DELAWARE-LEHIGH AMATEUR RADIO CLUB
Inc.

April 2026

W3OK CORRAL

Club Meeting April 2nd, 7 pm at the
Nancy Run Firehouse.
3564 Easton Avenue, Bethlehem, PA 18020
Zoom will be available

April's Program
Rockets
By George Wieland, N3SQD

General Club meeting

March 5th, 2026
Time: 7:00 PM - 7:11 PM
Attendance: 33 (8 Zoom, 25 In-Person)
Call to Order
The meeting was called to order at 7:00 PM by Dean Guth(AB3BD), who also led the Pledge of Allegiance.
Reports & Announcements
President's Report:
* PA QSO Party standings posted; DLARC placed 8th.
* Recognition of club participation and performance.
Announcements:
* Box of magazines available for members.
Guests: None
Secretary's Report
* Motion to approve previous minutes.
* Motion: Ken (WB2LNO), * Second: Ralph (KC3VII)
* Approved
Treasurer's Report
* January report presented; included United Way donation.
* Motion to approve report.
* Motion: Jay, Second: Ken
* Approved
Committee Reports
Membership:
Total Members: 141, * Life Members: 9
* Motion to accept 3 new members - Approved
Club Station: No report
Tech Committee: No formal report
* Discussion on improving Zoom meetings
* Issue with Kenwood TS-590SG to be investigated

Website: No report
New Business:
* Request for member presentations
* Open House approved for April 18
* Motion: Ken, Second: Tim
Old Business: None
Field Day:
* Committee forming; planning underway
* Field Day site confirmed for next year
Adjournment:
Meeting adjourned at 7:11 PM.
Program: None
Kind regards,
Wayne Westfield, N3FQ

March Board of Directors Meeting

Date: March 16, 2026
Time: 7:07 PM - 9:13 PM
Location: Northampton County 911
Attendance
A quorum was present. All board members attended.
(Full attendee list available upon request.)
Meeting Overview
Call to Order
The meeting was called to order at 7:07 PM by President Dean Guth (AB3BD).
Officer Reports
President's Report
The President noted adjustments in board processes and

acknowledged differences from past practices.
Wayne Westfield (N3FQ) volunteered to assist with agenda preparation.
Recognition was proposed for Pete Nebz (KC3EVL) for his work with a 4th grade class at William Penn Elementary.
A standardized schedule of meetings and locations will be developed and published at least 5 days in advance, ensuring no conflicts with holidays.
Secretary's Report
Previous meeting minutes were reviewed.
Motion to approve minutes as published:
Motion: Jay Reid (KC3ZFR), Second: Dean Guth (AB3BD)
Approved unanimously
Treasurer's Report (February)
Motion to approve report:
Motion: Steve Harper (W3NAM), Second: Dean Guth (AB3BD)
Approved unanimously
Old Business
Online Demo
Ham Club Online demo tabled until next meeting.
Club Communications
Options discussed:
Website-based form Groups.io
Further research requested on integrating email (text/HTML) distribution via website.
Decision tabled pending additional research.
Field Day
Committee forming under Jay Reid (KC3ZFR).
Planning meeting scheduled for March 27 at 7 PM (Milkhouse).
Fire Extinguishers
Procurement in progress (Adam Gauntz, N3LAG).

New Business
VE Testing Program
Discussion on future testing processes tabled pending input from W3OI meeting.
John Barbaz (NT3P) to provide findings.
Connectivity (Hotspots / Internet Access)
Discussed potential need for improved internet at meetings and field events.
Options such as mobile hotspots and Starlink considered.
General consensus: No immediate need; no further action at this time.
Calendar & Communications Improvements
Board meetings will be added to the newsletter calendar.
Motion: N3FQ
Second: KD3FLY
Approved unanimously
Annual event calendar to be added to DLARC website.
N3FQ appointed as Web Events Administrator
Motion seconded by KC3JTK
Approved unanimously
Fundraising (Raffles / Giveaways)
Discussion on 50/50 raffles, door prizes, and annual radio giveaways.
Tabled pending clarification of legal requirements.
Hybrid / Zoom Meeting Setup
Proposal to create a committee to improve hybrid meeting capabilities (audio/video).
Topics include:
Cameras, Microphones, Speakers, Mixer
Tabled for further discussion.
Equipment & Technology

