



PCARA Update



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RACES and races

PCARA participated in the NYS QSO Party on October 20, 2018 courtesy of Joe WA2MCR, who graciously hosted the event and allowed us to use his home station. Operators included Joe WA2MCR, Charles N2SO, and Malcolm NM9J. Yours truly stopped by for a while in the evening, to check on things and operate a bit. Results from the contest for PCARA can be found in this month's edition of the *PCARA Update*. On behalf of the membership of PCARA I would like to **thank** Joe for allowing us to use his station for the contest, and **thank** his XYL for the delicious home-baked coffee cake as well!

On October 21, 2018, PCARA along with our fellow amateurs from WECA provided communications support for the 38th Annual **Harry Chapin Run Against Hunger** in Croton-on-Hudson, NY. Operations were coordinated from the Westchester County RACES truck by Tom WB2NHC, as Net Control.



Hilltop view of Croton-Harmon High School with RACES truck at right and Run Against Hunger finish line in front.

The order and timing of events were changed this year. The 5K Run/Walk was first at 9:00 a.m., followed by the 10K Race at 10:00 a.m., while the 1 Mile Fun Run was scheduled to start at 11:30 a.m. The Fun Run was delayed to allow a few stragglers from 10K to finish. Amateur Radio turnout was a bit light this year, which left a couple of spots along the 10K Race without coverage. All in all, there were no incidents and we're looking forward to next year's event.

Upcoming events include the **PCARA Breakfast** on Saturday November 17, 2018 at 9:00 a.m. at Turco's in

Yorktown Heights, NY. The last PCARA Breakfast on October 20, 2018 had some serious competition for attendance due to the BARA Fall Hamfest and NYS QSO Party falling on the same date. Regardless, there were seven attendees including Vincent — KD2ITZ's first harmonic. Also, on Saturday November 17, 2018 at 11:00 a.m. a PCARA-sponsored **VE Test Session** will be held at the John C. Hart Memorial Library in Shrub Oak, NY. If you know of someone interested in taking an Amateur Exam please let them know.

The 2018 **PCARA Annual Holiday Dinner** is scheduled for Sunday December 2, 2018 at 5:00 p.m. at the Cortlandt Colonial Restaurant in Cortlandt Manor, NY. Due to the excellent overflowing turnout at last year's dinner, we need to get a headcount for this year to see if we need to make arrangements for a larger venue. If you are interested in attending the dinner, please email your name and the number of people in your party to: *mail 'at' pcara.org*, so that we can get an idea of the number of attendees. RSVP as soon as you can. Also, menu selections and price can be found in this month's *Update* courtesy of Malcolm NM9J.

Our next regularly scheduled Membership Meeting is on November 4, 2018 at 3:00 p.m., at NewYork-Presbyterian/Hudson Valley Hospital in Cortlandt Manor, NY. Note: **Nominations and Elections of PCARA Officers** will take place at the November 2018 Membership Meeting. Please come out to join us and throw your hat into the ring if you're interested. As always, I look forward to seeing each of you there.

- 73 de Greg, KB2CQE

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PCARA Officers

President: Greg Appleyard, KB2CQE, kb2cqe at arrl.net

Vice President: Joe Calabrese, WA2MCR, wa2mcr at arrl.net

Adventures in DXing

- N2KZ

A Great QSO

We are all familiar with a basic QSO conversation. Exchange your call sign, name, location, operating power, equipment, antenna type and height and you are all done. Fast CW or digital, it could be as brief as: N2KZ QSL UR 5NN TU. How about an FT8 QSO? VE3GOP N2KZ FN31EH. Next? In a contester's mind, fast QSOs mean more and more points. Is that all there is?

To another community of the amateur world, a good QSO is one that runs like a good novel. You like to enjoy a long conversation with someone from an interesting place far, far away. Just like a journalist or paperback writer, you are always looking for 'the good stuff.' Who doesn't like an amazing story or sharing an unusual interest in common?

Memorable QSOs can be cultivated just like a fascinating interview or biographical profile. Try to be gently inquisitive all about the person you are talking to. Becoming a good conversationalist is a very useful skill! People love to talk about themselves and share their lives and history. See if you can get them to tell you a story!

Be a good listener and be thoughtful. Always frame your questions so they cannot be answered with a simple 'yes' or 'no.' My all-time favorite is simply 'Tell me what it was like!' Oh, the things you will learn and all you have to do is ask!



Be a good listener.

It is a little bit different when you operate in CW or digital modes. You lose the ability to use inflection and tone of voice to add to your persuasion. To compensate, when using CW you sometimes open an exclusive door to the quite distant past. Solid first-class CW operators, with signature definitive fists, often have remarkable stories to share!



Old-time CW operators often have remarkable tales to tell.

I have enjoyed hearing amazing tales of adventure and lore. Who knows who you might meet on the air! Several times I have heard the seafaring sagas from telegraphers who spent decades aboard ships. I caught a gentleman who literally worked on a United Fruit banana

boat sailing across the Caribbean Sea. One evening, I chewed the rag with a Russian telegrapher sitting on a vessel anchored off the Dominican Republic. With people like this on the other side of the radio, you really don't want to have a cursory QSO. Tell me more!

Did I ever tell you the story of my first QSO with my one watt

Small Wonder Labs QRP CW transceiver? I was immediately answered by a French ham who could actually hear me loud and clear.



Small Wonder Labs SW40+ QRP CW transceiver in Halloween setting. [N2KZ pic.]

Both of us were thrilled and I received

a QSL I will treasure. Can I tell you another story?...

Rag-chew QSOs have had a profound effect on my operating habits. A Navy veteran spent an hour or so one day teaching me a fortune in tricks of the trade that may have taken him ages to develop! For example, instead of using the time-consuming CW pro-sign for a period (di-dah-di-dah-di-dah,) steal a pro-sign from the old telegram industry and use a simple 'X' instead (dah-di-di-dah.) An X just rolls off your key. Much faster and more graceful!

After being introduced to new tips and tricks, your on-air persona can suddenly be filled with self-confidence. In the CW world, learning to use pro-signs like BK (break) or AR (end of message) will really add a nice snappy timbre to your fist. You will no longer be beleaguered with long and complex signatures to your 'overs.' Try it!

