

# Solid Copy

The CW Operators Club Newsletter

December 2020 — Issue 131



## Get Your Park On



Some ops take their parks activations very seriously. [Story by KG5OWB on 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 March 10-11.

### 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"

### 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](#)

Director: Matt Frey [CE2LR](#)

Director: Bert Banlier [F6HKA](#)

Director: Barry Simpson [VK2BJ](#)

Director: Riki Kline [K7NJ](#)

WebGeek: Dan Romanchik [KB6NU](#)

Newsletter Editor: Tim Gennett [K9WX](#)

## President's Message

Merry Christmas, Happy Hanukkah and other named holidays of December. Enjoy!

The biggest news in CWops this month is the election of our new President and



officers who will take office starting January 2021. Congratulations to Stew GW0ETF (aka GW4J) our new President and Ken JN1THL who was elected as a new Asia Director. Our South American Director Matt Acevedo Von Frey,

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CE2LR has won a new term. Stew GW0ETF has requested that Theo, SV2BBK serve as the European Director for the remainder of Stew's term. This has been approved by the CWops Board of Directors. Let's wish them very satisfying and successful terms in office.

Thanks to Don N1DG, CWops #2, for being the Chair of the Nominating Committee along with its members. Well done.

As I write my last message to CWops members I want to express appreciation for support, interest and participation shown over the years. CWops is a strong group of operators who love CW. I think you could say it has the Esprit de Corps embedded in it and all members contribute to it like a cause.

Last month in our newsletter, SOLID COPY, I called out several members who have worked selflessly to build our success. There are so many more who have contributed but there's not enough space to name you all.

However, I'd like to pay tribute to Rob K6RB and Jim N3JT. These two men are among the founders of CWops, having membership numbers of 3 and 1 respectively. They have been my go-to mentors. Thank you for all you have done and do for CWops. Rob is a former multi-term President as well as head of CWops CW Academy and Jim has served as Secretary for many years.

In closing, let's agree to keep the love of CW alive forever so that succeeding generations of hams can share our passion forward.

Thank you for the opportunity to serve.

**73, Mac NN4K**, President

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## From the [Editor](#): The Mode Gap

A recent discussion on the [Society of Midwest Contesters](#) listserv sparked my curiosity. Craig K9CT (who also happens to be the CWops treasurer) noted that his 2020 ARRL Sweepstakes SSB log included a large number of more recently-licensed operators as, judged by the "check" that is sent as part of the exchange.

Sweepstakes, if you are not familiar with it, is a contest with a relatively complicated exchange that includes a serial number, a letter that designates operating class, station callsign, the ARRL/RAC section and a two-digit number, known as the check, indicating the year the operator was first licensed. You can reasonably determine the time in the hobby of your QSO partner from their check. A check of 19 tells you your partner has been licensed for 1 year (or possibly 101 years but, outside of a few club stations, that is highly unlikely). A check of 60, on the other hand, tells you that



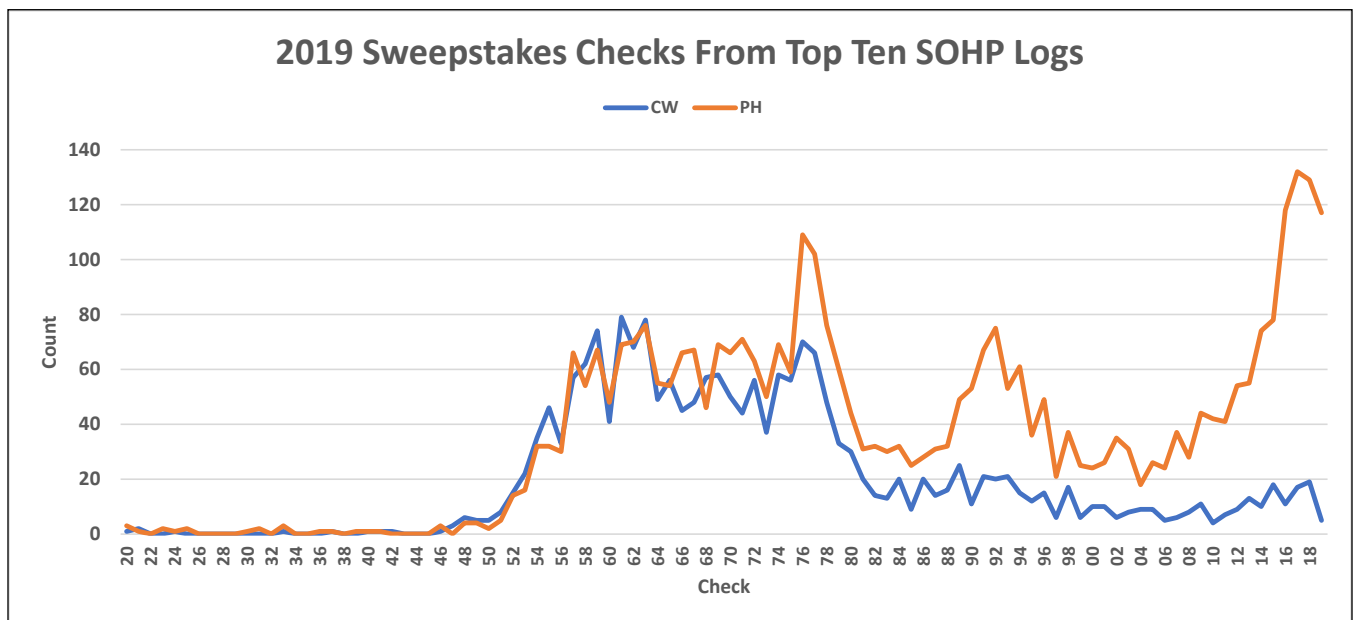
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your partner has been licensed for 60 years. Check may be correlated with age to some degree but it is not a reliable determinant of age.

Intrigued, I looked at my own log and those of other Sweepstakers and shared some of that data back to the listserv. More discussion ensued, much of it revolving around a gap between CW and SSB.

Eventually I hit upon the idea of aggregating the checks from the top ten single operator high power logs from 2019 (the ARRL thoughtfully makes these logs publicly available) to capture a larger data set. For the data geeks among you, these logs contain 12,823 CW QSOs with 1,998 unique callsigns and 13,939 SSB QSOs with 3,638 unique callsigns.



And, yes, it seems we have a mode gap. In more recent years, there has been an encouraging increase in the number of newly licensed operators who participate in the SSB Sweeps, and that's a good thing. But the opposite is true for CW, where the number of newly licensed participants has been in steady decline since the mid 1970s. Why aren't newer hams participating in the CW Sweepstakes?

I was at the point of trying to decide what, if anything, should be done about the gap, rationalizing that Sweepstakes is probably the last contest a new CW op will tackle due to the complicated exchange, when I received a thoughtful email from CWops and SMC member Bob N7WY who had been doing his own investigation.

Using slightly different data and methodology, Bob had also identified a similar mode gap. But he did have at least one idea on how to respond. We are often encourage to look at our logs and identify CW operators who might be viable candidates for membership in CWops. Bob's suggestion was to look at our Sweepstakes SSB logs (assuming you operate that mode) and identify operators who might be candidates for CW Academy. He cautioned that this could have a potential

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downside in the event we overwhelm the Academy beyond its ability to handle new enrollees. Nevertheless, this is something I will do over the upcoming holiday period when contest activity declines and, at least this year, the number of social engagements will also be at a minimum. Thanks, Bob, for your thoughtful suggestion. And, it also seems we should support the Sunday [K1USN slow speed contest](#) whenever we can. Perhaps with some concerted effort by our membership, we can make a small dent in the gap.

**Let me close** by acknowledging Mac NN4K, who this month completes his term of office as CWops president. I did not know Mac prior to becoming the editor of *Solid Copy* and I have had a chance to spend some face-to-face time with him at Dayton and the annual North American CW Weekends. Mac, it has been a pleasure working with you. I hope to continue to see you down the log and in person once we begin to have a post-COVID life with normal opportunities for eye-ball QSOs.

**73,**

**Tim K9WX** Editor

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## News and Notes

### [Jerry Weisskohl AC4BT](#)

**Peter, W1UU:** This is a heads-up about CWops planned participation in HamExpo March 2021. NM5M will be a speaker on CW Academy and W1UU will speak on modern CW operations using Zoom.

Basically, I am looking for volunteers who will appear “live” via zoom chat channels from our “virtual booth”. If you are interested in volunteering please contact me.

**Joe, KK5NA:** CWops Academy CW Advanced Class Newsletter

Joe, KK5NA has created a monthly CW newsletter packed full of interesting CW information for his CW Academy Advanced classes. Anyone with an interest in CW can access the newsletters by going to this URL: <http://www.kk5na.com/Class-News.htm>

There are currently 9 issues available to view. (Thank, John KE5C for the tip.)

**Dallas, K1DW:** I just completed building two Keyer kits: a CMOS III and a Morserino-32 and started working on a K3NG Arduino Keyer.

Santa brought me an IC 7300 early so working on various clandestine antennas to avoid conflict with local HOA. Still active remote for CWTs and SSTs. MC HH and HNY to all.

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**Rob, K6RB:** I have replaced the hand winch on my new Tashjian WT-51 crank-up tower with an electric hoist (see photo right). Now I can fully raise or lower it in under one minute, without having to turn the crank over 300 rotations.

A more comprehensive article about all this will be appear in the April 2021 issue of *Solid Copy*.

### **Tom, W0FN: CW: It's a Symphony!**

I've been surprised at my transition from disliking CW in my Novice days to enjoying it immensely now. A recent chat with a neighbor prompted me to try to jot down how and why that happened.

A next-door neighbor and I were chatting last week out by my tool shed. He was bringing back a ladder I had loaned him.

During our conversation he looked up at my Hexbeam and asked me what it did. Upon hearing that I talked to the world on this funny looking upside-down umbrella, he asked "do they all know English then?" "Oh" I said, "they might not

speak English, but they know International Morse code". He said "Morse code! Isn't that obsolete?" I explained that approximately 3 million amateur radio operators still use it and love it around the world. I also said thousands attend classes each year or are learning Morse code online - even though the FCC no longer requires it. He then asked "Why would you want to use Morse code instead of talking?"

I tried to explain to him why Morse code is so special, and why I don't use my microphone anymore. One obvious response would have been "because it's International." I wish I could have thought of all the things I'm writing now. That sending good CW is like playing a musical instrument - really well. That great CW at speed has rhythm, tempo and cadence, even a lyrical quality.

It's like Zen; it has a wonderful feeling of flow, of peace, of no mindful effort. It promotes a sixth sense of how to send so the listener can easily copy you. CW QSO traditions embody kindness, courtesy, appreciation and positivity. We'd all enjoy more of these!

Great CW rag chews at speed are tremendously gratifying when they happen; it makes you want to experience another one. You enjoy making friendly connections via skillful, rhythmic CW sending and head copy. Some days it's better than others of course. But you wake up the next morning early and head to the shack, always hopeful!

History comes alive as I use my paddle to talk with 'Sparks' on his bug or cootie. Later I buy a bug and start on another learning curve. He spent a decade onboard ship manning the radio and tells



**The K6RB tower.**

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me some of his adventures. I spend an hour on a great CW rag chew talking with the son of a railroad telegraph operator. I never thought I was a history buff but experiencing it through the eyes of those who were there is high impact history. I'm changing my mind!

We often value most that which requires the most from us. Morse code head copy needs a sense of upbeat curiosity from people who enjoy learning. It requires patience and the realization that missing characters fast is as important as copying them. Missing isn't failure - 'Letting Go' of misses (instantly) is an important skill! No self-judging. A joyful, large dose of persistence helps - on second thought it's pretty much a requirement. Bottom line, every CW operator out there **earned it**. That's probably why so many CW ops appreciate skillful CW operating. The best CW ops are almost universally kind and encouraging; they know what it takes and want to help!

You find out along the way that CW is extremely efficient. 100 watts and a good antenna are all it takes to talk to the world. You decide that you want to promote good CW operational skills and help others experience what brings you so much joy. You volunteer to be a CW Academy (CWA) Advisor after learning to head copy in CWA classes last year through [CWops.org](http://CWops.org).

You then meet a genius retiree in January of 2020 who was intimately involved with America's space program. Incredibly coincidental, he actually created the CWA class you decide to teach. Remarkably, he offers to be your assistant. You learn that you're not teaching - you're coaching. You're having fun, you're helping, and you're answering questions, explaining how head copy works, talking through doubts. Students become new friends. After a couple of CWA semesters you realize he's the Elmer you never had. Thanks Glenn.

Head copying CW as a language is literally music to your ears and brain. It's like a symphony! It requires a relaxed, open mind but with a singularly focused yet effortless concentration level that's hard to explain. Again, it's a Zen thing. It's a great way to exercise your unconscious mind. It's a focused type of flowing mental exercise few people get to experience and enjoy. Surely CW can help maintain our cognitive abilities as we age.

My path to learning these things was helped by many great CW ops. Thanks Dallas, Frank, Joe, Gary, Eric, and [Tony](#). Also, thanks to all those CW ops that encouraged me during my painfully slow QSOs in December of 2018 and throughout my CW journey. I now realize it's a journey that will last as long as I do.

I discovered Ham radio through CB radio in the mid-70's. In the late 70's with no Elmer I began learning by writing the alphabet's 'dots' and 'dashes' on paper. After that I counted dots and dashes as I heard them to figure out what letter was being sent - just what you should never do! Even better, I thought, I can just visualize seeing the dots and dashes on paper while listening to W1AW - even worse! I was so wrong about learning CW - thank goodness I was out of Ham radio for long enough to help me forget most of the bad habits I had!

If you're not enjoying or using CW now, CW Academy can help you to learn it right and have fun while you're at it.

**Gary, AF8A:** Now that the weather has taken a turn for the worst, I'm working on a 'save the data' project - I am typing my paper logs into RUMLogNG and uploading them to LoTW. One ben-

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efit is that the logs will be backed up to the 'Cloud', in case the unthinkable happens.

A pleasant surprise has been seeing many, many CWops callsigns in my early 1980's logs. A sampling: K8MR, K0WA, AA3B, N6AA, K5KG, W9RE, K0EJ, and plenty more, too numerous to mention. Most were contest QSOs, but a few, like one with N4BP, were ragchews.

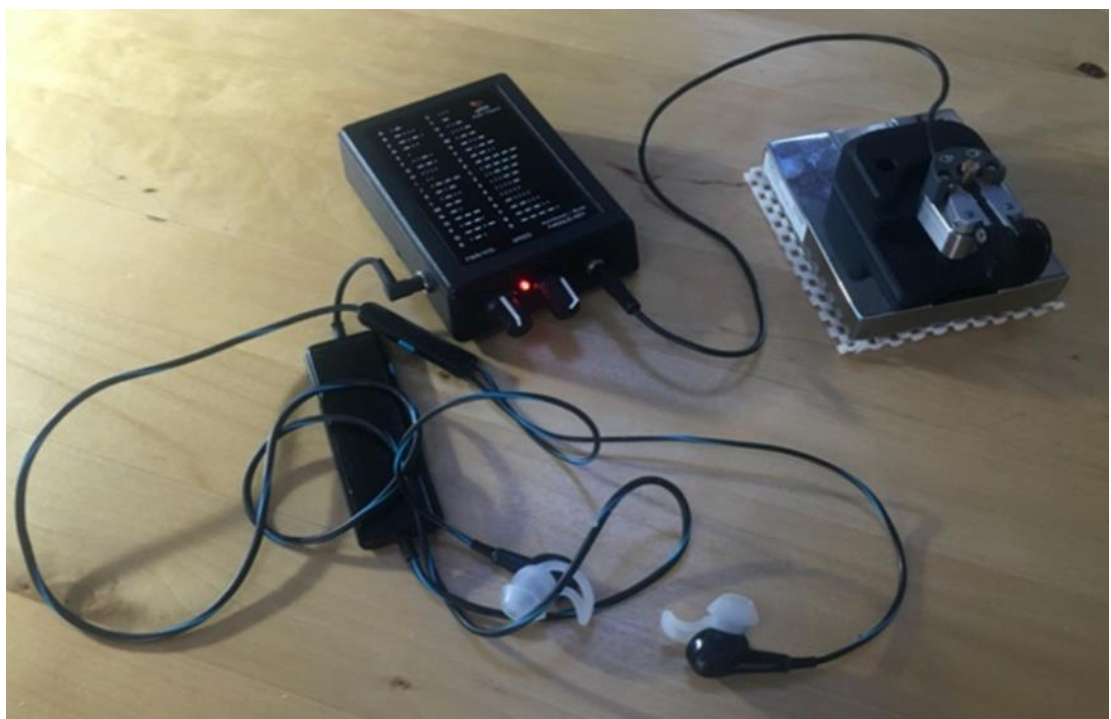
I'd like to believe that CW operators tend to have long ham careers and lead long lives, but, as we know, correlation does not imply causation. Still, one can hope!

### **Duncan, G3WZD: Universal Code Practice Oscillator & Multi-Mode Morse Tutor**

This handy device came to my attention through a post of the FISTS reflector and I thought it may be of interest to CWops, CWA advisors and their students. Let me say right away that I have absolutely no connection with, or financial interest in, the manufacturer of this device, PhoenixKitsOnline, a UK company specializing in designing and producing amateur radio kits.

Some students need or want a Code Practice Oscillator; either because they don't have a rig with built in keyer/sidetone or want something portable for practice.

PhoenixKitsOnline has one such device; the UCPO (Universal Code Practice Oscillator) This is available either as a complete kit, a module or ready-built unit. Paul, M0BMN, the owner of Phoenix and designer of the UCPO, kindly made a unit available to me for evaluation. Following some post-eval suggestions, Paul made some tweaks to hard-



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ware and software to make the unit more relevant to CWA.

The compact UCPO device auto-senses the type of key (straight or paddle) when it is plugged in and can be used as a straight-forward CPO or multi-mode morse tutor. Speed and Farnsworth spacing are adjustable. The Tutor mode features user-selectable Letters, Numbers, Mixed (letters and numbers), Pro-signs, Callsigns and Pseudo-contest, where callsigns are sent and followed by 5NN and a serial number (occasionally including cut numbers for zero and 9). The callsign mode features varying speeds and tones, which I think adds some realism.

