



PCARA Update



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Quite a year II

As we begin a new year, it's a good time to look back to see where we've been. Please permit me to provide a synopsis of 2021 for PCARA, a sort of quick year in review...

Throughout the year the weekly Roundtable and Old Goat Nets continued. There were occasional Monday night simplex nets on 2m, 10m, and 80m. There was even a test of slow scan amateur TV. Several Zoom presentations on the "Magic of Amateur Radio" were held. Monthly outdoor membership meetings, V.E. Test Sessions, and breakfasts took place. We participated in the Hudson River Radio Relay from Annsville along the river using special event callsign N2N. The antenna/trailer was registered and used at Field Day 2021 at Walter Panas High School, which saw outstanding participation and a record score. PCARA was represented in the NY QSO Party and was present to help at the 41st Annual Harry Chapin Memorial Run Against Hunger. A membership meeting was held at the CUE Room in the Cortlandt Town Center which included the election of Directors / Officers. Indoor breakfasts returned to Uncle Giuseppe's with excellent attendance and some new faces (albeit cut short by a fire alarm. OK, who burned the biscuits?). We topped the year off with the Annual PCARA **Holiday Dinner** at the Cortlandt Colonial Restaurant with an amazing attendance of 25! Wow! Please keep in mind that all of this happened during a pandemic! Just *PCARAMazing!*



PCARA members, family and friends enjoyed the Holiday Dinner at Cortlandt Colonial Restaurant on December 5.

Moving forward we have the Annual PCARA **Bring and Buy Auction** on Sunday January 9, 2022 at



At the Holiday Dinner, Todd N2MUZ receives the "Radio Amateur of the Year" certificate from Greg KB2CQE, in appreciation of his "Magic of Amateur Radio" presentations.

3:00 p.m. at the Cortlandt Town Center Community Room (CUE Room) in Mohegan Lake, NY. This is an opportunity for each of us to bring along our no longer needed treasures and offer them for sale to make them someone else's treasure. Due to the dynamic nature of the pandemic, **please keep an eye** on the PCARA website, PCARA Google Groups e-mail, and PCARA Facebook page for any changes.

The next **PCARA Breakfast** is scheduled for Saturday January 22, 2022 at 9:00 a.m. at Uncle Giuseppe's Marketplace in Yorktown Heights, NY. The breakfast was to be followed by a **PCARA V.E. Test Session** at 11:00 a.m. at the John C. Hart Memorial Library. We have subsequently learned that *Continued on page 2* ⇨

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the library is not permitting indoor meetings due to the surging pandemic. Please stay tuned for updates.

Our next **PCARA Membership Meeting** will take place on January 9, 2022 at 3:00 pm at the Cortlandt Town Center Community Room (CUE Room) right before the Annual PCARA Bring and Buy Auction. I look forward to seeing each of you there.

(Due to the dynamic nature of the pandemic, please keep an eye on the PCARA website, PCARA Google Groups e-mail, and PCARA Facebook page for any changes and updates.)

- 73 de Greg, KB2CQE

[For those who spurn Microsoft and Intel, Greg composed this month's Presidential column on a Raspberry Pi, using OpenOffice Writer. -Ed.]

PCARA Board

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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.

V.E. Test Session

After pauses in November (no candidates) and December 2021, PCARA was planning to resume Volunteer Examiner Test Sessions on Saturday January 22nd, 2022. The venue was to have been **indoors** at the John C. Hart Memorial Library in Shrub Oak, but the Library recently stated: "Due to the Rise of COVID cases in our region, the Library has moved to Porch Pickup Only" and the V.E. Test Session can no longer be held indoors.

Please watch the club's web site <http://www.pcara.org> and the Google Groups mail list for announcements about a possible revised location.

If the session *does* go ahead, candidates should bring all the usual requirements for any V.E. Test Session — Photo ID, FCC Registration Number (FRN), current license and copy (if applicable) and test fee. New applicants will need to obtain an FRN from the FCC's Commission Registration System (CORES) before turning up for a test. The fee for a V.E. Test in 2022 is still \$15.00 per test or re-sit. All candidates are requested to contact PCARA's Team Liaison Mike W2IG before the test session using email address: w2igg'at'yahoo.com.

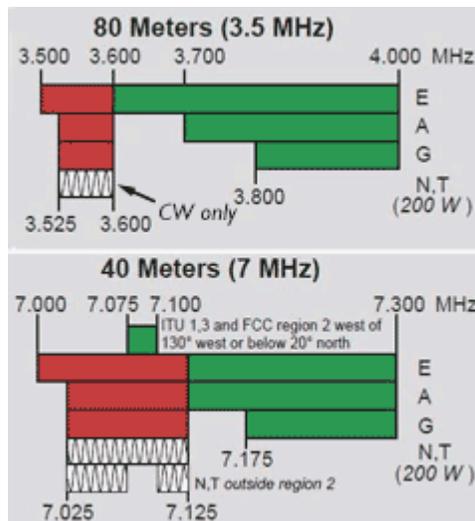
Straight Key Night - N2KZ

Start the New Year right by getting on the air! If you ever wanted to try CW, January 1st is your big chance. The ARRL presents Straight Key Night from 7:00 p.m. Friday night, December 31 until 7:00 p.m. Saturday night January 1. (0000 to 2359 UTC, January 1.)



During this celebration, CW operators use only straight keys, sending code at slower than normal speeds. Many operators enjoy using vintage gear, especially tube gear that glows gently in the dark. The result is a tribute to the way operating used to sound long, long ago. It is not a contest for fast contacts. Rag chewing is highly encouraged. It is all for fun!

Even if you do not know code or are shy to try, you can certainly listen in. Spin your dials on 80 meters from 3525 to 3600 kHz and 40 meters at 7025 to 7065 kHz — and 7100 to 7125 kHz. Remember: Technician licenses can operate on these bands in CW with up to 200 watts. No license upgrades are required! Why don't you try it and join in? Lots of us want to welcome you and say Happy New Year.



- Karl N2KZ

Adventures in DXing

- N2KZ

Warning! Warning! Warning!

Nearly everyone has a smoke detector in their house and maybe even a carbon monoxide detector. Their alarms are bold and loud by design. Wouldn't it be useful if you also could be alerted to another 86 individual sources of impending peril? Never again would you be surprised by an oncoming blizzard, flood, earthquake, hurricane, tornado or wildfire! For about 30 dollars, your wish can come true! Let me introduce you to the Midland WR120EZ NOAA Weather Alert Radio.



Midland WR120EZ Weather Alert Radio with S.A.M.E.

This clever device is unlike any other radio you have owned. It really is not a radio, *per se*. It is not a scanner. It is a preventative appliance created mainly to receive over-the-air transmitted data and alert you when it does. While you are in standby for the next alert, you can listen to the weather radio audio broadcast whenever you like by simply pressing the long and large 'weather/snooze' button. It is as easy as that!

