

**DELAWARE LEHIGH AMATEUR RADIO CLUB Inc.**

***FEBRUARY 2023***

**W3OK**

**CORRAL**

Club Meeting February 2, 7:30PM at the  
Nancy Run Firehouse.

3564 Easton Avenue, Bethlehem, PA 18020

**FEBRUARY MEETING PROGRAM**  
**QUARTZ FEST BY AL, W3CE**



## *JANUARY MEETING MINUTES*

The General Meeting was held at the Firehouse.

President Doreen, K3PDL called the meeting to order at 1932 hours.

**Pledge of Allegiances:** Led by Doreen.

**President's Thoughts:** Happy New Year to all. Welcome to the January DLARC Meeting.

This year should be great. Fox hunts will be planned, Parks on the Air, field trip(s)- one will be planned to go to ARRL in Newington CT.

DLARC is still looking for someone to take on being Secretary. This person will get lots of helpful hints, and more to excel this position.

Also 2 more board members are needed to conduct business and for future planning.

This year, there are great informational programs after the meetings. Everybody should have received a post card in the mail giving what the programs will be.

Final note: Wednesday night Dinner group. All are welcome, and then go to the Milk House for fellowship.

**Guests:** None

### **Secretary's Report:**

Terry, KC3JHT acting Secretary, asked if there was any additions or corrections to the Meeting Minutes as printed in the last Newsletter. A motion to accept the Minutes was made by Dean, AB3BD and second by Doreen, K3PDL and motion was carried.

John, N3IGA, talked about the Secretary's position. It's not hard. If you have a recorder on your phone, that's all you need. You use that to take the minutes of the General Meeting and Board Meetings. I have all the templates that I used as Secretary. Basically, it's fill in the blanks somewhat. It's not hard. I volunteer to help whoever takes over the position because it's an important position. I'll answer any questions the new Secretary has. No problem doing that for me. It takes about maybe two or three months to get use to what you have to do each month. Then all you're doing is the same thing over and over.

### **Treasurer's Report:**

Larry, KC3JTK, presented the report for the November. A motion by Dean, AB3BD to accept the report. George, N3SQD second the motion and so moved.

## **Committee Reports:**

**Membership:** Terry, KC3JHT, reported that there are 7 Life members, 3 Associates members, and 74 paid members for a total of 84 members.

**Club Station:** No Report

**Tech Committee:** Al, W3CE, updated the Club Station's computer from mechanical hard drive to a solid-state hard drive. 10 times faster.

**Website:** No Report

**Repeater:** No Report

**Old Business:** Dave, N3EYT, talked about club badges. He asked if anybody ordered a badge. If you don't have a badge and you're in good standing or exceeding, sign-up sheets are right here. You can contact Dave at [dblankenship370@gmail.com](mailto:dblankenship370@gmail.com) if you need a badge.

**New Business:** George, N3SQD, told us that he put a deposit in on the Bicentennial Park for Field Day this year. So mark your calendars for June 24th and 25th. It's the same pavilion from two years ago.

John, N3IGA, is now officially the DLARCforum Administrator. It was approved by the Board.

It was discussed at the Board Meeting about maybe having workshops on Saturdays for different subjects like how to make a foxhunting antenna and what goes in Go Bags for emergencies, and any other subjects' members might be interested in.

As you can see, we have a sound system so that members can hear what we have to say and be able to ask questions. This would help with programs too.

It was voted by the Board that the Tech Committee must get the rotator as soon as possible, along with anything else like control cables so that everything can be tested on the ground before putting it up and founding problems.

We need another new Board Member since Gabe, KZ2A, resigned. Larry, KC3JTK nominated Dave Frankenfield, N3LWY for the Board Member membership. John, N3IGA, seconded and motion carried. Welcome to Dave to the Board.

**Announcements:** None

**Awards:** None

**Adjournment:** There being no further business, the meeting was adjourned at 1944 hours.

**Program:** Terry, KC3JHT on Submarines.

It was quite a presentation. Terry explained with slides all about submarines. He talked about his experiences in Subs. He explained about how life was under water for any length of time. Talked about and showed the radio room which was quite small but still functional. There were many questions after that Terry was willing to answer. Great presentation.



### Quartz Fest by AI, W3CE

Quartzfest is an annual HAM Radio RV'ers Boondocking event which is held in late January every year with dates coinciding with the Quartzsite Arizona 'RV Show'. It is held at a Bureau of Land Management location 7 miles south of Quartzsite, AZ. Camping is free on BLM lands for a maximum of 2 weeks.

Close to 1000 hams come for a week long get together in the middle of the desert. Lots of activities are planned for the week, including transmitter hunts, craft demonstrations, technical seminars, off road drives, communal meals, and other activities such as the special event station W7Q.