Another enhancement approved by Paul was to fit two 3.5mm jacks, one for stereo earphones and the other, a mono jack, to provide a fixed low-level audio output than can be fed into a USB mixer for use with an application such as Skype or Zoom. The low-level output tone is clean and close to a pure Sine wave. These modifications will be included in the next production version of the UCPO. Power is from an internal PP3 9V battery.

Units ordered by CW Academy advisors & students can be supplied with a CWops logo and the next version of the label will have the 'dots and dashes' replaced by 'Dits and Dahs'!!

Prices range from £18- to £35 (roughly US\$24 to US\$47) depending on whether it is a module, full kit or ready-built unit. I assume there will be a price adjustment to include the two jack sockets as I fitted these to the evaluation unit. PhoenixKitsOnline will ship world-wide.

Many thanks to Paul M0BMN for the eval unit and enthusiastic support of CWA by incorporating the suggested enhancements!

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## CWops Elections

**Don Greenbaum N1DG**

**Chair of the Nominating Committee**

Pursuant to our Bylaws, during November we conducted an election for President and 2 Directors.

As discussed in the voting notices, Mac, NN4K, has chosen to step down from his position in favor of a new President. Your Nominating Committee recruited Stew, GW0ETF, and he graciously accepted to serve as President. Further, Nodir, EY8MM, decided to pass on running for re-election. We thank both Mac and Nodir for their time and dedication to



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making CWops such a great and vibrant club.

185 members voted in this election. Thank you for those who took part in our election.

Please congratulate Stew, GW0ETF, who will be our new President on January 1.

Our new Asia Director is Ken, JN1THL.

Winning a new term is our South American Director Matt Acevedo Von Frey, CE2LR



**Stew, GW0ETF, CWops president-elect**

The president has asked Theo, SV2BBK, to serve as Stew's replacement for Stew's term as European Director. The Board has approved this appointment and welcomes Theo to his new position.

In sum, on January 1, 2021 we will have Stew, GW0ETF as our new President, Matt, CE2LR as our South American Director, Ken, JN1THL as our Asia Director, and Theo, SV2BBK as our new European Director

### ***Don N1DG***

CWops #2 and Chair of the Nominating Committee

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## **Giving Back Update**

### **Rob Brownstein K6RB**

CWops' Giving Back (GB) program is meant to provide on-air QSO experience and practice for anyone who wants it. It was initially intended as a way for our CW Academy students to get some on-air experience. We all know that when there is activity on the bands, these days, it's usually a DXpedition pileup or a contest. Today's CW aspirants have had little chance to work others who are skilled at CW, operate at moderate speed, and are committed to helping. That's the mission of Giving Back.

The GB volunteers get on the air at approximately 7 PM local time and seek out CQers, or call CQ, and engage in routine QSOs including some conversational tidbits. Here is the current schedule:

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## Giving Back Operating Schedule 7 PM Local Time 40 m

	UTC+3	UTC+2	UTC+1	UTC/BST	UTC-1	UTC-5	UTC-6	UTC-7	UTC-8	UTC-10
<b>Mon</b>				GM0EUL		AF8A	K8UDH	NS6W	N6HCN	KH6LC
<b>Tues</b>		SV2BBK	PG4I	GW2CWO		WE5P		K7NJ	K6RB	
<b>Wed</b>				G0HKC	DF7TV	N4TMM	K5XU	KU7Y		
<b>Thurs</b>		SV2BBK		G2CWO						AH6KO
<b>Fri</b>		SV2BBK				VE3FXX	KG5U		K6RB	
<b>Sat</b>			LA1IO			VE3FXX	N8LR			

Those interested in working these folks and practicing should look for them at around 7 PM in each time zone. They will usually send a "CWA" just before signing after a CQ. This identifies them as GB volunteers and lets others know these people are there to help. Here are the results of November's GB efforts:

### Volunteer, Stations Worked

AF8A: VE1VYN, NR1Z, KY9I, W4MCX, N5SR, KI7NRI

AH6KO: WB7AEA, N6EED, AA6GA, K7NV/0, K2HZO, N7BKV, K4LAW, WB5YUZ, VE7KHI, K0AV

DF7TV: DC8VS, DL3TM, PA3GSV

GM0EUL: IK1YBL, HB9ANE, S52OW, OM3TG, IW1RU, SP9VFX

GW2CWO: SM2CSX, YO3GLL, EA1ALP, US7WA, G0LLX, I5ECW, HB9FBT, EA1CUB, IZ2EJU, SP3DGV, DL1ROT, HB9ANE, HA6OD, UT6LX, RN3ZSM, DL1NKS, SV2BBK

K6RB: K5OGX, NS7E, AE6C, W8ACM, KI6SN, N2FZ, N4FP, K2DGM, WB6DNE, KG5OUH, WB4DKF, KG0HG, W3UEC, W4WF, W0CCA

K7NJ: N4TMM, AB0TO, WA5SQA, W3KKK, K7XU, KA9DCU, N9ZXL, KB9LLD, SP7VVT, M1GEO, G4RMV, KM4FMI, N3HAM, VA3OKG, N8BEG, KW4GFK, W9ZSJ, W4USR, K7ZAD, N0ZT, WA4JYX, KE7LOY, WS7M, W6YAM, NR1Z, W1ZAH

K8UDH: WC2Y, N8AI, KG5IEE, KG4HWO

KH6LC: KA2MLH, K5TF, K6KOI, TI2KWN, NR4A, RX3APM, NP4AW, KD2FSH

N4TMM: K7NJ, WB2WGX, W4QBE, K5TSK, K5OGX, K4UYQ, W0UH

N6HCN: AK4Z, K5LN, K8CIT, W5WTH

N8LR: AA4BI, KT4AS

PG4I: EA1DBB, R1KA, EA8AF, G0MOH, SV8OVP, SV3CKF, DL3NAA, EI7KU, IZ8DFW

SV2BBK: DL1DUS, IK2ILH, F5EZU, I2QIL, I2CZQ, HB9FXU, OK1JKR, ON4XM, IK2GWH



# Hamvention 2021

[Rick Allnutt, WS8G](#)

THE GATHERING is the theme for Hamvention 2021. Do you get it?

We have spent the better part of a year without being able to get together with our friends from around the world. By the time we gather at Hamvention in May, the pandemic will be in sufficient control for us to safely gather together in 10s of thousands – face to face!

With medical advances, especially in safe vaccine development, we will first be able to get together for Gatherings of our own families. Soon Ham Radio Clubs will be able to Gather together in person. Finally, state and national leaders will open the world back up for large Gatherings like Hamvention.

Hamvention 2021 will be a Gathering that will emotionally affect us – a gathering of victory over the COVID pandemic. It will be a Gathering full of joy to remember for the rest of our lives.

The Logo of Hamvention 2021 expresses all the excitement about Gathering together at Hamvention. The location of Hamvention is shown by the red pin in Ohio. The airplane crossing the globe reminds us of the many international hams who will be able to join us in Xenia. And the simple words THE GATHERING are there to help us anticipate our getting together to celebrate Amateur Radio and our ability to be together once again.

I cannot wait to see who breaks the 40 wpm level at the CWops booth this year. Maybe more people will have spent time honing their CW skills.

I also need to have a good venue to share my “Know Code” and “May the Morse Be With You” tee shirts with like-minded CW operators.

Best 73 and Great DX until we see each other at Hamvention 2021!

**Rick WS8G** CWOPS #2308  
Hamvention 2021 General Chair



## ***Editor's Note:***

Watch an interview of CWops member Rick WS8G, Hamvention 2021 General Chair, by CWops member Tim K3LR on the [DX Engineering Facebook page](#). You don't need a Facebook account to watch.



# Get Your Parks On 2020

[Terry Griffey, KG5OWB](#)

Activators and hunters took to the airwaves in October during the annual "Get Your Park On!" (GYPO) event held October 10-18, 2020. The World Wide Fauna and Flora (WWFF) ham operators organization teamed up with the American Geosciences Institute to celebrate Earth Science Week. Educational programs were provided to K-12 students regarding responsible stewardship of the Earth. Ham operators from the US, Canada and two ops from Europe operated from references (parks, wildlife areas, etc.) for hundreds of reference activations making thousands of QSOs during the period to promote the event.



Better propagation aided in excellent European hunter participation with the top hunters logging over 100 references during the event. The top hunter for the entire event was from Europe which is a testament to the growing international interest in this annual event as well as some evidence of better operating conditions as we begin to ascend from the lowest period of the solar cycle.

All activators were required to follow their local COVID-19 requirements, regulations, and guidance. Safety first, always! Many states have restricted park/area access or require reservations ahead of time to control attendance numbers etc. However, even with the requirements and restrictions and extra planning/process, participation in the 2020 event was outstanding! Final metrics are still being tabulated, but at this writing, there were over 215 reference activations made by 58 activators resulting in over 11,500 QSOs. There were 100+ DX hunters participating in over 1300 QSOs and 280+ North American hunters making up the remaining QSOs. Better



**Editor's note: the pictures illustrating this article were provided by the author, selected from photos sent in by various activators themselves.**

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propagation to Europe from North America was VERY noticeable on 20m, between 1300z and 1600z, and activators were calling CQ from NA references VERY early in the morning to take advantage of the band openings. A few band openings on 17m and 15m were also reported and QSOs were also logged on those frequencies.



A new addition to the “Get Your Park On!” event this year was the inclusion of activators using Special Event Station (SES) designations. These “1x1” callsigns were approved by ARRL for eleven activators. Each of these SES activators created special pages on QRZ to list their individual park activation schedule as well as post activation results, park pictures etc. Several of the European hunters were able to complete QSOs with all eleven SES activators which was quite a feat! N9G (N9JF) and N3G (KB3WAV) activated the most references with 14 each. N5G (N9MM, CWops member) had the most QSOs logged with 1,628. K6G (W6LEN, CWops member) deserved recognition for working the European openings from the west coast with approximately 40% of his 582 QSOs being Europe. Top SES goes to N9G who had 14 of 16 qualifying activations (44 or more QSOs per reference) and 1,214 QSOs. Of the 215+ reference activations, SES stations accounted for 95 of the total number. SES stations completed over 6,700 QSOs for approximately 44% of the estimated total event QSOs. Most of the SES activators averaged at least one reference activation per day with many activators doing more. Since so many activators were present in the references simultaneously, a high number of “P2P” (park to park, reference to reference) QSOs were reported.



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Activations were made from all corners of North America, Canada and a couple of locations from European activators participating for the first time. Many of the GYPO activators were frequent KFF (the WWFF designation for the US) activators and hunters. However, there were a few new activators participating which points to growing interest in the yearly WWFF event and park activating in general. Activating stations ranged from QRO rigs in self-contained vehicles with large deployable antenna arrays to QRP rigs sitting on a park bench with a wire tossed in a tree and everything in-between! With the better propagation, some QRP activators reported frequent DX with western and central Europe as well as the Baltics on 20m.

Certificates are available for various levels of participation. Many qualify for the GYPO 2020 participation certificate which requires working 25 WWFF (not just KFF) references. Also, an endorsement is available for those Europeans working at least five 1x1 SES stations, or 10 for NA stations. These certificates are available by sending an email to [n9mm@arrl.net](mailto:n9mm@arrl.net) with the total number of WWFF references (and SESs) worked during October 10-18, 2020.

Plans are already being made for the "Get Your Park On!" 2021 event. The SES stations will also be included next year with some activators having already submitted their 1x1

SES callsign request to ARRL. With growing interest, it is hoped to expand the event to include more activating countries. With propagation looking better, and hopefully better health conditions, all are looking forward to next year's event and expanded participation. All are welcome to participate and join in the fun!





# State QSO Parties and the 2020 Kansas QSO Party

[Bill Hendrick, N0AC](#) aka N0W/m

When I wrote this article, I had just finished running the 2020 Kansas QSO Party and 1871 new QSOs were in the log. How did this happen?

My best recollection of how all this started was the 2012 Iowa QSO party as WI0WA/m. Dean, N0XR, and myself put together a mobile station although very crude only to find it was plagued with inverter noise. Not until 2016 did I get serious about refining the mobile station. I found K0BG's mobile website and followed his suggestions about bonding and antenna installation. Replacing the inverter with a Honda EU2000i generator solved the noise issue and supplied enough watts to run the transceiver's power supply, the laptop's charger and various accessories. The generator might seem like overkill, but it is working nicely. Since that meager beginning I have run the Colorado, Iowa, Georgia, Illinois, Kansas, Oklahoma, North Carolina, and South Carolina QSO parties from the mobile station.

I only operate CW since I have lost most of my hearing and SSB is impossible. (See Solid Copy May 2019 "Can You Hear Me Now? Coping With Hearing Impairment") The mobile radio is an Elecraft K3 at 100 watts. It rides on the front transmission hump



**The operating console.**

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and is keyed through a K1EL Winkeyer with a Bencher paddle. The antenna controllers are at the operating position and a simple Heathkit manual antenna switch allows for quick band changes.

Rig and keying control are by N1MM+ logger. N1MM+ is a pleasure to use as it handles roving easily and runs on an old HP laptop under Windows 7. I fashioned a lap board for the computer and paddles that I use while operating from the front passenger's seat.

Two screwdriver antennas are mounted at the rear of the truck bed. On the driver's side is a Tarheel M200-HP equipped with a capacitive hat and a six-foot whip which is normally tuned for 40/80m. The passenger's side antenna is an Ameritron SDA-100 with another six-foot whip that I use on 15/20m. I always run with the tailgate open to provide more ground plane area.

The feed and control lines have common mode chokes and enter the truck cab through the center sliding window. Keeping the mobile station simple means less things to go wrong while you are in the contest.

My driver is usually my wife, Donna, who is not a ham but an amateur photographer and somewhat tolerant of my contesting.



**Grand County, Colorado, Donna Hendrick photo.**

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Since these outing would not happen without her, I try to include something of interest to both of us. We usually plan these trips to include photography opportunities or points of interest spending a few days before or after the contest being tourists.

Routing is a work in progress. First is picking the QSO party and requires looking at previous 3830 reports. I am looking for lots of activity with rate. Second is tourist related activities and time of the year. Routing comes third and is the most difficult. Experience has shown that the average driving speed is about 50 MPH so in a 12-hour period that means limiting the route to less than 600 miles. I have also found leaving from and returning to lodging is much easier than checking in at the end of the day. I download my route built with Garmin Base Camp to a Garmin Drive Smart 50 GPS. Along with the GPS I follow the route with a DeLorme Gazetteer map. An Android tablet running Locus Pro alerts upcoming county lines.

### **The 2020 KSQP Contest**

The 2020 Kansas QSO Party almost did not happen for us. We summer just outside of Estes Park, Co. so usually start the contest on the Western side of Kansas. On August 10th, a severe storm roared through the Midwest and caused damage to our Iowa home and we needed to take care of business. After returning home, dealing with the insurance company and arranging for roof repairs we still had time to run the QSO party. I put together a new North Eastern route and we were ready to go. Saturday morning brought welcome rain to a parched Eastern Kansas and relief from the sweltering heat but not good for QRN. Sitting at the [Leavenworth/Wyandotte county line](#) I wondered if there was something wrong with the rig's receiver since signals seemed way down but as it turned out it was just conditions. Rates soared especially at county line crossing. After activating 18 counties I dropped my wife off at our motel got a bite to eat and re-activated LEA/WYA on 80m. At the end of day there were about 1035 QSOs in the log. Sunday morning brought another cool day as we headed for the southern edge of Atchison county. It was a beautiful day as we roved through 10 more counties. Conditions were improved and the pile-ups fierce adding 835 more QSOs in the log. This was the first year I made it to all my planned counties and had to stop in Doniphan county to let the clock run out. As a note for chasers, if you zero beat you better be loud but calling off zero beat frequency increases your chance of getting in the log sooner.

Contesting mobile is an adventure. My ¾ ton Dodge Ram truck is not the smoothest riding vehicle and most roads are curvy and bumpy. Getting jounced around while keyboarding is a recipe for many keystroke mistakes. As I mentioned before, routing is a challenge and sometimes I must check the GPS, read the map, and operate all at the same time. It can get hectic! Power line noise is a big problem especially going through towns. There are times all I can do is call CQ and hope for loud callers. The 2020 Kansas QSO party was a personal best for me.

### **A Special Word of Thanks**

- My wife for driving and putting up with my antics.
- All those that QSOed me. It would not be fun without you.
- The contest organizers that generate the enthusiasm.



# An Inexpensive Arduino-Based CW Keyer

[John Silzel N6HCN](#)

## Why Homebrew?

In a world of cheap, reliable, off-the-shelf ham gear, why homebrew? Why restore a classic automobile? Why re-finish a nice old coffee table? We are meant to work with our hands and experience the pleasure of building something. Especially during the COVID-19 lockdown, life is better if you have a project going.

Besides, you can build a keyer to suit your preferences. Add enough memory to send *War and Peace* for head copy practice. Add inputs for multiple



paddles, your entire bug collection, and that straight key on your shelf. Connecting mechanical keys to a microprocessor lets you use firmware tricks to tame troublesome contacts or rigs with keying quirks. And since keyer features are mostly programming, you can often add new ones without picking up a soldering iron.

## A Keyer is Born

Shopping online last December, I decided to get myself a “stocking stuffer”. In ten minutes on the All Electronics website, I had nearly everything needed for the digital part of the project for \$25. On a whim, I added a \$3 SD card reader board, figuring I could find a home for one of my old SD cards that are too small to use in a camera, but overkill for a keyer.

For simplicity and low cost, it’s hard to beat the Arduino, which features easy on-board programming, serial USB, on-board voltage regulation, and a free programming environment (IDE). And there is a vast amount of learning material on the web, much of it aimed at non-technical folks. Even my college students with no programming experience had Arduinos blinking LEDs within an hour of opening the box. Blink a transmitter (with a little finesse) and you have a keyer.

