OCTOBER 2025 VOLUME 22 ISSUE 10

THE LOGGER'S BARK

a magazine

Radio Club of Tacoma

In this issue:

Cover:

The Grim Reaper Guards the Tower at the N7ANN and W7UUU Shack in Burley as the Bad Moon Rises

Photo by W7UUU

About The Cover

LEGEND HAS IT, STRANGE FIGURES SOMETIMES APPEAR BENEATH THE RADIO TOWER WHEN THE LEAVES START TO TURN AND THE NIGHTS GROW LONG. THIS OCTOBER, IT'S THE GRIM REAPER HIMSELF—THOUGH IN TRUTH, HE'S A TWELVE-FOOT INFLATABLE ON A THREE-FOOT PLATFORM ANNE N7ANN AND I PICKED OUT FOR A BIT OF HALLOWEEN FUN. NOT PHOTOSHOPPED IN... IT'S JUST THE 70' TOWER, THE WOODS, AND OUR SPOOKY OVERSEER KEEPING WATCH.

In Memoriam

Silent Keys & Friends Remembered

Silent Key is a term of final endearment originally given to telegraphers who had died. Silent Key denotes their key was no longer active.

As time and technology moved forward the Amateur Radio Community adopted this to honor ham radio operators who had passed and became a "Silent Key"

Silent Key

There was a time when the sounds had flowed from your radio room.
A melody to you, and to some a cantankerous noise.

But what a wonderful sound. A melodious harmony and rhythms known to a few, but to you a symphony of your own creation.
Carrying your thoughts and feelings across town and around the world.

As times changed you picked up a microphone and shared your hours with friends known and unknown. But you always came back to the key you knew so well.

And now you are gone. The key knows no melody. The symphony is silent.
We remember with fondness the sounds that flowed
from your room, and we are now greeted with silence.

But now, your signals are perfect. All 599 with perfect tone. Your key is now golden. Your Creator now listens to the symphony we used to enjoy, and smiles, embrace you, and shows you the heavens where your symphony now roams.

-Matt Anderson - KAØBOJ

In Memoriam

Silent Keys & Friends Remembered

Left: Paul P. "Tad" Cook K7RA joined the Radio Club of Tacoma in November of 2021. Although he lived in Seattle, he stopped by the clubhouse now and again on a Saturday Openhouse Day here and there. He was originally licensed in March 1965 at age 12, and was an avid "Blues Dancer". He was well-known in the dance community, and also spent time as a DJ for such events. Tad became a Silent Key in April 2025 but this was only recently made known to the club.

Above: right Jan Gilbertson K7HTU was a very long-time member of the Radio Club of Tacoma, having joined in 1959 as member number 434. Many will remember him as being a big part of the Volunteer Examiner (VE) Team for the club, as well as being assistant Chuckwagon Chef at Field day and the Kirkreit Summer Picnic events for many years. He passed away August 23, 2025 at the age of 82. Funeral will be 12:30 Monday October 23 at the Tahoma National Cemetery in Kent, Washington. LINK to the location.

Left: Rick Leary K7LKG joined the Radio Club of Tacoma in October of 1970 as member number 644. In recent years, he was a frequent contester and CW master, often seen working contest events with the N7PP South Hill Contest Club (begun by Jerry W7BUN (SK) and later managed by Nick K7MO (SK)). Like Jerry, Rick was a Boeing retiree and spent a lot of time working CW contest events. He was also a member of FISTS, 10-10, and the North American QRP CW Club. He passed away in February 2025 but this was only recently reported to the club.

Below: Also just reported to the club, the passing of Rich Frankenberg, KI7HAE. Rich joined the Radio Club of Tacoma in August of 2019 as member number 2900. He passed away in April, 2025

W7DK 2025 Officers and Committee Leaders

Executive Committee:

President:	Adam Barbera W2NCC
Acting Vice President:	Mike Isakson W7XH
Secretary Pro Tem:	Mike Drorbaugh W7MKE
Acting Treasurer:	Doug Schafer AB7DG

Board of directors:

Board:	Mike Drorbaugh W7MKE
Board:	Paul Matney W7PFU
Board:	Doug Schafer AB7DG
Board:	Dan Vacanti KD7SV
Board:	Dave Ashley W7GEL

Key Committee Chairpersons:

Membership:	Mike W7XH
Salmon Run:	Mike W7XH
Infotech/IT:	Randy WB4SPB
HF Operations:	Phil K7PIA
Facilities:	Adam W2NCC
Property Mgmt.	Red WB7EC
Museum:	Dan KD7SV
Planning:	Mike W7XH
POTA:	BJ KO7T
General Meeting:	Dave W7UUU
Bark layout & Editor:	Dave W7UUU
Assistant/Copy Editor:	Anne N7ANN

The Logger's Bark does NOT accept AI submissions

Contents

QUICK LINKS TO THE BIG STUFF!

But don't stop there! Each issue is 100 or more pages of fun and cool stuff to explore! Scroll on!

***xx**=nothing submitted*

PRESIDENT'S CORNER

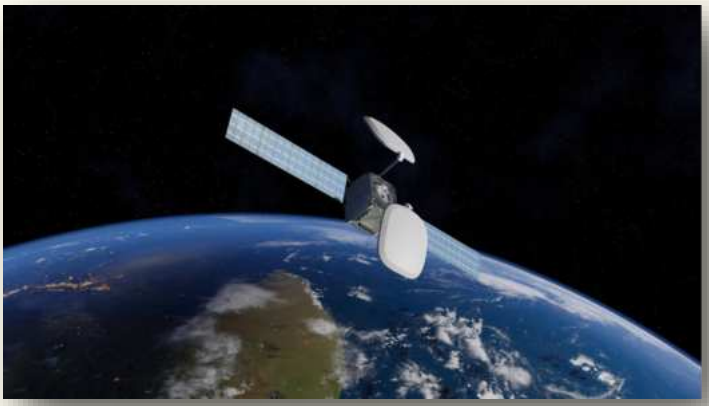
Monthly ruminations from our President

Adam
Barbera
W2NCC

FutureGEO Satellite Project

Some of you may be familiar with the QO-100 project, the world's first geostationary amateur radio transponder. The satellite is owned by Qatar and unfortunately does not have coverage for North American hams. Things are changing. AMSAT-DL (Germany) is looking to build the next-generation GEO satellite called FutureGEO. This project has a lot of good ideas and could help shape the future of amateur radio in space.

Satellites in geostationary orbit (GEO) fly over the Earth at the same speed as the Earth rotates. It takes GEO satellites about 24 hours to complete one full orbit, which makes these satellites look like they're stationary in the sky. They move at speeds of 6,710 mph and at an altitude of 22,236 miles, which is higher than most satellites.



Artist rendering of the FutureGEO satellite in orbit
Image from AMSAT-DL

The concept of partnering with a commercial satellite to host an amateur radio transponder is brilliant. The QO-100 project pioneered a new approach for amateur satellites, sharing the expense of building and launching satellites. Today, QO-100 is the only geostationary satellite for amateur operations, and its orbital location does not allow North and South American hams access. This is one of the reasons why FutureGEO is important.

The FutureGEO project is still in the design phase. AMSAT-DL, in cooperation with the European Space Agency (ESA), is currently gathering ideas for the payload, which could include some of the following: expanded analog and digital transponders (SSB, narrowband, and wideband channels for a variety of operations), a software-defined radio (SDR) core allowing new modes to be uploaded even after launch, and high-speed data links supporting digital voice, video, and messaging. The footprint of the satellite coverage will depend on the host satellite; however, expected coverage could reach eastern European countries and possibly large portions of North and South America.

A geostationary amateur satellite provides hams the ultimate HF-like experience on VHF and microwave bands with 24/7 availability. There are no orbital passes to wait for, no hoping for good HF propagation, and a true consistent meeting point for communications and experimentation. This will have huge implications for ham emergency communications. The FutureGEO project will push amateur satellite technology further, opening doors for reliable international amateur radio communication.

Stay tuned to AMSAT-DL's updates and let's watch as this project develops. The next big leap for amateur radio satellites might be just a few short years away.

Adam W2NCC

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FROM THE DESK OF THE VP

Insights from our Vice President

Mike Isakson
W7XH

BUILDING THE RADIO CLUB OF TACOMA 2.0

At a recent planning committee meeting, the phrase 2.0 was used in reference to the club. What does that look like? How do we get there—or better still, where will it take us?

Just as the spark gap gave way to CW and the heavy boat anchors yielded to sleek transceivers, change driven by technology and innovation must be fully embraced. Radio has brought wave after wave of breakthroughs, but not all of them have found acceptance among today's hams.

We have all heard the refrain, "That's not ham radio." Yet clinging too tightly to the past has been the undoing of many clubs in America, costing them members and vitality. There is a sharp contrast between the Silent Generation and Boomers on one hand, and Millennials and Gen Z on the other.

Mike W7XH working on VP & Membership tasks

Most clubs today are top-heavy with seniors, and the number of silent keys continues to grow. Energy fades, activities yield to inactivity, and mentoring classes wither. Thirty, forty, or fifty years ago the story was different—clubs were alive with doers, builders, and collaborators.

The 2.0 club will resemble the Radio Club of Tacoma of 1955: younger, stronger, active, sharing, and rooted in community. It will thrive on participation in nets, repeaters, classes, training, facility care and upkeep, PMT, Field Day, Salmon Run, and Bigfoot. Why? Because activity is attractive. An active club empowers its members. I like the saying: Each one, teach one. Create your successor. Invest in the club by investing in others. Never let a position sit empty—train your replacement.

How do we reach that point? It begins with openness. Openness to ideas, and to change. Old school must embrace new school. Just as tubes gave way to transistors—delivering reliability, efficiency, and convenience—our service has expanded. CW and SSB are no longer alone; they stand beside digital modes, digital radio, repeaters and VoIP, SDR and DMR radios, EchoLink, and even cousins such as GMRS.

FROM THE DESK OF THE VP

Insights from our Vice President

Mike Isakson
W7XH

A thriving club also invests in itself. To grow—and to ensure survival—we must market the club. That investment can take many forms: certificates or birthday cards for members, invitations to newly licensed hams, community booths at farmers markets or local events, or special activities that draw the wider ham community.

Our charter lays out the path:

A. Provide technical training in radio theory and operating practice.
B. Share current information about scientific advances and new techniques in radio communications.
C. Train a pool of licensed operators capable of maintaining communications during emergencies and disasters.
D. Encourage experimentation in equipment, systems, and operating methods, so that skills continue to grow in the service of the public.
E. Promote the highest standards of practice and ethics in amateur radio.

In short, our charter demands investment in both our members and our mission.

It is time for the old status quo to ride off into the sunset like a weary trail hand. The twenty percent who now carry eighty percent of the load must teach one, so that forty percent share the work. Invest in your club. Embrace change. Welcome new and different ideas.

Not long ago, a fellow member challenged me—though I took it personally, I believe the challenge was aimed at us all—to provide better follow-up for newly licensed technicians. Challenge accepted. And thank you, Tim, for the nudge.

History reminds us that eight young men once built a club that weathered the Depression, endured World War II, and has stood for nearly 110 years of amateur radio history.

The Radio Club of Tacoma 2.0, with its 430 members, has the same kind of opportunity in front of it right now. The future doesn't come from a committee report or a mission statement—it comes from people rolling up their sleeves and getting after it. Our predecessors left us a strong foundation. Now it's our turn to build on it.

73,
Mike W7XH

Photo: Dave W7UUU

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SECRETARY'S REPORT

W7DK Secretary Pro Tem—Mike W7MKE

SEPTEMBER WAS A BUSY MONTH FOR ALL THE officers as we entered the season of fundraising, elections, budgets, and future planning.

Salmon Run is our annual fundraising event. Mike W7XH, our awesome membership chairperson, wrote an exceptionally good description of why Salmon Run was so important to RCT, and that appeared in a previous *Bark* edition. As I am writing this, the outcome of Salmon Run for this year is yet unknown. But results and photos will be published elsewhere in this issue of *The Bark*. (See Page 55).

My responsibility is to assemble the team of operators to participate in the contest from our clubhouse stations. There is a range of potential talent available, so it is possible that we will contact all Washington counties again for the coveted Salmon Run Clean Sweep.

Elections are coming in November, and I encourage members to consider serving as officers or board members. Most roles are not difficult, and many of you have relevant experience, especially those of you with business experience. Board members simply need a willingness to guide the club, with no specific duties assigned by our Bylaws. If you do not want to run, please find a way to help out around the club.

In addition to monetary donations, members often leave their radio gear to the club, especially after becoming SKs. These generous gifts supply much of our current equipment, and gear not used by the club is sold—covering roughly another third of our operating expenses.

About a year ago the Board formed a Planning Committee, now headed by Mike W7XH, to look toward improving funding methods and activities to interest current and potential new members. Our President has consistently demonstrated a commitment to identifying innovative funding opportunities for the club. He recently presented the concept of establishing an Endowment Fund to the Board. Some members would prefer to donate to an endowment that offers support to the club forever—however long that might be. The endowment fund principal is not accessible to the Board, and the interest is typically distributed annually as part of that year's income. Currently, options for establishing an endowment for the club are being considered, with the objective of identifying an effective solution.

I wish everyone a happy and prosperous month, year, and life ahead.

73,
Mike Drorbaugh – W7MKE
RCT Acting Secretary

I AM WRITING THIS ARTICLE FROM THE CLIFFS AT PEACE CANYON in Las Vegas. I am taking a short time of rest between our major fundraiser Salmon Run and October membership renewal and election of officers. I came down to celebrate my 49th wedding anniversary. Dinners, outdoor theater, and 5 POTA's later, my editor has reminded me of publishing deadlines. Thanks, Dave!

Elections have begun, and ballots will be in the mail shortly after the October general meeting. The mailing will consist of a membership renewal notice, election ballot, a new membership ID card, and return envelopes. If you do not receive a ballot and think that you should have, please email THIS LINK by October 22, 2025.

Mike W7XH in Las Vegas—photo provided by Mike

Please don't let them sit in the bin or bowl to address later. Membership is so important, but an active membership is critical. It is said that many hands make light work. Clubs like ours often have members who feel they are too old or don't realize that the skills they still have would be a real blessing to the club.

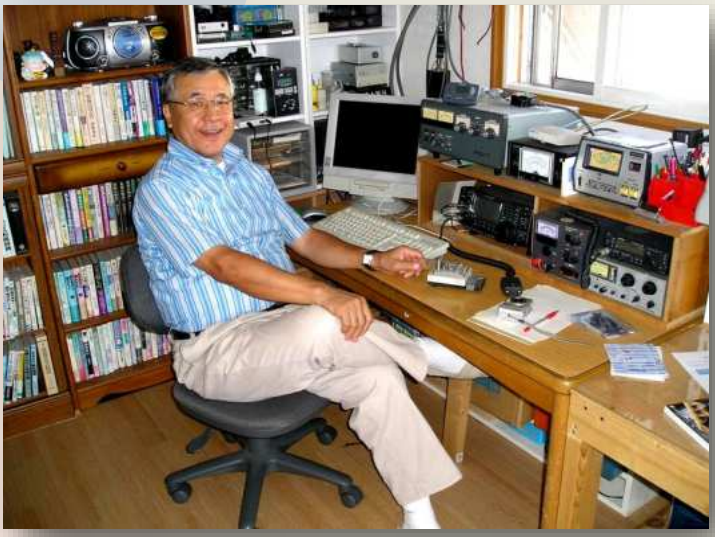
Do you have any of the following skills? Photography, graphics and art, technology, teaching, administration, writing and editing, bookkeeping, coding, electronics, drafting, construction, cooking, cleaning, hospitality, grant writing, or even the ability to encourage others. If you do, please share those skills. Reach out to membership@w7dk.org and let me help get you connected.

Our club is not just the officers and board members. It is a rallied membership setting goals and investing their talents, time, and finances to ensure the future of the radio club.

I encourage you to return your membership renewals and your club election ballot as soon as possible. Stand with us to build an even better Radio Club of Tacoma in 2026. While I ask for greater club involvement and participation, I want to thank so many who have dug in this year to make their presence known. I see you and appreciate what you are and have been doing for the club.

If you have made a pledge to Salmon Run or would like to do so, please use the online Salmon Run form with the PayPal option. As of this writing, we are a long way from our goal. Please see the Bigfoot article in this month's *Logger's Bark* (see page 26): the Bigfoot special event station is coming your way soon. If you have not signed up to operate, please contact BJ immediately at THIS LINK.

73
Mike W7XH
Membership Chair



PLEASE GIVE A WARM WELCOME TO OUR FIRST JAPAN-BASED member of the Radio Club of Tacoma, Mr. Yasuyo "Yass" Shiiya, JA8AWH, from Sapporo, Japan! Yass also holds the U.S. Extra callsign NX2A. In his message to Mike W7XH, RCT Membership Chair, he says:

"Thank you very much for accepting my membership application. This is my first time joining an amateur radio club in the United States, and I am very excited to see what lies ahead.

I am an old-timer with over 60 years of experience in amateur radio. Since 1965, my main activity has been DX chasing. My achievements include DXCC Honor Roll No. 1 with 328 confirmed in Phone, 322 confirmed in CW, and 306 worked in Digital. So far, I have made a total of 599 QSOs with stations in Washington State, including one with you [Mike W7XH] on July 8, 2021. At present you are the only active RCT member I have contacted I believe, but I also had QSOs with W7BUN, who used to be a member in the 1970s and 1980s. For this membership, I received tremendous support from [RCT member] Jiro, KW6A, to whom I wish to express my deepest gratitude. Thanks to his encouragement, I earned my Amateur Extra license and received the call sign NX2A in 2008, which I have been keeping every since. Until recently, I was an ARRL member under that call sign, but now I am rejoining with JA8AWH. I look forward to working with you and getting to know all of you better. It would be great to join RCT's general meetings to greet each one of the members of the club, but I think it's slightly hard for me to do, because 1 PM Pacific time is 5 AM our time. If I can get up early sometime, I would like to say good morning to everyone there.

Best regards,

Yass JA8AWH / NX2A"

NEW MEMBER WELCOME!

Jiro Oi KW6A "Our Radioactive Family"

KW6A

The following essay was submitted by Jiro Oi, KW6A, who joined the club earlier this year. He is very closely connected with the new member on the previous page. Welcome Jiro!

Our 'Radioactive' Family

I joined the Radio Club of Tacoma in the beginning of 2025 with my YL, Karen K4KOI, after moving to Renton, Washington to be close to our kids from Brentwood, Tennessee in 2023.

Now, my "brothers" in Hokkaido, Japan are joining the Tacoma club. My older brother, Terry, JL8VJC is through blood and younger brother, Yass, JA8AWH is through the electromagnetic wave (or brother from different parents). Hopefully, they are the DX member #2 and #3 – as the #1 DX member title was claimed by Pascal, F4LPH in France.

Our family is uniquely 'Radioactive' – How?

To start with, I am originally JA8SB from Hokkaido and came to Renton by way of California (There was a citizenship requirement for the FCC license in 1964), Laos XW8DG, Hawaii KH6BZ (The citizenship requirement was dropped then), Arizona AG7I, back to California NA6U & KW6A and TN (I retained KW6A). Karen was originally from Pennsylvania. We were together in school in AZ and she moved to CA and became licensed as N6SJT. We got married and QSY'd to Tennessee due to my employer's relocation. She received a new vanity call K4KOI. We attended the Dayton Hamvention, and she passed the 5 Word Per Minute (WPM) CW code test, earning her Tech Plus status.

Our son, Stephen, was two when we moved to Tennessee in 1991 and grew up there. He obtained his first license KG4AEB at age 8, eventually upgrading to the Extra at the age of twelve. When he passed his General with 13 WPM CW code test, he was ready to go for the Advanced class. However, the FCC rule change eliminated the Advanced class and CW code requirement to 5 WPM regardless of the class. He was SO upset and told me 'It is not fair – I just passed 13 WPM, yet all we need now is only 5 WPM even for the Extra class'. I had to tell him 'Life is not fair so get used to it.'

The Oi brothers in Sapporo (Yass JA8AWH & Terry JL8VJC)

We celebrated his accomplishment when he earned his Extra by applying for the vanity call NV6A. He finished college in Tennessee and moved to Washington. He got married to his schoolmate Amanda, KE4ARC. They are busy raising their daughter Nora. They named our granddaughter by picking a future Extra call N0RA!

NEW MEMBER WELCOME!

Jiro Oi KW6A "Our Radioactive Family"

KW6A

My older brother, Terry JL8VJC, is a late comer to the ham world. When we were growing up, he had nothing to do with radio. He liked Kendo, and I was his sparring partner. I had been beaten up big time and I hated it! I got out when I started high school. He kept it up and eventually earned the fifth 'dan' level.

He enjoyed riding a horse and wanted to play cowboy. He came over to the western U.S. to chase the cattle, on the dirty trail without taking a shower for more than a week as you can see in the picture – I cannot believe he did this more than once. He met Yass JA8AWH, my longtime ham friend, in a small English debate class in Sapporo by pure chance. It is amazing that in a city of about two million, to meet someone in a small class. Yass showed him how wonderful the ham world was and finally he saw the 'light' – Hallelujah! I am so glad that he became a part of our 'ham family' finally! Later, he received the US license and 'inherited' the W3ACE vanity callsign which was held by the late Hon. Armin H. Meyer, US Ambassador to Japan. Terry was 'converted' to ham radio in his seventies, so he was the late bloomer as they say, 'better late than never!' He and Yass came to the US to attend the Dayton Hamvention – they flew into Nash-

My cowboy brother Terry, chasing cattle "Heaaad 'em up, moooove 'em out!"

My "Electromagnetic Brother" Yass JA8AWH, chasing and looking for rare countries, "CQ DX, CQ DX, CQ DX"

NEW MEMBER WELCOME!

Jiro Oi KW6A "Our Radioactive Family"

KW6A

ville, and we drove to Dayton with Stephen chauffeuring who came home over the weekend from Knoxville where his school was. So, the 'four Oi Boys' had a good bonding time during the seven-hour drive from Tennessee to Ohio.

Yass, JA8AWH is my younger brother through the electromagnetic waves, rather than conventional relationship. Unlike Terry, he started his ham career at the same time as I did in the early 1960s. He has been quite a DXer and now he is the DXCC Honor Roll #1 in Mixed. Unlike me, Yass is an avid CW-man and a member of Keymen's Club of Japan [LINK]. (I struggled to pass my 20 WPM when I got my Extra ticket eons ago – hi hi!) His other passion has been the music band since his college days – Take a look at the recent video clip linked below of his group, The Viscounts, performing at their 50-year reunion concert. He is the drummer. He loves The Ventures, which started in Tacoma – I even call his band 'The Sapporo Ventures'! Unlike me again, he is extremely well organized, and he can tell you if you have made a QSO in the past and he would be able to show you your QSL card if you sent him one – His QSL collection includes the one from Mike, W7XH, as shown below.

He received the prestigious Overseas Yomiuri 10,000 Award (confirming 10,000 DX contacts) – Amazing! He received the FCC Extra Class license NX2A, and he is a VE in Sapporo.

So, this is the story of my 'Radioactive' family.

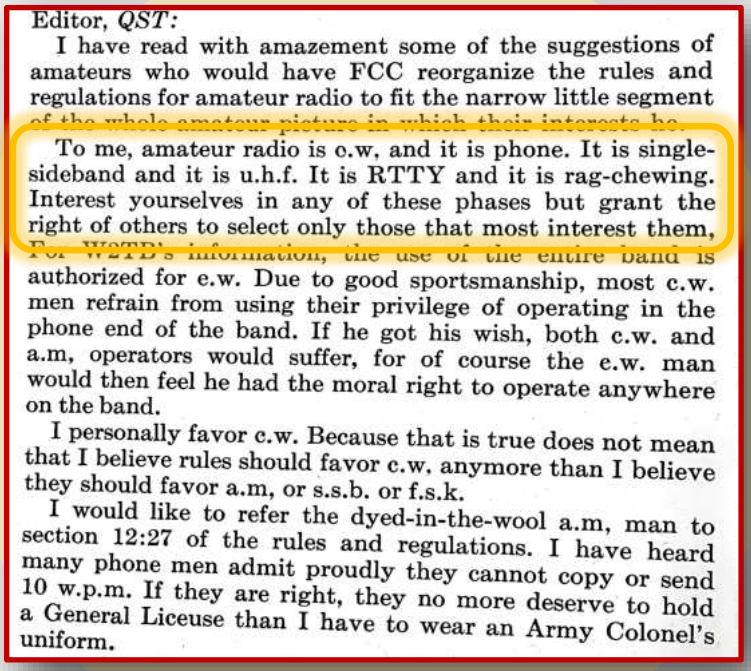
- 73 Jiro KW6A

My Electromagnetic Brother Yass JA8AWH and his band The Viscounts at their 50th reunion concert Right-click > "open new tab" to play

My QSL card from Radio Club of Tacoma member Mike W7XH

AS MANY ARE PROBABLY AWARE, I'M ON STAFF with QRZ.com and spend quite a bit of time monitoring the discussion forums. One of my big personal pet peeves (and one shared by many) is "mode hatred" comments that I see posted all the time—almost daily. If you're not familiar with this rude practice, it's all about folks (99.9% of which have zero experience with FT8) bashing anyone who uses FT8 or FT4 as "computers talking to computers" and putting them down by saying "it's not ham radio".

So funny thing while perusing a 1958 QST magazine I learned that this concept is far from new! In a letter to the editor, a reader opines, "to me, amateur radio is CW and it is phone. It is SSB and it is UHF. It is RTTY and it is rag-chewing. *Interest yourselves in any of these phases but grant the right of others to select only those [modes] that most interest them*". Wow—plus ça change, plus c'est la même chose indeed! The same "mode hatred" was also pretty rampant during the transition of the ham masses from AM to SSB from the late-1950s into the mid-1960s and their disparaging putdowns, calling SSB "slopbucket". That term is still often used to this day in the AM circles and internet forums.



Editor, *QST*:

I have read with amazement some of the suggestions of amateurs who would have FCC reorganize the rules and regulations for amateur radio to fit the narrow little segment of the whole amateur picture in which their interests lie.

To me, amateur radio is c.w, and it is phone. It is single-sideband and it is u.h.f. It is RTTY and it is rag-chewing. Interest yourselves in any of these phases but grant the right of others to select only those that most interest them. For W2YB's information, the use of the entire band is authorized for c.w. Due to good sportsmanship, most c.w. men refrain from using their privilege of operating in the phone end of the band. If he got his wish, both c.w. and a.m, operators would suffer, for of course the c.w. man would then feel he had the moral right to operate anywhere on the band.

I personally favor c.w. Because that is true does not mean that I believe rules should favor c.w. anymore than I believe they should favor a.m, or s.s.b. or f.s.k.

I would like to refer the dyed-in-the-wool a.m, man to section 12:27 of the rules and regulations. I have heard many phone men admit proudly they cannot copy or send 10 w.p.m. If they are right, they no more deserve to hold a General Liceuse than I have to wear an Army Colonel's uniform.

QST Magazine, September 1958 © ARRL, Inc.

The reality is, FT8 is far and away the most popular mode in ham radio history, and folks—that's not going to change. It is not going away! That's what the AM folks thought about "slopbucket", and I'm sure if you go back to late 1920s QST magazines, you'd find plenty of "mode hatred" spewing from the last vestiges of the Spark (damped wave) folks as the new-fangled CW (continuous wave) mode took over the amateur airwaves. Which of course was followed by the new fangled AM that started taking up bandwidth and suddenly everyone was *talking* into their radios.

These are just modes, folks—just like the fellow in the above letter to the editor says, "*grant the right of others to select only those [modes] that most interest them*". That's the nice thing about choices—we all get to make our own; and me making my choice doesn't in any way prevent you from making your choice.

As for me, I happily use as many modes as I am able: CW, SSB, AM, FM, RTTY, SSTV, and yes I also use and enjoy FT8 and FT4. And what about those hams who are getting on in years and no longer have the hearing to work "real ham radio" like SSB and CW. Or who no longer have the muscular ability to operate a keying device. For a great many hams, FT8 has been an utter blessing in getting them back on the air and making contacts. Let's stop with the mode hate!

-Dave W7UUU

HAM RADIO WORLD NEWS

FCC Grants Use of 430-440 to SpaceMobile

Web

FCC GRANTS AST SPACEMOBILE LIMITED USE OF AMATEUR RADIO BAND AFTER PUBLIC OPPOSITION

September 2025

On August 29, 2025, the FCC Space Bureau issued a license modification to AST & Science LLC (AST SpaceMobile) permitting limited use of the 430–440 MHz amateur radio band for telemetry, tracking, and command (TT&C) operations. The approval covers 20 additional satellites in the company's planned constellation, but it is far narrower than what the company initially sought.

The FCC's action followed a surge of opposition. More than 2,500 comments were filed by amateur radio operators, advocacy groups, and international organizations urging the Commission to reject the proposal. The ARRL, AMSAT, and several International Amateur Radio Union (IARU) member societies argued that allowing commercial use of this spectrum would risk harmful interference with long-standing amateur activities. They also noted that other spectrum allocations already exist for TT&C operations.

The 430–440 MHz band has been a workhorse for amateur radio. It supports repeaters, weak-signal experimentation, Earth-to-space communications, and digital data links. Amateur satellites also rely heavily on this band. For many hams, the idea of a commercial operator gaining access raised alarms about precedent and long-term spectrum protection.

AST SpaceMobile, for its part, maintained that it did not intend to disrupt amateur use of the band. The company stated that operations in the 430–440 MHz range would be used only in "exceptional circumstances" such as satellite launch, early orbit phases, or emergencies when other TT&C bands were unavailable. To address interference fears, AST pledged that transmissions would be brief, low in duty cycle, and coordinated to avoid conflicts.

The FCC ultimately struck a compromise. The license modification grants AST authority to use the amateur spectrum only under strict conditions: transmissions must be limited to genuine emergency situations, and use may not exceed 24 hours at a time. By explicitly framing the grant as a contingency measure, the Commission sought to balance commercial innovation with its obligation to protect amateur allocations.

Critics remain wary. The IARU and its member societies have warned that reliance on Article 4.4 of the ITU Radio Regulations—which allows exceptions to normal allocation rules under special conditions—sets a troubling precedent. They argue that AST has not demonstrated a compelling technical need to operate in amateur spectrum, particularly when alternatives exist.

The proceeding is identified as FCC Space Bureau Docket No. 25-201, with ICFS File No. SAT-MOD-20250612-00145. Amateur radio groups continue to monitor the case closely, stressing that protection of the 70-centimeter band remains a priority for both present and future operations.

- RadioWalkieTalkie.com , daily.hamweekly.com

AMATEUR RADIO SERVES DURING NEW ENGLAND TORNADOES

09/12/2025

Amateur radio volunteers serving in the ARRL Amateur Radio Emergency Service® (ARES®) and the National Weather Service SKYWARN® program were active over the weekend. They were serving their communities in New England as tornado-warned storms moved across New York, Connecticut, and Massachusetts. Five EF1 tornadoes struck the central Massachusetts communities of Paxton, Holden, Berlin and Stow.