Alert you it will... LOUDLY! and this is all intentional and by design. Fire and carbon monoxide alarms emit furious, sharp and relentless alerts. The WR120EZ is no different. You cannot alter the volume of the alert. When it triggers it will get your attention. It means business!

Always keep in mind that this is not primarily a weather radio or a scanner. You lock the radio to the single frequency where alerts for your specific county are transmitted. Changing frequencies requires several button presses. You can only audition each of the seven available weather broadcast frequencies by stepping through them one at a time. It will not scan by itself.

Also be aware that the WR120EZ is not designed as a battery powered receiver. It requires an external power supply! Yes, it can operate for short periods of time using the installed three AA batteries but they are primarily intended to only retain the configuration set-

tings. The provided external 'wall wart' supply is rated at 9 volts at 300 milliamps. If this switching type supply proves to be too noisy for good signal reception, try substituting an old-fashioned and physically heavier analog supply of the same rating for an improved signal-to-noise ratio on receive.

A nifty feature is the 'external alert' jack found on the rear of the receiver. When an alert is captured, the jack provides a constant closure that can be used in many ways.



Rear view of the WR120EZ shows the External Alert jack.

Midland markets their Model 18STR strobe light specifically for this port, intended for use by the hearing impaired. Another possible application would be to set the WR120EZ 'Alert Type' to 'Display' to completely mute the stunning built-in alarm and use the 'external alert' closure to activate a light or some other more palatable sounder instead.



Midland 18STR strobe light.

Good signal strength is always a good idea. Weather radio broadcasts are always transmitted with vertical polarity. Straight up and down is the way it should be. If you require a better signal, try an outdoor antenna. The WR120EZ is fitted with an 'External Antenna' RCA jack for this purpose. (I homebrewed an RCA male to BNC male adapter cable fitted with a BNC female to female barrel for easy connection to commercially available antennas.) You can try adapting a TV rabbit ears antenna (hang it vertically and try different whip lengths) or build your own antenna: <https://www.weather.gov/cae/antenna.html>. You might also find better reception using a vertical 2 meter band amateur antenna. Try different positions around your



RCA male to BNC male adapter.

5. **SET CHANNEL** — This is how you tune the receiver to the proper frequency for your area: In Westchester and Rockland Counties choose 162.550 MHz. In Putnam and Dutchess Counties choose 162.475 MHz. For other areas, consult: https://www.weather.gov/nwr/station_listing.

When you reach this site, drill down to your local station's listing, unclick the 'propagation' map and click on 'alerting area' to reveal what counties each nearby station covers. Look through the list of stations for your state if your first choice was incorrect for your location. Make note of the frequency for your county and then 'SET CHANNEL' to that frequency. Strong signal strength and good quality are essential for reliable operation. Look to see if 'NOAA' on the front panel is steady, indicating a solid signal. Inadequate signals will make the 'NOAA' text flash. A signal of +18 dBμV or better is the listed specification for continual trustworthy results.

6. **ALERT TEST** — Sets off the alert tone and 'external alert' closure for testing.
7. **ALERT TYPE** — **VOICE** — The most humane setting! When activated, the alert tone will sound for 8 seconds followed by 3 minutes of audio from the weather radio broadcast station to hear what the alert is about. Three colored LEDs on the main panel will tell you if the current alert is a **WARNING**, **WATCH** or **ADVISORY**.
8. **LOCATION** — It is best to choose 'SINGLE' to receive only alerts for your county. The entire procedure: Choose USA (select) NEW YORK (select) WESTCHESTER or your county (select) and then Menu to exit. 'MULTIPLE' allows you to monitor more than one county's alerts.
9. **SET LANGUAGE** — English (or as appropriate.)
10. **SET ALARM** — The WVR120EZ has a built-in alarm clock if you wish to use it.

Congratulations! You are ready to receive alerts! No? First read the supplied user guide. For more clarity, call Midland support: 1-816-241-8500 or try: <https://midlandusa.com/pages/support>

Handy Tips

To perform a full reset of the WR120EZ to factory settings: Remove just one of the three memory retention batteries and wait 30 seconds. Press and hold down the long 'Weather/Snooze' button. Re-insert the third battery. You should now see 'RESET' on the display. Your settings have now been refreshed as a new unit.

Underneath the WR120EZ are a couple of flip up feet. Try them. A little tilt may go a long way if you want to see the display. The plastic molding underneath also provides slot holes to allow the WR120EZ to

be hung on a wall.

The WR120EZ is the latest version of a legacy design that Midland has offered for many years. One new addition now allows use inside Canada along with a complete list of all provinces and their counties. You can tell if your WR120EZ is Canadian-capable by looking at the sticker on the underside of the receiver. An example: Look for: "CAN RSS-Gen/CNR-Gen" on the label along with the serial number.

If you were away from your WR120EZ, you can easily check to see if any alerts have been received. Simply press the up-arrow button. If nothing has been sent the display will read "NO MESSAGES." Whew! I am glad I didn't miss anything.

Quite a System

Weather radio alerts are sent two ways. Starting in 1969, weather alert ready radios were activated by simply transmitting a 1050 Hz audio tone. Everyone was alerted for all announcements. A major refinement in technology was introduced in 1997 when weather radio broadcasts adopted the digitally-encoded S.A.M.E. (Specific Area Message Encoding) system. Now exclusive alerts can be sent to single counties or groups of counties eliminating the inconvenience of receiving irrelevant messages not intended for your locale. To support older receivers, the 1050 Hz tones continue to be sent as well.



Aviation weather on-the-air broadcasts began in 1953 serving Chicago and New York City. One single frequency became standard: 162.550 MHz. During the mid-1960s, several new stations came on the air, now transmitting on newly allocated marine VHF frequencies and eventually two additional weather radio frequencies were added to cure co-channel interference: 162.400 MHz and 162.475 MHz. The United States, Canada, Mexico and Bermuda have now expanded to a group of seven frequencies: 162.400, 162.425, 162.450, 162.475, 162.500, 162.525 and 162.550 MHz.

Canada has adopted these seven frequencies and the S.A.M.E messaging system. Take a look at this con-

cise and detailed Weatheradio Canada summary from up north (pdf): https://publications.gc.ca/collections/collection_2010/ec/En56-228-2010-eng.pdf . In addition, Canada also offers CMB (Continuous Marine Broadcasts) from Environment Canada on 161.650, 161,750, 161.775, 161.850 and 162.000 MHz. These Canadian CMB transmissions can be widely heard in neighboring American states such as central Michigan and upstate New York.

Speaking of S.A.M.E codes, Midland has that covered. Each and every county covered by the NOAA weather radio network has a corresponding S.A.M.E. code for identity. The first two digits (sometimes preceded with a zero) designate the state and the last three digits indicate the county. For instance, Westchester is (0)36119 and Putnam is (0)36079. In the past, you needed to look up your county's code and enter it manually.

One improvement offered in Midland's current WR120EZ model supersedes this problem. When you need to enter county identity using the front panel buttons you now page through a list of all of your state's county names instead of looking up and entering code numbers. Sweet.