Radios
Proposal to purchase:
Icom IC-7300 (~$900)
Yaesu FT-710 (~$1050)
Discussion on standardizing station equipment.
Board requested review by the Tech Committee before proceeding.
Club Computers
Existing systems reported as slowing down.
Options discussed:
Purchase new systems (minimum i5)
Refurbish existing units
Referred to Tech Committee for evaluation and recommendation.
Adjournment
The meeting was adjourned at 9:13 PM.

Efficient Multi Band Wire Antennas
by Barry G. Kery, KU3X

Do you need an efficient multi band wire antenna that is simple to erect and use with only one feed line to go to your primary station?

We already know that a simple resonant dipole is one of the most efficient antennas that the average ham can build. So, let us use this as a basis for our multi band antenna and build from there.

The following are three efficient multi band wire antennas that the average ham can build and erect.

Let us start with a, “Fan Dipole.” A Fan Dipole is nothing more than multiple resonant dipoles for the bands you want to operate on using one common feed point. Let us start with an 80-meter dipole fed in the center with 50-ohm coax erected in a flat horizontal position. That would be two 1/4 wavelengths of wire that are 180 degrees from one another. Let us make it so one leg is aiming north and the other leg is aiming south. Next, we add a 40-meter dipole and connect it to the same common feed point. Let us make this antenna as an inverted vee. We hang this antenna under the 80-meter dipole and make this one with about a 160-degree inverted angle. Want 20 meters? Add a 20-meter dipole and make this one about a 140-degree inverted angle. More bands, add more dipoles.

When it comes to 15 meters, if you have a 40-meter dipole as part of the array, you cannot add a 15-meter dipole due to the fact that a 40-meter dipole is also resonant on15 meters. The two antennas will buck one another. To resolve this problem and have both the15 and 40-meter bands available on the array, trim the 40-meter dipole so It is resonant around 7080 khz. This will make the 40-meter dipole also resonant around 21240 khz. The only downside of this arrangement is the feed point impedance on 15 meter is much higher than 50 ohms but more than usable of 15 meters.

When adding multiple dipoles to this array you can do it three ways. One way is to build it using the way I spelled out above, that is using the inverted vee configuration. Another way is to use spreaders to support each dipole. Spreaders can be made out of half inch gray electrical PVC. Drill small holes through each spreader for the antenna wires to pass through. Keep dipoles spaced about 6 inches from one another. The next way is to fan out the wires. Have your 80-

meter dipole with one leg aiming north and the other leg aiming south. For 40 meters, one leg aiming north west and the other south east. Your 20-meter dipole will have one leg running north east and the other leg running south west. And so on.....

When trimming this antenna to your desired resonant frequency, trim the lowest band first and then move up the frequency range one band at a time.

Our next choice for a multi band antenna is an, “Off Center Fed Antenna.” This will give you an understanding of how the OCF works.

If you take an 80-meter 1/2-wave antenna and feed it in the center, the feed point impedance is around 72 ohms and is remarkably close match to 50- or 75-ohm coaxial cable. This same antenna is resonant on numerous other bands, such as 40, 20, and 10 meters. If you take the same antenna and use it on forty meters and keep the feed point in the center of the antenna, the feed point impedance will be around 3000 ohms. This is still a resonant antenna on 40 meters but is not a good match for coaxial cable. The antenna is a full wave antenna on forty meters but has to be fed at a different location if one wants to use 50-ohm coaxial cable. Move the feed point of the antenna so it is positioned one quarter-wave length in from the end of the antenna. The feed point impedance of the antenna will again have a reasonable match for coaxial cable. If you use the antenna on 10 meters, moved the feed point of the antenna again so it is one quarter-wave in from the end. Again, you will have a reasonable match for coaxial cable and now have the makings of a long wire antenna with gain.

