Silver splash, tenth 10K

The **September PCARA Membership Meeting** was held on September 7, 2024 at 10:15 a.m. at the Putnam Valley Free Library in Putnam Valley, NY, which had 14 members in attendance. There were a couple of items on the agenda, the most important one being the commemoration and celebration of **PCARA's 25th Anniversary in 2025**. Suggestions for the **PCARA Silver Jubilee** included a special event station, a picnic, a group trip to the Dayton Hamvention® or the *USS Slater* in Albany. If you have any suggestions, please feel free to share them. We've come a LONG way from our humble beginnings of meeting at a local diner over coffee.

Another milestone for PCARA is that this will be our 10th anniversary of providing communications support for the **Harry Chapin Memorial Walk/Run Against Hunger.** This year the event is on Sunday October 20, 2024 at Croton-Harmon High School in Croton-on-Hudson, NY. As in years past, we need members for checkpoints around the different courses (10K, 5K, and 1 Mile Fun Run). A planning session will be arranged to review the courses and checkpoints. Please come join us to support a great cause and help end hunger in our communities!

PCARA made a splash in one of the local papers, specifically the September 2024 Edition of *River Journal North*. The full-page article mentioned PCARA

Competitors in the October 2023 10K Run Against Hunger start out from Croton-Harmon High School. [NM9J pic.]

members Lou KD2ITZ, David KD2EVI, Charles N2SO, and Malcolm NM9J, sharing some general information on amateur radio and its roles in the community. Please see a copy of the article *reproduced with permission* in this month's edition of the *PCARA Update*. Thanks to everyone who was interviewed and made the article a success!

On Saturday September 21, 2024 at 9:00 a.m. another **PCARA Breakfast** was held at Uncle Giuseppe's Marketplace in Yorktown Heights. We were joined by two visitors, one had tested earlier with us, the other was just getting his feet wet in Amateur Radio and found us via the PCARA website. We're still getting new members!

Members were outside Uncle Giuseppe's for breakfast on the last day of summer, September 21, 2024.

Contents

Please mark your calendars with these upcoming events:

- Saturday October 5, 2024 at 10:15 a.m.: PCARA Membership Meeting at the Putnam Valley Free Library, 30 Oscawana Lake Road, in Putnam Valley, NY.
- Saturday October 5, 2024 at 11:30 a.m.: PCARA ARRL VE Test Session at the Putnam Valley Free Library. Candidates must contact Mike W2IG using w2igg'at'yahoo.com.
- Saturday October 12, 2024 at 8:00 a.m.: Bergen Amateur Radio Association (BARA) Fall Hamfest, Westwood High School, 701 Ridgewood Road, Township of Washington, NJ.
- Saturday October 19, 2024 at 9:00 a.m.: PCARA Breakfast at Uncle Giuseppe's Marketplace in Yorktown Heights, NY.
- Saturday October 19, 2024 at 10:00 a.m.: New York QSO Party. Individual entries are encouraged. Use "Peekskill/Cortlandt ARA" for the club name. (See page 6.)
- Sunday October 20, 2024 at 8:00 a.m.: 44th Annual Harry Chapin Memorial Run/Walk Against Hunger at Croton-Harmon High School in Croton-on-Hudson, NY. Please join us.
- Saturday October 26, 2024: PCARA Foxhunt at FDR State Park, Yorktown Heights, NY. Start time 10:00 a.m. from the Pool parking lot. (See page 13.)

Remember that our next scheduled **PCARA Membership Meeting** will be on Saturday October 5, 2024 at 10:15 a.m. at the Putnam Valley Free Library in Putnam Valley, NY. Please join us. I look forward to seeing each of you there.

- 73 de Greg, KB2CQE

PCARA Board

President:
    Greg Appleyard, KB2CQE; kb2cqe 'at' arrl.net
Vice President:
    Bob Tarsio, N2CBH; bob 'at' broadcast-devices.com
Secretary:
    Lou Cassetta, KD2ITZ; radiocassetta 'at' gmail.com
Treasurer:
    David Fredsall KD2EVI; joanndavidss88 'at' verizon.net
Director:
    Mike Dvorozniak, W2IG
Vice President Emeritus: Joe Calabrese, WA2MCR.

Net night

Peekskill/Cortlandt Amateur Radio Association holds a roundtable net on Tuesday evenings at 8:00 p.m. and a directed 'Old Goats' net on Thursday evenings at 8:00 p.m. Both events take place on the 146.67 MHz W2NYW repeater, offset -0.600, PL 156.7 Hz.

Join the roundtable to find out what members have been doing or join the Old Goats with net control Karl N2KZ for news and neighborly information.

VE Test Session

PCARA's latest VE Test Session took place on Saturday September 7 following the monthly meeting at Putnam Valley Library.

This was a Laurel VEC Test Session with team leader Dave KF2BD and VE's Lou KD2ITZ, Mike W2IG, Verle W2VJ and NM9J. Two candidates arrived for the session and — as usual with Laurel VEC tests — there was no charge to the candidates.

Dave KF2BD (standing left) and Lou KD2ITZ prepare the two candidates for their Laurel VEC tests at Putnam Valley Library on September 7.

Recently-licensed John KE2DTY from Mount Kisco has been a familiar face at recent PCARA Breakfasts. John was successful in the Element 3 examination and upgraded from Technician to General. Meanwhile, Joseph Micelli of Mohegan Lake was successful in the Technician test. He was assigned new call sign KE2EBP by the FCC on September 10. Congratulations to all.

PCARA's next VE Test Session is scheduled for 11:30 a.m. on Saturday October 5, immediately after the monthly meeting at Putnam Valley Library. This will be an ARRL VEC session, so candidates should contact Mike W2IG ahead of the session using w2igg'at'yahoo.com.

Adventures in DXing
- N2KZ

Over 'n' Out

Last month's PCARA Update headline saga continues!

Broadcasting group owner Audacy announced on August 12th that the decades-old legacy of **WCBS Newsradio 880** all-news format would come to an end on Monday morning, August 26. At midnight on that fateful day, the 880 kHz frequency was repurposed as **WHSQ** (**H**udson **SQ**uare — a Manhattan neighborhood and site of Audacy's studio facilities.) WHSQ now serves as an affiliate of nationwide all-sports ESPN Radio.

The WCBS newsroom went silent on the previous Friday (August 23rd) and many of the employees lost their jobs. It was sudden and quick. The moment was also filled with nostalgia, endless warmth and good luck wishes expressed on-the-air from all the news staff who congregated to witness the very last live news broadcast. The last two days of WCBS — Saturday, August 25th and Sunday, August 26th — were filled with replays of all of the many station's historical broadcasts and staff reminiscences.

Many signs pointed to this demise. For decades, WCBS-AM was an always exclusively up-to-the-minute, constantly updated, news resource for the New York metropolitan area and far beyond. The first steps toward doom? The decision was made to insert hours-long sports play-by-play completely interrupting the WCBS news continuity. No news event would ever again break through passionate baseball coverage. Long form commentary shows and television news audio were slowly introduced to the programming schedule, grabbing more time away from WCBS newscasts.

Most recently, full hours or half-hours were sold to infomercial hawkers and a variety of additional sports events continued to take lengthy hours away from airing the news. Next came casual news magazine programs hosted by in-studio anchors in all dayparts. ["Daypart" is a term used in the broadcast media to refer to specific segments of the day. –*Ed.*] These magazines were repeated often — sometimes re-run several times — before being refreshed with a new recording. Overnight broadcasts were filled by pre-recorded single hour 'best of' news summaries that were repeated hour after hour all night. All of these diversions brought in immediate profits but audiences dwindled severely.

Audacy's master plan became obvious: why continue funding the expensive WCBS news format at all when you could lease its world-class powerful AM signal to someone else and just sit back and collect the rent? WCBS was spun down slowly but surely. The station's end would not be a surprise.

Concurrent to the moves at WCBS 880 AM, another all-news Audacy station **WINS 1010** AM began simulcasting on 92.3 MHz FM, replacing an alternate rock format that never gained much steam. Now WINS would seem fresh and be heard with a solid signal throughout all of the New York metropolitan area day and night.

Handing 92.3 FM over to a WINS simulcast would reduce operating complexity further and eliminate many more employees. Why fund an alternative FM rock station when you could strengthen a proven high-billing brand and build an efficient strategy producing higher profits with minimal effort? Less people and less program sources — more money. Checkmate!

The Long Goodbye

The WCBS all-news format began on August 28, 1967 almost exactly 57 years ago. WCBS once was the nationwide cornerstone of the CBS Radio Network, always held in high esteem and dignity. Their clear channel 50,000 watt omnidirectional signal could be heard by DXers all over the world — demonstrating their dominance and authority.

