Web Site k3dn.org

Warminster Amateur Radio Club

May 2025

Next Meeting May 1 - Town Hall

President's Message

- <u>IMPORTANT NOTICE:</u> Since the July meeting date is Thursday July 3rd, we will not have a July general meeting due to the July 4th holiday
- **Upcoming presentations:** May Town Hall Discussion

•

2025-2026 Board: At the April 3rd meeting we had a full slate of officers nominated. There being no other nominations/ candidates the membership voted to install the candidates eliminating the need for an election.

President - Dave McGowan K3FTD

Vice President – Scott Vogin KB3ALX

Secretary – Tony Simek N3YNH

Treasurer – Tom Newman K3PLA

Elected Directors:

George Brechmann N3HBT,

Herb Hickmott KB3VMN

Appointed Directors: (Serve from Jan-Dec)

Doug Becker KC3MNQ,

Bruce Farrington WA3ZPC

Past President - Ray Oechslin KA3TRU

- Next VE session: Monday April 28th, 7:00 PM.
- <u>Good and Welfare:</u> We are looking for someone to cover this important club outreach. If you are interested, please contact the board or Dave McGowan at mcgowan2@comcast.net
- Public Service: We need volunteers for the the following public service events, please contact George N3HBT
- o Memorial Day Parade, Monday May 26th
- → To get, setup, man, take it down, and bring the tent back. The tent will set up at the corner of Henry & York Road (across from Rita's)
- **♦** Staff the parade route
- → Golf Outing on Thursday June 5th -
- ♦ We need 8 volunteers
- ★ We will have a sign up sheet at the May meeting

Hamfest: Sunday 5/4/2025

We need volunteers for the WARC 5/4/2025 Hamfest

Saturday, May 3

<u>Tables</u> - Unload and set up of the tables upon delivery, and chairs from the college (3:00pm at the Bucks County Community College-Lower Bucks campus in Bristol, PA). This usually takes about two hours or so, and involves a little lifting and walking, but not too taxing.

<u>Club Gear</u> - Load in and deliver to Bristol. Herb KB3VMN is coordinating this effort; the gear is currently being stored in two locations, and will probably be picked up early enough to make it to Bristol around 3:00pm to unload and help with set up. **Sunday, May 4**

Gate and Parking - Starting at 5:30am (gates open at 6:00am), we need a few members to handle these critical positions. Greeting attendees and taking payment at the Gate, and coordinating with the Parking team who handle guests and vendors once on site. We try to rotate these positions throughout the event (approximately hourly or so) to keep people fresh. Looking for at least 8 to 10 members for this, with 5 or 6 (minimum) at 5:30am start time. Herb KB3VMN is the lead and will be continually making rounds in both areas.

<u>Club Table</u> - Starting at 6:00am, to answer any questions, greet entrants as they come into the building, watch the club sale ta-

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ble, and generally be available to lend a hand where needed. Usually need about 3 to 5 members for this, Karl K3KH is the lead. **VE Testing** - Session starts at 10:00am, so our team needs to be together no later than 9:30am. Minimum of 3 VE's are required, usually needing no more than 5. Larry WA3ELQ is the lead for all of WARC's VE testing.

Break down/Clean up - We have historically wrapped things up around noon or shortly after. We need to break down and stack the tables when everything is over (for pick up by rental company on Monday), as well as returning all of the chairs to their storage racks, clean up the premises, etc. Another two hours or so, and we're usually off site by 2:30pm.

Thanks, Dave K3FTD

General Meeting Minutes April 3, 2025

Call to order at 7:30 PM

Introductions: Attendance 30

Minutes from last Board Meeting: Approved as submitted.