To make this same 80-meter dipole usable on numerous

bands without moving the feed point for every band, you have to find a common point where numerous frequencies converge at a lower impedance so we can use 50-ohm coax. By feeding the antenna one-third of the way in from the one end, you will find this so-called, "Sweet Spot." The only thing left to resolve is the high impedance of the antenna at that point.

The impedances of the numerous bands, on this antenna, will range from as low as 150 ohms up to around 300 ohms at this feed point. By placing a 4:1 Guanella Current Balun at this point you will have a reasonable transformation of impedance so that 50- ohm coaxial cable can be used. The end result would be an antenna that is usable on seven ham bands.

The overall length of the antenna is 135 feet. One leg of the antenna is 45 feet long and the other leg is 90 feet long. This will place the feed point of the antenna 45 feet in from one end. You now have an antenna that is usable on 80, 40, 20, 17, 12, 10 and 6 meters. Not bad, 7 bands on one antenna! Just a personal note here. I find the OCF40 to be a great reasonably sized antenna to use not only at the primary station but easy to erect for operating portable, like at a park on the air activation. The OCF40 covers 40, 20, 10, 6 and 2 meters. **Caution,** do not use either of the two above antennas on 15 or 30 meters. By doing so you are feeding the antenna at a voltage point and you can destroy the balun by overheating it. If you would actually apply 100 watts directly to the balun, 22 watts would be radiated from the antenna and 78 watts would be adsorbed by the ferrite cores in the balun. A balun is not a dummy load and cannot manage this abuse. The other thing you never want to do is to feed an OCF with

parallel feeders. By doing so the balanced feeders will radiate RF and create all kinds of issues in the shack.

You will often hear this antenna called a, “Windom Antenna.“ This is not a Windom Antenna. A true Windom Antenna is a quarter wave vertical with a half wave horizontal wire attached to the top of the vertical 1/3 of the way in from the end. This array is fed against a massive amount of ground radials. The antenna was designed by Loren Windom (W8GZ) and published in a 1929 issue of QST.

So why do hams call a traditional OCF a Windom Antenna? Three hams played around with the OCF and changed how it was made. WY4R, WA4LVB and W4LEB changed the design by changing the 4 to 1 current balun to a 4 to 1 voltage balun. By doing so the coaxial cable was not properly decoupled from the antenna which made the outside of the shield radiate RF. Next, they added a current choke inline with the coax about 20 feet away from the feed point. The choke is now supposed to choke off the RF on the outside of the shield of the coaxial cable to keep the RF from radiating and creating issues in the primary station. They claimed this was supposed to fill in the nulls of the radiation pattern. They called it a, “Carolina Windom” that is not a Windom.

First off, the 20 feet of radiating coax does not do much to fill in the nulls of the antenna’s radiation pattern. The chokes that are used with this setup overheat and have an extremely high failure rate.

Above I referred to an antenna that is, “the makings of a long wire antenna with gain.” I would like to take a minute to explain what a, “Long Wire Antenna” really is, why? Because so many hams call a simple random length end fed wire as

being a long wire antenna. It is not. A long wire antenna is made by first cutting a 1/4 wave length of wire and feeding it on one end where the current balun is placed. On the other side of the balun, one attaches a resonant wire that is multiple wave lengths long. This wire is cut to odd multiples of 1/4 wave length. Maximum gain is off the long wire's end of the antenna. This antenna can be fed with coaxial cable.

Our next efficient multi band antenna is the center fed doublet fed with parallel feeders. Again, we start with an 80-meter half wave dipole. Like the OCF it is resonant on numerous bands. With this antenna you will need a transmatch, but that does not mean that it is not an efficient array.

Our 80-meter dipole is now feed with 450-ohm parallel feeders. We cannot use random length parallel feeders; they have to be tuned. The feeders in this case become part of the match to the antenna. You need to cut the feeders to odd multiples of 1/8 wavelength at the lowest frequency of operation. In this case that frequency is 3.8 MHz You never want to use an antenna on a frequency lower than its design frequency. If you do, it will apply extremely high voltages to your transmatch and will damage same.

