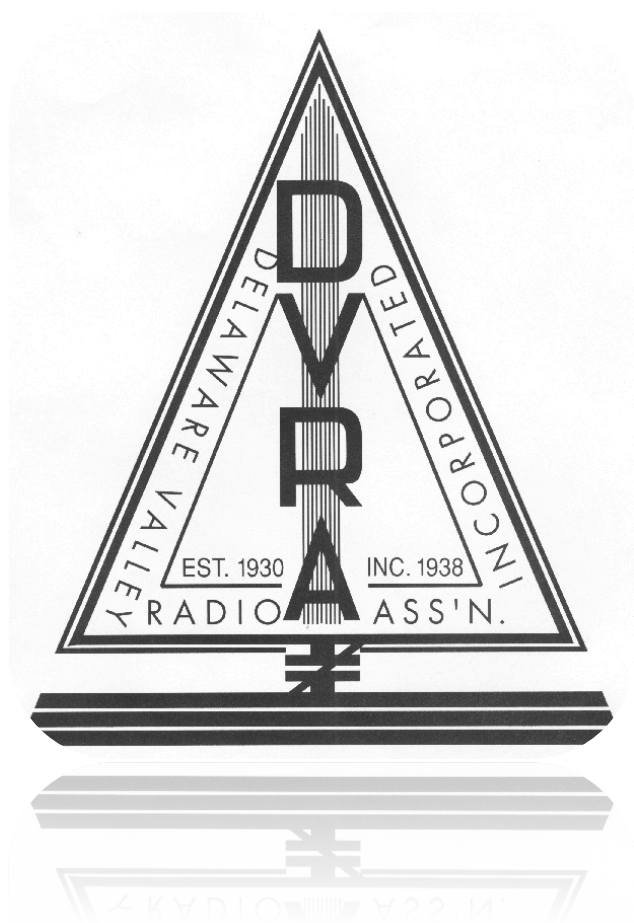# WIRELESS HILL BEACON

Delaware Valley Radio Association

OFFICERS
President
    M. Juza, KC2TGM
Vice President
    S. Costanzo, KC2VDL
Secretary
    L. Weight, KC2MTO
Treasurer
    R. Kubinski, KC2PQC

DIRECTORS
Membership
    L. Weight, KC2MTO
Radio Station
    M. Juza, KC2TGM
Repeater Operations
    L. Price, N2KPC
    M. Juza, KC2TGM (asst)
Physical Plant
    H. Gold, AB2VG
    D. Norcross, K2DRN (asst.)
Public Information
    T. Reeg, K2TFR
Training & Examinations
    D. Wright, AA2F
Publications
    A. Flinsch, AB2RC
Programs
    G. Wilson, K2GW
Immediate Past President
    R. Schroeder, N2HK (SK)
Web Service
    M. Juza, KC2TGM
Hamfests
    Open

Meeting – February 11th 2015
The regular monthly meeting will be held at 7:30 PM on Wednesday, February 11th, at Our Lady of Good Counsel Church, on Upper Ferry Road at Wilburtha Road in West Trenton. The site is easy to reach from I-95 or NJ-29. Talk-in is available on the 146.67 (PL 131.8) and 442.65 repeaters. The directors meeting takes place 1 hour earlier at 6:30 PM.

ARRL Section Manager, "Skip" Avery, N2EI, will be giving a presentation the state of the Southern New Jersey Section and the ARRL.

DVRA Nets
2-meter & 70-cm nets on the club repeaters 146.670 pl 131.8, 442.650 pl 131.8
2-Meter Nets:
The Pepper Net 10:00 PM Daily
Mercer Co. Emergency Net 7:30 PM Tuesdays KB2EGI, coordinator.

Training & Upgrade Classes
Don Wright, AA2F, periodically holds Technician and General classes.
Classes are held at various locations. Call Don at 609-737-1723 to register.

Exam Schedule
January 17, March21, May16, July18, September 12 and November 14. All are at 12:15 at the Hopewell (Township) Branch of the Mercer County Library at 245 Pennington-Titusville Road , midway between Route 31 and the Hopewell Valley Central High School. Please bring $15, cash or a check made out to ARRL-VEC, and a photo identification - driver license, passport, etc. Contact Don/AA2F aa2f@arrl.net or 609-737-1723 for details.

