



PCARA Update



Volume 19, Issue 6 Peekskill/Cortlandt Amateur Radio Association Inc. June 2019

All hands on deck

Looming large on the horizon is **ARRL Field Day 2019**. PCARA will be participating in Field Day this year at Walter Panas High School, 300 Croton Avenue in Cortlandt Manor, NY, during the weekend of June 22 - 23, 2019.

We've already had a couple of planning sessions to-date, one at Turco's on April 27th and the other during the May 5th Membership Meeting. This year we would like to have significant overnight coverage as well as plenty of members to help with tear-down on Sunday afternoon. To get a jump on things, lines for the wire antennas will be placed on Friday June 21st. Come for the weekend — bring a tent and stay for a while. Let's make this a Field Day to remember. Hope to see you there!



He did it again! On May 11, 2019 the fox, aka Mike N2EAB skunked the hounds for the Spring 2019 PCARA Foxhunt! This is the third Foxhunt where Mike has hidden himself so well that the hunters were unable to ferret him out. Oh, come on already! The fox and



Jay NE2Q and Lovji N2CKD check their antennas before the May 11 Foxhunt.

hounds met up at the 202 Diner for a post-hunt meal and debriefing. A full report detailing events of the Foxhunt can be found in this month's edition of the *PCARA Update*. Thanks to all who participated.

On Saturday May 18, 2019 PCARA

had another doubleheader. The day began at 9:00 a.m.

with the PCARA Breakfast at Turco's in Yorktown Heights, NY. There were eight in attendance including a potential new member with an interest in amateur radio. As always, a most enjoyable time was had by all. A PCARA V.E. Test Session began at 11:00 a.m. at the John C. Hart Memorial Library in Shrub Oak, NY. This gathering saw infinitely more V.E.s than candidates. Once again thanks to Mike W2IG for coordinating the session and to the John C. Hart Memorial Library for allowing us to use their facilities. The next PCARA VE Test Session should take place in July 2019.

Come out and join us at the Yorktown Rehabilitation and Nursing Center's Health and Garden Spring Fest 2019 at 2300 Catherine Street in Cortlandt Manor, NY on June 8, 2019. PCARA will have a tent with information about amateur radio, with a couple of radios for show-and-tell. Please come and join us and meet folks in the community that we serve and help teach them about amateur radio.

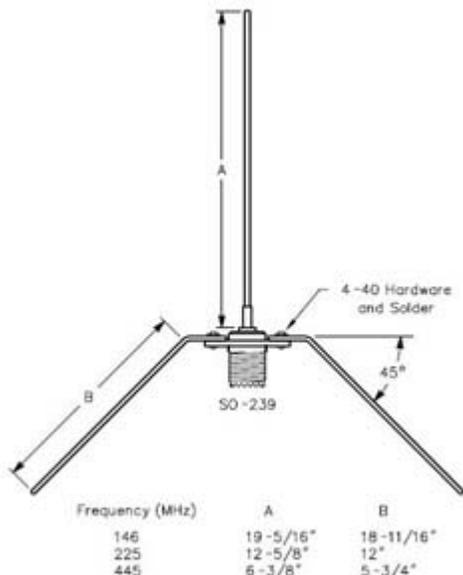


On the evening of June 10, 2019 at the Croton Free Library at 171 Cleveland Drive in Croton-on-Hudson, NY, Richard N2GIL will be holding a class on *Continued page 2* ⇨

Contents

All hands on deck - KB2CQE	1
Adventures in DXing - N2KZ	2
V.E. Test Session	5
Seen at BARA	5
Spring Foxhunt	6
'The Voices' book review - NM9J	8
Pocket Oscilloscope	11
NY State QSO Party	11

Continued from page 1 ⇒ building basic VHF or UHF $\frac{1}{4} \lambda$ ground plane antennas. The session entitled *Amateur Radio Antenna Build* will run from 6:30 p.m. to 8:30 p.m.



ARRL ground plane design for 144, 220 or 440 MHz will be employed at the June 10 antenna workshop. Vertical element and radials are 3/32 or 1/16-inch brass welding rod. #10 or #12 copper wire can also be used.

Turco's in Yorktown Heights, NY. Please bring along your appetite!

Our next regularly scheduled Membership Meeting is on Sunday June 2, 2019 at 3:00 p.m., at New York - Presbyterian / Hudson Valley Hospital in Cortlandt Manor, NY. I look forward to seeing each of you there.

- 73 de Greg, KB2CQE

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Net night

Peekskill/Cortlandt Amateur Radio Association holds a weekly net on the 146.67 MHz W2NYW repeater on Thursdays at 8:00 p.m.

Join net control Karl, N2KZ for news and neighborly information.

Adventures in DXing

- N2KZ

Can You Hear Me Now?

It was quite a party! We invited everyone to join us on UHF and many people responded. Event hosts, Malcolm, NM9J and Karl, N2KZ journeyed to the summit of Bear Mountain with big expectations. What fun we had! Eighteen amateurs found us on 446.000 MHz — the national 70 cm simplex frequency. For ninety minutes, we tested every possible combination of point-to-point communication far and wide across PCARA-land and beyond. We came down from the mountain fascinated after discovering how far we could go with very little power.



Our adventure was long in coming. Lovji, N2CKD and Lou, KD2ITZ both had experimented recently with 70 cm antenna designs that produced rewarding results. On January 16th, PCARA hosted an in-person demonstration about all things 70 cm at the Cortlandt Community Room in the Cortlandt Town Center to a large enthusiastic audience. What could we do as an encore?