Committee Reports:

- Treasurer's Report: Tom K3PLA -through 3/31
- As reported
- O Full report available at the meeting for review.
- **Programs:** Dave K3FTD -
- O April Hamfest preparation
- O May 2025-2026 Budget Presentation and Town Hall
- O June TBD
- **Membership:** Tony W3FLH -
- O 102 paid, 94 regular, 3 student; 16 past due
- O Members are reminded to log onto Ham Club Online to review and update their profiles.
- O Club members may update any skills is they wish to note.
- Public Service: George N3HBT -
- O Memorial Day Parade, Monday May 26th 9 AM to 1 PM will need 10 11 hams
- O Hole in One Golf Outing on Thursday June 5th 8:30 AM to 1 PM Contact George at N3HBT@ARRL.NET of your availability.
- <u>Classes:</u> Dave K3FTD/Dan K3GMQ/Tony N3YNH –
- O Tech license ongoing, we now have a Tech class with between 6-12 students
- **VE Testing:** George N3HBT -
- O Last session was Monday March 31st, 7:00 PM 2 new Technician
- O Next session is Monday April 28th, 7:00 PM
- Field day: Herb KB3VMN –
- O Planning a Family Picnic will need volunteers to set up, cook, operate, etc.
- O Exploring the possibility of Scout merit badge awards.

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- Club Station Status: George N3HBT -
- o Still down due to the condition of the loft

• Old Business:

- **Shed Update:** Herb KB3VMN –
- O After measuring the poles, it was determined that a smaller shed would work. A 144 sq ft shed would not re quire a building permit.
- O Cost is expected to be about \$1,000 less than current quotes.
- o New Business:
- No General meeting on Thursday July 3rd (July 4th is Friday this year)

• Good and Welfare:

• We are looking for someone to cover this important club outreach. If you are interested, please contact the board or me at mcgowan2@...

• Board Nominations:

- o President Dave McGowan K3FTD
- o Vice President Scott Vogin KB3ALX
- o Secretary Tony Simek N3YNH
- o Treasurer Tom Newman K3PLA
- o Elected Directors: George Brechmann N3HBT, Herb Hickmott KB3VMN
- O Appointed Directors: Doug Becker KC3MNQ, Bruce Farrington WA3ZPC
 There being no other nominations/candidates the membership voted to install the candidates thereby eliminate ing the need for an election.

Tonight's program is Hamfest Preparations. Following are notes:

5/3/2025 – Set up. Help is needed at 1 PM to move items from Echo's garage and from the Ben Wilson Sr Center. Tables and chairs are scheduled to arrive at 3 PM at the College. Tables will need to be set up throughout the hallways at the college. Anyone able to help should let Tony W3FLH know of their availability.

5/4/2025 – Gate volunteers are needed at 5:30 AM to manage entry into the Hamfest. Vendors are scheduled to arrive at 6 AM. Buyers are scheduled for 7 AM. All volunteers involved with the parking will be using 147.575 Simplex for communications. All other volunteers will be using 147.550 Simplex for communications.

Seminars planned are (1) Red Cross BCARES with a trailer for on-site demonstration and (2) Bob Famiglio from the ARRL.

VE Testing is scheduled. Volunteer Examiners should contact Larry Abbott WA3ELQ regarding their availa bility.

5/4/2025 - Clean up. Planned closing down is 12:30 PM to 1:00 PM. Anyone that can stay to help will be appreciated.

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WA4YWM Blog

tinySA Ultra

Well, that is an intriguing title. So just what am I talking about? This is an instrument which every ham should consider having in his toolbox. A bonus is that it is inexpensive and the bang for the buck is phenomenal. So, let's get to the discussion. In general what is this device and what does it do?

What is a SA (Spectrum Analyzer)?

Look up the definition online and you'll see something like "A **spectrum analyzer** measures the magnitude of an input signal versus frequency within the full frequency range of the instrument. The primary use is to measure the power of the spectrum of known and unknown signals. By analyzing the <u>spectra</u> of electrical signals, dominant frequency, <u>power</u>, <u>distortion</u>, <u>harmonics</u>, <u>bandwidth</u>, and other spectral components of a signal can be observed that are not easily detectable in <u>time domain waveforms</u>.

It's an instrument that's used to characterize rf devices and it typically is only used by rf engineers due to the high cost. The costs can range from five to ten thousand dollar for an "inexpensive" spectrum analyzer to about a quarter of a million dollars for a high end one. So they are certainly outside of the price range for most of us hams.

What is a tinySA good for?

The tinySAUltra has 2 ports. One is the Calibration Port and the other is the RF Port. The tinySA Ultra provides the functionality mentioned above. It also has a built in function generator that will provide single frequency outputs as well as AM and FM signal generation.