## NEWSLETTER INFORMATION

If any member has anything that they think would interest other club members such as Ham Radio articles, Contesting, and any other interesting subjects, please send them to me to put in our newsletter. It really doesn't have to be any radio subject. You can send your information to my email address located at the end of the Newsletter. My email has changed due to change in Internet provider. My email address is [n3iga@ptd.net](mailto:n3iga@ptd.net).

### Antenna Analyzers

By Barry G. Kery, KU3X

Today's antenna analyzers are probably the handiest piece of test gear a ham radio operator can own. Let's turn the clock back 50 years. If you wanted to check to see where your antenna was resonant, you had only three tools to choose from. The inline SWR meter was probably the most common tool. Today, almost every HF radio has an SWR meter built in. Some hams would use a GDO (grid dip oscillator). This was and still is a very handy tool. It has various uses. To check your antenna you would attach a coupling loop to the feed point of your antenna and use the GDO to look for a dip in the meter as you swept across the numerous bands. This was mostly used for mobile antenna work. You could even use it to check the actual resonant frequency of your tower. The last piece of test gear that was used 50 years ago was a noise bridge. This is a very simple hand held instrument to use. But, if you were to go to a military installation or a commercial AM broadcast station's antenna site, you would see a much more sophisticated type of Noise Bridge. The noise bridge would not only tell you the feed point resistance of your antenna, but it would also tell you what the capacitive or inductive reactance was of your antenna.

Remember one thing when it comes to using either of the above instruments or any of the antenna analyzers below, to get an accurate reading, you must be sampling at the feed point of the antenna. With some of the analyzers today, you don't have to climb to the top of your tower to do so. More on this subject later.

Today we have the stand alone antenna analyzer. You no longer need to run a power cable from your house to the driveway to use your GDO to check your mobile antenna. You no longer need a radio to use either a noise bridge or an SWR meter. You actually don't even need to have your ham ticket to design, build and test your antenna.

Today's antenna analyzers take two readings, just like a noise bridge does. It reads resistance and reactance. R=resistance, X=reactance. From that point on, the onboard

processor takes that information and feeds back so much more information to the end user. It calculates SWR, phase, return loss, and displays a smith chart and so much more.

Before you even think about what antenna analyzer you should purchase, you have to ask yourself one question. "What are you going to use your antenna analyzer for?" Are you going to sweep a frequency range, read the SWR and then just trim the antenna to get the lowest SWR at a given frequency? If so, you do not need a sophisticated type of an antenna analyzer. I see a lot of used expensive antenna analyzers posted for sale on the internet. They almost always reads the same. "I bought this not too long ago and now it just sits on the shelf collecting dust." So many hams spend a lot of money purchasing what they think is the best antenna analyzer on the market and then just look at the SWR on the analyzer and nothing else. For some hams, that is more than enough information for their needs.

If you are serious about designing, building and matching more than a simple dipole to coax, you need an elaborate antenna analyzer. You can do some many things with an antenna analyzer. You are not limited to using it strictly with antennas. You can use it to adjust a trans match, adjust tuned inputs for an amplifier, set up a tank circuit in an amplifier, check a balun to see if is working, and check for return loss and more. Rather than turn this into a, "how to use antenna analyzer" article, I suggest you do a search on the internet for, "**MFJ-259B user manual**" and look through it. It will show you how to use their antenna analyzer for more than just checking SWR.

One of the easiest and least confusing antenna analyzers to use are the MFJ-259 and 269 series analyzers. All you have to do is, hook the coax coming from your antenna to the analyzer, turn the analyzer on, turn the left knob to the frequency range you want to check and then turn the fine tune knob of the right while looking at either the display or the two analog meters to check for the lowest SWR. It's that simple. The one down side of either of these two antenna analyzer is, it does not show if the antenna is capacitive or inductive reactant. Capacitive meaning the antenna is too short, inductive meaning the antenna is too long.

Let's look into the more expensive antenna analyzers and focus on why one would need one. I'll use myself as an example and where I needed more than just an SWR curve. I use a half sloper, fed off of the top of my tower for working DX on 160 meters. The antenna's feed point resistance is 40 ohms and has some reactance. This equated to a 2 to 1 SWR. At the base of the tower I wanted to see  $R=50$  and  $X=0$ , zero means the antenna is resonant. I wanted 1850 kHz to be my resonant frequency. Once I knew what R and X was, I had enough information to design an LC network to be placed at the base of the tower. To build the LC network, I needed to know if the antenna was capacitive or inductive reactant. This provided me with enough information so I could build my network. As mentioned above, the MFJ's I talked about earlier do not show whether the antenna is capacitive or inductive reactant.