Prosign	Morse code	Meaning
AR	.-.-.-	End of transmission, +
AS	.-...	Wait
K	-.-	Go ahead
KN	-.- -.	Go ahead, named stn only
BK	-.-.-.-.-	Break
BT	-.-.-.-	Pause, new paragraph, =
SK	...-.-	End of contact (also VA)
CL	-.-.-.-.-	Closing down

Table of Morse Code procedure signals or 'prosigns'. Barred characters (e.g. AR) are run together when sent.

Another thing the Navy radioman instilled in me was 'the pause that refreshes.' Don't ever be tempted to use the CW shorthand for errors — an endless chain of dits. If you catch yourself making a mistake, quickly consider if you are confusing continuity. If you aren't,

just move on. Is the mistake really a mess? Pause briefly to break the roll of your fist to make it obvious there is a problem. Time is of the essence in handling traffic. Begin re-sending the sentence and just move on!

There is an exception to this rule. It is not likely, in the year 2018, that you are sending traffic that must be received perfectly verbatim. Aah, but if you *are* conveying critical content, like you would encounter in an emergency or general traffic net, it is best to revert to the beginning of your sentence and send it in total again. Especially on CW, keep your vocabulary simple and easy to understand. Multi-syllabic words are rough when sent via code.

Some QSOs don't need much cultivation. One lonely night several years ago I jumped onto a seemingly dead 15 meters and called CQ. I was greeted by a



An oddball call sign beginning with 'R'.

truly oddball call sign beginning with 'R'. I sent my vital information and waited for a reply. I just about fell off my chair! It was a Russian scientist based in Antarctica! You don't have to convince me that amateur radio is fun!

One fruitful way of starting a conversation is to tell a very quick tale to get the ball rolling. In essence, you are putting the bait on the hook and waiting for a bite. This may sound really clinical, but I find it is worth it. Learn to know how to start fun! An important tip: Don't get long winded yourself, especially early on in a conversation. If you sound like you are self-interested, many people will just run!

Enthusiasm and delight can go a long way. People will often warm up to a conversation when you highlight a personal achievement or comment they made in the last 'over.' Another great tip is to use the other person's name in a reply. I have always found it very hard to remember people's names and to recall a name can be quite an ice-breaker during a QSO.

Smiles can also be created by showing your optimism and inspiration. If someone has a really interesting idea or story, follow up the comment with an inquisitive thought: 'Wow! That's so cool! Tell me more!' Offer your ideas and try to build on a thought that caught your interest – but remember to be concise.

When someone has reached storytelling mode, I try to keep my answers short using what I call 'the 30 second rule.' Keep their ball rolling with just a little more push and get the conversation back to them before they lose their train of thought.

Sometimes your best intentions just go wrong. I once was in a conversation with someone on 30 meter

CW. I foolishly made a quip without thinking: (Paraphrasing...) "I am just like every other balding ham who wears a baseball hat." Boy! All I heard after that statement was a lot of static. Talk about pushing the wrong button! Things like this will happen! My philosophy: Learn from your mistakes and move on!



Needless to say, another (very sneaky) way to oil a new rag chew is to cheat and look up at your contact's biography on QRZ.com. Here you will discover all sorts of things to talk about. I have mixed feelings about this approach. It may be perceived as being heavy handed if you try too hard. Conversely, I have had nice QSOs that I would like to remember with a QSL. I will look up my catch's address on QRZ and then discover something I would really like to know about (like CW operating techniques.) Too late! The QSO is now over! Maybe I can arrange another QSO on sked?

Don't let the end of a QSO end your enthusiasm. Want to hear more good stories and make good friends? In my case, I met some great people teaching Morse Code. When you have QSO after QSO with a person pulling them through learning a useful skill, it is hard not to get to know them! Voice ops can do the same. Go to events, join a ham club or simply get on the air! The world is waiting for you!

The golden rule for great QSOs is The Golden Rule! "Do unto others as you would have them do unto you." Always be respectful and courteous to your fellow hams. Answer questions politely and simply, be thankful and grateful for each and every QSO and — above all — really *listen!* You will be amazed at what you can hear!

Until next month, 73 es good DX de N2KZ 'The Old Goat.'



WA2WGJ silent key

We were saddened to hear of the recent passing of PCARA member Charles, WA2WGJ. Here is a lightly edited version of his obituary.

Charles A. Gentile of Briarcliff Manor passed away peacefully on Thursday August 30, 2018. He was 87 years of age. Charlie hails from Staten Island and is the last scion of his clan. He was a USMC veteran and a friend to all who knew him. In addition to being a world traveler, Charlie was an avid hobbyist, involved with flying model airplanes and as an Amateur Radio operator with call sign WA2WGJ. Charlie was recognized for his charitable generosity and he will be missed by his neighbors and friends.

Accounts of WA2WGJ's world travels can be found in *PCARA Update* for March 2005 (Brazil and Argentina) and July 2005 (Australia).

Holiday Dinner

The 2018 PCARA Holiday Dinner has been arranged at the same location as in recent years, the **Cortlandt Colonial Manor Restaurant.**

The event begins at 5:00 p.m. on Sunday December 2.

The restaurant is located at 714 Old Albany Post Road. Take the Bear Mountain Parkway to the Highland Avenue exit, then head north. Proceed down Highland Avenue and across the bridge. The restaurant and car park are immediately on the left.



The dinner menu is the same 'Package Number Three' as in previous years.

Open Soup and Salad Bar
Soda, iced tea and soft drinks (unlimited)
 ♦♦♦♦ choice of: ♦♦♦♦
Prime Ribs of Beef
Grilled New York Strip Steak
Grilled Pork Tenderloin Medallions
Jumbo Shrimp with crabmeat stuffing
Chicken — Marsala, Chardonnay, Sherry or Madeira
Penne ala Vodka, traditional or w/grilled chicken
Custom Cake – Chocolate Mousse

Cost will be ~\$42.00 per head including service, but *not including* any alcoholic drinks.

We need to advise the restaurant — which is cele-

brating its 40th Anniversary this year — on the number of participants. If you will be attending, please let Greg KB2CQE know by emailing your name and the number of people in your party to: *mail 'at' pcara.org*.

