



FEEDBACK



Web Site k3dn.org

Warminster Amateur Radio Club

March 2022

Next Meeting March 3rd - Skywarn by NWS Mount Holly, NJ

PRESIDENT'S MESSAGE

I'd be remiss if I didn't start by saying that I am sorry for not having a President's Message ready for publication in February's issue of Feedback. I won't make any excuses; suffice it to say, I missed an obligation, and for that I apologize to all our members.

I am back now, however, and I can tell you that things are starting to heat up as far as club activity is concerned (because our weather sure isn't heating up!). We are gearing up for Hamfest, working on a new direction for our instruction classes, and starting the process for club elections, among other bits and pieces. There is a lot on our plate right now, and we all have a part to play in these events, so keep an eye on the standard lines of communication (Groups.io, email, Wednesday Night Net, etc.) and help us make the most of these great opportunities.

Let me say a few words about the upcoming elections: We are in need of members to step up and take on leadership roles within the club. As has been previously stated, myself (President) and Herb KB3VMN (Treasurer) are stepping down after our current terms, and these positions need to be filled. We are hopeful that one of our current Board members may decide to seek one or both positions, but even so that leaves other vacancies on the Board to be filled. This is a great chance for you to have a say in the direction the club will take for the coming year, and perhaps beyond, and gain valuable insight into the tremendous work that our Board does year-in and year-out. I realize that the lack of in-person gatherings has made it more challenging than it otherwise would normally be, and that a lot of our newer members have not had a chance to mingle and develop the bonds that generally lead to stepping into these roles, but what better way to get to know the membership (and be known by them) than to volunteer for one of the Board positions and guide the club going forward? As I've said before, the experience for me has been much more fulfilling than I ever thought it would be, and it has given me back many times what I have had to put into it.

Let me also point out that the four Executive Board positions {President, Vice President, Secretary, Treasurer} must be occupied per our Constitution, in order for us to maintain our Incorporation [and therefore 501(c)3 status] with the Commonwealth of Pennsylvania. Without sounding alarmist, I want to stress the sense of urgency as the nomination deadline approaches.

On a bit lighter note, our Hamfest is coming up on May 1, and I have had several members contact me about volunteering to help – these are GREATLY appreciated, but we will need more in order to be a success! This will be our first Hamfest in three years, and we are expecting a pretty good crowd to turn out, so I am counting on all our members to lend a hand, even if it's just for a few hours during the day, to pitch in and show the region why WARC has a great reputation as an active, outgoing club with the best members in EPA!

OK, that's going to do it for me this month. I hope that all of you take something good out of this, and that more than a few of you find the motivation to give some of your time to benefit the future of WARC.

Tony W3FLH

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Warminster ARC General Meeting Minutes - February 3rd, 2022

Meeting called to Order, 7:30pm

Introductions- (Hybrid meeting)

Ten in-person attendees, 36 on Zoom.

Minutes from last Meeting:

Motion made and seconded to approve as submitted.

(Continued from page 1)

Committee Reports:

Treasurer's Report: Herb (KB3VMN)
(as given)

Programs: Ray (KA3TRU)

February- Scanners in the Ham Shack by Ray (KA3TRU)

March- Skywarn by NWS Mount Holly, NJ (Pending confirmation)

April- George Miller (W3GWM) from the ARRL

Future Meeting Topics- Emergency Communications by Karl Harris (K3KH),
Digital Modes.

Membership: David (KC3RAT)

134 members, 34 of those remained unpaid.

Public Service: George (N3HBT) *No Report*

Classes: George (KA3WXV) **Instructor needed!**

George has retired from instructing our classes. We thank him for his many years of service and the many new hams!

VEC Testing: Larry (WA3ELQ)

January- Four candidates; two new Techs, one upgrade to General and one to Extra. Next session, Feb. 28 in the library at the BWSC.

Repeater: Brian (N3EXA)

Nothing new to report. All is functioning. Working on solid state amp. PHL(center city) input lost.

Good and Welfare: Ken (K9KJL)

Nothing to report

Other Committees:

Radiosport: Irwin (KD3TB)

February contests. Lots of State QSO's parties and RITTY contests.

February 19 to 20- ARRL CW contest.

March 5-6, ARRL Voice. Getting to the end of the QSO's parties.

Please, get on the air and show the FCC we are using the bands!

Hamfest: Tony (W3FLH)

56 tables have been reserved from the rental company. 50 of those tables will be for the vendors.

Field Day: Doc (W3GAD) *Tabled*

Old Business:

Club Station: Interest/Activity (Marty NR3Z & Andy KD3RF) *Tabled*

Elmer Program- Ongoing. *Tabled*

Annual Club Auction/Online [Andy (KD3RF) and Herb (KB3VMN)]

On-line auction starts Feb. 15. The auction is open to other local clubs. Announcements will be made on Constant Contact for previews. Up until the start of the auction, the auction is still accepting more donations. All donations must be radio related, no consumer electronics. **Someone needs to step-up and take over future auctions. Andy is retiring from running the auction.**

Nominating Committee 2022: Irwin (KD3TB), Bill (K3FMQ) and Doug (KC3MNQ).

