

ARC-SHORTS

February 2014

Club Repeaters: 147.315 (PL 107.2), 444.6 (PL107.2), 224.82 (PL107.2), 53.13 (PL107.2) (UP for TESTING at undisclosed temporary location, 927.6 (-25Mhz, PL107.2), and 1282.600 (PL 107.2), DSTAR 145.38Mhz, 442.060, and 1284.600

NEXT CLUB MEETING

Our next meeting is **FEBRUARY 14th, 2014** at 3600 Wheeler Ave. Just off Duke Street in Alexandria about 1 block west of Quaker Lane. We start the meeting at 7PM with our program and follow with a short business meeting.

This month's program will be the VA QSO party. Lots of fun to see the statistics from last year. Remember that we sponsor two awards for this contest.

Dinner prior to the meeting will be at Atlantis (Bradlee shopping center of Rt. 7 just east of 395) with folks starting to gather about 5:30. Our guest speakers get a meal on the club.

January MEETING MINUTES

2014 January 10 meeting notes

1900 call to order by VP (president out sick)

Member introductions (what did you do in the world of ham radio this last month?)

FS: Drake R7 of undetermined condition

Things coming up

- VAQP in march, KI4BXU expedition to Buckingham Co
- N3FJP logging software rebuilding process
- FL Everglades paddle – advice/equipment assistance solicitation – What gear would you take?
- PSK31 bandwidth metering kit \$39 (see Larry's article)
- N4ASX – opening his station for VAQP
- Raspberry Pi – usages (digipeater, D-STAR node)

Treasurer/budget (see 2014 budget proposal)

- Amend 6 m budget to \$408 from \$105 (to cover the controller, cables and the crystals)
- 5 accounts (savings \$5226, checking \$279, trailer \$855, education \$2313, PayPal \$20)

Secretary – waiting for member count as it is new year's

Committees

- Training – weekly sessions March 4th to May 6th – Technician level
- Trailer – battery condition, program 900 MHz rig for future installation, cleaning post-mortem, spare chair for ways & means at N4ASX's garage
- ARES – inventory antennas, dual band signals in/out of hospital (Ethernet vs. coax)

- Repeaters & remote receivers – 6 m: crystal purchase (\$163 approved) by K4GOR, but controller needed (NHRC model 3.1 (\$179) + program cable (\$35) approved); frequency not on T-MARC list as of last Friday

- D-STAR – 2-3 users added, KI4MWP purchased equipment stack
- Webmaster – not present (meeting time needs updating)

Upcoming events

- GW Birthday events - NEED VOLUNTEERS
- QSO parties
- VAQP plaque sponsorship (2x\$55 approved)

Hamfests

- Richmond Frostfest February 1st (Saturday) – CARPOOLING Advised. Check into the nets to organize.
- Vienna Winterfest February 23rd (Sunday) – Club usually has two or three tables, bring your old stuff.

Old Business

- N4CWP J-pole antenna construction project (teaching soldering techniques) 6 prototypes proposed

New Business

- Field Day (need an officially approved chair to deal w/ city - space reservation) Jack K5OTZ and Rick, N4ASX will co-chair this year.
- Work by team proposed (1 team/station)
- Holiday dinner @ Mango Mike's but remodeling at moment for Cal/Mex
- Savvio's (no room charge, CC hold) or Alley Cat (private upstairs room available, no room charge) – Members are encouraged to check out these places and report back on suitability.

Net Controls

1/16 – ka4gfy

1/23 – kk4cbl

1/30 – n4asx

2/6 – n8ik

2/13 – w9tce

N4TCW – new member; suggestion to populate a booth for STEM (US Science & Engineering Festival); regional reflector suggestion

KB3ZKQ – new member

Program by N8IK – demonstrated his go-kit w/ dual band analog, dual band D-STAR, 1.2 GHz D-STAR, navigation

Ways & Means by W9TCE

50/50 last call, pot \$63 and winner KK4CBL

next meeting is scheduled for February 14th with program on upcoming VAQP

meeting adjourned at 2035 by kk4cbl

PRESIDENT'S CORNER

I'm sorry I wasn't able to make last month's meeting. I think it was the first meeting I've missed in a couple of years. I was told that Larry did a good job of conducting the meeting in my absence (note to Larry: I'm not eligible to be president next year having reached my term limit, do you want the job?).