In the beginning, WCBS was a full-service station with news, music and a variety of entertainment programs. Their signature all-news format went on the air in 1967 and continued tirelessly for nearly 57 years. Today's void is unnerving and chillingly silent. Dedicated news listeners now feel abandoned and alone. The night of August 26th was frosty and dark for many New Yorkers.

The End Grew Near

WCBS anchor Wayne Cabot hosted the last few minutes of their final broadcast starting at 11:45 pm on August 25, 2024. We heard a long string of many historic and famous WCBS New York jingles and sounders. Wayne thanked his parents for driving him into the city at age 14 and introducing him to the station with a pre-arranged personal tour. It changed his life!

Wayne's comments said it all:

"You held us to a high standard and let us know when we didn't hit the mark. All of us here knew that our audience is engaged and smart and we knew to treat our audience with the respect that a well-informed, well-educated news consumer deserves. That's right... deserves.

"Our news desert is getting bigger and drier... and just like we should get a second medical opinion... we need to seek out more and more varied news sources that we trust because getting your information without the

bias and brainwashing in one place has given way to a fight to stay informed.

"With each closing newspaper, radio newsroom, TV newsroom, magazine... and now even digital news operations... the country we love is diminished. So as we leave the news eco-system after 57 years of all-news and 100 years of service on New York radio, we implore you to find that next trusted source. Use it. Support it. In word and in deed. It is the most patriotic thing you can do... and the most satisfying.

"To paraphrase a CBS News legend, 'Good night and good luck.' "

Many personal thanks were read and finally a small portion of John Lennon's song 'Imagine' was played as Wayne announced their historic call sign for the very last time — as the up to the hour time tick 'boings' played: *"I'm Wayne Cabot... and for the final time... This is WCBS New York."*

Forty seconds of silence followed and then we heard the new callsigns: **WHSQ** and **WCBS-FM HD2** New York. ESPN Radio was joined in progress. There was no acknowledgment from ESPN Radio of the handover. Yes, the sounds of ESPN would also replace the WCBS 880 feed on WCBS-FM HD-2.

The Way It Is Today

Compare the journalistic style of WINS to the now departed WCBS: WCBS was a legacy station with a strong backbone. The greatest voices of the CBS Radio journalistic roster were their hallmark. Legendary broadcasters like Edward R. Murrow, Douglas Edwards and Robert Trout offered serious, detailed reporting with authority and a quite serious tone. CBS was, in every way, "The Tiffany Network." Nothing could rival their quality, dignity and esteem.

WINS news presentation is constructed for a 21st century lifestyle. You'll find a multitude of very short news items delivered in a casual fast-paced format for instant listener gratification. A few minute's listening and you should be all set. The tone is light and so is the content. Ad-libbed jokes are inserted whenever they come to mind. The voices have lost their authoritarian timbre and the three-piece suits with white shirts have been long abandoned. It is a completely new world.

The Big Shuffle

See if you can follow how these New York City stations reshuffled at the end of August: Audacy owned both all-news stations: WCBS 880 and WINS on 1010 and 92.3 FM. ESPN Radio *was* heard on two frequen-

cies: WEPN 98.7 FM owned by Emmis Corporation — and — **WEPN** 1050 AM owned by Good Karma Broadcasting. (Good Karma also provides the advertising sales and day-to-day operations of ESPN Radio nationwide.)

The Emmis lease for ESPN on 98.7 FM ended at the end of August. The sounds of ESPN Radio have now moved from 98.7 FM to the former WCBS frequency 880 AM and is now called **WHSQ** (**H**udson **SQ**uare — the site of Audacy's studio complex.) Versions of ESPN Radio are now heard on both 880 and 1050 AM. 880 AM carries the New York City edition of ESPN Radio, including New York Mets baseball, Knicks basketball and Rangers hockey play-by-play. 1050 AM broadcasts the individual nationwide ESPN feed. Two ESPN sources on AM radio! It's like ESPN and ESPN2 on TV.

Audacy owns a second sports station AM/FM pair in New York City: WFAN on 101.9 MHz FM and 660 kHz AM. WFAN always caters to local sports. Complicated enough? WFAN 660 and the new WHSQ 880 share the same tower sitting out in Long Island Sound on a tiny island called High Island.

There's more! When ESPN Radio left 98.7 FM vacant (amazingly) there were no immediate takers for grabbing this dominant broadcast frequency in America's number one market. In the meantime, station owner Emmis launched a "pop-up station" on 98.7 FM as a space-filler until another lessee or buyer could be found. We were teased with three days of random music and claims that a new wonderful station would appear Tuesday morning, September 3rd —the day after Labor Day! Using the moniker "TJ 98.7 — Here now... until we're not!" commercial-free alternative rock rambled all weekend. Adding to the confusion: Some of the teaser promos were voiced by long retired WINS news personality Judy DeAngelis. What did it all mean? It really *was* a big tease.

TJ actually refers to the host of 98.7's morning show, T.J. Taormina, who was first heard on another New York City radio station "Z-100" WHTZ-FM. The TJ show's
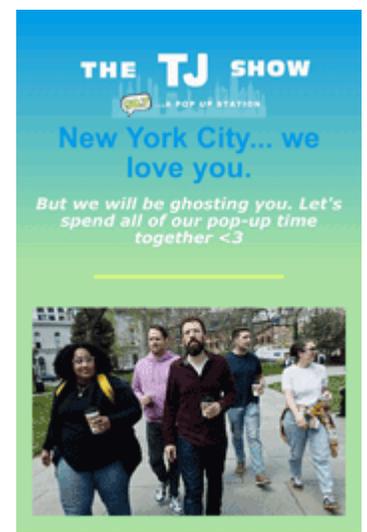
website currently reads: *"New York City… we love you… but we will be ghosting you. Let's spend all of our pop-up time together <3"* (Don't ask me what the '<3' indicates!) TJ 98.7 plays a wide mix of familiar alternative rock spiced with other songs nearly everyone knows.

An interesting sidebar about the music and integrated format of TJ 98.7: The entire station's sound is provided by Radio Cloud, "the first 100% cloud-native radio automation, content management and production platform" that is *AI* driven. Hand your station over to Radio Cloud, decide your format and let them do the rest. It is efficient and fulfilling with nearly no overhead or staff. It's perfect for year 2024 radio… isn't it? Quick review: It is slick sounding but incredibly robotic with no personality or soul! All the details: https://www.radio.cloud.

Consolidation in Connecticut

More chaos was brewing, this time in Bridgeport, Connecticut. Another station owner has built an empire around an *AM radio station.* Connoisseur Media owns decades old WICC 600 AM with a tower sitting nearly in the water along Long Beach peninsula in Bridgeport Harbor. With only 1000 watts, but an excellent low frequency and perfectly soggy tower location offering great ground conductivity, WICC can be heard all over Southern New England and beyond. WICC 600 has been on the air for 97 years — first broadcasting on November 8, 1926!

AM radio is not easy to hear clearly in this age of electromagnetic noise. Connoisseur first added WICC audio to HD-2 channels on their predominant wide-range FM rockers WPLR 99.1 and WEBE 107.9 FM. They also took advantage of the FCC's FM translator program specifically to boost the stature of AM radio stations and added low power W297CP (250 watts on a 289 foot tower) on 107.3 FM to serve Bridgeport. Suddenly, all FM radios could easily hear a clearer signal from WICC.

The WICC upgrades continued: On Tuesday, September 3, 2024, Connoisseur flipped their rocker WFOX 95.9 FM to now carry the audio of WICC news-talk 600 giving it another huge authoritarian FM signal covering the entire state of Connecticut in full stereo. Does this strategy sound familiar? WICC is known for its heavy load of local talk programming with ethnic programming and really old pop hits on weekends. It also features CBS News Radio's familiar top-of-the-hour nationwide news broadcasts formerly heard on WCBS 880 AM. Surprise! WCBS 880 keystone anchor Brigitte Quinn

will soon be anchoring a talk show on WICC weekdays from noon until 2 pm beginning September 30th.

Former WCBS-AM anchor Brigitte Quinn will join WICC in late September 2024.

Connoisseur merged WICC with WFOX to consolidate operations and reduce overhead while increasing audience ratings, signal penetration and brand identity serving the entire state. What a powerful upgrade!

Always remember: Radio is primarily a business that demands a firm business model and good profits. All other concerns are secondary! WICC 600 is also available via streaming through a multiple of outlets. See: https://www.wicc600.com/listen/ for details. WICC is also on the popular TuneIn app over the web to all your devices and via Roku.

Launching AM/FM simulcasts is a very popular trend in the 2020s. Most surviving and dominant AMs now have a simulcast voice on FM. It is probably only a matter of time before corporate actions are made to further decrease operating expenses and overhead by turning off the inefficient AM outlets. Radio station owners always want to increase their profits and show financial growth.