## C Programming? Me?

On this project, you will spend more time programming than soldering. But learning C is easier than learning CW! My advice is to plug the Arduino into your PC, download the free programming environment, start with the “Blink” example, and work up from there, making changes to existing programs to see how they work. Just like CW, you will learn faster by a little reading but

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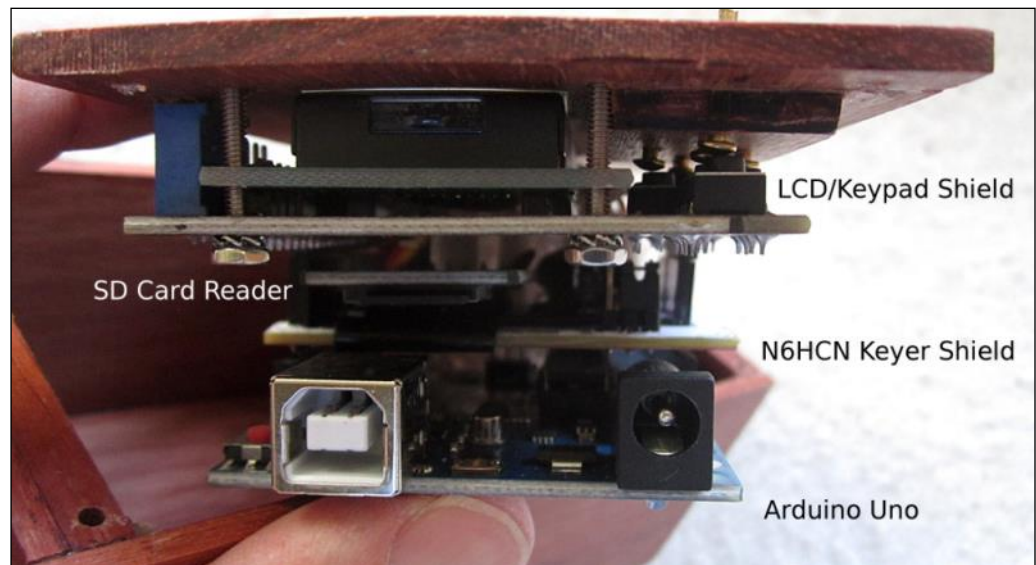
lots of practicing. If you can, find a programmer Elmer. Be sure to read the basics of using interrupts, these are the secret to a responsive homebrew keyer. Tips to program lmbic keying are provided in Reference 1.

## Connecting Keys and a Rig

You'll need a way for the Arduino to key your transmitter, produce audible sidetones, and accept input from keys or paddles. A good solution is to build a *shield board*, a printed circuit board

(PCB) that has pin headers that align with the Arduino main board. These headers feature sockets on one side of the board, and pins on the other, so that shield boards may be stacked vertically above the Arduino in any number necessary to provide the needed functions.

The LCD keypad is on the top of the stack so



that the display and buttons are accessible, leaving the keyer shield sandwiched between the LCD shield and the Arduino (photo above).

I etched a shield board for my keyer, but Google "Arduino Proto Shield" and you'll find pre-drilled perfboards of exactly the correct size, complete with the pin headers. In my circuit (Reference 1), the paddles ground Arduino pins through 470 ohm resistors, and the Arduino output pins key the transmitter using an open-collector 2N3904 transistor switch. A resonant piezo element connects directly for sidetone. Your board might be more complex, or include SD cards, ethernet, Bluetooth for remote keying, or other craziness.

## Features, from the Sublime to the Ridiculous

Adding features is fun, and fast, especially if your keyer's case exposes the USB programming port. More ideas are in the reference (see sidebar, next page).

**Dah to Dit Ratio:** Vary the standard 3:1 dah to dit ratio. A ratio of 2:1 is hard to copy, and values above 5:1 sound like a bug operator with "swing". Honestly, I am not sure why anyone would want this feature, but you *could* use the *rand* function in C to simulate a human fist.

**Contest Serial Numbers:** Use the LCD Keypad to send, display, increment, or reset a contest serial number.

**LCD Backlight Control:** Sleep the LCD display to save power, adjust its brightness, or even flash the display to signify something important. My display goes off if the keyer is idle, is dim, if I am

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in a QSO (see the ID timer below), and brightens if I press a button.

**ID Timer:** My keyer starts a timer when I first send a character and resets the timer if I am key-up for 10 seconds. If the timer ever reaches an (adjustable) number of minutes, the display starts to flash. Pressing any button resets it.

**Morse Keyboard:** It's easy to send characters to the Arduino over its serial USB cable. My keyer watches for these, translates them to CW, and sends them at whatever WPM I have set. Point a terminal app (such as the Arduino Serial Monitor) at the Arduino's USB port, and you have a Morse keyboard.

**Memory Keyer Functions:** You can implement SD Card storage and recovery of large amounts of text. But I decided to use USB and move these functions to a PC, which supplies function keys and logging capability.

**Head Copy Trainer:** Store an e-book text (from Gutenberg.org, perhaps) on the SD card or use the PC to feed it to the keyer while listening using the piezo speaker. Lose that pencil and your head copy speed will grow quickly!

**Rotary Encoder Control:** A rotary knob control for keyer WPM is faster than rapidly jabbing the keypad button to match a calling station's speed. With a digital rotary encoder, you can add this capability.

**Morse Decoder:** Don't even think about it!

Download the PDF referenced above and take a look. You may have your next project ready to start.

### ***Editor's Note:***

A pdf design description of the N6HCN keyer, including photos, schematics and programming ideas [can be downloaded from the CWops website.](#)

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## **Why We CW?**

### **Rob Brownstein, K6RB**

After more than 62 years of hamming – mostly CW – and seeing recent articles that predict a ham radio future that is largely digital and EMCOMM oriented, I feel compelled to weigh in. These days I frequently work people who were born years after I started pounding brass. Their frames of reference are certainly going to be different than mine. Their experiences on the bands, using different modes, are also going to be different. So, risking being called “an old fuddy duddy,” I want to make my case for why we do what we do, and why I don't think we will end up in history's dustbin anytime soon.

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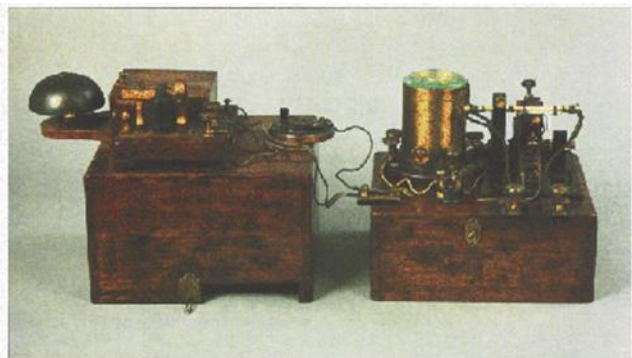
Each of us began our radio sojourn at different times and under different circumstances. Just read through those capsule histories each month in Solid Copy. Yet, here we are, in 2020, carrying on with Morse-encoded and decoded CW signals, just like I did starting in June 1958. Surely many things have changed since 1958. I haven't read a paper newspaper in probably ten years. I haven't watched a network TV show in probably 30 years. And, I stopped reading paper books a few years ago and now read most everything on an iPhone or iPad. If you would have told me, in 1978, that I would be doing all these changes, I would have questioned what you are smoking or drinking. Yet here I am.

But, despite all these changes, I still get on the air, with a radio capable of sending and receiving CW signals, connected to an antenna, and engage in two-way exchanges with other people doing the same thing. Before I get to why I do so, let's look at a capsule history of how we got where we are.

## Some history

I'm not going to bore you with names and dates. Suffice it to say that near the end of the 19<sup>th</sup> century, we found that we could send encoded signals, wirelessly, to other places on the planet. Those first signals, by the way, were not the familiar tones we now hear. They were the familiar clicks that wired-telegraph telegraphers were used to hearing. A device called a "coherer" would, in the presence of an electromagnetic wave, change from high to low resistance, temporarily, and allow a current to close an electromagnet producing a "click." It was very similar to the good old telegraph system except instead of wires; it used "radio" waves to make those clicks. And, instead of just one receiving operator hearing those clicks, many operators could hear those clicks at the same time.

Wireless telegraphy was not focused on terrestrial applications. Wired-telegraphy already had that covered. Instead, it was focused on ship-to-shore, and ship-to-ship communications applications. Before radio, when a ship left port, and was no longer visible, it was incommunicado until it was sighted nearing another port. If it sank, no one knew unless survivors later were rescued and gave a recount of what happened. With wireless telegraphy, a ship could stay in communication even when it was no longer visible.



Marconi's wireless receiver, built in 1895.

*Source: The Guglielmo Marconi Foundation: Historical Museum*

In the early 20<sup>th</sup> century, a UK inventor invented the first vacuum tube (a rectifier) called a "valve." It was a diode that allowed current to flow in one direction only. Soon after a third electrode was added, and the device could now "enlarge" a current's amplitude while preserving its time-varying characteristics. Like a photographic enlarger, this amplifier simply made the input signal larger but its "image" stayed the same.

Once we had diodes and amplifiers, it was possible now to dispense with broadband spark trans-

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mitters and coherers and replace them with electronic oscillator/transmitters and receivers. That's when the familiar tones came into existence.

Like the wired-telegraph operators before them, wireless telegraph operators used hand keys to encode the CW signal. A manual key, as such, has an inherent limit to how quickly it can be keyed which in turn establishes a limit to how fast a message can be encoded and sent. The invention of the semi-automatic "bug" key helped to reduce fatigue and increase speed. Later, the invention of a fully automatic keyer further reduced fatigue and increased speed.



If you were to listen to a recording of a conversational QSO done in 1960 using tube-type gear and a keyer and compare it to the sound of a contemporary QSO using solid-state gear and keyer, you would hear very little difference. Thus, for at least 60 years, from a sound impression perspective, not much has changed.

What has changed, though, is the environment in which these CW signals are now sent compared to those sent in 1960. Our current environment is much noisier, electrically speaking, than that of 1960. And alternative means of communications abound compared with back then. In 1960, if I wanted to speak to my friend on the other side of town, my choices were to get on my bike and ride over to his house, or pick up my telephone, dial his number, and talk to him. If speed was of no consequence, I could drop him a letter or postcard. Today, I can email him, TXT him, do an audio/video call using Skype or WhatsApp. And here's the best part, whether he is two miles away or 12,000 miles away, I can still do all of those same things.

So, why in the world would I want to acquire ham radio gear, put up an antenna, and attempt to communicate using Morse-encoded/decoded CW signals?

### **Some perspective**

Going back say 200 hundred years, during a person's lifetime, not much had changed. You communicated locally by visiting someone, and you communicated over distance by writing a letter and mailing it. Most communication in those days, other than newspapers and town-hall meetings, were one-to-one, point-to-point communications.

With the advent of the telephone, that changed. If you could afford one, you could now talk, one-to-one with someone (if they had a phone) over a respectable distance. If they had no phone, though, you were stuck with traveling or writing a letter.

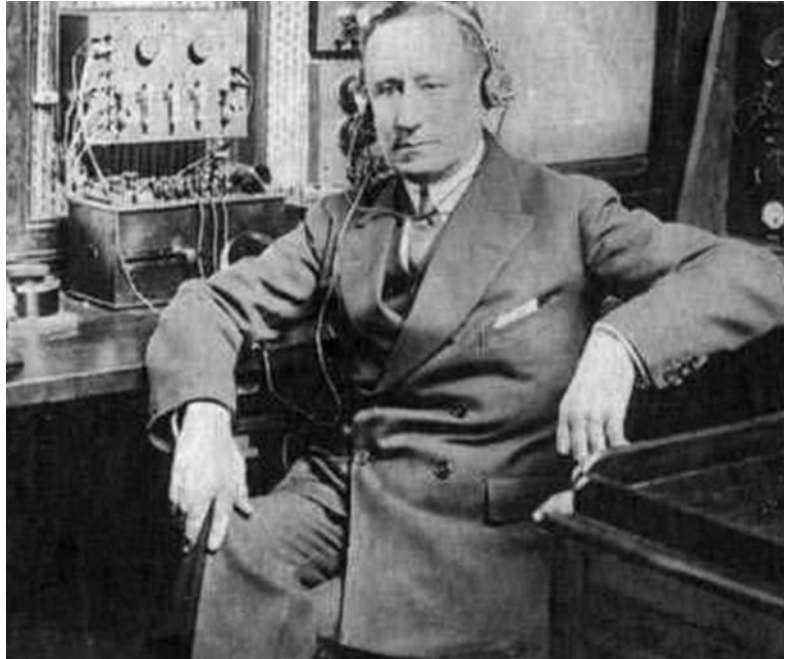
In the early 20<sup>th</sup> century, though, radio provided a means for one-to-many communications over large distances. At first there was a bit of chaos as radio was unregulated and hobbyists (hams)

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and commercial entities were contending for spectrum. The Federal Radio Commission (FRC), later superseded by the Federal Communications Commission (FCC) imposed regulation over who could transmit wireless signals, and what frequency or frequency band they would have to use.

It didn't take long for commercial radio networks to emerge and by the 1920s, radio programming in first-world countries was well at hand. In the 1930s, prior to World War II, radio was used to great effect by Churchill, Mussolini, Roosevelt and Hitler. Never before had a leader of a country had a means of communicating with huge groups of countrymen.



Meanwhile, the hobbyists (hams) who were given harmonically related spectra to play with first relied on Morse-coded CW signals and then began adopting voice-modulated techniques. The ham radio I encountered in 1958 had a lot of both – hams operating CW and hams operating AM phone. Because AM phone took up a lot more bandwidth than CW, the FCC and other IARU entities typically gave wider swaths of bandwidth to AM users than to CW users.

By the 1950s, some ham-radio use patterns began to emerge. CW operators and AM operators mostly engaged in two-way conversational activity but periodically events took place whereby participants competed to see how many quick-exchange QSOs could be made within a set period of time. The other big activity was trying to work as many hams in as many different countries as one could. The ARRL's DXCC awards were highly coveted.

From the 1950s until the mid-1960s, CW and AM were the primary modes although beginning in the early 1960s, suppressed-carrier single-sideband (SSB) transmissions began to grow. They had the advantage of higher power efficiency than AM and better spectrum efficiency, too. Furthermore, the problem of carrier interference from close-by AM stations was no longer an issue as the carrier was suppressed, not transmitted.

With increasing interest in SSB mode, and with the ability to use the same sub-systems for both transmitting and receiving, there was a surge in development of so-called "transceivers" where instead of using separate transmitter and receiver, one could use a single device for both. At first, transceivers were relatively expensive. But, with Heathkit's SB and HW series gear, prices became much more palatable, and many more hams began trading in their separates and switching to transceivers.

Virtually all of these transceivers had both CW and SSB mode capability, but the popularity of SSB

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for DXing saw most mode switches sitting in the SSB position. Prior to the explosion of lower-cost transceivers, most European amateurs used CW mode because AM modulation was expensive and power inefficient. But once they had access to lower-cost US and Japanese gear, one saw a shift of European DX activity to SSB from CW, or, at least, equal measures of both.

During this same period, the VHF and UHF bands, which had hardly been used also saw a surge in activity. On 2 meters, in particular, solid-state hand-held devices became a popular means for communicating locally by making use of a centrally located “repeater” that would receive and then retransmit a 2m FM signal. Coupled with increasing use of antenna-restricting HOA/CC&Rs in new housing in the US, people who may have been inclined to buy AM/CW gear and put up antennas often moved on to other things or bought 2 meter HTs and became the so-called “shack-on-a-belt” new hams.

### **Bringing us back to now**

There's no question that ham radio is ageing. The average age of hams has increased inexorably since 1970. Those who see doom-and-gloom assume that as our generation moves on to that big ham shack in the sky, HF CW will become a footnote in a history book. And they may be right. But I'm not so sure.

First let me point out that in the late 19th century, with the shift from sailing vessels to steam-engine vessels, people said sailing and sailboats would become historical artifacts. Consider this, though, today there are more boats with sails than ever before in our history. Today there are more people who know how to sail than there were 50 years ago.

In the mid-19<sup>th</sup> century virtually every item shipped across an ocean came by sailing vessel. Today, virtually no items are shipped by sailing vessel. Their use in commercial shipping is essentially zero. Yet, there are millions of sailboats and sailors. Why? Because it's a skill that is challenging to learn and enjoyable to practice. Hold that thought.

Ham radio was never a primary means of communications. It was always a hobby. It began with CW, then added AM phone, then added SSB phone, then added computer-generated digital modes. Although SSB activity appears to be waning and digital activity is swelling, CW activity seems to be holding steady or growing. This is particularly true for radio sport.

When I sit down at my paddle, or bug, or J-38, I don't chide myself for doing something that is an anachronism in today's world of global, hand-held communications capabilities. I don't weigh what it costs me to do a CW chat with some guy in Tokyo versus calling him on Skype or texting him. Of course, it's faster, easier, and more reliable for me to Skype or text him than to try working him with CW with QSB, QRM and QRN. So, why do I do it? Because acquiring the CW skills is a challenge and enjoyable to practice. Sound familiar?

### **More perspective**

Except for Covid-19, there are still a lot of people that like to go ballroom dancing. There are people who like to ride horses. There are folks who go backpacking. Like those activities, to many

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people HF CW ham radio is just plain fun. Yes, you do have to work to acquire those skills, but once acquired, you can sit back and enjoy chatting, contesting or chasing DX with your fingers.

Finally, one of the more recent ham-radio activities is Summits on the Air (SOTA), where people climb to the peak of a mountain, set up a portable antenna, and take out a small transceiver and proceed to work a bunch of people. Some of those people who climb or are worked are interested in collecting summits. Some of them just blunder into the mix and add a QSO. What a great way to combine the fun of exercise, being in the outdoors, and ham radio. But don't try that with digital because it means carrying a computer up there with you. And don't try that with SSB because, pound-for-pound, with the low power and greater bandwidth, the signal-to-noise ratio may limit how many QSOs you'll have. After nearly 10 years of advising CW Academy groups, my subjective finding is that at least 25 percent of the more than 200 students I've worked with came to CW by virtue of SOTA. My feeling is that when younger folks see the fun you can have using CW for SOTA, or radio sport, or just chatting (like texting), there will be some who will rise to the challenge of learning Morse and getting on the air. There may never be as many young hams as there were in my novice days of 1958, but I wouldn't bet that HF CW will simply shrink to nothingness over time.