A squall line of severe thunderstorms that would eventually have embedded tornadoes in central Massachusetts swept across the region. SKYWARN nets activated on repeaters across the area. Reports came in rapidly of downed trees and wires, as well as hail up to ¾" in diameter in western Massachusetts, with radio amateurs sharing critical damage reports from this area. In addition, reports of damage were received in all of the tornado path areas in near real time and were shared with the National Weather Service, Boston / Norton Weather Forecast Office, WX1BOX, amateur radio team direct via repeaters, using various applications, email, social media that the amateur radio team utilizes.

"It had been a below normal 2025 severe weather season with only one large-scale severe weather event [in July] across Rhode Island and southeastern Massachusetts," said Rob Macedo, KD1CY, ARRL Eastern Massachusetts Section Emergency Coordinator and SKYWARN Coordinator. "That all changed on September 6th."

Southern New England averages 2 tornadoes per year. The 6 states of New England average 8 tornadoes per year and there had been none in 2025 until Saturday, 9/6, when 2/3 of the average yearly total occurred. This outbreak also put southern New England above average for tornadoes in the 2025 season.

All active SKYWARN nets were secured around 6:30 PM Saturday. Andrew Loconto, Lead Meteorologist NWS Norton MA, commented, "Thanks to the entire team for all the reports today!" A complete summary of the severe weather in southern New England can be seen on the WX1BOX web site.

THE MAILBAG

Rick Casey W6RKC proudly holds is RCT Logger's Certificate
It's the first one we've ever sent to 6-Land (California)! Congrats, Rick!

From QRZ,

What I find truly amazing is just how well Dave W7UUU knows all of the club members! When he writes about them he relates the most interesting details of their lives—both hobby related and others—and captures the readers' interests. Each issue is a valuable addition to QRZ.

Jim N3AWS
Moss Point, MS

Dear Jim,

Thanks so much for the kind words and thanks for reading The Logger's Bark

73—Dave W7UUU

In last month's issue *of The Logger's Bark, Patrick K7GUD posed a great question: "I loved the Sherlock article and his finding the Music Man. But I was frustrated the article never told if the Music Man was actually caught and punished. Sort of like watching a movie that doesn't have an ending"*

To which I responded that I would reach out to our Mystery Writer Sherlock and pass that question on. Well, here's what Sherlock had to say:

My dear Patrick,

The affair of the so-called thirty-year transmitter hunt has reached no spectacular dénouement. The Music Man, once unmasked, was audible for scarcely a year thereafter, and now, in this present year of 2025, his signal has lapsed into silence. Perhaps some charitable soul dispatched him a copy of the *Logger's Bark*, and thus ended his performance.

I am not the law, but I represent justice so far as my feeble powers go.

S.H.

Dear Editor,

Many thanks for your response regarding my upcoming newsletter article submission [*to be featured in the December issue, my final issue as Editor –ed.*] and an update on your plans at the end of the year to retire.

I will honestly tell you that I will miss your newsletter Editor and writing efforts greatly. Your editing and presentation has caught the eye of many, many people and drawn several into the membership of the club.

The work you provide goes well beyond what others provide and it certainly directs you away from things you otherwise enjoy.

I hope that your replacement can fill in your shoes, but alas that is probably not going to happen. The *Logger's Bark* is the one thing that communicates very positively about the club, its officers, members and radio topics in both quantity and quality.

The artwork you provide gives the newsletter a huge boost to readers and it draws in everyone's attention month-after-month. How many comments have I read that compares your quality work to that of QST? Frankly, I find your publication far more useful than QST and other similar magazines.

Once again, I sincerely appreciate your response and wish you the very best. Take care.

-73 Bob K9OSC
Fridley, Minnesota

Dear Bob,

I can't tell you how much I appreciate your comments. It means a lot to me. It's really been an amazing experience these past nearly-two years as Editor and principal writer for The Logger's Bark. Reading comments such as yours, and others from around the world every month (whether they get published in The Bark or not) brings a lot of joy to me. But it's been pretty much a full-time job, around 40 hours a week and I committed to a two-year stint.

I'm sure the next Editor will have a different take on how to present the newsletter, but I have every confidence it will be a good product and something the club can be proud of even if it's not a full-blown magazine such as it has been since January 2024. I've certainly enjoyed the ride—it's been a truly rewarding experience producing this magazine every month.

Thanks again for the kind words and catch you down the log.

-73 Dave W7UUU

Dear Editor

I have now learned that this club newsletter will no longer be a magazine for the world. That the *Logger's Bark* may be discontinued as a globally available radio magazine is sad for me to read. Many operators outside your club in Tacoma are thankful for what your wife N7ANN and you did for the community for these two years.

I hope there is somebody in your club who has the mood and strength to continue this paper as a true magazine as you have done. It is always nice to read. Fresh ideas are welcome too, to show that the hobby is changing. And also that everybody can go this way or that way if interested, and that it works in nearly every place.

As long as the *Logger's Bark* continues as a magazine, I stay tuned for the next great edition.

It is really a lighthouse in the free community of ham radio.

Best 73 to both of you,

Cornelius – DO1FER
Braunschweig, Germany

Dear Cornelius,

Thanks so much for being a Bark reader and for your kind words. But no one yet knows what the future holds for the Logger's Bark. It is true, that my 2-year stint as Editor will end when the December 2025 issue publishes. And while no club member has yet voiced a desire to take on the job to continue the Bark as a magazine, it's still within the realm of the possible.

Either way, thanks for your readership, and for the several great contributions you have made. Your Commodore 64 article will indeed run soon.

-73 Dave W7UUU

Dear Editor,

My name is Debby Dixon, and I am a member of the Midland Trail Radio Club in Winchester, Kentucky. We are a new club and a 501C3. I love reading through the *Logger's Bark*. You guys have great articles and activities. I am writing to ask if we could get permission to reprint some of your articles in our own club newsletter (example: the Frugal Ham article). We are such a small club, and just starting out so right now we don't have a lot of content. I am envious of the marvelous club you have. We hope to become the best club we can be! It appears you guys have it down to an art

-Debby Dixon N4DBY
Winchester, Kentucky

Dear Debby,

Thanks for your kind words—I addressed your request for reprints in my email reply. I think you will make a very fine club and wish you all the best.

-73 Dave W7UUU

W7DK LOGGER'S CERTIFICATE

Classic "first award" for Members

HAVE YOU APPLIED for your own W7DK Logger's Certificate?! It's FREE and it's EASY! All you have to do is work at least 10 members of the Radio Club of Tacoma, then send in your list of call signs worked, and BAM! We'll print out your certificate and get it to you toot sweet by US Mail.

There are no confirmations required, no logs to submit, and really no rules other than the call signs you submit must be members of the club. You may work them on HF, 2m FM, on FT8 or SSB or any other mode! In fact, one of the best ways to get your 10 contacts is to check into the weekly Tuesday Night Net on the 147.28 club repeater… every Tuesday at 7:30 PM.

This venerable award was first launched in 1957, using certificate paper printed by club member Dick Ryan, W7RGD using a donated printing setup.

As of the date of this publication, there have been almost 700 certificates issued, including a few reissues over the years to replace lost certificates.

The original certificates were hand-lettered by long-time RCT member Barbara Osborne, W7UYL (SK 2022), and all of the records were kept in a series of recipe boxes still held by the club.

We still have a huge stash of this beautiful OFFICIAL logger's Certificate paper…. So if you do not already have yours, just shoot us an email with your list of call signs worked, and put "Logger's Certificate" in the subject line… ■ *-editor*

Wanna get yours? Send in those contacts!

Barbara Osborne W7UYL in 1955 an RCT USO event

Two more "firsts" recently— Our first Ohio (Bob W8RID) and Brazil (Marcos PP5AMP)!

W7DK LOGGER'S CERTIFICATE

SEARCH YOUR LOGS!!! GET *YOUR* CERTIFICATE!

THE W7DK RADIO CLUB OF TACOMA LOGGER'S CERTIFICATE is available to *anyone anywhere who has worked at least 10 members of the club*. It's a long-held club tradition to issue these certificates, with just shy of 700 having been produced since the start of the program in 1957.

Are you active on the HF bands? If you are, it's entirely possible you already have all the contacts you need to get your own Logger's Certificate! And it's really easy to search this.

Almost all modern computer logging systems have a way to search for the county of stations you have worked. For example, in the popular N3FJP Amateur Contact Log (ACL), to find stations that could possibly be W7DK members, just go to the "County" field in the ACL interface, then click "Search". If you have at least 10 results come back, send me the list and I will check to see how many are members!

For those who use QRZ's powerful logbook software, just open your main logbook, click the pulldown menu for "Filter" and select "New". In the "Filter Name" box you could call it "Logger's Certificate" (and then "save" if you want to use this rule in the future) - then in "Select Field" select "Their County", then for "State" pick WA for Washington, and lastly "Compare Value" set to "Pierce County, WA". Lastly, click "Add Rule". Once you do this, you will now see only those logged QSOs that the other station reported Pierce County. Since the Radio Club of Tacoma is in that county, your likelihood of pulling up club members is very high.

Regardless of the logging software you use, most should have a means for searching out county information.

Just note that if you find "Special Event" call signs such as W7F, W7B, etc., those don't count as multiple operators share those call signs during the club's Bigfoot event every October. Only actual FCC-assigned call signs count for the Logger's Certificate. The club call of W7DK or the museum call of W7OS are considered acceptable to use.

Also consider filtering for Kitsap County (where I live) as we have a number of members there. You could also include King County, but I warn you: it's the largest county in the state, and has a lot of hams—most of whom will not be W7DK members. Searching there will result in a huge list without many "hits".

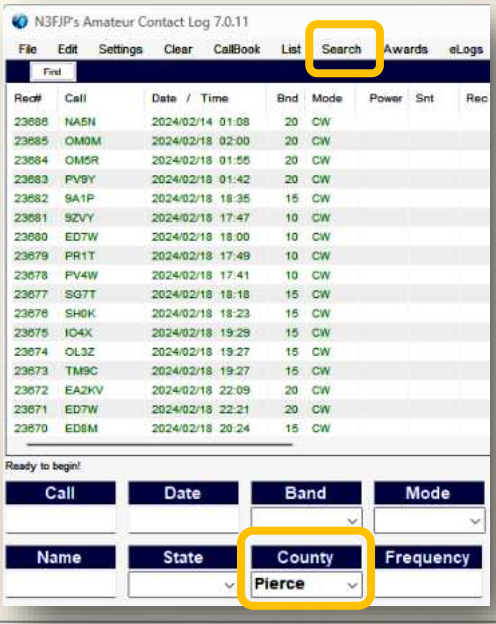
Wanna get yours? Send in those contacts!

Then just email me the list of calls—you don't need to include anything else: it's the Honor System. I won't be confirming anything other than if the call sign is (or ever was) a member of the club.

So start SEARCHING! I will send you your own beautiful Logger's Certificate free of charge—mailed to your listed QRZ mailing address. In return, just send me a photo of you holding your certificate and I will run that in a future issue of The Logger's Bark!

-Dave W7UUU

Above: *Custom Filter dialog for QRZ Logbook—just search for State=WA, and Value=Pierce (or Kitsap) County*



Left: *Using N3FJP Amateur Contact Log, simply enter Pierce (or Kitsap) for the County field, then click "Search" to see a list of calls from these counties*

RETURN TO HOME PAGE

email loggersbark@gmail.com

MEMBER SPOTLIGHT

Phil KC7PS

Phil Shideler KC7PS joined the Radio Club of Tacoma in July of 2018 as member #2853 after relocating to this area. He's a regular on Saturday morning Open House days, always up for a chat with the gang that shows up. Currently, he runs an Icom IC-7300 with wire antennas in the tall trees on his property. FT8 and FT4 are working out great for him! A while back I visited his house to try to drive a ground rod and boy did we discover he's got some huge rocks under his yard! Never had such a time trying to drive a ground rod with my Bosch drilling machine. But in the end, we did get something set that worked out OK. Next time you're in the clubhouse on a Saturday or at the monthly meeting, be sure to give a warm "howdy!" To Phil KC7PS

-Dave W7UUU

ASK ELMER!

Mystery Elmer

Dear Elmer,

I'm still pretty new to ham radio and sometimes feel lost about how it all works. I've got a few radios including a mobile dual-band FM radio and can get on the air okay, but one thing really confuses me. When I'm traveling, why doesn't the radio just find the local repeaters on its own? Instead, I end up with a bunch of pre-programmed memory channels I found on internet sites that I never use, and half the repeaters I program don't even seem to be active. Shouldn't the radio be smart enough to figure out the frequency, offset, and tone so I can just press the mic and talk? Or am I missing something obvious?

-Lost regarding repeaters

Dear Lost,

Great question! And it's actually a pretty common one, and quite logical to wonder "why doesn't the repeater just tell me all about itself?". Unfortunately, that's just now how they work (as you already know). But there's more to it than that. Knowing the access parameters of the repeater is just part of the battle. The larger issue is "which repeaters in this area are actually in active use?". The FM repeater scene is not like it once was decades ago—when you had to wait in line to access one. The vast majority of repeaters out there these days see very little use most of the time… just occasional weekly nets by a local club or an ARES group. Others are literally abandoned and haven't been used by anyone for years! So more important than knowing "how to get into the repeater" is the question, "which repeaters in any given area are the best to try?". And sadly, there's just not any concrete way to know that. The way that's worked best for me for years is when I'm mapping out a journey, I pick the towns and cities along the way, and seek out the local ham radio clubs and read about their repeaters (if they even have one). You usually will find useful information on club sites which machine is likely to be the best to try. Only then start programming your radio with access codes.

But there are actually devices that do what you are asking. The RFinder B1+ will do exactly that—locate nearby repeaters via GPS coordinates—tap the repeater ID on the screen and it will show you all the relevant settings (frequency, offset, tone, and oftentimes even DMR, P25, NXDN etc. etc. settings). You can read more about this device at THIS LINK. But be prepared for sticker shock—it doesn't come cheap. The Icom ID-5100 is also able to search repeaters and glean their codes, again by using GPS coordinates, and you can read about this radio at THIS LINK. This rig is a lot less expensive and still not cheap but *way* less than the RFinder. There are probably other radios out there that do this as well, but those are two that come to mind.

Your most cost-effective bet however is to just stick to the "map out your trip ahead of time" and contact the various clubs ahead of time for advice.

-Mystery Elmer #5

THIS MONTH'S CALENDAR

	September	October, 2025				November
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
40	September	September	September	1 07:00pm Board meeting	2 06:00pm HF Night at the ...	3	4 10:00am Open House
41	5	6 07:00pm General Class	7 07:30pm 2 Meter Net 147 ...	8	9 06:00pm HF Night at the ...	10	11 08:00am Technician Clas ... 10:00am Open House 01:00pm General meeting ...
42	12 08:00am Technician Clas ...	13 07:00pm General Class	14 07:00pm VE License Exam ... 07:30pm 2 Meter Net 147 ...	15	16 06:00pm HF Night at the ...	17	18 10:00am Open House
43	19	20 12:01am National Sasqua ... 07:00pm General Class	21 12:01am National Sasqua ... 07:30pm 2 Meter Net 147 ...	22 12:01am National Sasqua ...	23 12:01am National Sasqua ... 06:00pm HF Night at the ...	24 12:01am National Sasqua ...	25 12:01am National Sasqua ... 10:00am Open House
44	26	27 07:00pm General Class	28 07:30pm 2 Meter Net 147 ...	29	30 06:00pm HF Night at the ...	31	November

Recurring | Special | Contests | All Categories ...

Click calendar to view on W7DK.org with current active links!

Did You Know??

October was once considered the eighth month of the year. Before the Roman calendar reforms (in 46 B.C. or 708 AUC as the Romans would have noted—708 years after the founding of Rome), the year began in March, which made October's name (from Octo, Latin for "eight") perfectly logical. When January and February were tacked on to the front, poor October got shoved into tenth place, but for unknown reasons, the name remained.

What makes this even more charming is that remnants of that old arrangement still echo in the names of the months that follow—November (nine) and December (ten) are equally "wrong" by modern reckoning. So while we're enjoying the pumpkins, apple cider, and the slow build toward winter, October quietly carries a bit of ancient mislabeling that has persisted for over two thousand years. Not bad for a month that doesn't even match its own name.

IN OCTOBER 2024, THE RADIO CLUB OF TACOMA KICKED off the inaugural National Sasquatch Awareness Day special event. It was a fantastically fun experience for both the special event operators and those hunting for the sometimes-elusive BIGFOOT stations on the air. This year, we're back for the second annual National Sasquatch Awareness Day celebration.

The special event will be on the air from October 13, 2025, at 0000 Zulu through October 21, 2025, at 2359 Zulu. Once again, we'll have available custom QSL cards and a unique special event certificate. Details for QSL cards and certificates will be posted on each special event callsign page on QRZ.com: W7B, W7I, W7G, W7F, W7O, W7T, and Bonus Station, W4S.

That's right! This year we're introducing a *bonus* station—W4S—to honor a rarely sighted southern cousin to Bigfoot: the legendary "Skunk Ape." Not everyone will be able to find this illusive beast… only the lucky few hunters will manage it!

We had so much fun last year that we're looking for additional volunteer operators to join in. There's no minimum time commitment—just a desire to have fun playing radio. If you're interested in volunteering, please fill out the National Sasquatch Awareness Special Event Volunteer Operator form at THIS LINK.

The BIGFOOT certificate is available to anyone who contacts at least one BIGFOOT special event station. The real challenge, however, is to work all the special event stations—W7B, W7I, W7G, W7F, W7O (at least twice on two different modes, bands, or Zulu days), and W7T—to claim the coveted "FULL STOMP" designation on your certificate.

Get ready to find those elusive cryptids calling out to you soon!

-BJ KO7T, Bigfoot Coordinator

Sample of the handsome 8.5" x 11" Bigfoot SES Certificate that can be yours, as well as the QSL card. The certificate can be had by anyone working at least one letter (with a rubber "stomp stamp" awarded for each, "Full Stomp" will be stamped if you get all) for a donation of $5. The QSL card will be available for just an SASE.

AROUND THE CLUBHOUSE

But first…. A little *about* the Clubhouse

THE RADIO CLUB OF TACOMA IS UNIQUE not only in its age (continuously operating since October 1916) but also in its ownership of an actual clubhouse and adjacent parking lot. The current clubhouse was purchased by members in 1957 (the previous clubhouse was purchased in 1927!) and has been maintained on this site ever since. But it takes time, talent, and treasure to keep this dream a reality. Club membership is one of the solid ongoing means with which the club maintains not only members to help with the upkeep, but to also raise the capital that's required to keep our clubhouse in tip-top shape.

If you are not yet a member, please consider joining—even if you're not local! If you enjoy reading The Logger's Bark from afar, you can be a part of our club just as if you were here. And if you are a local, please consider contributing your own skills and effort to keep this club the wonderful thing it is. Ask any officer how you can help. Thanks to all our loyal members! *-Dave W7UUU*

Photos on left from RCT Archives—photos on Right by Dave W7UUU

AROUND THE CLUBHOUSE

All About the Saturday Clubhouse Hosts


W7DK

IF YOU HAVE EVER ATTENDED AN OPEN HOUSE SATURDAY at the Radio Club of Tacoma, you were probably greeted at one time or another by that week's Duty Officer and Clubhouse Host. This is an official volunteer position at the club, and one that pretty much any local member can fulfill and have a great time doing it! There are five host positions: 1st Saturday through 4th Saturday, plus Last Saturday (when the club serves up a by-donation lunch for anyone who wants one).

If you would like to be a Clubhouse Duty Officer and Host, just ask any officer. The job is pretty easy—open up the building around 9:00 AM, kill the alarm, turn on the lights and heat (if needed) and start the coffee. At the end of the day around 2:00 just reverse the process. There's a bit more to it than that of course, but that's the general ideal. It's a great way to get to know your fellow club members better! Just let an officer know and we can get you on the docket to be a new host!

-Dave W7UUU


Warren NG7G
Third Saturday


Paul W7PFU
Last Saturday


Mike W7MKE
First Saturday


Phil K7PIA
Second Saturday


Doug AB7DG
Fourth Saturday*

The Club's Current Staff of Duty Officer Hosts

**In months with a 5th Saturday*

Open House Reminder!

THIS IS JUST A WELCOMING & REMINDER that the W7DK Radio Club of Tacoma Clubhouse holds an open house on most Saturdays of the year (click HERE for exclusions) from 10:00 AM to 2:00 PM. There's always a nice group of members but ALL visitors interested in amateur radio are welcome to stop by! You do not have to be a member or even a ham to visit us. Please be sure to sign the Visitor's Logbook in the kitchen, say hello to your Clubhouse Host, have a cup of coffee and a donut (always a nice assortment on hand). You may wander the building—visiting the classroom, the downstairs "shack parlor" we call The Lou Room, and of course upstairs to see the main HF room and the W7OS Doc Spike Memorial museum—a living collection of vintage gear that regularly gets on the air.

The last Saturday of every month, we hold a mini flea market where members can sell their ham gear. But even non-members are eligible to dicker for deals and take home gear. And starting around 11:30, our club Chef Paul W7PFU serves up free chilidogs, or sometimes burgers or spaghetti at the chef's whim. We hope to see you stop by soon!
■ *-editor*

Mini-Swap Meet Monthly

DO YOU HAVE EXCESS GEAR TO SELL? Members of The Radio Club of Tacoma have a little perk every month with our own mini Swapmeet held in the clubhouse on the last Saturday of each month. No charge for a table—just bring your wares and set up shop! Non-members and visitors are free to stop by and see if they can pick up bargains. The club also has gear donated regularly that is made available to visitors and members alike, available for purchase via donation. And of course, as mentioned in the Open House reminder, the club chef Paul W7PFU cooks up chilidogs or spaghetti (whatever suits his mood!) at no charge for guests. ■ *-editor*

How To Lock The Doors

AS WAS REPORTED in last month's Bark by our club Secretary, Gary WG7X, in recent months there have been reports of the clubhouse being found unattended and the doors not even locked! Obviously, this is not acceptable. It's the responsibility of the Club Hosts on Open House Day (Saturday) or those who have door and alarm codes on other days to make certain the building is secure when leaving.

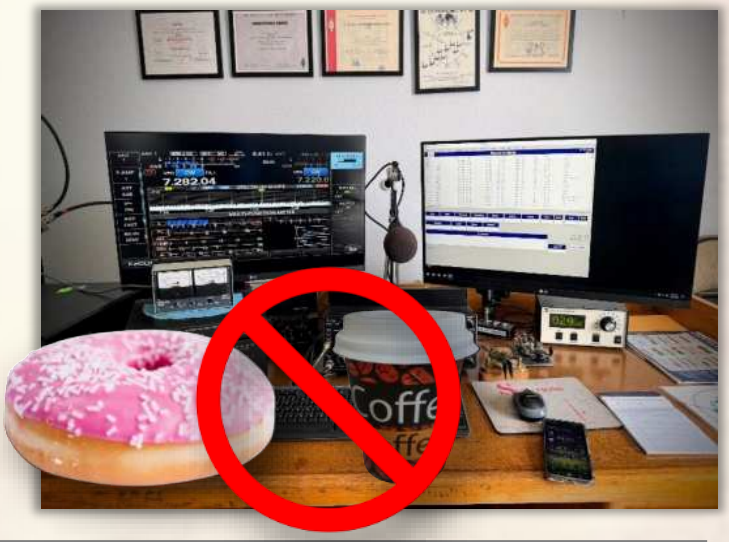
But should you be in the position of being the "last one out", you can still LOCK THE DOOR even if you don't have the code or a key. Simply pull the door closed and push the "lock symbol". The battery-powered mechanism will then lock the door (you won't be able to get back in without the code!). This applies to both the front door and the back door. See photo below—note the "lock" button.

-Dave W7UUU

Help Keep The Clubhouse Clean

THIS IS JUST A GENTLE REMINDER that the W7DK Clubhouse is for all members to use and enjoy, and is a place to put our best foot forward as a club for visitors we welcome in almost every Saturday of the year.

Please be mindful of leaving trash, empty cans or bottles, food wrappers, McDonalds bags, and whatever else. Same holds for coffee cups… we frequently see cups left on classroom tables, the kitchen counters, at the Lou Room table, and wherever else. Please just make sure to "pick up after yourself". Also, remember that liquids and radios don't mix. Please don't take cans or cups of beverages into the HF room or the Museum—just water bottles with lids or closures of some sort. And no "sticky foods" like donuts! No one wants to reach for the tuning knob only to find your sticky donut residue on it!



AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Gary WG7X and Paul K7OSS chat it up behind the clubhouse

Secretary Mike W7MKE at the Membership desk in the Doug Oakman Library

Nolan K7GBM arrives at the clubhouse Good morning Nolan! Great to see you!!

Membership Mike W7XH (left) and David AC7KP hanging out in the classroom on a recent Saturday

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Al N7OMS visiting with Chef Paul W7PFU

Stephen AD7AB and Jeff KB7QAG talking tech in the Lou Room

Mike W7MKE, Anne N7ANN, and Gary WG7X catching up in the classroom

Gary WG7X, BJ KO7T and Paul K7OSS hanging out at the garage and lockup building

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

President Adam W2NCC having weighty presidential thoughts in the Oakman Library

Mike W7XH at his Membership desk

Reggie KJ7RGP stopped by the clubhouse for a visit

Gary WG7X sharing 1980s Soviet Russian hand-made QSL cards to the editor… be watching for a feature article on this topic in a future issue

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Julie W7JUL hanging out in the stacks in the Oakman Library

Mike W7MKE (blue) talking FT8 with David AC7KP on one of the club's Flex radios

Ellen AI7FP with Mike W7XTZ in the W7OS Doc Spike Memorial Museum

Newly set up in time for the upcoming Classic Exchange and Straight Key Night—drake 2B receiver, 2NT transmitter, and HG-10B VFO

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

W7DK

Brad KK7YQC visits with Chef Paul W7PFU on a recent Saturday

Phil K7PIA, Wade W7ITL, and Bob AD7LJ discuss programming of the new DR-2X Fusion repeater

ARRL WWA Section Manager Bob AD7LJ dials in the programming of the new Yaesu DR-2X Fusion repeater

Closer view of the DR-2X programming screen This new machine replaces the decades-old GE repeater that was in the rack for many years.

All photos this page provided by Dave W7UUU

RETURN TO HOME PAGE

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

W7DK

Education Director Stephen AD7AB on break from teaching—visiting with Dave W7GEL

Gary WG7X always with a smile—hanging out in the Oakman Library stacks

Mike W7XTZ in the W7OS museum with the newly set up Novice-style Drake station

David AC7KP tuning 75m on a Saturday morning looking for a ragchew to join in on

All photos this page provided by Dave W7UUU

RETURN TO HOME PAGE

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

W7DK

"The gang" hanging out in front of the garage going over some recent SK donations

Mike W7XTZ, BJ KO7T, Paul W7PFU, and Dave KK7NYW yuk it up in the kitchen

Nathan WA7BUG signs up for a Salmon Run operating slot while Eamon KK7YTT (L rear) and Jesse KK7YTV look on

Red WB7EC doing his duty in the Property Management Lockup on a recent Saturday morning

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Andy Hall KK7CSV is a newer member who stopped by the clubhouse for the first time! Welcome!

Phil KC7PS (in hat) and Prez Adam W2NCC check out an old transceiver a visitor brought in to test

John WB6UBK stopped by the clubhouse, in town visiting from Sacramento, California

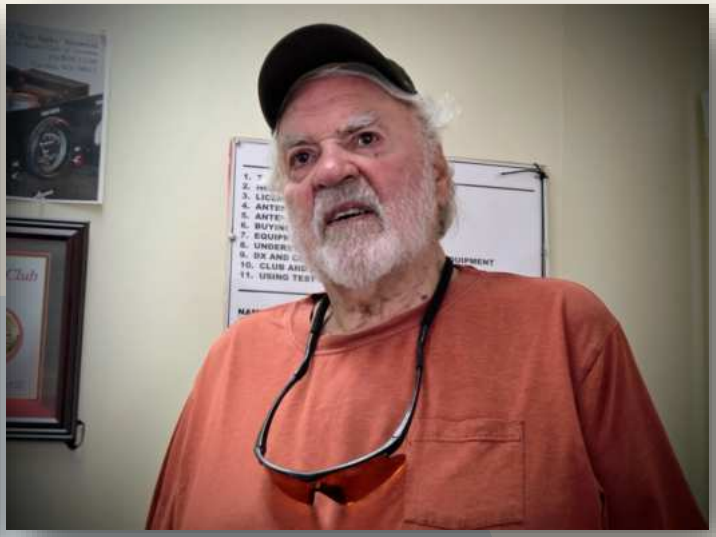
Sam KK7USO took his General exam last Tuesday and received his /AG upgrade Wednesday! CONGRATULATIONS, Sam!

All photos this page provided by Mike W7MKE

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Dave AE6CB was a first-time visitor to the clubhouse—Welcome in! Nice to have you here!



Bob N7QOZ is a member but infrequent visitor so nice to have him stop in for a visit!

Steve is a first-time visitor to the clubhouse and looking into becoming licensed. Glad to have you stop in Steve! We wish you luck in your pursuits.

Dave N7HT is nearly fully recovered from his horrific car accident a while back—and was able to make his first visit back to the clubhouse! Welcome!

All photos this page provided by Mike W7MKE

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

W7DK

Javier KM7AQN visited the clubhouse for his second time since joining back in April. Welcome back!

Randy KK7RHR, Becky KG7FZH and Randy's son Nathan WA7BUG hanging out in the classroom

Ned KK7ZRB hanging out in the W7OS Museum talking about the old rigs on display

Bob K7MXE bangs out a quick email in the Oakman Library computer station

All photos this page provided by Dave W7UUU except as noted

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Paul W7PFU as he often does hanging out with Nolan K7GBM in the kitchen

Past President Mike W7MKE always with a smile in the kitchen on a recent Saturday

Jim AG7LO, Al N7OMS, and Bob K7MXE yakking it up behind the clubhouse

Walt WA7SDY waves to the camera as Jim AG7LO looks on

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Jeff W8NGS always with a smile as he works with the Property Management team.

Walt WA7SDY hanging out with Nathan WA7BUG in the HF room on a recent Saturday

Dan KD7SV chats it up with BJ KO7T in the Oakman Library

L>R: Phil KC7PS, Dave N7HT, Stephen AD7AB, & ARRL Western Washington Section Manager Bob AD7LJ visit in the Lou Room

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

W7DK

Julie W7JUL perusing a 1980 bound issue of The Loggers Bark—amazed to find >>>>

...a time when things were a little different in radio clubs around the country

Chef Paul W7PFU "strikes the pose" with his usual smile

Gary WG7X (left) hangs with a beaming Tim KF4EDG as he picks up his very early edition of a Yaesu FT-101E hybrid transceiver

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Hanging out in the classroom—someone brought in fresh home-grown squash for the taking

Club Secretary Mike W7MKE works on club business in the Oakman Library

L>R: Nathan WA7BUG, Eamon KK7YTT, and Jesse KK7YTV in the HF room

Becky KG7FZH hangs out in the HF room with BJ KO7T on a recent Saturday

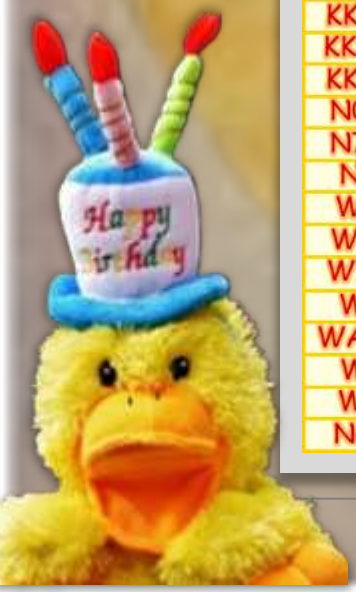
All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

October Birthdays!!