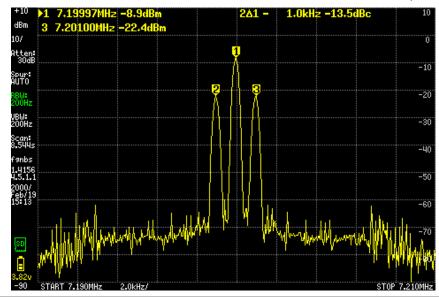
Several of its many capabilities are shown below.

The screen shots shown were created by saving the display to a microSD card provided. Configurations and settings can also be saved to this card.

What is the tinySA Ultra?

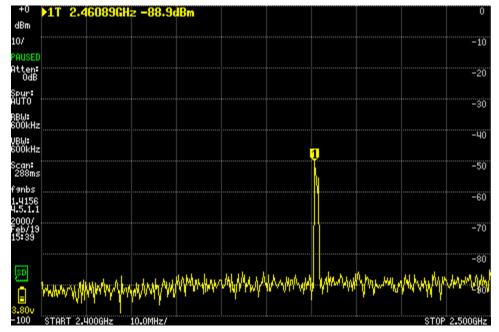
The tinySA Ultra is an incredibly inexpensive version of a SA. My tinySA Ultra cost me \$130. That's a little bit less than the professional versions discussed in the fourth paragraph isn't it? It is an amazing little device. It measures approximately 5" x 3" with a 4" screen.

In the photo below you can see my use of the tinySA in observing an AM signal at 7.2 MHz with a modulation frequency of 1 KHz. The bottom of the screen shows the selected frequency range of 7.19-7.21 MHz. On the right you can see the scale for the amplitude measurement. There is a marker at 7.2 (actually 7.199970) MHz shown as 1 at the upper left. The $2\Delta 1$ marker at the upper right indicates the difference between the number 1 and number 2 markers shown as 1 KHz (the modulation frequency). This number 2 marker is at the lower sideband at a differential level with respect to the carrier of 13 dBc. The 3 marker is at the upper sideband at an absolute level of -22.4 dBm. These markers can be moved anywhere along the curve.



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The screen shot below shows my WiFi at a frequency of 2.46089 GHz. This was displayed by connecting the provided telescoping antenna to the RF port. If you have some stray RF causing a problem, this ability to walk around with the antenna connected is a great tool to sniff out the offending source.



There are far too many examples to show you in this article. If anyone would like me to write about other functions, I will be happy to do so. First look at the many videos I refer to below.

Where can you make a purchase and how much does it cost?

The tinySA Ultra is an open source device for both hardware and software.

The Ultra model is an updated version of the original tinySA. It has a frequency range of 12 GHz. As mentioned before I recently purchased it for \$130.

Where can it be purchased? I bought mine from R&L Electronics. Find them at www.randl.com.

Where to get more info?

Check out www.tinysa.org for a wealth of information.

There are various group.io groups to answer questions.

An excellent source of uses of a spectrum analyzer is the You Tube channel of W2AEW. His videos have excellent presentations of the various uses of a SA. He is a tremendous instructor who clearly and thoroughly presents his material. The discussions he presents are mostly applicable to the tinySA Ultra. If you go to tinysa.org there is a selection on the left hand side of the screen under support for Videos to view on various aspects of the tinySAUltra.

Well, that's it for this month.

See you next time.

73, Jim WA4YWM

ARRL Iowa Section Wins Ham Exemption From Handsfree Law

ARRL volunteers in the Iowa Section have cause to celebrate. Their state-level advocacy work on behalf of amateur radio has resulted in an exemption to the state's handsfree law that covers ham operators.

Iowa Senate File 22 (SF22), a bill addressing distracted driving, had been in development since 2020. Former ARRL Section Manager Lelia Garner, WAØUIG, and Iowa Section State Government Liaison Alan Erickson, WBØOAV, played a crucial role in fostering and maintaining key legislative relationships. Over the course of five years, they navigated the legislative process to ensure the continued exemption for amateur radio operators.

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The COVID-19 pandemic and political opposition to the measure ground the bill to a halt, but the ARRL Iowa Section volunteers continued to engage in the process and ensure that amateur radio was represented as the legislature finally took the bill back up. The final language of the bill included, "The provisions of this subsection do not apply to ... A person using a two-way radio transmitter or receiver who is licensed with the federal communications commission in amateur radio service."