For 80 meters, 1/8 wavelength of 450 ohm parallel is found by using the following formula: 123/3.8 * .91. The .91 is the velocity factor of 450-ohm feeders. This length is 29.4 feet. Since this is not long enough to reach your primary station, we multiply that by odd multiples of 1/8 wavelength. Three times 29.4 is 88.4 feet. At the shack end of the parallel feeders, we attach a 4 to 1 Guanella Current Balun and then a very short length of coax going to our transmatch. This will bring our feeding point impedance to an impedance that the

transmatch can easily manage. Since parallel feeders are an extremely low transmission line, little power is lost due to the mismatch. Here is an example. Using this antenna on 40 meters, the feed point impedance of the antenna is around 3000 ohms. With 88.4 feet of parallel feeders, a 4 to 1 balun, if you feed this setup with 100 watts, 95.8 watts will be delivered to the antenna. You will only lose 4.2 watts due to the mismatch. The antenna is still resonant of 40 meters and your 95.4 watts will be radiated off of the antenna. Since this system is totally balanced, the transmission line will not radiate and cause an issue in the primary station.

If you use this antenna on a band that your transmatch can not manage, you can tune the feeders by adding or subtracting no more than 10%.

Let us address some misunderstood multi band antennas that are not so efficient. The first one is the trap dipole. If you have a multi band trap dipole that is designed to work from 10 to 80 meters, the lower you go in frequency the narrower the band width becomes and the efficiency starts to drop off due to the effects of the loading coils used in the traps. This does not mean that this is a bad antenna and should not be used, you just have to understand it has shortcomings.

The next antenna to address is the half wave end fed antenna. Yes, an 80-meter HWEF does in fact resonant on many bands but the wire is not the weak link. The matching transformer is. On 10 meters you can lose as much as half your power in the transformer. These transformers are notorious for overheating. The matching transformers are referred to as UnUn’s. I have built UnUn’s on FT 140-43 ferrite cores to be used for matching 160-meter inverted L’s and they easily managed 1500 watts without overheating.

Use this same core to make a matching transformer (UnUn) for a HWEF, use it on 20 meters and you are lucky to be able to work at 50 watts. Using it with 100 watts on 20 meters and you will overheat the UnUn. Another downside of this antenna is feedline radiation issues. Ever hear a POTA station with scratchy audio? Ask them what antenna they are using and 9 out of 10 times they will say, “End Fed Antenna.“ You must apply a good current choke at the proper place in the transmission line. So many hams either do not do so or use a poorly designed choke. By not addressing this properly, it will allow RF to continue to travel along the outside shield of the coax until it gets to your radio. This will cause all kinds of issues and cause distorted audio.

There is one way to make a 40-meter half wave end fed antenna efficient to both 40 and 15 meters and makes this a nice two band antenna. That is to feed it with a quarter wave of 450-ohm parallel feeders cut for 40 meters. It provides a perfect match and transformation of power delivered to the antenna. Make sure you add a good 1 to 1 current balun at the shack end of the parallel feeders. By the way, a few turns of coax wound in a coil is not a good 1 to 1 balun and should never be used for one. A good balun uses a ferrite core.

Watch out for adds that state, “with an auto antenna tuner you can work all bands with this antenna.” What this means is you have a good ATU, not a good antenna.
The most misunderstood antenna is the random length end fed antenna that the above statement will apply to.

I hear this statement all of the time when hams tell me they have a good antenna. “I work everything I can hear!” It is the stations you cannot work that you are not hearing due to the fact you are using a poorly designed antenna.

3/7/26 – ANOTHER BUSY NIGHT AT THE CLUB STATION

Memories of Bob Green, KE3AW

Honorary member Robert A. Green, KE3AW, age 85, died March 21, 2026. Bob joined DLARC in July 1990 after taking the club's licensing classes. He was an active member whose contributions spanned the spectrum of club activities – operating, Field Day, special events stations, public service activities, radio classes, club Hamfest, and leadership positions. In recognition of his many contributions, Bob received DLARC's two highest honors – the Amy Zimmerman Memorial Award for dedication to amateur radio in appreciation for unselfish services rendered to amateur radio and the community in 2002, and Honorary (Life) Membership in 2008.