Radio Shack began marketing fixed-frequency Weatheradio cubes in 1969. Their simplistic one-button operation and novel and distinctive design was an amazing success. Many subsequent Weatheradio models dominated the market for years and years. Radio Shack created a near monopoly becoming the leading supplier of home and portable weather band receivers until their demise in 2015.



Realistic Weatheradio Cube from Radio Shack. [N2KZ pic.]

Since that time, Midland has dominated the market with their WR series of receivers buoyed by advanced detailed design, ease of operation and economical price point. Always a best seller, the Midland WR120EZ is an exceptional value with its surprisingly sensitive and selective receiver and comprehensive features and has become the default standard for weather radios nationwide.

Heard Far and Wide

America's weather radio network has continued to grow and mature over the decades and has now expanded into a portal to convey much more than just weather alerts. The system's current title says it all: "NOAA Weather Radio All Hazards" now includes natural, environmental and public safety alerts along with all things about the weather. The physical network is

vast in every respect. Over 1000 transmitters cover all 50 states, Puerto Rico, The U.S. Virgin Islands and The U.S. Pacific Territories with continuous broadcasts 24 hours a day. Use this map to locate weather radio stations anywhere in the United States (pdf):

https://www.weather.gov/media/nwr/NWR_poster.pdf .

Quite nearby in frequency allocation to the amateur 2 meter and 220 MHz bands, weather radio stations also make excellent propagation beacons. Isn't it wonderful that these stations constantly identify themselves and continually mention their locales? Want to know if there is a tropospheric lift or duct going on? Tune through the seven weather frequencies and see instantly what is coming in!

Weather radio also serves as an ongoing promotion vehicle for the National Weather Service (NWS) and meteorology in general. How about the weather? Many amateurs volunteer and participate in the NWS Skywarn program reporting their local weather conditions back to their regional NWS bureaus to expand their database records. In return, the NWS provides free weather science orientation and training to all volunteers. The NWS weather radio system and associated Internet websites keep Skywarn members in constant contact with the NWS at all times.



A Royal Gift

If you like weather, you have come to the right place. You'll love the National Weather Service's school for junior meteorologists called Jetstream: <https://www.weather.gov/jetstream/about> . This site is a masterwork of fascinating information, practical lessons and detailed explanations all in one place. You could spend a lot of time here. You will become captivated and enchanted! There is so much to learn about the weather and about our planet — and — it is all here to enjoy for free. Congratulations and thank you to everyone at the NWS for this gift and offering. Bravo!

...And enjoy the gift known as the Midland WR120EZ. For a very modest price you can enjoy the results of many generations of design development and refinement. It's easy to configure and easy to use! Every home should have one!

Happy New Year to all! 73 and dit dit de N2KZ. 'The Old Goat.'



A Wonderful Success! Spot-on! - N2KZ

One of the great truths about show business is this: the audience doesn't know what is correct and what to expect. If you miss a line or blow a cue, the show goes on just the same.

The TransAtlantic Tests were a little different.

Thousands of listeners thought they knew what to expect and thought they knew how to tune in. What would they hear? On the night of December 11th... that was the big mystery.

A year or more in the making, this show came together like a high school variety show. Nobody really knew exactly what anyone else would do on the air. Most everyone who was involved in the recreation didn't know exactly what would happen either! The result was a fantastic performance with a varied and complimentary cast that would be remembered for a lifetime. Not bad, huh?

Let's set the scene: One hundred years ago, ace American amateur Paul Godley, Jr. (2ZE) was sent to Ardrossan, Scotland with the finest radio listening equipment that could be mustered. On schedule, on a



Paul Godley 2ZE with Paragon receiver.

stormy night, Paul accurately copied the CW signal from station 1BCG in Greenwich, Connecticut and then many, many more! The challenge had been met! You didn't need a huge and hardy Marconi station to send messages across the Atlantic. Amateurs proved they could fulfill that task, as well. The February 1922 edition of *QST* contains comprehensive coverage of all the excitement and accomplishment. It is a wonderful read!

The anniversary of this breakthrough moment would be celebrated many, many times during the next 100 years. A Greenwich amateur, Clark Burgard, N1BCG, has coordinated the tributes in the past few years. When I contacted Clark in September 2020, we



agreed that the 2021 centenary would be complex. The original plan was to re-build station 1BCG as closely as possible: A replica transmitter, an elaborate T-antenna overhead and an operating position below in a white tent at North Street and Clapboard Ridge Road in Greenwich. In time, other ideas took precedence.

Big Plans

Grand enthusiasm for the event grew and grew. By the summer of 2021, several groups had popped up each with a plan to join the party. America's ARRL and Britain's RSGB showed considerable interest and provided widespread publicity. In an effort to organize these efforts I authored a summary calendar of everyone's activities. We needed a road map to navigate through the big night — Saturday, December 11.

Oh! What a Night!

By the time the big day came around, three centers of operation were established in Connecticut. W2AN/1BCG operated on 1821 kHz from the Vintage Radio and Communications Museum in Windsor. Representing the Radio Club of America, W2RCA operated on 1825 kHz from the mighty QTH of Tom Frenaye, K1KI. W1AW on around 1816 kHz at ARRL headquarters in Newington was churning out two-way contacts throughout — and — was using accounts of the original 1921 Test as copy for its famous Morse Code practice transmissions on 1802.5 kHz.



ARRL CEO David Minster looks on as Headquarters Station W1AW makes high-speed CW contacts on 1816 kHz during the Transatlantic Centennial celebrations. [YouTube.]

Across the pond in Scotland, the Kilmarnock and Loudoun Amateur Radio Club had a fine presence along the beach in Ardrossan — ready to receive! The show was about to begin.

Calling the participants 'amateurs' was indeed a misnomer. At all locations, we witnessed multiple gatherings of seasoned professionals using all the tricks and talents of their crafts to produce the show of all shows. No matter what challenge they faced there was always a proficient answer. Those behind the scenes witnessed

what a magnificent ballet was performed on 160 meters on the evening of December 11th. Both sides of The Pond were in agreement. It truly was a re-enactment in every way!

Adventure and Joy in Scotland

The Kilmarnock and Loudoun club put on the performance of a lifetime. Situated on the west coast shore in Ardrossan, Scotland, they completed 401 two-way contacts in 60 different countries using the callsigns GS2ZE, GB2ZE and GB1002ZE.



Kilmarnock and Loudoun Amateur Radio Club (KLARC) operated from a mini-van in Ardrossan, Scotland, overlooking the Firth of Clyde. [KLARC overhead.]

At exactly 0252 UTC, the sounds of W2RCA sailed into their receivers! Success! The KLARC mini-van continued on until the next morning at 11:21 UTC. Even RSGB President Stewart Bryant, G3YSX, paid a visit. Go-Pro video was posted on YouTube so we could see the action inside their van. It was great fun!