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## A Summer for Station Improvements

[Jack Schuster W1WEF](#)

It was around 2004, when WV1K (SK) told me that my picture was in "Ham Radio for Dummies". Yeah sure...Matt was pulling my leg. A few years later I spotted the book on a flea market table, and flipped through the pages. Sure 'nuff...there I was in my Connecticut home station. Instead of picturing me as an example of a dummy, Ward N0AX used the photo of my station as an example of good ergonomics.

My family has been spending summers on Cape Cod for almost 50 years. I've always had some kind of station, starting with attic antennas, but I never did a whole lot of operating from the Cape until this year. Thanks to what has become one of my favorite contests, with more time at "home" than ever, I really look forward to the Wednesday CWTs. My Connecticut station is a little more capable than my Cape station, but in a summer of looking for projects to keep me busy, I made a few improvements, especially ergonomically, that I thought might be of interest to newer hams.

Good ergonomics means designing your station for comfort and efficiency. It means minimizing

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fatigue from eye movement, from over reach to tune or change bands, and a comfortable chair at the right height. I have tried to optimize these things in my little Cape station, without automation beyond what N1MM does easily. (For example, when I change bands on the radio the logging program automatically shows the new band and frequency.)

As you can see in the photo of the shack (right), I use a laptop for logging with N1MM. The laptop is at center stage, right in front of me. I log, I hit F keys, I hit the escape key on the laptop. F1 is programmed with the CQ having my call signed twice. Sometimes I have a gut feeling that someone is waiting to call me, so I hit Escape to end the CQ after my call is signed once. F3 is programmed with TU W1WEF, but when I know for sure someone is waiting to call, I hit escape after the TU without signing my call. But I digress...



My IC7300 is to the left where I can tune it with my left hand and see the very handy band scope. The antenna switch above the radio is within easy reach to minimize band change time which takes about 3 seconds. Just above the laptop is my rotor control box which I can control with my left hand while typing on the keyboard with my right or changing amplifier settings. Most of the time the rotor is pointed due West in CWTs but occasionally I'll go a bit to the North or South when I think it might help. Florida stations are usually loud here with the TH6 due West. The TH6 is at 53 ft.

To the right of the rotor control is my Daiwa Wattmeter/ SWR meter. At a glance I can see that I have the right antenna selected because the SWR is normal. My paddle is to the right of the laptop, set back far enough so my forearm rests comfortably on the desktop. I do a mix of manual and F Key sending and find there are times that I can go back faster with the paddle, like when I have a typo that I can be correcting with my left hand while sending the correct call with the paddle.

A new addition this year was the TL922A amplifier. On July 8 in the 1300 session of CWT it seemed like everyone I called on 40 went back to someone else. It was then that I put a message out on the [YCCC](#) reflector asking if anyone had a small amp they wanted to sell. I received a ton

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of replies and wound up with this great old amp. As you can see, I had to elevate it so I could slide the paddle underneath in order to be able to rest my arm comfortably. The pre-marked labels on the dials allow fast band changes without tuning. Ironically at the 1900Z session that same day with low power, I had my best LP hour ever with 151 Qs, all on 14037! What fun.

One other thing worth mentioning is lighting. I have my desk lamp situated so I can see the keyboard with my aging eyesight. If I don't have a well-lit keyboard I make even more mistakes than normal. That's exactly why I've been doing so poorly in the Kansas City Contest Club pileup contests in Dayton the last few years...hi (special mention for K0VBU Bill and Russ K0VXU who have provided that Dayton highlight for years)

I made a few other improvements this past summer. I reworked my 40m dipole so it runs from the top of the tower to the tallest pine tree on my lot. I managed to get the rope right over the very top.

After taking a nap one week and getting up for the 0300Z session of CWT, I found that 40 dried up at about 0345Z. I figured everyone had gone to 80, but I had no 80m antenna. Many guys have had great success using what has become known as a K2KQ Double L. The antenna looks like the letter "C" with as much vertical as possible fed in the center, and the extra needed length horizontal at the top and bottom ends. I had tried it once here but because of interaction with the tower it didn't work out. I surveyed my back yard and found two tall trees about 75 feet apart. I put up what I'm calling a "Lazy K2KQ," like a "C" facing down. The antenna works amazingly well!

One last project here this summer has been to improve the RF ground in the basement shack. I have been tied into the house ground rod about 25 feet away, but now have an additional ground rod three feet from the operating desk, going through the basement floor on an angle, in order to be able to drive it in after drilling thru the concrete with masonry drills. The new rod is connected with braid to the original house ground, as well as to a copper strip across the back of the operating position. The radio and amp are grounded with braid to the copper strip.

If you noticed the coax to the left of my lamp in the shack photo, that's my quick disconnect for my antennas. I just yank on the coax which has a quick disconnect PL259 fitting that just slides over the mating female. With the threats of thunderstorms (that hardly ever happen) all summer I try to remember to disconnect the coax whenever I leave the shack. I also disconnect the rotor control cable using a 6-pin trailer connector.

Time to find more projects!



# Solving a CW Problem

[Dave Clemons K1VUT](#)

About a year ago I began to receive reports of clipped CW, with part of the leading letter of any transmission missing. Coincidentally this was also when I began to regularly set my CW speed at 31 wpm in CWT contests. The following account will explain what steps I tried to fix this problem, and how it all turned out.

First, an explanation of my station setup. The main transceiver is a FlexRadio 6700. Originally, I used this as one radio, with an old ICOM 7000 as a second radio. The clipped CW problem only happened on the FlexRadio. I set up my 2 radio station as I did in the 1990's: that laughing sound you hear is CWops member Mike VE9AA, and probably rightfully so – he thinks I should enter the 21<sup>st</sup> century and get a station controller! The headphone audio is switched from LEFT-RIGHT-BOTH radios via an old RS stereo selector switch box (W5ASP design in the 1990's). CW is generated in the N1MM Logger+ program, and sent to an external WinKeyer, which is then switched via a toggle switch to one radio or another. A Bencher key is wired in parallel. For various reasons, I do not use the computer to control the FlexRadio but purchased a Maestro interface. The display on this device is the best thing since sliced bread!

Subsequent to the start of the CW problem, FlexRadio released a new SDR 3.x version of software which allows the FlexRadio 6700 to act as two separate radios. I upgraded to the new software version and added another Maestro to control the second radio. Once I began to use this software, the problem showed up on both Flex radios.

After I had become known as "A1VUT" (using CWT exchange "EAVE 1878"), I Googled the issue and found FlexRadio online discussions about this problem. The problem was noted at CW speeds in excess of 28 wpm). The people in the discussions had addressed the problem by setting the TX DELAY much higher than the recommended 50 ms, some had set it as high as 300 ms. FlexRadio was also notified of the problem by a number of these people.

I tried a number of things to fix the problem. I set the TX DELAY to 250 ms, which makes high speed exchanges really annoying on both ends, although it mostly fixed the problem. Worse yet, I found that the FlexRadio 6700 sidetone is heard as if there is no delay, while the Maestro shows my delayed transmitted signal correctly. I pored over the N1MM Logger+ documentation, mostly finding WinKeyer settings which are not recommended on today's radios. I tried a lot of them anyway but found the documentation to be correct. Some settings caused the problem to be worse. I had the same experience with various similar settings in the FlexRadio menus.

The problem was originally reported to me by several CWops members. Believe it or not, I truly appreciated hearing it from my fellow CW operators. One cannot fix a problem of which he is unaware. I don't want to mention names of those who reported the problem because I will certainly end up forgetting some. You all deserve a big 'Thank You'. I started a conversation on the reflector about the problem and received some good advice. Unfortunately, the advice did not work particularly well, though not due to any fault of those offering it. Frank W3LPL had the

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most elegant solution, why not use the PTT of the WinKeyer to hold the CW transmission through its full message? I wired it to my CW toggle switch, only to find that both radios cannot be set up for PTT simultaneously. (The radio to get PTT has to be configured in the radio menu, not something that can be reasonably done during SO2R operations.)

Eventually I just settled on using the TX DELAY option and the PTT set to one radio. At 250 ms, the clipping did not occur at the beginning of a transmission, but occasionally the middle or end of a transmission would have some missing parts, often described as choppiness. K1VUT would turn into K1VUE on the radio which had the PTT, and surmising this was related to interaction with the 250 ms TX DELAY, I removed the PTT connection. The last suggestion came from local CWops member and friend, Marty N1VH. Marty queried me on my station setup. My WinKeyer was far enough away from my computer to need the original USB cable plus a USB extension cable. (I did add ferrites to the USB cable). He told me that the USB extension was probably the culprit since the pair of cables was exceeding the workable length expectations of USB cable. I removed the USB extension, rerouted the WinKeyer and the remaining problems disappeared.



Over the next few weeks of CWTs, I slowly reduced [The Flex Maestro](#). the 250 ms TX DELAY until I got down to 110-120 ms. At this point I occasionally saw something suspicious on the Maestro during my transmissions, which was subsequently reported to me by a local CWops member. The choppiness had returned. I reset the TX DELAY to 150 ms, hopefully that will be sufficient for good CW transmissions all the time, not just most of the time.

My hope is that this issue will eventually be fixed by FlexRadio. I did speak with a representative at the ARRL Convention in Boxboro MA about 2 years ago. He said that a 50 ms TX DELAY should be adequate, unfortunately that is not the case. The FlexRadio 6700 is a fine radio, but I do find the use of the TX DELAY to be annoying during fast exchanges. (The FlexRadio Maestro interfaces are also a thing of joy to use.)

My thanks again to all who made observations and offered advice, including those in our local club (K1USN Radio Club), some of whom originally sponsored me for membership in CWops.

# CW Academy

**Kate Hutton K6HTN Joe Fischer AA8TA Bob Carter WR7Q**

The September-October 2020 CW Academy semester has ended and the results are presented here. We sincerely congratulate the many students who successfully completed a class. We also express our deep appreciation to the advisors who volunteered their time to lead a class and help their students to succeed.

- Interesting Statistics:
- We had 81 advisors teaching 95 classes.
- There were 804 students registered of which 602 verified, 141 declined and 61 did not respond (significantly reducing the “student chase”).
- Of the 456 that completed the classes, 396 were evaluated promotable, 35 not promotable and 25 withdrew.

Advisors leading three classes:

Ed, K6HP; Joe, KK5NA and Buzz AC6AC

Advisors leading two classes:

Dallas, K1DW; Kate, K6HTN; Mark, K5GQ; Mac, NN4K; Joe, AA8TA; Bill, K0MP; Gary, N8LR; David, KK6M; Roger, MI0WWB; Tom, W0FN; Mike, KI7OMH; Tony, VE2KM; Rick, W7VQ and Tom, K7MOZ.



Advisors leading one class:

Rob, K6RB; Andy, WB7DKZ; Keith, G0HKC; Ron, VE3FXX; Bill, W0EJ; Alan, AD6E; Rich, K1DJ; Bob, WR7Q; Bruce, K1BG; Ed, N9EP; Terry, WB0JRH; Jim, AA5W; Bruce, K8UDH; Eric, NM5M; Bill, W3PNM; Al, K0AD; John, AJ1DM; Duncan, G3WZD; Dennis, K2SX; Jim, N7MU; John, N8AA; Quinton, NU7Y; Chris, W4ALF; Carole, VA7QCE; Phil, W2OZB; Carl, W4IF; Tim, W7EEE; David, KT5V; Tom, KV8Q; David, W8OV; Ted, WA3AER; Tom, WA9CW; Hanz, YL3JD; Bill, AG4EA; Ryan, NN7M; Serge, NS6W; Mike, N7ID; Bryan, N3FZ; Kevin, VE7KHI; Kenneth, WF6F; Ken, AA5CF; Scott, AA9SN; Ken, AC5EZ; Jed, AD7KG; Jack, AK7O; Roberto, IK1HGE; Jerry, K0ES; Craig, K1CHM; Michael, K1LHO; Peter, K6PB; Roland, K7OJL; Gregg, KA7MDM; Ken, KD2KW; Charles, KG5FZ; David, KM3A; Bill, N0DNF; Mike, N5WNG; Jamie, N6JFD; Jack, N7JP; Chris, N8AI; George, N9DXP; Konrad, SG6GIT; Mark, W8EWH; Doug, WA6L and Jim WT8P.

Advisors leading their first class this semester: K7MOZ, AA5CF, AA9SN, AC5EZ, AD7KG, AK7O, IK1HGE, K0ES, K1CHM, K1LHO, K6PB, K7OJL, KA7MDM, KD2KW, KG5FZ, KM3A, N0DNF, N5WNG, N6JFD, N7JP, N8AI, N9DXP, SG6GIT, W8EWH, WA6L and WT8P.

Several people assisted these advisors as associate advisors. Their assistance is greatly appreciated.

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Students completing an Advanced class (47): AD4UM, AE7EU, AG4CC, K1MT, K1OKD, K4JC, K4LW, KA1YQC, KA7GPP, KD2ST, KI2N, KI7WNS, KX4FZ, N8HZM, NA6Z, G4HZE, M0RJ, K6TOR, K6ZD, WO6W, WR7T, WU6P, AD4N, KD4Q, KE2WY, KF6C, KJ4YM, N3EE, NK1N, VE3RDE, W3BG, W3GYM, W3UY, AB5M, K8UDH, KE5C, KF5WJ, KG5IEE, N5AAS, KG6NRV, KI7RS, N1CCK, NJ6Q, WB7BWZ, DF7TV, KC3FQF and KY9I.

Students completing an Intermediate class (62): ZL2GVA, AG7TX, AJ6AN, AJ6CU, K6AUR, K8OIP, WA7KJ, K1RID, N4LAG, VA3DKL, W0HY, DL3TM, M0XUU, PA2ST, SQ5VCO, G0ODP, LB1FI, M0SRZ, N2GG, W0GAS, K5HEM, K9ACM, KC5PL, KE0YGZ, KG0GGY, KV3T, N5EP, KO4AXD, WQ6Q, K1ARR, KI5DDO, N0ZT, K7VW, KB6VME, KG7YU, W6BRY, AA4MJ, N4UZZ, K0HNL, K4EMF, KB3SAR, W2NWU, K8TR, KI6M, W2AFE, W7WXX, AA4BI, KC4T, KE3MI, KW4WA, N1ILZ, K4KO, K7ULM, K9PLX, KB9LLD, KE6JAC, NE5ET, AI6IE, N0HBJ, W4MSL, WB7GR and WX9U.

Students completing a Basic class (107): AJ0V, K5PSN, KI5LOV, KN4UDT, NI4D, WA0YMC, WO7Q, KD8OOK, KK4QHE, KN4FIR, KV3U, AK7PM, KC9MJA, KD2QDD, KD8RGW, KE8BWA, KF6COZ, KN4YRM, N4HOE, KL0DR, KL2S, AH2DY, KE7MPO, David Sadkowski, K4PZ, K5FGH, KD2SSS, W1RBG, W9MBA, CA3CFM, KB2EJU, KC2BE, VE4TLA, WB8YHD, K6EEM, K8CKC, KN4CQB, OA4DVG, PU2THN, W3KK, WD9CUU, KM6QYV, N1LGQ, K1LOL, AG6P, KM6TVJ, G4PSS, LB5DI, M0CDL, M0ZXW, MM0WXX, PF0X, SP1MM, SP6SUD, AF7MM, K6LP, KB7YS, VA7RPE, W6HMN, W7GFW, AA6TQ, AJ6ET, KF7QNS, KM6CXQ, N6FP, WM7X, KI9I, LU6MAS, N1MDX, N4ELC, WA3GPP, K5LNR, KD2RKN, VE3KAE, AB5XS, MIROCK, N1MST, Nicolo Girasoli, W8DSN, KE7TR, KR7KR, N5DCH, NN0G, KD7RUS, KF7HP, KJ7OCZ, NF6N, W5HPQ, WJ0C, K4DKC, KC9AKW, N4GRC, AA7ZZ, K5PCJ, KD9LRB, KI5JH, N9EEE, W4THI, AA9IL, KJ4WNA, KJ5T, KN6GUJ, KM6VPJ, KN7A, WB6POT, WM6T and Candice Lee.

Students completing a Beginner class (169): AB7HA, K9VYH, KB3JIN, KN4RWD, VA2SAT, W1AFP, AJ5BS, KI5GGP, W9ZA, K7AEM, W5BRU, K7PKA, EI2HIB, M6AAO, PA2G, K5OCH, KE0IKG, KG5STP, KI7MJR, K0BRE, K6ABM, KJ7IGZ, W1SAV, W6OAK, W7DJS, Sophia Lupton, N0WOI, W9GGG, AC3SS, AD8FA, K8ZT, KX4TL, W4BNR, K6KZO, KJ4C, KN4ODM, KO4AQI, N1NS, N1YWS, KA0TZ, KC8BQN, KD8EUP, KJ7GVY, KE0EKF, N4MAW, Nethra Ramakrishnan, AF6TF, W2RY, KN6BIL, N7IMB, HI8K, KD2JWH, N1JSO, AD6IZ, AE7GW, AK4FA, K6RGD, KM6ZNN, N6DYL, W6OLI, AK7VV, K6CTX, K6EH, VA7ITM, AC2RV, AE5NA, VE6TMJ, K5IJD, K5TRP, KD0YMC, W5MBH, K6VIZ, K7ZZQ, N6EO, AA6PM, AJ6EE, KE7JIM, AC0MG, N2ZIP, AC0VM, KI5CDW, N1AOK, W9DEE, K4CBW, N7WWA, W8QE, KB5HXT, KB5KN, KC9YJP, N4DIN, W9JRM, KC1MVP, KD4IZ, KN4POL, CD3FJK, K4EMU, KD8VCB, AG7QO, KD6CDC, KD7MAX, KJ7KNR, VA3IWW, VE7GNR, AK2M, K8WZ, KC3OVA, KE8LDB, KK4KFG, KO4AIE, N8EI, N8OSF, W3KCK, W9PN, KD8VYT, KT9N, W1AGE, K0DOM, K5HUN, K9AIM, KW4CZ, N4WRT, VE1PDL, W1IP, WA3KD, DO3SE, LB9TH, MI0NUM, K3KZU, K8RRC, KA1YBS, KA9LWK, KC1LQT, 9A6ZE, KD6IFG, M0HZZ, WA4JK, ZS1ADC, ZS5ADS, K0WET, K7MNF, KC9AD, KE0ZZM, KG7MLL, WG2H, Eric Johnson, VE1GMP, K0LAR, KF0AFQ, N0RPM, WB8BCU, AE7TD, K6IZ, W6ELA, W7BIM, KB0JXR, KV4NK, VK5PL, WA0PAC, KC1MBR, KI7VUX, KN6IPE, W5EAL, KJ7IZT, KK6KOI, KM6NEP, W7PEZ, WS6Y, PD0SOT and S55AC.