Fall backward

Daylight Saving Time ends at 2:00 a.m. on Sunday November 4, 2018. Remember to change any of your household clocks and watches that still require manual adjustment.



The change from Eastern Daylight Time to Eastern Standard Time takes place on the same Sunday as PCARA's November meeting — which starts at **3:00 p.m. EST** on November 4. Be sure to change your clocks, or you might turn up one hour too early for the meeting.

V.E. Test Session

A PCARA Volunteer Examiner (V.E.) Test Session is scheduled to take place on Saturday November 17, 2018 starting at 11:00 a.m. at the John C. Hart Memorial Library, 1130 E Main St, Shrub Oak, NY. This particular session follows immediately after the PCARA breakfast at Turco's, scheduled for 9:00 a.m. the same morning.



John C. Hart Memorial Library in Shrub Oak.

The cost for candidates is \$15.00 per exam or re-test. A photo-ID is required and your Social Security Number will be needed if unlicensed. Please bring a copy of your current amateur radio license if upgrading.

All candidates are strongly advised to contact Mike W2IGG before the test session, using e-mail address: *w2igg 'at' yahoo.com*.

Run Against Hunger 2018

Why they run

Peekskill/Cortlandt Amateur Radio Association and the Westchester Emergency Communications Association (WECA) combined forces once again on Sunday October 21st for the 38th Annual Harry Chapin Memorial Run Against Hunger. This event takes place every year around the streets of Croton-on-Hudson to commemorate the fundraising efforts of singer-songwriter Harry Chapin — who was killed in a Long Island vehicle accident in 1981. Organizations that benefit from the Run Against Hunger include the Croton-Cortlandt Food Pantry, the Croton Caring Committee and Caring for the Homeless of Peekskill (CHOP).



New arrangements

In a pre-race meeting with the organizers, Greg KB2CQE had been told that timing of the three events would be modified in 2018. The 5K Run/Walk would be brought forward from 9:30 a.m. to **9:00 a.m.**, the 10K Race which had previously started at 12 noon would now start at **10:00 a.m.**, while the One Mile Fun Run would be moved from 11:00 a.m. to become the last event of the day, starting at **11:30 a.m.** There would have to be careful coordination of these events because of possible overlap, when runners might be moving both inward and outward along the same stretch of Cleveland Drive.

Cold start

The day dawned damp and chilly on Sunday October 21st. Temperatures stayed around 44°F all morning, with a bitterly cold wind gusting to 25 mph. Greg KB2CQE arrived at Croton-Harmon High School at 7:00 a.m. to make sure there was sufficient space in front of the school for the Westchester County RACES communications vehicle, driven by Alan N2YGK. WECA members who were posted at the school included Emergency Services Director Tom WB2NHC and Public Service Director Kathleen KC2VCT.

With the RACES truck hydraulic mast raised, net control Tom, WB2NHC was still having trouble with simplex contact to one of the out-stations, so a decision was made to shift the net from 146.565 MHz to

the WECA 2 meter repeater on 147.060 MHz. This change also proved helpful with hearing the start of each race as Kathleen KC2VCT and Alan N2YGK “shadowed” race organizers Jud Ramaker and Mike Grayeb. In addition to signaling the start of each race, the organizers provide a running commentary *via* public address for the benefit of spectators at Croton-Harmon High School.



Jud Ramaker (left) announces at the High School while shadow Alan, N2YGK operates nearby. [Pic credit: Run Against Hunger.]

5K Run/Walk

Your editor was once again out in the field to report on events from the three locations assigned to Al, K2DMV. Despite the earlier start time, stations were ready at both ends of the Croton Gorge Trail for the 5K Run/Walk which began at 9:00 a.m. Robert N2TSE was in position at the end of Truesdale Drive while Al K2DMV was located at the end of Cleveland Drive, where a large rock prevents vehicles entering the trail.

Shortly after your editor reached Al at the trail-head, we were joined by a large force of ten (ten!) Croton Cheerleaders who took position at the 2 mile marker to cheer on 5K participants with encouraging chants and waving of their red/black pom-poms. Four additional helpers guided runners past the rock and onto Cleveland Drive.



Ten cheerleaders encouraged 5K runners at the north end of the Croton Gorge Trail.

Passage of the first runner along the trail was reported to net control first by Robert, N2TSE then by Al, K2DMV. Both operators observed the remaining runners as they passed by. The trail was patrolled by a

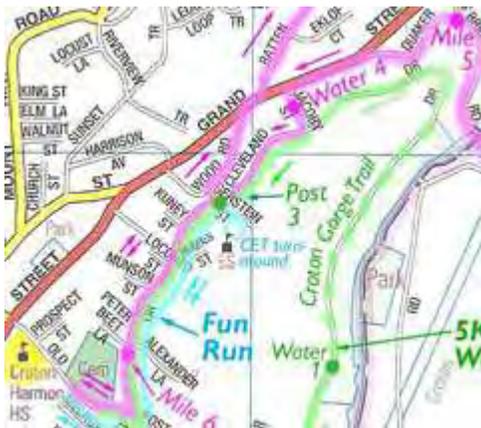
member of the Croton-on-Hudson Police Department on bicycle and by the Croton EMS mini-rescue truck. As the last of the runners passed the 2 Mile marker, our cheerleader team departed to travel to their next location at Croton Dam. Since many 5K walkers were still en-route, Al and I directed them along the course until the last walking couple went by. In all, 179 runners and walkers completed the 5K event, with times ranging from 19 minutes to 1 hour 5 minutes.



Al K2DMV observes 5K runners passing the 2 mile marker from inside his vehicle at the end of the Croton Gorge Trail.

10K Race

The main event of the day —the 10K Race — had been moved forward from 12 noon to 10:00 a.m. The course takes a sweep around Croton-on-Hudson, north on Cleveland Drive to Gerstein Street, crossing Route



Map detail shows race locations near to Croton-Harmon High School.

129 at Wood Road, then along Batten Road into the Town of Cortlandt and across the New Croton Dam. The return route is along Quaker Ridge Road, crossing the river at Croton Bridge Road then returning via Rt 129, Jacoby Street and Cleveland Drive.