The answer was... simple. Our club had a great time talking up the two-meter band during our first simplex challenge. Why not take it to a higher plain... and frequency? The choice of frequency was easy: 446.000 MHz, the nationwide 70 cm simplex/calling frequency. And call we did!

After we decided on the date and format of the event we let the world know! I sent out invitation e-mails to many nearby clubs and groups and to our ARRL representatives to get the word out. Lou, KD2ITZ, produced a flyer for the event that was posted on the PCARA Facebook page. It

Peekskill / Cortlandt Amateur Radio Association
<http://www.pcara.org>

UHF Simplex Challenge

Can you hear me now?

Saturday April 20, 2019 Start: 1:00pm EDT
 Frequency: 446.000MHz FM Simplex

Early Check-in: 12:50pm W2NYW Repeater
 (146.670 MHz, -600 Offset, pl 156.7 Hz)

All licensed amateurs welcome to participate.

This is a real-time experiment testing the capabilities of communication on the amateur radio 70 cm band. Our host station will be operating from high atop Bear Mountain contacting stations near and far. Call in from your favorite point of height, from your home QTH or your car. Challenge yourself by location choice and lowering power. Challenge us to hear you wherever you are!

Weather permitting: Rain date: Saturday, April 27th

Questions? Contact pcaraevents@gmail.com

Lou produced a flyer for the event.

received an overwhelming response.

When all was said and done, the Facebook posting registered 7005 total hits and 268 engagements — more than any other posting we have ever made. This was an experience in itself. We heard comments from people all over the country and even all over the world. The theme was constant: ‘What a great idea! Why don’t we do that!’ We will never know who all these people were and where they were from but it was obvious that our event idea was good! It was more popular than a G chord! (Maybe the G was for ‘good?’)

Malcolm, NM9J and myself were the organizers of the UHF Simplex Challenge originally planned for Saturday, April 20th. Coincidentally, the event was to be held the same day as our monthly breakfast at Turco’s in Yorktown Heights. April 20th came and we all woke to dark gray skies and thick moisture in the air. All who gathered for breakfast wondered if the threatening clouds above would clear to allow us to proceed up the mountain.



Bear Mountain is sometimes shrouded in mist and clouds.

Maybe just in time for the 1:00 p.m. start?

Before the breakfast, I made a phone call to the Bear Mountain Park Police to see if the access road to

the summit, Perkins Drive, would be opened today. I was told that the decision had not yet been made and to call again later. After the breakfast, Malcolm and I headed back to Malcolm’s house anticipating our future. I called back just before noon to receive bad news. Even if the rain cleared, it was too misty and foggy to open the drive today.

Going Home Happy

We announced our status to the world telling everyone our rain date was in a week. “We will see you then!” I headed home from Malcolm’s house but left my HT tuned to 446.000 MHz. Al, K2DMV, had found a good perch and decided he was going to operate in spite of the weather. With an excellent transmission site and good power, Al had a great time working several stations on 446.000 MHz simplex for the next hour or so. Go Al!

Al sends us this chronicle: “I went to Mohansic Golf Course and was switching between my dual band mag mount and an Arrow II 7 Element Yagi set vertically polarized on a quickie mast I made for it. My wattage was changed several times between 30 to

5 watts. I did almost as well Omni as I did directional.” (Mohansic Golf Course is just west of F.D.R. State Park — and just west of the Taconic State Parkway in Yorktown Heights... not terribly far from Turco’s.)

As I drove back to my home QTH in Katonah, along Route 202 and 35, I could hear Al holding court on the 446.000 MHz frequency. With just my Yaesu FT-60 HT sitting on my passenger seat, I could hear Al working station after station like he was atop the mountain himself. What a great spot!



Mohansic Golf Course parking lot is located at a 600 ft high point alongside one of Westchester County’s radio towers.

A New Day

The April 27th rain date proved to be a much better choice. The weather was partly cloudy and the temperature was cool and pleasant. Malcolm and I followed each other up the mountain. Through some curious coincidence, I found myself right behind Malcolm’s car as we entered Bear Mountain State Park and followed along the road leading to Perkins Drive. With the drive wide open and welcoming guests, we proceeded up the mountain.

We met and parked at a picnic area that was about the highest spot you can reach. This was the exact



Karl and Malcolm parked in the Picnic Area, close to the summit of Bear Mountain.

same site that PCARA has used for Field Day. As an added benefit, the chosen QTH was in an unusual Maidenhead grid: FN21xh. It was a delight for grid square hunters.

Malcolm brought fine equipment for our quest. The transceiver was his trusty Icom IC-207H operating at 10 watts. It was fitted with a Diamond 'Super Gainer'



Icom IC-207H VHF/UHF FM transceiver and Superex power supply as used from Bear Mountain during the Simplex Challenge.

mag-mount whip — model SG7500NMO. Power was provided by a nifty portable battery pack primarily engineered for 'jumping' car batteries in a pinch — an 18 ampere-hour 'Superex rechargeable emergency jump start and

air compressor.' That's quite a name!

Malcolm had the equipment going in a flash and we were all set for the 12:50 p.m. informal check-in on the PCARA 2 meter repeater on 146.67 MHz. Eleven people took advantage of our pre-game show and we found several more when we jumped to 446.000 MHz at 1:00 p.m. and went simplex.

