

DELAWARE-LEHIGH AMATEUR RADIO CLUB Inc.

JUNE 2023

W3OK CORRAL

Club Meeting June 1, 7 PM at the
Nancy Run Firehouse.

3564 Easton Avenue, Bethlehem, PA 18020

“PLEASE NOTE TO START TIME FOR MEETING”

JUNE MEETING PROGRAM

Parks On The Air

By Adam, N3LAG



MAY MEETING MINUTES

The General Meeting was held at the Firehouse.

President Doreen, K3PDL, called the meeting to order at 1905 hours.

Pledge of Allegiances: Led by Doreen, K3PDL

President's Thoughts: Doreen informed members present of the death of Adam, N3LAG, Club Station Manager, mother has passed away. A card will be sent.

Doreen showed a signup sheet for the Field Trip to ARRL Headquarters, Newington, CT. The date is Friday, June 16, 2023. Anybody interested please contact Doreen as soon as possible so she can set it up with ARRL.

Guests: Joe Tomko, no call sign yet, maybe tomorrow night. Jared Hughes, W5IU, who just moved into the area.

Secretary's Report:

Terry, KC3JHT, as Acting Secretary, asked if there were any additions or corrections to the Meeting Minutes as printed in the last Newsletter. There was a correction to Wayne, KG5MGN, call sign. A motion to accept the corrected Minutes is made by Dean, AB3BD, and second by Carl, AA3IX. All were in favor, motion passed.

NOTE: *We still need a **PERMANENT SECRETARY** and if interested, contact any Board Member.*

Treasurer's Report:

Larry, KC3JTK, presented the report for March. A motion by Dean, AB3BD, to accept the report. Wayne, KG5MGN, seconded the motion. All were in favor, motion passed.

Committee Reports:

Membership: Terry, KC3JHT, as of today, we have 121 members, 5 Associates, and 7 Life Members for a total of 133 members. .

Club Station: Since Adam was not available due to a family situation, John, N3IGA, Assistant Station Manager, did the report.

Barry, KU3X, built another set of risers over the Club radios. This further cleans up the Radio Room because the risers will be a place to put mikes and headphones for each radio. Also, will have whatever each radio needs as far as cables.

There are now Rules for the Club Station which the Board of Directors (BOD) approved. A copy of the rules is in the latest Newsletter. We put the Club Stations Rules on the operating stations and the door frame coming into the Radio Room.

Adam and I, yesterday, put in a stack of shelves where the 2 filing cabinets were. We moved the cabinets over into the other corner by the parts bins. We put the rolls of cables, headphones, cleaning supplies, and extra power strips.

At the request of Dean, AB3BD, we put back up the sign about Video Surveillance.

There is still more work to be done to make the Club Station presentable to visitors and perk the interest of some visitors to become Hams.

Tech Committee:

Al, W3CE, said that 2 new computers have been set up. To set up the other two computers, monitors, keyboards, and mice are needed. Al, made a motion for 2 monitors, keyboards, and 4 wireless mouses with a limit of \$600.00. George seconded the motion. The vote was taken, motion passed.

Website: No report

Repeater: No report. It's working.

Old Business: Field Day preparations has been set up by Adam and all members are ready to work on it together.

New Business:

Dave, N3EYT, talked about if you're a member in good standing and you need a badge, please see me. I have some requests; I got one if you already ordered one. He gave out what badges he had to members that were there.

John, N3IGA, who is the contact person for the Club with ARRL. In updating the Affiliated Club page for the Club, he noticed that the email address for the Club, W30K@arrl.net didn't work. There was no information about where the email was sent to. So, John contacted someone at the ARRL and explained the problem. Within a day, he got a reply that it was changed and to wait 24 hours for it to take effect. When he tried it, it went through and forwarded the email to John's W30K@ptd.net address. John said he was wondering how many hams, or anyone interested in the Club felt when no one answered their email. Now, this will not be a problem in the future.

There was a question about the Club's two pages on QRZ. One for W30K and one for WX3MAS. Someone said that Les, W3LES may have the answers. So, John, N3IGA, contacted Les. Les told John that he didn't know if he had the information that John wanted. So, Les said that Barry, N3NVA was the Trustee of W30K and Dean, AB3BD, was trustee of WX3MAS. Les had no idea who oversaw updating those two pages. Les told John to contact QRZ and explain the situation. John sent an email to QRZ and

within a few hours was informed that he had the authority to manage both pages when he gets added information like the WX3MAS Christmas Station and have pictures from Field Day 2023.

John, N3IGA, informed members present that if they are ARRL members to go up on the ARRL website and checkout the survey considering increasing the dues. Go to the ARRL website, click on "NEWS", and then click on survey. It will only take a few minutes. The reason for this increase in rates is because everything has been costing more since COVID. The cost of paper, ink, printing and distribution costs have gone up. This concerns the printing of QST, QEX, and NCJ. Take a few minutes to fill out the survey and it may be effective. You have until the end of May to take the survey.