Call	Name
AD7QI	Bill Wright
F4LPH	Pascal Carre
K4KOI	Karen Oi
K7CRB	Chris Buck
K7LCL	Leslie Levenson
K7PIA	Phillip Pia
K7WEO	Ron Suslick
KA7WGE	Frederick Hannes
KB7UON	Gail Wolvin
KC7PS	Phil Shideler
KC7VAA	Lee Webb
KC7YDW	Peter Markus
KE7RTB	Andy Willms
KE7TEY	Mary Atkinson
KE8CXF	Mark Schweizer
KF7SCB	Verna Lilly
KI7JKX	Ben Foster
KJ7QBK	Andrew Prisco
KK7HMZ	Nic Adonis
KK7IJL	Luke Stamm
KK7JEI	V Quiroga
KK7QLC	Dave Keller
KK7RZQ	David Dupree
KK7YQI	Christen Kaufman
N0BML	Brendan Leber
N7JAJ	Armin Keen
NZ4X	Ronald DeAngelis
W0AO	Bob Kimbrell
W7GEL	David Ashley
W7QKR	Kevin Ebat
W7VK	James Ohara
WA7SDY	Walt Morey
WE7P	Bruce Hanson
WV7S	Den Niles
No Call	Aaron Ohlsen



Happy Birthday Dave Ashley W7GEL!

Happy Birthday Jim W7VK!

photos by Dave W7UUU

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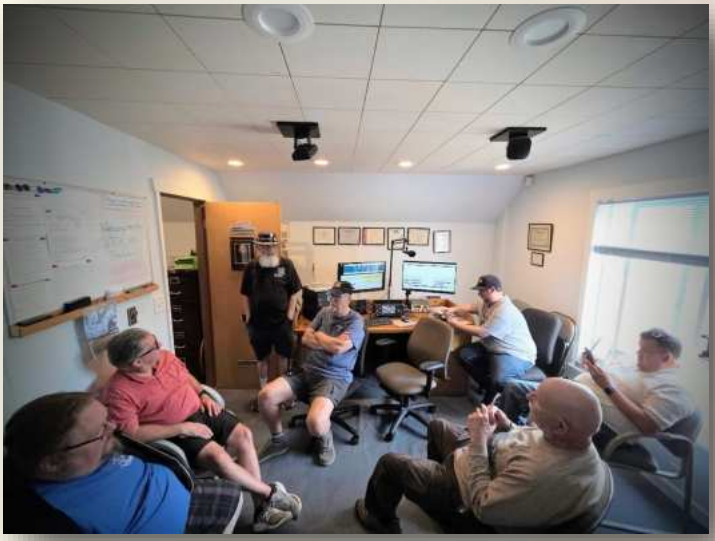
MOST EVERY THURSDAY EVENING from 6PM until 9PM, the Radio Club of Tacoma opens the HF room for one-on-one training time. Saturdays are a great time to come see the clubhouse and socialize, but often it's tough to get "quality time" with the radios. This weekly event is open to all—members and non-members alike. There is always at least one Extra Class operator on hand with a solid knowledge of the Icom and Flex radios in use, as well as the antenna patch bay, amplifiers, and tuners. Even non-licensed "hams to be" can take a hand operating under the tutelage and watchful eye of an experienced "Elmer" on hand to show the ropes. Other nights, the club takes on build-it projects in the classroom—Come on by any Thursday!

■ *-editor*



L>R: Sam N9MII, John K2CCT, Stephan AD7AB, Al N7OMS, Phil K7PIA, Bob AD7LG, & Javier KM7AQN at a recent Thursday Evening session Photo by Mike W7MKE

L>R: John K2CCT, Sam N9MII, Dave AC7KP, Julie W7JUL, Dave W7GEL, & Carson KJ5MEW at a recent Thursday Evening session Photo by Mike W7MKE

Great gathering of members for a recent Thursday HF Evening—gearing up to get on the air L>R: Julie W7UL, Jeff W8NGS, Al N7OMS, David AC7KP, Dan KD7SV and Dave W7GEL (back of head)

Photos by Mike W7MKE

CLUB ACTIVITIES

RCT 4th Wednesday Workshop

The Radio Club of Tacoma's 4th Wednesday Activity Night is a fairly regular event, allowing members to have "hands on" experience building practical ham radio projects—kits, antennas, baluns, you name it. It's a great time for newer hams especially to join in a fun social and learning time at the RCT clubhouse. There are always skilled mentors ("Elmers") on hand and usually the cost for attendees is minimal. Keep an eye on the Radio Club of Tacoma website for announcements of upcoming 4th Wednesday workshops at www.W7DK.org of just ask around the clubhouse on any Saturday Open House day. Photos on this page are from a recent such event where attendees learned how to assemble a roll-up J-Pole antenna for 2m and 70 cm under the guidance of member and ARRL Western Washington Section Manager Bob AD7LJ (yellow shirt) and Paul K7OSS behind him in a blue shirt. ■ *-editor*

Photos provided by Doug AB7DG

BRIEF HISTORY OF THE Traditional HAM BANDS

Delegates at the International Radiotelegraph Conference in Washington DC October-November, 1927
Photo: ITU International, Public Domain

MOST HAMS TODAY HAVE HEARD OF THE "WARC" bands (30, 17, and 12 meters), and how they were created back in 1979 (and if you don't know, be watching in the November issue of The Bark for that whole story). But have you ever stopped and wondered just where did all the "traditional" ham bands come from? How did hams around the world get those frequencies for hobby use?

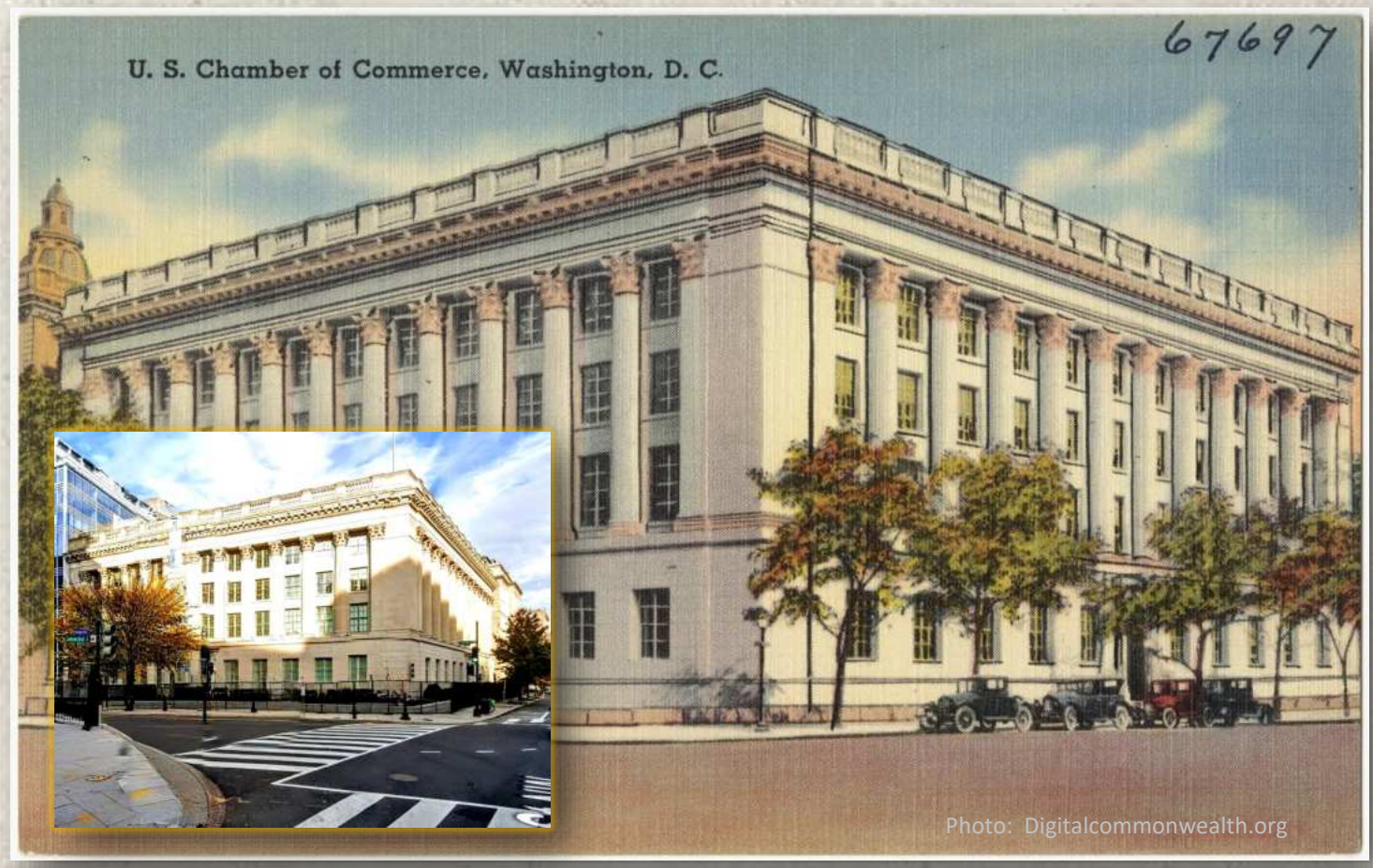
It all came about in the fall of 1927, when the world's governments gathered in Washington, D.C. for the International Radiotelegraph Conference. Running from early October into late November, it was the most ambitious attempt to date to bring order to the rapidly expanding use of radio. The opening speech was from President Calvin Coolidge himself. Broadcasting, military traffic, aviation, ship-to-shore, and commercial services were clamoring for space on the dial. In that crowd, the amateur service had to fight for its life. What came out of that conference would shape the ham bands for decades to come, fixing them into a form that still looks familiar today.

Before the Washington conference, amateur allocations were uneven and mostly national, determined largely in random ways by the various nations.

In the United States, regulation had been hammered out at a series of national radio conferences during the early 1920s. By 1924, hams had been confined to the shorter waves ("200 meters and down") and a few medium-wave frequencies, with boundaries that shifted according to the needs of government and industry. A ham in Europe might have quite a different set of authorized wavelengths than his American counterpart. In practice, operators experimented wherever the authorities tolerated them, and the result was a patchwork not a whole lot of international consistency. Long waves, medium waves, and early shortwaves were all fair game at different times, but there was no guarantee the band you enjoyed today would still be available tomorrow.

By 1927 it was obvious that a worldwide treaty would be the best path to once and for all settle the matter. In Washington, delegates from more than 70 countries debated fiercely over the future of radio. The

BRIEF HISTORY OF THE Traditional HAM BANDS



The building where our ham bands were born in the fall of 1927—the U.S. Chamber of Commerce, just a stone's throw from the White House where Calvin Coolidge served as President

Image: *1925 Postcard of just-completed building;* ***Inset:*** *Google Street view November 2024*

big event was held in the Chamber of Commerce Building—completed only two years earlier and located directly across Lafayette Square from the White House. The IARU, or International Amateur Radio Union, only two years old at that point, sent representatives to argue that amateur radio deserved internationally recognized space by treaty. Without that recognition, national administrations could easily squeeze hams into ever-smaller corners, or wipe them out entirely.

When the dust settled, the amateur service came away with something pretty remarkable: a set of internationally sanctioned wavelength bands that most hams will recognize on sight. These allocations were embedded in the official Radiotelegraph Regulations, Article 5, and they carved out for "Amateurs and experiments" a handful of specific wavelength ranges. They were narrower than

BRIEF HISTORY OF THE Traditional HAM BANDS

the free-for-all days of the early twenties, but they were secure, and they gave hams a common global playground.

SIDEBAR: The entire text of this ground-breaking document can be found at THIS LINK. It's 171 pages, in both French and English, and pretty complex in that it covers all things radio spectrum from soup to nuts. I actually read almost the whole thing while putting this piece together. It's pretty amazing the depths they went to allocate wavelengths on a global basis. We as hams owe a great debt to this gathering for the bands we casually enjoy today.

Tableau de Répartition des Indicatifs d'Appel. / *Table of Distribution of Call Signs.*

Pays.	Indicatifs.	Country.	Call Signs.
Chili	CAA–CEZ	Chile	CAA–CEZ
Canada	CFA–CKZ	Canada	CFA–CKZ
Cuba	CLA–CMZ	Cuba	CLA–CMZ
Maroc	CNA–CNZ	Morocco	CNA–CNZ
Bolivie	CPA–CPZ	Bolivia	CPA–CPZ
Colonies portugaises	CRA–CRZ	Portuguese Colonies	CRA–CRZ
Portugal	CSA–CUZ	Portugal	CSA–CUZ
Roumanie	CVA–CVZ	Roumania	CVA–CVZ
Urugay	CWA–CXZ	Uruguay	CWA–CXZ
Monaco	CZA–CZZ	Monaco	CZA–CZZ
Allemagne	D	Germany	D
Espagne	EAA–EHZ	Spain	EAA–EHZ
Etat libre d'Irlande	EIA–EIZ	Irish Free State	EIA–EIZ
République de Libéria	ELA–ELZ	Republic of Liberia	ELA–ELZ
Estonie	ESA–ESZ	Estonia	ESA–ESZ
Ethiopie	ETA–ETZ	Ethiopia	ETA–ETZ
France et Colonies et Protectorats	F	France and Colonies and Protectorates	F
Grande-Bretagne	G	Great Britain	G
Hongrie	HAA–HAZ	Hungary	HAA–HAZ
Suisse	HBA–HBZ	Switzerland	HBA–HBZ
Equateur	HCA–HCZ	Ecuador	HCA–HCZ
République de Haïti	HHA–HHZ	Republic of Hayti	HHA–HHZ
République Dominicaine	HIA–HIZ	Dominican Republic	HIA–HIZ
République de Colombie	HJA–HKZ	RepublicofColombia	HJA–HKZ
République de Honduras	HRA–HRZ	Republic of Honduras	HRA–HRZ
Siam	HSA–HSZ	Siam	HSA–HSZ
Italie et Colonies	I	Italy and Colonies	I
Japon	J	Japan	J
Etats-Unis d'Amérique	K	United States of America	K

69

The Washington wireless treaty conference frequency allocations, expressed both in meters and in their frequency equivalents, looked like this:

Meter Band	Frequency Band	Notes
160 meters	1.715-2.0 MHz	The classic "Top Band" right above the AM broadcast MW band
80 meters	3.5-4.0 MHz	Also referred to many times as 80/75 since it's such a wide band
40 meters	7.0-7.3 MHz	A key international band, excellent for both day and night work
20 meters	14.0-14.4 MHz	The premier DX band of the shortwave spectrum
10 meters	28.0-30.0 MHz	Propagation playground, especially at sunspot peaks
5 meters	56-60 MHz	The first "ultra-shortwave" band for hams - later became 6-meters as we know it today

BRIEF HISTORY OF THE Traditional HAM BANDS

That list captures the essence of what Washington delivered. A ham in London, Buenos Aires, or Chicago now had an officially recognized set of bands, rather than a haphazard assortment of national privileges. The conference brought clarity at the price of restriction: much of the wide-open spectrum amateurs had been roaming was now off-limits, handed over to broadcasters and commercial services. But what amateurs kept was enough to guarantee the future of the hobby.

One wrinkle is the 15-meter band. Many modern accounts fold it into the Washington story, but in all the reading I've done for this article, the real record shows that 15 meters was not one of the clear, fully formed and agreed-upon international amateur bands in the 1927 treaty text. Its status evolved much later, as administrations adjusted and subsequent conferences revisited the table of allocations.

So while 15 meters certainly belongs in the historical context of those early days, it was not yet part of the core set of ham bands that were fixed at Washington in fall of 1927. In fact, it would take another twenty years for 15 to be settled. This happened at yet another similar conference, the International Radio Conference in Atlantic City, New Jersey in 1947. The band was established at this event just as it stands today: 21.0 to 21.45 MHz. In 1952, along with 80-meters and 40-meters, the newly-established Novice Class licenses were granted CW-only segments of 15-meters.

It is also worth noting that the 5-meter allocation was a forward-looking move. At 56 to 60 MHz, it put amateurs into the realm of very short wavelengths, where propagation was poorly understood. Pretty much everything about such high frequencies was experimental in 1927, so for hams to get a piece of this action was a pretty bold move by the conference. Or perhaps such high frequencies were considered "junk" much like shortwave was when hams were tossed the bone of "200 meters and down". If so, nothing was ever recorded about that aspect.

This frequency allocation was lowered in frequency and would later become what hams worldwide have called the "magic band" of *6*-meters as we know it today, but in 1927 it was more a laboratory sort of thing rather than a ham radio playground. That experimental spirit is exactly what the delegates intended when they reserved that range for amateurs and experimenters.

The 1927 allocations marked the end of the wild frontier and the beginning of a regulated, international order for amateur radio. The IARU's presence was decisive: without it, hams might have lost *far* more. The result was a slimmed-down but much more secure slice of spectrum that made sense across borders. The table adopted at Washington gave us 160, 80, 40, 20, and 10 meters, plus that curious 5-meter band, and set the stage for the way amateur radio would grow through the rest of the century.

Those were heady times—and had it not been for the IARU (and the 27 nations that were signatory to the treaty), the ham bands would probably look a lot different today than they do—if we even still had them at all.

This is part one of a three part series—next month, watch for The History of the WARC bands (30, 17, and 12), and for the December issue, the background of the VLF bands of 2200 and 630 meters.

Until then, thanks for reading.

-Dave W7UUU

Station KPH ENIGMA Machine Cipher Contest 2025

ONE OF THE COOL RADIO EVENTS OF EACH YEAR is operated from the Maritime Historical Society (San Francisco) from Coastal Radio Station KPH at Point Reyes California. On Saturday, August 30, 2025, at 1:00 PM PDT, the station transmitted a historically correct coded message in five-letter groups, encrypted using the German Enigma machine. The message had been broadcast both in Morse code (CW) and RTTY across all KPH CW and RTTY frequencies (not on any ham bands). The CW transmissions occurred on 426 kHz, 4247 kHz, 6477.5 kHz, 8642 kHz, 12808.5 kHz, 17016.8 kHz, and 22477.5 kHz, and the RTTY transmissions followed on 6324.5 kHz, 8427.0 kHz, and 12585.5 kHz.

L>R: Steve K7YEM, Jim W7VK, Dan KD7SV & Quentin K7DRQ
Photo by Randy WB4SPB who was also on the decoding team

Listeners world-wide were invited to receive and decrypt the message using physical or simulated Enigma machines (via several websites), with the cipher key publicly provided. After entering the cryptic characters into their Enigma machines, participants then emailed their decoded message to KPH.

Certificates were issued for successful decoding, for being first to decode, and for using original German machines (very rare) , replica hardware (also pretty rare) or any of several online Enigma simulators. The decoding team of the Radio Club of Tacoma used the amazing simulator at 101 Computing (LINK).

The transmission began with a channel-marker "wheel" at around 16 to 18 WPM (according to Randy WB4SPB who participated from the Clubhouse) to help listeners tune in, followed by a plain-text call-up. The actual coded message was sent twice to give participants two chances to get the whole thing down. The event reflects KPH's tradition of engaging ham radio CW operators from everywhere to join in recreating the mystique of the WWII Enigma Machine and it's complex encoding and decoding scheme.

This year's W7DK/W7OS team, headed up by Randy WB4SPB, included crack CW decoders Steve K7YEM, Jim W7VK, Dan KD7SV, and Quentin K7DRQ as well as Randy himself. The frequency chosen to listen in the W7OS museum was 12.8085 MHz for the CW transmission.

Everything worked perfectly and the message was decoded within minutes, and emailed off to KPH.

Station KPH ENIGMA Machine Cipher Contest 2025

Below: the actual coded text that was received over the air in 16-18 WPM Morse code from KPH:

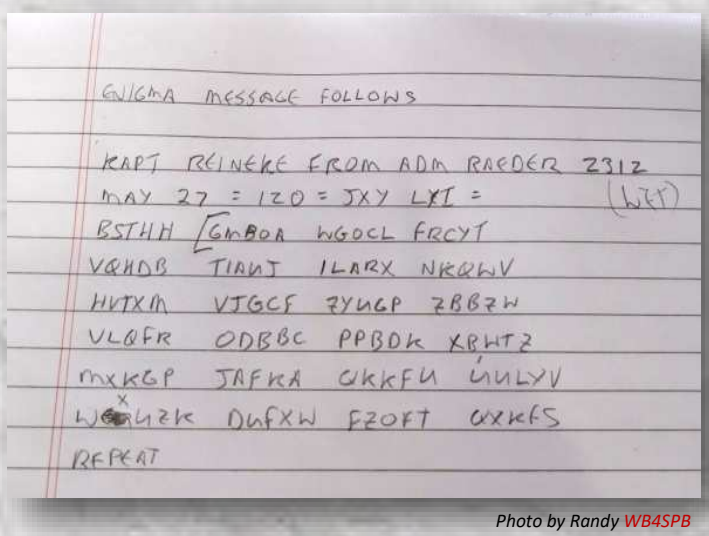
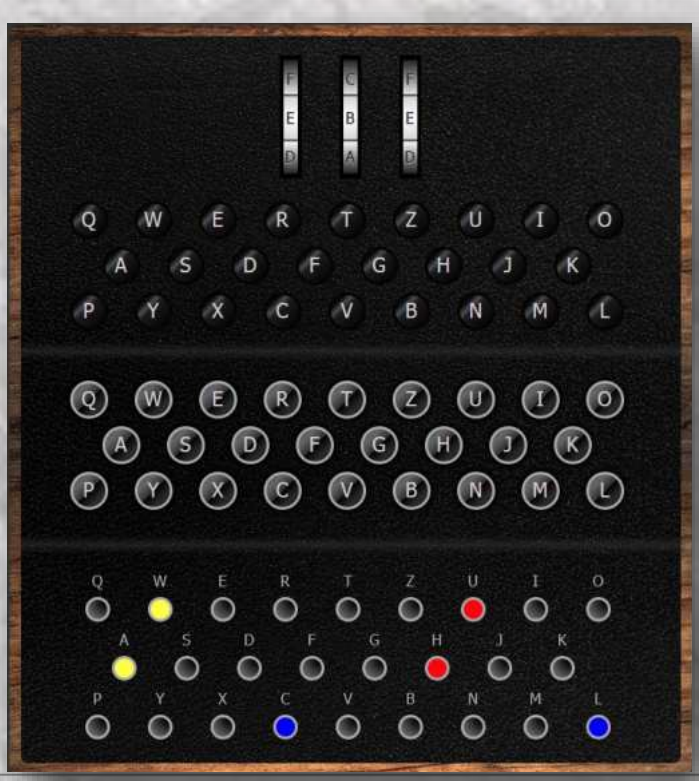
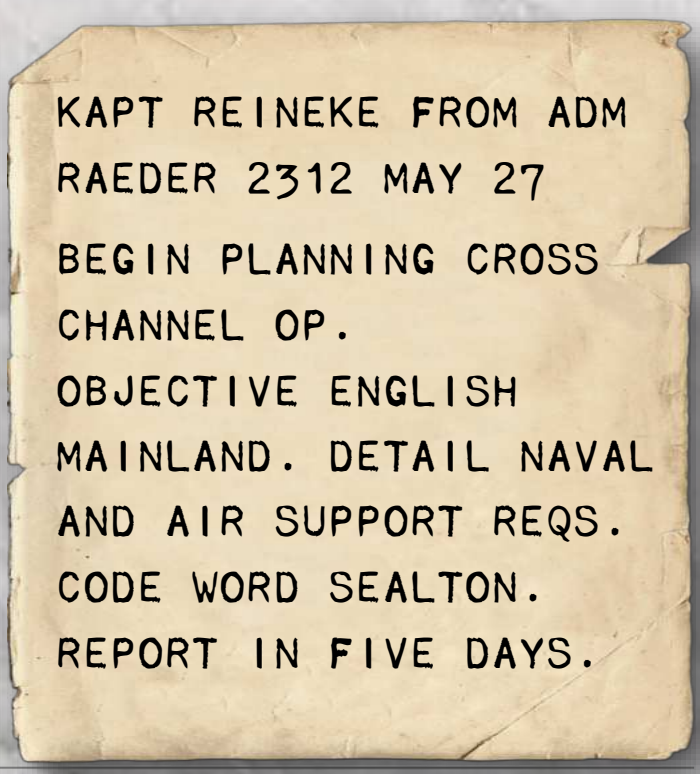


Photo by Randy WB4SPB

These 24 5-character groups were then fed one letter at a time into the Enigma machine (simulator):



Setting up the Enigma machine requires setting: the rotor wheel order, the ring settings for each rotor, the plugboard connections, and the initial rotor position. In actual WWII use, all of these critical decoding details were sent via courier a daily code book containing setting sheets to be used that day. But for the KPH event, these were sent in "open CW text" before the start of the actual message. So this means that not only must the team decode the message—they must also perfectly copy the settings first. The code wheel and patch panel settings must then be transferred to the Enigma device (whether original hardware, reproduction hardware, or an internet simulator like the W7DK/W7OS team used for this event. Once decoded, this is the actual message that was sent:



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Station KPH ENIGMA Machine Cipher Contest 2025

On September 4th, 2025 the club received the coveted Certificate of Cryptographic Achievement for the W7OS Antique Radio Museum station effort, as seen here.

This is one of the really cool events of the "radio calendar" in that it's not a ham radio event, but an historical event involving not only the disciplines of Morse code proficiency but also for the ability to work as a team (in our case) to decode a complex message. Thanks to Randy WB4SPB and his team for this effort.

-Dave W7UUU

The W7DK / W7OS 2025 Certificate of Cryptographic Achievement

Two members of the decoding team—Dan KD7SV copying on the left, then assisting Quentin K7DRQ with decoding on the Enigma
Photos by Randy WB4SPB

The Salmon Run

Washington State QSO Party

W7UUU

Beautiful jacket patch for all RCT Salmon Run ops designed and made by Mike W7MKE

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The Salmon Run

Washington State QSO Party

W7UUU

Dan KD7SV searches for WA counties at the 40m rig

Bark Editor Dave W7UUU working 20m CW

Becky KG7FZH fills in on the county search at the 40m SSB Flex station

Phil K7PIA works his stint on 15m SSB

All photos this page provided by Al N7OMS

The Salmon Run

Washington State QSO Party

W7UUU

The evening Salmon Run crew takes a dinner break
Photo by Mike W7MKE

Brad KK7YQC (yellow) chats with Chef Paul W7PFU in the kitchen fixing dinner for the crew
Photo by Gary WG7X

Another view of the 20m CW position on the Icom IC-7610 and Palstar amp/tuner combo
Photo by Dave W7UUU

Becky KG7FZH at the 40m SSB station
Photo by Becky

All photos this page as noted

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The Salmon Run

Washington State QSO Party

W7UUU

John K2CCT running the Flex for Salmon Run

Walt WA7SDY takes his stint on 15m for the event

Walt WA7SDY, Al N7OMS, and Gary WG7X standing by in the HF room for Salmon Run

Dan KD7SV tutors youngins Nathan WA7BUG and his little brother Elliott KK7YTU on how logging works

All photos this page provided by Dave W7UUU

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The Salmon Run

Washington State QSO Party

W7UUU

SALMON RUN 2025 IS NOW IN THE LOGBOOKS!

Commencing 1600Z Saturday September 20th, and ending 2359Z (5PM PDT) Sunday (with an off time between local midnight and 9AM Sunday). This event is one of the most popular QSO Parties in ham radio every year. It's also W7DK's biggest annual fundraiser event as well—where members pledge a dollar amount for how many counties they think they'll work, and if they will achieve a "Clean Sweep" garnering all 39 state counties (which can be rather difficult some years!).

The scores are in:

1162 QSOs, 106 multipliers (including all 50 states), 8 of 13 Canadian provinces, and 17 DX. entities. Total claimed score 293,348. Includes 1000 W7DX bonus points on 2 modes.

Says Randy, WB4SPB, keeper of the club's logs:

"Propagation was pretty good this year. We managed to work all states, and we got a "clean sweep" of 39 Washington Counties before end of day on Saturday. Using our recently installed band pass filters, and keeping power to 500W or less, we were pleased with our success in operating two stations simultaneously without significant interference. All of our statistics numbers are a bit better than our effort last year".

2025 List of Salmon Run operators:

K7MM, K7PIA, KD7SV, KG7FZH, KG7ZYB, KJ7MEW, N7HT, N7OMS, N9MII, W7JUL, W7MKE, W7UUU, W7XH, W7XTZ, WA7BUG, WA7SDY, WB4SPB, and WG7X

Our 2025 Statistics

QSOs by Band & Mode	
10 CW	33
10 SSB	27
15 CW	225
15 SSB	193
20 CW	100
20 SSB	205
40 CW	76
40 SSB	232
80 CW	0
80 SSB	71

QSOs by Mode	
CW	434
SSB	728

QSOs by Band	
10	60
15	418
20	305
40	308
80	71

Ten Years of W7DK Salmon Run Scores

Year	QSOs	Mults	Counties	Claimed Score
2015	995	93	35	209041
2016	1212	109	39	307072
2017	512	83	38	102426
2018	688	95	39	148060
2019	989	100	39	201700
2020	542	89	39	97866
2021	801	97	39	177540
2022	895	102	39	216730
2023	974	103	39	241505
2024	1131	104	39	253512
2025	1162	106	39	293348

STOP BUYING COMMERCIALLY MADE WIRE HF ANTENNAS!