Although we scored over 7000 Facebook hits, the crowd we met during the simplex challenge was (thankfully) mostly familiar old friends. Lots of often-heard call signs filled our notebooks as we sat in Malcolm's car high atop Bear Mountain: Mike N2EAB, Al K2DMV, Lou KD2ITZ, David KD2EVI, Verle W2VJ, N2CKD Lovji, KD2OJJ Fred, N2CBH Bob, WECA's AC2IL Jim, WA2MCR Joe, N2NBR Jon, W2LGB Larry, WECA's WA2NRV Stan, KD2GJJ Fred, N2GDY Bob/'Radar', KC2OOJ Carl, N2NBR Jon and KD2HRW Karl in Putnam Valley.

Similar to our two-meter simplex challenge, Malcolm and I were astounded at how most participants could be heard even when they reduced their power to a handful of watts or even milliwatts. Many people could hear at least a few people in their surroundings besides our main base station W2NYW atop the mountain.

Our memorable moments were many! A majority of folks were within the bowl of Peekskill and Route 6. Fred, KD2GJJ served as a challenge for many operating from his QTH in Mahopac, a few hills and bumps away from those in Peekskill. Bob N2CBH/mobile could be heard as he was heading up Route 9 past Cold Spring. Grand hams like Stan WA2NRV (calling in from across



Map shows location and height of stations worked from Bear Mountain on 446.000 MHz during the simplex challenge.

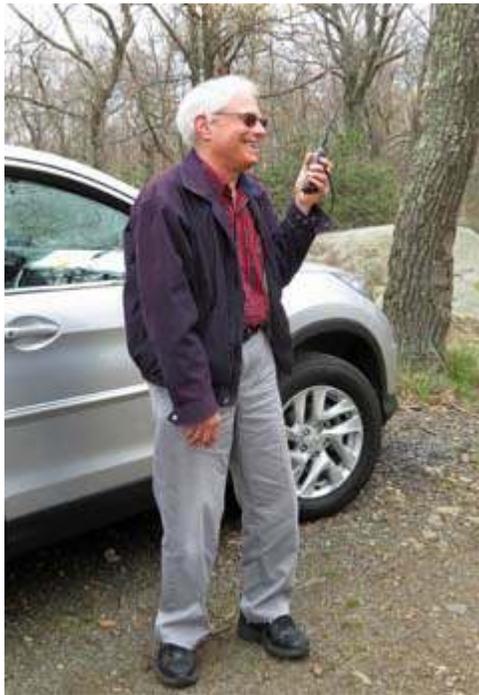
the county in South Salem), Joe WA2MCR and Lovji N2CKD (with his trusty Moxon antenna) always warm up a party. I also enjoyed hearing all the KC2 and KD2 calls in our group. They are the voice of the future!

Also interesting were shout-outs from down-river from Verle W2VJ in Orangeburg with his Baofeng HT and Robert, 'Radar' N2GDY from Dobbs Ferry — both below the Tappan Zee Bridge. One thing really made us scratch our heads: Malcolm and I could hear a distant conversation now and then on 446.000 MHz along with the activity produced by our Simplex Challenge group. At first, we thought they might be distant check-ins trying to reach us. Our best guess was that they were somewhere in Orange County. Malcolm summed it up succinctly: "After all, 446.000 is the nationwide 70 cm simplex/calling frequency!" The man had an excellent point!



Karl N2KZ operates W2NYW on 446.000 MHz FM during the April 27 UHF Simplex Challenge.

As an odd finale, I called out on GMRS channel 9 — FRS channel 1 — (both 462.5625 MHz) using an



Karl concludes operations from Bear Mountain with an Icom IC-F21GM HT on FRS/GMRS frequency 462.5625

Icom IC-F21GM HT made for GMRS use. It was a rare opportunity to employ my infrequently used GMRS call sign - WPWK312! David, KD2EVI managed to correspond with me effortlessly. Needless to say, the UHF Simplex Challenge turned out to be a wonderful way to spend 90 minutes. A

welcome added-value gift? It didn't rain!

More on UHF

The 70 cm fun will continue shortly on Monday, June 10th at 6:30 p.m. at the Croton Free Library, 171 Cleveland Drive in Croton-on-Hudson. Richard, N1GIL will be presenting a talk and demonstration all about building your very own 70 cm or 2 meter ground plane antenna. Please see the PCARA Facebook page for details.

All of the bands above 50 MHz will be filled during the June ARRL VHF/UHF contest. Look for lots of activity starting on Saturday, June 8 at 2:00 p.m. and running until Sunday, June 9 at 11:00 p.m. Contest details can be found at: <http://www.arrl.org/june-vhf>. Take advantage of a great opportunity to fill your log book and catch some more Maidenhead grid squares

towards a VUCC award!

Also mark your calendars for the biggest event of the ham radio year — ARRL Field Day on Saturday, June 22 and Sunday, June 23. PCARA will be participating from the baseball field area behind Walter Panas High School at 300 Croton Avenue in Cortlandt Manor. Details will be posted shortly on the PCARA Facebook page.



Until next month, 73 and dit dit de N2KZ "The Old Goat."

V.E. Test Session

PCARA's fifth Test Session of the current series took place on Saturday May 18th at the John C. Hart Memorial Library in Shrub Oak. Seven Volunteer Examiners were present to cope with the expected number of candidates who might want to sit the General Exam prior to the Question Pool change taking place on July 1, 2019. There were no passes or failures to report as the number of candidates was exactly seven less than the number of VEs.

