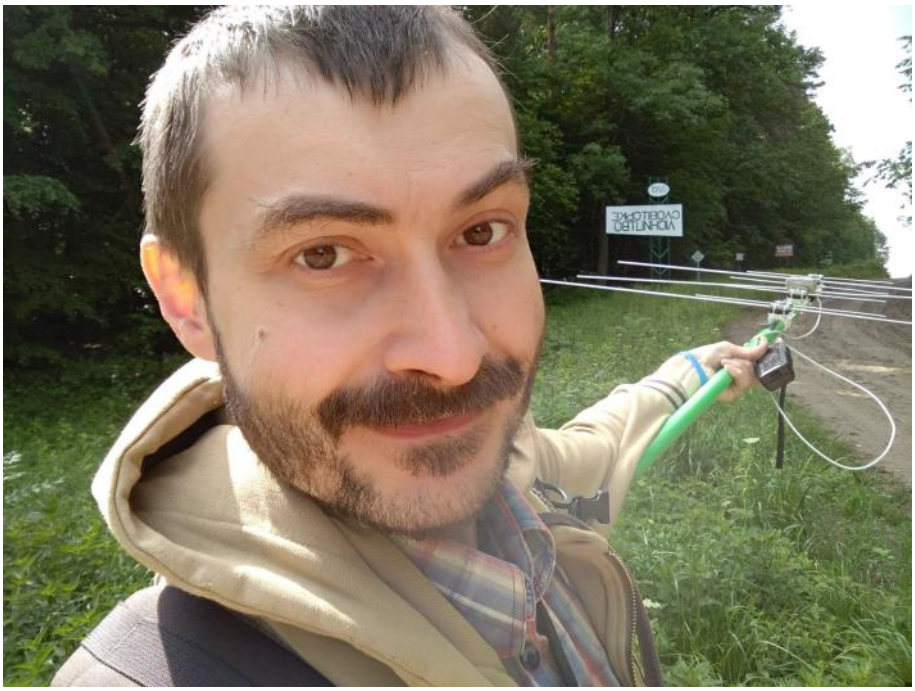
Volodymyr Protsaylo UT5WAA



Firstly, I would like to give my thanks to Keith G0HKC and Ron VE3FXX, who were my CWops Academy advisors during the course of CW Academy Level 3 and also nominating me for the CWops membership #2234. I've also enjoyed much learning in one group with Chris G0JPS, Hanz YL3JD, Will MI0WWB and Ron KF8O.

My interest in radio started in my deep childhood. My father was a technician working on the factory producing military radio equipment. He had many radio related literature and radio parts at home and that sparked my interest in radio!

Being in my primary school years I tried hard to understand the basics of electronic.

I started to attend my school radio workshop and my first project was transistor radio with a loudspeaker working without battery on the energy of radio waves.

Later on, together with my school friend, I started to attend a Morse code learning workshop located nearby the place we lived. As I remember from that time our teacher taught us how to send and receive telegraphy. We practiced on the factory manufactured Morse code generators with pre-programmed sequences of letters, numbers and punctuation signs.

Then I grew up and finished the university in Computer Science. After graduation I worked in the industry dealing with different companies, technologies and people. But my childhood interest in the radio didn't die.

I found a local radio club in my city named "LKK Lviv Shortwave Club" (UR4WXN). I phoned it and was told I can come, the next day was the day I gave it a visit! Since then, I attended the radio club and learned much about short waves and how to build different radio equipment there.

My Elmer is Yuriy Michailov UR4XN. And I am very grateful to him for everything I learned on those evenings!

Meanwhile I started refreshing my CW skills I learned while being a child.

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Later on I've been licensed and received my call sign UT5WAA in January 2017.

Since then CW is my preferred mode of operation. My station is home brew with only 15 Watts of maximum output. My antenna is 41 meters long wire and it works on 80/40/30/20m bands. As I live in the city, the noise level is too high, especially in the evenings on 80m band. Nevertheless, I appreciate every QSO I made from my QTH station!