Barry GM3YEH copies the CW transmission from W2RCA, re-enacting the original message of Dec 1921. [KLARC GoPro.]

Joy filled the shores of Ardrossan! Visitors came from far and wide to witness the station in its glory. Tony Miles, MM0TMZ, summed it up nicely: “Thumbs up and be proud! and we did Godley proud, I’m sure! and I very much hope that it will translate to (Godley’s grandson) Bruce Godley Littlefield as well. It was a

very exciting time and we felt like pioneers once again!”

“We started on Saturday morning to put the station together in Ardrossan in a howling gale and horizontal rain. We got pretty soaked putting the antennas up. We had a mobile welfare unit (a Honda mini-van) which was loaned to us. It wasn’t in the prettiest of conditions, in fact you had to wipe your feet before you touched the grass! It was pretty primitive, shall we say! It didn’t really matter. It housed the station adequately and we had a couple of generators to set out. That all got done Saturday morning.”



Paul GM5PEB, Barry GM3YEH and Paul MM7WAB outside the Kilmarnock and Loudoun ARC mini-van. [KLARC pic.]

“We took a bit of a break in the afternoon and then came back. The Kilmarnock and Loudoun ARC who were manning the station got everything up and running by then. The big catastrophe was that we ran out of gas to cook the bacon butties (sandwiches) so we had to fix that one. Someone came in and said if we crank the power up maybe we could fry them on the aerial! We were all in place for 0155 UTC. They received the transmission but were not able to respond. At 0252, we received the actual Godley broadcast. It was very dark. We only had minimal lighting.”

“The station continued to operate at Ardrossan until about 11 o’clock on Sunday morning. They decided that they had gotten wet enough and tired enough to haul it all down. It was a great event and I think it was an accolade to all of us that we pulled it all off and did exactly what it said on the tin. Fantastic to be a part of it!”

KLARC posted some videos about the event on YouTube. You can see them at: <https://www.youtube.com/channel/UC1wySx3Gi2D7JLn7IigKIJw> . In addition, an SDR segment of the spectrum was recorded for later analysis and for posterity to re-live exactly what was heard on 160 meters at 0252 UTC. A nifty interconnect system called freeSTAR connected their seaside station with 139 stations all around the world. Learn all about it at: <https://freestar.network> .

Sparks Fly!

Over in Connecticut, the W2AN/1BCG station at the Vintage Radio and Communications Museum endured similar conditions. Stormy rain also greeted volunteers getting the transmitting antenna into place. Inside, the guest of honor was Bruce Godley Littlefield (Paul Godley's grandson) and his wife Nancy. Bruce created a fascinating and unique museum display of historic pictures and documents from the Godley family's archive including the original log book used by his grandfather at the Ardrossan site in 1921.



Bruce Godley Littlefield with his collection of Paul Godley memorabilia at the Vintage Radio and Communications Museum in Windsor, CT. [VRCMCT]

The centerpiece was a replica transmitter built exactly following the design used in Greenwich 100 years prior. It was scheduled to send messages every 15 minutes from 6:00 p.m. until 10:45 p.m. Eastern time. W2AN/1BCG sent two tentative transmissions — one at 6:00 p.m. and one at 6:15 p.m. Sadly, a bad plate choke ended the replica transmitter's performance shortly thereafter.

Bob Allison, WB1GCM reports: "We accomplished the mission we wanted to accomplish. We had a wonderful group who came to the museum to watch. We were blowing fuses. It sounded like shells going off and smoke coming out from under (the replica transmitter.) We had arcing coming over a couple of times. It truly was a re-enactment!"

"The public had access to the event and brochures and certificates were distributed. The museum was the correct venue for this. Bruce Godley Littlefield, Paul Godley's grandson, attended. Sitting on his table of artifacts was the original logbook opened up to page 45 where Paul Godley copied the original 1BCG back in 1921. How special was that? It was really special!"

"Can you imagine Joel (Kosoff W3ZT) trying to wrestle that stupid cranky transmitter with 25 hams trying to help him! We actually did scare several old men! We were using a Heathkit (SB-)220 for high voltage putting out 2.2 kilovolts. When Joel was troubleshooting and discharged the caps... it put out a good

spark! It's amazing that we didn't burn out the place!"

"The first thing we had was a bad extension cord. When the transmitter fired up the voltage sagged to 100 volts. The next thing we had was the flash while Joel was trying to tune up the transmitter. A very tense moment! There was a lot of jumpiness in the room at that point. When he touched the key and the flash went off we all said "Oh, no!" His hands were used to this! 200 watts out of the transmitter, an inverted L antenna and 27 ground radials... and it worked!"

It was hard to make an accurate map of where people were listening from. Many people were using SDRs. "We got Malin Head, Ireland at 1800 and 1815. Massachusetts, Maryland... We did get a report from Suffolk U.K., Michigan, Ohio, Connecticut, New York, New Hampshire, South Carolina, Maine, New Jersey, Seattle, Washington! That was a real haul from where we were. Ontario Canada, Vermont, Pennsylvania, California, Virginia, Rhode Island, and Bauline, Newfoundland (north of St. John's and Torbay.) Still, the rough and crude signal emulated the experience of the radio adventure of 1921 to a T! See the highlights from the W2AN/1BCG afternoon at: <http://www.internetnetwork.com/radio/n1bcg/VideoHighlights.htm>



Joel W3ZT keys the replica 1BCG transmitter during centennial re-enactment at the Vintage Radio and Communications Museum. (PA tubes visible right.) [VRCMCT]

The Vintage Radio and Communications Museum of Connecticut is located at 115 Pierson Lane in Windsor, Connecticut, <https://www.vrcmct.org/> (860) 683-2903. It is open Thursdays and Fridays from 10:00 a.m. to 3:00 p.m., Saturdays from 10:00 a.m. to 5:00 p.m. and Sundays 1:00 p.m. to 5:00 p.m. A splendid time is guaranteed for all!

Big Guns

The standout facility was at the home of Tom Freney, K1KI, in West Suffield, Connecticut near Springfield, Massachusetts. Tom is known for the most dominant signal on 160 meters in New England. What an excellent choice it was for The Radio Club of America

to use for the centennial. Using 1825 kHz, W2RCA sent the text of the 1921 congratulatory message at exactly 0252 UTC and it was heard in multiple locations throughout The United Kingdom, Ireland and around the world.



Radio Club of America President John Facella, K9FJ keys the massive signal from W2RCA / K1KI. [RCA pic.]

I listened through the RAF Hack Green SDR (<http://hackgreensdr.org:8901>) located in Cheshire, England and heard superb signals from W2RCA. Bravo! Mission completed!

The Final Word

Clark Burghard, n1BCG, enjoyed the day in a very special way.

“My day of nostalgia and tribute wrapped up back home in Greenwich where, as n1BCG, I felt it would be appropriate to visit the site where it all happened. So, for ten minutes beginning at 9:50 p.m. (02:50 UTC) I listened to the many signals on 160 meters using an Icom 706 and a homemade active whip and imagined the significance of that first message sent 100 years ago to the moment from a



Clark Burghard, n1BCG.