Thanks to all the VEs and helpers who came to the session: Team Liaison Mike W2IG, Lou KD2ITZ, Stan WA2NRV, Gary WB2HNA, Ken W1YJ, Larry AC2QH, Greg KB2CQE and NM9J.

PCARA's next VE Test Session is expected to take place on Saturday July 20th, 2019.

Seen At BARA



Bergen Amateur Radio Association's Spring Hamfest was held in bright sunshine on Saturday morning, May 25th. Several PCARA members were present: L to R: NM9J, Greg KB2CQE, Verle W2VJ. In the background: Michael KD2PYS plus junior op and Bob N2CBH. [Pic by Mike N2EAB]

Spring Foxhunt



PCARA's first Foxhunt of 2019 took place on a perfect Spring Saturday, with the sun shining and temperatures around 68°F. Since the fox had not been discovered at the September 2018 event, Mike N2EAB would be repeating his previous role. (See 'Fall Foxhunt', *PCARA Update*, October 2018, p11.)

Hunters began arriving at the Beach Shopping Center from around 2:30 p.m. on May 11th for check-in by NM9J. First on-scene was Mike W2IG, followed by Jay NE2Q and Lovji N2CKD. There was time to examine the other competitors' directional antennas — and for a short period of silence to remember CARA's enthusiastic hunter Jay N1NRP (SK). Seconds before the 3:00 p.m. official start time, our fifth hunter Bob N2DVQ arrived and was checked in. (Frequent hunters Karl N2KZ and Al K2DMV were unavailable this time around.)



Hunters with their antennas at Beach Shopping Center. L to R: Lovji N2CKD, Jay NE2Q and NM9J. [Pic by W2IG]

The first transmission from Mike N2EAB appeared at 3:00 p.m. on 146.565 MHz and our directional antennas swung around seeking the strongest signal. General consensus was that the direction was due south from the Beach. As soon as the first five-minute transmission was complete, contestants were free to leave the parking lot.

Your editor ran into an immediate problem — there was a great deal of traffic that afternoon, with a long line of vehicles waiting to leave the Beach and turn into Dayton Lane. I made a rapid change of plan, leaving the parking lot via the Route 6 exit, then north to Route 202 and onto Tamarack Drive in time for the next transmission. Great minds must think alike as Mike W2IG was right behind me, ready to take his next

bearing from the same street.

From Tamarack Drive, Mike W2IG headed back toward the Shopping Center and noticed a 'booming' signal along Route 202. He circled around the Hudson Valley Hospital Center and checked the top of the multi-story parking garage — but found no sign of the fox. Mike crossed Route 202 and noted a maintenance worker in an orange vest to the right of the buildings in the opposite parking lot. He also visited Rick Lane which rises to 600 feet, from where the bearing took him back to the hospital.

Meanwhile NM9J had taken a bearing of SSW and decided incorrectly that the fox might be in the area of Blue Mountain. I headed south to the end of Lafayette Avenue, stopping outside Pleasantside Chapel for the next transmission. The bearing had now swung around to WNW, which did not agree with the preceding plots at all. PCARA's fox was by now describing the Scoville Scale for rating the strength of Chile peppers. Could that be relevant?

A subsequent stop was made at Montrose Avenue then I circled around Chapel Hill, Villa at the Woods, Buttonwood Drive and back to Tamarack Drive. Bearings were beginning to converge on the area between Route 202, Buttonwood Drive and Lafayette Avenue — with the fox talking about volcanoes. (Another hot topic?) This was followed by foxy comments about hunters investigating the back lot of the hospital and advising a medical check-up... Despite circling the hospital, there was no sign of a fox vehicle.

Lovji N2CKD had driven east from the shopping center to Toddville Plaza for the next bearing. The direction suggested either continuing along Rt 202 or going back to the hospital. In view of the heavy traffic, Lovji decided to continue east, turning onto Croton Avenue. The signal was getting much weaker as N2CKD proceeded around to Welcher Avenue and the State Armory on Washington Street.

Experienced hunter Bob N2DVQ was using an advanced direction finding set-up with an Arrow 3-element Yagi and

VK3YNG VHF Sniffer Mk IV from Australia. This small synthesized receiver has a wide-range auto-attenuator built-in and indicates signal strength by rising audio tone — making it easier to find the optimum antenna direction compared with use of a multi-bar S-meter.



VK3YNG synthesized Foxhunt receiver mounted on boom of N2DVQ's antenna.

See <http://www.foxhunt.com.au/>

Bob visited high spots to the north of Route 6, with the bearing bringing him back toward the Shopping Center each time. From Lafayette Avenue he found a very strong signal. Bob was unfamiliar with the PCARA Foxhunt 3-minute-on, 7-minute-off transmission sequence and our use of horizontal polarization. He rated this particular hunt 'quite difficult', especially with the reflections off high ground. (I think we would all agree.)

Jay NE2Q was unable to join other hunters at the end but reported his progress later. From the Shopping Center, Jay made a left turn onto Route 202 then right onto Lafayette Avenue, continuing down to the first school (presumably Blue Mountain MS). The next fox transmission was not audible but on the subsequent transmission, direction indicated was north, back toward the Beach. Jay reached another school on the other side of Route 6, from where he returned to the start. The next location was Husted Avenue off Route 6, followed by another school, from where the bearing was SE. Jay visited Tompkins Park, the baseball field just off Route 6 which figured in PCARA's previous Foxhunt. The direction was still SE, but by now the fox was approaching his last transmission.



