

# ARC-SHORTS

August, 2013

Club Repeaters: 147.315 (PL 107.2), 444.6 (PL107.2), 224.82 (PL107.2), 53.13 (PL107.2) Down for replacement, 927.6 (-25Mhz, PL107.2), and 1282.600 (PL 107.2), DSTAR 145.38Mhz, 442.060, and 1284.600

## **63rd Annual Berryville Hamfest and Computer Show**

*The club will have some members in the tailgate area under the trees, drop by*

Sunday, August 4, 2013 at the  
Clarke County Ruritan Fairgrounds in  
Berryville, Virginia



## **NEXT CLUB MEETING**

Our next meeting is **August 9th** at the Alexandria City's new Emergency Operations Center at 3600 Wheeler Ave. We will meet in the Community Room on the first floor. Parking is the public lot right in front of the building.

Our program this month will be Robert who will talk about the Metro communications systems.

DINNER before the meeting is usually an informal get together at Atlantis Restaurant. As we need to start the meeting at 7PM we usually start gathering at the restaurant about 5:30 plus / minus.

### **JULY MEETING MINUTES**

ARC Meeting, July 9, 2013 Rol Anders K3RA who will discuss the set up of the W3AO 29A Field Day Station this year. Rol presented a video showing the 51A set up. Of particular interest was the efforts to avoid co-site interference but using directional antennas and moving in band as far from each other as possible.

I was impressed with material collected and looked up the 'rocket launcher' mast kits on the web. The price without all the add ons is \$2,200 EACH.

Lots of work to provide the antennas, power supplies and logging.

### **PRESIDENT'S CORNER – Tom KJ4FUU**

I hope everyone enjoyed last month's program on how giant Field Day operations work. I think there was a lot of valuable information that can help us plan our Field Day operations in the future, even if we don't run any operations that large. Thank you, Rol Anders!

Your president just got himself a new radio, the Ten-Tec Argonaut VI. I will be going into the field soon to see how it stacks up against Elecraft's KX3, a radio owned by a couple of our members. The KX3 has a lot more features, but the Argonaut seems to be simpler to use. That is one thing we will be testing out. Hopefully, the MD/DC QSO Party will be a good test for the radio and my portable antenna.

One thing I would like to mention is that Rick N4ASX works hard at arranging programs for our monthly meetings, and it would probably be helpful if you could send him or me any suggestions on programs about topics you would like to learn more about.

I would also encourage our newer hams to drop by a hamfest sometime. The hamfest in Manassas was good, and there is one in Berryville coming up. I'm sure that the more experienced hams would be glad to give you advice about potential purchases, tips on what to look for, or warning signs of things to avoid. Even if you don't buy any gear, I'm told that the Barbeque sandwiches at Berryville are worth the trip.

Finally, for hams who are curious about CW/Morse Code, I recommend either the G4FON training program, or the lcwo.net web site for learning. If you decide that you really aren't interested after all, you haven't wasted any money. Why CW in this day and age? Well, the biggest reason I can think of is that it is the cheapest way to get your feet wet in HF operations and DX contacts. You would still need an antenna, of course, but home-built wire dipoles are simple enough, if you have the room. A 10-meter dipole is only 17 feet long. If you are happy with the VHF/UHF side of our hobby, so be it -- ham radio

has room enough for everyone, and we certainly have enough events where operators with VHF/UHF skills will be useful.

73,

Tom KJ4FUU

President

### **Future Programs**

Australian education over radio – Tomas in September

Joel – RF Connections – Connectors without instructions. – When we can get him.

Working on DARPA Spectrum Management, ARRL, AMRAD - SDR radios, AMSAT – Eagle Sat, NERA – Wide area UHF repeater system, Cell Phone/Trunked Radio Systems, Field Day – Planning, RFI chasing, Metro Radio system. And any others you suggest.