Will the day ever come when we ask "Alexa? What is radio?" and not get an answer? The world is rapidly adopting digital streaming. It is fast becoming the long-term future of audio distribution.

Never Ending

If you long for more WCBS Newsradio 880 memories, please visit the remarkable website, hosted by Don Swaim, "The WCBS All-News 88 Appreciation Site": https://donswaim.com/wcbsnewsradio88.html.

PCARA news is heard on our two weekly gatherings on the PCARA repeater — 146.670 MHz — minus 600 kHz offset — 156.7 Hz PL, Tuesday and Thursday nights starting at 8:00 pm. Tune in and join in!

History marches on! What will happen next? What will 98.7 FM become?… *"and what about… Naomi?"*

Until we meet again, 73 and dit dit de N2KZ "The Old Goat."

NY QSO Party 2024

The New York QSO Party is scheduled for Saturday October 19, from 10:00 a.m. to 10:00 p.m. ET, or 1400z October 19 to 0200z on October 20.

David KD2EVI has been in touch with Mike KM2B of Rochester DX Association regarding QSO Party plaques. David has requested that plaques for NY SSB Low Power and Non-NY SSB Low Power categories should be reserved for PCARA sponsorship. (NYQP 'Low power' means 5-100 watts. Less than 5 watts is classified as QRP.)

At the time of writing, rules for NYQP 2024 have not yet been published, and the 2023 rules are still listed. Rules for 2024 should appear on the web site shortly at: https://nyqp.org.

Club entry

Unfortunately, Joe WA2MCR is unable to host a multi-member entry for the New York QSO Party from his sun-room this year. PCARA members are invited to submit their own **individual** entries in a similar manner to 2023 and the COVID-restricted situation of 2020.

PCARA members taking part from their own stations, whether at home or in the field, can have their scores accumulated for the combined "New York Club high score". When submitting your entry, please indicate your Club Name as "Peekskill/Cortlandt ARA". Various categories are available for individual stations including: Single operator, Mobile, Portable. Power can be: High, Low or QRP. Mode options are: CW only, Phone only or Mixed mode — meaning any combination of Phone, CW, and RTTY/digital modes that sup-
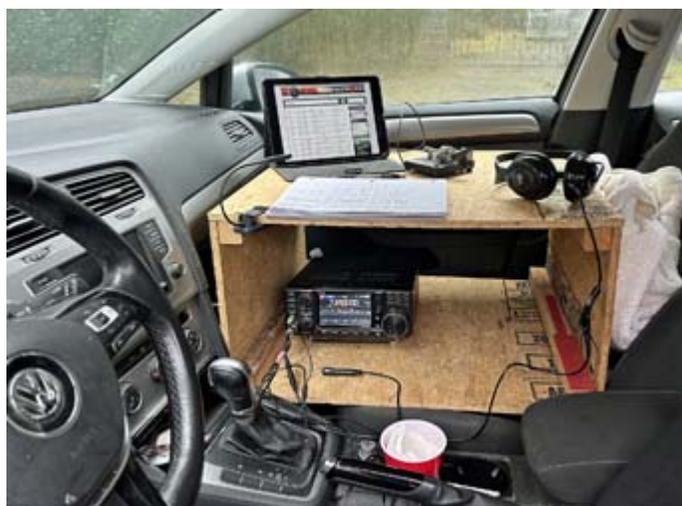
For NYQP 2023, David K2WPM operated from Trump State Park in Westchester and from Fahnestock State Park in Putnam County. The cabinet on the passenger seat housed: Icom IC-7300, iPad, log, CW key and lighting. K2WPM scored 65,962 points, setting a new record for the low-power, mixed-mode portable category. [K2WPM pic.]

Map shows the 62 Counties of New York State. When worked in New York's QSO Party, each of the 62 New York Counties, 50 US states and 13 Canadian provinces are counted as multipliers for calculation of the final score.

port the NYQP exchange requirements. Digital modes that do not natively support the NYQP exchange may not be used in NYQP.

When and what

The contest starts at 10:00 a.m. Eastern on Saturday October 19 and runs for 12 hours until 10:00 p.m. that same evening. For the contest exchange, New York State stations send signal report plus county, using a three-letter abbreviation for the county name. Westchester County is WES and Putnam County is PUT. Stations outside New York will send their Signal Report plus State, Province or "DX". Full rules, including the list of three-letter county codes, should be found at the New York QSO Party web site: https://nyqp.org/wordpress/.

Logging software

When operating from your own station, if you would like to employ the same computer logging software that is used at other PCARA events, N3FJP's State QSO Party logging programs are available from the following page: https://n3fjp.com/stateqsoparty.html. Registration for the NY State program is $8.99, or you can register all of N3FJP's logging programs for $59.99. The current version is 2.2.6, so if you purchased an earlier version, you may need to download a free update.

The N1MM Logger, https://n1mmwp.hamdocs.com/ can also be used. Set-up instructions are available at the NYQP web site under "Info you can use".

Run Against Hunger 2024

Decade of support

This year will be the **tenth** time that PCARA and WECA have been invited to provide communications support for the Annual Harry Chapin Memorial Run/Walk Against Hunger, which takes place on Sunday October 20th, 2024. The first Run Against Hunger was organized in Croton-on-Hudson to honor singer-songwriter Harry Chapin who died in a Long Island auto-accident in 1981. This year will be the 44th occasion that the event has been commemorated.

Ten hungry years ago

PCARA took part in the Run for the first time in October 2014. Westchester Emergency Communications Association (WECA) had been approached for radio support but they had a prior engagement for an equestrian event in Sleepy Hollow. Nevertheless, WECA was able to join in the planning and provide operators.

Greg KB2CQE and NM9J carried out an advance radio survey, with KB2CQE/M driving around the 10K course while NM9J/M stayed at Croton-Harmon High School. Simplex coverage on 2 meters was satisfactory, apart from an area east of the New Croton Dam — which is shielded by higher ground.

Radio arrangements on the day were similar to the mobile test, with NM9J located in the school parking lot, in simplex communication with stations located around the course at mile posts and water stops. Greg KB2CQE was shadowing the race organizers in the school grounds. PCARA members taking part included

*During PCARA's **first** participation in the Run Against Hunger in 2014, Greg KB2CQE was equipped with multiple HTs as he shadowed the race organizers.*

Ray W2CH with Marylyn KC2NKU and Henry KB2VJP. Henry was located at the shielded Mile Post 3 and had to use the W2NYW 146.67 repeater for communication. We were assisted by members of WECA and Stamford ARA positioned around the course. (See *PCUD* November 2014.)

Station/location whiteboard as used at the first event in 2014.

Sunday schedule October 20, 2024

Timing of the races **this** year will be similar to last year's event. The 5K Race/Walk starts at 8:30 a.m. This is followed by the 10K Race which begins at 10:00 a.m. The final event of the day is the 1-mile Fun Run which begins at 11:45 a.m. With the exception of the 'Fun Run', start and finish lines are all close to Croton-Harmon High School.

5K Race & Walk, 8:30 a.m. – 9:30 a.m.

The 5K Run/Walk begins near the High School and continues along Old Post Road South, down Truesdale Drive, east on Cedar Lane, then north up Nordica Drive and Truesdale Drive, through Croton Gorge and returning down Cleveland Drive to the High School.

10K Race, 10:00 a.m. – 11:30 a.m.

Starting from near Croton-Harmon High School on Old Post Road South, north on Cleveland Drive, left on Gerstein Street and right on Wood Road onto Rt 129. Left onto Batten Road, then across the New Croton Dam. Return is along Quaker Ridge Road, crossing the river at Quaker Bridge Road, then Rt.129 to Jacoby Street and returning down Cleveland Avenue to Old Post Road South and the High School.

One Mile Fun Run, 11:45 a.m. – 12:30 p.m.

The start point of this run/walk is on Cleveland Drive, south of Veteran's Corners. North on Cleveland Drive to CET (Carrie E Tompkins) Elementary School on Gerstein Street, then back along Cleveland Drive, finishing at the High School.

Full details of the three race routes are available at the Run Against Hunger web site, https://runagainsthunger.com/course/. A planning session will be arranged in early October to review PCARA's participation. Information about frequencies, radio stations and water stops will be available from Greg KB2CQE — contact Greg using mail'at'pcara.org for details. Setup for Net Control should begin around 7:30 - 8:00 a.m., in the usual location on the school driveway.

River Journal North

Back in April 2024, Lou KD2ITZ was approached by journalist Marc Ferris regarding an article about PCARA for *River Journal North.* Marc was unable to attend the April meeting so he had a separate conversation with Lou and David KD2EVI, then sought pictures of PCARA activities.