Map shows some of the locations visited by hunters during the Foxhunt on Saturday May 11.

As the last transmission came around at 4:30 p.m., Mike N2EAB declared the hunt over and announced that participants should meet at the 202 Diner on Route 202. Hunters' low spirits were soon raised when we discovered that **nobody** had found the fox. At the diner, Mike revealed his hiding place was by the Doctors' Offices at Cortlandt Medical Center, across the street from Hudson Valley Hospital. The location was deserted on a Saturday afternoon, though the maintenance worker in orange vest previously spotted by Mike W2IG had also been keeping a close eye on N2EAB/M.

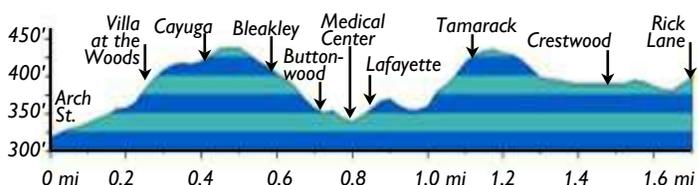
Mike's exact spot was in the upper parking lot of the Medical Center campus, close to Lafayette Avenue. He had



Mike N2EAB was located at the Cortlandt Medical Center campus, using a horizontal dipole antenna. [N2EAB pic.]

spotted Bob N2DVQ's car there and had a good view of other approaching vehicles. N2EAB was running 1 watt on 146.565 MHz for the first two transmissions, then 5 watts output to a horizontal dipole, oriented broadside to the Hospital and Beach Shopping Center.

The area between Buttonwood Avenue and Lafayette Avenue is in a low valley from where Dickey Brook flows south and east to the Hudson River. There is significantly higher ground on both sides of this valley, shielding the fox's RF signal from areas to the west and east. These areas were also off the ends of Mike's hori-



Cross section west-to-east from Arch Street to Rick Lane shows hilly terrain on either side of the fox's location.

zontal dipole, corresponding to a null in the radiation pattern and an opportunity for stronger reflections to be received from higher ground.

After the hunt, fox and hunters sat down for an enjoyable meal at the 202 Diner, regaling each other with tales of previous trials and triumphs.

There were no certificates to present, so here's looking forward to the



Enlightened hunters L to R: N2CKD, NM9J, W2IG, N2DVQ. [Pic by N2EAB]

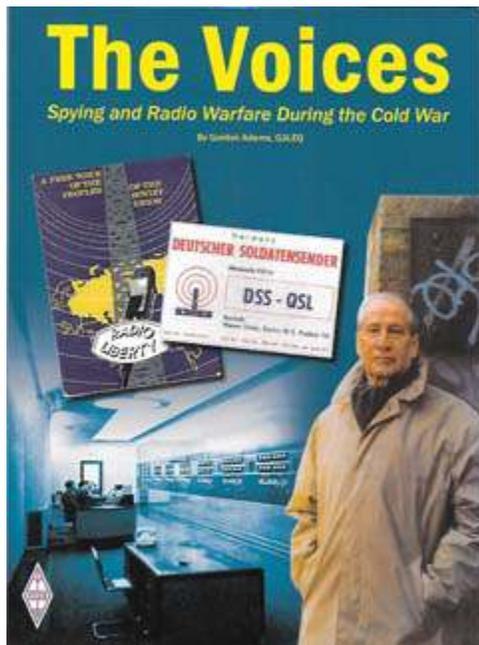
next Foxhunt when Mike N2EAB will be lurking in the fox's lair for the third time in a row.

- NM9J

The Voices – book review

“The Voices” is a paperback book by Gordon L. Adams, G3LEQ, published by the Radio Society of Great Britain in 2018. The content first appeared as a series of fifteen articles in the RSGB’s monthly journal *Radio Communication* between June 2000 and September 2001.

Full title of the publication is “The Voices — Spying and Radio

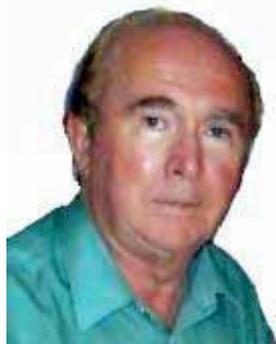


Warfare during the Cold War.”

The “Cold War” of the subtitle refers to the period of political dissension between the western allies and the Soviet Union/Eastern Europe after the end of World War II. The era began with the blockade of Berlin in 1948, then ended with the fall of the Berlin Wall in 1989 and subsequent dissolution of the Soviet Union in 1991. Fortunately, Gordon Adams goes further back in time to the inter-war years and World War II to explain the origins of Cold War radio propaganda and spying.

Introduction to the author

Gordon Adams, G3LEQ (SK) was a distinguished radio amateur, first licensed as a teenager in 1955-56. He lived in Colchester, Essex; Bangor Co. Down (Northern Ireland) and Knutsford, Cheshire. Gordon was always looking to the future and held a number of positions in the Radio Society of Great Britain including GB2RS Manager (News Reader service), Spectrum Director, Council member and Repeater Working Group member.



Gordon Adams G3LEQ, author of “The Voices”.