Al K2DMV was trying to relocate from the 5K Run/Walk to his allocated 10K spot near Mile Point 6, but by the time we set out, the 10K race had already begun. Cleveland Drive had been closed to traffic at Gerstein Street by Croton-on-Hudson Police Department so we had to pause there and watch the runners go past. Once the Trail Car containing Kathleen KC2VCT had followed the last runner around the corner to Wood Road, our friendly police officer



On the way to Mile Point 6, Al, K2DMV observes 10K runners turning from Cleveland Drive into Gerstein Street.

allowed Al's vehicle to continue down Cleveland Drive to Mile Point 6, near Peter Beet Lane. Tom, WB2NHC was also aware of the Trail Car's location in net control as he was tracking it via APRS.

Meanwhile, Greg KB2CQE had relocated to Water Stop #1 on Batten Road, where it only took 11½ minutes for the first runners to pass. The only excitement was caused by a vehicle not connected with the race which saw the runners, reversed into a driveway then hit a telephone pedestal and became trapped. AAA had to be called to extricate the vehicle. When the runners had all passed by, Greg returned to Croton-Harmon High School.

Runners continued across the New Croton Dam where Victor KC2UAP had already reported removal of the chain across the road so that race vehicles could pass. Mile point 3 was manned by Steve KD2OFD at the point where runners turn onto Quaker Ridge Road. The next water stop at the Danish Home had no radio cover, so runners proceeded to Mile Point 5 at the end of Quaker Bridge Road where Mike W2IGG was able to report that Runner #54 passed by at 10:35 a.m. (The subsequent water stop on Jacoby Street was also unmanned.)

Runner #54, David Pond, reached Al's location near Mile Point 6 at 10:42 a.m. Turning into Old Post Road South he continued to the finish line at the High School for a first place time of 39 minutes 36 seconds. The total number of 10K runners was 146, down on last year's total of 205 runners.



David Pond, bib #54, led the 10K race past Al's location at Mile Point 6, approaching the end of the course.

Meanwhile, the Trail Car with Kathleen was making its way more slowly around the course. Net

control was following her progress by voice contact and APRS, then informing each water stop station that it could secure as soon as the last runner had passed and local volunteers had wrapped up. The Trail Car turned into Al's location near Mile 6 at 11:25 a.m. One other PCARA/WECA participant seen on the course was Barry K2BLB in "EMS12".



Kathleen KC2VCT provided radio and APRS coverage from within the 10K Trail Car.

One Mile Fun Run

The Fun Run, scheduled as the third and last event of the day, was due to start at 11:30 a.m. For this race, Al K2DMV had been hoping to relocate to his appointed spot at the CET Elementary School turnaround, but the Fun Run had already begun before he had a chance to move away from the 6 Mile post. Cleveland Drive was soon awash with runners and walkers who departed in two waves, separated by age. As it turned out, Al's location at Peter Beet Lane was still a good spot to keep an eye on all participants, some of whom were taking part with strollers.



Fun Run participants fill Cleveland Drive on their way to the turnaround point at CET Elementary School.

The Fun Run is a short event, and after all walkers had passed Peter Beet Lane at 12:07 p.m., permission was given for Al K2DMV to secure operations.

Final thoughts

Once again a combined force of PCARA and WECA volunteers was able to provide radio support for the Run Against Hunger. Because of manpower limitations, three posts could not be covered. Thankfully there were no major problems to report and the event concluded with most participants successfully finishing the course.

I checked with our operators who returned the following thoughts. Greg KB2CQE reported that from his viewpoint at Croton-Harmon High School and at Water Stop 1, the event went well. Greg also noted the comprehensive and complex equipment inside the Westchester County RACES communications truck where Tom, WB2NHC was net control.



Tom WB2NHC handled net control from inside the well-equipped Westchester County RACES vehicle. [Pic by KB2CQE]

Mike W2IGG said that he is always happy when different radio clubs work together and wished that was the norm rather than the exception. He was glad that the 38th Harry Chapin Memorial Run was safe and incident-free and appreciated all the volunteers who showed up to support a worthy cause.

Al K2DMV added that almost everyone dealt with the schedule changes well. Use of the WECA Repeater covered the whole course very adequately. We were short one person for Mile Post 4 — it can be tough to get someone over there without pre-planning. Fortunately Steve KD2OFD was able to move over to cover Mile Post 3. Obtaining the locations of personnel through APRS was helpful — it could be even more useful if more people had APRS capability.

Finally, Kathleen KC2VCT thanked all who came out to support the Run Against Hunger, even though numbers were down, possibly as a result of weather and WECA's busy schedule. The new format had some challenges, but amateur flexibility and dependability shone through to get the job done. Our organizations are fortunate to have the opportunity to work together on such a deserving cause. While no charity should be any more deserving than another, feeding hungry people is critical, and efforts on their behalf are well appreciated.

- NM9J

New York QSO Party 2018

PCARA's entry in the 2018 New York State QSO Party was once again hosted by Joe, WA2MCR. Joe had moved his Icom IC-7410 HF transceiver from the basement up to the sun room where there is plenty of light and space for operators. The antennas in use were a ZS6BKW computer-optimized dipole strung high in the air between trees and the Carolina Windom, sited lower down for high-angle NVIS propagation.

For the start of the contest at 10:00 am Eastern on Saturday October 20th, Joe was joined by Charles, N2SO. Charles had brought along his Hamcrafters K44 CW Keyboard, programmed with appropriate exchanges for the contest. Computer logging was in use on Joe's notebook using N3FJP software for the New York State QSO Party.

The aim of the contest is to contact as many stations in other States/Provinces and New York counties as possible, since each new state and county acts as a multiplier for the final score.



Charles N2SO (right) operates 40 meter CW alongside Joe WA2MCR during the 2018 New York State QSO Party.

Charles concentrated on 40 meter CW at the beginning of the contest. CW contacts score double points compared with a single point for phone QSOs. As the day progressed, propagation on 40 meters deteriorated, so operation moved up to 20 meters. There we found competing activity from the Boy Scouts' "Jamboree on the Air" and from the Deutscher Amateur Radio Club's "Worked All Germany" contest.

Charles left after lunch, but operation continued with Joe and your editor taking turns on key, microphone or computer keyboard. As evening approached and 40 meters seemed to have been worked out, a move was made down to 80 meters. The IC-7410 built-in ATU seemed to be having trouble with re-tuning at high power, so we had to carry out re-tuning at the lowest power setting.