Bob served DLARC as Vice President in 1993 and President in 1994 and 1995. In 1996 he assumed the responsibility for running the club's licensing classes, a position he held for more than 25 years. He was also a volunteer licensing examiner for ARRL.

Over the years, Bob volunteered his communication talents for a wide range of charitable activities sponsored by such groups as Habitat for Humanity, Musikfest, and the Red Cross. He also organized the club's participation in these public service activities, including the Emmaus Halloween Parade for many years. He was a volunteer with the Courage Handi-Hams System.

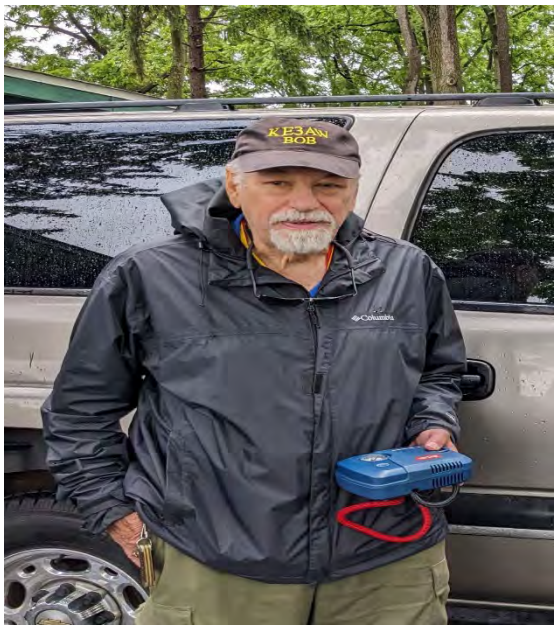
Bob participated in the club's ARES and RACES nets and volunteered for emergency drills such as a Gracedale test evacuation drill. As an active ham operator, Bob enjoyed contacting other radio operators. In 2011, he received the DLARC 50th Anniversary Radio Trophy Sprint Award.

An Air Force veteran, Bob was a speech and hearing therapist. He earned his doctorate in Educational Administration and was employed by Colonial Intermediate Unit 20 for more than 30 years, retiring as assistant director for special education. He was active with the Boy Scout program, chairing the Minsi Trails Council Scouting with Special Needs program.

Bob is survived by Andrea, his wife of more than 60 years; daughter Kelly Ann Krauss; son Andy; and 2 grandchildren. A memorial service will be held at a future date. Contributions may be made in his name to the ARRL

Foundation (arrl.org/the-arrl-foundation) or to the Special Olympics (support.specialolympics.org)

De Barb Wiemann, Club Historian



MILKHOUSE CORNER

As we get more people operating our equipment, I need to know of any problems with the equipment. There have been issues that I was not aware of. All I ask is that I am made aware of any issues at the milkhouse so either I can take care of them or have the proper people take care of them. Best way is to either email me at KC3OJA@aol.com or text me so there is written communication.

Also, if there is anything you would like to see in the milkhouse please let me know. Also, if there is a contest or event you personally would like to do at the milkhouse that is not a Saturday or Wednesday, please let me know and I will do my best to make it happen for you. Just give me ample notice if you want to utilize the milkhouse on an off day.

In the next week or two, there will be a subtle changed that will hopefully be good.

De Adam Gauntz, N3LAG

DLARC Club Station Manager

PA QSO Party Final Results
In State Awards

N3IGA Single Op QRP SSB 36,580

Member Stations by County

Rank				
1	N3WR	Carbon	Port SO LP	43,552
1	N3SQD	NHA	SO HP SSB	35,730
2	N3NVA	NHA	SO HP SSB	22,768
1	N3IGA	NHA	SO QRP SSB	36,580
1	W3OK	NHA	MO HP SSB	39,288

PA Based Clubs – 3 to 25 entries

Rank			
8	Delaware-Lehigh Amateur Radio Club	6 entries	180,332

I am always interested in seeing how the Club does in the PA QSP Party each year. I try to match the scores of the participating Club members to the total score that the Club gets. This year, there was a difference of 2,414 between the scores. I went on the PA QSO Party website and checked ALL the scores and found nothing. Then I started checking everything that had scores. Finally, I found the score of 2,414 from a operator, WA3TVZ, who was from the County of Delaware. So, all I can think of was there was a mistake. I believe that WA3TVZ information was not read right and his score came to us.