River Journal North is published on a monthly basis and mailed out to residents of Buchanan, Croton-on-Hudson, Cortlandt Manor, Crugers, Mohegan Lake, Montrose, Peekskill and Verplanck. The article about PCARA appears on page 10 of the September 2024 issue and is reproduced below. Past issues are available at: https://riverjournalonline.com/category/print-issues/.

HAMMING IT UP

Connecting the Dots ...and Dashes

Story and Photo by Marc Ferris

Morse Code lives. As an energy-efficient way to send long-distance messages, it attracts the attention and devotion of some, but not all, members of the **Peekskill-Cortlandt Amateur Radio Association**.

Navy ships may still flash coded dot-dash lights to other vessels, but its use today is mostly academic. Club Secretary **Lou Cassetta** uses a vintage brass telegraph key to send those instantly identifiable signals from his home for fun.

"1 love the sound, the rhythm, the musicality," he said. "Also, the historical reenactment part of it, there's a tradition of operators stretching back generations and it's nice to perpetuate that." He and other club members are known by their Star Wars-like call signs, which are assigned by the Federal

'I love the sound, the rhythm, the musicality [of Morse Code]' — Lou Cassetta, Amateur Radio Enthusiast (with vintage brass telegraph key)

Communications Commission when amateur radio practitioners pass a licensing exam.

***

Cassetta's is KD2ITZ, which he is required to repeat at least once every ten minutes while on the air. These folks aren't hosting sports or politics shows. They want to know that their gear is working and enjoy hearing other people's voices over their machinery.

Treasurer **David KD2EVI Fredsall** said that the hobby presents a low bar for entry. He got started with a $35 radio and took the test after the FCC dropped the Morse Code requirement.

"I figured if I didn't enjoy it, I wouldn't be out very much," he said.

The nonprofit formed in 2000 after bringing their first repeater (W2NYW) online. It turns low-level signals from individuals to stronger ones and are preferably located at as high an altitude as possible. In subsequent years, the club added two more.

***

Some members are interested in ham radio's history and engineering. Newsletter editor **Malcolm Pritchard** (who uses the byline NM9J, not his name) found a 1970s portable short-wave radio from England and examined the history of the manufacturer, its internal components and frequency changes at the BBC in 1978.

But manning a radio — and it is mostly older men, said Fredsall — is solitary even if an operator is communicating with a person halfway around the globe.

One member drops in on a regular basis with another ham in Australia because they figured out when to tap into ethereal radio frequencies that depend on how the sun interacts with the ionosphere, said Cassetta.

"We help each other out with technical issues and the camaraderie is value-added," said Fredsall.

Practical endeavors include visiting schools, offering exam preparation for the licensing test and giving talks in local libraries (like **Charles N2SO Tropp**, who presented Morse Code Ancient Technology or Vital Tool?)

***

They also set up at the **Harry Chapin Run for Hunger** in Croton-on-Hudson and host an annual holiday dinner at **Cortlandt Colonial Restaurant**.

In the only-they-would-find-this-interesting department, members also hold semi-annual "foxhunts" where they search for hidden transmitters at **FDR State Park** in **Yorktown**, using a Yagi directional antenna constructed from a cut-up tape measure.

"There's nothing more exciting than setting up a radio antenna, turning it on and making contact with other amateurs miles away or on the other side of the world," said Cassetta.

But that Morse Code is also something: "You have to really pay attention. Right now [speaking on the phone], I'm walking back and forth, but you have to lock in and be engaged when you're communicating that way."

Northeast HamXposition
August 22-25, 2024

PCARA Update has received **three** reports on this year's Northeast HamXposition — from Lovji N2CKD, Rob AD2CT and David KD2EVI. They provide complementary and contrasting views of the popular event.

HamXposition - N2CKD

On Friday August 23rd I attended the Northeast HamXposition and ARRL New England Division Convention in Marlborough, MA — an annual event, which I have wanted to check out for some time.

I arrived just before noon on Friday and headed straight to the outdoor flea market where there were quite a few vendors still in the process of setting up. Some of the vendors were the same as those who show up at the OCARC and other Hamfests. I found a few local tailgaters with vintage equipment to sell. I was expecting to see a much bigger flea market and was told the market is bigger and better attended on Saturday.

Flea market at Northeast HamXposition, 2024. [N2CKD pics].

I headed inside the Best Western Royal Plaza Hotel to register and paid a $25 fee for the 3-day event — which covered the flea market, exhibits, seminars and workshops. It did not include the Convention Banquet

Venue for HamXposition 2024 was the Best Western Royal Plaza Hotel in Marlborough, MA.

Another section of the outdoor flea market.

or other dinners. HamXpo activities included W1XPO GOTA Station, DXCC Card Checking, FoxBox (find the hidden fox), Mini-Contest University, POTA, NWS Skywarn and ARRL-ARES. A full list of forums, seminars and schedule are in the Convention guide.

In the hotel lobby, a kit building workshop was set-up, where I saw a few ladies soldering away. There were many forums, seminars and tracks being held on all three days. I attended a few and found them interesting. In one of the seminars, I saw PCARA ham friends David KD2EVI, Ray W2CH and Marilyn KC2NKU in attendance but regrettably, was unable to make contact.

The main exhibit hall was not open on Friday as they were still setting up exhibits. I happened to walk-in and was greeted by New England Division Director Fred Kemmerer, AB1OC. I had a nice conversation with him and he filled me in with news about section activities including satellite and high-altitude balloon launches at the Nashua Area Radio Society, https://www.n1fd.org/.

Some items from the 2024 HamXpo Schedule: Thursday evening, August 22nd featured a comedy kick-off with Juston McKinney. On Friday August 23rd, there was a dinner talk by well-known DXer and contester Yuri Onipko VE3DZ. One door prize that day was a $500 gift card from DX Engineering. The keynote speaker on Saturday morning was ARRL Education and Learning Manager Steve Goodgame, K5ATA, on STEM and the ARRL Teachers Institute. The Convention Banquet on Saturday featured a talk by Dr. Tamitha Skov, WX6SWW, also known as the Space Weather Woman. The door prize that day was a Yaesu FT-710. Other door prizes included an Icom IC-705, ID-50A and Xiegu X6100.

The event was well organized with good seminars, exhibits, activities and flea market — all for a reasonable entry fee. Congratulations, to Bob DeMattia, K1IW Chairman, HamXposition 2024 and his team for organizing the event.

- 73 de Lovji, N2CKD

My first HamXposition

- AD2CT

Here are some of my experiences and impressions at HamXposition 2024, the first large amateur radio conference I've attended.

My XYL and I arrived on Thursday night, and had the good fortune to meet up with David KD2EVI, Ray W2CH, and Marylyn KC2NKU at the hotel. We all went for a leisurely dinner at a nearby Longhorn Steakhouse, with John, W1SMN.

L to R: Ray W2CH, Marylyn KC2NKU, David KD2EVI, and Rob AD2CT in the exhibit hall at HamXpo. [AD2CT pics.]

On Friday I spent the afternoon in the Kit-Building Workshop held in the lobby atrium. This was run by Bob Phinney, K5TEC, who is the founder of New England Sci-Tech. Their mission statement, according to their website, https://nescitech.org, is as follows:

"New England Sci-Tech is a non-profit STEM education center and maker space dedicated to project-based, hands-on learning for youth and families across the New England community. Our mission is to promote development of a STEM-literate and skilled citizenry ready to meet the needs of the 21st century and beyond."

The workshop was extremely helpful, since up to then I had limited experience with soldering. Bob was a patient instructor, examining all soldered joints I made and giving me a number of tips and suggestions. The result of my work was a Morse Code oscillator.

Morse Code oscillator constructed by Rob AD2CT at the kit-building workshop.

The indoor exhibit hall and outdoor flea market were decent sizes for a regional conference.

The exhibit hall at HamXposition 2024.

While I didn't purchase anything at the flea market, I did pick up a Uniden SDS100 digital police scanner from Scanner Master, https://www.scannermaster.com — fortunately, at a "show price." I also picked up a Lil' Squall transceiver kit from QRPme, https://qrpme.com, the perfect way for me to continue practicing my soldering.

Flea market panoramic view.

The Friday night dinner featured a talk by Yuri Onipko, VE3DZ, who is a well-known international DXer with over 50 years of experience DXing and contesting from a multitude of locations around the world. He spoke at length mainly about his experiences in Eastern Europe, South America, and the Caribbean.

On Saturday, I attended these 3 seminars:

- APRS Secrets – Gary Francis Thomas, AA1UE
- Introduction to Winlink – Rory Griffin W4RJG
- "Spy" Radios and Secret Clandestine Communications – Tom Perera, W1TP, Michael Crestohl W1RC, George Rancourt K1ANX.