Of the above, the following have joined CWops since the start of the semester (some were members prior to the start of the semester): AE7EU, AG4CC, K1OKD, K4JC, K4LW, KA1YQC, KA7GPP, KD2ST, KI2N, KI7WNS, KX4FZ, N8HZM, NA6Z, N2GG, K5HEM, KO4AXD, K6TOR, WR7T, WU6P, K5TRP, KD4Q, AB5M, KG5IEE, KI7RS and N1CCK.

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As you can see, we had a busy and productive semester, and the January-February semester is being put together now and it looks like another busy semester.

If you are reading this and would like more information on being a student, please visit our web site at: <https://cwops.org/cw-academy/cw-academy-options/>. We always appreciate having advisors and information is available at: <https://cwops.org/cw-academy/cw-academy-advisor-sign-up/>.

**73,**

**Kate K6HTN, Joe AA8TA, Bob WR7Q**  
CW Academy Managers

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## CWops Tests

[Rich Ferch, VE3KI](#)

We are getting close to the end of the year and the end of the 2020 CWT hunt. In fact, by the time you read this there will only be three weeks left, maybe only two if you don't get to this before the December 15-16 CWTs.

As of December 1, there were 111 CWops members who had already qualified for a gold medal for CWT participation in 2020, 143 more who had reached the silver level, and 131 who had made bronze. In the 15 CWT sessions in December, some of the silver and bronze level members will no doubt move up a level, and several more will make it to bronze. By the time the year is finished, I am expecting numbers of around 145 gold, 135 silver and 135 bronze, give or take a few.



Because the last CWTs this year are in the last two days of December and it takes a few days for the last scores to trickle in, I may not have finalized the list of medal recipients in time for the January newsletter. If not, the final results will be in the February issue.

A few words about some things you can do to make my job easier going forward:

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The participation awards are based on claimed scores posted to 3830scores.com. We don't want your logs, just your claimed scores. The first thing I need is to be able to identify whose score it is. This means you need to type in your call sign correctly. After all, if X1IO's typing and proofreading skills are not so good, and sometimes he/she types in their call sign as X1IIO, or X1IOO, or XX1IO, how am I supposed to guess that those are all the same person? The easiest way to ensure this is to use the Preferences setting at 3830scores.com to set up your call sign so you don't normally have to type it in. Once it's in there correctly, it will be prefilled each time you open a score submission page from the same computer.

What happens if you use different call signs during the year? Perhaps you use one of the CWOps club call signs, or another club call sign, during some of the CWTs, or perhaps you operate from two or more different locations and have a different call sign for each location (maybe they are in different countries). That's what the "Operator(s) Call(s)" box on the 3830scores submission page is for. If the call sign you used on the air is not the same as your home call sign, enter your home call sign in the "Operator(s) Call(s)" box. (Unfortunately, there is no default for this in the Preferences, so you will have to be careful to type it correctly.) I don't need your name or your CWOps member number here; just the call sign that you want the participation points credited to, which is almost always your own home call sign. If you don't do this, either your participation points won't all get credited to you, or else during the cross-checking phase I may notice two totals assigned to the same member number. When this happens, I have to go back into the database, change all of the occurrences of the secondary call sign to the correct primary call sign, and redo the calculation. That's annoying and time-consuming, so don't make me have to do it.

What if you changed call signs during the year? Just drop me an email explaining the change at the same time as you notify the membership secretary of your new call sign. I will do a one-time edit to change all the occurrences of your old call sign to the new one in my database of scores, and all of your scores for the year will be credited to you under your new call sign at the end of the year.

There is also a box for "Station Call" on the submission page. What's that for? If you operate as a guest operator or operate another station remotely under your own call sign or a club call sign, that is where you can indicate the call sign of the owner of the station you used. This is not where you put your own call sign; that goes in either the "Call Used" box or the "Operator(s) Call(s)" box. If you put your own call sign in the "Station Call" box, unless it is the same in all three boxes, I will think that someone else was operating your station as a guest operator and assign the participation points to them instead of to you.

Enjoy the last few CWTs this year and we'll all look forward to making many more contacts with one another in the new year. Enjoy the holiday season (as best you can in this unusual year)!

**73,**

***Rich, VE3KI***



# New Members

## Trung Nguyen W6TN

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

\*Life Member

CWops	Call	Name	CWops	Call	Name	CWops	Call	Name
2742	VE1VEI	Lloyd	2748	N1SNB	Jeff	2754	KF3B*	Al
2743	KD4Q*	Bob	2749	K5HEM*	Hal	2755	GW4VXE*	Tim
2744	YU6DX	Alex	2750	PY4XX	Carlos	2756	KC8ZH*	Dave
2745	KO4AXD*	Brian	2751	AA5JF*	Andy	2757	K3TEJ	John
2746	AF4QK*	Kenny	2752	M0RJC*	Richard	2758	VE7NZ*	Adrian
2747	HB9DQJ*	Markus	2753	G4HZE*	Edward			

## Current Nominees

As of December 8, 2020:

**Need Sponsors:** W2DWL, VA3WHU, VK2IOW, AD4UM, W8NIC, W8OU, IK7UKF, TA1UT, WS5C

**Invitations Extended:** W0ECS, EU8F, W0CD

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](mailto: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.

73,

**Trung W6TN**, Membership Manager

# CWops Member Awards

## [Bill Gilliland W0TG](#)

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. [Use the new online tool to submit your data.](#) It's easy! (Watch the tutorial if you have not used the online tool before.)

This table is a composite of scores from the old system and the new. Anyone who submitted logs via the new web page will see those submitted scores here. Those who have not adopted the new process will see scores they reported via the old system. Anyone who see errors in their scores should report them to [cwopscam@w0tg.com](mailto:cwopscam@w0tg.com).

Members whose call signs are in **RED** have achieved a milestone: 100 DX entities, 40 WAE entities, 50 states (WAS).

Call	ACA	CMA	Call	DX	Call	WAS	Call	WAE	Call	WAZ
AA3B	1644	10206	<b>W1RM</b>	<b>208</b>	<b>WT9U</b>	<b>50</b>	<b>W1RM</b>	<b>59</b>	UR5MM	39
K3WW	1539	7808	<b>F6HKA</b>	<b>193</b>	<b>WT2P</b>	<b>50</b>	<b>UR5MM</b>	<b>58</b>	W1RM	38
N5RZ	1474	6029	<b>DL6KVA</b>	<b>163</b>	<b>WA9LEY</b>	<b>50</b>	<b>DL6KVA</b>	<b>58</b>	OK1RR	38
K3WJV	1398	5488	<b>W4VQ</b>	<b>155</b>	<b>WA4JUK</b>	<b>50</b>	<b>OH2BN</b>	<b>55</b>	OH2BN	38
W1RM	1340	6969	<b>UR5MM</b>	<b>152</b>	<b>W9ILY</b>	<b>50</b>	<b>F6HKA</b>	<b>54</b>	N8BJQ	38
NA8V	1324	5897	<b>G4BUE</b>	<b>149</b>	<b>W7GF</b>	<b>50</b>	<b>VE3KI</b>	<b>50</b>	F6HKA	38
F6HKA	1288	6395	<b>OH2BN</b>	<b>148</b>	<b>W6KY</b>	<b>50</b>	<b>OK1RR</b>	<b>49</b>	AA3B	38
WT9U	1220	4179	<b>OK1RR</b>	<b>141</b>	<b>W4VQ</b>	<b>50</b>	<b>DJ1YFK</b>	<b>49</b>	9A1AA	38
N8BJQ	1211	6554	<b>VE3KI</b>	<b>134</b>	<b>W1UU</b>	<b>50</b>	<b>9A1AA</b>	<b>49</b>	W4VQ	37
VE3KI	1203	6087	<b>W9ILY</b>	<b>127</b>	<b>W1RM</b>	<b>50</b>	<b>G4BUE</b>	<b>47</b>	VE3KI	37
K7QA	1198	3511	<b>N8BJQ</b>	<b>126</b>	<b>W0EJ</b>	<b>50</b>	<b>AA3B</b>	<b>47</b>	G4BUE	37
K4WW	1188	3239	<b>K3WW</b>	<b>125</b>	<b>VK7CW</b>	<b>50</b>	<b>N8BJQ</b>	<b>46</b>	W9ILY	36
K3JT	1181	3852	<b>AA3B</b>	<b>125</b>	<b>VE3KI</b>	<b>50</b>	<b>K3WW</b>	<b>46</b>	W0VX	36
AC6ZM	1164	2354	<b>K1ESE</b>	<b>121</b>	<b>NU7Y</b>	<b>50</b>	<b>G4HZV</b>	<b>46</b>	N5RZ	36
K1VUT	1159	3582	<b>9A1AA</b>	<b>119</b>	<b>NA8V</b>	<b>50</b>	<b>W9ILY</b>	<b>45</b>	N5PHT	36
KG9X	1155	3718	<b>W0VX</b>	<b>118</b>	<b>NA6O</b>	<b>50</b>	<b>PG4I</b>	<b>45</b>	K3WW	36
N7US	1093	4108	<b>AC4CA</b>	<b>118</b>	<b>N8BJQ</b>	<b>50</b>	<b>K3WJV</b>	<b>45</b>	DL6KVA	36
I2WIJ	1078	2344	<b>N5IR</b>	<b>117</b>	<b>N7US</b>	<b>50</b>	<b>W4VQ</b>	<b>44</b>	AC4CA	36
W9ILY	1058	4825	<b>N5RZ</b>	<b>114</b>	<b>N5RZ</b>	<b>50</b>	<b>SM0HEV</b>	<b>44</b>	N5RR	35
K3PP	1058	2336	<b>N5PHT</b>	<b>114</b>	<b>N5RR</b>	<b>50</b>	<b>NA8V</b>	<b>44</b>	ON4CAS	34
W4PM	1038	2122	<b>EA8OM</b>	<b>111</b>	<b>N5PHT</b>	<b>50</b>	<b>K1ESE</b>	<b>44</b>	N1EN	34
K6NR	1023	2458	<b>K1SM</b>	<b>110</b>	<b>N5IR</b>	<b>50</b>	<b>IK0YVV</b>	<b>44</b>	K1ESE	34
DL6KVA	1017	4442	<b>N1EN</b>	<b>109</b>	<b>N4ZR</b>	<b>50</b>	<b>I5EFO</b>	<b>43</b>	IK0YVV	34
W4WF	1017	2546	<b>K3WJV</b>	<b>106</b>	<b>N2UU</b>	<b>50</b>	<b>4X6GP</b>	<b>43</b>	4X6GP	34
K9WX	1004	3429	<b>4X6GP</b>	<b>106</b>	<b>N2RC</b>	<b>50</b>	<b>N5RZ</b>	<b>42</b>	VK7CW	33
N1DC	993	3587	<b>VK7CW</b>	<b>105</b>	<b>N1EN</b>	<b>50</b>	<b>N5RR</b>	<b>42</b>	NA8V	33
K1ESE	984	4508	<b>N5RR</b>	<b>105</b>	<b>N1DC</b>	<b>50</b>	<b>N5IR</b>	<b>42</b>	N5IR	33

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
AC3BU	984	2236	NA8V	104	KY7M	50	N2UU	42	K0VBU	33
KE8G	981	2747	N2UU	104	KU7Y	50	M0RYB	42	I5EFO	33
K8JQ	974	3884	W1UU	103	KE4S	50	G3LDI	42	K1SM	32
NA4J	957	2119	I5EFO	103	K9WX	50	EA8OM	42	I5IYJ	32
WA4JUK	953	2664	N7US	101	K9OZ	50	DL5DBY	42	WA9LEY	31
NJ3K	951	1895	IK0YVV	101	K8JQ	50	AC4CA	42	W1UU	31
N4ZR	939	3122	AE1T	101	K8AJS	50	SM7IUN	41	RM2D	31
WN7S	931	2524	ON4CAS	99	K7QA	50	K8AJS	41	N7US	31
W8FN	930	2707	EA1WX	99	K6NR	50	K3JT	41	N2UU	31
K1DJ	929	3155	K0VBU	98	K5IX	50	K1SM	41	OK1RP	30
K8AJS	916	3373	K8AJS	97	K5CM	50	HB9ARF	41	NA6O	30
KV8Q	907	1922	WT9U	95	K5AX	50	UW7LL	40	N7RD	30
WS1L	898	1575	WA9LEY	95	K4WW	50	SQ9S	40	N2RC	30
K1DW	896	3987	K1DJ	91	K4GM	50	RM2D	40	KR3E	30
CO8NMN	896	2385	N4ZR	90	K3WW	50	OZ3SM	40	K8AJS	30
KT5V	885	2503	K3JT	88	K3WJV	50	LB6GG	40	K3WJV	30
N5PHT	871	4289	K1DW	88	K3SEN	50	K1DJ	40	N4ZR	29
K2TW	868	2433	N2RC	87	K3JT	50	G4NVR	40	K3JT	29
N2UU	863	4444	F6JOE	87	K2QB	50	W0VX	39	IT9VDQ	29
KO8SCA	859	1556	KY7M	86	K1ESE	50	N4ZR	39	WT9U	28
NR3Z	843	1484	KR3E	86	K1EBY	50	N1EN	39	N5AW	28
9A1AA	839	3305	DJ1YFK	86	K1DW	50	MI0WWB	39	KT5V	28
W0VX	833	4522	RM2D	85	K1DJ	50	M0DHP	39	K1DW	28
K4TZ	830	1888	N7RD	85	K0VBU	50	LA8OM	39	DJ1YFK	28
VE3TM	829	1395	CT1DRB	85	K0MP	50	K3PP	39	K7QA	27
W3WHK	815	2274	PG4I	84	IK0YVV	50	IT9MUO	39	K4GM	27
W6LAX	794	1353	I5IYJ	83	I5EFO	50	I2WIJ	39	I2WIJ	27
WT2P	786	3467	AD1C	83	G4BUE	50	DF7TV	39	WT2P	26
N4FP	784	1482	N1DC	82	F6JOE	50	AE1T	39	SM0HEV	26
W1UU	756	3386	K4HQB	81	F6HKA	50	SM2CEW	38	PG4I	26
OZ3SM	740	1579	SM0HEV	80	F5MNK	50	IT9VDQ	38	OZ3SM	26
K0TC	732	2228	NA6O	80	EA8OM	50	DK1WI	38	N1ZX	26
VE3MV	731	2324	K9WX	80	AE1T	50	CT1DRB	38	KU7Y	26
K3SEN	675	2115	K5AX	79	AD1C	50	WA4JUK	37	K9WX	26
N5IR	666	3854	DL8PG	79	AC4CA	50	SV2BBK	37	K9OZ	26
DF7TV	665	970	WA4JUK	78	AB7MP	50	SM5IMO	37	K5ZD	26
K4GM	664	2945	G3LDI	78	AA8TA	50	PA3HEN	37	K5CM	26
W2NRA	662	2038	N1ZX	77	AA3B	50	PA3BFH	37	K4HQB	26
KT4XN	654	1494	K4GM	77	WN7S	49	N1DC	37	K2QB	26
AG4EA	649	1129	IT9VDQ	77	WB5BKL	49	KR3E	37	K1DJ	26