All officers are up for nomination and election. Nominations needed by April. Members vote (election) for Officers and Directors in May. New board members take office July 1. Please consider joining the executive board. The current President and Treasurer will be retiring from the board. **A new President and Treasurer are needed! The club's charter requires these vacancies be filled or the club can no longer legally function!**

Clean-up crew for WARC storage area at BWSAC: (Mike WJ3O)

Old magazines and some furniture will be disposed of. Old magazines are available for the taking. It was suggested that a security camera(s) will be installed upstairs in the club station.

New Business:

License Classes- **Instructor(s) needed**

Motion made to Adjourn, 8:30pm

Presentation: Scanners in the Ham Shack by Ray (KA3TRU)

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FOR SALE

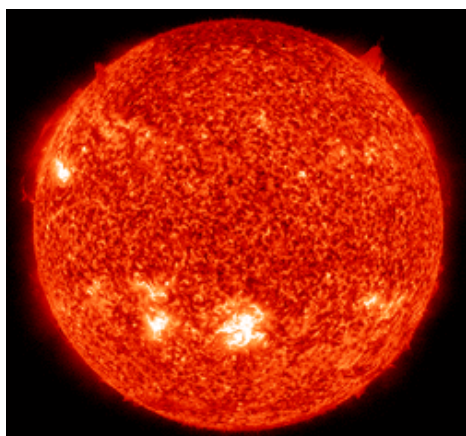
Drake TR-4C, RV-4C, AC-4 with Harbach modes by WB4HFN, Drake desk mic 7075, original Drake manual for TR-4C, a few spare Drake parts. All in excellent electrical and physical condition. New matched finals replaced a few years ago. No issues. Great back up set-up or set up for new ham.

ASKING: \$495 with local pick-up at my home or nearby local to be discussed.

Contact Bob Wilderman a WARC member at dlrwild1@verizon.net or 267-535-9189 cell

K3SRO

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The K7RA Solar Update

Tad Cook, K7RA, Seattle, reports: New sunspot groups appeared on February 17, 19, 20, and 21, but solar activity declined, even though sunspots were covering the sun every day.

The average daily sunspot number declined by 21 points, from 75.3 last week to 54.3 in the February 17-23 reporting week. Average daily solar flux was down by nearly 15 points, from 110.1 to 95.4.

The average daily planetary A index went from 13 to 9.6, and the average daily middle latitude A index was off by a point to 7.3.

Predicted solar flux is 100 on February 24; 105 on February 25 - March 2; 110 on March 3 - 4; 108 on March 5 - 8; 105 on March 9 - 11; 103 on March 12 - 13; 100 on March 14; 98 on March 15 - 16; 102 on March 17 - 19; 104 on March 20 - 22; 108 on

March 23 - 26; 110 on March 27; 115 on March 28 - 29, then 112 and 110 on March 30 - 31.

Predicted planetary A index is 5 on February 24 - 25; 10 on February 26; 8 on February 27 - March 2; 12, 15, 10, and 8 on March 3 - 6; 5 on March 7 - 10; 15, 12, and 10 on March 11 - 13; 5 on March 14 - 18; then 8, 5, 12, 18, 15, and 10 on March 19 - 24; 5 on March 25 - 29, and 12, 15, 10, and 8 on March 30 - April 2.

Sunspot numbers for February 17 - 23 were 103, 53, 51, 49, 48, 38, and 38, with a mean of 54.3. The 10.7 - centimeter flux was 96.7, 93.3, 95.7, 93.3, 97.8, 95.3, and 95.5, with a mean of 95.4. Estimated planetary A indices were 5, 6, 9, 13, 12, 16, and 6, with a mean of 9.6. Middle latitude A index was 4, 5, 6, 8, 11, 13, and 4, with a mean of 7.3.

A comprehensive K7RA Solar Update is posted Fridays on the ARRL website. For more information concerning radio propagation, [visit](#) the ARRL Technical Information Service, [read](#) "What the Numbers Mean...," and [check out](#) the Propagation Page of Carl Luetzelschwab, K9LA.

A propagation bulletin [archive](#) is available. For customizable propagation charts, visit the [VOACAP Online for Ham Radio](#) website.

[Share](#) your reports and observations.

Courtesy of the ARRL Newsletter

Amateur Radio in Ukraine Ordered Off the Air in State of Emergency

A state of emergency was declared in Ukraine just prior to the Russian military invasion. Among other things, the February 24 decree from President Volodymyr Zelensky will remain in effect at least for 30 days and may be extended. As published on the website of the Verkhovna Rada, Ukraine's unicameral legislative body, the state of emergency includes regulation of TV and radio activities and "a ban on the operation amateur radio transmitters for personal and collective use."