Doreen mentioned that John, N3IGA, had something to say about the Club's Football. Football is a book that has all the Club's Secured Information like password to accounts, login information to Club sites, and other important Club information. This was brought up with so many things the Club has, and nobody knew how to get into them. One was the Club's Facebook Account, and another was the QRZ accounts. With a "Football", there will be a place to find what you need as far as how to get into it. This is for members who have information and become Silent Keys or leave the Club. Adam, N3LAG, and John is putting this together and would like to include George and Al to supply information that they may have. All the information will be written down in a book and kept in a lock-secured box and kept in the Milk House. It may have a key lock or a combination lock on it and who has the key or combination hasn't been decided on yet. More on this in the future.

Announcements: Bob, KE3AW, informed those present that there will be a VE Session tomorrow night at 7 pm at the 911 Center.

Old Business: The Rotator is in and George, N3SQD, will collaborate with Charley Adam, K3HKZ to get checked it out and installed soon.

Awards: None

Adjournment: There being no further business, the meeting was adjourned at 1932 hours.

Program: The program was FD Preps by George, N3SQD and Ben, N3WR.

ARRL Helps Radio Amateurs Comply with New RF Exposure Evaluation Rules

05/05/2023

The National Association for Amateur Radio® provides free, comprehensive resources to help radio amateurs ensure they are compliant with the new RF exposure rules. On May 3, 2021, [new FCC rules governing RF exposure](#) evaluations went into effect. While the exposure limits were not changed, the requirement to conduct an evaluation was made more applicable to amateur licensees. A 2-year transition period was implemented to allow existing amateur licensees to conduct evaluations and make any changes necessary to ensure that their station follows the exposure rules. On May 3, 2023, the transition period ended. All licensees must now conduct evaluations of their current station and reassess compliance when making changes to their stations that would affect exposure going forward.

As detailed in a [May 2023 QST article by Greg Lapin, N9GL](#), the rules now require amateur radio operators to perform station evaluations. The Amateur Radio Service is no longer categorically excluded from certain aspects of the RF exposure rules, and licensees can no longer avoid performing an exposure assessment simply because they are transmitting below a given power level.

The ARRL website features an [RF Exposure landing page](#) with resources, such as an RF exposure calculator, the entire RF Safety section from the 100th Edition of the *ARRL, The Handbook*, a video explaining the topic, FAQs about the subject, and more. These tools and resources are available to the public without an ARRL membership or website account.

For further assistance with technical matters, ARRL members enjoy the additional resources of the [ARRL Technical Information Service](#), and access to the experts within the ARRL Lab.

George, N3SQD, talked about this at the May General Meeting.

I have a question; how many people have done an RF evaluation for their station? How many people know that the FCC changed its regulations yesterday? The thing is, it's effortless to do, so I just want to take a couple of minutes and convince you that it's really easy to do. Most of you grab a three-by-five card or something like that and go to this website. So, this is the ARRL website whose main URL is www.arrl.org, and a stroke, RF, dash, exposure, dash, calculator brings up their RF exposure web page. There is a simple section up here with the power that you're running. How many watts? Most of us are going to be running 100 watts. I am going to do this for Field Day. You have a drop-down box here. So, let's put 100 watts in here to make this easy. So, you have a drop-

down box that covers the sideband CW FM AM ready. I am going to use the Conversational Sideband. Then it wants to know the send duty cycle. So, they are talking about transmitting for 5 minutes and receiving for 10 minutes. This depends on how much of a chatterbox you are. We will leave that for the time being. Then they want to know the antenna gain, so many of you may not be aware of this, but you just come down here and say I need help. Just going to use three DB 2.15 for the dipoles. We will get 10 meters. That is usually one of the worst cases. 10MHz. It tells you the maximum allowable power density for that frequency. This is for a controlled environment. You exercise control over a controlled environment while sitting inside your house. It'd be for your backyard if you have a fenced-in backyard. There are also a second set of numbers here. Which is the uncontrolled environment. Uncontrolled means anybody can be walking around in that space. Now you can see the 10-meter band running 100 watts with a dipole. Controlled environment - minimum safe distance is nominally 2 1/2 feet. That is rounded off 3 feet. Three feet away from the antenna. You will notice that the minimum safe distance for an uncontrolled environment is 3.6 feet. OK, figure 4 feet. You are good to go. You crank these numbers up to the full legal limit of 1500 watts. Things change a little bit. You can see that legal limits for a controlled environment go up to about 10 feet, and for an uncontrolled environment, it goes up to about 15 feet. So, roll your antennas off the ground so people can walk underneath. At least as far as dipoles go. Being antennas and things like that will be as you would expect; longer or higher frequencies will be a little worse, but for most of you that run barefoot HF out of home with reasonable antennas, most of you are not going to have RF exposure issues. So go through this and as I said, put it on a 3 X 5 card, keep it in your shack, and now you will meet the FCC requirements for performing your station RF exposure evaluation. The FCC is authorized when you get your license to be allowed into your home to check out your equipment. So do not think that the FCC won't ask to come to check your equipment.