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
W2VM	645	1732	OZ3SM	76	WA5LXS	49	K3MD	37	CT1DRB	26
WA2USA	645	1256	KE4S	76	WA3GM	49	K1VUT	37	WE5P	25
WA9LEY	644	2990	WT2P	75	W8FN	49	K1DW	37	WA4JUK	25
WA5LXS	642	1444	K1EBY	75	W8DN	49	G4ILW	37	W4WF	25
KK0ECT	640	1275	G4HZV	75	W4WF	49	G3WZD	37	V31MA	25
KE4S	638	2375	LA8OM	74	W4PM	49	F6JOE	37	UW7LL	25
K4HR	638	2212	K7QA	74	W4ER	49	DL4KG	37	SM2CEW	25
K6KM	638	1123	HB9ARF	74	W3WHK	49	WT9U	36	LA8OM	25
K0MP	637	1749	K2QB	73	W2NRA	49	W1UU	36	KE8G	25
LB6GG	635	1363	IT9MUO	73	W0VX	49	SP1D	36	K6NR	25
W1EQ	630	1080	I2WIJ	73	VE3TM	49	ON4VT	36	K1EBY	25
W8OV	624	1609	K4WW	72	VE3MV	49	G4DRS	36	IT9MUO	25
UW7LL	623	1362	KE8G	71	VA7ST	49	F5IYJ	36	HB9ARF	25
W8DN	622	1391	K5ZD	71	NN4K	49	EA1WX	36	DK1WI	25
W0TG	618	1794	K4HR	71	NJ3K	49	ON4CAS	35	PY4XX	24
SM0HEV	617	1316	DL5DBY	71	NA4J	49	N7US	35	NA4J	24
KB4DE	607	1146	DK1WI	71	N7RD	49	K5ZD	35	K4WW	24
AF4T	605	1018	SM7IUN	70	N5AW	49	K0VBU	35	DL4FDM	24
IT9MUO	597	1924	N5AW	70	N2WK	49	IN3FHE	35	DF7TV	24
K0VBU	595	4266	W2NRA	69	N1ZX	49	EA5IUY	35	N1DC	23
W1AJT	589	793	N7WY	68	KV8Q	49	EA3FZT	35	KG9X	23
AA8TA	587	1913	KT5V	68	KT5V	49	DD7CW	35	KE4S	23
KB8GAE	580	1321	K3PP	68	KM4FO	49	RT5P	34	K8JQ	23
KF8O	573	1094	G4NVR	68	KK0ECT	49	N5AW	34	K4HR	23
KC8J	572	1161	F5MNK	68	KG9X	49	K4HQB	34	G4HZV	23
M0RYB	569	1220	VE3MV	67	KE8G	49	K1EBY	34	G3LDI	23
K2YR	565	899	UW7LL	67	KE4RG	49	IK0NOJ	34	W7GF	22
W2CDO	563	797	SQ9S	67	KC8J	49	DL4FDM	34	W0TG	22
OK1RR	553	2949	SM2CEW	67	K6RB	49	W4PM	33	SQ9S	22
SM2CEW	553	944	KG9X	67	K6KM	49	W2NRA	33	SM7IUN	22
K5ZD	550	2306	K1VUT	67	K6DGW	49	VE3MV	33	N2WK	22
NN4K	545	2227	N2WK	66	K4TZ	49	PY4XX	33	KO8SCA	22
SP1D	542	955	M0RYB	66	K4HR	49	K7QA	33	K3PP	22
K9OZ	538	2563	W3WHK	65	K4AFE	49	EA4OR	33	W4PM	21
W2XYZ	533	768	V31MA	65	K3PP	49	AC3BU	33	W2NRA	21
W4VQ	524	3112	OK1RP	65	K3MD	49	W4WF	32	SP1D	21
PY4XX	506	657	WE5P	64	K2TW	49	PF5X	32	K6DGW	21
NU7Y	503	1593	SM5IMO	64	K1VUT	49	N2WK	32	K3SEN	21
SQ9S	502	947	F5IYJ	64	K0TC	49	N2RC	32	G4NVR	21
N7RD	500	1437	W4WF	63	DL6KVA	49	KY7M	32	G4DRS	21

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
HB9ARF	489	1819	NA4J	63	AC6ZM	49	KE4S	32	AC3BU	21
N3FZ	486	1143	K3SEN	63	AC3BU	49	K4WW	32	VA7ST	20
KM4FO	479	1529	K3DMG	63	9A1AA	49	K4GM	32	NN4K	20
K4AFE	459	1906	DF7TV	63	W8XC	48	I5IYJ	32	K6KM	20
K1EBY	455	2381	VA7ST	62	W8OV	48	F5MNM	32	K1VUT	20
KC4WQ	454	694	ON4VT	61	W6LAX	48	DK3WW	32	JF2IWL	20
AF3K	453	983	LB6GG	61	W2VM	48	CO8NMN	32	IN3FHE	20
K5QR	445	674	K9OZ	61	W0TG	48	W3WHK	31	F5IYJ	20
CT1DRB	444	1146	K8JQ	61	UR5MM	48	VK7CW	31	DL4KG	20
G3LDI	439	1740	K5CM	61	OK1RR	48	V31MA	31	CO8NMN	20
AA8R	438	965	G4DRS	61	N7WY	48	OK1RP	31	AC6ZM	20
K3ZA	438	656	CO8NMN	61	N5XE	48	N1ZX	31	AA8R	20
N4CWZ	434	663	W4PM	60	KT4XN	48	KO8SCA	31	WN7S	19
G4NVR	429	1338	DL4FDM	60	KR3E	48	KG9X	31	W4ER	19
G4BUE	424	3816	AC3BU	60	KO8SCA	48	K5AX	31	W3WHK	19
K4EES	422	741	M0DHP	59	KE6K	48	DL8PG	31	VE3TM	19
NF8M	421	691	KO8SCA	59	KB8GAE	48	DF4ZL	31	VE3MV	19
G4HZV	419	1345	PY4XX	58	KB4DE	48	WA9LEY	30	M0RYB	19
DJ1YFK	418	1925	WN7S	57	KA9BHD	48	VE3TM	30	M0DHP	19
NG1R	413	828	K4QS	57	K5ZD	48	NR3Z	30	LB6GG	19
G3WZD	413	763	W6KY	56	K4QS	48	NJ3K	30	KB8GAE	19
N4GL	403	574	NN4K	56	K4HQK	48	NA6O	30	K0TC	19
WE5P	399	1034	K6RB	56	K4EES	48	N5PHT	30	G3WZD	19
EA5IUY	397	546	IN3FHE	56	K3DMG	48	M0NGN	30	WB5BKL	18
PG4I	396	806	SP1D	55	K1SM	48	KE8G	30	WA3GM	18
KH6TU	394	631	K0TC	54	IT9VDQ	48	K3SEN	30	W8OV	18
KJ4M	386	1176	G3WZD	54	IT9MUO	48	DL5JQ	30	W8FN	18
WB5BKL	385	1382	W2VM	53	I2WIJ	48	AC6ZM	30	PF5X	18
SM7IUN	384	880	W0TG	53	EA1WX	48	N7RD	29	ON4VT	18
N5XE	377	1306	NR3Z	52	DL8PG	48	K4QS	29	NU7Y	18
RM2D	375	1332	K2TW	52	AF4T	48	K2QB	29	NR3Z	18
WA5PFJ	374	781	IK0NOJ	52	AF3K	48	G0ELZ	29	KE6K	18
VE6JF	367	943	G4ILW	52	4X6GP	48	WN7S	28	K4AFE	18
N1RM	367	490	DL4KG	52	WT8P	47	NN4K	28	K2TW	18
K8RJW	364	726	AC6ZM	52	WS1L	47	NA4J	28	IK0NOJ	18
AB7MP	358	1303	AA8R	52	WA2USA	47	K9WX	28	AF4T	18
W7GF	356	1068	KU7Y	51	W6TN	47	K4HR	28	W8DN	17
AJ1DM	356	879	K6NR	51	W2NO	47	K2TW	28	W2VM	17
W6TN	351	985	K4AFE	51	W1EQ	47	DL1NKB	28	SM5IMO	17
W8XC	342	682	W8DN	50	VE1OP	47	AD1C	28	N5XE	17

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
K9CPO	341	475	PF5X	50	SM5IMO	47	WT2P	27	N4FP	17
UR5MM	340	2920	MI0WWB	50	PY4XX	47	W2VM	27	KV8Q	17
KE4RG	335	1169	W8FN	49	ON4CAS	47	VA7ST	27	KT4XN	17
EA3FZT	328	500	VE3TM	49	OH2BN	47	K8JQ	27	KK0ECT	17
DD7CW	327	472	KT4XN	49	NR3Z	47	K3DMG	26	K0MP	17
OH2BN	325	1315	NJ3K	47	N4FP	47	GW4MVA	26	DK3WW	17
G4DRS	324	955	N3FZ	47	LA8OM	47	G0MGM	26	AF3K	17
VA7ST	322	2579	KV8Q	47	KJ4M	47	W1AJT	25	WA2USA	16
NA6O	319	3352	SV2BBK	46	KF8O	47	PA0INA	25	W6TN	16
PF5X	312	426	DK3WW	46	K2YR	47	N4FP	25	VE6JF	16
DK3WW	311	491	W8OV	45	I5IYJ	47	G4LPP	25	NJ3K	16
4X6GP	308	1812	PA3BFH	45	HB9ARF	47	WE5P	24	N3FZ	16
KD2KW	294	413	KB8GAE	45	DK1WI	47	W8FN	24	MI0WWB	16
N7SU	289	552	G0MGM	45	CO8NMN	47	W8DN	24	KM4FO	16
PA3BFH	286	477	EA3FZT	45	AJ1DM	47	N1RM	24	KB4DE	16
N1EN	285	2462	AF3K	45	AG4EA	47	K6RB	24	DL5DBY	16
AA0O	282	375	W4ER	44	AA8R	47	AF3K	24	WS1L	15
W3RZ	278	478	DD7CW	44	WE5P	46	WS1L	23	WA5LXS	15
DL4KG	278	412	PA3HEN	43	WA5PFJ	46	W2CDO	23	W8XC	15
WT8P	274	520	M0NGN	43	W2XYZ	46	W1EQ	23	SV2BBK	15
DL5JQ	266	381	W8XC	42	W2CDO	46	N3FZ	23	NG1R	15
EA4OR	262	419	RT5P	42	W1AJT	46	KT5V	23	M0NGN	15
DL5DBY	261	1123	KK0ECT	42	VE6JF	46	K6NR	23	KE4RG	15
PA3HEN	256	396	EA5IUY	42	V31MA	46	K5QR	23	KC8J	15
M0DHP	252	602	AF4T	42	UW7LL	46	K5CM	23	G4ILW	15
KE6K	244	946	WB5BKL	41	SP1D	46	K0TC	23	AJ1DM	15
MI0WWB	226	540	WA5LXS	41	SM0HEV	46	EA1DP	23	AG4EA	15
M0NGN	222	274	WA3GM	41	RM2D	46	AF4T	23	AB7MP	15
N7MU	219	536	N4FP	41	OZ3SM	46	AA8R	23	W6LAX	14
W2TT	211	259	K3MD	41	N7SU	46	W0TG	22	W2TT	14
KA1YQC	210	251	DL5JQ	40	N4CWZ	46	SP2R	22	W2NO	14
WA5BDU	206	243	WS1L	39	N3FZ	46	NG1R	22	RT5P	14
K1IG	201	251	NG1R	39	N0PP	46	KT4XN	22	N7MU	14
W6GMT	198	391	N5XE	39	KC4WQ	46	DL8BH	22	N0PP	14
NF5KF	198	289	EA4OR	39	K8RJW	46	KV8Q	21	KJ4M	14
KI3F	197	308	AA8TA	38	K5QR	46	JF2IWL	21	KF8O	14
KR4WI	197	255	KB4DE	37	K3ZA	46	GD4EIP	21	K5QR	14
SV2BBK	187	378	K6DGW	37	JF2IWL	46	F5PBL	21	K4TZ	14
GD4EIP	184	199	W0EJ	36	G4HZV	46	AG4EA	21	EA3FZT	14
F5IYJ	183	732	W2NO	35	G3LDI	46	WA2USA	20	AA8TA	14

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
ON4VT	182	719	KM4FO	35	DL5DBY	46	W8OV	20	W3RZ	13
RT5P	174	280	K6KM	35	CT1DRB	46	KB4DE	20	W2XYZ	13
KA9BHD	157	755	JF2IWL	35	W0PHX	45	KA1YQC	20	W1EQ	13
KU7Y	154	1674	WA2USA	34	ON4VT	45	K9OZ	20	PA3BFH	13
WU6P	148	170	W1EQ	34	NG1R	45	K4AFE	20	KH6TU	13
GW4MVA	147	192	AG4EA	34	G4NVR	45	W8XC	19	KA1YQC	13
KG5VK	147	163	W7GF	33	F5IYJ	45	N5XE	19	K8RJW	13
OK1RP	136	701	G0ELZ	33	DF7TV	45	KB8GAE	19	K4EES	13
G4LPP	131	183	VE1OP	32	AA0O	45	WB5BKL	18	EA5IUY	13
W8EH	130	149	KF8O	32	W3RZ	44	WA3GM	18	DD7CW	13
AB7RW	129	160	K5QR	32	SM2CEW	44	W6KY	18	WA5PFJ	12
DF4ZL	123	177	DL1NKB	32	PG4I	44	W2XYZ	18	NF8M	12
DL1NKB	116	146	DF4ZL	32	N7MU	44	W2NO	18	KA9BHD	12
G0ELZ	112	218	AJ1DM	32	N4GL	44	VE1OP	18	K9CPO	12
EA1DP	104	131	W1AJT	31	KH6TU	44	K9CPO	18	K2YR	12
KI7RS	86	97	NU7Y	31	KD2KW	44	G4RCG	18	W2CDO	11
KG5U	84	93	K4TZ	31	G4DRS	44	WA5PFJ	17	W0PHX	11
K8MP	84	89	W6TN	30	SM7IUN	43	PA0VLD	17	N4GL	11
DL8BH	81	115	KE4RG	30	NF8M	43	N4GL	17	KC4WQ	11
PA0INA	68	86	KC8J	30	N5KW	43	KF8O	17	EA4OR	11
SP2R	65	90	W2TT	29	N1RM	43	K8RJW	17	WU6P	10
G4ILW	59	693	N4GL	28	LB6GG	43	W4ER	16	W1AJT	10
LA8OM	54	1370	KA9BHD	28	KI3F	43	AJ1DM	16	PA3HEN	10
I5EFO	52	1447	KA1YQC	28	K9CPO	43	WA5LXS	15	N7SU	10
ON4CAS	39	1131	K8RJW	28	DJ1YFK	43	NF8M	15	KI3F	10
OK4MM	37	40	GW4MVA	28	W6GMT	42	KU7Y	15	K3ZA	10
K4NE	36	84	G4LPP	28	SQ9S	42	KE4RG	15	K1OJ	10
KM3A	28	33	EA1DP	28	N7ID	42	K6KM	15	K1IG	10
VK7CW	20	1809	WA5PFJ	27	M0RYB	42	K2YR	15	GD4EIP	10
PA0VLD	20	37	W6LAX	27	G3WZD	42	W2TT	14	G0ELZ	10
ON6PJ	17	21	W3RZ	27	DL4FDM	41	K0MP	14	DL8BH	10
DD5KG	17	18	W2XYZ	27	NA1VT	40	AA8TA	14	DL5JQ	10
AC4CA	0	4479	W2CDO	27	KR4WI	40	KC8J	13	DL1NKB	10
N5RR	0	4223	KE6K	27	K1IG	40	W6LAX	12	WT8P	9
K6RB	0	4032	K0MP	27	WA5BDU	39	KM4FO	12	W6GMT	9
K5AX	0	3634	DL8BH	27	W2TT	39	KK0ECT	12	N7ID	9
N2RC	0	3271	PA0INA	26	IN3FHE	39	KI3F	12	N1RM	9
KY7M	0	3252	N1RM	26	WU6P	38	K6DGW	12	KG5VK	9
AE1T	0	3206	N0PP	26	W4MDV	38	K4TZ	12	G4LPP	9
F6JOE	0	3002	GD4EIP	26	PF5X	38	ON6PJ	11	F5PBL	9

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
IK0YVV	0	2958	F5PBL	26	KA1YQC	38	KA9BHD	11	WX5CW	8
K5CM	0	2866	K2YR	25	AB7RW	38	W3RZ	10	W4MDV	8
EA8OM	0	2758	K9CPO	24	W9KM	37	W0EJ	10	NA1VT	8
K1SM	0	2566	K5IX	24	NF5KF	37	NF5KF	10	KD2KW	8
N5AW	0	2510	AB7MP	24	KB8PGW	37	NA1VT	10	G4RCG	8
N2WK	0	2339	SP2R	23	IK0NOJ	37	N5KW	10	EA1DP	8
N7WY	0	2303	NF8M	23	DD7CW	37	K1IG	10	AA0O	8
K4HQB	0	2193	K4EES	23	M0DHP	36	KJ4M	9	SP2R	7
K6DGW	0	2122	VE6JF	22	DK3WW	36	W6TN	8	SM7CIL	7
AD1C	0	2101	NF5KF	22	OK1RP	35	VE6JF	8	OK4MM	7
W6KY	0	2088	G4RCG	22	MI0WWB	35	SM7CIL	8	N5KW	7
K4QS	0	2069	KJ4M	20	GD4EIP	35	N0PP	8	KI7RS	7
K2QB	0	2023	KI3F	18	G0MGM	35	KD2KW	8	GW4MVA	7
EA1WX	0	1961	KC4WQ	18	DL4KG	35	K5IX	8	PA0INA	6
DL8PG	0	1789	K1IG	18	W8EH	34	K4EES	8	N4CWZ	6
K3DMG	0	1773	W0PHX	17	KG5VK	33	NU7Y	7	KR4WI	6
K3MD	0	1734	PA0VLD	17	EA5IUY	33	KG5VK	7	K4NE	6
IT9VDQ	0	1618	N7MU	16	EA3FZT	32	OK4MM	6	DF4ZL	6
KR3E	0	1602	NA1VT	14	KI7RS	31	K3ZA	6	AB7RW	6
V31MA	0	1520	N5KW	14	G4ILW	30	AA0O	6	WA5BDU	5
SM5IMO	0	1382	KH6TU	13	EA4OR	30	W7GF	5	W9KM	5
N1ZX	0	1348	ON6PJ	12	PA3BFH	29	KC4WQ	5	PA0VLD	5
W4ER	0	1311	KD2KW	12	K8MP	29	AB7MP	5	W8EH	4
WA3GM	0	1230	K3ZA	12	KG5U	28	W6GMT	4	ON6PJ	4
F5MNK	0	1111	AA0O	12	G4RCG	28	KE6K	4	KM3A	4
W2NO	0	961	SM7CIL	11	M0NGN	27	W0PHX	3	KG5U	3
DK1WI	0	908	KG5VK	11	K4NE	27	N7SU	3	K8MP	3
K5IX	0	892	K1OJ	11	DL5JQ	27	N4CWZ	3	DD5KG	3
I5IYJ	0	837	WX5CW	10	SV2BBK	25	KR4WI	3	AF9W	3
IN3FHE	0	769	W6GMT	10	PA3HEN	25	WT8P	2		
VE1OP	0	768	OK4MM	10	G0ELZ	23	N7MU	2		
W0EJ	0	754	N7SU	10	AF9W	23	N7ID	2		
JF2IWL	0	674	N7ID	9	WX5CW	20	KB8PGW	2		
DL4FDM	0	646	WU6P	8	G4LPP	19	DD5KG	2		
N5KW	0	639	WT8P	8	GW4MVA	18	WX5CW	1		
N0PP	0	550	W4MDV	8	DL1NKB	18	WU6P	1		
G0MGM	0	495	N4CWZ	7	RT5P	17	WA5BDU	1		
W0PHX	0	426	KR4WI	6	KM3A	17	W9KM	1		
IK0NOJ	0	366	KI7RS	6	SM7CIL	13	W4MDV	1		

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Call	ACA	CMA	Call	DX	Call	WA S	Call	WA E	Call	WAZ
N7ID	0	311	KB8PGW	5	OK4MM	13	KM3A	1		
NA1VT	0	306	K4NE	5	F5PBL	13	K4NE	1		
KB8PGW	0	284	AB7RW	5	EA1DP	13	K1OJ	1		
W9KM	0	236	W9KM	4	DL8BH	11	AB7RW	1		
W4MDV	0	225	DD5KG	4	DD5KG	10				
F5PBL	0	134	WA5BDU	3	DF4ZL	7				
G4RCG	0	131	W8EH	3	SP2R	3				
AF9W	0	59	KM3A	2	PA0INA	3				
WX5CW	0	49	KG5U	2	K1OJ	3				
SM7CIL	0	35	K8MP	2	PA0VLD	2				
K1OJ	0	29	AF9W	2	ON6PJ	2				

## QTX Report

### Enjoying the Art of Conversational CW

**[Bruce Murdock K8UDH](#)**

A couple weeks ago I received an inquiry about Roundtable QSOs and how they should be scored. Here's the scenario -- You're in a CW QSO conversing with someone and another op joins in. Then a little later someone else joins in and shortly after that a fourth person becomes part of the group. Before long one of them leaves, then another, and later on the last one leaves. So, the question was, how should it be scored for QTX? I had an opinion but not a definitive answer, and the CWops website didn't have any information about scoring a round table QSO.