I hope the club has another successful year. In February, there are two events that need volunteers with radios, the GW Birthday 10K Run on Sunday, 2/16, and the GW Birthday Parade on Monday, 2/17. I'm taking off work for the Parade, and I hope for a good turnout. Last year, far fewer parade marshals (the city's volunteers, not ours) showed up than was expected. While I hope that the situation doesn't recur, it would help if we had as many people as possible to show up to assist the marshals that do come. However, I never see us as replacing absent marshals.

We have the VA QSO Party in March, and the club usually has a good participation level. We do sponsor two plaques in this contest every year. Please participate, even if all you have is a 2m handheld. Make one contact, submit a log, and get a certificate. The VA QSO Party briefing will be the February meeting program. There is a recommended 2m frequency to try (no repeater contacts allowed). I turned my mobile that I use as a base down to 5 watts last year, and made a few contacts on that band (I always participate in the QRP category).

Several members of the club make the trip to Dayton for the biggest hamfest in the country in May. I plan to join them this year.

Field Day comes in June. We had pretty good participation last year, but I don't know that I'll be able to repeat my overnight stay this year. The location may be different this year, so stay tuned.

Our club usually has a good turnout of volunteers for the Marine Corps Marathon. Handheld radios can be used, and if you are new/inexperienced, they can usually find a place to put you where you can learn from a veteran ham.

In closing, we've been having a good turnout at our meetings, and I hope that we continue to have an active club. The office of president and treasurer will be vacant at the end of this year, both Steve and I having reached our term limits. Anyone interested in a club position (it's not that difficult, really!), keep this in mind.

73,

-- Tom Kirby KJ4FUU
President, Alexandria Radio Club

WASHINGTON'S BIRTHDAY PARADE and 10K RUN

2014 10-K Race Day is on Sunday, February 16, 2014 (note this is SUNDAY not the usual Saturday.) We need to meet at the Patent and Trade Office (starting point) at _____. We will use both handheld and mobile and use the 147.315 Repeater. This event is usually over by noon and we then go for lunch some ware.

2014 Parade = No differences from last year. Parking is always an issue. We will need about 15 volunteers. Two at the reviewing stand with 9600 Baud Packet (Kenwood D700A works for

this). Two in the trailer at race start area. Handheld voice division hams. We will ask for the use of the 146.655 repeater (141.3PL). If this is not available we will go to the 147.315 Repeater.

I would like to also use APRS if we can find two portable APRS operators. One for the race start and one for the end of the race. If we have two volunteers for this we will set up an APRS display at the reviewing stand so that the parade folks can track the parade.

The packet will be used this year to provide changes to the parade order of march.

To carpool, we will meet at the Fire Training Center at 10AM and carpool to the parade start area. We will also pick up the trailer. For those who walk the parade, we will arrange to pick you up on the way out to lunch.

We need to be at Parade start at 11AM. The units need to be formed up at noon and parade kicks off at 1 PM. We usually are DONE by 2:30 – 3 PM and go out for a late lunch early dinner. Last few years we met at Fudruckers but they are now gone. We will have to find a different place. Me Casa comes to mind.

ELMER'S Corner

Setting up your station can be a bit of a pain. The good news is that with newer radios it gets very easy compared to the goo ole days.

In the past you had a separate box for each function. Go back to the 1960s and you had a receiver, transmitter, maybe an R/T antenna switch that also muted the receiver, trans-match (antenna tuner), SWR bridge, and on and on.

More modern HF radios are now Transceivers (Receiver, Transmitter, switching circuits all included). In the 1970s you still had narrow band tube finals, so you had to learn to tune the transmitter to your antenna. You dipped the plate current and increased the load (the circuit in the radio was a pi network and you had two variable capacitors and an inductor in the output tuning circuit (just like your antenna tuner), the coil was taped for each band covered but the plate and load capacitors needed to be adjusted for each frequency within the band. Most of these radios would load between 50 ohms to 75 ohm antennas. Now most radios are looking for a matched 50 ohm load with NO final tuning. But we still find that we need to watch the SWR on these new radios. On the bands above 20 meters most antennas, once set to the either the SSB sub-band or CW sub-band need no other tuning. It is on the 160, 75/80, 40 and 30 meter bands where most antennas will only have a 2:1 or less on a portion of the band. My recent experience bears this out. I was rag-chewing on 7.245 MHz using a solid state radio at 100 watts. My logging software received a DX spot at 7.165 Mhz. Just 80 KHz away. I hit the F11 Key which tuned the radio to the frequency and mode, identified the station and when it was my turn, made the call. No luck, I turned on the amplifier that was already set up on 40 meters and made the call with 500 watts out (I was using the dipole). Got the DX!, but I noticed that my SWR was up around 5:1. That's not so good. Lucky for me that the amplifier and radio are well protected.