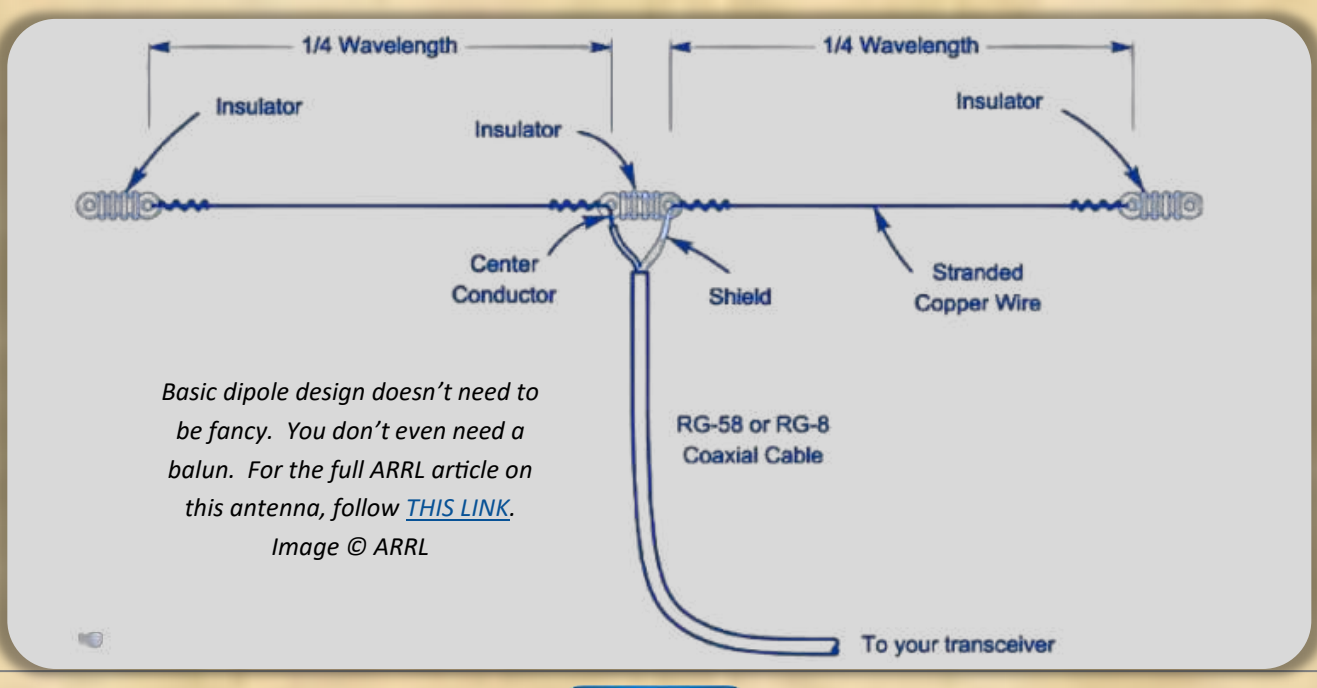
There, I've said it. In an age when nearly everything in ham radio is pre-packaged, polished, and sold at a premium, it's remarkable how many hams still hand over *big money* for something as basic as a length of wire with a coax connector in the center and insulators on the ends. Let's be honest—commercially-made wire antennas are among the biggest rip-offs in the hobby and one of the easiest things to make.

A basic dipole, the original workhorse of HF, can be built for the cost of a few dollars in wire and a few insulators. Some operators scrounge everything from plastic strips for insulators and old extension cords or stereo speaker cables for the antenna wire. Compare that with the sticker shock of commercial offerings, where the same length of copper wire with a center insulator and some plastic ends might run a hundred dollars or more. You're not paying for performance—you're paying for *packaging*. (And of course, serious markup).

Antenna building was once considered a rite of passage. Old-timers (like ME, your editor!) remember stringing up their first 40-meter dipole between two trees, soldering PL-259s by hand, and feeling the thrill when the receiver came alive. The antenna was *theirs*—not bought, not pre-tuned, not wrapped in shrink tubing to look "professional." There's pride in taking raw materials and turning them into a signal-flinging machine that really works. That pride is being lost every time someone clicks "add to cart" for what amounts to wire on a spool.

The argument for buying antennas usually comes down to convenience. People say they don't have the time, or they're afraid they'll get the lengths wrong, or they think commercial antennas somehow "perform better." But here's the truth: wire antennas *are forgiving*. A dipole cut a little long can be trimmed (always start with it a little bit too long!). Even multi-band fan dipoles, trap dipoles, or simple verticals can be put together on the workbench in an afternoon. If you can measure, cut, and solder, you can build antennas as good as—or *even better*—than what you'll find on websites for sale.

Another overlooked point is cost flexibility. When you build your own, you can afford to experiment. Want to try an 80-meter doublet one week and a 20-meter delta loop the next? The only real investment is your time and some lengths of wire. You learn how antennas interact with their surroundings, how feedline choices matter, and how tuning can change with height or ground conditions. You become a



Basic dipole design doesn't need to be fancy. You don't even need a balun. For the full ARRL article on this antenna, follow THIS LINK. Image © ARRL

better operator because you've built, tested, and learned—*not just bought*.

Online ham resellers know the psychology of today's ham: sell them convenience, sell them confidence, and sell them something "plug-and-play." But that mindset robs the operator of one of the great joys of the hobby—making things work with your own two hands. Wire antennas are the easiest possible place to push back against the trend of buying everything. You don't need a factory-sealed product to make contacts around the world. You just need wire, some insulators, and the willingness to climb a ladder or tree.

So the next time you're tempted by ham gear website ads for wire antennas with impressive names, *stop*. Don't buy. Head to the hardware or thift store, pick up some wire and connectors, and build one yourself. You'll save money, learn something valuable, and join a long line of hams who know the real fun begins not at checkout, but at the workbench.

If you DON'T know what you're doing, that's the time to hook up with hams in your local ham radio club (like the Radio Club of Tacoma) and find an Elmer/Mentor who knows about antennas to help you out.

Speaking for myself, as WN7AWK and later WB7AWK and on into W7UUU, spanning from 1974 until 2014, I never once purchased an antenna for the HF bands. True story. I built every antenna I ever used, from the very first, until August of 2014 when, after 40 years as a ham, I put up my first Yagi (a Mosley TA-33MW at 47 feet at my previous house in University Place, WA). And I have to say that it felt sort of weird to me "buying" an HF antenna when every one of the myriad antennas I used before were all homebrewed.

So where do you go from here? What resources does a ham have to learn how to build his own antennas? Fortunately, this is one of the easiest areas in ham radio to dive into. Entire generations of operators learned antenna craft by starting with nothing more than an ARRL Handbook or Antenna Book. Those two volumes remain gold standards today, packed with designs, formulas, and practical notes. You don't need to buy the books new—antennas haven't changed much in 100 years. Older editions will work just fine.

Beyond these printed classics, there's a wealth of online resources. Hundreds of hams have documented their antenna projects in blogs, forums, and YouTube videos. You'll find everything from step-by-step guides on cutting wire lengths to clever homemade insulators built from PVC pipe, cutting boards, or even the plastic top of a peanut butter jar. Search for "ham radio dipole build" and you'll discover a vast ham radio community eager to share what worked for them—and sometimes what didn't.

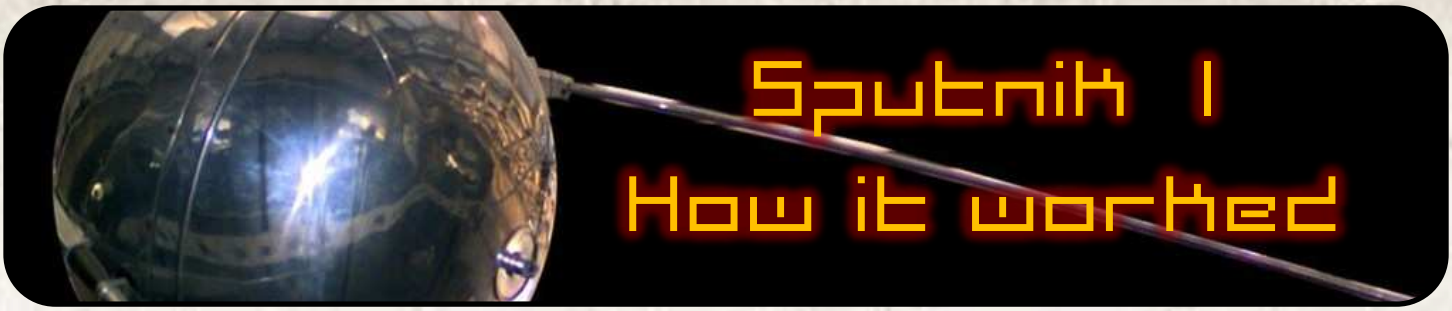
Clubs are another powerful resource. Most local ham clubs have at least one antenna-building night every year, and you'll often find an "Elmer" or two who live for this kind of thing. Spending an afternoon with someone who has strung up miles of wire over the decades can save you plenty of trial and error. More importantly, it connects you with the spirit of the hobby: people helping people make radio work.

Don't underestimate experimentation, either. Wire antennas are inexpensive and forgiving. Build one, hang it up, see how it tunes, and then adjust. Antenna analyzers make the process easier, but you can learn just as much by listening, using your SWR meter (at LOW power!), trimming, and re-testing. A notebook and some patience will teach you more about resonance and efficiency than any glossy instruction sheet that comes in a commercial package.

The take-away point is this: you don't need to be an engineer or a master builder to succeed. Start with a simple design like a dipole, use the cut-and-try method if needed, and lean on the community and literature that have guided hams for nearly a century. Before long you'll realize that building antennas isn't a chore—it's one of the most rewarding, empowering, and downright fun parts of amateur radio. And at the same time, one of the most frugal things you can source in ham radio.

-Dave W7UUU


How it worked
Спутник 1
Sputnik 1—October 1957



Sputnik 1 How it worked

68 YEARS AGO THIS MONTH, THE SOVIET UNION shocked the world. It was October 4, 1957 (11:26 Pacific Time) that saw the launch of Sputnik 1, the first artificial Earth satellite, and it marked the beginnings of human space exploration.

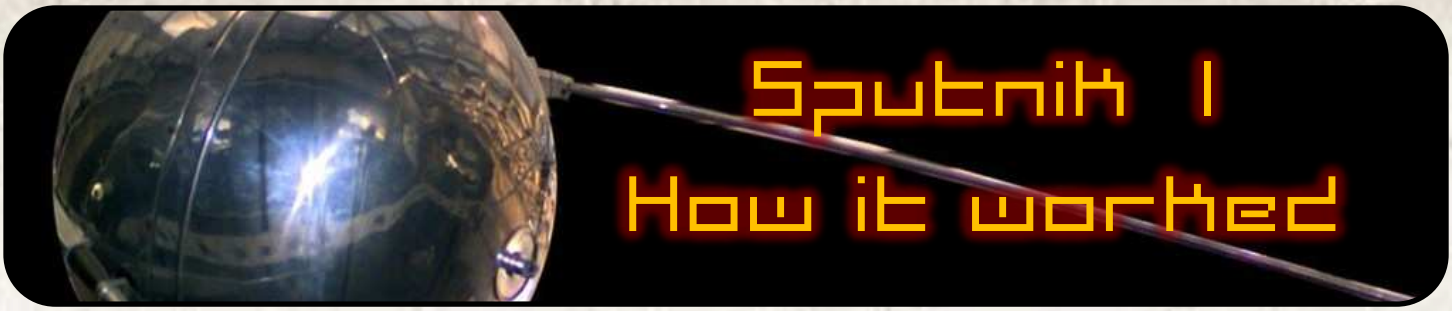
While ostensibly a purely scientific venture, it's impossible to strip the launch of Sputnik from the extreme political tensions of the era between the Soviets and the United states. That much is known by most people. But what's seldom discussed is the actual technology behind this pivotal event in history, and the fact that radio amateurs played a big part in the mystery and excitement around the world as Sputnik 1 lived out its 3-month journey. Only the first 22 days had radio transmission capabilities. Time was short.

Sputnik 1 was a spherical satellite, approximately 23 inches in diameter, weighing 184 pounds. It had four long, thin antennae protruding from its surface, one pair 7 feet and one pair 9 feet long. These antennas were essential for communication between the satellite and ground stations. The satellite was constructed using aluminum and stainless steel, making it lightweight yet durable enough to withstand the harsh conditions of space.

But what the world didn't know that October morning was that Sputnik was both deaf *and* blind. It carried no cameras, no listening devices, no real scientific instruments of any kind—nothing of the sort. The only electronics on board this silver aluminum medicine ball were two small tube-based radio transmitters.

And even at that, the transmitters were fairly simple pulse generators, producing a series of beeps that were detectable by ground stations around the world—including by ham radio operators.

RETURN HOME PAGE



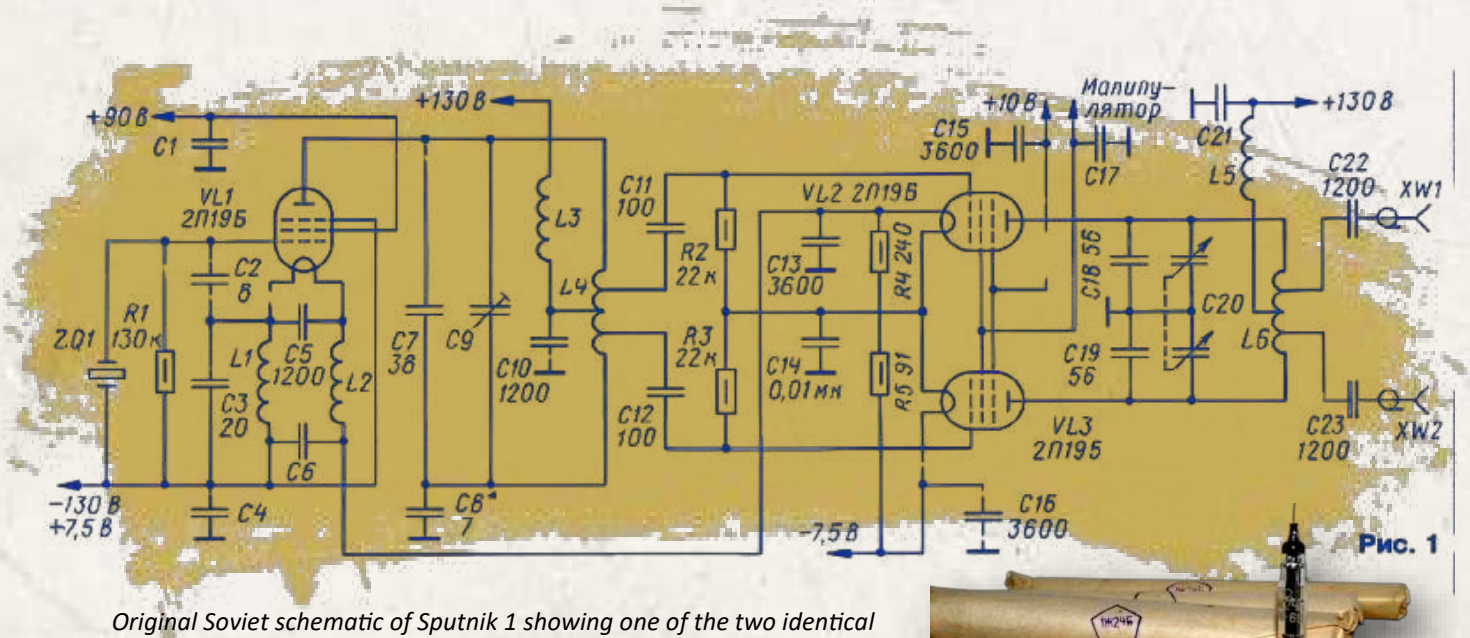
Sputnik 1
How it worked

The Sputnik transmitters operated on two frequencies: 20.005 MHz and 40.002 MHz. The lower frequency was considered to be the primary, but two frequencies were used to maximize the potential that signals could be heard from earth. Not much was known in 1957 how radio waves would behave coming from space to ground stations, so to that extent, Sputnik indeed served an important scientific mission. But there was *nothing* in the circuits beyond that—no accelerometer device to record speed or deceleration during orbit; just an endless series of beeps. But that was enough to unnerve the rest of the world. No one knew what the signals meant. Everyone assumed the beeps meant *something.*

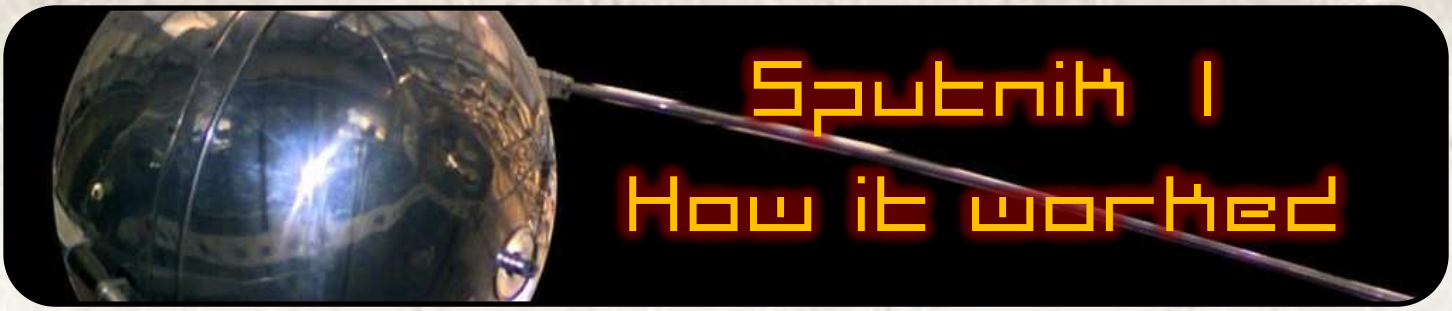
Many reception reports were recorded by amateur radio operators and shortwave listeners around the world, *especially* reporting signals from the 20 MHz transmitter.

In an editorial article in the December 1957 QST magazine column, "It Seems to US", listeners were admonished thusly: "From some of the so-called Sputnik logs we've seen, it is apparent that what some fellows were hearing definitely was not the satellite. Observations reporting the wrong signal not only are worthless, but may waste valuable time for those who have to analyze the data. So before you send any reports […] make absolutely certain that what you are reporting is actually a satellite signal and not some commercial circuit working near 20 Mc.—or even WWV!"

Indeed, the choice of 20.005 MHz by the Soviets put their signal pretty much right on top of the WWV time broadcast station's 20 MHz frequency. Undoubtedly, many of the reports received by authorities were nothing more than WWV signals.



Original Soviet schematic of Sputnik 1 showing one of the two identical transmitters—one operating on 20.005, the other on 40.002 MHz. Far right connections XW1 & XW2 are for the two antenna connections, with both transmitters feeding a total of four antennas. The tube types used are the Soviet equivalent of the 1S(Z)H24B and 1P24B subminiatures



Both Sputnik transmitters were housed in a single cabinet called the "D-200 Transmitter Unit". In addition to providing fairly-wide frequency spacing between the two transmitters, this approach also provided redundancy in case one transmitter failed. The Soviet scientists hoped such an arrangement would help reveal details about ionospheric layers and help improve radio communications.

Each transmitter ran about one watt of RF power—which doesn't sound like much, but is actually perfectly adequate for the signal to be heard by thousands of listeners worldwide as Sputnik passed overhead.

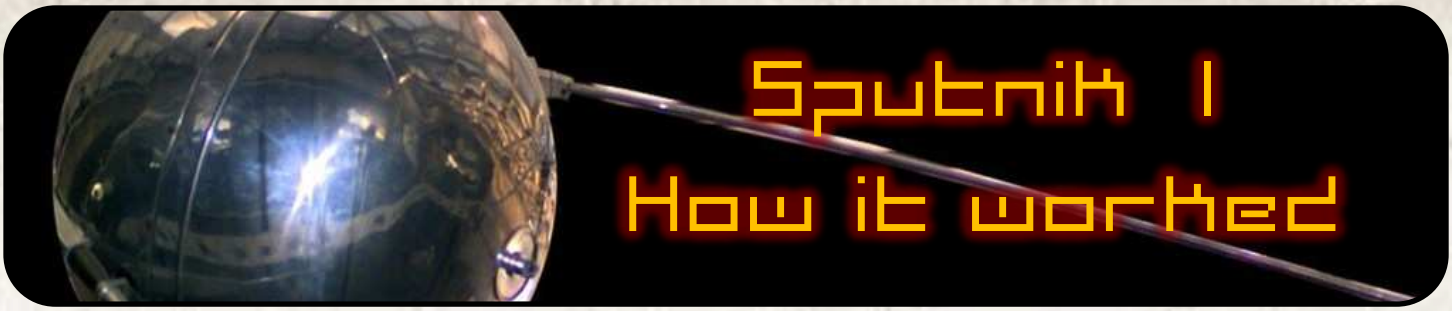
Power came from three silver-zinc non-rechargeable batteries housed inside the sphere of the satellite. Two of these powered the transmitters, while a third operated a small fan and thermal switches designed to keep the inside of the satellite cool during daylight passes with direct solar radiation raising the internal temperature.

But unbeknownst to the startled public and avid listeners on the earth, Sputnik transmitted nothing that would be considered intelligence. A timer circuit caused each transmitter to transmit in succession, sending CW signals in short pulses that lasted about one-quarter of a second. It was this pulsing that created the famous "beep-beep" sound now familiar to many hams and shortwave fans everywhere.

Basic telemetry was sent by modulating the beep timing and duration as temperature rose and fell. Signals on the first frequency pulsed between 3 and 6 Hz depending on temperature. The satellite carried a pressure sensor that could detect if the hull were breached by a meteorite. In such a case, the switch would trigger a change in the duration of the radio signal impulse. But no other pressure data was transmitted and the hull was never breached.

Amateur operator Dick Oberholtzer W9ZPV and wife Ruth listening to radio signals from Sputnik 1 from his shack in Elm Grove, Wisconsin
Photo: Francis Miller/The LIFE Picture Collection/Getty LINK
To HEAR SPUTNIK 1 SOUNDS, Click on the image above!

Ham radio operators were among the first people on earth to detect sputnik's signal. One of the first publicly known and "in the news" to have copied the "beep-beep" signal of Sputnik was Dick Oberholtzer W9ZPV, accompanied by his wife Ruth in their Elm Grove, Wisconsin home, featured in the October 21, 1957 Life Magazine.



Sputnik 1's orbit was deliberately chosen to be fairly elliptical. At apogee (farthest point from earth) it was about 590 miles up, and at perigee (closest point) only about 140 miles. This was to give the satellite enough "hang time" to keep orbiting earth for as long as possible, while regularly dipping low enough to the surface for the two transmitter signals to be copied on earth by the myriad of listeners.

The batteries for the transmitter lasted all of 22 days, but the orbit continued on for about three months, making some 1,400 trips around the earth. But as the orbit decayed, it became less stable and on January 4, 1958 it was observed burning up on reentry. Nothing of it remains (other than prototypes, replicas, and photographs).

So in the end, what was the real significance of Sputnik 1?

I think it was revolutionary in that it beat the U.S. by mere months into space (the first salvo in the cold war theater of 'The Space Race'). The "beep-beep" signal astounded, shocked, and in many cases, frightened the world—most not realizing it was more the sound of a crowing rooster than any sort of sinister surveillance device. It was later of course learned that through some U.S. government ineptitude, that America could have *been first* in space and was poised to be so but for the inaction of a few bureaucrats that blocked the launch of the U.S. Vanguard satellite. Regardless, the Soviets were "first in space" and that set the tone for many years to come.

It's a great story, especially to know that amateur radio operators played a significant part in all of it.

-Dave W7UUU

Parameter	Details
Transmitter Unit	Model D-200, containing two Independent vacuum-tube radio transmitters
Operating Frequencies	20.005 MHz and 40.002 MHz
Transmitter Power	Approximately 1 W per transmitter module
Signal Pulse Characteristics	3 Hz to 6 Hz depending on the temperature inside the satellite
Telemetry Encoding	Internal temperature changed the pulse duration. A pressure switch could detect a hull breach and would further alter the pulse duration.
Vacuum Tubes Used	Soviet equivalents to 1SH24b or 1P24b
Circuit Configuration	Master Oscillator–Power Amplifier (MOPA) configuration
Transmitter Designer	Radio transmitters were developed by Vyacheslav I. Lappo
Antennas	Four whip antennas: two about 7.9 feet long and two about 9.5 feet long; arranged for nearly uniform spherical radiation pattern

Summation of the known technical details of Sputnik 1

SHERLOCK INVESTIGATES:

RADIO FAILURES IN THREE ACTS

ACT 3

SHERLOCK

RADIO FAILURES ACT 3: Cracks, Common Failures, & Final Clues

introduction

IN THE JULY *BARK*, I PUBLISHED A GREAT PIECE OF WORK submitted to me anonymously, titled "Sherlock: The 30 Year Transmitter Hunt Mystery". This story takes readers through a real-life 30-year effort to stop a habitual repeater jammer in an anonymous US city.

I actually *do* know who the writer is, and can confirm that he is in fact a duly-licensed Extra Class ham with 50+ years of amateur radio technical experience. The articles he writes are not AI generated (confirmed by three different "AI detector" websites) bur rather are the real deal. He is a prolific writer, but just prefers to remain unnamed for this series, collectively entitled Sherlock (obviously an homage to Sir Arthur Conan Doyle's famous private investigator, Sherlock Holmes).

This month we again present Sherlock, with the first act of a fascinating 3-part glimpse into sleuthing out difficult ham radio repair problems, all drawn from his own years of bench repairs.

Here is an outline of the series:

~~Act 1 August: The Science of Sleuthing:~~

- ~~Introduction and mindset~~
- ~~Overview of failures~~
- ~~"Black Widow" transistor~~
- ~~"Denny Dendrite"~~
- ~~The "Green Radio"~~

~~Act 2 September: Salt, Whiskers, and Scintillation:~~

- ~~3.5% saline failure~~
- ~~Tin whiskers~~
- ~~Tantalum capacitor scintillation~~
- ~~Electrostatic discharge~~
- ~~"Open Case" - transistor issue~~

Act 3 October: Cracks, Common Failures, and Final Clues:

- **Solder joint failures**
- **TS-440 foam reversion**
- **Audio cap polarity design flaws**
- **List of basic investigation equipment**
- **Safety precautions for circuit sleuths**
- **Resource epilogue**

As with the prior Sherlock articles, you'll find his writing clear and concise, evoking a true sense of the famous British detective himself—only here, he's solving "mysteries of electronics failures" instead of hunting criminals. Surprisingly, the two have quite a lot in common. I hope you enjoy reading along. I sure did.

-Dave W7UUU

SHERLOCK

RADIO FAILURES ACT 3: Cracks, Common Failures, & Final Clues

By Dave W7UU

Act 3: Cracks, Failures, Final Clues

The Cracked Solder Joint Mystery

Solder joints can be traitors. They look good, but inside? Cold, brittle, or fractured — especially when one side of a component is anchored and the leads are stressed from the other. All that shines does not conduct.

Thermal cycling is a major culprit. Leave your rig out in a freezing-cold shack all winter, then power it up while the board's still cold? That's *asking* for micro-fractures of a myriad of solder joints. These hairline cracks break continuity and only show up under the microscope… or when your gear goes dead in the middle of a QSO.

Sometimes, chilling the device with dry ice or a freezer and then applying power will trigger the failure right in front of you. Rather than summon the nerve to do such, endeavor to keep your radios in as much a controlled environment as possible, and avoid extremes of thermal change.

Multiple Radios, One Rotten Clue

Some failures are repeat offenders. Take the Kenwood TS-440, for example. This radio has a long insidious reputation: it will lose VCO lock at 28 MHz — it will power on, the display will merely show cryptic dots, and that's it. The fault? *Foam*.

Specifically, foam potting compound inside the VCO (Voltage Controlled Oscillator) cans. The manufacturer used this insipid foam to keep parts stable for mobile use, but after 10–20 years in humidity, it reverts into sticky, conductive goop. This "reversion" shorts out high-impedance circuits. Many a TS-440 has fallen prey to this malady.

NASA engineers once fell for this too. The fix? Scrape the goo out. Clean the VCO. Problem solved. Just be careful while poking around the VCO board so as not to inflict more serious injury by damaging a trace or a component.

Another recurring issue: audio distortion caused by misused electrolytic capacitors. Some foreign-made radios use polarized electrolytics for audio coupling — a problem, since audio, after all, is AC. The negative half-cycle slowly eats away at the dielectric, especially if the rig runs squelch-off 24/7, like in packet radio setups.

The symptom? "Transmit audio sounds fine, but Receive audio is garbage." The solution? Replace one cheap capacitor. I've bought more than one "broken" radio this way and had it working within 20 minutes. Look for the interstage capacitor that feeds from the detector into the audio amplifier. Be sure to have a known-legible schematic on hand. Every radio is different, but the cause is almost always the same.

SHERLOCK

RADIO FAILURES ACT 3: Cracks, Common Failures, & Final Clues

Elementary Tools for an Electronic Sleuth

You don't need a cleanroom to investigate failure. You don't even need Watson. Just a few good tools:

- A solid multimeter
- A curve tracer
- A decent microscope or magnifier
- A hacksaw for when diplomacy fails.

Some parts are nasty… safety first, in all matters of sleuthing:

- Beryllium Oxide (BeO) — used in power semiconductors — is toxic if powdered. Don't grind semiconductors of any kind if you are unsure.
- Some old capacitors leak corrosive or carcinogenic goo. At all costs, avoid puncturing electrolytic capacitors of any kind. If you do, immediately wrap in foil or plastic wrap and dispose of properly.
- Mercury relays and 866 mercury vapor tubes? Handle with care. Mercury abounds in many old ham rigs from times when no one thought anything of it.
- Radioactive sources? Leave those to the DOE.
- If it smells weird — don't lick it. This goes for life in general, beyond the sleuthing of radio failures.

Epilogue: Further Reading and More Clues

For those who wish to go deeper down the rabbit hole of the Science of Sleuthing radio gear:

Wikipedia's many component pages — great for background—just search by component type

Jim Williams' columns in EDN, especially 1991

Troubleshooting Analog Circuits by Bob Pease

IEEE Reliability Physics and ISTFA conference papers

MIL-STD-1580A for destructive physical analysis

And naturally, The Adventures of Sherlock Holmes — never out of date, I can assure you.

"I can't give you a more detailed account of these cases without referring to my notes. I do not know anything essential that has been left unexplained."

■ *-Finis—S.H.*

QRZ NEWS YOU CAN USE

NEW! The QRZ *RTQM*

By Steve KF8KI

Steve Weigold, KF8KI, is one of the Staff Engineers at QRZ.com. He was the primary programmer for the newly-launched Realtime QSO Manager system at QRZ—RTQM—a revolutionary new way for hams to "call CQ" -editor

QRZ IS PLEASED TO INTRODUCE OUR NEWEST FEATURE: the Real Time QSO Manager! We call it RTQM for short. The Real Time QSO Manager is the brainchild of QRZ founder Fred Lloyd, AA7BQ and was developed by the QRZ team. Think of the concept as a digital means to call CQ. Rather than calling CQ into the void and hoping that someone spins the dial past your call and responds, RTQM gives you a mechanism to put yourself on the world map to announce your activity.

You might think of it as a self-spot on a DX spotting network, but it goes far beyond a simple network which depends on random reports and observations. With RTQM, users can see who's available on all bands and modes simultaneously. Rather than searching endlessly for a weak signal, use RTQM to tune directly to the frequency and start listening. Filters are also provided so users can limit the display to only the bands and modes they want to work.

The Real Time QSO Manager introduces the concept of an "Operating Session." By creating one, the user is announcing to the world that they are available to communicate on a specific band via a specific mode at a specific frequency. It's not even necessary to actually call CQ. A number of users have already started utilizing RTQM to extend the "monitoring" concept common on VHF and UHF into HF by indicating they are "monitoring" and inviting other operators to call. A popular comment to add is "monitoring while working, give me a call!"

As an RTQM user, you can post your own session or simply review those of others and decide which ones you might want to work. Details can be updated in real time, and notifications are sent to all connected users. Thus, if you need to change frequency or mode, you can do so easily, and your session will be updated on the map immediately. RTQM supports all recognized amateur bands worldwide and all ADIF-specified modes.

This is the RTQM webpage widget that you can embed on your QRZ page or website. Click the image to go to the User Guide.

RTQM sessions are already being used to publicize special event stations, POTA and other OTA activations, and participation in open nets alongside more typical CQ activity. A widget is also available for use on your QRZ bio and other pages that reports your current session if you're on the air, or your most recent session otherwise.