Later on Saturday evening we were joined by PCARA President Greg, KB2CQE. Greg enjoyed himself making contacts on 80 meters into the night. The contest ended at 10:00 p.m. Eastern after 12 hours of operation. By then 392 contacts had been made, a little down on 2017.



Greg KB2CQE (right) operates 80 meter SSB phone with Joe WA2MCR logging during NYQP 2018.

Final results

Joe provided the following QSO count and claimed score according to the N3FJP contest software.

New York QSO Party 2018, W2NYW WES

Band	CW	Phone	Total
80m	41	51	92
40m	108	169	277
20m	23	0	23

Total contacts = 392

Total points = 41,172

Here is a summary of results from past New York QSO Parties for comparison with this year's claimed score.

Year	QSOs	Points	Multiplier	Claimed total
2013	300	345	83	28980
2014	463	548	100	54800
2015	292	359	81	29079
2016	352	441	86	37926
2017	432	612	87	53244
2018	392	564	73	41172

For 2018, there is some doubt about the calculation of final points as there seems to be a disparity between the software's total and the count of states/provinces worked. We shall have to see what the final score shows when New York QSO Party scrutinizes entries then publishes results in early 2019. Keep an eye on their website at: <http://nyqp.org/wordpress/>.

- NM9J

CB in the UK and 10 FM

A big 10-4

During the Old Goats' Net of October 4, 2018 net control Karl N2KZ posed Questions of the Week on the subject of **Citizens Band**. (The date was 10/4 — get it?) One of Karl's questions was to identify the significance of CB Channels 9, 19 and 14.

Karl's topic revived a few memories. Your editor was not in the U.S.A. during the "CB craze" of the mid-late 1970s and had a different experience of that aspect of the radio hobby on the other side of the Atlantic, where inexpensive equipment was re-purposed for Amateur Radio. Here is how it all played out in north-west England.

Setting the scene

When I first came on-air in Great Britain as G3VNO, the UK licensing authority had a very different attitude compared to the U.S. Federal Communications Commission. Very few private individuals were permitted to transmit on *any* frequency in the UK. Reception of non-broadcast frequencies was also highly restricted.

Radio Amateurs were in a somewhat privileged position along with boat owners who had a permit to transmit on marine channels, private pilots who could use aeronautical frequencies and a very small number of people who had a Post Office mobile radiotelephone installed in their vehicles. Equipment for the marine, aeronautical and mobile services was very expensive and had to meet demanding government specifications. Any unlicensed operation was treated severely, with the Post Office Radio Investigation Service keeping a very tight rein on any wrongdoing.

In the late 1970s, the general public in the United Kingdom began to hear about **Citizens Band radio** as practiced in the United States. The message arrived in movies such as *Smokey and the Bandit* (1977) and the



Burt Reynolds (1936-2018) as 'Bandit'.

top 20 song *Convoy* by C.W. McCall (1975) — which inspired the movie *Convoy* (1978). In 1976 a comedy version of the *Convoy* song appeared as *Convoy GB* by "Laurie Lingo & The Dipsticks" — this turned out to be two BBC Radio 1 disc jockeys — Paul Burnett and Dave Lee Travis. Some TV series shown in Britain also featured CB radio, including "The Dukes of Hazzard" (1979 - 1985).

A.M. and SSB CB equipment intended for the U.S.A. began appearing in Britain in the late 1970s. The importation of this equipment was illegal — CB transmission on those



Launch of UK radiosonde weather balloon, Aughton Meteorological Station, 1978.

27 MHz U.S. channels was unlikely to be licensed while legitimate UK services such as pagers, radio-controlled models and weather balloons were already making use of the same frequencies. The licensed services began suffering heavy interference from illegal transceivers, especially when used with external RF amplifiers.

Radio amateurs *were* permitted to modify the imported USA equipment for licensed operation in the 10 meter amateur band — provided import duty was paid — but all other use was illegal.

Legal Citizens Band arrives

Activity on the illegal U.S. frequencies continued to grow and demand was increasing for a legal Citizens Band radio scheme in Britain. Several magazines such as *Breaker*, *CB News*, *CB Radio Magazine* and *CB Citizens Band* added to the pressure. Eventually the UK Government came up with a licensing scheme that was intended to *block* use of the illegal radios from the U.S.A. The UK 27/81 specification published as MPT 1320 in April 1981 provided forty channels in the 27 MHz band using frequency modulation. (MPT 1321 specified another 20 FM channels in the 934 MHz UHF band.) Deviation at 27 MHz was specified as ± 1.5 kHz, peaking to ± 2.5 kHz absolute maximum when fully driven.



U.K. CB magazines.

The 27 MHz channels were spaced at 10 kHz intervals but on different frequencies from the USA CB channels, as shown in the table below.

Channel	USA MHz	UK MHz
1	26.965	27.60125
2	26.975	27.61125
3	26.985	27.62125
4	27.005	27.63125
...		
39	27.395	27.98125
40	27.405	27.99125

Not only were those UK channels higher in frequency than the U.S.A. channels, they were also offset +1.25 kHz above exact multiples of 10 kHz. This was intended to avoid harmonic interference with other radio services such as land mobile and aircraft ILS. There was a strict limit on spurious radiation of 50nW from the transmitter for the same reason. The mode allowed was FM-only — to reduce the chance of unwanted pickup by domestic television sets (TVI) or radio and audio equipment. Power output was limited to 4 watts maximum and antennas were initially restricted to a length of 1.5 meters (4 ft 8 inches), base loaded only. If the antenna height exceeded 7 meters (23 feet) the power output had to be reduced by at least 10dB (0.4 watts).

Radios arrive

Transceivers complying with the new MPT 1320 specification began arriving in the UK in late 1981, just in time for the holiday season. CB Licenses for individuals became available from November 2 for £10.00 each. The government had been hoping that the UK-specific frequency plan and FM-only mode would provide an opportunity for British manufacturers, but in practice the majority of legal CB equipment was imported from the Far East. Radios from Korea, Taiwan, Hong Kong and Japan began arriving



Sanyo LC7137 PLL frequency synthesizer integrated circuit in a Rotel CB radio..

with names such as Shogun, Maxcom, Rotel, Midland, Cybernet and Amstrad. Early sets used the Sanyo **LC7137** synthesizer chip, based on the LC7131 for U.S. channels. The LC7137 generated the UK CB frequencies from a reference oscillator using a single quartz crystal on 10.240 MHz. This frequency was also employed as local oscillator to convert from the receiver's first intermediate frequency (I.F.) of 10.695 MHz to the second I.F. on 455 kHz.