### **Jeremy's IC 7100 UTUBE LINKS**

<http://youtu.be/zEM8skeHkEE>

### **MARINE CORPS MARATHON SIGNUP OPEN**

<http://www.ncacdc.com/>

This is our BIGGEST and most complicated public service event each year. Because it is run by the Marine Corps it IS A TARGET for ... . For that reason, there is a high degree of security on the course. With the events at the Boston Marathon, you can bet your last dollar that security at MCM this year will be very high. If you volunteer for the Virginia side of the course, you will be expected to be on the course early (4 AM in the past). On the DC side it's more like 6AM to 7AM. You're done when the tail end Charlie vehicle passes your assignment and you are released by Net Control.

We are the eyes and ears on the course, If a runner needs help its amateur radio that gets the word to the medical folks. If there is something not right on the course we see it.

Unlike many other marathons, we are not the ONLY comms on the course. The Marine Corps runs its own network for security. They still ask us to act as back backup. History shows that we've been able to get the traffic through when all else fails.

If you volunteer for an aid station, understand that this is now a D-STAR position. Each Aid Station uses the 1.2 GHz D-Star digital mode to pass patient info. D-Star DV on 2 meters and /or 440 is used to connect the aid stations.

When you volunteer you will be asked to provide your gear information and your vehicle information. The vehicle information is to provide law enforcement with a list of authorized vehicles on the course. If you are handheld only, you will need power for the day, a good antenna is also a good idea. Net Control is OFF THE COURSE and can generally hear all, but a basic rubber duck antenna can be a handicap. Some locations require a mobile radio and decent antenna. Some folks go so far as to bring about 20 feet of mast kit. There is an amateur at each mile and many half mile points, All Aid Stations, water and food points and amateurs support each of the Marine Corps Zone Commanders to provide

situational awareness. Packet is also used for APRS (6 meters) and for 9600 baud backup to D-Star digital.

Net Control assignments are made by the leadership team. If you have some experience and want to work NCS put that into your info.

73 Rick

### **ELMER'S Corner – HF Antennas cheap and stealthy**

With VHF and UHF we found that you can make several inexpensive antennas. VHF and UHF antennas are small by comparison with HF (High Frequency) antennas. The fundamental focus should be that the size of the antenna is related to the  $\frac{1}{4}$  wavelength of the frequency. So

Band	Frequency(MHz)	1/4 wavelength
70 cm	445	6.6"
1.25 Meters	224	13.2"
2 Meters	146	20"
6 Meters	52	4'9"
10 Meters	28.5	8' 7.5"
12 Meters	24.95	9' 10"
15 Meters	21.3	11' 7"
17 Meters	18.15	13' 6"
20 Meters	14.175	17' 3"
30 Meters	10.125	24' 6"
40 Meters	7.175	34' 4"
80 Meters	3.8	64' 9"

As you go down in frequency your antenna must be larger. While there are LOTS of small antennas that suggest that they can perform as well as larger antennas, the math does not support the claims.

The simplest antenna is a dipole (2  $\frac{1}{4}$  wavelength wires attached to the coax center and ground. But many of us cannot run a coax out to the center of a dipole and stay stealthy. Two alternatives for a resonant antenna are a vertical which can be a vertical dipole or a  $\frac{1}{4}$  whip with a ground plane. For the 20 meters you might run a vertical wire from the ground up into a tree and run four or more quarter wave radials (wires along the ground or buried in the ground. If you can mount the vertical radiator on a metal plate you are in good shape. When the sunspots are high then you might go with a 10 meter vertical and you could use an old CB (11 Meter) whip and cut it down.

One of our members has a copper water pipe antenna. He uses heavy pipe with a threaded coupling so he can make it 10 meters, 15 meters or 20 meters. He uses hook up wire for the radials and a screwdriver stuck in the ground to insulate the radiator from ground.

One other member used aluminum drain pipe on a wine bottle as the vertical.

Another alternative is the random wire. If you can put lots of wire between your balconies or someplace close to the feed point you can run the coax outer conductor to ground and attach your wire to the center conductor and run as MUCH wire as high as you can. You can use copper weld or other light weight wire so that it's hard to see and run it to a faraway tree. As this is a non-resonant antenna, you will need to use an antenna tuner to make the wire antenna resonant for each band you operate. One ham was on the 9<sup>th</sup> floor of an apartment and ran 250 feet of thin magnet wire to a fence around the parking lot and he worked over 200 countries on 100 watts.