In CW I like to work with my straight key which I've got from my good friend Alex US5WFU.

The interesting fact is that the key I use was manufactured on the factory my father worked for in the late 80th.

Steve Reyers DJ7AO

After some decades of CW practice, I stumbled over the CWT contest and enjoyed it with working lots of G-stations a couple of weeks ago. So, I found out how to join the CWops and asked some CW friends to nominate and sponsor me. This was easy and I thank everyone for the votes. Now I'm a member with the number 2254.

As a pupil in the age of 14 years I got my license. All the years before I was fascinated about the wireless communication and listened shortwave with an old tube radio. I became a member of the local ham radio club and visited a CW course. I decided after getting my license to make the first contact in CW. 1981 I made my first call with an old Trio TS-510 and a simple dipole and a straight key. The first CQ on 20m was answered by a station from Moscow. Wow - what a feeling in the time where letters were written and no cellphones were available. The radio waves made contacts via the Iron Curtain possible.

My first callsign was DL5HBS and it was terrible for CW - especially in DXing and contesting. So, I managed to change the call to the present one.

I've been a K9 dog handler for protection and explosives in the police. Today I'm working in the

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local crime scene investigation. I'm the chairman of the local radio club in the district Hamburg - living between Baltic and North Sea. I like to activate islands and lighthouses and, in the holidays, SOTA in the Austrian alps. I'm also a member of the HSC, AGCW, CTC, RTC, GDXF and the Int. Police Radio Club. For my activities I'm using a K-line, KX3 and QCX - an OptiBeam 9-5 and several wire antennas. Other interests are mountain biking, climbing my old STEYR tractor from 1948 and my German sheepdog. You`ll find more info about me at my website http://dj7ao.de

Thanks for the admittance in the CWops club and I hope to see you on the bands.

Gary Sienkiewicz W2TR

I was first licensed in 1966 at age 12 as WN2WZG in Rochester, New York. I passed the General Class exam to become WB2WZG and then the Advanced. In 1969, I passed the Extra Class license exam and in 1977 changed my callsign to W2TR. Taking some earnings from my first job, I purchased the parts to construct the Touchcoder Two (RTL - Resistor Transistor Logic) CW Keyboard Keyer by W4UX, which was a construction article in the July 1969 *QST*.

I got to meet J. A. (Bill) Bryant W4UX at one of the Rochester, New York hamfests in the early 1970s. The Touchcoder Two was a revolutionary design at the time because of its low component count compared to earlier CW keyboard keyer construction projects which were much more complicated to build. After college, I worked for Xerox, Scientific Radio (one of their products was the SR-416 which was the original high-power VHF National Weather Service transmitter which was installed at various sites around the country) and Harris Corporation in their Short Range Test area where I worked on various transceivers and car telephones. After Harris Corporation, I was one of the owners of a two-way radio sales and service business which also owned two tower sites providing UHF community repeater services and leased space to commercial entities such as 900 MHz nationwide paging providers, whose services were popular at the time.

I purchased a home in The Villages, Florida in 2017 and erected a flagpole-style antenna system in 2018. The present station is a Flex 6400 and the Elecraft KPA500/KAT500 combo which I use in

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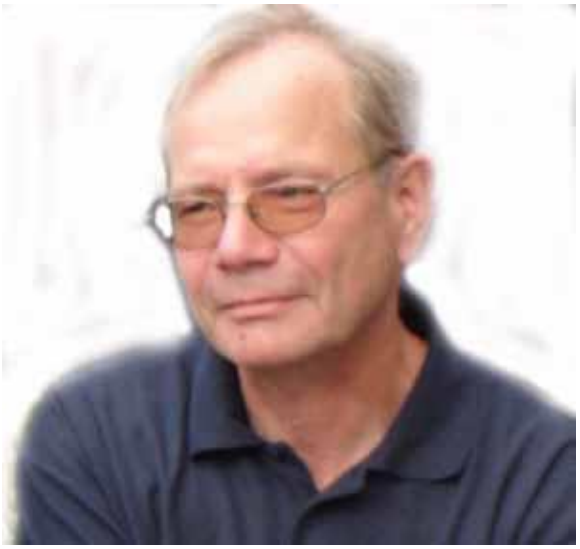
the Wednesday CWT sessions.