Being proactive about sharing the good work amateur radio operators do was key. "We presented a carefully crafted exemption proposal, backed by evidence of our contributions as a radio service," said Garner.

The texting bill (SF22) passed the Iowa Senate with a vote of 47-1 on March 18, 2025, and the Iowa House passed it on March 26, 2025 with a vote 54-11. On April 2, 2025, it was signed by Governor Kim Reynolds and goes into effect July 1, 2025.

The process encouraged Erickson. "Every legislator I spoke with appreciated the public service that licensed amateur radio provides. They also acknowledged the responsibility demonstrated by amateur radio operators. I was impressed by their willingness to exempt amateur radio from their texting bill, and was also humbled that we have a duty to preserve this awesome reputation."

Courtesy ARRL Newsletter

Effort to Save Marconi Towers in Canada – Public Invited to Vote on Project

There's an effort underway to save some of Marconi's original towers, and an online poll is open for people to vote on it being a restoration project through the "Next Great Save" project from the National Trust for Canada.

Some of Marconi's first messages were received and transmitted using the Battle Harbour Marconi Towers, thought to be the last of their kind standing in North America. News of Admiral Robert Peary's 1909 North Pole expedition was transmitted by these towers. After 100 years, the twin towers are in need of repair.



The Battle Harbour Marconi Towers on Labrador's rugged coast. [Photo courtesy of Battle Harbour Historic Trust]

Courtesy ARRL Newsletter

To honor 150 years since Marconi's birth, there are a number of events planned around the world to observe Marconi's birthday and International Marconi Day.

In the United States, from the Port of Baltimore, Maryland, the Nuclear Ship Savannah Amateur Radio Club will operate K3S on April 26 from 1330 - 2100Z. Check spotting networks for frequency. See QRZ.com info for Savannah Award qrz.com/db/k3s. A QSL card is available by contacting Ulis Fleming, 980 Patuxent Rd, Odenton, MD 21113.

The Great South Bay Amateur Radio Club in Babylon, New York, will operate W2GSB from the Babylon Village Historical Society Museum for Marconi Day on April 26, 1300 - 2030Z. Frequencies include 28.340, 21.250, 14.246, and 7.245 MHZ.

Elmer's Corner

Welcome to Elmer's Corner. This will be a section where hams can request help with ham related issues. Our goal is to match someone with experience with the issue you are having in order to resolve your problem. This is intended to cover all aspects of ham radio:

Equipment Software Antennas Operations

Send the editor an email detailing the issue: wa4ywm@comcast.net.

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2025 Contest Calendar

May

23-25 CQ WW WPX Contest, CW

0000Z, May 24 to 2359Z, May 25

June

14-16 June VHF

1800 UTC Saturday, ends 0259 UTC Monday

28-29 Field Day

1800 UTC Saturday and running through 2059 UTC Sunday

July

12-13 IARU HF World Championship

1200 UTC Saturday and runs through 1159 UTC Sunday

OSO Parties

Indiana 1500Z, May 3 to 0300Z, May 4 Delaware 1700Z, May 3 to 2359Z, May 4 Arkansas 1400Z, May 17 to 0200Z, May 18

> ATLANTIC DIV. HAMFESTS > 2025

May 4 - Warminster ARC - Annual Hamfest, ARRL Eastern Pennsylvania Section Convention

Bucks County Community College-Lower Bucks Campus 1304 Veterans Highway (Route 413)

Bristol, PA 19007

http://wp.k3dn.org/hamfest/

May 25 - Maryland F.M. Association Hamfest

Howard County Fairgrounds

2210 Fairgrounds Road

West Friendship, MD 21794

http://marylandfm.org

June 15 - Baltimore Amateur Radio Club Father's Day Hamfest

Arcadia Carnival FairGrounds

16020 Carnival Ave.

Upperco, MD 21155

https://w3ft.com/hamfest/

June 21 - Bloomsburg Hamfest

Lime Ridge Community Center

6405 4th Street

Lime Ridge, PA

https://www.qsl.net/cm-arc/hamfest.htm

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 2024 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, 1st Wednes-

day at 6:30. Levittown Library - 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 3rd, non holiday Monday of the month at the Giant Supermarket, 315 York Rd., Willow Grove, 19090 at 6:30 PM in the Community Room. 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

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CLUB INFO

PUBLIC SERVICE

Memorial Day Parade, Monday May 26th Golf Outing on Thursday June 5th Contact George N3HBT

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 \$12.50 annually and are approved by the Board. Please contact the Membership Committee for more information if interested."