Lesson is: Even with modern NO TUNE radios, we still need to make sure that we have a good match to the antenna system.

73 Rick
N4ASX

Larry's Homebrew

The purpose of this paper is to review the PSKMeter kit being sold by KF6VSG.

Those of us who have used PSK31 and PSK63 in the past have seen strong signals on the waterfall display blank out all others. This happens when a person through ignorance or malice cranks the power up to 50 or 70 watts or higher in PSK mode. That produces distortion and unwanted harmonics and annoyed fellow Hams. It is essential that we operate our transmitters in as linear a mode as possible to communicate well, minimize distortion and live happily with other amateurs.

The most effective linear operation occurs when the Intermodulation Distortion (IMD) is in the range of -25 db to -30db. Much higher than -30 db and you are trading signal power for fractional improvement in IMD reading. Much lower than -25 db and you are distorting. So, how do you know what's enough power and what's too much? Well, you can have another ham observe your signal on his display and to relay you the IMD setting, but it would be great to have a monitor that could be sitting in your shack giving you constant readings.

Such a monitor is available as a kit by KF6VSG at www.ssiserver.com/info/pskmeter



Figure 1 – PSKMeter circuit board kit

Shown above is the kit as it arrives in a Ziploc package. The circuit board is well-designed and soldering is quite simple and straightforward. The package includes all parts for the circuit board and assembly instructions. The kit includes a pre-programmed micro-processor, a 20 MHz crystal, a voltage regulator chip and assorted resistors, capacitors and connectors. The parts are well-marked and someone has said the instructions resemble early Heathkit ones. Assembly took about an hour max. Assembly is in two stages: everything prior to a power on

smoke check (micro processor not yet installed) then remaining parts are installed and a further checkout is done with the PSKMeter attached to a PC.

Figure 2 is a shot of the board after assembly. The PSKMeter inserts between the transmitter and antenna using a T-connector. Unfortunately it is a BNC connector so adapters are necessary to connect with most Ham equipment. Tuneup and calibration of the circuit is best done with a dummy load. There are two software packages available. Both are free. The best one in my estimation is called Psk Scope <http://www.softpedia.com/get/Science-CAD/Psk-Scope.shtml>. It has a software slider to change power settings and readings that include a visual signal display, the number of the comm port being used, IMD, RMS signal voltage, Peak signal voltage and output power in watts. By connecting your PSKMETER (board) to a free comport on your computer (or connecting to a USB port with the optional Serial/USB converter), connecting your transmitter's RF output via a 'T' connector, and running the Psk Scope software application, your signals can be perfectly adjusted.



Figure 2 – Assembly complete

An enclosure is available for around \$2. Once the circuit board is installed in the enclosure it should resemble Figure 3, below.



Figure 3 – Unit assembled inside cover

Note: The documentation refers to idling power. This is when you key the transmitter but are not actually sending data. You set the power level and IMD using idle power. (When actually transmitting data the IMD setting may or may not be accurate).

The assembled unit performs as advertised and has been functioning in my shack for about 2 weeks. No problems have been noted.

The next page (Figure 4) shows the PSK Meter in operation using the PSK Scope software. The signal pattern is green indicating a good signal. Other data being shown include that we are using Comm Port 7, the IMD is 30.3 db, RMS is 0.65 v, Peak voltage is 3.37 and Power Out is 29.0 watts.

Price Data:

PSKMeter \$41.40 plus shipping. Data cable, power supply and enclosure available at extra cost.