The RTQM display offers a map that supports both pan and zoom as well as a list view, both of which show the available sessions. Filtering supports one or

QRZ NEWS YOU CAN USE

NEW! The QRZ *RTQM*

By Steve KF8KI

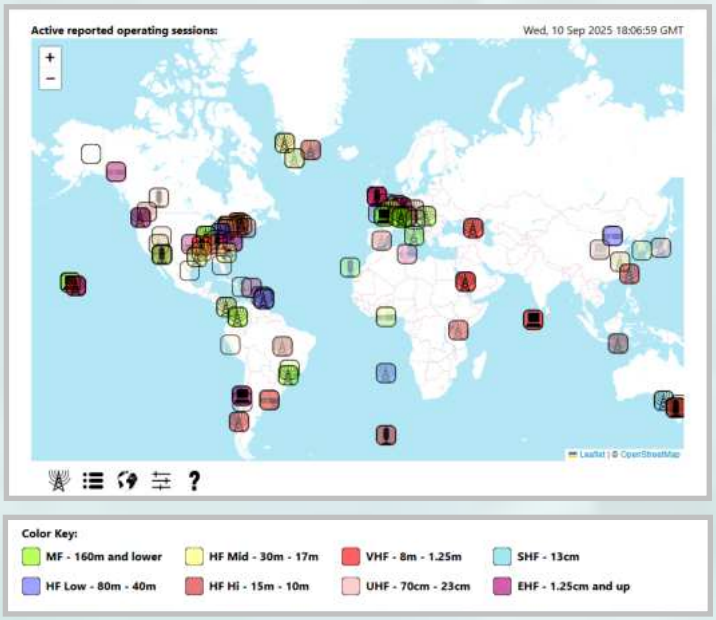
more bands and one or more modes, selectable through the filter manager. Each session is accompanied by a color-coded icon. The icon indicates the mode, and the color indicates the range of bands. This lets the user get a general idea of the details at a glance. In the map view, clicking on a session reveals more information, while the list view shows the details immediately.

The Real Time QSO Manager is designed around the concept of "fresh" data so users don't have to wonder how old a "spot" is or if the operator is still on the reported frequency. Sessions have an initial lifetime of 30 minutes. If there's no interaction during that time, the entry disappears from the map. To keep it current, the owner can update it to show the session is still active. Other users are also encouraged to mark a session "heard" if they are able to hear the operator on the air.

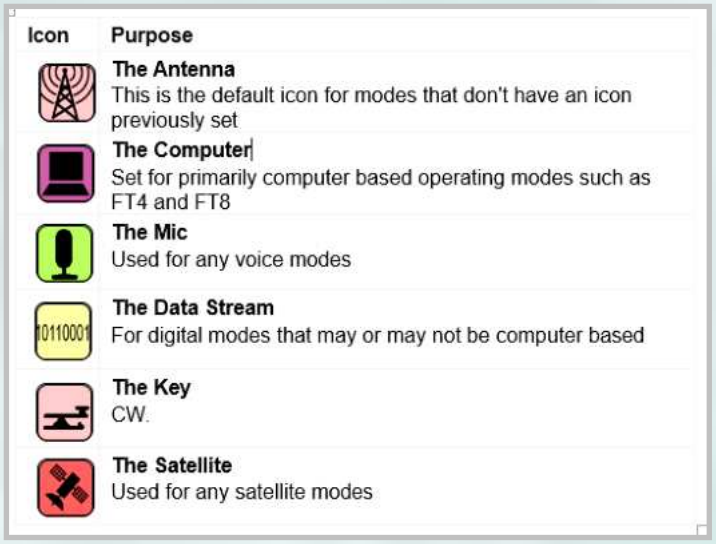
As of this writing, RTQM is undergoing public beta testing. All licensed QRZ users are encouraged to try out the tool and help improve it by providing feedback. You can read the User's Guide at THIS LINK.

To access the Real Time QSO Manager system itself, visit THIS LINK and be sure to check the beta test forum in the QRZ Community section to provide feedback, get questions answered, and offer suggestions and feature requests.

-Steve Weigold KF8KI
Staff Programmer, QRZ.com



Sample view of the RTQM Activity Map. Colors indicate the band in use. Users can filter by band and mode. So if you only want 20-meter CW activity, you can select that.



The icon displayed on the map then defines the mode groups which include FT modes, digital modes of other types, CW, phone, satellite, etc.

President Adam W2NCC and Secretary Pro Tem Mike W7MKE prepare to start the meeting

The Zoom turnout started to build nicely—I think we had maybe 12 in "remote attendance"

Leonard KA7NWF gears up with door prize tickets and sign-in sheets

Perry WB7NIL from Puyallup stopped in for the first time to see what the RCT meetings are all about

All photos this page provided by Dave W7UUU

RETURN TO HOME PAGE

Decent turnout—hoping to get more of our 429 members to actually start attending our in-person meetings

Stephen AD7AB visits over his hotdog lunch with Phil KC7PS

Our wonderful Eagles Club hostess and bartender Angel poses with Stephen AD7AB and Dave N7HT before the meeting starts

Robert WB7CQV is one of the longtime members of RCT, having joined in March 1970 as member #635 stopped by for the first time in a long time at a recent meeting

All photos this page provided by Dave W7UUU

Our presenter was Jeff NZ2S who toured us through a wide array of antenna analyzer devices

Jeff's program concluded with information on the NanoVNA series of analyzers

Dave N7HT wins an RCT tee shirt in the monthly door prize drawing at the General Meeting. Congrats Dave!

Walt WA7SDY displays his RCT tee shirt as another winner in the door prize drawing. Congrats Walt!

All photos this page provided by Dave W7UUU

STRAY TOPICS OF INTEREST:

AC Electrolytics vs. DC

I RECENTLY HAD CAUSE TO CHANGE A MOTOR STARTING capacitor in a compressor. I just went on Amazon, and ordered the "right part" and put it in, and bam! The motor was back in business. But it occurred to me I actually had no idea what makes a "motor starting" capacitor be different from the capacitors in ham gear. So I spent several hours reading up on it, and wanted to share my "new-found knowledge" with the *Logger's Bark* readers.

It's obvious to anyone at all familiar with any type of electrolytic capacitor that motor capacitors are rated in µF just like power supply capacitors. So for those that may not know, electrolytic capacitors are a large family of devices that provide high capacitance (electrical storage) in a relatively compact package, and there are two very broad categories of these devices: the AC motor starting capacitor, and the DC power supply filter capacitor (such as found in ham gear).

At first glance they seem similar, but in reality they are built for very different jobs and are *not* interchangeable. A motor starting capacitor is designed for single-phase induction motors (like in my compressor), where it provides a very necessary phase shift to create high starting torque and make the motor "start running". Hence the name.

A single-phase motor, by itself, produces only an alternating magnetic field that does not rotate. That means if you simply energize the stator (the fixed coil in the motor that builds the electromagnetic field that turns the rotor) with AC, the rotor will sit still and hum, but it will not begin turning on its own. What is needed is a *second* magnetic field, *shifted in phase from the first*, so that the combination of the two produces a rotating magnetic field strong enough to pull the rotor into motion. The capacitor creates this phase shift by delaying the current in the auxiliary winding relative to the main winding, which effectively generates a second field at a different phase angle.

The interaction of the two fields produces the torque necessary to get the rotor moving. Once the rotor is up to speed, the motor's design allows it to keep running without the auxiliary winding and the capacitor, which is why the capacitor is

Typical AC Motor Start capacitor | *Typical AC Motor Run capacitor* | *Typical DC Power supply capacitor*

Photos by Dave W7UUU

disconnected after startup—usually by a device called a centrifugal switch—a switch that opens up and breaks electrical contact when it starts spinning. This type of capacitor is non-polarized so that it can safely handle alternating current. The usual construction involves two "DC style" electrolytic capacitors connected *back to back*, which cancels out the polarity restriction of a conventional electrolytic. These capacitors come into play only during startup, when the motor is accelerating from rest up to about three-quarters of its operating speed. That's when the centrifugal switch kicks in and disconnects the capacitor. They are built for brief duty cycles, sometimes only a second or two, and then they must rest while the motor runs.

Because of this short duty cycle and the high losses inherent in the design, they cannot be left continuously in circuit without overheating or failing. Their capacitance is typically large—tens or even hundreds of microfarads—and their voltage ratings are stated in AC terms, such as 125, 250, or 330 volts AC—not DC voltage as in ham radio gear.

In reading up about these devices I learned that many motors use another kind of AC capacitor known as a *run* capacitor. Unlike the starting type, a run capacitor is designed for con-

STRAY TOPICS OF INTEREST:

AC Electrolytics vs. DC

tinuous duty and remains in circuit as long as the motor operates. They're usually a different type—most often metallized polypropylene film capacitors rather than electrolytics, because they must withstand constant AC stress with low losses and minimal heating. The run capacitor provides a more modest phase shift than a starting capacitor but maintains a rotating magnetic field throughout operation, improving efficiency, reducing vibration, and ensuring smoother torque. In capacitor-start, capacitor-run motors, the two types are combined: the starting capacitor provides the heavy torque at startup, and the run capacitor carries on for efficient running. Including this distinction makes clear why starting capacitors, with their limited duty cycle, cannot substitute for run capacitors any more than they can for DC filter capacitors.

I'm much more familiar with DC electrolytic capacitors from all my years tinkering with electronics and ham gear. A DC power supply filter capacitor is polarized and must always be connected with the correct polarity (or it will blow up quite spectacularly—I learned that the hard way when I was about 15, recapping a guitar amplifier!). They are designed to work with rectified DC, smoothing the pulsating waveform from a power supply so that the output voltage is more constant. These capacitors absorb the ripple, supply energy on demand when loads change suddenly, and generally stabilize the supply. They are designed to operate continuously under a steady DC bias, while handling whatever ripple current the supply creates. The ratings are given in DC volts—25, 50, or 450 volts, for example—and they are carefully engineered to manage ripple current without overheating during long-term service.

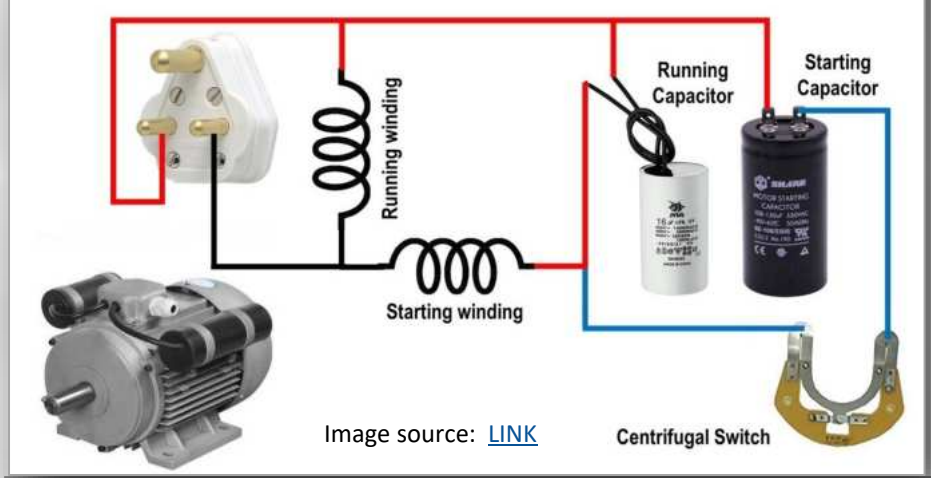
What the two types have in in common is both motor starting capacitors and filter capacitors rely on the same fundamental idea of an electrolytic: a very thin oxide dielectric layer on etched foil, giving a large capacitance in a small volume. Both store and release charge as needed. But the similarities end there. The motor starting capacitor is a temporary, AC-rated device, intended for a few seconds of service at a time, while the filter capacitor is a continuous-duty, DC-rated device. Their electrical characteristics, ratings, and even the way they are physically built diverge pretty dramatically to meet these different requirements.

Trying to substitute one for the other is asking for trouble. A DC filter capacitor cannot withstand the full AC voltage swing in a motor circuit and would quickly fail, often violently, if used that way. A motor starting capacitor, meanwhile, is too lossy and not polarized correctly for use as a DC filter; it would overheat and break down if left in circuit continuously. Although both belong to the electrolytic family, they were designed with completely different jobs in mind, and the differences are important enough that they should never be interchanged.

I'm sure many readers will have already known all about the AC variety, but if you're like me and always wondered, hopefully you got something out of this article.

-Dave W7UUU

Double Capacitor Motor Connection



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SUMMERFEST 2025
MINERAL, WASHINGTON

By Dave W7UUU

SUMMERFEST IN MINERAL WASHINGTON is a little-advertised mini-hamfest sponsored by the local hams in Mineral that takes place in late August. It's always a beautiful drive out to the Mount Rainier area past Eatonville, on the shores of crystal-clear Mineral Lake. You can always count on finding the true gems of the Boat Anchor age as well as parts and pieces for most any project you can think of. But if you don't search out the few places it's announced every year, you'll miss it! *-Dave W7UUU*

All photos by Dave W7UUU

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RCT Bulletin Board

Posted notes and other important stuff

Here's a **useful tip** when reading the Bark: if you want to view a link, "right click" > "Open link in new window"… that way you won't lose your place in the Bark!

The National Sasquatch Day Special Event is coming up quickly! The actual day is October 20th but the Special Event begins October 13 and runs through the 21st. If you want to operate, contact BJ KO7T ASAP!!

Last month's Hidden Object—Arduino:

On 88 lower right table in the POTA section

Last Month's Hidden Word:

Arduino

It was hidden in the Elmer Board table, bottom right Page 67

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HUGE THANKS TO Mr. Bruce Horn, WA7BNM for publishing his "Contest Calendar" for all these many years… a truly wonderful resource for finding virtually every ham radio contest on Earth that might be happening, in most any mode and most any region in the world. Follow the link to take you to the site, then sort through the various options to find the specifics of every upcoming event. For now, here's the **WA7BNM** Contest Calendar for the this month. Click the calendar below to visit Bruce's site directly.

October 2025	
SARL 80m QSO Party	1700Z-2000Z, Oct 2
URC DX RTTY Contest	0000Z-2359Z, Oct 3
German Telegraphy Contest	0700Z-1000Z, Oct 3
TRC DX Contest	0600Z, Oct 4 to 1800Z, Oct 5
Worked All Provinces of China DX Contest	0600Z, Oct 4 to 0559Z, Oct 5
Oceania DX Contest, Phone	0600Z, Oct 4 to 0600Z, Oct 5
California QSO Party	1600Z, Oct 4 to 2200Z, Oct 5
Peanut Power QRP Sprint	2200Z-2359Z, Oct 5
ARS Spartan Sprint	0000Z-0200Z, Oct 7
10-10 Int. 10-10 Day Sprint	0001Z-2359Z, Oct 10
Makrothen RTTY Contest	0000Z, Oct 11 to 1559Z, Oct 12
QRP ARCI Fall QSO Party	0000Z-2359Z, Oct 11
Nevada QSO Party	0300Z, Oct 11 to 2100Z, Oct 12
Oceania DX Contest, CW	0600Z, Oct 11 to 0600Z, Oct 12
Scandinavian Activity Contest, SSB	1200Z, Oct 11 to 1200Z, Oct 12
SKCC Weekend Sprintathon	1200Z, Oct 11 to 2359Z, Oct 12
Arizona QSO Party	1500Z, Oct 11 to 0500Z, Oct 12
Pennsylvania QSO Party	1600Z, Oct 11 to 2200Z, Oct 12
South Dakota QSO Party	1800Z, Oct 11 to 1800Z, Oct 12
PODXS 070 Club 160m Great Pumpkin Sprint	2000Z, Oct 11 to 2000Z, Oct 12
4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Oct 13
AGCW Semi-Automatic Key Evening	1900Z-2030Z, Oct 15
NTC QSO Party	1900Z-2000Z, Oct 16
JARTS WW RTTY Contest	0000Z, Oct 18 to 2359Z, Oct 19
10-10 Int. Fall Contest, CW	0001Z, Oct 18 to 2359Z, Oct 19
New York QSO Party	1400Z, Oct 18 to 0200Z, Oct 19
Worked All Germany Contest	1500Z, Oct 18 to 1459Z, Oct 19
Stew Perry Topband Challenge	1500Z, Oct 18 to 1500Z, Oct 19
Asia-Pacific Fall Sprint, CW	0000Z-0200Z, Oct 19
Illinois QSO Party	1700Z, Oct 19 to 0100Z, Oct 20
Run for the Bacon QRP Contest	2300Z, Oct 19 to 0100Z, Oct 20
ARRL School Club Roundup	1300Z, Oct 20 to 2359Z, Oct 24
SKCC Sprint	0000Z-0200Z, Oct 22
CQ Worldwide DX Contest, SSB	0000Z, Oct 25 to 2359Z, Oct 26

Click Calendar to visit online

***WA7BNM** Contest Calendar data used with permission*

Background Image Source LINK

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THE W7DK ELMER BOARD

Do you have a skill or tool to help new hams?

YOU! YES *YOU!* Do YOU have a skill you could pass on to new amateur radio operators? Do you possess a skill or piece of gear that you're willing to share with others to fix antenna problems, diagnose noise issues, drive a ground rod, teach Morse, help teach technical topics? If the answer is YES you too could be a W7DK Elmer!! Let any officer know what your skills are or how you could help new hams get a leg up on the hobby. And if you're one of those already on the list, are there any changes we should be aware of? If so please hit the email address (found bottom of page on the right) and let us know so we can update the W7DK Radio Club of Tacoma "Elmer Board".

NEW HAMS OR MEMBERS: If you are looking for help, and NEED AN ELMER to help guide your way, use this table! Find the skill you need on the left, then look for an Elmer Provider of that skill on the right and reach out to them. ALL of these Elmer's have committed to helping so please don't hesitate.

ELMER ("MENTOR") BOARD

Do you need help with some area of ham radio?

List of members' areas of interest:

1. Technical questions, Classes
2. Help with Morse Code
3. License Examinations
4. Antenna and Station Planning
5. Antenna and Tower Erection
6. Buying Equipment (new or used)
7. Equipment Repair
8. Understanding and Using Your Gear
9. DXing and Contests
10. Club and ARRL Activities
11. Using Test Equipment
12. IRLP, Digital, SDR, APRS, WinLink, etc.
13. Basics of Electronics—how things work

Current as of January 2025

Name/Call Sign/Phone Number/Topic:

Adam W2NCC 360-870-7894 (4, 5, 6, 7, 11)
Dave N7HT 253-363-1692 (1, 2, 4, 6, 8)
Dave W7UUU (253-820-0890 (2, 4, 6, 9)
Al N7OMS 253-495-9068 (10, 12)
Mike W7XTZ 253-405-8095 (6, 8, 10)
Stephen AD7AB 253-212-9437 (1, 3, 4, 12)
Randy WB4SPB 253-761-9391 (2)
Phil K7PIA 253-307-4781 (9, 10, 12)

Are you an RCT member with skills to offer?

Please let any officer know and we can add you!

Note: *Providers or users of the Elmer Board must be local to the Radio Club of Tacoma. This is a local club service for our local members only. Thank you!*

STRAY TOPICS OF INTEREST:

Try out a PRC319 "Manpack Transceiver" for free*

Contributed by Paul WØRW

TRY OUT A PRC319—FREE* BACKPACK RADIO LOANER NOW AVAILABLE!

Ever wanted to get your hands on a PRC319? Now you can. One of these legendary backpack HF rigs is available on free loan to any licensed ham in the lower 48.

Whether you want to test it in the field, show it off at a club meeting, or just finally see what all the fuss is about—this is your chance.

Not familiar with the 319? It's a rugged, fixed-frequency, channelized HF radio originally built for military use. It's channelized—no VFO—just punch in a channel and go. It runs CW, USB voice, or data at either 5 watts or a full 50 watts. You can watch a great overview video at THIS YOUTUBE LINK.

You can read more about the PRC319 HERE.

The loaner comes as a complete kit: PRC319 radio, antenna tuner, handset, battery/AC supply, and satchel. Due to the battery, it ships *UPS only*.

Here's how this program works:

If you want to borrow it, drop me a line and I'll send you the loan agreement. When your turn comes up, I'll let you know. You'll send upfront $100 to cover shipping out, and you'll be responsible for return shipping too—figure around $200 total. You get to keep it for up to 90 days.

Sorry—CONUS *only*. No shipments to Alaska, Hawaii, or Puerto Rico. You'll need a General class or higher license and must appear in the FCC database.

This is the actual PRC319 "Manpack transceiver" that is available to borrow for up to 90 days (continental U.S. only).

This unit was donated by Clare Owens Jr. N2RJB, of Apex, NC. Accessories came from Al G8LIT. Thanks to both for helping make this possible.

Interested? Reach out to Casey Efaw KD2YMM KD2YMM@gmail.com

Information provided via WØRW

*Just pay shipping both ways. Disclaimer: Neither W7DK nor Editor W7UUU have any direct involvement in this offer. All details of the transaction and transfers of the radio are solely between the borrower & WØRW & Casey

READ ABOUT BELLINGHAM'S HIDDEN JEM: THE SPARK MUSEUM OF ELECTRICAL INVENTION

Photo: Dave W7UUU
Sign Image: © Spark

Photo by Dave W7UUU

Spark Museum on a rainy August morning. Prices for entry are reasonable and well worth it. Header photos from Spark Museum website

NESTLED IN THE HEART OF DOWNTOWN BELLINGHAM, Washington at 1312 Bay Street sits one of the most interesting museums I've ever seen. Dubbed the SPARK Museum of Electrical Invention, it houses an amazing collection of devices that date to the very beginnings of electrical discovery and invention. Arranged in a more-or-less counterclockwise path through the first floor, you begin your journey with the early discoveries of static electricity and what makes it work.

It had a humble beginning in 1985 when Jonathan Winter, a local electrical & electronics enthusiast wanted to share his collections with the world. Then called the Bellingham Antique Radio Museum, by 1998 it had on display more than 800 radios that formed the core of the museum at that time.

In 2001 the museum expanded , moving into a spacious 23,000 square foot facility, and rebranded as the American Museum of Radio and Electricity. That same year a former Microsoft executive named John Jenkins joined up with the museum, bringing to the table an impressive collection of early wireless devices and scientific books.

By 2012, the museum had a vision to adopt a full arc of electrical invention and tech and once again rebranded—this time as the SPARK Museum of Electrical Invention. It proudly showcases a world-class collection of artifacts dating from the 17th century to mid-20th century, with a large focus on radio.

Alas, around this time, all the ham gear that was once on display during my earlier visits prior to 2012 was removed. But there is still a large assortment of crystal radios, early and mid-century AM consoles and table radios, along with displays of tubes and a large array of Atwater Kent breadboard radios.

And so much that was never on display before—electrical devices and gizmos of a very wide variety.

On the pages that follow are a sampling of the kinds of things you will see when you visit—which I hope everyone who can will do—it's well worth your time and admission fee.

-Dave W7UUU

Priestly's Electric Machine (reproduction)

Photos of displays this page by Dave W7UUU

c. 1840
Electroscope

When you first enter the SPARK museum, the path veers to the right just past the admissions desk. The building layout is roughly counterclockwise in an historical context, beginning with the 17th & 18th centuries' earliest discoveries of electricity. It's amazing to see actual Leyden Jars on display that date to the era of their invention. An early electrical experimenter of the town of Leyden, Netherlands, described his discovery of what we would today call a storage capacitor, as a "new but terrible experiment". He received harsh shocks early on.

In the 1740s, Pieter van Musschenbroek of Leyden and Abbé Jean-Antoine Nollet in France independently discovered the Leyden jar, one of the first devices to store static electricity. Van Musschenbroek's experiments involved a glass vessel partially filled with water, with a conducting wire passing through a cork. He found that it could accumulate and hold a surprising electric charge. Nollet soon repeated and publicized the work, even famously discharging a Leyden jar through a chain of 180 soldiers holding hands to demonstrate its strength. These experiments revealed that electricity could be stored and released, laying groundwork for modern capacitors. This demonstration was for King Louis XV at Versailles—the King being impressed and amused seeing the soldiers all jump simultaneously as the charge was released into the completed circuit of human flesh.

Many other static electricity devices are on display—above being Joseph Priestley's Electric Machine—a device that generated static electricity by friction, using a rotating glass disc and a leather cushion to build up a charge. This allowed for the easy production of electricity for experiments, such as the gold-leave electroscope you see above—a classic instrument for detecting and measuring an electric charge. This was invented by Abraham Bennet in 1787.

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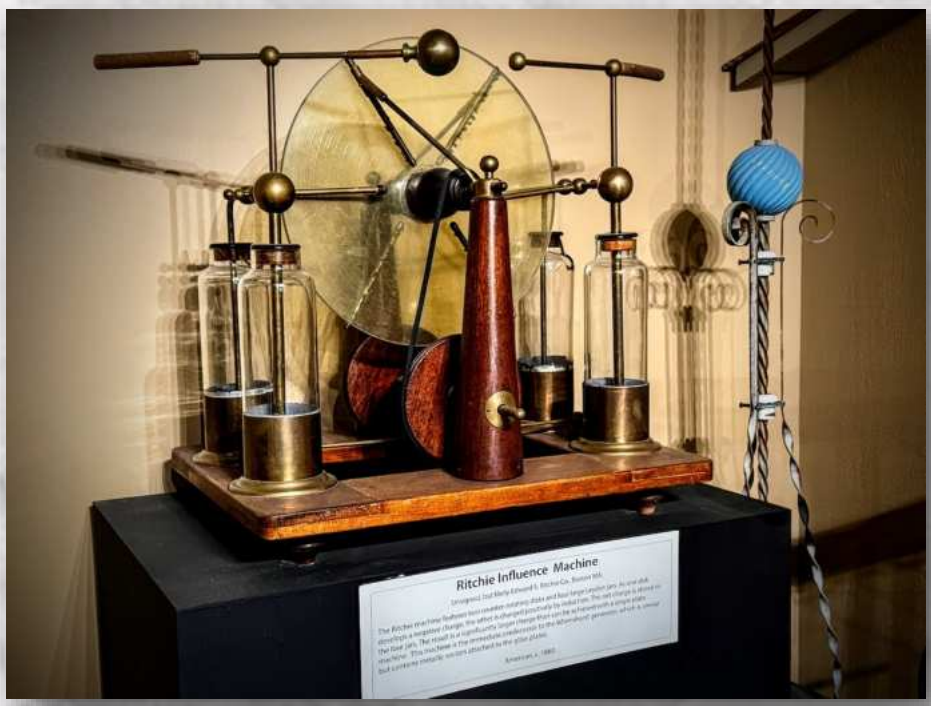


Ritchie Influence Machine

Another really fascinating machine among the electrostatic displays at the SPARK museum is the Ritchie Influence Machine. Edward Samuel Ritchie was an American inventor and physicist, often considered to be the most innovative instrument maker in 19th century America—many of his devices being of a nautical nature but others delved into the new science of electricity.

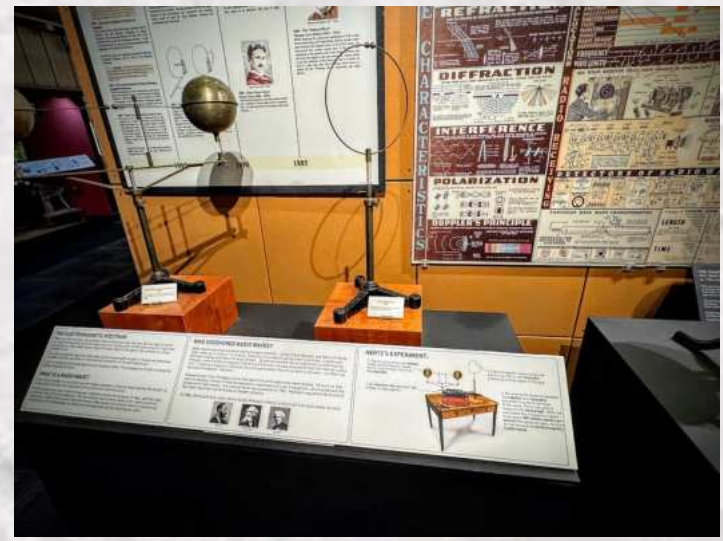
Shown above is a late-model ca. 1880 electrostatic device combining a glass disc generator as well as multiple Leyden Jars. Dubbed the Ritchie Influence Machine, this elaborate device is a refinement of the Holtz electrostatic generator, produced in the latter half of the nineteenth century by Edward S. Ritchie of Boston, Massachusetts. Ritchie was already known for precision scientific instruments and compasses, but in 1868 he patented a plate-type "influence machine" that quickly gained attention for classroom and laboratory use for demonstrating and experimenting with electricity—a new science that was all the rage.

His company operated from a building at 313 Washington Street in Boston, right across from the Old South Meeting House where the Boston Tea Party movement began.

The machine itself consisted of a rotating glass plate set opposite a fixed plate fitted with paper sectors and metallic inductors. As the rotor turned under hand crank, small residual charges on the inductors polarized the approaching sectors. Neutralizer brushes were positioned across the plates to reverse charge orientation at precisely the right angular position. With each revolution, the influence process multiplied the accumulated charge, steadily building high potential on the system. In essence, it was a cumulative electrostatic generator capable of producing and storing very high levels of electrostatic energy—even to the point of deadly potentials.

Metallic comb collectors were placed near the periphery of the rotating plate to draw off the separated charges. Each collector connected to a Leyden jar condenser mounted in the machine's base, providing a means of storing the charge and increasing the energy available for discharge. When connected across a spark gap or to demonstration accessories, the Leyden jars released the charge in sharp, bright sparks… an effect that would soon become very important.

Compared to earlier friction-based electrostatic machines, Ritchie's design offered smoother performance, greater output for its size, and better tolerance of environmental conditions such as humidity. It became a standard device for teaching principles of induction, dielectric breakdown, and capacitor action in nineteenth-century laboratories.