Mobile whips will work but they are inefficient and usually on resonant for a narrow range of frequencies, but if you put a ¼ wavelength wire counterpoise or two or more radials you can still work the world.

### **Hamfests –**

August 4 – Berryville Hamfest, sponsored by the Shenandoah Valley Amateur Radio Club. This is a very nice hamfest under the trees at the Clarke County Fairgrounds. Lots of items to be had. It's a short drive and scenic drive from Alexandria. Not only that, the Ruritans club does a barbeque lunch that is worth the trip. Its smoked right there at the fairgrounds.

August 18 – Carroll County Tailgate Fest, sponsored by the Carroll County Amateur Radio Club. The Tailgate Fest is located at the Carroll County Agricultural Center, 706 Agricultural Drive, Westminster, MD. It's a short drive from Alexandria. You buy a tailgate spot and sell your wares, there are no inside dealers or tables.

September 14 – Virginia Beach Hamfest, sponsored by Tidewater Radio Conventions. This is a great excuse to go to the beach for the weekend while the weather is still warm and most of the beachgoers have left for the summer. The hamfest is located at the Virginia Beach Convention Center, right off I-264 in VA Beach.

### **Training -**

Our next class is scheduled to start October 1. We are starting to get some interest in the class with some email traffic asking general questions and occasionally something specific about the class. There is still plenty of room. If you know someone who is not licensed, or you are not licensed, and would like to be, send me an email at [ka4gfy@arrl.net](mailto:ka4gfy@arrl.net). As always, we don't make our students find an exam on their own. The last class on December 10 will be the exam. Time to upgrade to General or Extra.

### **Contests**

August 3 and 4 – ARRL UHF QSO Party. 220 MHz and above. Exchange is grid square.

August 3 and 4 – North American QSO Party, CW. Exchange is name and<sup>d</sup> state

August 10 – Maryland/DC QSO Party. Exchange is your state.

August 17 and 18 – North American QSO Party, SSB. Exchange is your name and state.

August 18 – ARRL Rookie Roundup, Digital. Exchange is both calls, your name, check (year you were licensed) and state.

August 24 – Hawaii QSO Party. Exchange is signal report and state.

August 24 - Kansas QSO Party. Exchange is signal report and state.

August 24 – Ohio QSO Party. Exchange is a serial number and state.

August 31 – September 1 - Colorado QSO Party. Exchange is your callsign, name and state.

September 1 and 2 – Tennessee QSO Party. Exchange is signal report and state.

### **The Alinco DJ-G29T**

My major purchase at the Dayton Hamvention this year was the Alinco DJ-G29T handheld radio. This particular model has some special significance for us in the Alexandria Radio Club because a couple of years ago at the Hamvention, Marshall, KI4MWP, put a bug in the ear of some of the Alinco engineers to design and build a handheld radio that will work the 1.25 meter and 33 cm bands. Alinco was the only manufacturer marketing a handheld on 1.25 meters and the only way you could get on 33 cm was converting certain commercial equipment. At the 2012 Hamvention, Alinco had a mockup of what the new handheld would look like. By the 2013 Hamvention, the DJ-G29T was a reality.

Playing with it the hotel room Friday night, I realized the automatic offset needed to be turned off. A quick look at the manual and I figured out how to do it. A word of caution here, the manual was originally written in Japanese and translated into English, so some of the grammar and sentence structure requires some thinking to make sense of what it's saying.

The 1.25 meter of the radio worked well, while I managed to bring up a few 220 repeaters in Dayton with no trouble, even managing to turn on the correct CTCSS tones. When I switched to 900 MHz, the radio reverted to auto duplex and I had to turn it off again. 927.500 MHz is the national simplex/calling frequency on 902 MHz, but the radio kept thinking it should have been a repeater. I managed to make a contact on 900 MHz simplex with somebody in a nearby hotel, so we both decided the radio must be working correctly.