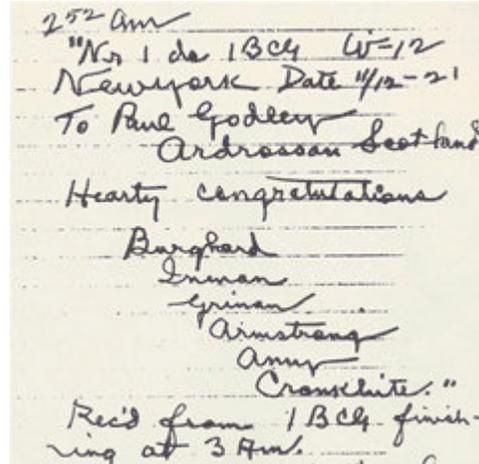
wooden shack in the field. It was quite a feeling to realize that it all happened right there. Thank you, everyone, for making this magnificent tribute a reality, and to borrow part of the historic 1BCG message that spanned the Atlantic, Hearty Congratulations.”

Not Done Yet!

A Transatlantic Test Success Call was arranged on Zoom for the following Thursday, December 16th, 2021. Many smiles were seen and many grand stories were told! Unanimous agreements were made: The Godley Anniversary will become a yearly event from

this day forward. Also being considered are special events celebrating the first transatlantic QSO between 1MO (USA) and 8AB (France) in November 2023 and the 100th anniversary of the IARU (International Amateur Radio Union) in 2025. We will meet again on Zoom in June of 2022 to discuss next year’s Godley event. Stay tuned!

- Karl N2KZ



Original message as received at Ardrossan by Paul Godley, December 1921. “No. 1 de 1BCG. W-12 (Words 12) New York Date 11/12-21 To Paul Godley Ardrossan Scotland Hearty Congratulations Burghard Inman Grinan Armstrong Amy Cronkhite.”

W2RCA Transatlantic Centennial Re-enactment Message

At 0252 GMT 12 Dec 2021, (2152 ET Dec 11)

VVVVV

QST QST QST de W2RCA W2RCA W2RCA

Nr 1 de 1BCG W 12 New York Date 11 / 12 - 21

To Paul Godley Ardrossan Scotland

Hearty Congratulations

Burghard Inman Grinan Armstrong Amy Cronkhite

BT

Best wishes to all from the Radio Club of America for the next 100 years of wireless progress

73 de W2RCA W2RCA

QRT CL

Commemorative message from W2RCA / K1KI, Connecticut, then received at Ardrossan, Scotland, December 2021.

The lost CD-R

In early December 2021 I was tidying up old floppy disks when I came across something unusual — an 8 cm Mini CD-R. It was labeled as a “Memorex® Pocket CD-R”, with 185 MB capacity or 21 minutes of audio. My written label said it contained “Test pictures Mavica CD300 12/15/01 – (3 separate sessions).”

I took the disk out of its plastic pocket and popped it into the BD/DVD drive on my desktop PC.

The tiny disk was still readable and the contents showed pictures taken around the radio room in December 2001. My department at work had recently acquired a Sony Mavica CD300 camera and I must have brought it home to familiarize myself with operation.

Ye olde digital cameras

A small digression about digital cameras... Sony introduced their “Magnetic Video Camera”, capable of recording images on 3½" floppy disk around 1997. I remember seeing one demonstrated in the Duty Free Store at Schiphol Airport around that time. Performance was limited by the 640 × 480 (0.3 megapixel) image sensor, 1.44 MB floppy disk capacity and slow writing speed.

As digital pictures grew larger, floppy disks gave way to recordable CD technology, and Sony introduced



Sony Mavica MVC-CD300 digital camera.

the Mavica MVC-CD300 in 2001 for \$999.00. The image sensor was sized at 3.3 megapixel (2048 × 1536 pixels) with jpeg-compressed files occupying around

1.4 megabyte each. The CD-R drive had a capacity of 156 MB, sufficient for about 100 images. The Mavica CD300 was no pocket camera — it weighed 22 oz. with physical dimensions of 5 5/8 × 3 5/8 × 3 11/16 inch. There was a significant lag between pressing the shutter and recording a picture to the built-in CD-R drive.



Memorex Pocket CD-R turned up during a shack clean-out.

Flash memory would soon take over from rotating disks and I had acquired a “Fuji FinePix 2400 Zoom” camera for my own use that same year. It was supplied with an 8 megabyte “SmartMedia”



Fuji FinePix 2400 Zoom camera with SmartMedia flash memory cards.

shots. Digital pictures soon began appearing in the *PCARA Update*, with the first issue distributed electronically just twenty years ago, after I had taken over from the newsletter’s founding editor Joe KR2V.

Two decades ago

Returning to contents of the mini-CD-R, those early digital pictures taken with the high-resolution Sony Mavica camera show the equipment I was using in 2001. Here is a view of the radio room — (sorry, I did not have time to tidy up for this photo.)



Radio room pictured in December 2001 using Sony Mavica MVC-CD300 digital camera.

At the far left of the bench you can just see the Yaesu FT-902DM HF transceiver along with its matching Yaesu speaker and Yaesu FTV-901 VHF/UHF transverter. The FT-902 employed a pair of 6146 tubes in the final amplifier and was the last vacuum tube radio in the shack, having crossed the Atlantic with me from the U.K.

Also visible in the picture is my shack computer, an HP Pavilion 8595C. This came with Windows 98, 128 MB RAM, a 36GB hard drive and a Pentium III running at 733 MHz. Although the PC had a network adapter, there is no cable modem in the 2001 picture. That’s because high speed Internet from Optimum Online would

not arrive until November 2003. Electronic distribution of the *PCARA Update* still required a dial-up modem.

The next photograph is a close-up of the operating position. This shows the main HF transceiver, a Kenwood TS-870S tuned to 15 meter SSB, alongside a Kenwood SM-230 station monitor.



Main operating position pictured in 2001 using the Sony Mavica camera. L to R: Kenwood SM-230 monitor and TS-870S are topped by an Icom IC-706 MkIIIG.

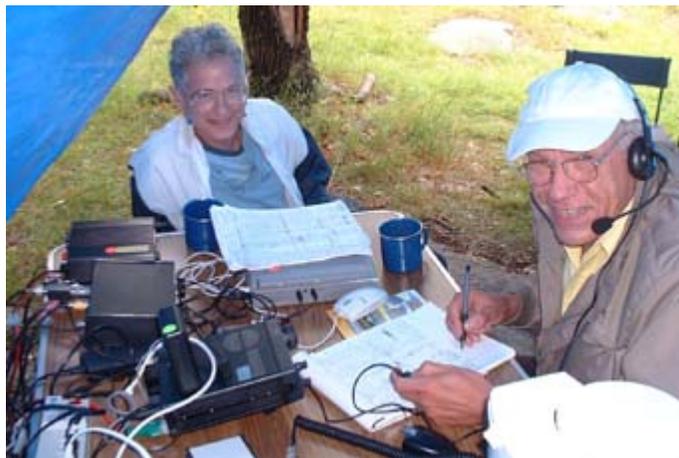
The Kenwood TS-870S transceiver was all solid-state and a pioneer in using I.F.-stage digital signal processing (DSP) for control of bandwidth, noise reduction and removal of interference. DSP was a major step forward when I acquired the TS-870 in 1995 from Ham Central in Poughkeepsie... remember them? Another item that I liked on the TS-870 was the 'M.CH/VFO.CH'



TS-870 rotary controls.