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The decree also imposes a ban on mass events and on strikes and authorizes checking the documents of citizens, and if necessary, conducting searches on persons, vehicles, cargo, office space, and housing. A curfew could be imposed. "The situation changes rapidly," IARU Region 1 Secretary Mats Espling, SM6EAN, said. "IARU Region 1 continues to monitor the development and expect all radio amateurs to follow their national laws and regulations."

Courtesy of the ARRL Newsletter

60 speakers, Buildathons, Prizes at March 2022 QSO Today Virtual Ham Expo

Tickets are on sale now for the upcoming **QSO Today Virtual Ham Expo on March 12-13, 2022**. It's an amazing experience for anybody that wants to improve their amateur radio knowledge and get exposed to new ideas, cutting edge ham radio technology, and practical operating and building techniques. And, there is no need to travel - anyone can participate from their home or office! Information and tickets can be found at <https://www.qsotodayhamexpo.com>.

Here are some Expo highlights that we want to share with you:

Watch the Keynote Presentation. We are excited to announce that **Courtney Duncan, N5BF**, will be our **keynote speaker**. Courtney will talk about the importance of amateur radio and technical hobbies to advance global technology and mankind's "big projects". Courtney just retired from JPL, NASA's Jet Propulsion Laboratory, where he supported numerous missions with digital and radio frequency hardware and software, most recently as telecommunications lead for the Ingenuity Mars Helicopter.

Listen and engage with 60 ham radio luminaries on some 20 different topic areas - there is something for everyone. Here are a few of the presentations, from general to expert levels:

[3Y0J: The Bouvet DXpedition](#)

[APRS Picoballoon Flight by a Rank Amateur](#)

[Core HF Communication Concepts: Fundamentals of Shortwave Propagation](#)

[Deep dive of an FPGA implementation of DVB-S2](#)

A complete list of speakers can be found at <https://www.qsotodayhamexpo.com/speakers1.html>

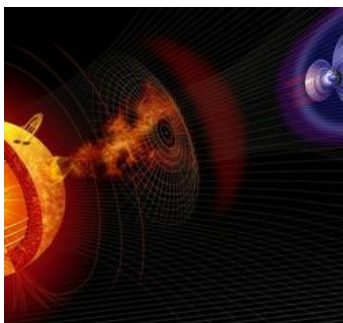
Watch as many presentations as you want! A big limitation of in-person events is that you can't watch many of the presentations (you can only be in one room at a time). At the Expo, return anytime within 30 days to view any presentations you missed as well as explore exhibitor offerings. Our presentation videos with Q&A from previous Expos are still enjoyed by amateurs on our Vimeo channel.

[ARRL, the national association for Amateur Radio®](#) in the United States, is a QSO Today Virtual Ham Expo Partner. [FlexRadio](#) is the Expo's Platinum Sponsor, [Elecrafit](#) is our Gold Expo.

Early Bird Tickets are just \$10 (through March 6) and then \$13.50 to the end of the on-demand period. Tickets include entry for the Live 2 day period and the 30 day on-demand period. Save on gas, lodging, and travel to attend the QSO Today Virtual Ham Expo on March 12-13.

For more information, go to <https://www.qsotodayhamexpo.com>.

Geomagnetic Storm Leads to Loss of Up to 40 Starlink Satellites



A geomagnetic storm on February 4 "significantly impacted" the launch of some 49 Starlink satellites. The company said the satellites were intended to achieve low-Earth orbits after being sent aloft on a Falcon 9 launcher. Starlink is a satellite internet constellation operated by SpaceX to provide satellite internet access. SpaceX said it initially deploys its satellites into low-Earth orbit so that "in the very rare case any satellite does not pass initial system checkouts, it will quickly be deorbited by atmospheric drag." All did not go as planned, however.

"Unfortunately, the satellites deployed on February 3 were significantly impacted by a geomagnetic storm on Friday [February 4]," SpaceX announced this week. "These storms cause the atmosphere to warm and atmospheric density at our low-deployment altitudes to increase. In fact, onboard GPS suggests the escalation speed and severity of the storm caused atmospheric drag to increase up to 50% higher than during previous launches."

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The satellites were commanded into a safe mode, where, as SpaceX explained, "they would fly edge-on (like a sheet of paper) to minimize drag -- to effectively 'take cover from the storm' -- and continued to work closely with the Space Force's 18th Space Control Squadron and LeoLabs to provide updates on the satellites based on ground radars."

A preliminary analysis showed that the increased drag at the low altitudes prevented the satellites from being moved into higher orbit, and up to 40 of the satellites will reenter, or already have reentered, Earth's atmosphere.

"The deorbiting satellites pose zero collision risk with other satellites, and, by design, [burn up] upon atmospheric reentry -- meaning no orbital debris is created and no satellite parts hit the ground," SpaceX said.