Heinrich Hertz electromagnetic wave test bench

Righi Bench for investigation of Hertzian Waves

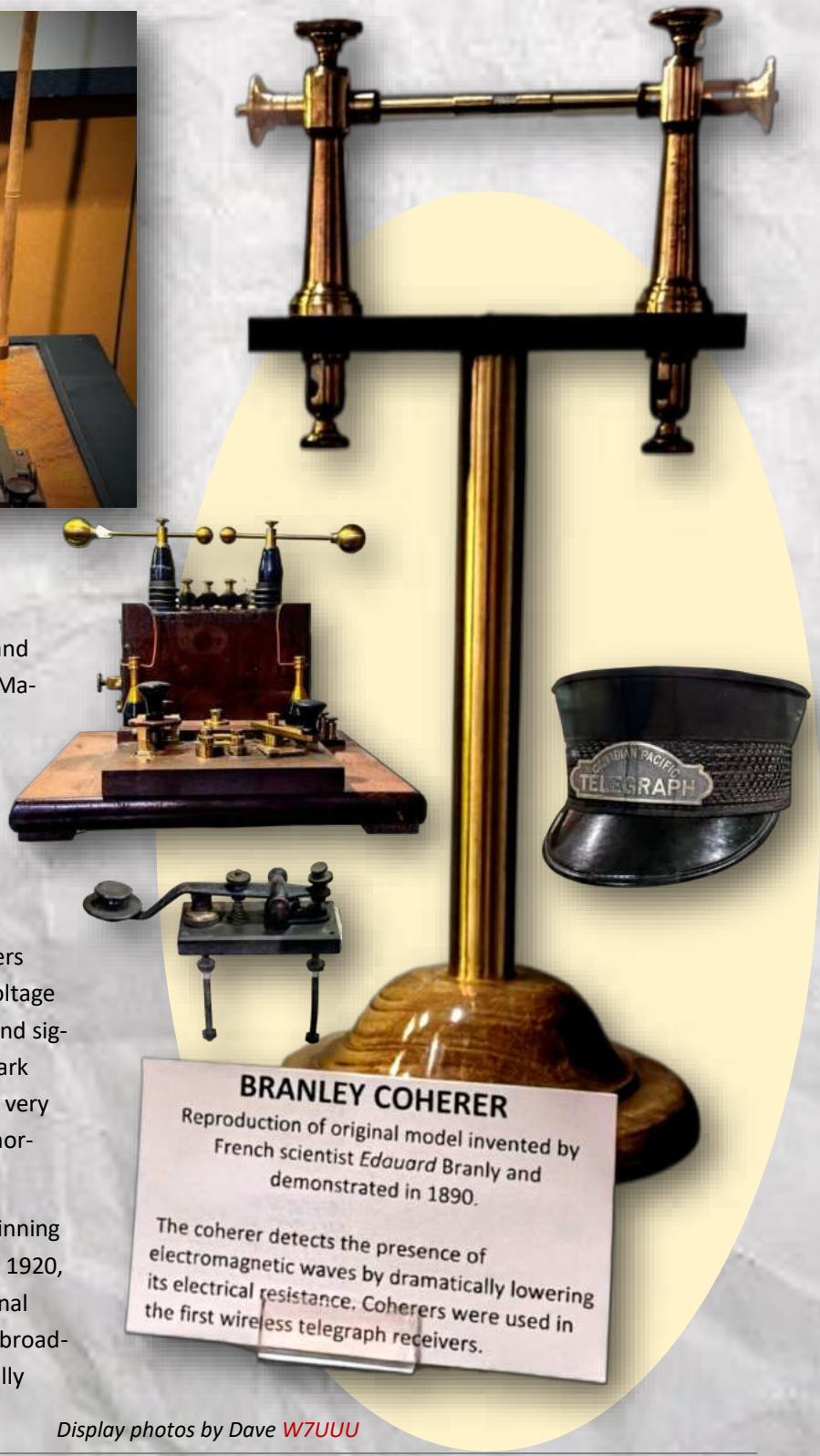
Following James Clerk Maxwell's 1864 prediction of the existence of radio waves, it was 22 years later in 1886 that German physicist Heinrich Hertz first demonstrated his discovery of radio waves with this apparatus, confirming Maxwell's theory. On display is a faithful reproduction of Hertz's apparatus used to prove the existence of radio waves.

An induction coil produces high voltage electricity to create sparks across a small spark gap attached to two brass radiators, one of which is visible above. This spark produces radio waves, that then generate a current in the circular resonator on the stand on the right—producing a spark in unison with that being sent.

By varying the distance between the radiator and resonator (or transmitter and receiver, as we as hams would understand the idea), and observing the brightness of the spark, Hertz was able to measure the actual wavelength. When he calculated the propagation speed to be about 300 million meters per second (the speed of light), he knew he had discovered electromagnetic (radio) waves just as Maxwell had predicted.

In 1897, Italian Physicist Augusto Righi built an apparatus called the Righi Bench. It was an experimental device that was designed to investigate Hertzian radio waves. It consisted of a precision optical-style bench with adjustable supports for spark-gap transmitters, receivers, and resonators. The radiator spark gap and the resonator receiver were housed in metal reflectors to help focus the waves. There is an angle calibration marker that is the wooden circle that allowed for precise angular movement when conducting experiments. The transmitter produced high-frequency oscillations via an induction coil and spark gap, while the receiver used a coherer detector—a small glass tube with metal files that when struck by radio waves, stick together and conduct electricity, ringing a bell. The arrangement allowed controlled studies of reflection, refraction, polarization, and interference of electromagnetic waves, analogous to optical experiments with light. This apparatus provided some of the earliest laboratory confirmation of Maxwell's electromagnetic theory. The device on display is an original—although not known if it was Righi's own piece.

An actual 1895 Marconi spark transmitter



Display photos by Dave W7UUU

As you meander your way through the museum you will discover a myriad of early spark transmitter devices and coherer detectors. Pictured above is an actual 1895 Maconi spark transmitter that was a predecessor to the type used aboard the Titanic, which was one of the first ships to be equipped with wireless capability.

It was these early spark transmitters and coherer receivers that were the foundation of all early wireless before the advent of continuous wave (CW) transmissions and crystal detectors. Spark transmitters generated damped oscillations by discharging high voltage across a spark gap, radiating powerful albeit broadband signals. Though by comparison inefficient and noisy, spark transmitters and coherer receivers were able to span very long distances—especially at sea—and solidify the enormous importance of radio waves for communication.

The reign of spark was almost a quarter of a century—beginning with Marconi in 1895 and lasting until about the year 1920, when CW began to take over. By 1927, by international treaty, virtually all spark was prohibited as being too broadbanded to coexist with CW—and the spark era officially came to a close.

Reasonable facsimile of the Titanic Radio Room—click image to see zoomable full size

Seattle Marine Radio Office—click image to see zoomable full size

One of the really popular exhibits in the SPARK museum is a reasonable recreation of the RMS Titanic Marconi wireless room. While not an exact representation it gives viewers a pretty good idea what that room was like. The key devices of course being the Marconi Wireless transmitter and receivers (against the back wall). The Titanic transmitter was a powerful 1.5 kilowatt Marconi (despite the sign high on the wall reading 1/2 KW). The red cylinder centered above the desk and below the sign is the centerpiece—the rotary spark gap itself. This produced the high-frequency sparks that generated the actual radio signals via the tuning network, damping coil, and antenna system.

The Titanic radio room was positioned close to the officer' quarters on the Boat Deck, linked to the navigation bridge by voice tube and messenger. And of course, the one key fact about the Titanic radio room—when the iceberg was struck at 11:40 PM April 14, 1912, it was in this room that Jack Phillips urgently tapped out first CQD and later the new SOS emergency codes thus summoning the Carpathia. Had it not been for the Marconi wireless system aboard Titanic, all 2,208 passengers and crew would all have perished at sea at a location that may well have never been discovered.

This is not an exhibit as such but rather a very large photo on the wall in the museum, depicting the Seattle Marine Radio Office, which handled ship-to-shore traffic for merchant and naval vessels in Puget Sound waters and along the Pacific Coast. It was the central hub in the Northwest for handling traffic, as well as distress calls following significant changes in marine radio procedure as a result of the 1912 Titanic disaster.

This is a great photo because it appears to have bene taken between 1918 and 1923, when spark transmitters were still in use but being phased out in favor of CW, and the use of vacuum tube transmitters and receivers. So there is an estuary of technologies represented in this photo. The desk holds multiple banks of meters, rotary tuners, and keying devices for several types of transmitters.

Clearly evident is the giant coil in the upper center that is the damping coil for the rotary spark transmitter and tuning system. This was a very busy, and likely very loud radio room!

The Seattle office was the "nerve center" for the Pacific Northwest's shipping lanes—with operators in constant contact via Morse up and down the Pacific, up to Alaska, and even ships enroute to and from Asia. This later became the U.S. Coast Guard radio station NSS & KET all throughout the 1920s.

In various locations in the museum you will find interesting displays of vacuum tubes from the very beginnings of the electronics age, including tubes by Lee de Forest and John Ambrose Fleming up to the final modern years of tube popularity before the transistor and integrated circuit reigned supreme. Pictured below is the Fleming Oscillation Valve which was the first practical application of the Edison Effect (the emission of electrons emitted by a heated element). Pictured on the right is the "drugstore tube tester" of its day, the Acremeter where customers could test their own tubes and obtain replacements for purchase from the drawers below. This was very much the predecessor of the nearly-ubiquitous tube testers of the 1960s and 1970s that appeared in drugstores and Radio Shack stores from coast to coast. This model was sold from around 1930 to 1932, initially in the Everett, Washington area which is very likely where this prime display example was found.

Display photos by Dave W7UUU

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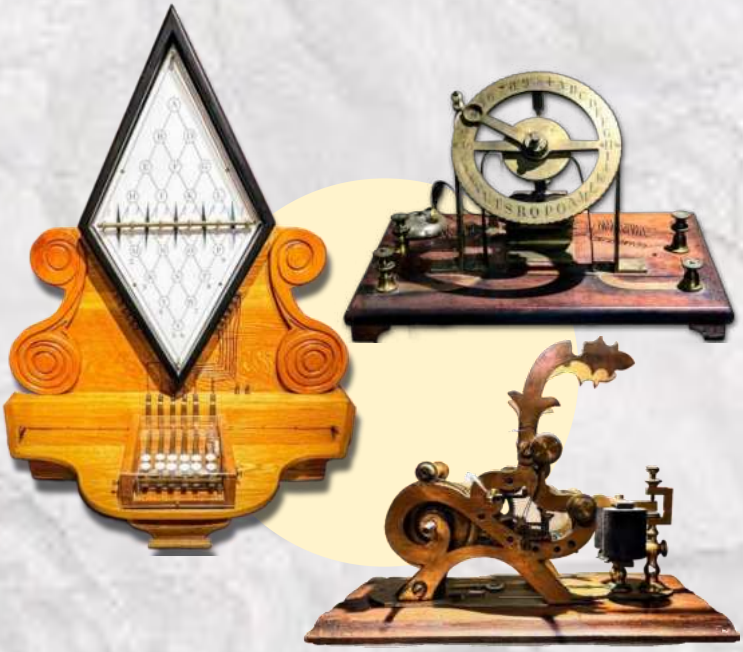

One of the more intriguing displays for a Morse guy like myself is the collection of early Morse printing and display devices. Morse Code was not originally designed to be decoded by human ear. Rather, a printing system to stripe a moving paper strip with literal "dot lines and dash lines" was the first method of decoding. Other more fanciful and vastly more complex systems were devised, not only for decoding but also sending Morse—by those with no knowledge of the code—were developed. These used elaborate mechanisms to allow lesser-skilled operators to still achieve message sending and receiving. But in the end, most of these systems faded out once their operators learned that it was far easier to simply learn to decode the Morse symbols by ear. Not only was it easier, it allowed for a much faster exchange of information. Once "human decoding" caught on, printers and display systems faded away.

One of the tape printers caught my eye: the J.H. Bunnel Pen Register, above, introduced in the 1880s and sold into the early 20th century in ever-evolving versions. As a young lad in the 1980s I worked for ADT, the alarm company. In their central stations all around the country were thousands of very similar machines, such as you see below. Do you note the similarity? Yes they are virtually the same design. Early ones were even made by Bunnell. They printed out fire alarm box code numbers for the operators to dispatch firemen to a fire. These were still in daily use until about 1989, when tens of thousands of them literally went into dumpsters, replaced by more modern systems. I once possessed about ten of the wonderful old machines, that I rescued from the dumpster. To this day they still bring fairly high prices on eBay (which is where this photo was found).

Photo: eBay ad from 2023

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Display photos by Dave W7UUU

Crystal radio sets of all types abound as well. There is a whole wall in the center of the museum that is devoted to them, with lots of examples of high-end commercial sets. They range from the United Wireless receiver below right to the "EMCO Radio Telephone Crystal Set No. 340", to the middle-of-the road Museo aimed at a less-affluent market, to the radios built by hobbyists for fun like the Quaker Oats box crystal set with Bakelite knob. Or even crystal radios assembled in dire circumstances such as the Gillette razor blade detector radios that were built by soldiers in WWII to catch up on news from back home. In my own youth, I built several such receivers and would lie awake at night, with a 2000 ohm single earpiece in my ear, listening to the far-away signals from the mighty KSL AM radio station in downtown Salt Lake City, Utah. There's a certain magic that comes from pulling radio signals right out of the air with so few parts, and you don't even need a power source—only the signals themselves.

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All the above photos by Dave W7UUU from his collection and that of W7DK

However–what you WON'T find at the SPARK museum is amateur radio gear and that's kind of a shame. While the hobby is largely considered a "dead end technology" just like the tube industry, it still represents an overall billion dollar market over the century-plus hams have been active. When I first visited the museum some 20 years ago, there was actually quite a large display of classic ham radio gear from all the big brands: Heathkit, Collins, Hammarlund, Hallicrafters—you name it. It was featured in many various groupings throughout the space. But the overhaul to become SPARK has clearly shifted amateur radio out of the focus and there's no longer a single piece of ham gear of any kind on display. I hope that one day perhaps that will change, and the vast scope of the hams that adopted radio over 100 years ago and drove a booming industry will again be represented in this otherwise wonderful museum.

But what you WILL find at the SPARK museum is a delightful environment for families and school groups to explore and learn about technology and concepts that at their core, surround us all daily: electromagnetic energy in all of its forms including the truly shocking—there are two large spark generators (above is the smaller, the page header illustrates the massive MEGA ZAPPER from their weekend electrical show). During our visit to the museum, even on a rainy August morning, not long after opening the crowds poured in and excited groups of kids and adults from all walks of life discovered new things. The staff are awesome—tours and demonstrations are given all day long in the different areas, and there is an upstairs room for the younger kids to learn some new things and have lots of fun. **I highly recommend if you are able, to attend SPARK** museum if you're ever near Bellingham. It's well worth the entry price.

-Dave W7UUU

THE WAY BACK PHOTO BOOTH

Highlighted photos from the club's past

Researched & Compiled by the Dave W7UUU

Archive Photo

W7DK Ham Fair 1970

This month's photo dates from June of 1970, at the W7DK "Hamfair" held at that time at The Sportsman's Club in Spanaway, Washington. As with last month's photo, I pulled a little "Ted Turner" trick and colorized it to help bring it to life. On the right in the blue shirt is one of the club's big names from the past, Jerry Seligman, W7BUN(SK) who was one of the longtime license class teachers. In the center in sort of an "American Gothic" pose is Marv Wheeler KG7V (SK this past June) and his XYL Jean W7OII. The Sportsman's Club was a very regular meeting place for the RCT in the late 1960s into the 1970s. It was here the Hamfair was held, as well as Field day for a number of years. The RCT also hosted numerous dinners in the club dining room for holidays and special events during that time. The club still exists, but relocated many years ago. The original site is now housing developments.

Dave W7UUU

MIGHTY DK! QSO REPORT

Reporting all the HF QSO action from the club

EACH MONTH in the Bark, the Radio Club of Tacoma recognizes the members and guests who have made non-contest QSOs using the HF stations at our clubhouse. Saturday Open House, especially, is a time when members have access to this equipment. Why not sit down at one of our operating desks and make a contact or two? Assistance is almost always available for those unfamiliar with the equipment, and if your license class doesn't permit HF operation, ask the denizens of the HF Room or the Saturday clubhouse host to help you find a suitably-licensed control operator to sit with you. It's a feather in the club's hat for the call sign of The Mighty DK to be heard on the airwaves. So get on the air and get your name in the Bark! (Don't forget to *enter your call sign as the operator* into our logging program.) ■ *-editor*

Clubhouse QSOs during this period:

NAME	CALL	QSOs
Mike	W7MKE	39
Dave	W7GEL	30
Dave	N7HT	23
Julie	W7JUL	22
Carson	KJ5MEW	13
Sam	N9MII	11
David	AC7KP	7
Nathan	WA7BUG	5
John	K2CCT	3
Jesse	KK7YTV	1

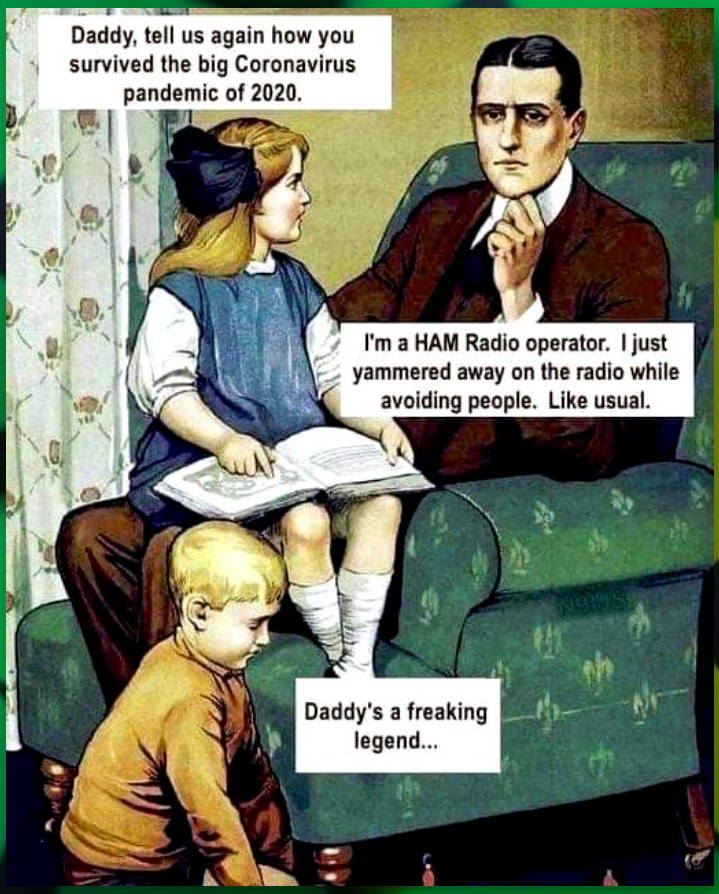
Above: HF Room Flex 6600 & Mercury III

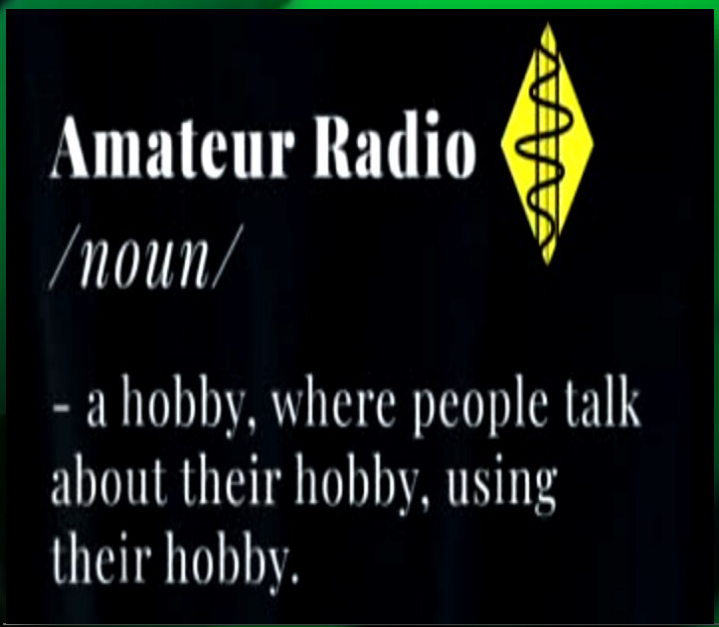
Below: HF Room Icom IC-7610 & KPA-500

Photos this page provided by Dave W7UUU

THE FUNNY PAPERS

Ham Humor for Humorous Hams





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HOW'S DX?

DXpeditions and Notable DX operations

WEB

NG3K Upcoming DXpedition Calendar

October						
2025 Oct03	2025 Oct07	Christmas I	VK9QO NEW	LoTW	BH6BEZ 20250811	By JA3GEP JA1COU BA7LVG BH6BEZ; 80-6m; CW SSB FT4 FT8; QSL via JA3GEP
2025 Oct08	2025 Oct13	Svalbard	JW	Home Call	OPDX 20250203	By LA7XK as JW7XK, LA6VM as JW6VM, LA9DL as JW9DL; HF; CW SSB + digital; QRV for Scandinavian Activity SSB Contest using JW5X
2025 Oct08	2025 Oct15	Fernando de Noronha	PY0FB	LoTW	DXW.Net 20250606	By PY2DV; 80-10m; SSB; some FT8 FT4
2025 Oct08	2025 Oct15	Grenada	J38LD	M0OXO	DXW.Net 20250726	By GM5RDX; 80-6m; focus on SSB, some FT8
2025 Oct09	2025 Oct20	North Cook Is	E51MWA	LoTW	OPDX 20250723	By N7QT WA7CPA N7JP KC7EFP N9ADG KN2P; HF; QSL via M0URX (See Web for details)
2025 Oct17	2025 Oct29	Saba & St Eustatius	PJ6Y	LoTW	DXW.Net 20250318	By W6IZT W2FQ NM1Y and YOTA team fm Saba I; 160-6m, incl 60m; CW SSB FT8; QRV for CQWW DX SSB; see Web for QSL details
2025 Oct18	2025 Oct26	Angola	D2A	EA7FTR	DXW.Net 20250727	By EC7R CT7BOL D2ACE EC1T EA1ACP D2XX CT2GFW CT7APE CT1FFU EA5EL; 160-6m; CW SSB RTTY FT8
2025 Oct20	2025 Oct29	Dominica	J79FJ NEW	KU9C	FM5FJ 20250810	By FM5FJ; HF; CW SSB, perhaps FT8
2025 Oct20	2025 Nov07	Wallis & Futuna Is	FW5K	LoTW	OPDX 20250210	By NC7M NG7E N7JI K6VHF KA6BIM W7HER fm IOTA OC-054; 160-6m; CW SSB RTTY FT8 FT4; See Web for QSL details; QRV for CQWW DX SSB Contest
CQ Worldwide DX Contest, SSB (Oct 25-26, 2025) Check here for pericontest activity too.						
2025 Oct29	2025 Nov10	Equatorial Guinea	3C2MD	IK2VUC	OPDX 20250424	By 14 op team fm Bioko I (IOTA AF-010); 160-6m; all modes
2025 Oct29	2025 Nov12	Madagascar	5R8TT	LoTW	OPDX 20250315	By IK2RZP I2PJA IV3ZXQ I2YSB IK2CKR IK2HKT I1FQH I1HJT; 160-6m, incl 60m; CW SSB RTTY FT8; QSL via online OQRS/log checker (see Web)
2025 Oct29	2025 Nov19	Burundi	9U1RU	LoTW	DXW.Net 20250509w	By R7AL OK8AU RW9JZ W8HC SP6EQZ RU3UR UA3QLC R2BW R5EC; 160-6m; CW SSB FT8

Click anywhere on the table above to visit Bill's site directly—the hyperlinks will be active there.

Courtesy Bill Feidt, NG3K
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email loggersbark@gmail.com

STRAY TOPICS OF INTEREST

RADIO ADS FROM 75 YEARS AGO THIS MONTH

W7UUU

ONE OF THE MOST INTERESTING legacy modes of amateur radio operation is Slow Scan TV, or SSTV as it's called. I first saw this done in the hamshack of Hank W7UD (SK) who was my first Elmer/ Mentor in ham radio. He had the exact setup as you see at the right—the Robot 300 Scan Converter, the Model 80A camera, and the 70A monitor. This setup allowed hams to send *monochrome* images over HF, taking about a minute to send each direction. The result was a *single* still-frame image of something… a QSL card, a "girlie picture" from a magazine, or if you had the bankroll for a camera, an image of you the operator that was sent to the far end.

But as evidenced by the prices you see in this ad, SSTV was a mode for the well-heeled amateur of the 1970s. This stuff was not cheap!

Today? All you need for gear to run this exact same mode, in full color, is your radio you already probably use for FT8, and a different piece of FREE software—MMSSTV is still the most popular but YONIQ is another that's very effective and full featured. Gone are the days of expensive dedicated hardware to work this mode!

-Dave W7UUU

The best amateur SSTV equipment was the Robot Model 70B Monitor and 80A Camera

Now it's the Robot Model 300 SSTV Scan Converter

It also accepts amateur-standard SSTV audio tones in the same range and converts them to TV standard video signals capable of being reproduced on any closed circuit monitor or home set.

Subject matter no longer needs to be stationary either, since the 300 "grabs" and stores one TV field (1/60 second) thus freezing moving scenes.

Model 300 Scan Converter	$1,295
RCA Closed Circuit Camera	$ 260
Setchell-Carlson Monitor	$ 225

Our new Model 300 Scan Converter offers a complete new dimension to amateur SSTV: commercial TV picture quality on amateur SSTV operation.

Our popular Model 80A Camera and 70A or 70B Monitor will continue to be available.

Because of the many thousands of Robot SSTV units now on the air, and their reasonable price, we feel many amateurs will continue to choose this economical way to get in on the fast growing amateur SSTV activity.

Model 70A Monitor	$345
Model 70B, 3-in-1 SSTV Monitor with built-in fast scan viewfinder and oscilloscope	$445
Model 80A Camera	$345

The Model 300 offers both fast-to-slow and slow-to-fast scan conversion capabilities, and is able to generate and to accept either 128-line or 256-line SSTV pictures. The Model 300 accepts standard TV video signals from a TV camera or other video source and converts them to amateur-standard SSTV audio tones in the accepted range of 1200 to 2300 Hertz.

Please send me the following:
Complete descriptive literature on the
☐ Model 300 Converter ☐ Model 70B SSTV Monitor
☐ Model 80A SSTV Camera ☐ Model 300 Converter

Name _____ Call _____
Address _____
City _____
State _____ Zip _____

ORDER FACTORY DIRECT TODAY

ROBOT

ROBOT RESEARCH INC.
7591 Convoy Court
San Diego, CA 92111
Ph. (714) 279-9430

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Homebrew & Kits corner

DIY QRP RIG STAND

PROJECT PROFILE

I HAVE A THING FOR SMALL QRP RIGS… and the QRP Labs QCX-mini series of transceivers is especially appealing to me. But they have one drawback: They are designed to sit flat on the table, and at that angle you cannot read a single thing on the tiny LCD screen. No, I'm not faulting Hans Summers GØUPL in any way—he's a brilliant engineer, an amazing businessman supporting the ham community, and well, just a super nice guy.

But I needed a way to support his tiny transceivers (of which I own several) in a way that the display was fully legible while operating.

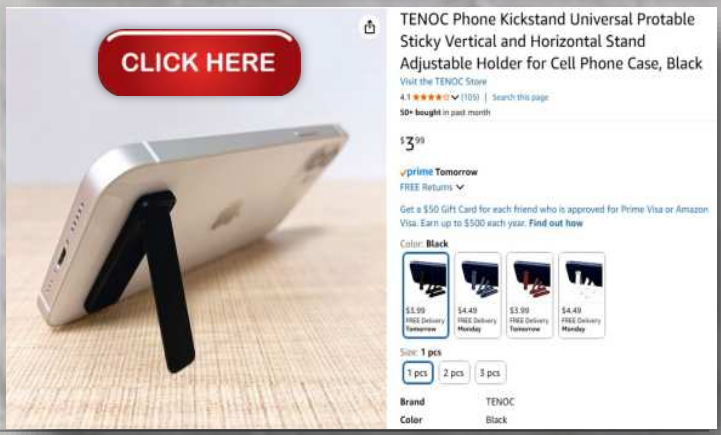
I found the simple solution: a $3.99 cellphone stand from Amazon (click the bottom right photo to view on the Amazon site) that, combined with a scrap piece of metal I had on hand, makes a terrific stand for the QCX-mini transceiver—and many others of the same form factor.

The stands are also available in pairs, for supporting larger "tiny rigs" like this—for not much more money. The metal bit I used was part of some old bracket—I popped it in the bench vice and bent it at a perfect 90-degree angle, then sanded it down and painted it satin black with a rattle can sprayer. It now makes a perfect support for the QCX-mini and for a couple other very small QRP radios that I like to use in the shack and in the field.

Super easy way to make your own mount for a tiny radio and do it all yourself! That's the essence of amateur radio, after all.

-Dave W7UUU

Photos by Dave W7UUU



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COOL OLD RIG O'THE MONTH

The Collins 180S-1 Antenna Coupler

By Dave W7UUU

ARGUABLY ONE OF THE MOST CLASSIC HAM RADIO design motifs of the 20th century was the Collins S-Line, a look first established with the KWM-2 and later KWM-2A, before the first S-Line (75S-1 receiver with the 32S-1 transmitter) appeared. Oddly Collins never offered a stand-alone antenna tuner unit for any of these earlier radios. But the popularity of the KWM-2 (and later KWM-2A) with the U.S. military drove the need for a robust 1 kW pi-network tuner to use not only with the transceivers but also with the 30S-1 kW amplifier and later the improved 30L-1 amplifier—both of which matched the styling of the KWM-2 and S-Line.

Collins 180S-1 antenna tuner
From the K7MO (SK) collection
Photo by Dave W7UUU

Under government contracts, Collins was tasked with designing and building a 1 kW tuner for use with the KWM-2 series as well as the S-Line. The result was the Collins 180S-1 Antenna Coupler. To most "first time viewers" it truly is the duck-billed platypus of the entire Collins line. The front panel is a startling combination of stylings, with mismatched knobs, and a steel front panel far more closely aligned with the much-earlier 75A series of receivers and early 32S transmitters.

The "Series-Shunt" box in the upper right is particularly jarring to first-time viewers. When I first saw a 180S-1 I *totally* thought that box was some sort of modification! But no, that's the way the tuner looked from the factory. Oddly, Collins never produced any other antenna tuner (or coupler, as the 180S-1 is called) that actually matched the S-Line and KWM series in styling

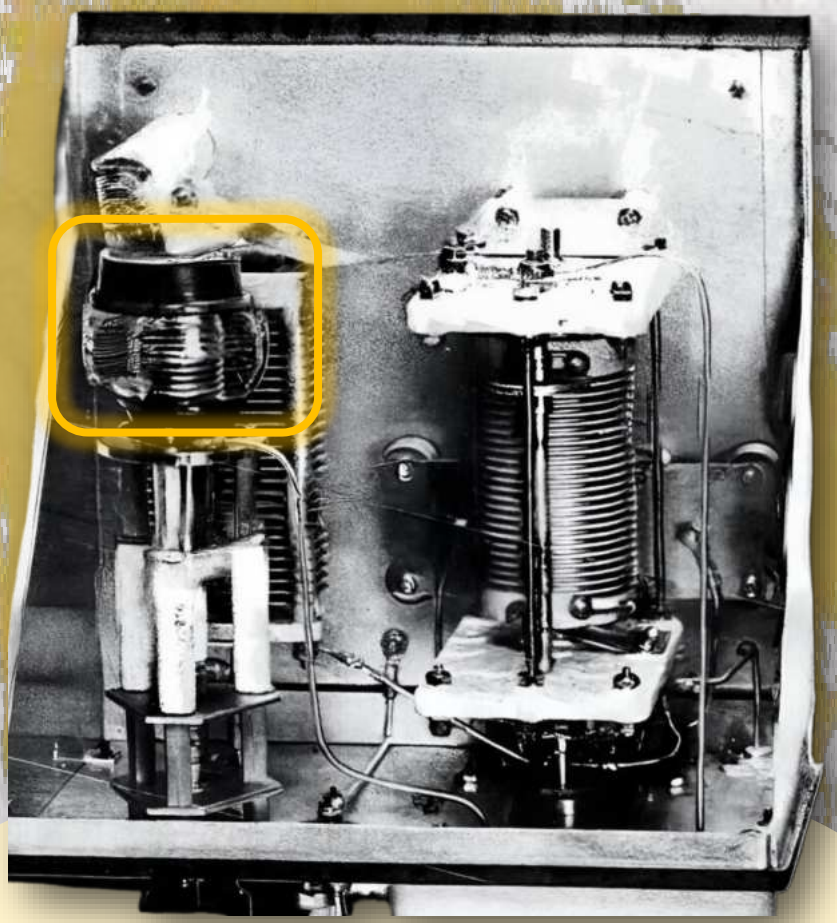
The Collins 180S-1 antenna coupler first appeared in 1956, with later slight revisions issued in the early 1960s. It was built to handle a full kilowatt across the HF spectrum from 3 to 30 MHz, giving Collins military (and later, amateur) operators a very rugged and dependable way to tame antenna mismatches and keep their transmitters happy.