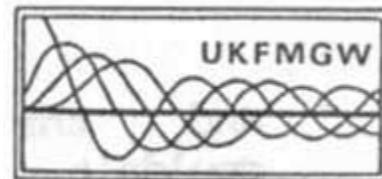
I first came across Gordon in the mid-1970s in connection with local hopes for a UHF repeater to serve the Liverpool area of northwest England. G3LEQ was a founder member of the UK FM Group (Western) which

had brought the northwest’s first 2 meter repeater on-air in April 1976. GB3MP had begun operation from the Moel-y-Parc TV mast in North Wales on European frequency pair R6, 145.750 MHz, -0.600. This accomplishment was closely followed by the arrival of UHF repeater GB3LL on RB4 (433.100 MHz, +1.600).

As Group Secretary of the UK FM Group (Western), Gordon hosted an initial meeting of interested parties from Merseyside at a pub on Ashurst Beacon in mid-1976. This led to the GB3LI repeater coming on-air from Seaforth Grain Terminal in October 1977.

The frequency was (and still is) RB10, 433.250 MHz +1.600. For more on GB3LI, see *PCARA Update* for April 2012 pp 4-8.

The UK FM Group (Western) went on to sponsor a number of repeaters in NW England, North Wales and the Potteries. Their web site <https://www.ukfmgw.co.uk/> currently lists 16 machines.



Logo of the UK FM Group Western shows a plot of Bessel functions involved in the math of frequency modulation.

Back to the book

The first chapter of “The Voices” describes how at age 14 Gordon Adams received a birthday present of a Philips LW/MW/SW receiver which allowed him to hear the overpowering signal of the BBC’s European Service from Crowborough on medium wave. He moved on to short wave and found a station on 6.5 MHz that was being plagued by “jammers”.

This was in the early days of the Cold War, when an “Iron Curtain” had descended across Europe and countries to the east came under the influence of the Soviet Union. Radio waves know nothing of international boundaries, so there was a propaganda war taking place with broadcasts from the west aimed at target audiences in the east. Those unwanted intrusions were being opposed by high power jammers in the east intended to prevent reception by local residents.

G3LEQ goes on to describe the high power broadcast stations operated by the BBC and Voice of America (VOA) from the UK and Germany as well as some less well-known sources. Several stations were still on-air in the early 2000’s when the original series of articles first appeared in *RadCom*. Nowadays most of the high power LF and MF broadcast stations in Germany have left the air, forsaking AM for VHF-FM, DAB, Internet and satellite. Deutschlandradio — mentioned by G3LEQ in “The Voices” — finally left long wave (177 kHz) in December 2014 and vacated the medium frequency airwaves (990 kHz etc.) in December 2015.

In subsequent chapters, G3LEQ goes on to describe

the American efforts to flood Eastern Europe with broadcast radio signals and the counterattack by the Soviet Union. Another chapter describes efforts by the USA to bring American radio and TV messages to the island of Cuba following Fidel Castro's revolution of 1959.

The story continues with the development of radar, starting in 1935 with the BBC's shortwave transmitter at Daventry on 6050 kHz, which was employed in an important experiment by Arnold Wilkins to detect approaching aircraft. Once the principle was established, work began on a practical system at Orfordness, a peninsula off the Suffolk coast surrounded by salt water.

Jumping ahead a few decades, Orfordness comes back into the picture in the late 1960's and early 1970s when it became the site for an American "over-the-horizon radar" (OTHR) with code name "Cobra Mist". The installation was designed to generate 10MW RF pulses feeding a giant antenna, consisting of 18 separate strings of log periodic elements, 2200 feet long,

fanning out over a 135° angle, with RF energy directed *via* the ionosphere toward Eastern Europe. Frequency range was 6 to 40 MHz. Reflected pulses received back at Orfordness should have revealed any unfriendly intercontinental ballistic missiles inbound to Western Europe.



Aerial view of 'Cobra Mist' antenna array at Orfordness. River Ore is lower left, North Sea is upper right. The site was subsequently used for BBC transmissions to Europe on 648/1296 kHz.

This was around the same time that the USSR had its notorious "Woodpecker" over-the-horizon radar emitting hundred megawatt HF pulses from giant antenna arrays located in the Ukraine, covering large swaths of the HF bands.

"Cobra Mist" was closed down in 1973 because of unidentified 'ground clutter noise'. Soviet countermeasures may have been responsible. Enthusiasm for over the horizon radar subsequently ebbed in favor of satellite monitoring, but there seems to be a resurgence of interest nowadays — with reports of new radars operating from China and Russia causing interference in the 80 meter, 40 meter and 20 meter bands.

G3LEQ's story of radar at Orfordness spans several intermediate chapters that deal with other aspects of clandestine radio, including "Numbers Stations", used for undercover communication with foreign agents. A subsequent chapter describes "Spies and Where to Find Them." Under the sub-heading "Naughty Thoughts", G3LEQ points out that for several decades it has been possible to receive a large slice of RF spectrum at some distant part of the world, then transfer it all back through microwave satellite link to a location such as Cheltenham for detailed analysis. Early remote SDR?

By the way, the gentleman pictured on the front cover of "The Voices" in gray raincoat with collar turned up is *not* Gordon Adams but Markus Wolf, former head of the East German foreign intelligence service, and source of many a coded message to his agents in the west.

The CIA-funded stations "Radio Free Europe" and "Radio Liberty" have their own separate chapters. The RFE chapter includes an explanation of One Time Pads employed for encoding and decoding of secret messages intended for undercover agents. Sample messages are provided for the reader to try processing himself (or herself).