And now it's time to purchase your needed antenna analyzer. So here are some suggestions.

As mentioned above, the MFJ 259 and 269 series analyzers are reasonably priced, easy to use and give you a lot of useful information.

NanoVNA: You don't have to save your lunch money for months on end to own one of these. They have two models that I would suggest, the standard NanoVNA, \$60 and the NanoVNA H4, \$90. You have to watch out for clones when it come to the little Nano's. Stay off of Ebay unless you know for sure you are not getting a clone. I'm not trying to promote a business, but R&L Electronics sells only the original NanoVNA's. These little guys give you the same information as some of the most expensive VNA's do. There is only one down side to this item and that would be that it's very menu driven and a little on the confusing side. Once you learn how to navigate the menu, it's super easy to use. You can even carry it around in your shirt pocket. I chose the H4 model. First off it has a bigger display and second it can be programmed to use up to 401 sampling points. Sampling points has a lot to do with accuracy. The higher the rate the more accurate the readings will be.

Rig expert antenna analyzers: These are on the expensive side but very good hand held analyzers. The newer Zoom models are the ones you want to focus on. The reason being, these models use a higher sampling rate. I would suggest the AA-230 Zoom.

SARK: There are two models I want to address. First the SARK 100. I'll keep this simple....JUNK. Stay away from this model. Now the SARK 110 is a top of the line and highly accurate analyzer. The only down side is its very menu driven. The one big upside is you can go as high as 10,000 sampling points as a stand-alone unit. It's small and will fit in your shirt pocket.

Earlier I talked about taking your antenna readings at the feed point of the antenna. Enter OSL calibration. OSL (open, short, load) calibration is a way of canceling out your feed line. Let's take a 100 foot length of coax. Hook it to your analyzer and then run OSL calibration by putting your open, short and load on the antenna end of the coax. Once calibrated, you can hook your coax to the antenna under test and the coax will be canceled out so the readings you see are the same as if you were to hook your antenna analyzer to the antenna's feed point. Not all antenna analyzers have this feature. The NanoVNA, the Rig Expert and SARK110 have this feature. These three models can also be used in conjunction with your computer.

TDR (time domain reflectometer). TDR is a really neat feature. The antenna analyzer sends a trace down the coax to look for a fault. Suppose a squirrel chews through your coax and you have no idea where the fault is? TDR will tell you. Again I will use my station as an example. My forty meter antenna crapped out, the SWR went through the roof. I knew the total length of my coax was 150 feet to the top of my tower. I ran a TDR plot and it showed I had a fault at the 60 foot point in the coax. The 60 foot

point is at the base of my tower. At that location I had coupled two length of coax together with PL 259's and a barrel connector. I took the connection apart and found the barrel connector was burnt and melted. I replaced both of the PL 259's and bought a better quality barrel connector. Problem solved. The above three mentioned antenna analyzers have this feature.

There are so many antenna analyzers on the market and I cannot review or list them all. Stop by the club's station most Wednesday evenings and I would be more than happy to discuss antenna analyzers and their usage.

### Board Meeting 16 January 2023

Jim Matlack has resigned as the Past President, because he feels he has to move on at this time. Steve Harper, W3NAM was nice enough to volunteer for the position.

According to the By-Laws, Article VIII, Section 6:

“All other Board vacancies shall be filled by a qualified Voting Member in good standing selected by the remainder of the Board of Directors.”

Steve was voted onto the Board, Monday night at Board Meeting.

There is still a need for a Secretary to complete the Executive Committee.

Anybody interested in the Secretary's position, contact anyone on the Executive Committee which is listed at the back of every Newsletter.

De John, N3IGA  
Acting Board Secretary

### THE DLARCforum

**John, N3IGA List Administrator**

Back in the late 90s early 2000, the Executive Committee established an electronic mailing list for D.L.A.R.C. Members and friends to provide an easy way to disseminate information on a timely basis. This mailing list is called the “DLARC forum” and all club members with email capability are welcome to join.

Joining the list is easy. If you have internet access, just go to this web site:



<http://mailman.qth.net/mailman/listinfo/dlarcforum> and fill in the appropriate boxes. Instructions for the subscription process are available on the page. Here's how you subscribe to the DLARCforum:

Go to <https://mailman.qth.net/mailman/listinfo>

You will see at the top "QTH.net Mailing Lists"

Scroll down until you see "DLARCforum"

Click on that.

Look for "Subscribing to DLARCforum"

Fill in the Email Address box

Your name – put your legal call sign. *This keeps out spam bots and junk subscription. Call signs make it easier to find your subscription and see where the problem is. I will contact you for a call sign if there's none.* For example: John, N3ABC is what is needed. No call sign may slow down your subscription.