FD PREPS BY GEORGE, N3SQD AND BEN, N3WR

Field day is coming up. It's the last full weekend in June. This year, it is going to be at the Bicentennial Park in E Allen Township. So, you've got like a month and a half to look up where that is. We've had it there before. It's going to be in the large pavilion there. There's a wooded Knoll in that park, and we're going to be at the top. So that's our location. It's a 24-hour event, plus a few hours for setup. We have five hours to set it up. We'll start there at 9:00 AM. Setting up if you're interested in how to set up a station

in the field, how you put your radios up, how you should power your radios, how you look them up to the computer, or how you network your computers. How you get antennas into the air, what have you, if you're interested in any of those things. Come up, come out for set up. See how that stuff goes up in about 5 hours. It usually takes the bulk of five hours. I believe we're going to be operating 2A this year. We've been operating 2A, so we'll probably continue with 2A. If we could get more operators would probably run 3A. The number is quite simple. The 3A says that we're going to be operating three transmitters within the contest. Alpha says we're going to be running on running off the generator. So that's if you're also familiar with familiar or want to become familiar with just using gasoline generators, we will be doing that on Field Day, so come out and do that. The other reason that people come out to see us during this event is we have food there. The real reason people come out and feel today, we're going to try to convince you that when you come out to Field Day, please operate. It's a little disconcerting to those of us that operate because you get a quarter of people, maybe half a dozen people that are operating, and 60 people will show up at Field Day. Everybody's eating, drinking, and having a good time. There are half a dozen slobbs sitting there, you know, collaborating with other people on the air. So please come out and help us out so we get a chance to eat and drink and have more free time as well. Not quite sure what antennas we're going to put up. We've got a bunch of antennas we can string up. We'll have a bunch of radios and computers, generators. Most importantly, we'll have food and drink there from 9 until two. We set up at 2:00 o'clock and we try to go on the air. Then we run for 24 hours until 2:00 o'clock the next day. All right, so we have time available to play on the radio for a 24-hour span. If you like the pileups, come during the day and early evening. If you like solitude and quiet, come at 2:00 and 3:00 in the morning, and you can get on the air, and things quiet down, and it's hectic, and then of course it picks up the next morning. Another reason for Field Day is to take a test. We also do a VE session and field, so that will be available to you as well. The more people that we get to work, the better because of it. You know, it's it spreads the workload out. You know, if you have a few operators and they're sitting there for hours on it, and that gets caught in tedious. So come on out and, you know, collaborate with us, and help us make contacts on the air. It's also a great opportunity to bring the Techs out to get on the chat. Come out because we will have extra class control operators there. I'm not sure whether we'll run digital modes. We may try to do some digital operations. That would be cool. I know other fielding sites do that to significant effect. We're serious about having fun. So that's what we want to do. It's also a public service thing that we want to get the public to come out and see what we do. We invite radio stations. Television

stations, and elected officials. Besides that, which is the purpose of it, we also get people out there that might want to put up solar system. We will have some solar operations up there. We were fortunate this past year that one of the estates donated to us a 100 Watt solar panel and a large lithium iron phosphate battery inverter combination. We'll set that up in addition to the gasoline generator so that you can see that as well although the power will be coming from the gasoline generator. One area where we need much help in setting up and tearing down. We should also point out that traditionally, tear-down takes us about an hour. Supposedly you have friends that are interested in ham radio, but they're not licensed yet. What fun can they have if they come up? Party. Traveling. That's a lot of fun. Seriously, they can work as well. You have an 8 year old and you think you know, has the spark. You know, maybe interested in this technology stuff, bring them out, we'll put them on the air. There's, you know, we genuinely do try to get everybody involved that that comes out. It's something you know, food, drink, there are bathroom facilities there. We were allowed to be there overnight, even though the park is technically closed, you know, so you're more than welcome to stretch out on a picnic table and take a nap and go in your car and sleep and do whatever you want. We have some people that sleep overnight there. Other people go home.

To get to the Park, You're likely to get to it from either Weaversville Road or Airport Road. I would suggest Airport Rd. Oh. If you take 22 from wherever you are, either east or west like you're wanting to, go to the Lehigh Valley International Airport, get on Airport Road, and head north. Past the airport, just keep going. There's a light there. People used to know where Gregory was. And go past Gregory's. Go about a mile and you'll come to a sort of a bridge overpass. It goes over some old rail lines, but it sort of goes up a hill and down right as it goes back downhill. You can make a left, and it's a country road. You just follow that all the way out. There's a big sign there about the Park. You just follow that around; it'll go west for that's about 3/4 of a mile. Then it'll turn to the south 90 degrees. Less than 1/4 of a mile is the park entrance if you are coming from Weaversville Rd. If you're up north and you know where Weaversville Rd. You come down Weaversville Road after you get past all the new warehouses. There should be this ramshackle little house in the left-hand hand corner. If you're headed south, you make a left there. Go in maybe a block or so; there's another entrance to the park. I recommend coming in from Airport Road because that entrance will be the closest entrance to where we have the pavilion. You can get to the pavilion from the other side; it's just a little more. You're having trouble locating this. We should have talked in there anyways in terms of getting people there. So, if you got two meters in your car, we'll try to talk.