I would like to thank Bob K3ZGA, Wayne N4FP and Marty N4GL as the local Florida Ambassadors for CWops and Stephen K2KRG who are great supporters of the organization.

Alain Darve F6ENO



I'm 72 years old and licensed since 1976.

I'm a 100% CW operator.

I have been one of the UFT founders in 1985 (UFT is the main French CW club: Union Française des Télégraphistes).

I am also a SOTA operator and like hiking in mountains.

Phil Yasson AB7RW

Prior to enlisting in the U.S. Navy in 1955, I took the entry battery tests. Guess what? I aced the code test, E I S T. Then I was told that I was guaranteed a school of my choice. Entry into the Navy was at the Liberty Bell in Philadelphia. The Mayor gave us the oath and then we were off to the training center at Bainbridge, MD. The Navy band directory found out that I played the Sousaphone which he did not have in his band. I was drafted into the Navy Band and did not have to spend all day out in the June/July hot sun.

Then the interview came to pick my school. The top of the list was the Navy School of Music. The 2nd choice was Communications Technician School and it had no description, very interesting and that is what I picked.

So, this Pennsylvanian living in a coal mining town was about to see the world. I had a plane reservation from La Guardia NY to San Diego and into RM school. I did not know how to type, so spent almost six weeks every night at school learning the keyboard and typing without looking at the keys. Then transferred to Communications school in Imperial Beach, CA, not far from Tijuana.

My 1st duty station was Wahiawa, Hawaii for three years, then to Midway Island after reenlisting. After 20 years, I retired in Chesapeake, VA, June 1975, and was hired to be a Dockmaster at the Atlantic Yacht basin, later assistant manager of the marine store.

In 1987 we moved to Vancouver, WA built a house, then was hired by Foremost Forwarders in Portland, OR., a paperwork mill that moved military household and personal effects around the world. I was a friend of every Military Transportation Officer around the world.

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I took the Technician test in April 1995 along with wife Barbara. Although I had not heard any Morse code in over 15 years, I went in and aced the 13 WPM test. I studied at work during my 15-minute breaks and soon became an Extra class with 20 WPM. Six months after becoming a Tech, I was voted onto the Radio Club board where I kept getting reelected and finally gave it up after 12 years. I did a lot of things for our radio club: 50/50 fundraiser at the ARRL Seaside Convention, ran and organized operators for our fundraiser at the free coffee stand on I5 NB, Field Day committee, organized operators for the Veterans Day Parade, and the Parade of Bands and our annual awards banquets. The Radio Club has presented me with Operator of the Year, Community Service Award and a plaque for logging more than 100 CW QSOs at Field Day.

One May in 1998 I got into the Texas QSO Party and worked a W3DYA in many counties. I knew nothing about County Hunting. But I send a bunch of QSL cards to Norm and he replied with receipts. Then he sent me a stack of paperwork describing county hunting and I was immediately hooked.

I have set up a County Hunting table at the ARRL SeaPac Convention in Seaside, Oregon where I was able to get several former members to renew, some to join and gave out lots of information. I also worked the booth for a bit at the Dayton Convention. I can't wait for conditions to improve so we can make more contacts. My heart is in it.

In 2012, Barbara and I co-hosted the MARAC National Convention here in Vancouver. It was well-attended and I am still hearing good comments in regards from those that attended.

In 2017, I began doing the MARAC awards. All I did was ask one question, and I was selected. I had an excellent teacher, Patty W8TAX. I am really enjoying doing the awards and have had an opportunity to speak to many County Hunters on the phone. I am looking forward to the new software program that will be online soon.

During my mobile trips, we have traveled many back roads putting 1357 counties on the air and earning 284 last county awards. We have seen and enjoyed many parts of the United States that we only dreamed about.