This year the PA QSO Party is October 10th and 11th. Always the second full week in October. Starts at Noon on the 10th and stops at midnight. Then starts up at 9 am until 6 pm. You only have 7 days after the Party to send in your scores.

I hope members will participate in a fun event that gets you to meet so many nice Hams.

See you on the bands during the 2026 PA QSO Party.

De John, N3IGA

DLARC NETS AND EVENTS CALENDAR

April 2026

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 7 pm DLARC NET	2 CLUB MEETING 7 PM	3	4
5 EASTER SUNDAY	6	7	8 7 pm DLARC NET	9	10	11
12	13	14	15 7 pm DLARC NET	16	17	18
19 ROOKIE ROUNDUP SSB	20	21	22 7 pm DLARC NET	23	24	25
26	27	28	29 7 pm DLARC NET	30		

WEDNESDAY NIGHT NETS

Additional Net Controls are needed for the Wednesday Night ARES, RACES & DLARC net. If we have enough interested operators, it will only be necessary for each operator to have only one net session in each three-month period. 13 weeks in a period, then 13 net controls would be ideal, and some extras to fill in if needed.

This would give us a pool of experienced controls, for any emergency which would arise. Interested operators should contact George, N3SQD at george@bioserv.com. The NIMS IS-700 and ICS-100 courses are not needed to be a net control, but should the need arise, and we do supply controls and operators for real emergencies, then the courses requirement will be in effect and EMA issued IDs will need to be on the scene of an emergency.

NORTHAMPTON COUNTY ARES, RACES AND DLARC NET

All Radio Amateurs are welcome to take part in the ARES, RACES and DLARC net. This net meets Wednesday at 1900 hours local time, on the W3OK Repeater 51.76, 146.70 and 444.90 (pl 151.4). With an alternate frequency of 147.135 + DPL 315) W3OI Repeater. Other inputs are the 146.85 repeater, (151.4 PL) and Echolink at K2PM-R.

QCWA Chapter 17 holds a net Monday evening at 7:30 PM on 3958 +/- depending on conditions.

Mid-Atlantic D-Star Net meets each Tuesday at 7:30 PM. The following repeaters Dstar repeaters are available in the Lehigh Valley. W3OK -145.11000MHz -0.600 Port C – W3OI -147.16500MHz +0.600 Port C, – W3OI - 445.02500MHz -5.000 Port B

All repeaters on the net are linked through **Reflector 020 port A**, so all stations checking into the net should make sure that they have *their local repeater call sign followed by the letter "G" in the eight positions of the RPT2 field***.** Otherwise, you will only be heard locally and not over the Reflector. Dongle users wishing to check into the net should Log On by connecting directly to Reflector 20, port A, rather than through your local repeater to conserve local bandwidth.

EXECUTIVE COMMITTEE 2025–2026

OFFICERS

President – Dean Guth / AB3BD ---------- president@dlarc.club
Vice President – Jay Reid / KC3ZFR ---------- vice president@dlarc.club
Secretary – Wayne Westfield / N3FQ ---------- secretary@dlarc.club
Treasurer – Larry Butler / KC3JTK ---------- treasurer@dlarc.club

BOARD of DIRECTORS

Adam Gauntz / N3LAG
Bill Carlsen / KD3FLY
Steve Harper / W3NAM
Andrew Parker / WV1B
Henry Adam / KD3AFL
Terry Swinney / KC3JHT (Past Pres.)

PHONE NUMBERS FOR THE EXECUTIVE COMMITTEE OF THE DLARC CAN BE FOUND ON THE WEBSITE / MEMBERSHIP LISTING CLUB MEETINGS.

All regular meetings of the D.L.A.R.C. are held on the first Thursday of each month at 7 PM at the Nancy Run Firehouse. TALK IN ON 146.700 (PL 151.4) Club Station Telephone Number **484-291-1527** Email Address – W3OK@arrl.net

THE W3OK TRUSTEE --- Barry Vogt / N3NVA

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