Sad ending and service

In the penultimate 'Voices' article published in August 2001, G3LEQ announced that the RSGB was planning to publish the series in book form with additional material. Sadly, Gordon Adams died in February 2018 before an extended version of "The Voices" could be completed. The RSGB published Gordon's original articles in book form with minor updating. The obituary on RSGB's web site mentions an interesting point...

Gordon L Adams, G3LEQ, 4 February 2018 February 12, 2018

Gordon Adams, G3LEQ, passed away peacefully on 4 February 2018, surrounded by family.

Gordon worked for many years in the service of his country, whilst at the same time being an active radio amateur. A Member of the RSGB for over 60 years, he extended his talents to help his fellow amateur. A member of the RSGB Council for many years, he was also the RSGB Spectrum Director and a prime mover of the 5MHz experiment when that started. He was the IARU Region 1 Emergency Communications Co-ordinator too, among many other roles. He was also latterly the GB2RS News Service Manager until illness began to overtake him a few short years ago.

Gordon Adams was unusually well-informed about the U.K. and U.S. governments' use of radio for undercover communications. The RSGB obituary is not very forthcoming about G3LEQ's *profession* apart from the phrase: '*Gordon worked for many years in the service of his country*'.

Column five

G3LEQ's interest in undercover communications did not begin with the first *RadCom* article in 2000. Examination of back-issues of *Talkthrough*, newsletter of the UK FM Group (Western), edited by G3LEQ, reveals several articles by **Funf** the Group's "Fifth Columnist".

For example, in *Talkthrough* issue 23, from September 1982, Funf writes about a Russian spy transmitter being discovered in a Welsh field then goes on to describe much material subsequently developed into "The Voices". In *Talkthrough* 24 (March 1983) Funf writes about "Mouldy Old 'MOLD' ", the U.K. Ministry of Defence's then new radio network for Mobile Operation / Land Defense which interleaved well-sited base stations between the 25 kHz-spaced channels in the 433 MHz band for officially-approved amateur repeaters. A subsequent article in *Talkthrough* 26 (Summer 1984) entitled "Funf Takes a Closer Look at GCHQ" describes the activities of the UK's Government Communications Headquarters in Cheltenham, modern successor to the code-breakers of Bletchley Park. There is a list of six listening stations in Great Britain plus three overseas stations at Washington DC, Hong Kong and Ascension Island. (This was written 13 years before Hong Kong was handed back to China in 1997.) For *Talkthrough* back-issues see: <http://www.ukfmgw.co.uk/archive/talkthrough/>

Military link

An obituary for G3LEQ in the Spring 2018 *5 MHz Newsletter* by Paul G4MWO describes how in the quest for an amateur allocation at 5 MHz...

"Gordon's military experience was invaluable in this respect and soon established a good rapport with the MoD representative resulting in five 3 kHz channels in the band being allocated on a 'Notice of Variation' (NOV) to the Full UK licence basis in Aug 2002."

More insight

In an article in September 2004 *RadCom*, G3LEQ encouraged RSGB members to stand for election. He wrote about two people who had influenced him as a teenager — his Combined Cadet Force Signals Officer C. Bernard Gordon and Bert Allen MBE, G2UJ.



Columns by 'Funf' appeared in *Talkthrough*, newsletter of the UK FM Group Western.

"Bert Allen lived just around the corner from my home in Tunbridge Wells. He was also the Chairman of the West Kent Amateur Radio Society, which still meets in the town. I was lucky as a teenager to meet up with these two gentlemen because my resultant involvement in the hobby has most certainly enriched my life. I also met Harold Robin, who lived in Tunbridge Wells. He was Chief Engineer at the high-power government radio station known as 'Aspidistra', situated on nearby Ashdown Forest. Professionally, I was later to become employed by the government organization that controlled 'Aspidistra'."

Note that last sentence. Aspidistra was the wartime code name for the frequency-agile 600kW RCA medium wave transmitter installed in 1942 at Ashdown Forest, near Crowborough, Sussex. The underground installation had been commissioned by the Political Warfare Executive, PWE, for high-power propaganda broadcasts into continental Europe during World War II. It was subsequently joined by additional medium wave and short wave transmitters for clandestine broadcasts from the same site.



Aspidistra's underground RCA transmitter included three 170 kW PA units that were combined to produce 500 kW. When over-run they could generate 600 kW, which was fed to a three-mast MF array above the transmitter hall.

The installation was managed by the **Diplomatic Wireless Service**, a part of the U.K. Foreign Office which — amongst other things — provided radio communication with British Embassies around the world. I remember seeing the Diplomatic Wireless Service's recruiting booth, showing their multi-tone "Piccolo" RTTY system at RSGB London Exhibitions during the late 1960s and early 1970s.

Back to WW II

The Diplomatic Wireless Service was established at the end of World War II by Richard Gambier-Parry, G2DV who was head of MI6 Section VIII — the communications division of the Secret Intelligence Service. One of his organization's responsibilities was dissemi-

nation of decoded 'Ultra' traffic via 'Special Communications Units' to field commanders during WW II. See "Broadsword calling Danny Boy", *PCARA Update*, October 2014 and "The Secret Wireless War" by Geoffrey Pidgeon, Arundel Books 2008.