± 250 kHz around the carrier frequency.

Sitting on top of the main HF transceiver was an Icom IC-706MkIIIG, a tiny multi-mode transceiver that covered all bands from 160 meters to 440 MHz (apart from 222), tuned that day to 144.200 MHz SSB. I'm convinced that Icom Inc. must have employed Japanese elves to assemble this miniature miracle. My own IC-706MkIIIG was just one year old and also came from Ham Central. It made the first of many appearances during PCARA's very first Field Day effort, on the summit of a soaking wet Bear Mountain in June 2001.



Ray W2CH and Marylyn during PCARA's 1st Field Day on Bear Mountain in June 2001, with Icom IC-706MkIIIG.

That diminutive Icom transceiver brings back memories of earlier VHF hilltop operation in the 1970s and 1980s. Back then, portable SSB/CW operation usually involved ferrying a vacuum-tube HF transceiver, power-supply and homebrew transverter to the top of the hill, firing up a portable generator and hoping the combination would remain operational for the length of the contest. By 2001, Icom had shrunk all that equipment into one small box, capable of running from a 12 volt battery.

My next picture shows the mobile installation in 2001. My CR-V had a convenient slot in the dash, just below the radio, intended for an optional CD changer.



Mobile installation pictured in 2001 using Sony Mavica.

I used this space for the front panel of an Icom IC-207H VHF/UHF FM transceiver. The IC-207H came from Ham Central in September 1999. The radio's front control panel could be separated from the main body of the transceiver — the main body was then installed in the plastic storage bin that fits under the CR-V's front passenger seat.

The IC-207H is still going strong in my current vehicle, with the transceiver's body now installed in the center console compartment, between the front seats.

Vintage tuner

The final Mavica picture shows a close-up of my KW107 "Antenna Tuning System". This unit also came across the Atlantic.



K.W. Electronics KW107 Antenna Tuning System, as pictured in 2001 on Sony Mavica.

K.W. Electronics of Dartford, Kent was a U.K. electronics manufacturer founded by Rowley Shears, G8KW. They manufactured a range of HF receivers, transmitters and transceivers. A "KW Vanguard" HF transmitter makes an appearance in the very first James Bond movie "Dr. No", as reported in *PCARA Update* for July 2012. During the 1950s to 1970s, KW Electronics was the leading U.K. manufacturer of HF equipment for the amateur bands — including their Vanguard, Viceroy and Vespa transmitters and the well known KW2000A SSB transceiver.



KW Vanguard HF transmitter (left) as featured in 'Dr. No' (1962).

The KW107 was a combination of the KW E-Z Match antenna tuning unit, KW103 SWR/Watt meter, KW Antenna switch and KW Dummy load all in one wrap-around case. In the days of vacuum tube amplifiers, this was a convenient combination as it allowed the transmitter to be tuned up into the built-in 50 ohm dummy load, then connected to a choice of antennas, either directly or through the ATU. The Z-match capacitors could be tuned for lowest SWR through reduction drive knobs on the front panel.

That 50 year-old KW107 is still in use, and is probably the oldest piece of functioning equipment in my present radio shack.

- NM9J

Have You Heard? - N2KZ

During the height of the winter season, casual DX-ers tune around the good old AM radio band and enjoy listening to stations far away. Here is a basic list of distant stations you should be able to hear in the New York City area. See how many you can log at home or on your car radio:

650 WSM	Nashville, TN
670 WSCR	Chicago, IL
680 WRKO	Boston, MA
700 WLW	Cincinnati, OH
720 WGN	Chicago, IL
740 CFZM	Toronto, ON
750 WSB	Atlanta, GA
760 WJR	Detroit, MI
800 CKLW	Windsor, ON
810 WGY	Schenectady, NY
820 WBAP	Fort Worth, TX
830 WCCO	Minneapolis, MN
840 WHAS	Louisville, KY
850 KOA	Denver, CO
860 CJBC	Toronto, ON
870 WWL	New Orleans, LA
890 WLS	Chicago, IL
900 CHML	Hamilton, ON
1000 WMVP	Chicago, IL
1020 KDKA	Pittsburgh, PA
1030 WBZ	Boston, MA
1040 WHO	Des Moines, IA
1060 KYW	Philadelphia, PA
1080 WTIC	Hartford, CT
1090 WBAL	Baltimore, MD
1100 WTAM	Cleveland, OH
1110 WBT	Charlotte, NC
1120 KMOX	St. Louis, MO
1140 WRVA	Richmond, VA
1160 KSL	Salt Lake City, UT
1170 WWVA	Wheeling, WV
1180 WHAM	Rochester, NY
1200 WOAI	San Antonio, TX
1210 WPHT	Philadelphia, PA
1500 WFED	Washington, DC
1520 WWKB	Buffalo, NY
1530 WCKY	Cincinnati, OH
1540 KXEL	Waterloo, IA
1550 CBEF	Windsor, ON



If you want to quickly see if the medium wave band is currently 'long'... do a quick check of the Iowa trifecta: WHO Des Moines 1040, KXEL Waterloo 1540 and KCJJ Iowa City on 1630.

If you believe in miracles, try for WIOD 610 Miami, KFI 640 Los Angeles, KNBR 680 San Francisco and KNX 1070 Los Angeles.

- N2KZ

Solid developments

Even better batteries

Developments in metal-ion batteries have been featured in past issues of the *PCARA Update* newsletter.

- “Lithium laureates” – PCUD Nov 2019 p10 described how the Nobel Prize in Chemistry was awarded to three chemists for work which led to the modern lithium-ion battery.
- “Better batteries?” – PCUD Jan 2021 p11 explained how sodium-ion batteries based on Prussian Blue chemistry are being developed by Natron Energy in Santa Clara, CA.
- “More better batteries” – PCUD Jul 2021 pp 16-17 described further developments in sodium-ion batteries by British company Faradion.

Lithium-ion batteries in electric vehicles are usually based on a cathode made from lithium cobalt oxide (LCO), lithium nickel cobalt manganese oxide (NMC) or lithium nickel cobalt aluminum oxide (NCA). The anode is made of graphite. Both electrodes are immersed in a liquid electrolyte based on organic solvents such as ethylene carbonate containing a dissolved lithium salt such as LiPF_6 .