The APRS and Winlink seminars were good introductions for me to these digital messaging systems. The spy radio seminar was also informative, and covered covert methods of radio communication from — amazingly — Civil War to the present day. The Civil War spy set merely consisted of a straight key and a couple of wires, which could be thrown over unshielded telegraph lines in order to intercept Morse code messages.

Tom W1TP also had a selection of spy radios on display, which we could handle and examine. One of the radios was a British spy radio "on loan" from a dealer in the outdoor flea market. I must've walked right past it in the flea market, not knowing what it was.

Spy radios on display at presentation by Tom Perera W1TP. More spy radios can be seen on web site "W1TP Telegraph & Scientific Instrument Museums", http://w1tp.com.

The Saturday night dinner featured a talk by Tamitha Skov, PhD, WX6SWW, who is well known on social media as the "Space Weather Woman." I've seen one of her talks on the Ham Radio Crash Course YouTube channel.

Sadly, before her talk she announced that a close friend and radio operator, Paul Graveline, K1YUB, of Andover MA, had passed away August 19, 2024. Paul had served on the boards of the Somerville Amateur Radio Club and the Billerica Amateur Radio Society (BARS). Paul also was an Assistant Editor of, and contributor to, *The AMSAT Journal*, and had served on a team developing a CUBESAT simulator. He had previously interviewed Dr. Skov, in a cover story for *The AMSAT Journal*'s 2022 Jan/Feb edition, and had most recently served on the Steering Committee for Dr. Skov's Space Weather Woman project.

Dr. Tamitha Skov, WX6SWW. See: https://www.spaceweatherwoman.com/

The most impactful part of her presentation to me was how space weather not only affects radio propagation, but can also interfere with a number of important regional and national functions that depend on radio communication. These include, but are not limited to, satellite radio, television, internet, and mobile technologies; airline communication, and thus transportation; GPS navigation and precision farming; financial markets and precise timing applications; and cloud-based services.

All in all, I had an interesting and enjoyable time at HamXposition 2024. I hope to attend next year as well.

- Rob AD2CT

Northeast HamXposition 2024 – KD2EVI

I attended the Northeast HamXposition (HamXpo) in Marlborough MA again this past August 22-25. Also attending from PCARA were Rob, AD2CT, his XYL: Ray, W2CH; and Marylyn KC2NKU.

HamXpo was held in the same location as in recent years; the Best Western Hotel in Marlborough. I arrived Thursday afternoon and left Sunday morning. Drive time from our area is between 3 to 4 hours, depending on traffic. Busy traffic can almost be guaranteed on I-90 in Massachusetts and Sunday traffic on

Best Western Royal Plaza Hotel in Marlborough, MA. [KD2EVI pics.]

I-84 in Connecticut was often slow. The hotel has pleasant rooms, free breakfast, ample parking and — in a change from the Covid-era — daily room cleaning has resumed. The hotel restaurant is only open for dinner Friday and Saturday evenings, but there are a number of restaurants nearby. I did not attend the Thursday comedy show or the Friday and Saturday banquets.

The flea market opened on Saturday at 9:00 a.m. and had many vendors. Commercial vendors were inside and included Elecraft, ARRL, AMSAT and Quicksilver Radio. The flea market is fairly large. There, I purchased a 12 ft length of RG-8X coax, the ARRL *Antenna Book* from 1975, and a well-used MFJ-962D antenna tuner. I am still going over the tuner, and hope to have something about it in a future *PCARA Update*.

HamXposition outdoor flea market.

What makes the conference worthwhile to me is the variety of workshops, talks and classes. Up to a dozen different talks will be going on at any one time

between 9:00 a.m. and 4:00 p.m. The problem is deciding among the talks as there may be two or more that you are interested in attending at the same time. The events change from year to year. The Minuteman Repeater Association ran a fox hunt Friday and Saturday on the hotel grounds, but I did not take part.

What did I participate in? Along with W2CH and KC2NKU, we listened to Greg Algieri, WA1VUG discuss phase noise. This is noise originating in our equipment, and is usually not a major concern with modern ham radios.

Greg Bonaguide WA1JXR gave an excellent presentation on the tinySA® spectrum analyzer. The tinySA uses the same hardware (display, housing) as the NanoVNA. There are two versions, one with a 2.8" screen and a larger 4" version. Greg explained that, in

4-inch screen tinySA-Ultra spectrum analyzer. [https://www.tinysa.org/wiki/]

addition to being easier to read, the larger spectrum analyzer has more sophisticated software and is more accurate. I do not think I need a spectrum analyzer for my shack, but it is amazing what $150 (4 inch version) will buy in test equipment. Greg WA1JXR was kind enough to send me a soft copy of his PowerPoint deck and I can share that with anyone who is interested.

The 2024 keynote speaker on Saturday August 24 was Steve Goodman, K5ATA. Steve is head of the ARRL's Education and Learning Department. A former teacher, he explained how the League is reaching out to schools and teachers and expanding the ARRL Teachers Institute. While many schools had amateur radio clubs in the 1960s and 70's (mine did), the League did not maintain efforts to help the school clubs and many disappeared. He is hopeful that the invigorated program will bring young people into our hobby and reminded clubs that they should not discourage young hams.

AMSAT was represented by Burns Fisher, WB1FJ. AMSAT has a couple of amateur satellites being developed. A higher orbit is being planned for a future launch. This will give greater coverage than existing low earth orbit satellites. Their booth had a 3D-printed model of a linear (SSB) satellite they are developing. I walked past the model several times before I recognized what it was. The satellite was much smaller than I expected. Without solar cells, the satellite is $10 \times 10 \times 30$ centimeters (approximately 4 inches on a side and 12 inches in length). To keep costs down, processors designed for the automobile industry are being used, as they are made for a somewhat challenging en-

vironment. Many existing CubeSats are even smaller at $10 \times 10 \times 10$ centimeters.

Satellite AO-91, launched in 2017, is still active, but has suffered battery failure and only works when in sunlight. AO-91 is an FM satellite using 435.250 MHz for the up-link and a 145.960 MHz downlink.

I enjoyed Charles (Smitty) Smith's, KC1IKA, talk on off-grid and portable operations. He is active in Emcomm and ARES and has almost all of his equipment, radios, batteries, laptop computer, stored in Pelican-style cases for portability. The emphasis of this talk was on portability and being able to sustain operations in the field without access to commercial power. In addition to multiple batteries, solar cells are used. After listening to Smitty, I am planning to move my Yaesu FT-817 to a Harbor Freight copy of the Pelican case and add a $LiFePO_4$ battery to the case.

3D-printed mock-up of CubeSat linear satellite.

Lab599 Discovery TX-500 10W portable radio with Digirig digital modes interface set-up in portable case by Smitty KC1IKA.

For sustained mobile operations Smitty uses a lead-acid gel battery powered through a West Mountain Radio ISOpwr+ to run an Icom ID-4100 50 watt dual band mobile. The ISOpwr+ isolates the second battery from the vehicle's electrical system, allowing radio use without depleting the vehicle's main battery when the car is not running and charges the second battery when the engine is running. The mobile radio — except for the control head and ex-

West Mountain Radio ISOpwr+ isolates and charges a 12 volt auxiliary battery.

ternal speaker — is mounted in the trunk.

I think this method will be an improvement over the go-box I currently have in my Audi A3. Right now I use a plastic .50 caliber ammo can to hold a TYT TH-8600 (25/20 watt) mobile and a small Bioenno LiFePO₄ battery for mobile use in the Audi. It works, but the Bioenno battery must be recharged from a 110 volt charger and the TYT, not having a separate control head, sits in the ammo box on the car floor, and is not as easy to operate as the Icom IC-2730 in my truck. This project will have to wait until the ISOpwr+ is back in stock at West Mountain Radio.

Go-box described by David KD2EVI in PCARA Update, September 2023. Lower left: 4.5 Ah LiFePO₄ battery with AC charger. Lower right: TYT TH-8600 VHF/UHF transceiver inside the ammo box. [KD2EVI pic.]

I scanned the printed and bound(!) slide deck and can have a soft copy available.

There were other presentations of interest I could have attended with better planning, but there's always next year. I enjoyed HamXpo, learned some new things, and would recommend it to any ham who wants to learn.

- David KD2EVI

Fall foxhunt October 26

PCARA's next Foxhunt is scheduled for 10:00 a.m. on Saturday October 26th. The rules will be similar to previous PCARA events in FDR State Park. Here are the **Foxhunt rules** courtesy of Lou, KD2ITZ:

PCARA's radio fox with Halloween hat.