The arrival of legal and inexpensive transceivers for 27 MHz caused a mini-boom in late 1981 and 1982. Some 170,000 licenses had been issued by February 1982, rising to 300,000 in 1983. Monitoring 27 MHz frequencies from my elevated site in Norden (600 ft asl and overlooking Rochdale) revealed continuous activity on the 40 channels. Some operation was by lorry drivers on the nearby M62 motorway, but a great deal of activity seemed to be coming from the younger voices of school children trying to meet each other over the air. Much use was made of “handles” and CB’s own specialized language... with terms such as “breaker”



UK sets complying with MPT 1320 had to carry the CB 27/81 mark.

(operator), “wally” (bad operator), “twig” (antenna), “bleedover” (adjacent channel interference) and “burner” (external RF amplifier – illegal).

Amateur interest

In the early 1980s, fully synthesized transceivers for amateur radio were both new and costly. For example the Icom IC-740 HF SSB transceiver cost £725* in the UK while the IC-25E 2 meter mobile FM radio was £269. As a result, radio amateurs looked with interest at the newly-arrived, inexpensive CB transceivers costing only £50-£80 — roughly one quarter the price of a 2 meter mobile. However the LC7137 synthesizer design did *not* lend itself to easy modification.

*(The conversion rate for pound sterling to U.S. dollar in 1983 was roughly £1.00 = \$1.60.)

More radios

As the CB boom continued, more radios were imported, including designs that did **not** incorporate the expensive Sanyo LC7137 synthesizer chip. Some examples included the DNT M40FM, JWR M2 and “Icom” ICB-1050*. These sets made use of an inexpensive



Icom ICB-1050 box.

lower-frequency Motorola synthesizer chip, the **MC145106**, with additional quartz crystals to mix the



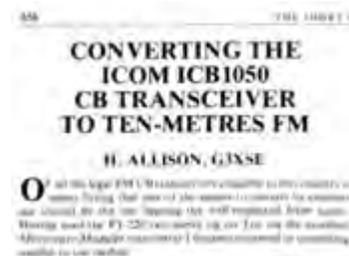
Motorola MC145106 frequency synthesizer IC in Icom ICB-1050.

VCO signal down to a lower frequency that the phase-lock loop chip could handle. These radios were even less expensive with prices ranging from £25 to £50.

*(The Icom ICB-1050 radio was manufactured in Korea and bore no relation to radios manufactured by Icom Incorporated of Japan.)

Dawn breaks

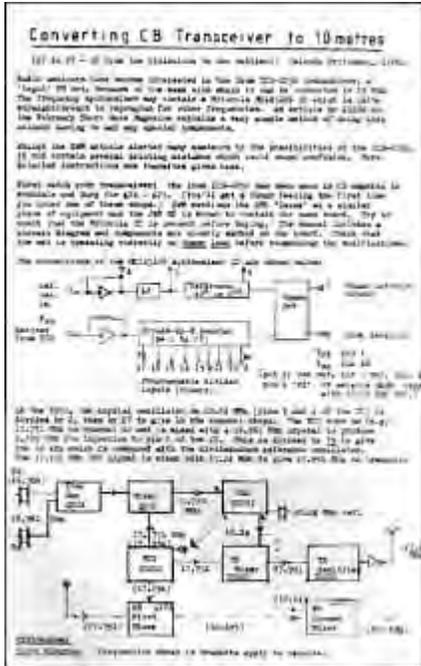
The February 1983 issue of UK publication *Short Wave Magazine* contained a short article by Hugh Allison G3XSE (SK) entitled “Converting the Icom ICB1050 CB transceiver to Ten-Metres FM”. G3XSE gave straightforward instructions for modifying the programmable divider inputs of the Motorola MC145106 IC so the radio would transmit and receive on 29.6 MHz instead of 27.841 MHz. All you had to do was move some colored



wires between the channel switch and synthesizer IC, then re-peak the RF circuits.

At the next meeting of my local club, Bury Radio Society, word went out that our local electronic store in 'The Rock' shopping area had low-cost, modifiable ICB-1050 radios **in stock**. Four or five members including myself and club Chairman Chris G4JAG purchased

a radio and confirmed how easily this particular model could be converted. The article in *Short Wave Magazine* had a couple of typographical errors and did not contain any diagrams or tables — so I wrote a three-page article for the March issue of the club magazine *Feedback* "The Journal of Bury Radio Society", expanding on the theme. This proved popular and more members carried out conversions.



Article on CB conversion from Bury Radio Society *Feedback*, Mar 1983.

Feedback for NARSA

Meanwhile the annual NARSA (Northern Amateur Radio Societies Association) Exhibition was approaching. On the weekend of March 19-20, 1983 radio amateurs would be congregating at Pontins Holiday Village near Southport. Bury Radio Society was a regular exhibitor at this convention — the club had a portable booth to display projects, publicize club activities and recruit new members.

With the sudden interest in CB conversions, BRS newsletter editor Alex G6HBF came up with the idea of a special edition of *Feedback* for the NARSA Exhibition, combining all the knowledge that had been accumulated to-date on the ICB-1050. Bury Radio Society was fortunate in having members who were professionally engaged in electronics as well as others who were talented constructors. All sorts of ideas were bouncing around on different ways to convert and improve the low-cost radios. I undertook to document these ideas in newsletter format ready for publication. Article titles included the original "Converting CB Transceiver to 10 metres", plus "Extending the ICB-1050 Frequency Coverage", "ICB-1050 Modification by changing crystals", "Modification with CMOS adders", "Correct Channel Read-Out", "Receiver improvements" and "Aerials for

29 MHz". Collaborators for these sections included Peter G2DPL, Chris G4JAG and Martin G4FIK.

I should mention the newsletter technology available in 1983. Home computers were just making an appearance in Britain, but there was no Internet, no e-mail, and no word processing available at the G3VNO shack. Instead, articles were typed out on my Silver-Reed 150 portable type-writer, with diagrams hand drawn and labeled. Titles were lettered using German Rotring pen stencils. Photographs were literally cut



Desktop publishing equipment in 1983 — manual typewriter from Japan plus Rotring pen stencils from Germany.

out and pasted onto the A4 size paper. Publication required a visit to the Mosses Centre in Bury where our Radio Society meetings took place. The Centre had a large-format copier which could handle A3 paper. After two-sided copying, each A3 sheet was folded in half to produce four sides of A4 — 8¼" × 11¾" — then stapled together into a booklet.