Ben's going to give a demonstration of the logging program that we use. We wanted to do this tonight for those of you that are not familiar with N1MM. Exchange for Field Day. Oh, it's going to be our section. And our motive operation. So, somebody's going to call up and they're going to give you their mode and section. So, it may be they're calling in, and they are 5A MDC for Maryland, DC. We'll just respond with 2A EPA for Eastern PA. So, all you are capturing is you need their call sign, how they're operating in, and the section area. No serial numbers or Counties, none of that. Noticeably short. Amazingly fast. I'm going to go over to the network so you know our specific setup for the networking logging, and in the case of our setup the computers will be connected to the radios, so you don't have to enter any frequencies or anything and computers will know what bands or what frequency or what load your operating. All you got to give is a call sign that. Just copy the code and the section. There you go. That's it, enter and march on and find somebody else. They're only two modes of operation we do. We do hunt and peck. Newer operators tend to like that. It's a little less stressful in that you tune your way up and down the band. You find a station you could hear, and put a call sign in. It doesn't come up as a dup. We should try to collect it. Put out your call sign, and usually, that's all you're doing. You're not calling whatever their call sign is and your call sign. When you hear them get done calling CQ, you throw out W3OK. They don't hear the first time; they work with somebody else the first time. Later, you throw out the W3OK. When they hear it, they're going to come back, and they're going to go W3OK, you are 5A MDC. Find the MDC in there, and then you go; whatever their call sign is, you are 2 alpha EPA. That's the end of the exchange. They'll say thank you. Quite simple and quite easy. Don't have to work with people any faster than you want to work with them. The other operation is essentially what is considered running. That is, you find an empty spot. Good luck with that. You find an empty spot, and you start calling. So really, that pressing button will call CQ, CQ, CQ, CQ, CQ3, W3OK. Now somebody comes back to you, their call sign in, and you go back to them, and you say you are 2A. EPA. There's more to the N1MM Logging program. Come out to Field Day and see everything we talked about working.

The DLARCforum Information

The DLARCforum is the club's email reflector. An email reflector is like a bulletin board. When you send a message to the reflector, it processes it and then sends it out to everyone who is subscribed to the reflector. That way, you only must address your email to one address, not a whole bunch. The DLARCforum is open to all club members. You must subscribe to the

reflector to be able to send and receive messages.

This list is restricted to club members only, which means that you won't be getting tons of spam through the list. Identity and membership is verified before anyone is subscribed to the list.

If you would like to subscribe, go to this UR on the Internet,

<http://mailman.qth.net/mailman/listinfo/dlarcforum> and you will see at the top: "QTH.net Mailing List". Fill in the Email address that you want the mail sent to. "**Your Name**" - put your legal call sign. Example: "**John, N3ABC**". Enter a password, reenter your password. Click on "**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. Check your Spam filter to make sure nothing from the forum is there. If everything is filled out correctly, especially the legal call sign, then he will pass it on. You should get a "Welcome Message". If you need any help or have questions about the reflector, feel free to ask. You can see me at almost every meeting, or you can send email to n3iga@ptd.net and I will be happy to assist you.

De John, N3IGA DLARCforum Administrator

Parks On The Air By Adam, N3LAG

The program for June is Parks On The Air by Adam, N3LAG. Everybody that was at the Parks On The Air last year saw how Adam sets up. Come to the meeting and hear what goes on in setting up Parks On The Air on your own. Adam will explain the proper way to set up, what kind of battery you would need or can afford, type of antenna, and many more interesting facts. Come out and hear how to set up and work Parks On The Air. You may want to try to set up somewhere out in the fields just to work with less power than you would run at home. It will be remarkably interesting program.

“QRP Corner”

Antenna, The Heart of the Station

By Barry G. Kery, KU3X

Without an antenna, you are not going to work or hear anything. What you hear and work with relates to how good your antenna is. Since you are starting out with only 5 watts, you want to maximize your signal. You want the most effective radiated power (ERP) you can get.

Your coax is your pipeline to the antenna. We've already addressed what coax is best for your needs. When using coax, you want to maximize your signal by using a matched resonant antenna. By using a resonant antenna, you are feeding your antenna in phase. By doing so you are coupling the power at the antenna's end of the coax in the most efficient way possible.

Don't get sucked into the phrase, "With an antenna tuner and this antenna you can work all bands." What they are saying is you need a good antenna tuner to fool the radio into thinking this is a good antenna. Here's another phrase you should not get sucked into. "I can work everything I can hear." What about all those stations you cannot hear because you are using an inefficient antenna?

Let's discuss two examples of two not so good, highly overrated antennas. Enter the "G5RV". This is basically a one and one half wavelength antenna center fed with a quarter wavelength of 75 ohm parallel feeders to match the antenna's 100 ohm resonant feed point. This design is 20 meters. That is the original design. It has been changed over the year and now uses 450 ohm transmission line and then hams add coax from the end of the parallel feeders to the ATU. This antenna is only resonant on one band and that is 20 meters. You are feeding this antenna out of phase on any band other than 20 meters and since it is non resonant on all bands other than 20 meters, the coax will see a high SWR and the losses in the coax are greatly increased.