Bill McClellan KV0I

I'm very appreciative to my sponsors, K0MP, NM5M, N3JT, W9IL and K1VUT, and to the CWops organization for accepting me into this fine family.

I am 73 years old and fully retired from the Air Force in 1989 and Lockheed Martin in 2008. Now I have time to devote to all my hobbies including my first love, amateur radio. Like many I started by building crystal radios, small transistor radios, and listening to short wave. I got my Novice license in 1961 at age 14. Built my first transmitter using two 6L6

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vacuum tubes, had an old Hallicrafters SX-17 receiver and a 40 meter dipole fed by TV twin lead. Was the first President of my high school's amateur radio club in 1963. My preferred mode is CW and I enjoy contesting and DX. I have been inactive for 26 years until Feb 2019 due to HOA covenants work commitments. I have a very limited station now with stealth antennas and low power. Even with this meager setup I am able to join CWops weekly CWTs which help me recover my old CW skills. I'm finding the CWTs to be a great asset for amateur radio to keep our CW heritage alive and well.

I grew up and lived in the south western part of Virginia in the Appalachian Mountains. Got my Novice license in 1961; upgraded to Conditional in 1962. After graduation from Virginia Tech in 1968 went immediately into the Air Force where I flew B-52 Bombers as a Navigator Bombardier. Flew many combat missions during the Vietnam war including three Linebacker II sorties into the Hanoi area in December of 1972. Was stationed on Guam in the early 1980's and had my call changed to AH2L. DX and contesting were fabulous from there. Also spent countless hours running phone patches back to the states for many military families stationed on Guam.

In 1982 was posted to Headquarter SAC near Omaha, Nebraska where I managed the development of war planning software. I again had my call sign changed to KV0I after arriving in Nebraska. Built a very nice DX and contesting station running a KW to TH6DXX at 50 feet. Developed some of the first ham radio contest logging software. It was all freeware and was delivered by floppy disk prior to the arrival of the internet. Hams sent me a floppy diskette and return postage and sent the software back to them.

In 1992 business commitments caused me to go QRT. Then after final retirement in 2008 I got extremely interested in developing flight simulation add-on software and a great interest in genealogy. Traced my own family and my wife's family back into the 1300's. Now I am back to the hobby of my life and loving it. Amateur radio sure has changed tremendously. I have gotten involved in the digital modes that were just starting as I left the hobby in the early 1990's. I do enjoy the new modes and find them fascinating but they will never replace my love for CW.

Thanks for this opportunity.

Laura Tunnell N6LRA

My ham radio experience, like much of my life, is somewhat like the raggedly loved toys buried in my dog's kennel. It began at age 7, when my older brother reported that he needed to learn Morse code for some sort of boy scout award and that meant I had to learn the code too. He tended to negotiate such things from terra firma whilst looking up at me stuck in a 30-foot grapevine tree. Consequently, I first learned Morse code at age 7.

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Many years later I married a WWII vet. He was much older than me and his early life seemed like scenes out of a 1940's war movie. I was again peripherally introduced to radio via his stories as an operator for the 5th Army as they made their way across Europe. Being the radio operator, he was in the lead when a land mine blew up the halftrack, killing soldiers as well as civilians. He survived the incident but had a severe limp the rest of his life - his radio limp.

Events come and go. My third touch with radio happened when I became close to my present boyfriend, a long-time ham. In fact, I stole one of his ribs and stuck it in the middle of his call sign, resulting in my callsign N6LRA. Once more, as if to complete the circle, I was drawing closer and closer to CW.

Finally, last year I bit the bullet and signed up for the Level 1 course. Many dits & dahs later, I graduated from the Level 3 course and made a finish line sprint for the CW Academy where I am today.

Oh yes, somewhere in the middle of all that, I got a piano scholarship, a PhD in physics, worked at Los Alamos, did some spook work, some Star Wars work, wrote patents, and inherited a sports bar.