The Diplomatic Wireless Service was absorbed by the Foreign and Commonwealth Office in 1973, as part of its new Communications Division. The organization is now known as "Her Majesty's Government Communications Centre", with headquarters at Hanslope Park, 8 miles north of Bletchley. See <http://www.hmgcc.gov.uk/>

Read the book

I have no further details about Gordon Adams' role in government service — but it is well worthwhile obtaining a copy of "The Voices" from the RSGB and reading it for the insight it provides into undercover uses of radio and into G3LEQ himself. "The Voices" can be ordered from the Radio Society of Great Britain for £9.99 plus shipping at:

https://www.rsgbshop.org/acatalog/Online_Catalogue_General_Books_30.html. A Kindle version is also available at the same price from Amazon UK. - NM9J

Pocket oscilloscope



Pocket-sized DSO Shell oscilloscope runs off a 9 volt battery.

molded case measures just 4½" × 3" × 7/8" and weighs only 100 grams.

The "DSO Shell" is available for \$40.00 assembled from Circuit Specialists, <https://www.circuitspecialists.com> or as a kit requiring some soldering from well-known Internet vendors for around \$30.00. The kit version was reviewed by Giles G1MFG in June 2019

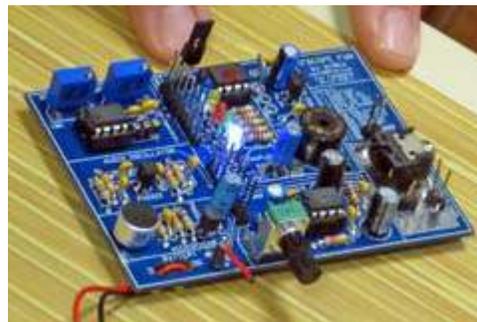
At the May meeting Mike N2HTT brought along two items for Show and Tell. Mike's first item was a tiny piece of test equipment, the "DSO Shell" by JYE Tech. This is a digital oscilloscope with 200 kHz bandwidth and 2.4" color LCD display which runs off a 9 volt battery. The



RadCom where he described difficulty with one tiny component and reported that "some of the soldering is quite tight". Mike N2HTT chose the fully assembled version when he ordered his own DSO Shell.

The other item that Mike brought along was an "O*scope Fun"

board, available from <http://www.qrpme.com>. The board, designed by Rex Harper, W1REX was part of the "Four Days in May" Buildathon 2019 project. QRP Amateur Radio Club International's Four Days in May event took place during May 16 - 19, in conjunction with the Xenia Hamvention®.



O'scope Fun board by W1REX.

The board provides sample signals to measure while getting familiar with tiny pocket oscilloscopes such as the DSO Shell. See: <http://www.qrparci.org/fdim/192-buildathon2018>

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NY State QSO Party

As mentioned in the May 2019 *PCARA Update*, Peekskill/Cortlandt Amateur Radio Association was recently awarded First Place in the "Multi One Low Mixed" category of the 2018 New York State QSO Party — meaning multiple operators, one transmitted signal, 5-100W output and any combination of CW/Phone/Digital modes. PCARA's 2018 effort was hosted by Joe WA2MCR.

At the May meeting, Joe WA2MCR brought along the plaque which had just arrived from the Rochester DX Association for PCARA's

winning entry. As primary sponsor RDXA reminds us that the next NYQP is scheduled for Saturday October 19, 2019.



Joe WA2MCR (left) and NM9J show the plaque for first place in the 2018 NYQP Multi-One Low Mixed category.

Peekskill / Cortlandt Amateur Radio Association

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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 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 Jun 2: PCARA meeting, NewYork-Presbyterian /Hudson Valley Hospital, 3:00 p.m.

Sat Jun 8: Yorktown Health & Garden Spring Fest 2019, YRNC, 2300 Catherine St., Yorktown. Club booth. 11:00 a.m. - 4:00 p.m.

Mon Jun 10: Antenna Build Workshop, Croton Free Library, 171 Cleveland Dr, Croton On Hudson. 6:30 - 8:30 p.m.

Sat Jun 15: PCARA Breakfast, Turco's, Yorktown Hts. 9:00 a.m.

Fri Jun 21: Field Day antenna setup, Walter Panas HS.

Sat-Sun Jun 22-23: ARRL Field Day, Grounds of Walter Panas High School, 300 Croton Avenue, Cortlandt Manor, NY.

Hamfests

Sun Jun 2: Hall of Science ARC Hamfest, New York Hall of Science Parking Lot, 47-01 111th Street Queens, NY. 9:00 a.m.

Sun Jun 9: LIMARC Outdoor Hamfest, 1055 Stewart Ave., Bethpage, NY. 9:00 a.m.

Sat Jun 15: Raritan Valley RC Hamfest, Piscataway HS, Hoes Lane & Behmer Rd., Piscataway, NJ. 8:00 a.m.

Sun Jul 14: Sussex County ARC Hamfest, Sussex County Farm & Horse Show Fairgrounds, 37 Plains Road, Augusta, NJ. 8:00 a.m.

VE Test Sessions

Jun 9: Yonkers ARC, Yonkers OEM, 789 Saw Mill River Rd, Yonkers NY. Pre-reg. Walter P. Pastor (914) 826-5571. 11:30 a.m.

Jun 10: Columbia Univ ARC, 531 Studebaker Building, 622 W. 132 St., New York, NY. 6:30 p.m. Alan Crosswell (212) 854-3754.

Jun 13: WECA, Westchester Co Fire Trg Center, 4 Dana Rd., Valhalla, NY. 7:00 p.m. S. Rothman, (914) 949-1463.

Jun 22: PEARL Field Day Test Session, Sycamore Park 790 Long Pond Rd, Mahopac NY. 10:00 a.m. Michael Troy (845) 225-4650.



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