The second most overrated antenna that is widely used is the non-resonant end fed antenna. This antenna is not resonant on any ham band. It uses a 9 to 1 UnUn (coupling transformer) to bring the antenna's high feed point impedance down to an impedance your ATU should be able to manage. Now you are feeding the antenna out of phase, so you have losses. To increase your losses even more, you have an extremely high SWR (standing wave ratio) which increases the losses in your transmission line. The longer the coax, the higher the losses.

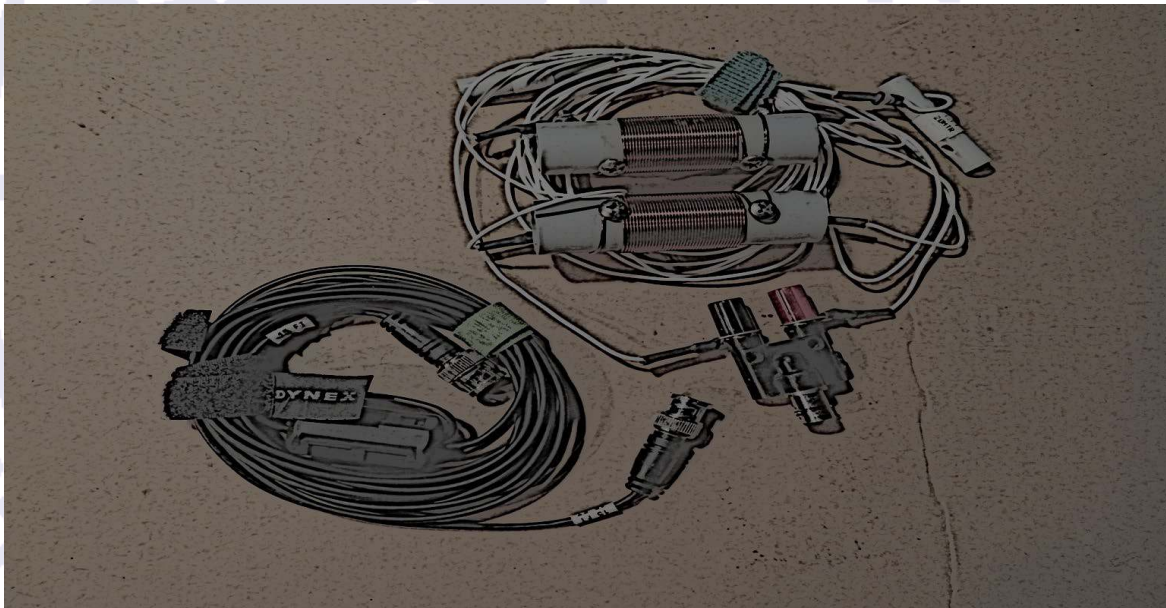
When using a non-resonant antenna, you have no choice but to use an ATU to couple the antenna to the radio. ATU's have losses. The ATU in my Kenwood TS480SAT has a 10% loss factor. So, the result is, an antenna with losses, the SWR on the coax is increased which adds to the loss and next you put an ATU in line and lose even more power.

“Is there a serious problem using either of the above two antennas with our little QRP radio?” No, not at all. Hams all around the world use them and are happy with them. But why use an inefficient antenna when you can use a much better antenna and get a much stronger signal in the air?

Here are a few suggestions for an antenna used for QRP portable.

A simple half wave center fed resonant dipole is one of the simplest and most efficient antennas you can use. They are super simple to build and erect. If you erect a dipole less than one half wavelength in the air it will be a non-directional antenna. The same goes for erecting it as an inverted V.