Space weather forecaster Tamitha Skov, WX6SWW, analyzed the incident in considerable detail in a recent [update](#) on YouTube. *Courtesy of the ARRL Newsletter*

Research on Ancient Massive Solar Storms Suggests a Need to Prepare for the Next Ones



Numerous powerful X-class solar flares occurred last fall as Solar Cycle 25 activity picked up. Jon Jones, N0JK, covered the event in his *QST* column, "The World Above 50 MHz," in the February issue, and he pointed out, "More powerful flares than these have taken place, such as the Carrington Event of 1859, during which aurora was seen in the South Pacific and in Cuba, and it sparked electrical fires."

Similar events took place in the 20th century, but, as Jones notes, scientists are researching spectacular solar storms that took place as early as 7176 BC and in 5259 BC. The huge solar flare some 9,200 years ago has convinced researchers that we are not ready for the next one, and our modern technology would take a major hit.

"Also worrisome is that Earth may have narrowly dodged a 'Carrington-level event' in 2012," Jones said. Daniel Baker of the University of Colorado -- speaking at a NOAA Space Weather Workshop -- said, "If it had hit, we would still be picking up the pieces."

Jones said his reading has led him to conclude that these solar superstorms occur more frequently than people think. "As more ice cores and tree rings are sampled, scientists are finding there have been more of these [major solar storms]," he said.

In his February column, Jones cited a 2013 Royal Academy of Engineering [report](#) that discussed the risks of a Carrington-level event.

"An extreme space weather event, or solar superstorm, is one of a number of potentially high-impact, but low-probability natural hazards," said Paul Cannon, a Royal Academy of Engineering fellow and chair of the study working group that developed the report. "Extreme space weather [can have] impacts on engineered systems and infrastructure."

Cannon said the hazard and risks of extreme space weather on the electricity grid, satellites, and air passenger safety had not previously been critically assessed. His group's report attempts to address that omission.

The *Live Science* article, "Ancient solar storm smashed Earth at the wrong part of the sun's cycle -- and scientists are concerned," cites a study, "[Cosmogenic radionuclides reveal an extreme solar particle storm near a solar minimum 9125 years BP](#)." Study co-author Raimund Muscheler, a geology researcher at Lund University in Sweden, said, "These enormous storms are currently not sufficiently included in risk assessments. It is of the utmost importance to analyze what these events could mean for today's technology and how we can protect ourselves."

"A Carrington Event taking place today could destroy orbiting satellites, disrupt GPS, and damage undersea cables and internet infrastructure on the ground," Jones said in his *QST* column. "An event in 775 AD was believed to have been 100 times stronger than the Carrington Event."

Courtesy of the ARRL Newsletter

APRS Developer Bob Bruninga, WB4APR, SK

The creator of the Automatic Packet Reporting System ([APRS](#)), Bob Bruninga, WB4APR, of Glen Burnie, Maryland, died on February 7. An ARRL Life Member, Bruninga was 73. According to his daughter, Bruninga succumbed to cancer and the effects of COVID-19. Bruninga had announced his cancer diagnosis in 2020. Over the years, he readily shared his broad knowledge of and experience with APRS, among other topics in the amateur radio and electronics fields.

While best known for APRS, Bruninga was also a retired US Naval Academy (USNA) senior research engineer who had an abiding interest in alternative power sources, such as solar power. In 2018, he authored *Energy Choices for the Radio Amateur*, published by ARRL, which explores developing changes in the area of power and energy, and examines the choices radio amateurs and others can make regarding home solar power, heat pumps, and hybrid and electric vehicles. Bruninga drove an all-electric car and had experimented with a variety of electric-powered vehicles over the years.

APRS originated in 1982, when Bruninga wrote his first data map program that plotted the positions of US Navy ships for the Apple II platform. A couple of years later, he developed what he called the Connectionless Emergency Traffic System (CETS) on the VIC-20 and C64 platforms for digital packet communications to support an endurance race. The program was ported to the IBM PC platform in 1988, and was renamed APRS in 1992. The recognized North American APRS frequency is 144.39 MHz, and APRS is globally linked via the internet. Bruninga founded the Appalachian Trail Golden Packet (ATPG) event, which fields APRS nodes from Stone Mountain in Georgia to Mount Katahdin in Maine each July.

ARRL Contributing Editor Ward Silver, N0AX, remembered Bruninga this way: "Bob kept pushing APRS beyond its origins as a position reporting system. He developed and helped implement numerous other uses of APRS in support of what has become the 'Ham Radio of Things,' with great potential for future amateur radio applications. Bob's far-reaching vision and imagination were as good as it gets."

Bruninga mentored USNA midshipmen in building and launching amateur radio satellites and CubeSats, beginning with PCsat in 2001. PCsat was the first satellite to directly report its precise position to users via its onboard GPS module. Subsequent USNA spacecraft included PSK31 capability (HF to UHF) and other innovations.