Enter a password

Reenter your password

English Language

Would you like to receive list mail batches in daily digest – "NO"

Click on "Subscribe"

Your subscription will go to the Administrator to check over. Then I will pass it on.

You should get a "Welcome Message".

The DLARCforum is a "closed" list which means that only subscribers can post messages, so your mailbox won't be filled with junk mail from unknown sources. The list uses a "text only" format which means that only messages in plain text are passed. To post a message to all the list members, send email to [dlarcforum@mailman.qth.net](mailto:dlarcforum@mailman.qth.net).

Messages received in HTML are filtered and stripped of any formatting before being sent out to list subscribers. The list will not accept or pass any attachments such as files and pictures. This is done to eliminate the possibility of spreading any type of computer virus or other harmful program. The forum is an "un-moderated" list which means that there is no moderator screening messages before they are passed on.

Since its beginning, the volume of messages on the DLARCforum has been relatively low compared to other similar mailing lists. So, don't worry your inbox won't be overflowing with messages if you subscribe. There is also the ability to configure your preferences for the list to your personal liking.

So, please consider joining the list if you're not already subscribed. You'll be better informed about current club activities and also have the knowledge and experience of over half the membership at your disposal. Anything you want to know, all you have to do is ask!

## MEMBERSHIP DUES ARE DUE!

DUES are payable for the calendar year 2023. Here's is how easy it is to remit your club DUES and keep your valuable D.L.A.R.C. Membership current. Whether in person or by mail, **CHECKS made payable to the D.L.A.R.C.** is one method of payment to more accurately record your timely renewal. Please ensure that your callsign appears somewhere on the instrument, such as in the memo field. Payment may also be made using PayPal. Paying with cash is discouraged, but if you really, *really* must, kindly make certain you are prepared with the correct sum according to the rate table shown below. Remember, if your DUES are not paid by the beginning of March 2023, your membership will expire.

### 2023 DUES Rates

Regular Membership 18-64 years of age: Jan. - Dec. -- \$25.

65 and over or retired from all forms of employment (no age limit): Jan. – Dec -- \$20.

Additional Family member each -- \$5.

Associate Individual Membership -- \$15.

**You are strongly encouraged to MAIL your DUES** so that I may conduct the bulk of the record-keeping duties apart from where I believe you deserve the most of my attention. In person at Club Meetings, I'd prefer to answer your questions, address your concerns, and welcome your thoughtful revenue raising and savings ideas. Therefore, it is firmly advocated that DUES correspondence be mailed to:

**Lawrence R. Butler**  
**800 Maple Lane**  
**Easton, Pa. 18045**

Enclosing an S.A.S.E will bring your new membership card back to you immediately if you can't attend the next Meeting where they are routinely distributed. You may write to me anytime with questions regarding DUES, or to discuss issues that you believe are my responsibility at: [lrbutler@ptd.net](mailto:lrbutler@ptd.net) include your phone number if you prefer a live reply.

De Larry / KC3JTK, DLARC Treasurer

# DLARC NET QUICK CHECK CALENDAR

February 2023

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 DLARC NET AI W3CE	2 DLARC MEETNG 7:30pm	3	4
5	6	7	8 DLARC NET George N3SQD	9	10	11
12	13 BOARD MEETING 7PM	14 VALENTINE'S DAY	15 DLARC NET Ben N3WR	16	17	18
19	20 PRESIDENTS' DAY	21	22 DLARC NET Doreen K3PDL	23	24	25
26	27	28				

## 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, so 13 net controls would be ideal, and maybe 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](mailto:george@bioserv.com). The NIMS IS-700 and ICS-100 courses are not required 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 be needed to be on the scene of an emergency.

### NORTHAMPTON COUNTY ARES, RACES AND DLARC NET

All Radio Amateurs are welcome to participate 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. QCWA Chapter 17 holds a net Monday evening at 8:30 PM on 3960 +/- depending on conditions. Other inputs are the 146.85 repeater, (151.4 PL) and Echolink at K2PM-R. 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 2022-2023

## OFFICERS

**President** – Doreen Gramling / K3PDL ----- dgramling709@gmail.com  
**Vice President** – Terry Swinney / KC3JHT ----- ldocapt@gmail.com  
**Secretary** – *OPEN*  
**Treasurer** – Larry Butler / KC3JTK ----- lrbutler@ptd.net

## BOARD of DIRECTORS

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**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 7:30 PM at the Nancy Run Firehouse. TALK IN ON 146.700 (PL 151.4)  
Club Station Telephone Number – 484 291-1527 Email Address – [w3ok146700@gmail.com](mailto:w3ok146700@gmail.com)

**THE W3OK TRUSTEE --- Barry Vogt / N3NVA**

**The W3OK Corral is published monthly and is the Official Publication of the**

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