COOL OLD RIG O'THE MONTH

A look back at the cool gear of the past

By Dave W7UUU

At its heart, the tuner is a pi-network, although in most practical cases it functions as an L-network. The full pi-circuit comes into play when the L-section alone won't quite do the job.



Inside view of the 180S-1 (from the Collins operating manual) showing the relatively simple layout. The robust roller inductor is at the right, and the Jennings UCSL 4-500 output vacuum variable capacitor is highlighted in the yellow box. Beneath that is the 570 pF wide-spaced input variable capacitor on the transmitter input side.

On the antenna side, Collins used a robust vacuum-variable capacitor that spans about 4 to 500 picofarads. Depending on the installation, the "Antenna Output C" (the vacuum variable) can be wired in series with the antenna, placed in shunt mode, or left out entirely. In series with the antenna path is a continuously-variable roller inductor ranging from zero to 15 microhenries, which is then used to bring the antenna into resonance.

On the transmitter side, there's an air-variable capacitor that adjusts from 50 to about 570 picofarads, always connected across the 50-ohm input. If that isn't enough capacity, two fixed 500-pF banks can be switched in with front-panel jumpers. Collins even provided spare jacks to park the jumpers when they weren't in use, a thoughtful touch that kept small parts from going missing (surely a requirement of the military contract documents).

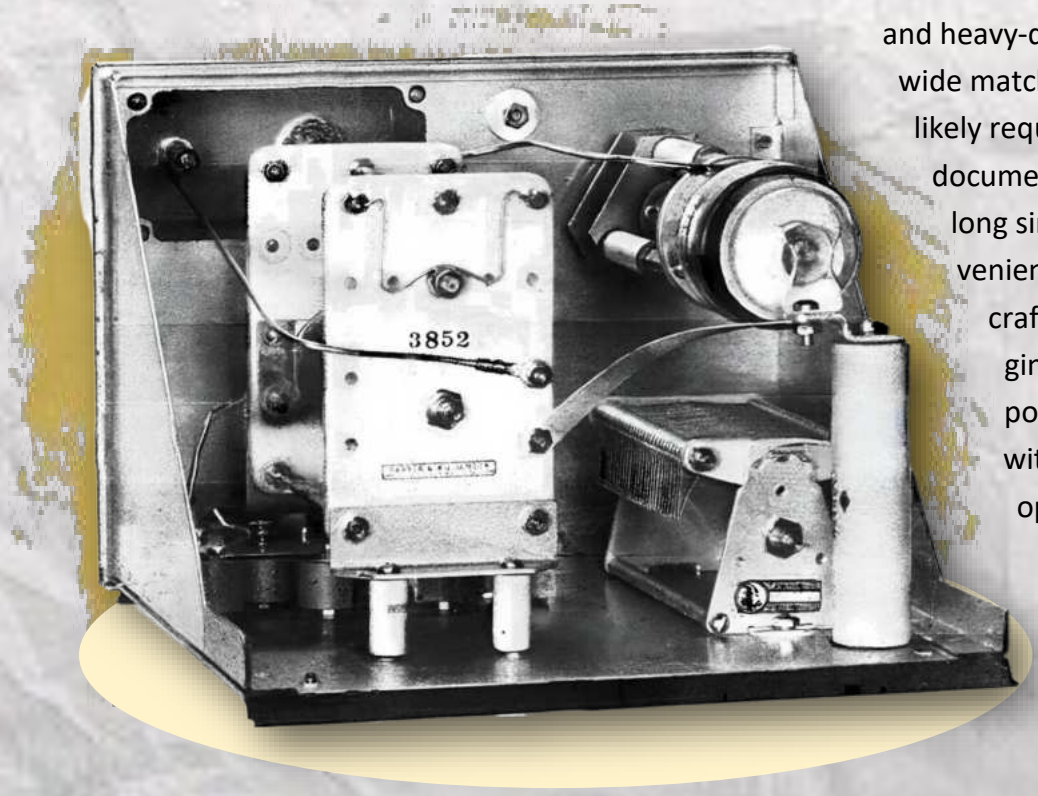
The instruction book makes a point about installation: Antenna lead-ins should be kept as short as possible, and in aircraft use, Collins recommended keeping the coax run under a foot in length. A solid ground is equally important, with braid or radials for ground stations, and aircraft skin serving as the ground-plane in airborne setups.

COOL OLD RIG O'THE MONTH

The Collins 180S-1 Antenna Coupler

By Dave W7UUU

Tuning the 180S-1 was a hands-on process like most manual tuners, but straightforward once you understood the sequence. The usual setup involved connecting the transmitter, a directional wattmeter or SWR bridge, and a dummy load to establish baseline tuning of the transmitter first. Once the tuner was put in line, the operator would juggle the coax input capacitor, the series inductor, and, if needed, the antenna output capacitor, watching for the lowest reflected power and the proper plate current. At the higher frequencies, adjustments became a bit more touchy and the manual reminded operators to move the controls slowly to avoid skipping past the "sweet spot". Many users kept a log of control settings for each band and frequency, making it quick to return later without repeating the whole exercise all over again.



Another view of the inside of the 180S-1 tuner (from the Collins instruction manual). In this view, the Jennings Vacuum variable capacitor is in the upper right, and the transmitter input 570 pF variable capacitor is in the lower right. The roller inductor is the large object on the left. There really isn't all that much to this tuner, and many DIY replicas were made over the years, even to this day.

The 180S-1 reflected Collins' usual attention to detail. The use of vacuum variables, ceramic stand-offs, and heavy-duty RF parts gave it durability and a wide matching range. Again, these were very likely requirements in the military contract documents. While automatic tuners have long since taken over for their utter convenience, the 180S-1 still stands as a finely crafted piece of mid-century Collins engineering, built to handle legal limit power and adaptable enough to work with almost any reasonable antenna an operator might try. While the 180S-1 does not even closely match the look of all the other Collins S-Line (and KWM-2) gear, its relative rarity makes it a prize piece in many Collins collector shacks.

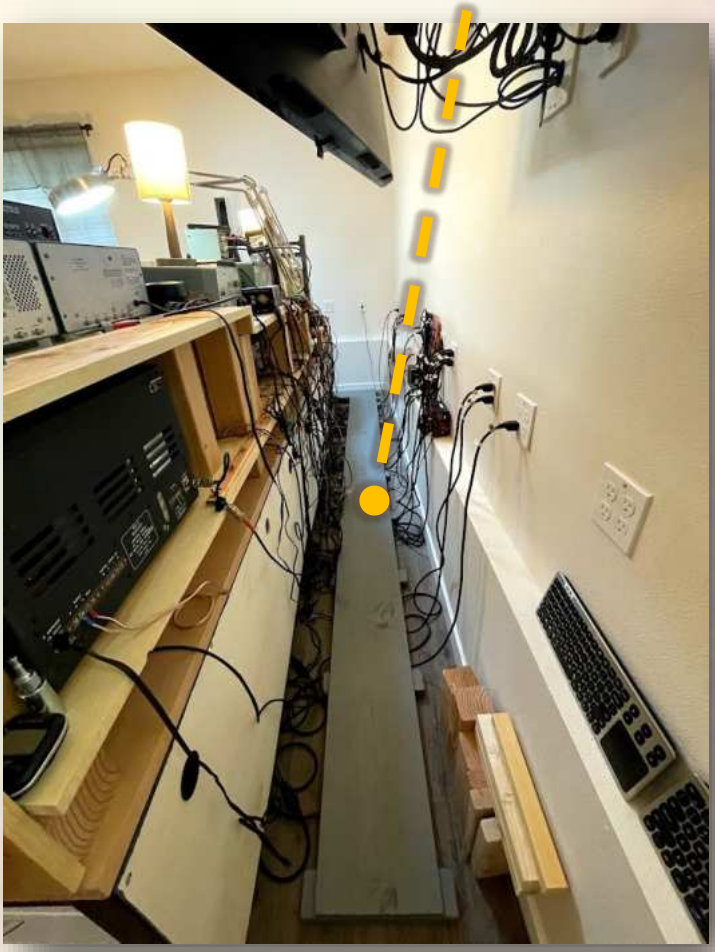
A big thanks to Nick K7MO's widow, Anna K7ANA for letting me share this amazing piece of collectible gear from Nick's large collection.

-Dave W7UUU

A FEW YEARS AGO I WAS FORCED TO DO A MAJOR shack overhaul. One of the best things I came up with (which was actually an afterthought) was to offset the large L-shaped operating desks 24 inches from the outside walls, to allow walking room behind. But that alone wasn't the "big idea". The big idea was to install what I like to call gangplanks on the floor behind the two sides of the operating desks. See the photos—I used 12" pine boards for the planks, with 16" 2x4 risers affixed to the bottoms to allow for all wiring to pass under the planks. It turned out to be the most brilliant idea I've ever come up with for a shack build!

Yes, you lose that 24" of space behind. But this can be done even in a small shack. A 10x10 foot room with a single desk would drop to being a 10x8 operating space, but think of the freedom of being able to walk behind all the radio gear and move things, make cable changes, or add new gear. The benefits far outweigh the slight loss of space in the room.

For power though, you will need to source commercial grade single-outlet extensions for each piece of gear. In my case, during construction I had installed 58 outlets (on 10 15A circuits, not counting the 240 for the amp outlets) so every piece of gear can have its own AC outlet. But of course you needn't be that extravagant… you just need the extender cables to allow power cords to feed beneath the gangplank to keep the walking area free.



Of all the myriad of shack rebuilds I've done in my ham radio life of 50+ years, my gangplanks are hands-down the single best improvement to any shack that I have ever made. If you have the means and ability, I cannot recommend them more highly.

-Dave W7UUU

STRAY TOPICS OF INTEREST

RADIO NEWS FROM 100 YEARS AGO THIS MONTH

W7UUU

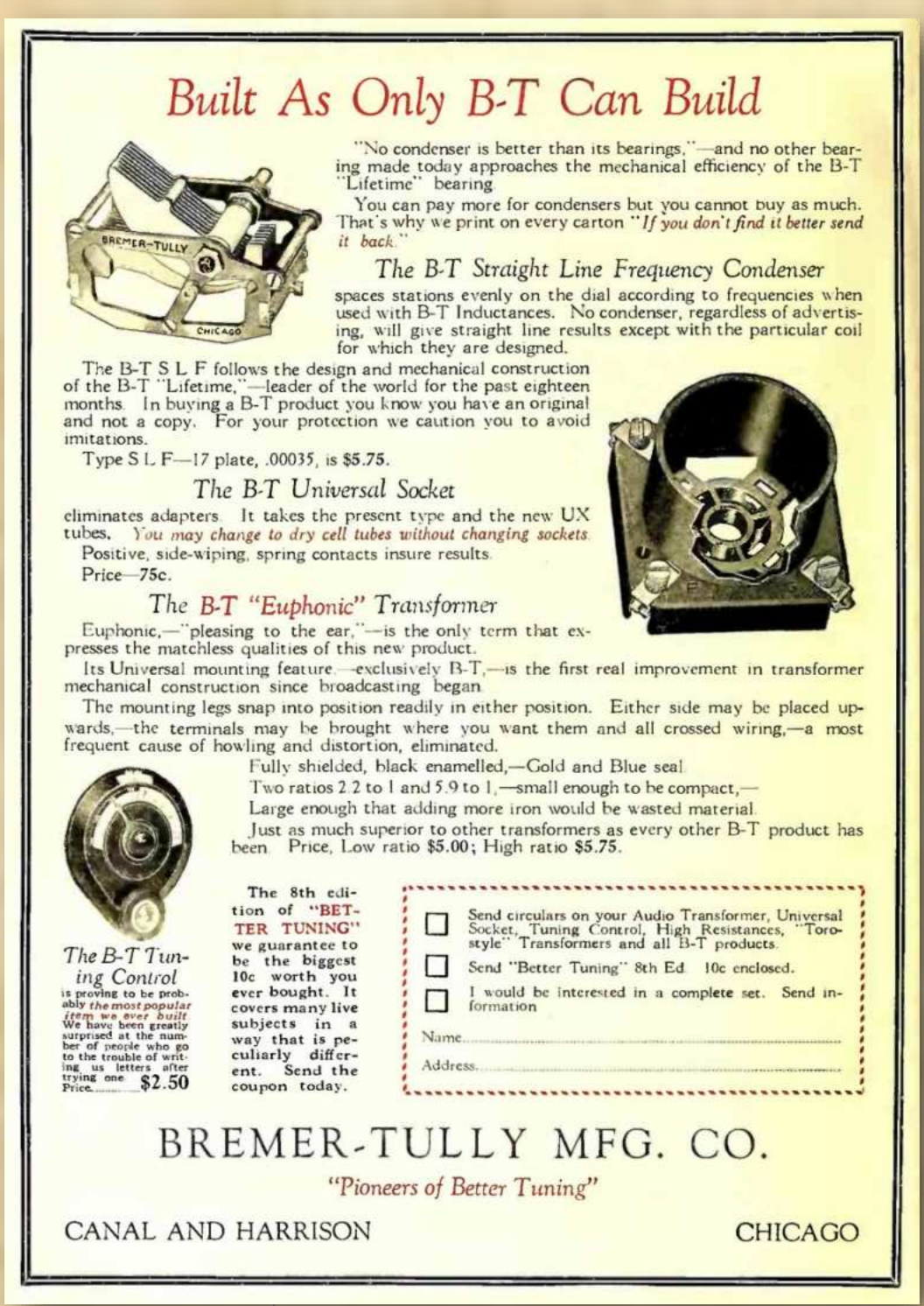
BREMER-TULLY MANUFACTURING was founded by Harry Bremer (president) and John Tully (vice-president) in 1921 at the corner of South Canal and Harrison streets , Chicago (the site now occupied by a Greyhound bus station).

The primary focus of the company was manufacturing AM broadcast radio receivers, with one of their top products being the "Counterphase Six" which came out in 1925 and was sold both as a kit as well as a complete unit. B-T was one of the pioneers of the "straight line frequency condenser" (pictured at right) with the rotor plates crescent-shaped in such a way as to distribute the capacitance to allow for near-linear tuning of the band in use.

As a result of their radio parts production, they catered heavily to the nascent amateur radio market with variable capacitors, vernier tuning dials, tube sockets and many other radio components.

In 1929 the company was sold to the Brunswick-Balke-Collender Company which still exists to this day as the Brunswick Corporation. Long ago out of the radio business, Brunswick still manufacturers many types of high-tech products, mostly for marine use.

-Dave W7UUU



Built As Only B-T Can Build

"No condenser is better than its bearings,"—and no other bearing made today approaches the mechanical efficiency of the B-T "Lifetime" bearing.

You can pay more for condensers but you cannot buy as much. That's why we print on every carton "*If you don't find it better send it back.*"

The B-T Straight Line Frequency Condenser

spaces stations evenly on the dial according to frequencies when used with B-T Inductances. No condenser, regardless of advertising, will give straight line results except with the particular coil for which they are designed.

The B-T S L F follows the design and mechanical construction of the B-T "Lifetime,"—leader of the world for the past eighteen months. In buying a B-T product you know you have an original and not a copy. For your protection we caution you to avoid imitations.

Type S L F—17 plate, .00035, is $5.75.

The B-T Universal Socket

eliminates adapters. It takes the present type and the new UX tubes. *You may change to dry cell tubes without changing sockets.*

Positive, side-wiping, spring contacts insure results.

Price—75c.

The B-T "Euphonic" Transformer

Euphonic,—"pleasing to the ear,"—is the only term that expresses the matchless qualities of this new product.

Its Universal mounting feature—exclusively B-T,—is the first real improvement in transformer mechanical construction since broadcasting began.

The mounting legs snap into position readily in either position. Either side may be placed upwards,—the terminals may be brought where you want them and all crossed wiring,—a most frequent cause of howling and distortion, eliminated.

Fully shielded, black enamelled,—Gold and Blue seal.

Two ratios 2.2 to 1 and 5.9 to 1,—small enough to be compact,—

Large enough that adding more iron would be wasted material.

Just as much superior to other transformers as every other B-T product has been. Price, Low ratio $5.00; High ratio $5.75.

The B-T Tuning Control

is proving to be probably *the most popular item we ever built.* We have been greatly surprised at the number of people who go to the trouble of writing us letters after trying one. Price..... $2.50

The 8th edition of "BETTER TUNING" we guarantee to be the biggest 10c worth you ever bought. It covers many live subjects in a way that is peculiarly different. Send the coupon today.

☐ Send circulars on your Audio Transformer, Universal Socket, Tuning Control, High Resistances, "Toro-style" Transformers and all B-T products.

☐ Send "Better Tuning" 8th Ed. 10c enclosed.

☐ I would be interested in a complete set. Send information

Name.....

Address.....

BREMER-TULLY MFG. CO.

"Pioneers of Better Tuning"

CANAL AND HARRISON CHICAGO

Bremer-Tully ad from Radio Age Magazine, October 1925

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COOL GEAR!

Interesting Bits of Gear Any Ham Can Use

By W7UUU

BOB K7MXE RECENTLY LENT ME THIS NIFTY GIZMO that allows you to determine how much it costs to run an electrical device. All you need to know is the cost per kilowatt-hour (kWh) from your local power company. Where I live (Burley, WA) our power comes from Puget Sound Energy, and the "delivered cost" for me works out to just about 16 cents per kWh. That's quite a bit higher than the state average, which is about 11.83 cents per kWh. Being a curious person, I also looked up the national average which is slightly higher at 13.17 cents per kWh. Massachusetts ranks as the most expensive at 30.37 cents, while Louisiana almost on par with Washington state at 12.64 cents per kWh.

I have often wondered just how much it costs to operate ham radio gear. So Bob W7MXE's lending me the SURAIELEC power monitor right before the start of August was good timing. I plugged in my Yaesu FTDX-101MP (a 200w transceiver) at 00:00 UTC on August 1st and unplugged it at 00:00 UTC on August 31st. During that month, the radio stayed on 24 hours a day, and for several hours each week, I operated on SSB, CW, and FT8 modes at various power levels.

At the end of the test, I had used 65.1 watts of power. So 65.1 watts = 0.651 kW over the course of 744 hours (31 days) at 16 cents per kWh energy cost—the meter is spot on with a total cost of $7.75, which works out to just a gnats eyelash more than one penny per hour.

-Dave W7UUU

SURAIELEC Wattmeter as found on Amazon for $13. Great device for finding out how much an electrical device costs to run in a week, month, year. Click image to view on Amazon

The one-month cost of running my FTDX-101MP 24 hours a day with light transmitting was $7.75 or $93 per year

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Plan Now: Upcoming POTA!

By BJ KO7T

RADIO CLUB OF TACOMA POTA 2025 Schedule

This past year, the club hosted 11 POTA activations at 7 different parks, and we have BIG plans for 2025!

The Club's POTA Chairman, BJ KO7T, is always looking ahead for fun new parks in the state to activate. It's always a great way for members to get involved with amateur radio while enjoying the great outdoors here in Washington State!

Here's the upcoming schedule:

PARK: Millersylvania State Park (US-3231)
DATE: October 19th
TIMES: 10:00 AM PST
NOTES: Autum Support Your Parks Weekend

PARK: Illahee State Park (US-3202)
DATE: November 9th
TIMES: 10:00 AM PST
NOTES: This park is in East Bremerton

DATE: December
TIMES: N/A
NOTES: Due to the Holiday Season and the W7DK Holiday Banquet, there will not be a POTA activation for December. But see you in January!!

Everyone is invited to come to our POTA activation events. It's a great opportunity to learn about different antenna types, setting up and tuning antennas with loading coils and/or a counterpoise, learn about different digital modes, and other topics related to portable operations. We usually have 3 to 5 stations set up running many modes on multiple bands. We encourage prospective hams to get on the air, and those with Technician licenses to operate on different bands with a control operator. For club members with a General license, we even have a portable POTA kit that is available to check out from the club the Saturday prior to our club activations. Please see or email BJ Rollison (KO7T) for more information.

-BJ KO7T

BJ KO7T operating at a recent POTA activation

PERHAPS THE WEATHER FORECAST OF RAIN, the televised Seahawks game, or the Mariners home game kept many POTA activators from the club away for the Radio Club of Tacoma's September POTA activation. Despite the gray skies, the mild temperatures made for a pretty darn nice day for the end-of-summer activation at Manchester State Park US-3227 for me KO7T, Dave KK7NYW, and John N7TES. We were also visited by Dave W7GEL, Dave W7UUU and his wife Anne N7ANN from the club, as well as local hams Scott KK7YZM, Chris KE7YC and his wife Janet KK7NHE from nearby Port Orchard.

John set up his K3S with an end-fed sloper pointing southeast and worked 20-meter SSB, while Dave KK7NYW set up an inverted-V end-fed 15-meter half-wave antenna with his Yaesu FT-991. John logged 33 hunters and Dave added another 10 to the books. I tried some CW QRP into a Buddistick Pro Deluxe but had no joy. So, another 43 QSOs for W7DK and valid activations for John and Dave. Although the QSO count was a bit low and we didn't have as many club operators as in previous months, it was still a great activation. We had good discussions, and it was nice to meet Chris, Janet, and Scott and talk about playing radio and POTA! Of course, any day at a park playing radio is a great day.

The Radio Club of Tacoma's next club activation will be on October 19, 2025. This is the yearly POTA Support Your Parks Weekend. We will be activating Millersylvania State Park US-3231 south of Olympia. Then our club's last POTA activation for 2025 will be at Illahee State Park US-3202 on November 9. As usual, everyone is invited to any of our club's POTA activations. We encourage hams in the community to come out and join in the POTA fun even if you don't have a portable radio kit. We'll get you on the air to play POTA!

-73 BJ KO7T

ON AUGUST 5TH ANNE N7ANN AND I HEADED OFF FOR A few days in Bellingham, Washington—the main focus of the trip was to visit the Spark Museum of Electrical Invention for an article featured elsewhere in this edition of *The Logger's Bark*. But we planned ahead to bring the POTA rig and visit Larrabee State Park, not far outside of Bellingham to the South. Larrabee holds the honor of being the oldest state park in Washington State, established in 1913, following the donation of 20 acres of land in the Chuckanut Mountains by Frances Larrabee.

It's an interesting park in that it's situated on a very narrow, very winding 2-lane highway, with rock outcroppings in some cases mere inches from passing vehicles. It's not a road for motorhomes or large trucks! The park itself is very hilly, with lots of trails and it even has an amphitheater that dates back many years, in a natural grassy bowl in the center of the park.

It was on a whim that we stopped that day. The plan had been to activate the park on Wednesday, not Tuesday. But we figured we were there—so why not just do it today? We were glad we did! The next day it poured rain all day so would have been a very different POTA event.

Conditions weren't great—in fact, it was quite a struggle. I did my usual "bang out the required 10 QSOs on FT8 first then move to CW". I was glad I did—it was hard enough to get the 10 FT8 contacts ("*But I thought FT8 works other stations automatically while you sleep!!").* I ended up with 12 for a buffer, then onto CW—but the noise levels were very extreme and I was only able to eke out 3 CW contacts before calling it. SSB wasn't an option.

Regardless, it was very fun POTA activation and a wonderful park. And we were both so glad we got it done on Tuesday before the heavy rains the following day!

-Dave W7UUU

Larrabee State Park, near Bellingham, Washington, holds the status of being the oldest state park in WA—established in 1913

This is me, Dave W7UUU, with my trusty "plastic sawhorse" antenna mount supporting an MFJ-1979 17-foot telescoping antenna that covers 20 meters and up full size and lower bands with the LDG-Z11Pro tuner with my Icom IC-7300

STRAY TOPICS OF INTEREST

Fun stuff for Hams to read!

W7UUU

Hidden Word Contest

This month's hidden word is not even a word—it's a tube type! 6146 is the "word" to find. This is one of the most important tubes ever made for radio use, and is still used extensively around the world. First introduced in 1952, the 6146 family became a mainstay of transmitter finals all the way to the end of the "tube era". Several variants came along in later years that offered improved specifications. Be watching for the *December* 2025 issue of The Logger's Bark for a full article on the history of the 6146 and what all the variants are. But for now, if you are the first to find the hidden word 6146 (which is also the hidden object this month), I will mail you some cool W7DK and QRZ stickers free of charge! But of course, this page doesn't count. It will be hidden elsewhere.

Hidden Object Contest

Find this 6146 hidden and win cool stickers! Of course, this page doesn't count.

Famous Ham October Birthdays

THIS MONTH'S FAMOUS HAM BIRTHDAY is one of the biggest names in ham radio: Bob Heil K9EID who founded Heil Sound which to this day manufactures (mostly in the U.S.) microphones and other products for radio amateurs. He's equally known in the rock music world as well. As a pioneering sound engineer, he revolutionized live concert audio in the 1970s by designing custom sound systems for artists like The Who, Joe Walsh, and Peter Frampton. His creation of the Heil Talk Box became iconic in rock history.

In the few years before he became a Silent Key in February 2024, Bob and I became good friends. I recorded a series of interviews with him in 2023 you can view on my YouTube channel. He was such a sweet guy—we had many great conversations on the phone, and I even got invited to design a prototype product for Heil Sound—which although he didn't live long enough to release it as a product, I was nevertheless very honored to have been asked. RIP Bob—you were a good friend.

-Dave W7UUU

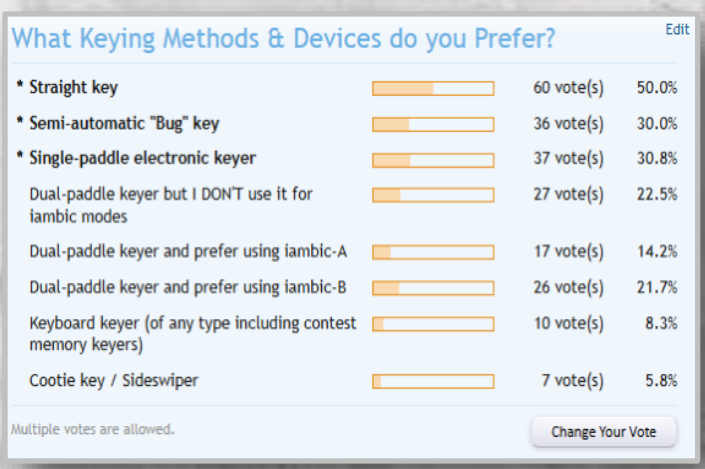
Bob Heil K9EID—frame clip from W7UUU interview

STRAY TOPICS OF INTEREST

Survey Center & QSL of the Month

W7UUU

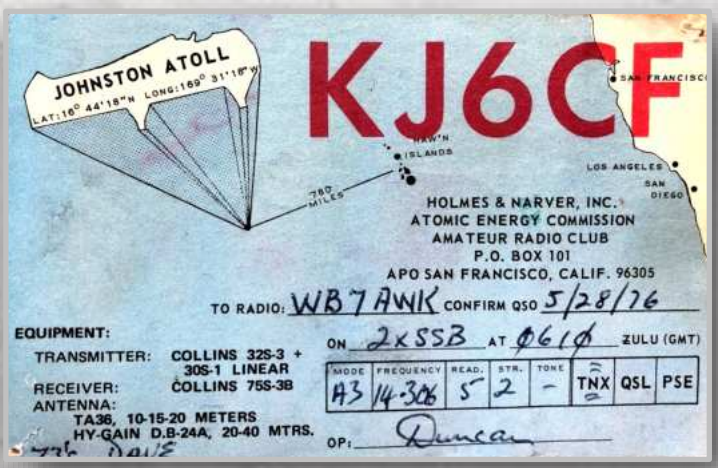
Survey Center!



THIS MONTH'S SURVEY WAS STARTED BACK IN MAY and deals with preferences for Morse keying devices being used today. It was a "3-selections multiple choice" survey, so respondents could choose the top three devices they like to use on a regular basis (my choices are in bold with an asterisk). The results aren't too different from my expectations when I started the polling—although the disparity between the two iambic modes is interesting. Although I'm not a proficient iambic CW operator, I do know the differences and would have to suggest that it's probably because iambic-B mode seems to be a tad quicker and a little bit more forgiving perhaps? It could also be a factor that there are some keyers (the Accu-keyer I believe is one) that only supported iambic-B. So maybe that's the reason—if you are an iambic keying fan maybe you can shoot me an email and give me your thoughts and I'll run your response in the Mailbag section of a future edition of *The Logger's Bark*.

-Dave W7UUU

QSL Card of the Month



OF ALL MY QSL CARDS FROM 50+ YEARS AS A HAM, this is the only one that's truly a rare one: Johnston Atoll (also called Johnston Island). It's right up there with North Korea and Bouvet Island these days in "Rare DX". But at the time I made this contact (as WB7AWK, my General call back then), it really wasn't any big deal. In fact, they had a whole group of hams on the island as part of the Holmes & Narver, Inc. radio club. This company was a logistics contractor for the Atomic Energy Commission in the 1960s and 70s. But the area is now strictly off limits to any visitors due to significant radioactive waste deposits on the island from missile launch tests. Weapons-grade plutonium contamination still exists in many places, including the lagoon and surrounding sea areas. Some 550 drums of radioactive waste were dumped in the ocean near the atoll in the mid-1960s. As a result, the island will not likely have another ham radio operator set foot on it in most of our lifetimes, if not for all time. The only visitors these days are highly trained and protected government staff who visit the island occasionally as it ever-so-slowly reverts to a natural state.

-Dave W7UUU

THIS IS THE BEAUTIFUL SHACK SETUP of Jim N2EY of Wayne, Pennsylvania—100% homebrew station (the gear was covered in the February 2024 issue of The Bark, beginning on page 57) but now with a brand-new table & shelf system rebuilt using nothing but repurposed wood and a lot of sweat equity.

Says Jim, "At N2EY, the rig and the furniture are all homebrew. This summer's shack project was a new radio desk for the shack. Made entirely of repurposed wood and some reused hardware, including a 36" x 79" solid-core office door that forms the top. Drawers and shelves for storage are built-in, plus a sliding shelf for the shack computer. It matches the workbench built back in 2018. It was all built on my porch and designed to fit (just barely) down the basement stairs when disassembled. The operating desk sits in the middle of the room so the back is accessible for cables and equipment adjustments. It is bracketed to the bookshelves (also made of repurposed wood) that hold the power supplies"

Amazing homebrew shack, Jim! This new table & shelf build just make it all the better! Thanks!