LiFe-saving cathode

The presence of relatively rare elements such as cobalt and nickel in the cathode is problematic. The materials are expensive and there are political questions about continued access and availability. One solution is to switch to a cathode made of **lithium iron phosphate**, LiFePO_4 (LFP), which is free of nickel and cobalt. The material is more thermally stable than lithium cobalt oxide, resulting in longer battery life, with cells that are more resistant to high temperatures and thermal runaway. The downside is that batteries based on LiFePO_4 have a lower energy density than LiCoO_2 .

For applications where safety outweighs the need for high electrical capacity, lithium-ion batteries based on LiFePO_4 have proved popular. Examples include the Bio-



Bioenno BLF-1212AB 12V, 12Ah LiFePO_4 battery costs \$124.99 without charger.

enno Power® range of batteries for amateur radio, see <https://www.bioennopower.com/collections/lifepo4-batteries-for-communication-equipment-ham-radio>.

In October 2021 Tesla Inc. announced that it was switching battery chemistry for all standard-range

Models 3 and Y from nickel cobalt aluminum (NCA) to lithium iron phosphate (LFP). The cells are cheaper and longer lasting than NCA, though their lower energy density may result in some reduction in range. Meanwhile requirements for monitoring and cooling of the cells are more relaxed.



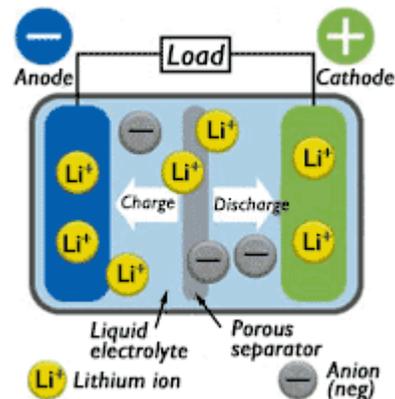
Tesla Model 3 standard range battery pack.

Less liquid

Apart from high energy density and unstable cathode material, another hazard of conventional lithium-ion cells is the use of **organic solvents** in the electrolyte. Typical solvents include a mixture of cyclic carbonate esters, such as ethylene carbonate and propylene carbonate, plus linear carbonate esters such as dimethyl carbonate and diethyl carbonate. The solvent is made conductive by adding metal salts such as LiPF_6 . When dissolved, the salt dissociates into ions, Li^+ and PF_6^- .

To keep electrolyte viscosity low and electrolyte conductivity high, linear carbonate esters are required. Unfortunately, they are highly volatile and flammable with flash points around room temperature. Dimethyl carbonate has a flash point of 16°C , diethyl carbonate has a flash point of 33°C . Electrolytes containing these solvents will catch fire if exposed to air and a source of ignition. This might occur through overcharging, short-circuiting or physical damage.

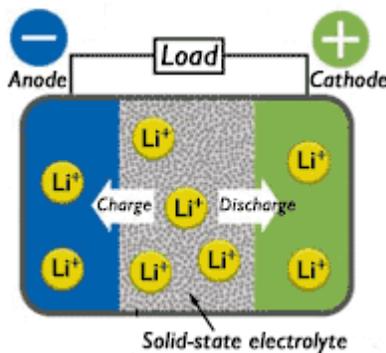
One source of ignition could be the battery itself. Dendrites can grow from the electrode surfaces, eventually touching the opposite electrode and causing a spark. In order to avoid this, a **separator** consisting of a porous membrane is introduced between the electrodes. The separator keeps the two electrodes physically apart, avoiding a short circuit while still allowing passage of lithium ions through its pores. Separators can be made of polyolefins, fluoropolymers and ceramics.



Conventional lithium-ion cell has liquid electrolyte and a porous separator to keep the electrodes apart.

Solid steps

A goal for lithium-ion battery development is removal of the volatile liquid electrolyte, reducing the chance of thermal runaway and fire. One way to do this is with a **dry** separator that still allows transport of ions between the electrodes. Such materials are referred to as “solid electrolytes” or “solid-state electrolytes” with no further need for a distinct separator layer. Just as a semiconductor allows passage of positive holes and electrons, the solid state electrolyte would allow passage of lithium ions.



Solid-state lithium-ion battery replaces liquid electrolyte and separator with a solid-state electrolyte. (In practice the SS electrolyte is present as a thin layer.)

A good deal of research is underway to discover solid electrolytes suitable for lithium-ion batteries used in electric vehicles (EVs). Huge investments have been made by automobile manufacturers and independent battery companies, with some limited successes and several humiliating failures. Commentators believe these efforts will not produce practical batteries for five to ten years.

Despite gloomy predictions, there have been notable announcements in the last few months. The three companies below are each exploiting one of the major types of solid electrolyte: ceramic, polymer or sulfide.

QuantumScape of San Jose, California has been working with Volkswagen, which recently tripled its investment to \$300 million. QuantumScape announced in November that longevity of its 10-layer solid state battery



had been raised to 800 charging cycles, sufficient for an electric vehicle to travel 240,000 miles. The solid electrolyte in QuantumScape batteries is a non-combustible proprietary **ceramic** material, combined with an organic gel electrolyte for the cathode side. Recent patent applications mention “lithium-stuffed garnets” based on, for example lanthanum, zirconium and aluminum oxides. QuantumScape’s battery design makes use of lithium metal at the anode. The battery is manufactured in a discharged state, with lithium metal only forming around the current collector when the battery is charged. Because of its lithium anode, energy density is high, with two to four times the capacity of a current Tesla Model 3 battery. Charge times are short with 80% capacity achieved in 15 minutes or less.

Factorial Inc. of Woburn, Massachusetts is a solid-state battery company with recent investments by Hyundai, Kia, Mercedes Benz and Stellantis (Fiat/Chrysler/Citroen/Peugeot). Factorial’s solid electrolyte is based on an **organic polymer** rather than ceramic. Patent applications mention polyethylene glycol/urea/epoxy polymers mixed with lithium salts and plasticizer. In April 2021 Factorial announced a 40Ah cell for electric vehicles, resulting in a 20% to 50% longer range per charge compared with conventional lithium-ion technology. Factorial Energy was included in “10 Start-ups to Watch” in the November 15, 2021 issue of C&E News.



Factorial



Factorial Energy’s 40Ah solid-state lithium-ion cell.[Factorial]

Solid Power Inc. of Louisville, Colorado was featured in an earlier C&EN “10 Start-ups to watch” back in 2017 with a solid



electrolyte based on **lithium sulfide**. The company is a spin-off from the University of Colorado in Boulder. Partnered with Ford and BMW, Solid Power made its debut on the NASDAQ in early December 2021. Solid Power’s electric vehicle cells are based on either a high silicon content anode or a lithium-metal anode, with conventional NMC cathode. The sulfide-based solid electrolyte has high conductivity but is also moisture sensitive and must be manufactured and stored under an inert atmosphere. Solid Power is preparing for pilot-plant production of 100Ah battery cells in early 2022.

Who will win?