So, I talked with my friend John, K1ESE, who was the CWops QTX Manager for five years. I respect his expertise and his opinions. I decided to adopt John's suggestions and clarify the issue by adding the following paragraph in the QTX area of the CWops website <https://cwops.org/qtx-awards/>

- For Roundtable QSOs, log the time when each operator joins the group and when each leaves the group. If the difference in those times is 20 minutes or more it counts as a QTX QSO. If it lasts from 10 to 19 minutes it counts as a Mini QTX QSO.

In a Roundtable QSO you could have several QTX or MQTX QSOs. This change will be effective January 1, 2021. Let's take a look at the comments we received last month from our ragchewers.

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## Comments from QTX Submissions

**G3WZD:** November was fun as several of the MQTX were during my weekly Giving Back session.

**K6DGW:** Most of my QTX Q's this year have been remote to W7RN, condx from home with my HOA stealth WOOF antenna have been rotten. Improving SFI's led to more Q's from home which is easier than the remote.

**W3PNM:** Busy month with the birth of more grandchildren. Little time for radio :-)

**KC0VKN:** Another pleasant month of ragchewing, was really nice to bump into a few people I haven't QSO'd in a long time.

**AA5AD:** Longest ragchew this month was a nice 34 minute chat with Joe KG0HG in Independence, MO. Also had a great bug-to-bug ragchew with Dan N0TK in the W6SFM Bug Roundup that lasted 29 minutes. Glad to see propagation up so hopefully the bands will be great for lots of ragchew time in the shack this winter!

**K4AHO:** Still enjoy the QTX program, It has keep me going during this seemingly never ending isolation.

**N6HCN:** Big month because I decided to get up early and find at least one 1 QTX before work. Marriage still intact so far.

**W9EBE:** With improved band conditions on 30 meters, I've found that good ragchews can often be maintained using exciter power (43 W) rather than having to run the legal limit of 200 W. Welcome back, autumn and Old Sol!

**WA2USA:** It's always fun to converse with a ham of a mutual acquaintance. In this case it was a member of a 'local' band called "The Dam Band" who also refurbishes musical instruments. Yep, we have a dam here next to our small town on the Ohio River in Southwest Indiana. HI....

**AJ1DM:** It's a joy to rag-chew with my friends on the air. Great therapy!! 73 de John AJ1DM

**KG5IEE:** Had a nice second QSO with Jim W4DDD. He is still going strong on CW at 99 years young.

**K8UDH:** In November I had the opportunity for a 70 minute Marathon QSO with Ron KN4IXU. Great fun !!! He's an outstanding ragchewer.

## Awards and Medals for 2020

Medals for 2020 are awarded for three different levels in QTX.

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- Gold – 400 QTX QSOs
- Silver Medal – 300 QTX QSOs
- Bronze – 200 QTX QSOs

The Gold Medals earned through November 30<sup>th</sup> are Art (K8CIT) with 1380 QTX QSOs, Joe (KC0VKN) with 762 QSOs, Bill (N5IR) with 683 QSOs, Chris (N8AI) with 475 QSOs, Gary (N5PHT) with 427 QSOs, and John (K1ESE) with 424 QSOs. Chip (W9EBE) with 394 QSOs and Tom (DL5DBY) with 358 QSOs have qualified for Silver Medals. Our Bronze Medal earners are Chuck (WS1L) with 298 QSOs, Dan (KB6NU) with 236 QSOs, Phil (F5IYJ) with 219 QSOs, and Cecil (K5YQF) with 212 QSOs.

### QTX for October 2020

Call	QTX	Call	QTX	Call	QTX	Call	QTX
K8CIT	121	N6HCN	31	N5PHT	8	W3PNM	4
N8AI	74	WS1L	28	K6DGW	8	W3WHK	4
KC0VKN	58	K9OZ	23	AJ1DM	7	K8UDH	3
K1ESE	53	W9EBE	20	AA5AD	7	SV2BBK	2
N5IR	37	K4AHO	14	KG5IEE	7	N5LB	2
F5IYJ	32	K5YQF	11	WA2USA	6		

### MQTX for October 2020

Call	MQTX	Call	MQTX	Call	MQTX	Call	MQTX
N8AI	61	K8CIT	14	AA5AD	8	W3WHK	3
SV2BBK	27	K6DGW	13	K4AHO	5	AJ1DM	1
K1ESE	26	KG5IEE	13	N5PHT	4		
W9EBE	19	G3WZD	11	K5YQF	3		
N6HCN	15	WS1L	10	K8UDH	3		

### QTX for 2020

Call	QTX	Call	QTX	Call	QTX	Call	QTX
K8CIT	1380	KB6NU	236	KG5IEE	63	K6DGW	17
KC0VKN	762	F5IYJ	219	AG4EA	50	EW6BS	15
N5IR	683	K5YQF	212	W3PNM	49	N5LB	14
N8AI	475	N6HCN	185	WA2USA	31	W5LA	5
N5PHT	427	K4AHO	159	W3WHK	29	AB7MP	4
K1ESE	424	AJ1DM	121	SV2BBK	29	G3WZD	4
W9EBE	394	K2KRG	111	K9OZ	23	KU7Y	3
DL5DBY	358	K8UDH	75	WB6TOU	23	KR4TH	1
WS1L	298	AA5AD	64	IK0IXI	22		

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## MQTX for 2020

Call	MQTX	Call	MQTX	Call	MQTX	Call	MQTX
DL5DBY	684	N5PHT	131	K6DGW	41	W2USA	6
N8AI	553	AA5AD	125	K8UDH	31	KU7Y	5
W9EBE	301	KG5IEE	100	W3PNM	29	W5LA	5
SV2BBK	284	N6HCN	80	AG4EA	22	N5LB	3
WS1L	189	K4AHO	73	W3WHK	21	KR4TH	1
K1ESE	143	G3WZD	70	AJ1DM	19		
K8CIT	139	K5YQF	52	WB6TOU	11		
K2KRG	134	MI0WWB	47	AB7MP	9		

Thanks for participating in CWops ragchewing. I hope you have Merry Christmas and a better New Year.

**73,**

**Bruce K8UDH**, QTX Manager

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## My Story: New Member Biographies

### Robert Gerace, KD4Q

CW has been one of the great joys of my life. Even when I haven't been active, since I was a child, I've sounded out -- probably hundreds of thousands -- of road signs and TV commercials... always challenging myself to get it all sounded out before passing the sign or before the commercial fades.

I didn't always sound code out, having memorized the actual dot/dash characters from an encyclopedia one evening in the basement of my parent's house at 12 years old. At 13 came the records and having to relearn the code by sound.

You know, there are so few constants in life. For me, God is the ultimate constant. And here on earth, not much else -- math, science (even that changes),



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but CW has always been one for me. I wouldn't write this to most ham groups, feeling they might not understand, but I know this group does. CW is always there. It never changes. It was beautiful the first time I heard it, and the most recent time (5 minutes ago) as I heard 4O4T running on 40m. It's beautiful. It's useful. It's something that sets us apart. It's something that brings us together. And I love it. And I'm so proud to be a new member of a group of people who love the code like I do.

However, for nearly 44 years I was always frustrated by my inability to move past 20 wpm. I was pretty much stuck there since 1976. Until this past fall, when I met Joe, KK5NA that is. Joe has a gift for teaching speed -- both sending and receiving. Having taken his Advanced CWA class, I'm now sending, I believe acceptably well, at 40 wpm, and copying standard QSO's at that speed extremely well -- even extended versions. I'm extremely comfortable rag chewing at 25+ and that is coming up quickly as I've had some lengthy convos at 30+.

Thank you Joe!

My story (from my QRZ page):

I began my amateur journey in 1975 mentored by Elmer WB4ECE (later N4YD, SK), without whom I would never have made it. Rest in peace, Paul. And thank you, my friend. And thank you for being a man that a 12/13 year old boy could spend a year of Saturday afternoons in your basement (building Heathkit equipment) and shack (working all kinds of DX) and without a single worry. You were the kindest, most selfless man I've ever met. Much respect.

The skills I learned from Paul built the foundation for everything I've ever achieved. Specifically: worthy outcomes are available to anyone willing to discipline themselves to tackle complex issues...and further...when kind people help others to do so there is no limit to what can be achieved.

And most important is to give back along the way.

I didn't realize it at the time, but Paul was a Titan. He had an amazing station and we easily worked every corner of the world.

Paul wasn't a theory teacher and suggested I take a YMCA class where I met Cal, K4JSR (sadly also SK). Cal had a gift for teaching theory, and I also owe him much thanks and respect. Cal made it possible to remember anything with what I call his "magical mnemonics."

In June of 1976 I sat for the General, and during the code test sat for the Extra at 20 wpm and passed! I also passed my General that day and became WA4YZA.

I tried for quite some time to study for / pass the Advanced Class and between girls, cars, and jobs just couldn't get it done. Between those distractions, the 'wood pecker,' band congestion, changing sun spot conditions, and an onslaught of Cbers I wandered in the wilderness of ham radio for decades.

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Eventually, after having been through Air Force ECM electronics training, and a technology career, studying for the Extra seemed much easier than Advanced when I was a teenager. A couple weeks of study and I became an Extra Class operator. (Telling on myself -- I did have to reach out to K4JSR a few times to get some of his magical mnemonics.)

I traded WA4YZA for KD4Q, and I hope to work as many CWops members as possible; and hope you'll listen out for my call.

### **Carlos Alberto Cipriano, PY4XX**

Profession: Military Brazilian Army. (retired)

First License: January 1989

First Call Sign: PT9CEL

I started my life in contacts via RF, through the Citizen's Band, when I met, at the home of a radio amateur friend (Weima - PY4QA), where I got to know the amateur radio, and what I fell in love with, when I first heard, the sound of dits and dahs.

It was love at first sight. Even without knowing what they were saying on the radio, I was broken with what I came to know was called Codigo Morse.

I started taking classes with my friend, and later, with a CW teacher (Guimarães-PY4CY) at LABRE - League of Brazilian radio amateurs. In January 1988, I moved to Dourados-MS for work reasons, and there I met some Citizen's Band who were preparing to carry out the tests for radioamadorismo. Only they didn't know CW and had no one to help them. I offered to teach them, and for 1 year, I prepared them. In November 1988 we went to take the tests, and they all passed, except me HI HI HI. I didn't pass Legislation. HI HI HI. In January of '89 I took the tests again and started receiving the PT9CEL code.

Two years later, also for work reasons, I moved to Rio de Janeiro-RJ and changed class from B to A and acquired the callsign of PY4CEL. I changed to PY4XX in 2008, when in a contest, I lost several points, due to many radio amateurs receiving PY4CL instead of PY4CEL. I love contests in CW, RTTY. I like homemade assemblies. Being a member of ARAUCÁRIA DX GROUP, RIO DX GROUP, I have contributed to the score of my clubs in several competitions.

### **Harold Mignola, K5HEM**

Born and raised in Tucson, Arizona, graduated from the University of Arizona (Go Wildcats!) and



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migrated my way to the Houston area via the Middle East and the energy industry. I retired in June 2020. I am married to my special YL, Lee, with 4 kids, 3 grand-kids.

I was interested in radio from a young age, learned code in the Cub Scouts and I used paper route money to buy a receiver (Hallicrafters S-118), and was officially bitten when I received a SWL QSL from Quito, Ecuador.

First licensed in 1964 as a 15 year old Novice (WN7BHZ) with the help of some friends I met hanging out in the local ham radio store: Arnie Lewin (now W7BIA), Garry Shandling (ex WN7BKG - SK, yeah that Garry Shandling) & Mark Leavitt (ex K7OLZ).

Novice gear was a Hallicrafters SX-110 and a Heathkit DX-60 built by my high school physics teacher George Goldbach (K7KGS/W6RZJ SK). Antenna was a vertical with a loading coil. Key was a J-38 I had picked up in a junk shop previously. In those days the license, of course, was only good for a year – and attempts to break the 13-wpm barrier failed repeatedly. Alas the only remains from my Novice station is a "danger" sign that came with my QSL order!



I was then QRT for a "few" years (decades actually) - likely something to do with being 16 years old; 13WPM code requirements, high school, college, work, and subsequently some other past hobbies:

- Race cars - SCCA H Production MG Midget "Spridget"
- Sailboats - J24 and then a J30 "Mabuhay" and crewing on a C&C 37 "Dynomite"
- Airplanes - 1/4 partner in 1979 Grumman AA5B Tiger - N4533P - licensed in 1993, Private Pilot SEL - Instrument

All the above are long gone, but the interest in racing, sailboats and aviation still lives on...

Rekindled the interest in Ham radio in 2011 when I moved buildings at work and found myself with a new friend (Haskell Moore -W5HLM) who got me going again and I progressed through the license classes to Extra.

Took another short break in 2016 as we moved to the current QTH and subsequently had to deal with the results of Hurricane Harvey (flooded).

QTH is Cypress, Texas, a suburb about 15 miles Northwest of Houston. Blessed with the inevitable HOA restrictions, the trees behind the house do provide some cover for antennas.

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With retirement I am working on getting my CW speed up to do contests and chase that CW DXCC (65 confirmed as of Nov 2020).

CWops and the CW Academy have done wonders with the code speed, contest software set up and procedures. A special thanks to my advisors: Mac NN4K, Dallas K1DW, Frank K1EBY, Mark K5GQ and Ken KD2KW.

Rig/Antenna:

- Elecraft K-Line - K3S - P3 - KAT500 - KPA500
- ZeroFive 10-80m 43' vertical ground plane at 8ft AGL
- W6LVP Receiving Loop (12 ft AGL)

### **Markus Polesana, HB9DQJ**

Thank you very much to all of my sponsors who made my membership at CWops possible.

I was born in 1961 and grew up in Langnau in the Emmental. I attended school for 9 years. After school I did a 3-year-old apprenticeship as a butcher. Since 9 years old I have played ice hockey as a goalie for 35 years and was also a goalie trainer. I have two children, Svenja born 2002 and a son Sergio born 2006. I got married in May 2003 and have been divorced since 2010. I have had a life partner for 8

years. I was in the Swiss Army as a Mortar Tank Commander for many years. I got into amateur radio in 1981 when I was visiting the Verkehrshaus Luzern with two friends. There is the club station HB9O and there I saw how telegraphy is made. That fascinated me very much and I started to learn telegraphy without a school or a teacher.

In 1983 I started studying CW. I taught myself CW with a Junker Key and a Telereader decoder. In 1984 I received my SWL call HE9XMB and work many on the shortwave as listener in CW. I heard a lot on amateur radio in CW and learned to listen better as a training. In 1987 I started to study radio operators for the technology test at Swisscom in the evening school. In 1988 I passed the exam and got the Call HB9TGE CEPT Class 2. In 1989 I took the telegraphy exam and got the Call HB9DQJ. I had great pleasure and am very active in 99% telegraphy and a bit of SSB via the Es-



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Hail QO-100 satellite. I love contest and DX Hunting, but my favorite thing is to do beautiful rag chew QSO with handkey, bug and Sideswiper.

I like to work on different contests and have great fun. Most of the time I work in the contests and award hunting in QRP or low power max 100 watts. My absolute highlight was the little Lighthouse Expedition in East Friesland in 2003, where I activated the very well-known Lighthouse Pilsum. This was a very nice experience which I was allowed to experience. On 12.21.2019 I became active on the Es-Hail QO-100 satellite. Dak of a very good friend Fiorello HB9DWK this station became reality and I am very active on this satellite and have worked 48 DXCC countries in CW. For me it is a very personal and very nice feeling to be active via QO-100. You can see more information and pictures of the QO-100 station on QRZ.COM on my Website.

### Awards

I have worked on the following diplomas over the years:

- DXCC CW # 9481
- DXCC MIXED CW/DIGITAL # 38441
- QRP DXCC
- WAZ CW All Zones # 512
- WAC All Continents
- WAE # 4354
- H26 CW # 009
- IOTA Award CW
- HTC AAward # 002
- Divers Contests Awards and many Others.

### Club Memberships:

SDXF Swiss DX Foundation, USKA Union of Swiss Shortwave Amateurs, SKCC # 2722, Marconi Club # 663, HSC # 1876, ITC Italian Telegraphy Club # 013, Swiss AMSAT, FISTS # 20608 and new CWOPs # 2747

My Goals for the future are as follows. I am very passionate about telegraphers and I work hard to promote CW and to keep CW alive for the future. I want to show myself with my activities as a telegraph operator on the shortwave. I am terminally ill and therefore I have a lot of time to show myself to these CW activities and also to promote CW as a Morse teacher. CW is not dead, long live telegraphy. I thank you for your interest and I wish all hams in this world good health, all the best and good brass-pounding all time.