Amateur Radio on the International Space Station (ARISS) ARRL liaison Rosalie White, K1STO, recalled that Bruninga attended many ARISS-International meetings and contributed "enormously" to ARISS APRS activities, leading a team in developing protocols and software for rapid message exchange via a packet "robot."



White said APRS remains a key staple in the new ARISS InterOperable Radio System (IORS) that's now on board the ISS. She added that Bruninga offered input for future NASA Lunar and Gateway opportunities in which ARISS hopes to take part.

Last year, ARRL CEO David Minster, NA2AA, on behalf of ARRL, honored Bruninga with a brick in the ARRL Diamond Club Terrace at ARRL Headquarters. ARRL sent him a letter of appreciation along with a replica of the brick.

Bruninga held a bachelor's degree in electrical engineering from Georgia Tech (Georgia Institute of Technology) and a master's degree in electrical engineering from the Naval Postgraduate School. Bruninga was a 20-year US Navy veteran. Dayton Hamvention® honored him in 1998 with its Technical Excellence Award.

Bruninga authored and co-authored numerous academic papers over the years, and was frequently in demand as a speaker and presenter at amateur radio gatherings.

Survivors include his wife, Elise Albert; daughter, Bethanne Bruninga-Socular, WE4APR, and son A.J. Bruninga, WA4APR. Arrangements are pending, although his daughter said that a celebratory memorial service will be held this summer in Annapolis, Maryland.

Courtesy of the ARRL Newsletter

Heil Sound Changes Hands

Heil Sound has changed hands. Founded by Bob Heil, K9EID, and based in Fairview Heights, Illinois, Heil Sound is a manufacturer of microphones, microphone accessories, and audio accessories for both professionals and amateurs. The new owners are Heil Sound President and CEO Ash Levitt and Director of Operations Steve Warford. Sarah Heil, who was co-owner of Heil Sound, has retired, but Bob Heil will continue to do outreach work and amateur radio product design as Founder and CEO Emeritus.

"My life has been about achieving great sound, whether on the concert stage or in the amateur radio world," Bob Heil recounted. "I've watched Heil Sound go from a regional sound company to a world-class microphone manufacturer. This company has been my passion, but it is time for me to step aside. There is no better team to carry the company forward than Ash and Steve, and I have the utmost confidence in them."

[Heil Sound](#) is a name well known within the worldwide amateur radio community for its microphones and "boom set" microphone/headset combinations. The company marked its 50th anniversary in 2016. The company began in 1966 as Ye Olde Music

Shopee -- a music store in Marissa, Illinois, Heil's hometown.

Heil initially made a name for himself working with music performers to provide sound reinforcement for their live gigs, initially supplying full sound system packages for venues and festivals throughout the Midwest and later working with world-class acts such as Humble Pie,



(L - R) Heil Sound President and CEO Ash Levitt, Bob Heil, K9EID, and Director of Operations Steve Warford.

The Who, The Grateful Dead, and Joe Walsh, WB6ACU. Heil said it was the Dead's Jerry Garcia who suggested the Heil Sound name. Among other innovations, Heil created the quadraphonic sound system for The Who's "Quadrophenia" tour as well as the Heil Talk Box, made famous by Joe Walsh and Peter Frampton.

Levitt and Warford both started working with Heil Sound as teenagers, building and packaging products. Levitt took a different career path in academia for several years but continued to regularly consult with Heil Sound. He returned to Heil Sound full time in 2017 and assumed the role of president in 2020. Warford worked his way up in the company over the course of his tenure and, for the past several years, has been responsible for daily operations.

"Steve and I are honored to carry forward the legacy of Heil Sound," Levitt said.

"We care very deeply about Heil Sound's role in the industry and intend to build

on that going forward with new products and greater distribution. Read [an expanded version](#).

Courtesy of the ARRL Newsletter

Crozet Island DXpedition Preparations are Moving Forward

The upcoming solo DXpedition to Crozet Island, spearheaded by Thierry Mazel, F6CUK, will likely arrive on the island around Christmas. While traveling aboard the *Marion Dufresne*, Mazel will make stopovers at other remote islands that are also rare DXCC entities, including Tromelin Island. The Crozet and Tromelin islands are administered as part of the French Southern and Antarctic Lands (abbreviated in French as TAAF).

"After the permission granted by the TAAF and the DXpedition announcement, [the] time has come to gather the equipment and move forward with the preparations," Mazel said. "The *Marion Dufresne* will leave Réunion Island on December 8, with a stopover at Tromelin to resupply the people there, then head for Crozet."

Mazel expects to spend a solid 3 months operating from the Alfred-Faure base on Crozet. The *Marion Dufresne* will return on March 26, 2023, after stopovers at the Kerguelen Islands and Amsterdam, arriving at Réunion Island on April 16, 2023. He said dates may vary depending upon weather conditions.

His first task upon arrival will be to erect antennas and set up his station, for which he'll need to enlist help from others. He'll also have to contend with the weather, as Crozet is subject to strong winds.