ATTENTION MEMBERS

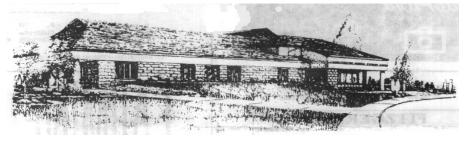
The Membership Committee can provide Club badges. Two types are available: an engraved plastic callsign and name badge for \$8 or a free, laminated plastic, photo ID badge/card. The photo id badge is included with your membership. Pictures for the club badge will be taken before club meetings on even 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 2025

May - Town Hall

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. **FEEDBACK** Page 9

SKYWARN INFORMATION

Bucks County SKYWARN Weather Spotter PRIMARY FRE-QUENCY: 147.300MHZ (+ 131.8)

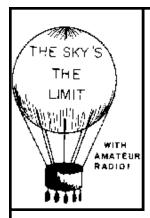
Fairless Hills, PA (many remote access locations throughout Bucks County)

Mount Holly NWSFO SKYWARN Homepage:

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

SKYWARN Basic Weather Spotter Educational Programs URL:

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



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.

New Classes (Tech and General) to start Sept 13 from 7 pm to 9 pm.

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

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	

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, Dave McGowan KC3RAT

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 N3DOZ 53.320 K3MFI

Page 10 **FEEDBACK**

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:

wa4vwm@comcast.net Or via snail mail to: FEEDBACK EDITOR Warminster Amateur Radio Club

Box 113 Warminster, Pa 18974

- Use both upper and lower case
- 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: WARMrcinfo@gmail.com

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

The annual dues rate structure is as follows:

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

Are your dues current?

2025 Officers

Executive Officers

President Dave McGowan 215-850-5846 K3FTD Vice-President Scott Vogin KB3ALX Secretary Tony Simek N3YNH 215-796-0336 Tom Newman Treasurer K3PLA 215-630-5965 Doug Becker Director (A) KC3MNO 215-932-1370 Director (E) Herb Hickmott KB3VMN Bruce Farrington WA3ZPC 215-262-4215 Director (A) Director (E) George Brechmann N3HBT 215-443-5656 Past President Ray Oechslin KA3TRU 267-269-3198

Committee Chairpersons

Safety Officer

Station Trustee

VHF/UHF/MW

Youth Programs

Good and Welfare Township Liason

ARES/RACES Liason Karl Harris K3KH 215-264-1855 ARRL Liason Awards Manager Vince Pironti KD3TC 215-674-0446 Dave McGowan KC3RAT Classes 215-850-5846 Dan Clementi K3GMO 267-337-0392 Digital and APRS Ron Wenig NY3J 215-638-9257 Feedback Editor Jim Elmore WA4YWM215-538-1889 Field Day 25 Herb Hickmott KB3VMN 267-718-3601 Hamfest 25 W3FLH Tony Cuttone 267-679-9297 Hamwear Kathy Acker KC3FBY 215-815-7978 215-443-5656 Holiday Dinner George Brechmann N3HBT Tony Cuttone Membership W3FLH 267-679-9297 Net Manager George Brechmann N3HBT 215-443-5656 PA QSO Party Mark Kempisty AA3K Publicity Herb Hickmott KB3VMN 267-718-3601 Refreshments Arlene Newman KA3PLA 215-345-4539 RF Interference Bill Ballantine K3FMO 215-766-0764 Repeater Coordinator Brian Taylor N3EXA 215-257-6303

George Brechmann VE License Testing Larry Abbott George Altemus Website Coordinator Kathy Acker

George Brechmann

Mike Malone

215-443-5656 N3HBT WA3ELQ 215-704-3282 KA3WXV 215-855-3856 KC3FBY 215-815-7978

215-639-2175

215-443-5656

W3MJM

N3HBT