### **Richard Corfield, M0RJG**

With thanks to my instructors Peter GM0EUL, Keith G0HKC and Kit G0JPS, I have finally reached CWops! It has taken a lot of practice. The courses have been great, working through character by

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character into word by word head copy. I'll keep on practicing to improve but am happy now that a lot of what is on air is now accessible to me. I really am enjoying CW as a mode.

My interest in CW comes from SOTA. Lightweight equipment such as the MTR3B is easy to carry along with a resonant antenna and telescopic pole. Even at 5W I can reach large distances and find myself in pileup situations. I bought a second hand KX3 for SOTA, but CW allows me to forgo the SSB capability and carry an even lighter kit. The photograph was taken on Whernside (G/NP-004) a few weeks ago by M0DCD



who was operating 2m FM. I've also been seen quite a few times around the parks near my work and home experimenting with portable setups.

I first encountered CW in the 80s playing with other kids on a bonfire night and being impressed by the flashing light signals sent across a field. Children's flashlights in those days had Morse sending buttons on them for this purpose, along with red and green filters for some reason. My first foray into radio at a similar age was the crystal receiver project with 80 turns of enameled wire on a toilet roll core (tap at 20), a 500pF variable capacitor and a Ge diode. I had a wire to a tree in the garden then, and I have wires to trees in the garden now. It was only natural that I went on to study engineering. Like many I was sucked into the dot-com boom and now work with computers, but still love all things engineering. I wish I could do it all! But there's so much out there and not enough time!

I was first licensed as M6RJG sometime around 2007. I met RAYNET, the UK emergency radio network, while on duty with St John Ambulance and thought wouldn't it be great to have those skills as well. Intermediate (2E0RJG) and Full (M0RJG) licenses quickly followed, helped by the engineering degree. Much of my experimentation is with antennas, sometimes microcontrollers and other circuits. I'm with RAYNET, St John and also Scouts with my own children, who are starting to show some interest in radio.

## **Andrew Goss, AA5JF**

It's a great honor to be part of the CWops community. A big thank you to John Laney K4BAI for nominating me, and for the sponsorship of N3JT, NF8M and W9ILY. It will be a great privilege to

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help fulfill the CWops mission of advancing the state of the art of Morse code activities.

I was first licensed as a teenager in Socorro, New Mexico in 1987, and with the help of Elmer Larry Beno WA6GFE, I got hooked on CW and DXing, even with my Novice license. I was able to put up a used tribander with an Armstrong rotator. And equipped with a Ten-Tec Argosy I worked more than 200 countries, many on CW. Larry taught me that busting a pile-up with 40



watts was harder on SSB. I also started attending meetings of the Albuquerque DX Association, and got a taste of contesting, learning from AA5B, N7KA and others. I upgraded to Extra in early 1989, and got my current callsign.

When I moved up to a proper keyer, I decided that in order to prepare for contesting success, I should teach myself to send code with my left hand, so I could log with my right hand. I'm not ambidextrous but even now sending code with my right hand is awkward.

I went to college in New York to study electrical engineering, where I soon joined the college amateur radio club. In my freshman year, I entered the California QSO party from the college station, and still have the bottle of wine the NCCC sent to an 18-year old for placing in the top 20 out of state (now empty, with a candle in it). The end of that contest marked the beginning of my long QRT. I pursued other hobbies in college – including rock climbing – and drifted away from engineering, and finished my degree in Asian studies. I then went to graduate school in history, and wrote a dissertation (later turned into a book) about the history of science in Indonesia. One of the pleasant surprises of returning to the hobby now is to see the popularity of amateur radio in YB land. I did always remember to renew my license.

I am currently a history professor at Augusta University, Georgia, and am married with two teenage boys in the house (my older son Sage is KO4BUR). In early 2019 I bought a rig, put up a wire, and made my first contacts in 28 years, using CW of course. I was delighted to find how useful computers are (thank goodness dupe-sheets are in the past), and only logged my first 20 or so contacts on paper. Sending code left-handed is just a novelty now with so much done from the keyboard.

I still enjoy contesting and DXing. Morse code is perfect for sharing space with three other people (especially in the middle of the night). In the last year I've improved my station with better anten-

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nas. Every weekend seems to have another contest to build skills, although the time commitment for really competing is not yet possible – there are always important family commitments, and I still will pause every Sunday morning for my weekly long run. I look forward to learning from you all.

## **Edward Hill, G4HZE**

It seems appropriate to firstly thank my CWA Advanced advisor Keith (G0HKC) for the very enjoyable CWA sessions and for nominating me for CWops membership. Thanks also to my sponsors, Gary (EA5IUY), Tom (DF7TV) and Hans (LB6GG).

I feel proud and humbled for the faith shown in me to represent CWops with the code of conduct befitting of all radio hams.

I began my ham radio hobby back in 1960 when I was 11 years



old. A friend and I went along to the Plymouth Radio Club (G3PRC), and quickly became absorbed into learning Morse code under the hospices of instructor Paul Laxton (later to become G3SVZ and subsequently Club President). I also took a great interest in contesting in those early days, not only helping at field days with G3PRC, but also accompanying our then Club President Harold Jones (G5ZT) and John Spray (G3LMG) on VHF field days, where we would go to High Willhays, the highest point on Dartmoor that could be reached by car. Contesting was so different in those days, much more relaxed and sociable, even time for rag chews! Eventually after many years as an SWL, I took the Morse code test in 1978 and passed the Radio Amateurs Exam in 1979, obtaining the callsign G4HZE. As with many people, my journey with ham radio has been punctuated with long periods of inactivity and inevitably, ham radio took a back seat to family, career and university. I had a few false starts before returning properly to ham radio earlier this year. I have to admit it was Covid 19 and the imposed “lockdown” that gave me the opportunity to rekindle my interest in ham radio, every cloud has a silver lining!

By profession I’m a Chartered Electrical Engineer and spent my career working in the steel industry, initially as an engineer and then as Engineering Manager. Although I should have retired six years ago, I opted to continue working at a local Care and Nursing Home where I’m currently responsible for maintenance and Health & Safety.

I live in the Celtic County of Cornwall on the banks of the River Tamar, the natural border between Devon and Cornwall. I am very fortunate to have an unobstructed view from my “Radio Shack” window of the iconic Royal Albert railway bridge built by Isambard Kingdom Brunel back in 1859, and this is depicted on my eQSL card.

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CW has always been my favourite mode of communication and it came as a great shock to me earlier in the year, to discover that I had lost my dexterity when trying to operate with the straight key and the paddle. The effects of Anno Domini and arthritis had caught up with me. What seemed so easy as a pre-teenager now had become so incredibly difficult. I still make the odd mistake when keying, but I'm slowly getting back to where I was previously.

Please look out for me on the bands, it will be a great pleasure to QSO with fellow CWops members.

## **Alex Novovic, YU6DX**

Many thanks to Bud AA3B for nominating me and to the sponsors who supported the nomination.

I was born in November 1983 in Belgrade, Serbia (former Yugoslavia). I fell in love with this hobby 25 years ago, when I was 11 years old. As a little boy, I learned CW in local radio-section YU1AAV, and there I made the first step in this beautiful hobby. After that, I made my first CW QSO on 80m with the old German key "Junker". For me, it was



something amazing, communicating in a different way than usual. I can say, the best music in the world for my ears. I have not stopped there. I wanted to learn more and more every day... And then came the crucial moment, my first CQ WW contest and that was the beginning of everything.

I have been licensed in 1995 as (4N1FAN), then 4N1NN (2001), and finally YU6DX (2008). In the past, I participated in national HST, QRQ competitions and was the state champion several times. Good old times.

My interest in ham radio are contesting, DX hunting, mostly CW but also SSB, award chasing, and computer technique. Also, I'm president of Contest Club Serbia (the biggest contest club in YU), and YUFF award manager.

The home HF station is YAESU FT2000, Vertical antenna (HyGain AV-640), Mosley Beam, and dipole (160/80M).

I am excited and honoured to be part of CWops. Thanks to all, and hope to work you on the air soon.

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## **Tim Kirby GW4VXE**

I was born in 1963 and was first licenced as G6TTU, at the time a VHF only call, in 1983. I'd been both a broadcast bands and amateur bands SWL before that, so I knew a little of what I was getting into. Later in 1983 I passed my 12 wpm Morse test and became G4VXE. Having fairly small antennas, I quickly cottoned onto the fact that I'd do better on CW than I would on phone!

Over the years though, I've been involved in many branches of the hobby from HF to VHF/UHF/SHF; from CW to data modes and from ragchewing to contesting.

In the late 1980s I was part of the Square Bashers DXpedition Group which made VHF/UHF expeditions around the UK as well as to Gibraltar, Madeira and Malta.

I spent some time in Canada in the late 1990s and operated as VE3/G4VXE - sometimes from the super-station of John, VE3EJ. In the UK I operated many, many contests from South Wales from the home of my great friends Roger and Sue Ward, GW5NF. I was lucky enough to be part of the FSDXA expeditions to Comoros (D68C) and Rodrigues (3B9C).

Over the last ten years or so, my HF activity dropped to almost zero – where we lived which had started off with a quiet noise level but became noisier and noisier. I concentrated on VHF, mostly 6m and 2m, predominantly data modes.

At the end of 2018, I was able to escape what was a well-paid, but ultimately unsatisfying role in Corporate IT, to what my wife, Julie and I term a 'free range' lifestyle. I am lucky enough to write for a number of the UK radio magazines, including a regular VHF/UHF column, features and reviews of new (mostly VHF/UHF) equipment. Julie, or Reverend Julie, is an Interfaith minister and a published poet – with a book of her work coming out shortly. At the end of 2019, we left Oxfordshire in Southern England to move to a former farm, on the west coast of Wales, near the ferry port of Fishguard Harbour where we have plenty of space to grow our own food – and plant aeri-als!

Although the VHF/UHF bands are fascinating from here, with some exceptional paths being possible at times (I have worked Cape Verde on 2m, some 4300km away and the Canary Islands on 70cm both using 50W of FT8 and a vertical antenna), I decided that I would also like to get back on HF CW. With the space available, it seemed silly not to. With dipoles up and a vertical, I quickly



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found the Wednesday CWTs and enjoyed making a few contacts with friends both old and new.

Outside radio, I'm deeply interested in the ancient landscape here in Wales, photography, walking, astronomy and so it goes on...

Thank you to Stew GW0ETF for nominating me and to Abdel M0NPT, Nigel G3TXF and Don G3XTT for their sponsorship. I'm looking forward to many years of enjoyable CWops activity.

## **Aaron Ray, N4ARY**

Wow!, what an amazing Christmas surprise to be nominated by #1, N3JT for CWops Membership. A very big thanks to you and my sponsors, NJ3K, K1EBY and KK5NA who is mostly responsible for getting me here as my most excellent CW Academy Advanced Advisor and sponsor. I was deeply honored to see that I earned your sponsorship, Joe. Thank you for all you have done for me. In addition to Joe, I would like to thank Ron, VE3FXX, my Level 2 Advisor and Rocky, AE7US, my Level 1 Advisor. The three of you gentlemen have given me the gift of a new skill and passion that I will cherish for the rest of my life.



If we ever have an eyeball QSO, feel free to call me "A-Ray" as many friends do. On the air I keep it simple and go by the name my parents gave me, Aaron. I was first licensed as a Technician in high school in 2003 when a fellow Civil Air Patrol cadet and lifelong friend, David, KG6JOL explained to me that we could use our radios outside of CAP search and rescue activities legally by means of getting an FCC license. I owe much to my high school buddy who gave me a ride to my first test session. He even paid the fee after I failed it. Not easily deterred, I hit the books and persevered. I returned the favor of motivation to Dave in 2004 when I convinced him to join the US Air Force shortly after I got back from my own visit to the recruiter's office. I left for basic training and wondered if I would ever see Dave again. Much to my pleasure, I saw Dave weeks later out of the corner of my eye, marching by in a passing formation. It was a struggle to keep my military bearing as I marched on in the opposite direction. Dave is no longer in the Air Force, but he had an epic career serving in Air Force Fire Protection and now continues service as a firefighter, medic and emergency management professor.

I still serve in the USAF today as a Senior Master Sergeant in the Boom Operator career field, which means that I refuel airplanes in flight and somehow manage to get paid to do so. Since 2012, I've served in the flight test community by testing new tankers, certifying receiver aircraft to refuel behind legacy tankers and functional check flight testing. I currently serve on a group staff servicing units spanning the country who perform these missions. In the years following my ini-

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tial enlistment, I fell out of our hobby as many young people do, as I arranged my life and moved many times. In 2015, it was Dave again who motivated me to get on HF when he stopped by my house during a long road trip. After some catching up and a few social lubricants, Dave threw a wire in a tree in my backyard and hooked me again as he spun the dial of his FT-817. I have been at it ever since and this time it stuck.

My ham radio hobbies mostly involve CW. I very much enjoy QRP CW. SOTA, NAQCC events, other contests and CWTs continue to set the hook deeper for me. In the shack I keep it under 100w with my FT-991A, KX2 (sometimes with help from my KXPA100) or one of my other QRP rigs into an EFHW or fan dipole. When portable, I typically take a HT and my KX2 or something designed by the great Steve Weber, KD1JV. Non-radio hobbies include outdoor activities such as hiking, shooting, archery and BBQing. It's hard to beat a meal that has been rolling in smoke for the better part of a day. If you ever pass through middle GA, drop me a line. I love cooking for friends. I am happily married with two young children who keep me busy. I am also their Cub Scout Den Leader. I may have used scouting once or twice to share the magic of radio with the kids. Both of my kids show interest and my daughter often sits with me to learn the characters.

If you've made it this far without falling asleep, I salute you. I promise I'm not usually this long-winded, but I felt that an honor this big was worthy of a few extra words. Again, thank you to all who have helped me get this far. My debt to you will be paid forward soon as I have already volunteered to be a CW Academy Advisor for the upcoming Beginner session.

### **Tony Garland, N7DX**

My initial interest in electronics was sparked one Christmas when I received a "50-in-1" kit from Radio Shack. Thereafter, a buddy of mine (now KB7RYY) and I became interested in listening to shortwave radio (SWLing). I saved up my money, purchased and built a Heathkit GR-64 shortwave receiver. It wasn't long after that when I began listening to interesting transmissions from local amateur radio operators. Soon, we were studying for our ham licenses.

I obtained my first license at age 16, back in 1972. My original call was WA7UQG. As a teen, I operated from my parent's house in Normandy Park, south of Seattle. My first transceiver was a Heathkit HW-16 (CW only). Later, I graduated to a Heathkit HW-101 (CW + SSB) transceiver.

One of my Elmers was the well-known DXer Bill Bennett (W7PHO) who lived just a few miles away. Bill introduced me to the Western Washington DX Club where I became interested in DX and contesting. Another Elmer who helped me study and pass my Extra-class license was Ken Barroll (now W7OP).

After high school, I attended college at the University of Washington where I set up a station in my dorm room running a Heathkit HW-101. One of my room mates was also a Ham, Walt Legowski (WA1KKM).

After graduating from college and getting married, I lived on a sailboat for a number of years--where I still have a portable station using an ICOM-735 and SG-230 remote antenna tuner feeding the back stay (about a 43-foot-long sloping wire) against a copper counterpoise installed in-

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side the hull of the boat.

Other than a few years as a net control for the Seafarer's Net (running telephone patches for boats transiting the Pacific), other interests and activities left less time for amateur radio. My operating activity dwindled for many years. When a remodel project intervened, my antennas had to come down and the radios were boxed up--where they remained for almost 20 years. Other than an occasional contact made from the boat, I was effectively off the air.

In 2017, some early ham friends, Tom Owens (K7RI) and Walt Legowski (WA1KKM), stopped by for a visit. Later, Tom invited me as a guest operator in multi-operator contests and the bug bit again. It took me a couple of more years before I set up the home station I have now.

## **Hamp Williams, WS5C**

Greetings to my new fellow CWops members. I owe a big thanks to my college friend Mike K5XU for nominating me and to K8BZ, N3JT, and W6SX for sponsorship. I will try not to disappoint! As I have gotten involved with this group, I have encountered a lot of familiar names and calls from past QSO's, and this has been a pleasant surprise. I have been a ham for 54 years and it has been a most enjoyable hobby, I have met many friends, and it has shaped my career. I am now a retired physician, enjoying life. Here is my story.



I credit the spark that generated my interest in radio, CW, and career path to my father for giving his 10 year old son his Hallicrafters S-53 receiver. As a kid, when I flipped that toggle switch to CW, and heard those sounds and distant places I guess I was hooked. The interest progressed as he introduced me to a couple of local hams. At age 14 one evening I took the Novice exam and code test in the back of Mr. Guy's TV repair shop. That resulted in my first call-WN5PDU, and many fun trials getting on the air. My parents allowed me to set up my first station (to get out of the main house) in a garage closet. I benefited from a great Elmer who helped me track down a much-used Globe Chief 90A. He advised me correctly to invest in a good receiver - this led to a gently used Hammurland HQ-110. I got interested in DX early, built a beam and my parents let me put it up. Here is the photo of that 1966 Novice station; note that Lafayette bug!

I went through phases of activity as have many of us who started as young hams. However, whenever I had the opportunity I always came back. In college I chose electrical engineering. There I managed to find the college club station W5YD in one of the engineering build-

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ings. Today I still have a regular schedule with some former members. After finishing college, a career choice resulted in me undergoing a career in medicine, and ultimately specializing in Anesthesiology. I honestly credit ham radio for leading me to pursue engineering and then medicine and then my anesthesia career. Much of the learning and problem-solving complexities are the same.

Today I still preferentially operate CW and look for the rare DX. I try to be an ambassador for CW at my local club and have taught local Scouting Troops the signaling merit badge. After 42 years of medical practice and a couple years of hospital administration, I am finding increased time for this great hobby. I enjoy traveling, riding my motorcycle throughout North

America, and sitting by the lake. I credit my most-tolerant wife for putting up with CW squeals, a mess of wires, and an antenna that looks beautiful only to a ham.