No call sign has been issued at this point, although Mazel has requested one that will commemorate the 60th anniversary of the first amateur operation from Crozet in 1961 and 1962. To head off problems with pirates, the call sign won't be released until after Mazel has arrived on Crozet, and just hours before he begins operation.

"I have asked the TAAF [for] permission to send part of the equipment with the previous ship supply mission leaving in November," Mazel said. "It sometimes happens that, because of the weather during landing, not everything can be brought to the island. Imagine being on the island without a station!"

Mazel said much remains to be done, including finalizing antenna designs, securing winter clothing, and organizing scheduled contacts with school children via the QO-100 geostationary satellite.

"Crozet will be an ATNO [All-Time New One] for many, and you can't afford missing it, as nobody knows when the next ham operation will take place from this #3 most-needed," Mazel said in urging contributions to the DXpedition effort.

The last ham radio activity from Crozet was in 2009 by Florentin Bard, F4DYW, who operated as FT5WQ. The 2022 - 2023 solo DXpedition is anticipated to cost upward of \$60,000.

Courtesy of the ARRL Newsletter

2022 Contest Calendar

March

5-6 [International DX- Phone](#)

0000 UTC Saturday and runs through 2359 UTC Sunday.

12-13 [North American Sprint, RTTY](#)

2300Z, Mar 12 to 0300Z, Mar 13

26-27 [CQ WW WPX Contest, SSB](#)

0000Z, Mar 26 to 2359Z, Mar 27

April

10 [Rookie Roundup - Phone](#)

1800 to 2359 UTC

QSO Parties

Oklahoma 1500Z, Mar 12 to 0200Z, Mar 13 and 1500Z-2100Z, Mar 13

Idaho 1900Z, Mar 12 to 1900Z, Mar 13

Wisconsin 1800Z, Mar 13 to 0100Z, Mar 14

Virginia 1400Z, Mar 19 to 0400Z, Mar 20 and 1200Z-2400Z, Mar 20

V.E. TEST LOCATIONS

Confirm all information, in advance, with the contact person. Licensed applicants must bring the original, and one photocopy of their license. All applicants, including children, must bring two forms of positive ID. Also bring the original, and a copy, of any Certificate of Successful Completion needed to prove current status. The ARRL VEC'S 2022 test fee is **\$15.00**.

Warminster Amateur Radio Club, Monthly, Last Mon. 7:00 pm at the Wilson Senior Community Center 580 Delmont Avenue Warminster, PA 18974 George Brechmann (215) 443-5656.

Atco, NJ, The fourth (4th) Tuesday of each month, at 7 p.m. Winslow Township Senior Center, 33 Cooper Folly Road, 08004-2603.
Mark (K2AX) jtra@comcast.net

Levittown, PA, Monthly, 3rd Monday at 6:30. Falls Township Building - Ben Johns, K3JQH, 215-657-5994

Telford, PA, RF Hill ARC. Indian Valley Library. Held the third Monday of odd months (January, March, May, July, September, November)
Contact: Jim Soete 215-723-7294
wa3ylq@arrl.net.

Philadelphia, PA, Testing is done on the 4th, non holiday Thursday of the month at the, Community Ambulance Association of Ambler, 1414 E Butler Pike, Ambler PA 19002 at 7:00 PM We also are testing on Saturdays at least once per quarter at 9:00 AM. For further information contact James McCloskey at jmccloskey@msn.com and by phone 215-275-2979.

Lansdale, PA Testing on the fourth non-holiday Thursday of the month starting at 7:00 PM. The Lansdale Library Community Room Vine St. and Susquehanna Ave. Lansdale, Pa. Registration is required 48 hrs. or more before the scheduled exam date. If there are no registrations the scheduled exam date will be canceled. NO WALK-INS. You can register by contacting:
Olaf N. Markert - Phone (610) 517-5074, E-mail w3pa@arrl.net
Alt Contact: Jim, 610-287-5630

➤ ATLANTIC DIV. HAMFESTS ➤ 2022

April 23 - [Delmarva Amateur Radio & Electronics Expo](#)

Cheer Community Center
20520 Sand Hill Rd.
Georgetown, DE 19947
<http://www.radioelectronicsexpo.com>

April 24 - [Maryland Mobileers Spring Hamfest](#)

Odenton Volunteer Fire Company
1425 Annapolis Road
Odenton, MD 21113
<https://sites.google.com/view/marylandmobileers/hamfest?authuser=0>

April 30 - [York Hamfest](#)

Elicker's Grove Park
511 Roth Church Rd
Spring Grove, PA 17362
<http://yorkhamfest.org>

May 1 - [Warminster ARC Hamfest, ARRL Eastern Pennsylvania Section Convention](#)

Bucks County Community College-Lower Bucks Campus
1304 Veteran Hwy (Rte.413)
Bristol, PA 19007
<http://www.k3dn.org/hamfest/>

CLUB INFO

PUBLIC SERVICE

CLUB STATION

The WARC club station is open to anyone with an interest, on the first Thursday of the month (meeting night) between the hours of 6:30 and 7:30 pm. with the exception of the December dinner meeting For further information, call George Brechmann N3HBT at 215-443-5656.