Having owned the radio for two plus months now, my first observations are that it's a very nice radio. It has a nice feel to it. The power button took a bit of getting used to, but after awhile, it is not much different than any other radio. I found the first few times programming the memories, it was helpful to have the manual close by. With the manual guiding me, I was able to load frequencies into the memories with relative ease. One thing I found with the memories is if you put a name into the memory channel, that is what is displayed, not the frequency. Not a major problem. I would rather know the frequency than which repeater I'm on. I know which repeater I'm on by the frequency.

So far, signal reports have been positive on both 1.25 meters and 33 cm. The receiver has plenty of audio and the transmitter sounds very clean. The transmitter is rated at 5/1/0.4 watts on 1.25 meters and 2.5/1/0.4 watts on 33 cm. That will work most anything in the local area. It comes standard with a 1.2 AHr battery pack, which I find is plenty for what I use the radio for.

I will say for most of my VHF and UHF radios, I'm an ICOM guy. I can usually have an ICOM up and running in a few minutes. There was a learning curve here. This was my first venture into Alinco territory.

I applaud Alinco for diving into this niche market. Perhaps this will encourage hams to try these two bands. With activity comes more options for equipment. While there are not a lot of 33 cm repeaters on the air, there are quite a few 1.25 meters repeaters. All it takes to generate activity on a new band is for a few hams to buy equipment for it and start using it. This is great news for hams because we now have a 33 cm radio that is VFO programmable and has the memory capacity we have become used to. (Us old timers remember crystal controlled VHF/UHF gear or only 10 memories).

Having said all that, you may be wondering why I bought this particular radio. Well, the Alexandria Radio Club is the proud owner of repeaters on both 1.25 meters and 33 cm. Both repeaters are commercial grade and sound great. They just need more activity. In fact, the August 2013 issue of QST had an article on the 33 cm band. Not only that, N4ASX still has a few of the Motorola GTX handhelds that need a forever home.

73,  
Rich, KA4GFY

## ARES

At some time in your wonderings through amateur radio you may find yourself working a public service event, an emergency drill or you may find yourself working a real emergency.

We are very seldom able to work these events from our home shack using commercial power. Most of the time we are working a handheld or a mobile and you may be running mobile out of your car or you may be running from a place like a shelter or other location. That other location may or may not have commercial power.

You may have guessed that this is about power supplies for your gear. Lucky for most of us, most of the handhelds made in the last 5 or so years will run from a 12 volt source and every mobile radio takes 12 Volts DC.

So, you want to think about a 12 volt battery which allows you to carry it where you need it and run your chosen radio for the total time of event. The worst case I can think of is the Marine Corps Marathon (don't forget to sign up SOON). If you are on the Virginia side of the course, you will start off at 4AM and run to when the race passes you and that could be 5 PM. So, lets assume you need 14 hours.

Next, what does your radio draw on receive and transmit? If our running a 50 watt radio that may be 13 amps or so and receive is nominally 1 Amp (thanks to all the micro-processors). So if your rag-chewing you can expect to be transmitting 50% of the time but if you are on a controlled net, then expect 10%. Your average will then be  $.1 \times 13 + .9 \times 1 = 2.1$  Amps/hour. 13 hours is 27.3 Amphours. Expect that you will get 60% of a batteries rating so 46 amphours is what you will need.

Many amateurs will tell you that they use the vehicle battery, but nothing is more embarrassing then asking for a jumpstart when you've run your vehicle battery down.

For most applications you won't need 13 hours so the size that fits is the U1 battery used to run electric carts or wheelchairs. I have one for shorter activities, but I also have an 80 Amphour marine deep discharge battery. Another battery stretcher is to run 5 watts or 10 watts from the mobile.

73 Rick  
N4ASX

### **Social Events**

Monday Night Half Price Burgers – There is a group that gets together at Shooter McGee's (Duke and Paxton Streets) on Monday evenings at 6:15 PM. A good burger and soft drink runs about \$9.00.