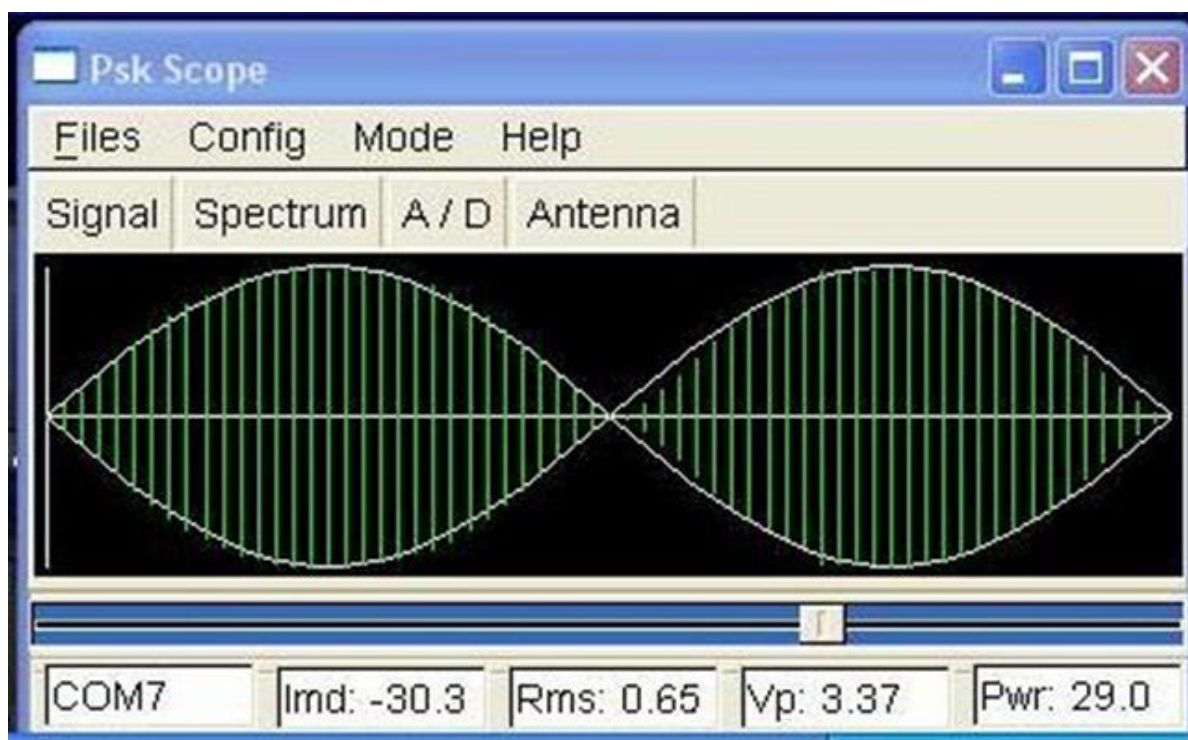


Figure 4 – PSK Scope in operation

Hamfests –

The Richmond Frostfest takes place on February 1, 2014 at the Richmond Raceway Complex. Its about an hour and half down the road and it looks like there should be a few more commercial vendors this year. The Alexandria Radio Club usually makes a good showing. At the end of the month, the Vienna Wireless Society's Winterfest will be at the Annandale Campus of Northern VA Community College on February 23. We have tables for club members to sell their equipment that needs a new home.

April 5 is the date for the Baltimore Hamfest. Its one of the largest in this area.

It's also not too early to start thinking about the Dayton Hamvention. This year's event takes place May 16, 17 and 18. I have 5 rooms reserved for this year. The cost per person should still be around \$200 plus whatever food and goodies you buy.

Training -

Our next class will be starting on Tuesday, March 4 and ending May 6, 2014. If you know someone who has been interested in becoming a ham, point them in our direction.

Contests

February 1 and 2 – Vermont QSO Party. Exchange is RST and state.

February 1 – Minnesota QSO Party. Exchange is name and state.

February 1 and 2 – British Columbia QSO Party. Exchange is RST and state.

February 1 through 3 – Delaware QSO Party. Exchange is RST and state.

February 8 & 9 – CQ WW WPX RTTY Contest. Exchange is the RST and serial number.

February 8 & 9 – New Hampshire QSO Party. Exchange is RST and state.

February 15 & 16 – ARRL International DX Contest, CW. Exchange is RST and state.

February 22 & 23 – North American QSO Party, RTTY. Exchange is name and state.

March 1 & 2 – ARRL International DX Contest, SSB. Exchange is name and state.

March 8 & 9 – Idaho QSO Party. Exchange is RST and state.

March 9 & 10 – Wisconsin QSO Party. Exchange is state.

73,

Rich, KA4GFY

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.