Much to everyone's surprise, the special edition of *Feedback* was a success at the 1983 Exhibition. Selling at £1.00 per copy, the venture added a tidy sum to the BRS treasury.



Bury Radio Society booth at 1983 NARSA Exhibition with Roger G6FUQ and Brian G4SEO in attendance, plus "Low Cost 29 MHz FM" on sale. [Pic credit - Bury Radio Society]

Demand continued after BRS' Editor, Alex, G6HBF placed small ads in *Radio Communication* and *Practical Wireless* magazines. One year later, at the April 7-8th 1984 NARSA Exhibition at Pontins, special editions of *Feedback* were again on sale, with working models of converted sets on display. On that occasion, Bury Radio Society was presented with NARSA's Cup for "Best Club Stand".

Another trip to the well

As a result of all the publicity, inexpensive readily-converted transceivers such as the ICB-1050 became far more difficult to find, leaving only sets with the Sanyo LC7137 IC, dedicated to UK CB frequencies.

In the March 1984 issue of *Short Wave Magazine*, Hugh Allison G3XSE wrote a second article entitled "How to Convert 'Unconvertible' CB Rigs to Work on the Ten-Metre Band". G3XSE suggested a new approach where the VCO frequency for 29 MHz operation would be *mixed* down to a lower frequency before being presented to the LC7137 phase lock loop input. The synthesizer IC would then be 'tricked' into controlling the frequency as though it was still operating on 27 MHz — rather than on 29 MHz. In a great piece of lateral thinking, G3XSE suggested the local oscillator for this mixing process could be generated from the 10.240 MHz reference oscillator by dividing either by 6 or by 12 in a 74LS92 divide-by-12 low-power Schottky IC to provide LO frequencies of 1.7066 MHz or 0.8533 MHz.

In collaboration with my colleague Arthur G4UTB another article was submitted to Bury Radio Society's journal which appeared in the May 1984 issue of *Feedback*. We made some changes to the circuit published by G3XSE and provided mixer circuit layouts for an etched circuit board and for Veroboard (UK brand of strip-board). A second special edition of *Feedback* was



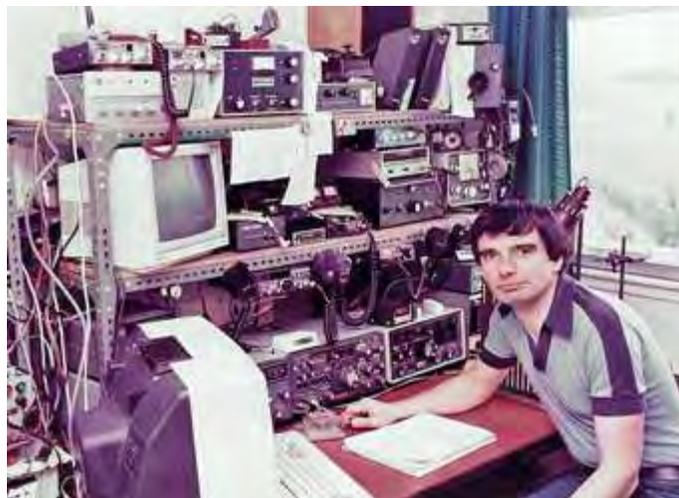
May 1984 Special Edition of Bury Radio Society Feedback included conversion details for LC7137 radios.

published containing conversion details for LC7137 transceivers such as the **Rotel RVC-230** (Cybernet board) and the Midland 3001. Further articles were titled "Improved Repeater Shift" and "Cybernet Board Improvements". Additional contributions covered "Ex-CB Amplifier Use" and "Bandplans, Beacons and Repeaters". That last article included a list of U.S.A. and German repeaters on 29 MHz FM, kindly provided by Terry G4TZB and Barry G4MKT — who had made contacts through a good number of them. We also had details of the "DNT M40 / LCL 2740 on 10m" — these were UK CB sets based on the MC145106 IC but with improved design and still available in stores.

The special editions of *Feedback* were reviewed positively in *Ham Radio Today* for June 1985 by Julie G1CKF.

How was 10 FM?

At the height of interest in 10 meter FM, I had a pair of ICB-1050s and a converted LCL 2740FM in the shack feeding a full-size vertical dipole outdoors. I could also run mobile from my red VW Polo with the transceiver feeding a 25 watt amplifier and 4 foot long "Jasco Mr CB Lightning Rod" fiberglass antenna (made in USA), retuned from 27 to 29 MHz.



G3VNI Rochdale shack in 1985 included two ICB-1050s (top shelf) and an LCL 2740FM (under middle shelf).

The impression I gained was that 29 MHz simplex range was better than 2 meters or 4 meters (for similar power) especially over rolling terrain, and the mobile flutter rate was slower. Another observation was that vertical street objects such as light poles could influence the antenna pattern of a vertically-polarized mobile. There were no 10 meter repeaters in the UK at the time.

How 10 FM now?

In the mid 1980's a trio of converted UK FM transceivers accompanied me across the Atlantic. I recently found a basic "Icom" ICB-1050 in its original cardboard box. After I unpacked it, I was amazed at how clean it was, 35 years after purchase. Applying 12 volts DC lit up the S-meter lamp and LED channel display. I checked



Icom' ICB-1050 transceiver was recently powered up after 32 years in storage.

power output to a dummy load and observed 5 watts output on 29.6 MHz. Transmitted audio still sounded good on the main HF transceiver, when switched to FM. The only problem was the ICB-1050 squelch control which would barely open with no signal present. Connecting an external antenna improved matters, and I could hear strong signals from the WB2HWW repeater in Brooklyn on “channel 31”, 29.660 MHz plus the KQ2H repeater (Wurtsboro) on “channel 27”, 29.620 MHz.