W7OS DOC SPIKE MUSEUM

Featured Gear from the Museum

Photos & Text by Dave W7UUU

IN A PREVIOUS ISSUE OF THE LOGGER'S BARK, WE covered the Heathkit MR-1 mobile HF receiver. This month, we'll cover the matching transmitter. The Heathkit MT-1 "Cheyenne" was conceived as a true mobile HF transmitter. Introduced in 1959, it was engineered to ride in the car, typically over the "center hump" (the drive shaft tunnel in older cars) in the front seat and pair with the MR-1 matching receiver. Bands covered were 80 though 10 meters, AM and CW. The tube lineup — a 6AU6 VFO into a 6CL6 buffer, a 5763 driver, and a 6146 final — was a pretty common signal chain of the era. With the single final tube, input power was around 90 watts (resulting in around 50 watts output). Controlled-carrier screen modulation (12AX7 speech amp with 6DE7 modulator) on AM kept the current draw reasonable. This was the same modulator circuit as was used in the DX-40 and DX-60 transmitters. CW operation was also available for those who were able to master "mobile Morse". The transmitter was cathode keyed, and presented around 75 volts key-up so users had to be careful to avoid a shock.

Heathkit MT-1 "Cheyenne" transmitter from 1959
From the W7OS Museum collection
Photo by Dave W7UUU

For power supply options, Heathkit offered three choices: the MP-1 mobile 12v supply that used a pair of 2N442 transistors in an inverter to supply the needed 500-600 volts at 150 mA, as well as 300v at 100ma.

In 1960 the improved HP-10 was introduced that offered better efficiency. For home use, the HP-20 could be used (this was the forerunner to the HP-23 series of AC supplies that powered the later HW and SB transceivers on into the 1970s.

The transmitter's physical construction was designed for the rigors of mobile operation. The VFO is voltage-regulated and mechanically secure, with tubes shielded and components well anchored to minimize drift and microphonics as the car bounced along. Where the MT-1 really shines is as half of a matched mobile pair. Heathkit's MR-1 "Comanche" receiver was designed expressly to ride shotgun with the Cheyenne, right down to matching cosmetics and footprint. The MT-1 carries the transmit/receive relay and power pass-through to the MR-1 so they worked very well as mobile separates (note that even when paired, the MT-1/MR-1 combination was not a transceiver, but rather separate transmitter and receiver, each with its own VFO).

Unfortunately the MT-1/MR-1 only had a few years on the market, as AM was starting to fade away and SSB was in its ascendancy. But even today, the pair can still be a lot of fun to use on the air. Occasionally, the Radio Club of Tacoma fires the MT-1 and MR-20 in the W7OS museum collection for Straight Key night or the Classic Exchange events. I have used them and can attest to the fact they're pretty fun to use.

-Dave W7UUU

ANTENNA TIME

GutterTenna!

Dave W7UUU

BEGINNING IN 2024 AND CARRYING INTO 2025, I DID A series of antenna experiments I called Lamptenna where I used a 1990s torchiere metal floor lamp in my living room as my antenna, and worked the world!

I always had in the back of my mind the desire to try loading a section of my home's metal gutters and see what sort of results I might obtain. So in August, a few days before the North American QSO Party (SSB) was to be held, I set up to use a "T" arrangement of metal rain gutters totaling 32 feet in all. See photo for the details of the layout. My gutter system is a hybrid of metal and plastic sections but I was lucky to have the 32 feet of usable gutter right outside the kitchen deck door.

The feedline was RG-8X coax, with the center conductor feeding the gutter sections against a 16' radial draped on the deck.

Dave W7UUU at the kitchen table operating desk for the GutterTenna experiment. Radio is an IC-7300 with LDG autotuner. Gutter system is right outside the glass doors.

My LDG Z-11pro autotuner was easily able to find a match to the gutters on every band from 80 through 6 meters. I didn't use a balun or transformer of any kind—just coax to gutters and radial.

I immediately recognized that unlike Lamptenna, GutterTenna produced a consistent S7 to S9 noise level on every single band. I spent a couple of hours carefully tuning every ham band from 80 through 10, listening for CW or SSB activity. A quick check with the FTDX-101MP in the main shack, using my SteppIR DB18E Yagi at 70 feet, confirmed there were plenty of strong signals on just about all of the ham bands at that time. But on the IC-7300 connected to GutterTenna, I heard absolutely nothing. Not a single CW or SSB signal was found over the entire course of the first day listening.

Next, I fired up a Microsoft Surface Pro4 that I use for POTA activations, and tuned up on 20 meters to see if there would be any FT8 action to be seen in the waterfall. There was!

I was seeing a fair number of signals in the WSJT-X waterfall, and decodes began trickling onto the screen. But there was no doubt that receiver noise was going to be a big problem.

I then set about trying to make contacts. I decided not to bother with calling CQ, but rather watch for the strongest stations in the decode list who were calling CQ and answer them. Knowing the antenna system was subpar to start with, I decided to run with 100 watts. I quickly found that it was going to be a challenge making contacts. Frequently, stations would answer my initial reply to their CQ, but the QSO could not be completed—the other station simply 6146 never "came back" to me in a reply.

I also discovered that running 100 watts, with the far end of the gutter antenna within a few feet of the house power panel, my RFI-susceptible Eaton GFCI breakers

ANTENNA TIME

GutterTenna!

Dave W7UUU

were having fits and I had blown 4 breakers. Eaton AFCI breakers are very well-known and documented for this problem. Normally I don't have an issue, as my usual antennas are far from the house. But GutterTenna was simply too close.

So I reduced my power to about 30 watts, and the breaker problem (on all bands except 40) was resolved. It was then I noticed I didn't need 100 watts anyway. The reports I was getting were consistently strong. It was the received signals that were subpar. So in effect, I was the proverbial "ham radio alligator: all mouth, no ears".

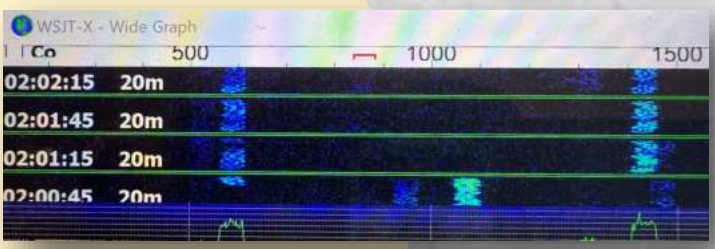
```
233400 -16 -0.1 1821 ~  CQ K1PAP DM13       U.S.A.
233415  Tx      1370 ~  K1PAP W7UUU CN87
233430  -9 -0.2 1822 ~  W7UUU K1PAP +24
233445  Tx      1370 ~  K1PAP W7UUU R-09
233500 -11 -0.2 1822 ~  W7UUU K1PAP RR73
233515  Tx      1370 ~  K1PAP W7UUU 73
```

In the screen capture above, you can see that even running 30 watts, K1PAP in California at a distance of about 1000 miles recorded me at +24dB, while his signal to me was only –09 dB. So obviously, 30 watts should be plenty to do the job, at least using FT8.

On Saturday August 16, the NAQP contest commenced at 11:00 AM local time and I eagerly began tuning the SSB segments of 20, 15, and 10 meters. Nothing was heard—not even a hint of stations calling. A quick fact-check out in the main shack confirmed the contest was on, and the SSB segment of 20-meters was packed with signals. But back in the house, the IC-7300 heard absolutely nothing.

After hours of patient tuning and listening, I finally heard a single lone station calling "CQ contest" just above my S9 noise level, and I worked W7CXX, followed a half hour later by K6JO. For the entire 12 hours of the contest, these were the only SSB contacts I was able to make.

Operator view of the IC-7300 station running FT8



At any given moment, only a few signals would be present

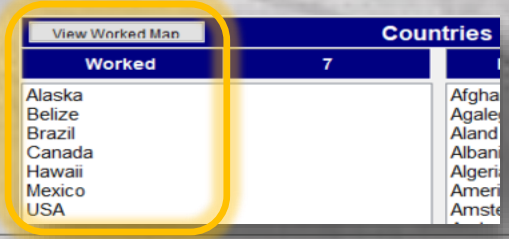
Note the persistent near-S9 noise level across the entire bandwidth of the IC-7300 passband filter even with the Noise Blanker (NB) engaged

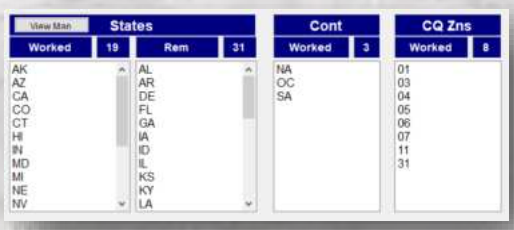
I also spent a fairly significant amount of time tuning the CW end of 15 and 20 meters, but only ever heard one station, who was calling "CQ CWT" (a regular CW sprint event by CWops). I called WØGAS and gave the usual exchange to log the contact. Perhaps if there had been a CW contest going on, I'd have fared better—there are a lot of "big gun" CW contest stations. Alas, WØGAS was the only CW station I ever heard over my 5 days of working with GutterTenna for this experiment.

```
W7UUU's Contest Summary Report for N3FJP's Amateur Contact Log
Created by N3FJP's Amateur Contact Log
Version 7.0.11  www.n3fjp.com

Total Contacts = 64
Total Points = 0

Operating Period: 2025/08/12 23:22 - 2025/08/18 16:37


Total Contacts by Band and Mode:

Band       CW    Phone     Dig    Total       %
----       --    -----     ---    -----     ---
  40        0        0       1        1       2
  30        0        0       5        5       8
  20        1        2      49       52      81
  17        0        0       2        2       3
  15        0        0       1        1       2
  12        0        0       3        3       5
          --    -----     ---    -----     ---
Total       0        0       0       64     100
```

My final stats are shown above: 64 contacts logged, 61 using FT8, two on SSB and one single CW contact. Notice that virtually all QSOs were on 20 meters. 30 netted five contacts, but 40 was "circuit breaker misery" no matter how low my power level so I stopped at a single contact. 15 and 12 meters scored a few but I never made a single QSO on 10 or 6. I never bothered with 80 or 160.

My DX score was not terrible, all things considered—see below for the DX entity stations worked.





In all, I worked a total of 19 U.S. states (including Alaska and Hawaii). But far and away, the majority of QSOs were with stations in California—20 in all, representing 31% of my states totals. I'm confident that given enough time, and persistence, Worked All States using FT8 would certainly be possible. Same with CW if you were to work a bunch of contests. SSB however? Not a chance IMO.

```
011015  -4   0.2   976 ~  CQ W7DK CN87          U.S.A.
011302  Tx         838 ~  W7DK W7UUU CN87
011315  -5   0.2   977 ~  AC3KE W7DK -11
011330  Tx         838 ~  W7DK W7UUU CN87
011415  -5   0.1   977 ~  W7UUU W7DK +00
011430  Tx         838 ~  W7DK W7UUU R-05
011445  -5   0.1   978 ~  W7UUU W7DK RR73
011500  Tx         838 ~  W7DK W7UUU 73
011515  -4   0.2   978 ~  CQ W7DK CN87          U.S.A.
```

Twice on Saturday August 16th I worked "The Mighty DK", the W7DK station of the Radio Club of Tacoma. I don't know which operator I worked each time, but it's always fun to put another W7DK QSO in my logbook.

So to wrap it up—could you use house gutters for your main antenna? Sure! No question. But you have to temper your expectations—and know that patience and persistence are going to be mandatory attributes of such an effort. Factoring in dwindling band conditions as the current solar peak fizzles and CME events block propagation, it could be something of a challenge. As long as you understand and accept the limitations and challenges you will face, the old maxim is true: any antenna that radiates and receives is better than no antenna at all.

-Dave W7UUU

ANTENNA TIME

GutterTenna Layout & Design

Below is the Gutter-Tenna "business side" of things. My gutter system is actually a mix of metal and plastic, so I had to pick an area that was all metal. First thing I did was electrically bond all three gutter sections using self-tapping sheet metal screws. Then I confirmed that the gutters were fully isolated from the house electrical ground (which they are, at least this section). Gutter section **A** is 7 feet long, section **B** is 18 feet long, and section **C** (the "feed point") is only 7 feet high. The deck sits about 4 feet above earth, so this is NOT a very high gutter system! Unseen in this photo is a 16-foot ground radial that runs to the right, under the door rug and potted plant. FAR from ideal, no question. The feed point is at the bottom of section C, with the center coax attaching to the gutter metal, and the coax shield attaching to the radial wire. The gutter section at the far left is actually plastic, so was not a part of this experiment. Area **D** is discussed in the preceding text regarding the house AC power panel and the miserable Eton AFCI circuit breakers. *–Dave W7UUU*

STRAY TOPICS OF INTEREST:

Top Ten & Hamfests

Dave W7UUU

10

10 Top Coolest Boat Anchor Rigs of the Past!

This is a list of the top-10 all time Boat Anchor rigs of all time based on a long search of a bunch of internet sites. Is my tabulation correct? Heck I don't know—this is what I found in my own searching. Do you have a gripe about cool old radios that I somehow missed? By all means—send me an email at the address below right and give me a piece of your mind!

-Dave W7UUU

1	Collins 75A-4 Reciver
2	Collins KWS-1 Transmitter
3	Collins R-390A Receiver
4	Drake R-4C Receiver
5	Hallicrafters SX-88 Receiver
6	Hammarlund SP-600 Receiver
7	Heathkit SB-101 Transceiver
8	Hallicrafters HT-32 Transmitter
9	National HRO-500 Receiver
10	Central Eletronics 100V

Upcoming Ham Fests in the Area

Data published with permission from Lynn at N7CFO.com

October 5. Delta Com Fest, Tsawwassen, BC. https://hambone.ca/rac/events/detail.php?event_ID=2434

October 10 & 11. Pacific Northwest VHF Society Conference. http://www.pnwvhfs.org/

October 11. Arctic Amateur Radio Club Hamfest, Fairbanks, Alaska. http://www.kl7kc.com/. *This is an ARRL Sanctioned Event.*

October 11. Kitsap County ARC Hamfest. Bremerton, WA. https://kcarc.org/hamfest/

October 18. Swaptoberfest. Rickreall, OR. www.swaptoberfest.com Flyer in PDF.

Radio Club of Tacoma Ham Fair 1970

HAM TECH 101

By Jim AF5NP

Useful tech info for newer hams and old

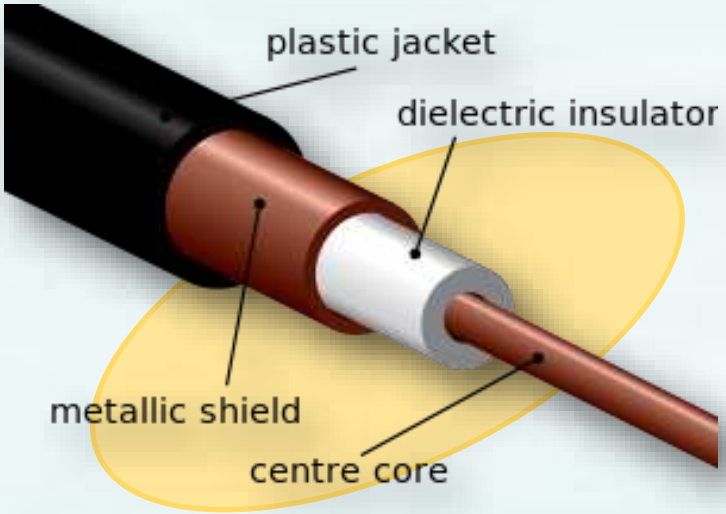
The Basics of Coaxial Cable

BECAUSE IT'S COMMONLY used in radio work, every ham should be familiar with coaxial cable, often simply called coax.

Coaxial cable is most often used between the transceiver (or T/R switch) and antenna. In this application coax acts as the feed line (AKA transmission line) to carry transmitted and received RF signals between the antenna and radio. Other types of feed line can be employed but coax is used by many hams because it is easy to work with and readily available.

T9B03-2018: Why is coaxial cable the most common feed line selected for amateur radio antenna systems?
It is easy to use and requires few special installation considerations

Coax is a type of electrical cable that has an inner conductor surrounded by a tubular insulating layer, surrounded by a tubular conducting shield. Most coaxial cables also have an insulating outer sheath or jacket. The term coaxial comes from the inner conductor and the outer shield sharing a geometric axis.



To be useful coaxial cable must be terminated with mating RF connectors. An experienced ham may terminate their own coax; at greater cost they may purchase ready-made and tested assemblies.

A wide variety of coaxial cable and assemblies are available with different characteristics. A quick summary of the important features:

- Characteristic impedance
- Signal loss
- Power capacity
- Diameter/weight
- Flexibility
- Environmental resistance

A seventh important characteristic of coax is velocity factor but that is a more advanced topic of lesser importance so we'll simply mention it here.

HAM TECH 101

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The Basics of Coaxial Cable

Coaxial cable selection for each installation may be a compromise between features, requirements, and cost. The ham has to factor in what he needs or wants, what is available, and what it costs.

A quick look at these features of coaxial cable:

Characteristic Impedance: Like all other cable, coax is specified at so many ohms impedance based on its physical and electrical properties. In radio work the characteristic impedance is usually needed to match that of the radio and antenna. Hence 50Ω is commonly used, although 75Ω cable may sometimes be used with an impedance matching device.

T9B02-2018: What is the impedance of most coaxial cables used in amateur radio installations?
50 ohms

Signal Loss: RF signal strength will attenuate as it passes through coax. This is an undesired characteristic which must be considered for each installation.

Different coax types have different losses so material selection (type) can be important. Online and manufacturer calculators are helpful here to select the best cable. Links to a couple are given at the end of this article.

T9B10-2018: What is the electrical difference between RG-58 and RG-8 coaxial cable?
RG-8 cable has less loss at a given frequency

Cable loss depends on diameter of the cable and dielectric (insulation) used between the inner and outer conductors.

Length is also a major factor; loss is specified in dB per 100ft, so it's apparent that short runs will have less loss. Conversely, a long run between the radio and antenna demands careful consideration of coax cable type.

Additionally, loss is proportional to frequency.

T9B05-2018: In general, what happens as the frequency of a signal passing through coaxial cable is increased?
The loss increases

For VHF and UHF application, a ham is advised to choose a lower loss cable, particularly for long runs.

Whatever frequency you operate, recall that a 3dB loss represents half power so make careful consideration of loss.

Power Capacity: Different coax types have different power ratings. For most hams with 100W maximum power, there are many common cables to choose from. Hams blessed with RF amplifiers running 500 to 1500W transmit power will need to be more selective about their coax. For receiver only situations or low power transmit (QRP), coax power rating is not a concern.

Here again online calculators are very helpful for cable selection based on power require-

HAM TECH 101

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The Basics of Coaxial Cable

ments. As with all kinds of wire and cable, higher current demands thicker conductors so high wattage coax will be larger in diameter and less flexible.

Diameter & Weight: Coaxial cable comes in a range of diameters and proportional weight:

Cable diameter should be a minor consideration, as other factors such as power handling and loss are much more important. However, there are occasions when weight or size do matter. For example, this LMR400 coax is low loss for VHF but not practical to mate with a handheld radio:

While this skinny RG-174A coax is more appropriate (but rather lossy):

Flexibility: Coax is available with solid or stranded center conductors. Solid conductors make the overall cable more rigid but easier to terminate (solder) should you choose to roll your own. Stranded center cable is more flexible but also more expensive.

Environmental Resistance: The outer jacket determines the suitability of a coaxial cable use in various conditions. The biggest concern is resistance to ultraviolet (UV) light from the sun when coax is run outdoors.

HAM TECH 101

By Dave W7UUU

Useful tech info for newer hams and old

About HF Ham Gear Brands for Beginners

Other considerations are chemical resistance, if so exposed, and ability to bury coax under ground (direct burial), as some hams do.

All of these features can be found in the manufacturer's spec sheets and/or sales info for every particular coaxial cable type.

One of the more important considerations with coaxial cable use is to prevent moisture from entering the dielectric insulator between the center conductor and outer shield. Water intrusion will dramatically alter the characteristic impedance and increase loss of the cable, affecting performance. This is why there are a few license exam questions on the topic:

Obviously we should be concerned about cuts and abrasions in coaxial cable, as this also allows water an entry point. *-Jim Peisker, AF5NP*

T7C09-2018: Which of the following is the most common cause for failure of coaxial cables?
Moisture contamination

T9B08-2018: Why should coax connectors exposed to the weather be sealed against water intrusion?
To prevent an increase in feed line loss

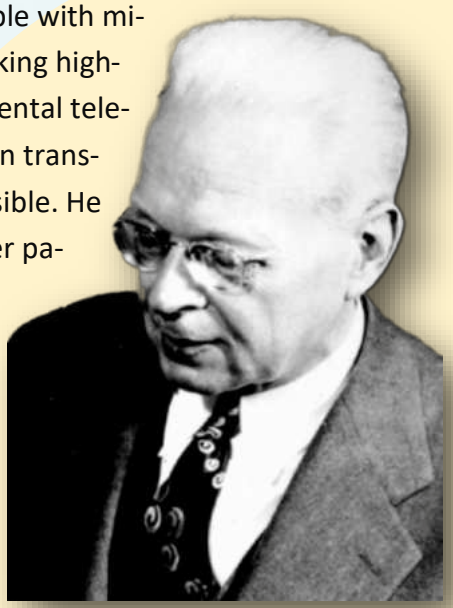
T7C10-2018: Why should the outer jacket of coaxial cable be resistant to ultraviolet light?
Ultraviolet light can damage the jacket and allow water to enter the cable

This column is reprinted with permission of Jim AF5NP from his blog www.NEWHAMS.info
References to FCC question numbers may be out of date but the content will still be accurate

HERMAN A. AFFEL (b. 1893, d. 1972) **is credited with inventing coaxial cable while working for AT&T Bell Telephone Laboratories in 1929.** This type of cable opened a wide spectrum of frequencies of long distance telephone service, making it possible to carry thousands of simultaneous phone calls on long distance circuits.

Affel was born in Brooklyn, New York and studied electrical engineering at the Massachusetts Institute of Technology. As a consultant to Bell Labs, Affel worked with Espenschied devising efficient means to carry high frequencies needed for broadband communications systems. Affel and Espenschied created a transmission system using a coaxial conductor, consisting of two concentric cylinders of conducting material separated by air. This structure reduced frequency losses and prevented outside interference.

Broadband coaxial cable created a higher capacity for local and long distance circuits. During his career at Bell Labs, Affel worked with other engineers to combine coaxial cable with microwave relays, making high-volume transcontinental telephone and television transmission signals possible. He earned several other patents for devices including antennas and transmitter systems.

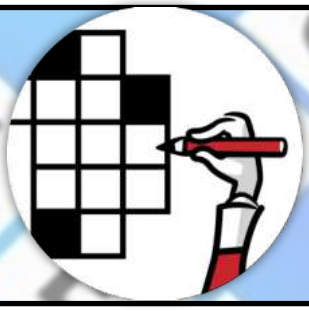


■ *-editor*

RETURN TO HOME PAGE

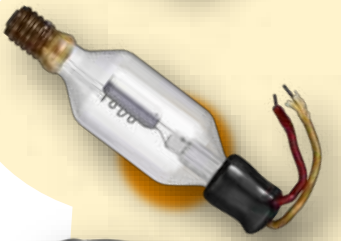
FUN AND GAMES!

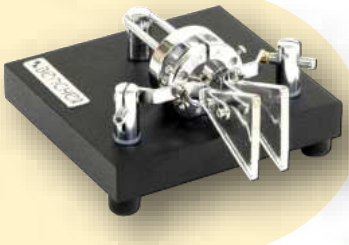
Crosswords, Word Search, etc.

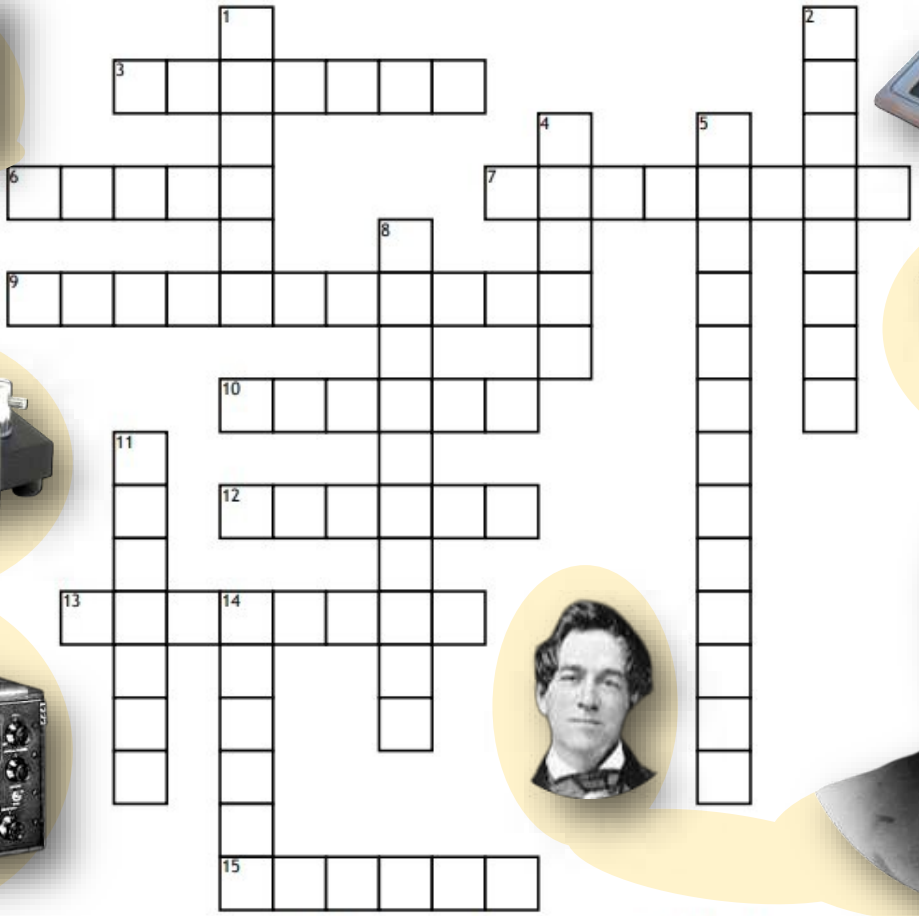


Radio Terms Word Search! Print this page to play!

Assorted Radio Terms and Names







Across

3. Guglielmo is better known as _____

6. The last name of the guy called WB6ACU

7. The "V" in VFO

9. Old transmitter power tubes had to be _____ to prevent oscillations

10. The fancy word for using a squeeze keyer

12. If it weren't for _____ Vail, Morse's code would be very diffferent

13. The company that got famous in Benton Harbor

15. The tube Mr. de Forest invented is called the _____

Down

1. The full first name of the guy who started Collins Radio

2. The device called "cans" in a repeater system

4. Radio Shack was a division of _____ corp

5. Mr. Halligan came up with a great name for his radios

8. The most expensive brand of modern ham gear

11. The first radio detector type

14. The Radio Club of _____

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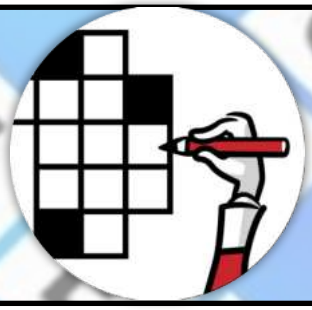
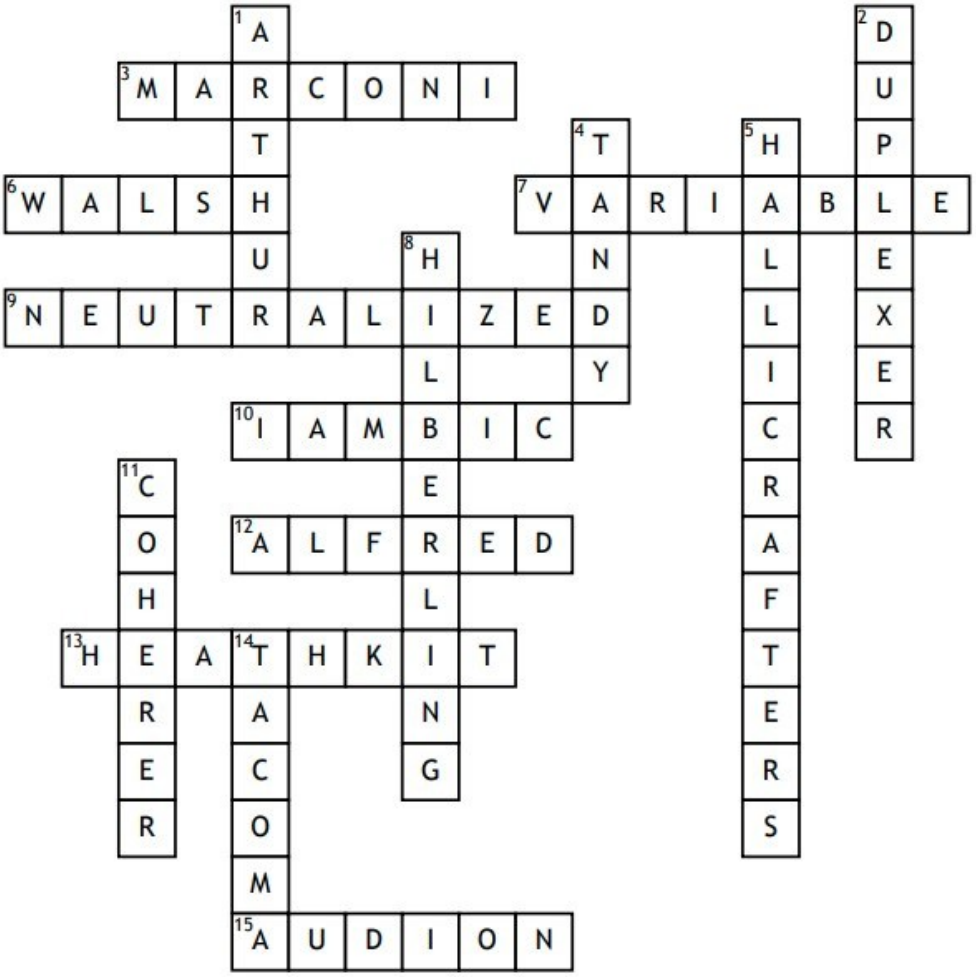
email loggersbark@gmail.com

FUN AND GAMES!

Crosswords, Word Search, etc.



Answer Key… but don't cheat!



Across

3. Guglielmo is better known as _____

6. The last name of the guy called WB6ACU

7. The "V" in VFO

9. Old transmitter power tubes had to be _____ to prevent oscillations

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About this Publication

The Logger's Bark is the official publication of the Radio Club of Tacoma and is published by RCT, PO Box 11188, Tacoma, WA 98411. The Radio Club of Tacoma is a non-profit corporation as defined by law. All proceeds will be used exclusively for charitable and educational purposes. The Radio Club of Tacoma's Club House is located at 1249 Washington St, Tacoma, WA 98405, phone: 253-759-2040.

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Radio Club of Tacoma Repeaters

Central Tacoma 2m:	**147.28 + PL Tone 103.5**
Central Tacoma 70cm:	**440.625 + PL Tone 103.5**
Crawford Mountain:	**147.380 + PL Tone 103.5**
North Tacoma:	**145.21 - PL Tone 141.3**

The Loggers Bark ***does not*** accept AI / ChatGPT submissions

Membership Information

- Full-time students, licensed or non licensed, up to age 25 are $20 per year.
- Fees are applicable for the calendar year: January to December
- Lifetime membership is 20 times the yearly fee you are eligible for. Lifetime memberships are calculated based on the FULL and ASSOCIATE rates.
- Visit www.w7dk.org For the latest and most current information on events and activities

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