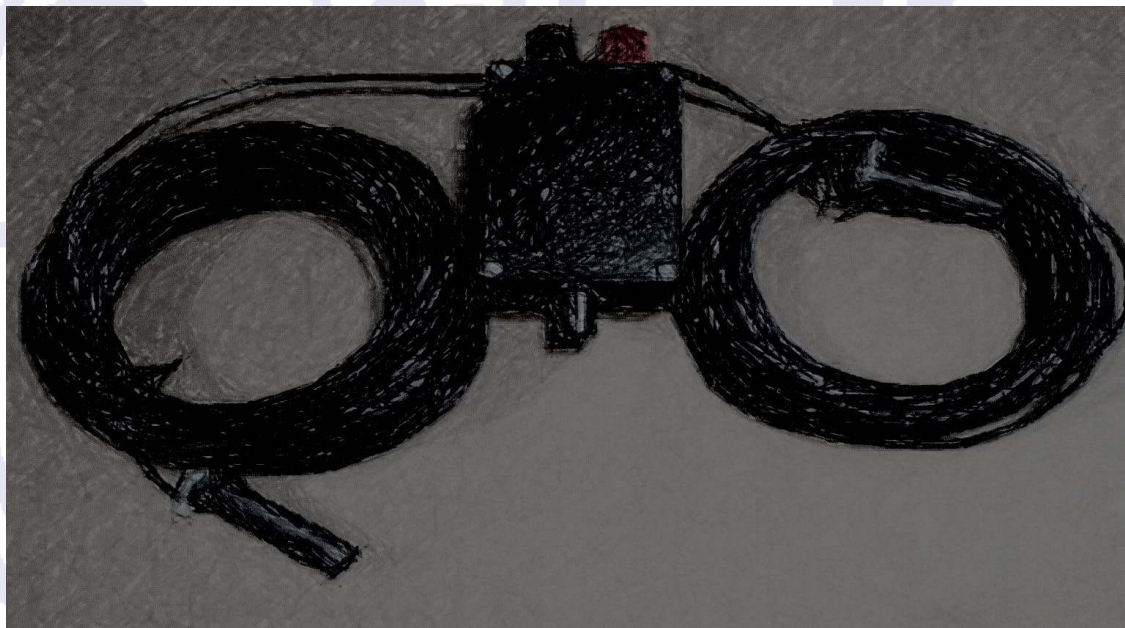
Maybe you want to use a 40 meter dipole but there’s not enough room to erect this antenna in the field. You can shorten this antenna by adding shortening coils anywhere between 50 and 67% of the way out from the feed point of the antenna. Shown below is a 12 foot long resonant 20 meter dipole. Take note of the clip on ferrite balun installed on the RG 174 coaxial cable.



If one does not want to be limited to only one band when using a simple dipole, the off center fed antenna is an incredibly excellent choice. An OCF40 is 65 feet long and covers 2, 6, 10, 20 and 40 meters. It is in fact resonant on all these bands. Most of the time an ATU is not needed. You treat this antenna the same as you would a simple dipole. You can erect an OCF as a flat horizontal dipole, inverted V or even a sloped dipole. Numerous hams claim the OCF is a low performing antenna. This is false. I evaluated a 4 to 1 Guanella Current Balun it only had a .05 db loss. You can have that much loss in a simple PL-259 connector. This amount of loss is negligible. Since the

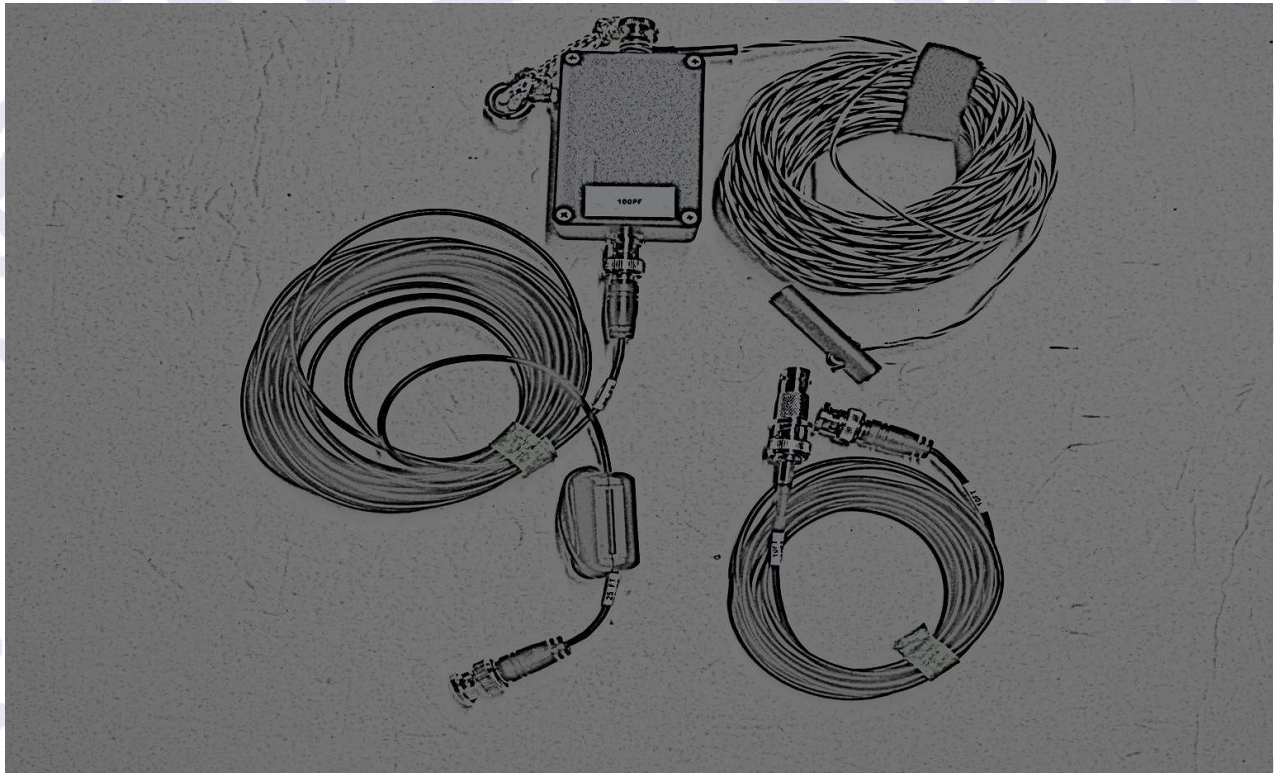
antenna is in fact resonant on all the above mentioned bands and the balun has such a small loss factor, there is no reason an OCF would be a low performance antenna. The idea of the OCF is it is designed to work on many bands with the use of coaxial cable to couple the antenna to the radio. Some hams think by using parallel feeders to feed an OCF they can work on any band with the use of an ATU. A word of warning: NEVER feed an OCF antenna with parallel feeders. An OCF antenna is an unbalanced antenna, and the parallel feeders will radiate causing all kinds of trouble in the shack. A simple center fed dipole is a balanced antenna and parallel feeders are also balanced. Parallel feeders will not radiate if used with a resonant center fed dipole. More on this later.