I also checked operation of a converted LCL 2740 FM transceiver — a superior design which had been



LCL 2740 FM transceiver had better receive performance than ICB-1050.

modified for repeater offset and correct channel display on the green LEDs. Receive audio was low until I poked around in the bundle of cables between circuit board and front panel, when it suddenly improved.

Transmitting produced 5 watts output with rather tinny modulation — possibly caused by damage to the microphone case. With an antenna connected, I was able to hear strong signals from the N2ACF RRA repeater on “channel 64”, 29.640 MHz (Nyack).

The third radio kept in storage was a Rotel RVC-230 transceiver, based on the Sanyo LC7137 dedicated synthesizer IC. This radio was a lot more trouble to convert than the ‘Icom’ and ‘LCL’ models. Checking inside, I found

that one of the additional circuit boards had come adrift as its double-sided foam tape had dried out. After fixing the problem, I switched the radio on and the S-meter



Rotel RVC-230 ‘dedicated’ UK CB transceiver converted to 29 MHz FM in 1984 and still operating today.

and channel display LEDs lit up. The set was receiving local repeaters satisfactorily, but power-out on transmit was somewhat intermittent. When output was present, the FM transmissions monitored on my main HF transceiver still sounded good.

UK update

Much has happened since the original UK CB boom of the early 1980s. One outcome was that many CBers realized the limitations of legal operation on 40 channels with low power FM and decided to take the Amateur Radio Exams. (Welcome aboard!)

The base-loading-only antenna rule for CB’ers was relaxed in 1984, at the same time as restrictions were placed on youngsters under the age of 14. Longer antennas were allowed in 1987 along with permission to operate on the 40 ‘CEPT’ channels allowed in mainland Europe between 26.965 and 27.405 MHz. The 934 MHz UHF band was withdrawn in 1998, and the remaining service on 27 MHz was made license-free from 2006. CB Radio is still in use but with nowhere near as many people as in its UK heyday of 1981-83.

Final thoughts

Radio amateurs have always been ready to exploit inexpensive equipment, whether military surplus, private mobile radio transceivers from the 1960’s and 70’s or CB radios from the Far-East during the 1980’s. Fortunately, CB equipment from the 1980’s did not contain any **surface mount devices**, making modification relatively easy.

Moving forward a few decades, the cheap and cheerful equipment of today is probably best exemplified by the \$15.00 Baofeng BF-888S UHF FM hand-held or the \$27.00 BaoFeng UV-5R VHF/UHF FM handi-talkie. (Note: ARRL has taken exception to part of a September 24 FCC Enforcement Advisory pertaining to the import, sale and use of such radios and is in discussion with FCC personnel to resolve the matter.)



Baofeng BF-888S low-cost UHF FM handi-talkie.

There are some inexpensive mobile radios for 10 meter FM available from CB brands such as ‘Stryker’ and ‘President’ — but they do not include PL tone, required nowadays for 10 meter repeater access. FCC approval is also in some doubt. See *PCARA Update* for March 2013 and January 2015 for reviews of two multi-mode models.

If you are looking for a 10 meter FM transceiver with CTCSS for repeater operation



Alinco DR-03T 10m FM transceiver.

you may have to pay more — check out the 10 watt Alinco DR-03T (\$230.00) or the Yaesu quad-band FT-8900R (\$340.00). For fixed station operation, remember that your existing **HF transceiver** may well include FM mode already.

- G3VNO, NM9J

Peekskill / Cortlandt Amateur Radio Association

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Newsletter contributions are always very welcome!

Archive: <http://home.lanline.com/~pcara/newslett.htm>

PCARA Information

PCARA is a **Non-Profit Community Service**

Organization. PCARA meetings take place the first Sunday of each month* at 3:00 p.m. in Dining Room B of NewYork-Presbyterian/Hudson Valley Hospital, Rt. 202, Cortlandt Manor, NY 10567. Drive round behind the main hospital building and enter from the rear (look for the oxygen tanks). Talk-in is available on the 146.67 repeater. *Apart from holidays and July/August break.

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

Sun Nov 4: PCARA meeting, NewYork-Presbyterian Hudson Valley Hospital, 3:00 p.m. Nominations & Elections.

Sat Nov 17: PCARA Breakfast, Turco's, Yorktown Hgts. 9:00 a.m.

Sat Nov 17: PCARA VE Test Session, John C. Hart Memorial Library, Shrub Oak. 11:00 a.m.

Sun Dec 2: PCARA Holiday Dinner, Cortlandt Colonial Restaurant, 5:00 p.m.

Hamfests

Sun Oct 28: LIMARC Hamfest, Levittown Hall, 201 Levittown Parkway, Hicksville, NY. 9:00 a.m.

Sat Nov 3: New Jersey Antique Radio Club Fall Swap Meet, Parsippany PAL Bldg., 33 Baldwin Rd, Parsippany NJ. 8:00 a.m.

Fri Nov 23: Fairlawn ARC Auction, Fair Lawn Senior Center 11-05 Gardiner Road, Fair Lawn, NJ 07410. 6:30 p.m.

VE Test Sessions

Nov 8: WECA, Westchester Co Fire Trg Center, 4 Dana Rd., Valhalla, NY. 7:00 p.m. S. Rothman, (914) 949-1463.

Nov 16: Orange County ARC, Munger Cottage, 183 Main St, Cornwall NY. 6:00 p.m. Contact Joseph DeLorenzo (845) 534-3146.

Nov 17: PCARA, **John C. Hart Memorial Library**, 1130 E Main St., Shrub Oak. 11:00 a.m. Contact Michael Dvorozniak (914) 488-9196.

Nov 18: Yonkers ARC, Yonkers Office of Emergency Mgmt., 789 Saw Mill River Rd, Yonkers NY. 11:30 am. Pre-reg. John WB2AUL, (914) 969-6548.

Nov 19: Columbia Univ ARC, 531 Studebaker Bldg, 622 W 132nd St, New York. 6:30 p.m., Alan Crosswell (929) 888-7590.



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