WARC ALUMNI MEMBERSHIP

An Alumni membership category is available for WARC members who are unable to attend meetings and club activities on a regular basis because of health considerations, travel impediments, or other hardships. Dues for the Alumni membership are \$10.00 annually and are approved by the Board. Please contact the Membership Committee for more information if interested."

ATTENTION MEMBERS

The Membership Committee can provide Club badges. Two types are available: an engraved plastic callsign and name badge for \$8 or a free, laminated plastic, photo ID badge/card. The photo id badge is included with your membership. Pictures for the club badge will be taken before club meetings on even numbered months. If you do not have at least a Warminster Amateur Radio Club badge with your picture on it, please contact your Membership Chairs at the WARC monthly meetings. Otherwise, please contact Membership by email at: membership@k3dn.org.

If you want to have your picture taken to be placed on the 'Members' Photos' section of the www.k3dn.org website, please contact Membership with your interest. When we get enough people who are interested we will post a notice in Feedback and have a camera ready at the following club meeting.

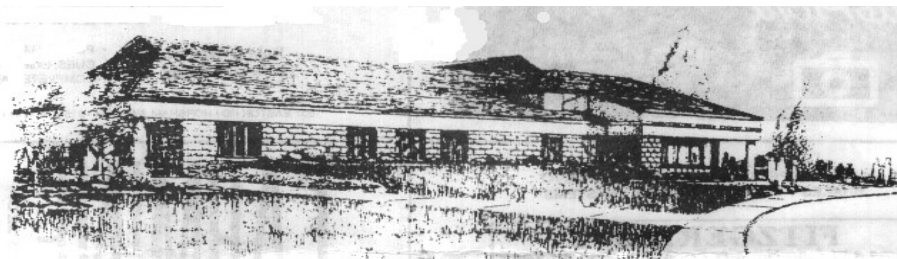
PROGRAMS 2022

March- Skywarn by NWS Mount Holly, NJ (Pending confirmation)

April- George Miller (W3GWM) from the ARRL

Future Meeting Topics- Emergency Communications by Karl Harris (K3KH), Digital Modes.

The Club Station - K3DN - is located at the Benjamin Wilson Senior Center, Delmont Avenue, Warminster, PA. The station is open for club members and the interested general public on the first Thursday of the month (meeting night) between the hours of 6:30 and 7:30 pm. with the exception of the December dinner meeting . The station is fully operational on HF (80 meters through 10 meters) both phone and CW. There is an assortment of amateur radio shareware which may be copied under the shareware licensing agreement.



For additional information on the Club Station please call the Station Manager N3HBT - George at 215-443-5656.

➤ WARC Meetings are held the first Thursday of each month at 7:30 pm at the Benjamin Wilson Senior Center, Delmont Avenue, Warminster, PA. Talk in is available on the 147.09 & 443.950 repeaters.

SKYWARN INFORMATION**Bucks County SKYWARN Weather Spotter PRIMARY FREQUENCY: 147.300MHZ (+ 131.8)**

Fairless Hills, PA (many remote access locations throughout Bucks County)

Mount Holly NWSFO SKYWARN Homepage:

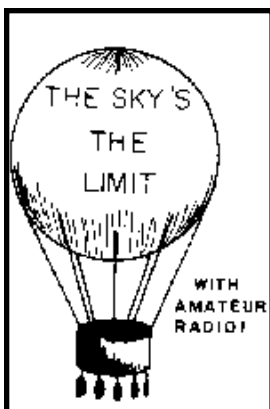
<https://www.weather.gov/phi/Info>

SKYWARN Basic Weather Spotter Educational Programs URL:

<https://www.weather.gov/phi/classes>

➤ CLUB EQUIPMENT

WARC has 2 Baofeng UV-5R dual band HT's and a Yaesu FT-2900 2M mobile that are available for use by members of the club. The radios are available on a month-by-month basis and have been purchased primarily to help new hams get on the air. However, they may also be used by any club member who is in need of a temporary 2-meter radio. They are also available for use by participants in WARC's public service activities. DE, Tony Simek N3YNH



*The Warminster Amateur Radio Club
Announces Free Ham Radio Instructional Classes*

If you're interested in Ham Radio, or think you might be, this is your opportunity. Perhaps you'd like to learn about digital communications, VHF, UHF, satellite, or perhaps you'd rather sit down and chat with someone in South Africa, Russia, Great Britain or in the space station.

For further information contact George Brechmann, N3HBT at 215-443-5656.