Shown below is a full size OCF40. It is small enough that it would easily fit in your pants pocket.



Another antenna to consider is the half wave end fed (HWEF) antenna. A 40 meter half wave end fed's overall length is the same as an OCF40. This antenna is resonant on 10, 15, 20 and 40 meters. At the feed point of this antenna is either a 49 or 64 to 1 UnUn. On 10 and 15 meters the UnUn is a little lossy. Most of the time an ATU is not needed with this antenna. Like the two above mentioned antennas, they can be erected as an inverted horizontal or sloping configuration. Some hams erect these as sloping vertical feed close to the ground. Since this antenna is considered a monopole, there is an issue with the coax radiating RF. The shield of the coax acts as the second half of the

antenna. This can be easily resolved by adding a clip on #31 ferrite core on the coax at a non-resonant length away from the feed point of the antenna. The antenna shown below is a HWEF40 with a 64 to 1 UnUn at the feed point of the antenna. Take note of the clip on ferrite choke placed at the far end of the 25 foot length of the RG 174 coax.



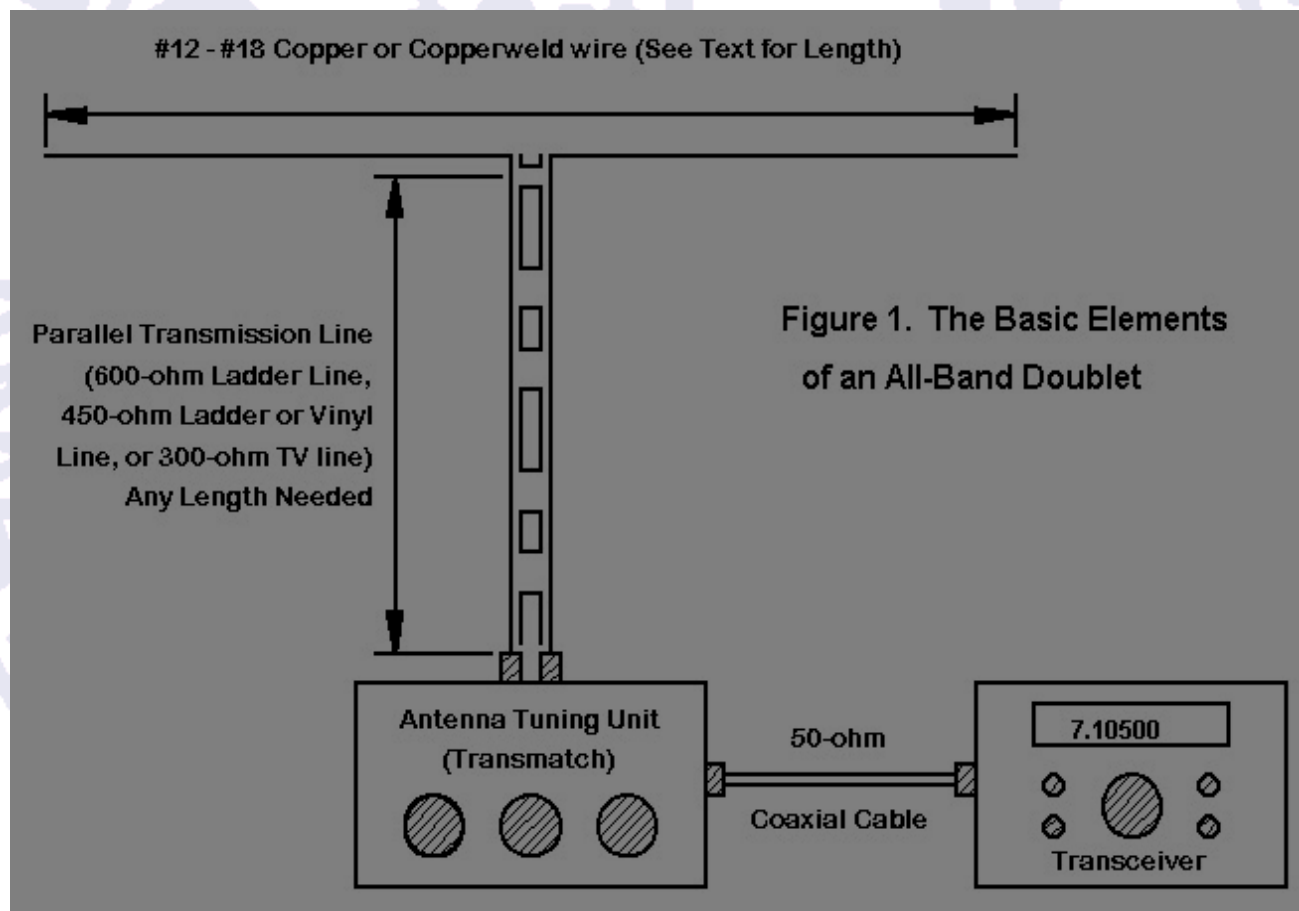
One of the most efficient multi band antennas is the doublet antenna. A doublet is a half wave dipole fed in the center with $1/8$ wave of parallel feeders. The antenna is balanced and so are the parallel feeders. A big advantage of using parallel feeders over coaxial cable is, parallel feeders are exceptionally low loss transmission line and can manage remarkably high SWR with minimal loss. An ATU must be used with this design, as shown below. A balanced tuner is designed to be used with parallel feeders and a 4 to 1 balun is not needed. Most ATU's today are not balanced tuners so the use of a 4 to 1 balun is needed and is to be placed at the shack end of the parallel feeders. A short length of coaxial cable is used to connect the balun to the ATU.