- Transmission: FM simplex on 146.565 MHz.
- Transmissions start at 10:00 a.m.
- All are welcome to participate.
- Participants must start in the Pool Parking Lot.
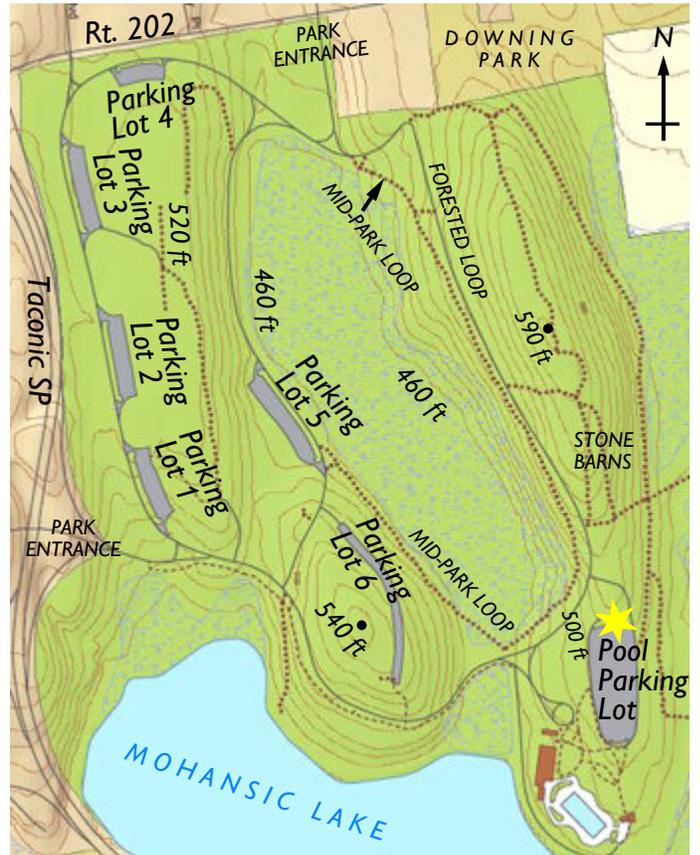
Map of FDR State Park showing Foxhunt start point in Pool Parking Lot. [Base Map: NYS Parks].

- Participants are not allowed to enter FDR Park before 9:45 a.m.
- The transmitter will be hidden within the confines of FDR Park.
- Please be mindful of **other events** scheduled for October 26 including "The FDR Ghoul's Fest" Disc Golf tournament on the Disc Golf and Ace Place courses near Parking Lots 1 and 4.
- Once the event begins, participants must remain on foot, without assistance of vehicles of any kind.
- Participants are encouraged to work in groups of two or three.
- Participants who locate the transmitter should discreetly inform the event coordinator who will note the time. Avoid revealing the site to other participants who are still hunting.
- The participant who locates the transmitter in the least amount of time will be invited to assume the role of fox at the next event.
- Any changes due to weather or unforeseen circumstances will be posted to the PCARA Google Group and Facebook Page.

Not your father's Pi

Baking the first Pi

In 2006, Eben Upton and colleagues at the University of Cambridge Computer Laboratory became concerned that each year their new students were fewer in number and with less hands-on experience. Earlier generations had grown up with home computers such as the Sinclair Spectrum, BBC Micro and Commodore 64 — which could be programmed and experimented with.

The Cambridge group began design of a small, inexpensive computer with programming capabilities suitable for youngsters. They were assisted by recent developments in powerful processors for battery-powered mobile devices. The Raspberry Pi Model B began production in 2011 and within two years had sold over two million units.

Eben Upton [Credit: Ashley Basil, CC BY-SA 2.0, cropped.]

The Raspberry Pi Model B incorporated two USB 2.0 ports, Ethernet, HDMI/composite video and audio outputs, plus a general-purpose input/output (GPIO) connector — all on a single, credit-card sized board. When combined with keyboard, mouse and an HDMI-capable TV it became a home or school desktop system ready for programming and experimentation.

Old Pi

I have owned a couple of early Raspberry Pi single-board computers. Back in 2015, I purchased a Raspberry Pi 2 Model B at Sussex Hamfest. In 2016, I upgraded to the then-new Raspberry Pi 3 Model B, part of a Vilros "Complete Starter Kit".

Fresh Pi

My Raspberry Pi 2 and Raspberry Pi 3 added several improvements over the original Pi 1B, including more RAM, faster processors and additional USB ports. The Raspberry Pi 3 added Bluetooth and WiFi capability, all on a small, single-board computer. These products were built at the Sony UK Technology Centre in Pencoed, South Wales. The recommended operating system, Raspberry Pi OS, was a Debian-based version of Linux.

I kept my Raspberry Pi 3 in one corner of the radio room, sharing monitor and keyboard with two other

Raspberry Pi 2 Model B.

computers. The Raspberry Pi 4 was released in 2019, just before COVID, and almost immediately ran into supply chain issues. I hung on to my old RPi 3.

More powerful Pi

I had been following news of the latest **Raspberry Pi 5** following its announcement in September 2023, with various accessories introduced during 2024. Everything on the new model is faster thanks to a Broadcom **s**ystem **o**n a **c**hip (**SoC**) containing a 2.4 GHz quad-core 64-bit processor plus graphics processing unit. There is more memory (2, 4 or 8 GB RAM), a PCIe 2 interface for fast peripherals, USB 3.0 ports and a real time clock. The Raspberry Pi 3's full-size HDMI socket, composite video and audio outputs have all been replaced by a *pair* of micro-HDMI ports. The recommended operating system is Raspberry Pi's version of the latest Debian release, named "Bookworm".
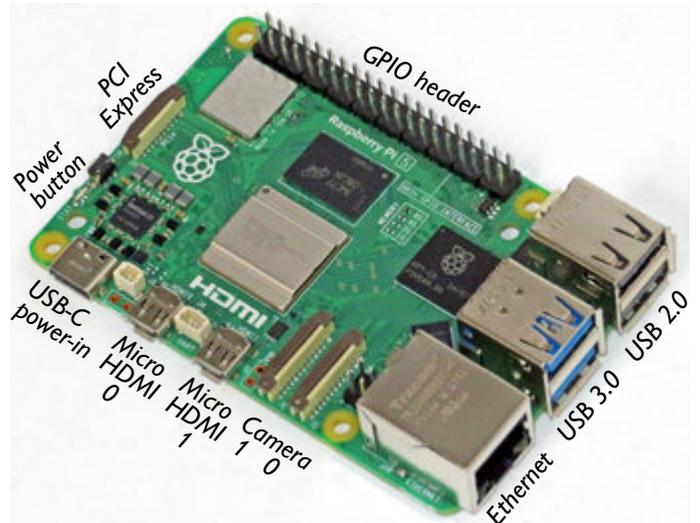
The new Raspberry Pi 5 single board computer, with input/output connections labeled. [NM9J pics.]

I ordered an 8GB "Raspberry Pi 5 Desktop Kit" from PiShop.us, https://www.pishop.us/. In the box was the RPi itself, a microSD card with Raspbian operating system, plastic case with fan, 27W power supply, keyboard, mouse, a pair of micro-HDMI to HDMI cables and a 286-page guide. I ordered some additional accessories from PiShop.us and Amazon.

Contents of the Raspberry Pi 5 Desktop Kit including Beginner's Guide, board, microSD, official power supply, mouse, plastic case, keyboard and micro-HDMI cables.

Switch-on surprise

For a first test, I assembled the RPi5 circuit board in its red/white plastic case, attached the case fan to the computer board, cabled the keyboard and mouse to a USB-2.0 socket then found an old HP monitor with HDMI connector for video and audio output. After connecting my network cable and official 27W power supply, I switched on and saw a splash screen announcing: "Welcome to the Raspberry Pi Desktop, Powered by Raspberry Pi OS (32 bit)". This was followed by a setup wizard allowing choice of country, username and browser. After restarting, the desktop graphical user interface appeared.

Raspberry Pi 5 Desktop Kit after first switch-on. The initial desktop wallpaper is named "fisherman.jpg".

This startup was smoother than on my first Raspberry Pi — where the computer boots to the Linux command line interface (CLI), waits for manual entry of username and password, then required a typed-in command (`startx`) to enter the desktop environment.

I followed instructions to install updates then took a tour around the desktop. The Applications Menu (see alongside) had some familiar items while others were missing.

Instead of a single Internet browser, the new Pi OS provides a choice of either Chromium or

Raspberry Pi 5 menu is obtained by clicking on the Raspberry Pi icon, top left.

Firefox. I had chosen Firefox as default browser and was soon reading news items from the ARRL web site. I switched to BBC News — and saw an immediate error message… "Gah. Your tab just crashed". This behavior was repeated on other web sites. I checked the forums and tried suggested solutions without success. The alternative browser — Chromium — was not affected by this bug.