Area Repeaters**VHF**

145.310 R.F. Hill
145.350 Doylestown R.C.
146.790 Penn Wireless
145.330 Hilltown
146.670 DVRA
146.685 Holmesburg
146.925 Willingboro
147.000 Ham Buergers
147.030 Phil-Mont
147.090 Warminster
147.270 Frankford
147.300 BEARS
147.390 CBRA

220

224.580 PackRats
223.76 K3NAL

UHF

442.650 DVRA
443.250 TAG
443.050 Metro-Comm
443.950 Warminster
444.200 BEARS
447.475 WR3B
448.225 Penn Wireless
444.759 RF Hill Analog/
Fusion

D-STAR

146.61000 K3PDR DV
445.18125 K3PDR DV
445.01875 AA3E Montco
RACES

6 Mtr

53.030 WA3BXW
53.230 N3DQZ
53.320 K3MFI

Bucks County Amateur Radio Emergency Service (BCARES)

www.bucksares.org

Bucks County ARES will be on the air Wednesdays, at 9:00 PM . We will be using Warminster Amateur Radio Club's repeater on 147.090, pl 131.8. This net is linked as shown in the Net Schedule box for the Wednesday night net. It may also be linked to 147.300.

Winlink Gateway Stations:

Lower Bucks NY3J-10

145.530 Bensalem

Net Schedules

Sunday	2000	10 Meter Net	28.445 MHz
Wednesday	2000	2 Meter Net	147.09 Rptr.
Wednesday	2000	Linked w/ 2 Meter Net	443.95
Rptr.Wednesday	2000	Linked w/ 2 Meter Net	53.230 Rptr.
Sunday	2030	Informal Net	223.5 Simplex
Thursday	1900	Mont. Cnty RACES Net	146.835 Rptr.

Are you submitting an article for the Feedback ?

Contributions of articles to be published are always accepted for consideration. Please follow these guidelines:

- E-Mail to:
wa4ywm@comcast.net
Or via snail mail to:
FEEDBACK EDITOR
Warminster Amateur Radio Club
Box 113
Warminster, Pa 18974
- Use both upper and lower case letters.
- Use your program's spell check.
- If you don't have a computer, then typewritten sheets are o.k. but please use both upper and lower case.
- Put your name and call at the beginning or end of the article, and show credits if you are using material from another source.
- Deadline for articles is the Saturday before the regular meeting.

For general club correspondence:
k3dn@k3dn.org

Visit our Home Page at:
<http://www.k3dn.org>

The annual dues rate structure is as follows:

Full Member: \$25.00
Student: \$ 7.50
Alumni: \$12.50

- **Are your dues current ?**

2022 Officers

Executive Officers

President	Tony Cuttone	W3FLH	267-679-9297
Vice-President	Ray Oechslin	KA3TRU	267-269-3198
Secretary	Dan Myers	K3NXX	215-957-2343
Treasurer	Herb Hickmott	KB3VMN	267-718-3601
Director (A)	Doug Becker	KC3MNQ	
Director (E)	Larry Abbott	WA3ELQ	215-704-3282
Director (A)	Bruce Farrington	WA3ZPC	
Director (E)	George Brechmann	N3HBT	215-443-5656
Past President	Marty Squicciarini	NR3Z	215-872-9644

Committee Chairpersons

ARES/RACES Liason	Karl Harris	K3KH	215-264-1855
ARRL Liason	Irwin Darack	KD3TB	215-343-8170
Awards Manager	Vince Pironti	KD3TC	215-674-0446
Classes			
Digital and APRS	Ron Wenig	NY3J	215-638-9257
Feedback Editor	Jim Elmore	WA4YWM	215-538-1889
Field Day 22	Doc Whitticar	W3GAD	215-968-6397
Hamfest 22	Michael Shanblatt	W3MAS	267-491-5773
Hamfest 22	Tony Cuttone	W3FLH	267-679-9297
Hamwear	Kathy Acker	KC3FBY	215-815-7978
Holiday Dinner	George Brechmann	N3HBT	215-443-5656
Membership	David McGowan	KC3RAT	
Net Manager	George Brechmann	N3HBT	215-443-5656
Publicity	Bernice Kraut	KB3PCX	215-884-8195
Refreshments	Brandon Penglase	N3UO	215-259-7255
RF Interference	Andy Vavra	KD3RF	610-287-3295
RF Interference	Bill Ballantine	K3FMQ	215-766-0764
Repeater Coordinator	Brian Taylor	N3EXA	215-257-6303
Safety Officer	Mike Malone	W3MJM	215-639-2175
Station Trustee	George Brechmann	N3HBT	215-443-5656
Sunshine Club	Ken Lichtenstein	K9KJL	847-697-1188
Township Liason	George Brechmann	N3HBT	215-443-5656
VE License Testing	Larry Abbott	WA3ELQ	215-704-3282
VHF/UHF/MW	George Altemus	KA3WXV	215-855-3856
Website Coordinator	Al Konschak	WI3Z	215-491-9941
Youth Programs	Steve Larson	WW3Y	215-822-1511



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