Several other companies are in the race to find a solid-state battery for electric vehicles — including Toyota, which is carrying out its own research in a joint venture with Panasonic. Toyota hopes to introduce a mass-produced electric vehicle with solid-state battery by 2025.

Perhaps Field Day 2025 will be 100% powered by lightweight solid-state batteries, instead of the usual Honda generator.

- NM9J

Magic comes to BOCES

- KD2ITZ

On Tuesday November 30th, high school students at Putnam Northern Westchester BOCES Tech Center had the opportunity to discover the Magic of Amateur Radio, thanks to Todd Traver N2MUZ. Readers will recall that Todd has given a similar presentation on Zoom numerous times, but at BOCES, Todd was live and in-person. He addressed two large groups of students during a morning and afternoon session. Numerous facets of ham radio were discussed, including emergency communications, field operations, and long distance (DX) contacts. Included among the radios he brought was the μ BITX that he built in 2018. (See the March 2020 PCARA Update for more information on that rig.)



Todd N2MUZ presented "Magic of Amateur Radio" at Putnam Northern Westchester BOCES on Nov 30. [KD2ITZ pic.]

The PNW BOCES Tech Center offers numerous college, career, and job preparation courses. Enrollment is



Todd N2MUZ with 'Radio Amateur of the Year' certificate presented at the Holiday Dinner in recognition of all the 'Magic'.

over 1100. Students spend part of their day at their local schools and are shuttled to the BOCES campus in Yorktown Heights for individual programs. The leadership is very supportive of Todd's initiative. James Bellucci, a former physics teacher and

current BOCES principal, also addressed the groups and encouraged them to pursue amateur radio. There are numerous hams on-campus already. Robert Cuomo N2QGE, former Director of Emergency Medical Services for Putnam County, is an instructor there. He attended the event and mentioned that he sometimes brings a transceiver to the classroom to monitor local repeaters with his students. Also present was Dr. Joseph DeCicco, instructor of microcomputer technology. He is planning to not only get an amateur license, but also integrate radio technology into his curriculum.

PCARA looks forward to supporting BOCES faculty and students as they pursue amateur radio. The exam team is happy to accommodate alternate testing days for individuals with scheduling conflicts. PCARA meetings and breakfasts provide ample opportunities to answer technical questions. Likewise, the club's Google Group provides an excellent forum for sharing information. Students are encouraged to reach out to PCARA at mail 'at' pcara.org .

- Lou, KD2ITZ

Ham Radio University

Ham Radio University 2022 is once again a virtual event, organized as a live webinar. The forums begin at 8:00 a.m., Saturday January 8, 2022 and continue until 3:00 p.m. Topics include:



- All things Digital VHF & above with DMR and D-Star - W2PW
- QRP low power fun - W2XS
- Basics of HF operating - KS2G
- Scanning - W2LIE
- Basics of Grounding in the ham shack - WB2BEZ
- Art of Operating Amateur Satellites with an HT -W2JV
- Skywarn - KD2LPM
- Overview of Ham Radio Logging Programs - KA2D
- Cables and Connectors - K2KNB
- HF Digital Modes including FT8 - W2NDG
- Software Defined Radios - Ria N2RJ
- Raspberry Pi applications for Ham Radio - W2NDG

Registration for each of the forums has been open since December 19. To register, go to <https://hamradiouniversity.org/> and perhaps make a voluntary \$5.00 donation toward the cost of organization using PayPal.

Field Day site

Lakeland Central School District is reconstructing the softball and baseball fields at Walter Panas High School, with installation of artificial turf and addition of a parking lot.

The new softball field is being constructed on the field previously used for football and soccer games, west of the main school building. The old softball field — which did not meet size regulations in right field — is being transformed into a parking lot. Work originally expected to begin in March 2020 did not begin until summer 2021— so with the permission of Lakeland Central School District, PCARA was able to once again make use of the existing upper ball field for Field Day 2021, with 40 meter three-element wire beam and mobile tilt-over tower carrying a tri-bandner.



Football/soccer field and upper ball field at Walter Panas High School during Field Day 2021.

According to the Lakeland Central School District web site:

“The new projects to repair and replace the fields and drainage at Lakeland and Walter Panas High Schools are well underway...



View SW across construction area at Walter Panas HS, late Dec 2021, in preparation for the new ball field and parking lot.

“At Walter Panas, the design phase of the project is well underway and expected to be completed by March or April. The Walter Panas multipurpose field will be slightly longer than Lakeland, a full 120 yards. Panas is



Original plan for parking area, upper ball field and multipurpose field at Walter Panas High School.

also scheduled to pick up a parking lot where the softball field currently sits. The softball field will be relocated on the field closer to the school. Unfortunately, with its proximity to the New York Watershed, the Walter Panas project plans must undergo a number of inspections and approvals from the Department of Environmental Protection, which are anticipated to slow the project down by at least a few months. The District and our engineers are doing everything possible to keep it on schedule as quickly as possible.”

The original plan for softball field and multipurpose field adjacent to the school building is shown above.

The picture below shows project progress by late December 2021. The softball field and its light poles have disappeared, the entire area is fenced off, and construction vehicles were rumbling across the site. Here's hoping the work is finished by Field Day 2022.

- NM9J

Peekskill / Cortlandt Amateur Radio Association

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E-Mail: mail 'at' pcara.org

Web site: <http://www.pcara.org>

PCARA on Facebook: <http://facebook.com/pcarahamradio>

PCARA Update Editor: Malcolm Pritchard, NM9J

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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

Please monitor PCARA's Google Group and websites for any changes to activities in January.

Masks and Social Distancing may be required.

Sun Jan 9: PCARA Bring and Buy Auction, Cortlandt Town Center CUE Room, 3:00 p.m.

Sat Jan 22: PCARA Breakfast, Uncle Giuseppe's, 380 Downing Drive, Yorktown Heights. 9:00 a.m.

Sat Jan 22: PCARA V.E. Test Session, 11:00 a.m., *location to be determined.*

Hamfests

Most Hamfests scheduled for Winter 2022 have been canceled. Check with organizers for physical events.

Sat Jan 8: Ham Radio University, Second year as a virtual Event. Registration links for the forums are now available at: <https://hamradiouniversity.org> .

Sun Jan 30: LIMARC Virtual Hamfest, 8:30 a.m. - 1:30 p.m. See: <https://limarc.org/> .

VE Test Sessions

Check with the contact before leaving.

Jan 1, 8, 15, 22, 29: Westchester ARC, 19 Hunts Bridge Rd, Yonkers NY. 12:00 noon. Must contact VE, k2ltm'at'aol.com.

Jan 13: WECA, Westchester County Fire Training Center, 4 Dana Rd, Room 3, Valhalla, NY, 7:00 p.m. Must contact VE: Stanley Rothman, (914) 831-3258.

Jan 22: PCARA, *location to be determined.* 11:00 a.m. Contact Michael W2IG w2igg@yahoo.com, (914) 488-9196. Masks may be required.



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