Super 64 bits

The Firefox error was annoying me, and the splash screen advertising "Raspberry Pi OS (32 bit)" was still fresh in my mind. I checked the "Getting started" instructions at https://www.raspberrypi.com/documentation where there is a strong recommendation to install the **64-bit** version of the operating system. The supplied microSD card only contained the 32-bit version.

I followed instructions to download "Raspberry Pi Imager" software to my Windows notebook, inserted a new SanDisk 64GB microSDXC card with adapter into the notebook's SD-card slot, selected my computer model then opted for "Raspberry Pi OS (64-bit)". After customizing the installation, I transferred the new microSD card to the Raspberry Pi 5 and started the new version of the operating system. I was pleased to see that the 64-bit version booted successfully, then I was delighted to find that Firefox's crash problem was resolved. Excellent!

Creation of new microSD cards with different versions of the operating system (OS) is a highlight of the Raspberry Pi. It

Inserting a 64GB microSD card into the Raspberry Pi 5.

takes less than a minute to shut down, pop out a previous card then insert a new card with a different OS or a different set of software. 32GB and 64GB microSD cards are readily available and not very expensive.
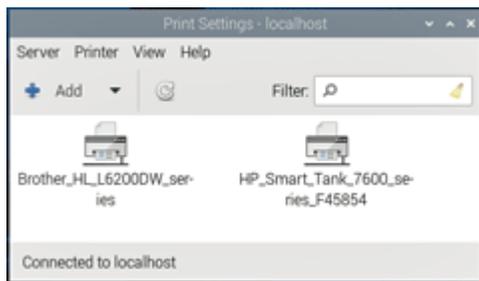
Printing Pi

One of the weak points of the Raspberry Pi used to be printer support. You could install the free "LibreOffice" suite, generate documents, drawings and spreadsheets compatible with Microsoft Office — but printing them out was very difficult.

Life is easier with newer versions of the Raspberry Pi OS. "CUPS" (Common Unix Printing Standard) software is already installed. All you need to do is connect a printer.

I switched on my two network printers and waited for them to become available on the local area network. From the Raspberry Pi 5 desktop Applications Menu I selected "Preferences" → "Print Settings". I

could see a "Print Settings – localhost" window with named icons for my two network printers. Right clicking on each brings up

'Print Settings' shows connected printers.

a menu of options including "Properties" where printer settings could be modified.

Documents created in LibreOffice can now be printed out — with all the different fonts included with the Raspberry PiOS, and added to by LibreOffice.

Cooling a hot Pi

The Raspberry Pi 5 can be run without forced air cooling — but prolonged, intensive computing can raise the temperature to a point where the processor speed is throttled back. This begins at 80°C, then the CPU is slowed even further as the temperature reaches 85°C

The official Raspberry Pi 5 case includes a red plastic base into which the Raspberry Pi board clips, a semi-transparent frame that supports a small fan, and a white lid that clips on top. The case

Raspberry Pi 5 board mounted in the official case. White frame contains the case fan, which is wired to the board.

comes with a small heat sink for the SoC plus four rubber feet to raise the base slightly, allowing air flow through the bottom vents.

The case fan switches on at 67.5°C then speeds up as the temperature increases. This work fine — with one problem… the case fan is not compatible with accessories that mount above the Raspberry Pi board, known as HATs (for **H**ardware **A**ttached on **T**op).
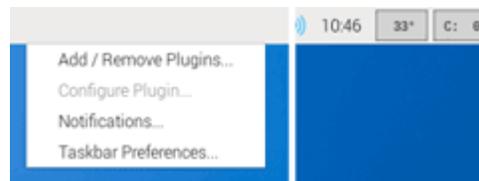
Raspberry Pi's official solution is the RPi 5 **Active Cooler**, a small anodized aluminum heat sink with temperature-con-

Raspberry Pi 5 Active Cooler mounts onto the RPi 5 board with two push-pins.

trolled fan attached. Pre-applied thermal pads transfer heat from the SoC, wireless and power management devices. The unit mounts onto the Raspberry Pi 5 board using spring-loaded push pins.

I installed the Active Cooler on my own RPi 5 and noted the fan's different speeds. You can monitor CPU temperature and load from the desktop by right-clicking on the taskbar, then adding plugins for "CPU" and "CPU Temp". With the Active Cooler in position, the case lid will

By right-clicking on the taskbar (top left), plugin indicators for CPU Temperature °C and CPU Load can be added (top right).

still fit on top, provided the original fan has been removed from the frame.

To SD or not to SD?

From the beginning, Raspberry Pi models have employed SD (**S**ecure **D**igital) card technology to hold the operating system, software and file storage. SD cards were originally developed for digital cameras, camcorders and mobile devices that require removable, non-volatile flash memory. The SDHC and SDXC variants have higher capacity.

MicroSD cards have the same capabilities as full-size SD cards but are only half the size. They perform perfectly well in the Raspberry Pi — though there are concerns about relying on simple flash-memory for files that are overwritten time and time again. A better solution might be a solid-state drive (SSD) which is faster and designed for repeated read/write operations. An external drive, wired through one of the Pi's USB ports could be an option.

SanDisk 64GB microSDXC card.

The Raspberry Pi 5 includes **PCIe 2** (**P**eripheral **C**omponent **I**nterconnect **E**xpress 2.0) for fast peripherals. This opens the door to use of a modern, high-speed solid state drive (SSD).

Tip of the M.2 HAT

The official device for attaching M.2 M Key devices such as NVMe drives and AI accelerators is the Raspberry Pi **M.2 HAT+**. This inexpensive card attaches to the Raspberry Pi main board using four threaded spacers and 8 plastic screws. There is a ribbon cable for the PCIe connector, and a GPIO stacking header to extend the 40 GPIO pins up to the level of the M.2 HAT+.

I ordered an M.2 HAT+ from PiShop.us. Before installation, I followed instructions to make sure the Raspberry Pi's software and firmware were all up-to-date. I had to power down, remove cables from the Pi 5

and take the board out of its case. Four pillars were mounted above the Pi board with plastic screws, the GPIO stacking header was pushed onto the 40 pins, then the HAT+ was positioned above the Active Cooler, pushed down onto the GPIO pins and secured with four more screws. For the final step, a short ribbon cable connects the PCIe port on the Pi board to the HAT+.

Raspberry Pi M.2 HAT+ installed on top of the Raspberry Pi 5

Right sized drive

The M.2 HAT+ supports solid state drives with an 'M.2 M key' edge connector in the short 2230 or 2242 form factors. (Those numbers refer to a physical size of 22×30 mm or 22×42 mm).

*SK hynix 512 GB solid state drive in 2242 size. "M.2 M key" specifies an M.2 edge connector with **5** contacts alongside the notch.*

I ordered an inexpensive SK hynix SSD 512GB M.2 2242 NVMe drive from Amazon, along with an Eluteng M.2 NVME to USB Adapter.

The USB adapter was needed to install a copy of the Raspberry Pi OS onto the solid state drive using my Windows notebook computer. I repeated the procedure to use "Raspberry Pi Imager" software, loading the latest, 64-bit version onto the SK hynix 512 GB drive. Once the image was copied and verified, I transferred the new drive to the M.2 HAT+ and secured with a double-flanged screw.

I had already checked the boot up options using

512 GB solid state drive inserted into the Raspberry Pi M.2 HAT+.

"`sudo raspi-config`" in the command line interface, followed by: Advanced Options → Boot Order. My pre-ferred boot order was: SD Card then NVMe then USB. With the microSD Card removed, I switched on and saw the Raspberry Pi boot from the solid state drive into Raspberry Pi OS (64-bit). Boot time was reduced by a few seconds, with applications loading faster and behaving more responsively.

High hat case

My Raspberry Pi 5 with Active Cooler and M.2 HAT+ was now too tall to fit inside the official Raspberry Pi plastic case. I had ordered a larger case from PiShop.us. The "HighPi Pro 5S case for Raspberry Pi 5" is molded from black ABS, includes space for HATs, cooling vents, illuminated power button and slots for external cables. The Raspberry Pi 5 board snaps into the case and is then held firmly in place.

HighPi Pro 5S plastic case with Raspberry Pi 5 and solid state drive mounted inside. The ventilated case lid, which clips on top, is not shown.

Pi Applications

Whether you employ a microSD card or a solid state drive, your Raspberry Pi will only become truly useful with suitable software. The first three items that I installed on my own Raspberry Pi 5 were:

1. LibreOffice: This free software can be easily installed from Menu → Preferences → Recommended Software → Office → LibreOffice. It includes programs for database, spreadsheet, diagrams, slide presentation, mathematical formulae and word processing. The only downside is that it also installs a large number of *additional* Noto fonts covering foreign languages — but they can be removed with care.