A doublet antenna should never be used below its design frequency. If you design a 40 meter doublet that can be used from 40 meters up to 10 meters, you never want to use it on 60, 80 or 160 meters.

Let's design a 40 meter doublet. We already know that a 40 meter dipole is around 65 feet long. Now the trick is how to cut the parallel feeders. Parallel feeders are

cut to odd multiples of 1/8 wavelength. 450 ohm parallel feeders for 40 meters...example: $123 / 7.150 \text{ MHz} = 17.2$ feet times the velocity factor of the transmission line. $17.2 \text{ times } 92\% = 15.8$ feet. If this length is not long enough to reach your station, multiply this length by an odd number. $15.8 \text{ time } 3 = 47.4$ feet

Some hams use a random length of parallel feeders to go from the tuner to the antenna and usually have all kinds of issues trying to couple the antenna to the radio. Parallel feeders, in this application, acts like a transformer changing the feed point impedance of the antenna to a usable range for the tuner. If one were to cut the feeders to, let's say, one half wavelength on 40 meters, when using this antenna on 20 meters the ATU could see an impedance as high as 3400 ohms which is the actual feed point impedance of this antenna on 20 meters. That is way too high for any tuner to manage, even with the use of a 4 to 1 balun. By using the proper length of parallel feeders, the ATU now sees 117 ohms instead of 3400 ohms.



The above picture was copied from an old ARRL Antenna Handbook. It says that any length of parallel feeders can be used. Incorrect as I pointed out.

There may be times that there aren't any trees to tie off your antenna to or it's not conducive to erect a mast. Maybe working from your vehicle is the only way to get in

the air. Whether you sit inside of your vehicle or sit in a chair outside of your vehicle, you will still need a good antenna. I don't want to turn this article into a school for mobile antennas, but there's a lot of junk and good mobile antennas on the market.

The good old dependable Hustler mobile antennas are high performance antennas for HF mobile. Coil placement comes into play on these antennas and Hustler really did their homework.

MFJ makes a nice telescopic whip that is long enough to be use on 20 meters. It can be used with a standard 3/8" fine thread mobile antenna mount. This antenna can be used on any band from 20 meters up to 6 meters. It can only be used while you are stationery. It is not designed to be used while driving. The part number is MFJ-1979.

Another way to use the MFJ-1979 is to make an antenna mount that will work with a tripod, add a few radials and you now have a nice ground plane antenna.

I've supplied you with enough information to assemble a nice compact portable QRP station. You can apply this knowledge to a higher power portable station. Either way, it's time to put a portable package together and have some fun operating from a park. Bring along some snacks and you will have an enjoyable day in the park.

73 de KU3X/QRP

**"MAKE A DIFFERENCE,
ATTEND A MEETING."**

DLARC NET QUICK CHECK CALENDAR

June 2023

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 DLARC MEETNG 7:30pm	2	3
4	5	6	7 DLARC NET Al W3CE	8	9	10
11	12	13	14 DLARC NET George N3SQD	15	16	17
18 FATHER'S DAY	19 BOARD MEETING 7PM	20	21 DLARC NET Ben N3WR	22	23	24
25	26	27	28 DLARC NET Doreen K3PDL	29	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 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. 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 be needed 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. 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

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Vice President – Terry Swinney / KC3JHT ----- ldocapt@gmail.com
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Steve Harper / W3NAM ----- sharper3152@gmail.com

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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