2. SDRconnect: This software is provided by U.K. Company SDRplay for use with their range of software defined radios. Their earlier "SDRuno" software could be used on Raspberry Pi models 3 and 4, but the Raspberry Pi 5 requires SDRplay's newer 64-bit SDRconnect. I followed SDRPlay's instructions to download and install the current preview on my Raspberry Pi 5. It immediately recognized my SDRplay RSP1A receiver, connected through a USB port. The latest 'Preview 4' (Sep-

tember 18, 2024) now includes RDS decoding of FM broadcasts, custom radio profiles and timed recordings.

Partial screenshot of SDRplay's SDRconnect software running on the Raspberry Pi 5. Spectrum shows SSB signals in the 10 meter band received on RSP1A during IARU Region 1 SSB Field Day, September 8, 2024.

3. HamClock: This program is a poor man's version of the Geochron® Global Time Indicator, which displays day and night on a wall-mounted world map as affected by the seasons and Earth's axial tilt. HamClock by Elwood WB0OEW, displays a similar map on the computer screen, with additional information of value to radio amateurs. See *QST*, October 2017, pp 42-44. I followed instructions at https://www.clearskyinstitute.com/ham/HamClock/ to install HamClock on my Raspberry Pi 5. After entering call sign, latitude and longitude, the World Map appears, surrounded by additional panels, with information about direction/distance to a DX station, solar activity, sunspots, propagation and your choice of additional data.
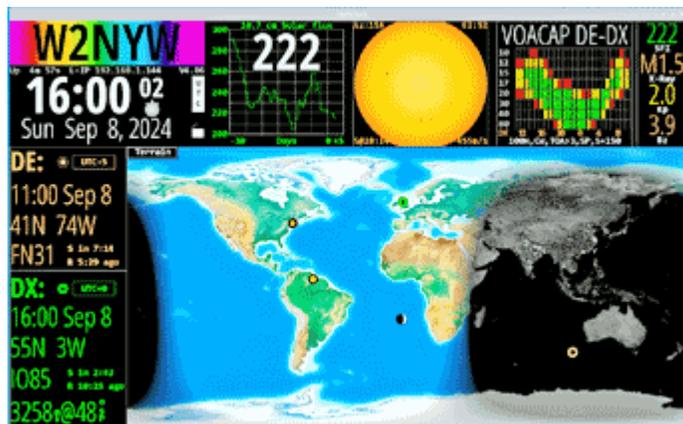
*HamClock screen display, running on Raspberry Pi 5.*

Recipe for HamPi

There are plenty of other amateur radio applications for the Raspberry Pi, from CHIRP radio programming to remote station control and construction of a digital voice Hotspot. The difficulty can lie in searching out projects from the Internet, installing the software then assessing its usefulness.

A large number of popular amateur radio applications for the Raspberry Pi have been collected together by David Slotter W3DJS and integrated into a single software distribution named "**HamPi**". Details of the applications included are available at: https://github.com/dslotter/HamPi/wiki. An episode of "Ask Dave #294" (by David Casler KE0OG) explains the background, including an interview with David W3DJS. See: https://youtu.be/Bnpln-aRWrs. A video showing how to download, expand and install the image on a microSD card by 'TheSmokinApe' is available at: https://youtu.be/vPVHx-ITxqpw.

I downloaded the latest HamPi distribution to my Windows notebook from https://sourceforge.net/projects/hampi/. After expanding the …img.xz file with WinZip, I flashed the image to a new 64 GB microSD card using the free software "Balena Etcher". The next step was to switch off the Raspberry Pi, remove the existing SD card, insert the new microSD card and reboot.

I saw the Raspberry Pi OS (32 bit) start up. There was custom wallpaper on the desktop, with the Menu displaying a new category "Hamradio" containing over 27 programs and sub-categories.
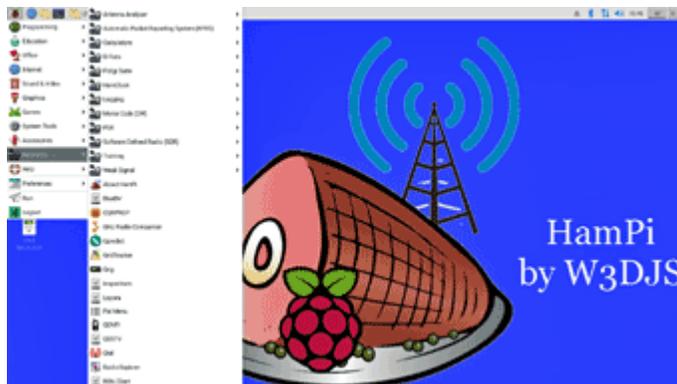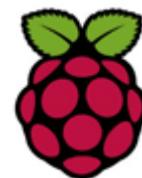

Screenshot of Raspberry Pi 5 with HamPi distribution installed. Note the large number of entries in the menu under category 'Hamradio'.

I tried out a few of the choices on the menu and most seemed to be working on the Raspberry Pi 5. Other items such as FLdigi and WSJT-X would need a USB connection to an HF transceiver. This is a great way to sample all sorts of software and find out what might be useful.

Try some Pi

The Raspberry Pi 5 offers a great opportunity to try something different in computing, programming and amateur radio. Price of the single board computer is just $50 (2GB RAM), $70 (4GB RAM) or $80 (8GB RAM). Accessories are inexpensive. Take a break from your bland Intel or Apple hardware, middling Microsoft software and try something else, with a lot more color and flavor.   - NM9J

Peekskill / Cortlandt Amateur Radio Association

Mail: PCARA, PO Box 146, Crompond, NY 10517
E-Mail: mail 'at' pcara.org
Web site: http://www.pcara.org
PCARA on Facebook: https://www.facebook.com/pcararadio
YouTube Channel: https://www.youtube.com/@peekskillcortlandtamateurr7670

PCARA Update **Editor:** Malcolm Pritchard, NM9J
E-mail: NM9J 'at' arrl.net
Newsletter contributions are always very welcome!
Archive: http://nm9j.com/pcara/newslett.htm

PCARA Information

PCARA is a **Non-Profit Community Service Organization**. PCARA meetings take place every month (apart from July/August break). See http://www.pcara.org for current details.

PCARA Repeaters

W2NYW: 146.67 MHz -0.6, PL 156.7Hz
KB2CQE: 449.925MHz -5.0, PL 179.9Hz
N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sat Oct 5: PCARA meeting, 10:15 a.m., Putnam Valley Library, 30 Oscawana Lake Rd., Putnam Valley, NY.
Sat Oct 5: PCARA V.E. Test Session, 11:30 a.m. Putnam Valley Library. See below.
Sat Oct 19: PCARA Breakfast, 9:00 a.m., Uncle Giuseppe's, 327 Downing Dr. Yorktown Heights, NY.
Sat Oct 19: New York QSO Party, 10:00 a.m. - 10:00 p.m.
Sun Oct 20: Run Against Hunger, Croton-on-Hudson and New Croton Dam, 8:00 a.m. - 12 noon.
Sat Oct 26: PCARA Foxhunt, FDR Park. 10:00 a.m. start, Pool Parking Lot. See page 13.

Hamfests

Check with organizers before leaving.
Sat Oct 5: Splitrock ARA North Jersey Tailgate Hamfest, Landing Park Recreation Complex, 165 Landing Rd., Landing NJ. 8:00 a.m.
Sat Oct 12: Bergen ARA (BARA) Fall Hamfest, Westwood Regional High School, 701 Ridgewood Rd., Township of Washington, NJ. 8:00 a.m.
Sun Oct 13: Nutmeg Hamfest, Maloney High School, 121 Gravel St., Meriden CT. 8:00 a.m.

VE Test Sessions

Check with the contact before leaving.
Oct 5: PCARA, Putnam Valley Library, 30 Oscawana Lake Rd., 11:30 a.m. Must contact VE: Mike W2IG, w2igg'at'yahoo.com.
Oct 5, 12, 19, 26: NYC-Westchester ARC, 43 Hart Ave, Yonkers NY. 12:00 noon. Must contact VE, k2ltm'at'aol.com.
Oct 10: WECA, Westch Cnty Fire Trg Center, 4 Dana Rd Valhalla NY. 7:00 p.m. Contact VE, N2gdy'at'weca.org
Oct 18: Orange County ARC, Munger Cottage, 40 Munger Dr Cornwall NY. Contact VE: w2bcc'at'arrl.net

Peekskill / Cortlandt Amateur Radio Association Inc.
PO Box 146
Crompond, NY 10517