Please Visit Our Sponsor

Fame and Fortune Await
Want to become rich & famous – write an article for the DVRA Beacon. Fame among local hams almost guaranteed – fortune is up to you (and your luck in Powerball). Deadline for submission is one week before the monthly meeting (that would make the deadline the first Wednesday of the month). For details contact Alex / AB2RC – ab2rc@ab2rc.net

End of Paper Licenses

Starting February 17, the FCC no longer will routinely issue paper license documents to Amateur Radio applicants and licensees. The FCC has maintained for some time now that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS), although the FCC has continued to print and mail hard copy licenses. Under the new procedures, licensees will access their current official authorization via the ULS License Manager. The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one. Licensees also will be able to print out an official authorization - as well as an unofficial "reference copy" - from the ULS License Manager."

We find this electronic process will improve efficiency and reduce regulatory costs," the FCC said. According to the WTB, the new procedures will save at least $304,000 a year. The FCC said that applicants or licensees who include a valid e-mail address under "Applicant Information" in the ULS will receive an official electronic authorization via e-mail. New license applicants who do not provide a FCC Registration Number at the examination point will receive a printed license as well as an FRN and a temporary password to access the Commission Registration System (CORES).

The ULS License Manager now includes settings that allow licensees to notify the FCC that they prefer to receive authorizations on paper. Once the final procedures go into effect designating electronic access as the default, licensees can change the ULS License Manager setting so that the Bureau will print and mail a license document. Licensees also may contact FCC Support via the web at,
http://esupport.fcc.gov/index.htm?job=contact_fcc_support , or via telephone or mail to request paper licenses.

Website
Our website has been updated, and looks better than ever. Take a look at it
http://www.w2zq.com

Logbook of The World
On January 25, 2015, Mike AB2IO reported the latest QSLs for W2ZQ logbook of the world were:
W2ZQ records as of Jan 25, 2015

IU3X	2006-10-28 11:41:33	20M	SSB	14.22400	ITALY
EA5YU	2007-11-25 04:01:28	80M	CW	3.56560	SPAIN
9A2EY	2007-02-18 12:43:20	20M	CW	14.03400	CROATIA

5467 matches out of 16557 QSLs submitted, so 33.0% matched to date.

January 2015 Meeting Minutes
At 6:45 pm President Mark Juza KC2TGM opened the combined regular/director's meeting of the DVRA (based on requests from members, the regular and director's meeting are now held as one meeting) held at Our Lady of Good Council Church, West Trenton, Ewing, NJ. .

Mark explained that his philosophy as president is that DVRA is more than a club, it is an association, a purpose in common. He said that we all, as the association of members, have to come together and share the responsibility for maintaining the viability of the association, whether it be assisting at the shack or for our fund raisers such as the triathlon or ham fest. The association has led the way for over 75 years. DVRA has a distinct advantage with our shack.

Mark said the focus over the next year would be increasing membership, raising funds, coordinating more events. To make this happen he would need members to assume director positions supported by one or more assistant directors. Each Director would act as a committee head with a committee so that the load would not fall on one person but be spread out amongst the committee or DVRA as a whole.

Finally, business meeting would be formal with only one person speaking at a time (no conversations or side meetings).

MINUTES: Minutes are sent to the members. Minutes were accepted as posted.

TREASURER'S REPORT: Treasurer Ron Kubinski KC2PQC said the balance is $7349 which is just barely enough to cover expenses like tower repair, electricity, insurance, and heating oil.

ACTIVITIES: Director needed.

PUBLIC RELATIONS: Director needed.

SHACK: Hy Gold AB2VG will take a look at the 70 watt high pressure sodium lamps and repair or replace them as necessary. These lamps are about as efficient and cost effective as is possible. Hy will need an assistant or two to climb ladders. Mark will work with a team to address the beam antenna issues. A discussion will be held at the shack on 1/17/15; all welcome.

REPEATER: Gary Wilson K2GW bought a YAESU DR-1X repeater for a cost of $500 which he funded as a donation to DVRA. THANKS GARY! This is a major step to up-grade our repeater system!

EXAMS: Don Wright AA2F said exam session would be held this weekend. He asked for assistance.

WEB SITE: Bob Cardone KD2EIM is considering if we need a visitation counter to determine how many visit our web site. He is looking for input.

RADIO MERIT BADGE: On January 10, 2015 about a dozen DVRA members, lead by member and Scout official Gary Wilson K2GW, assisted with this program at TCNJ. About 50 Boy Scouts participated and received their Radio merit badges. The boys were divided into groups which attended classes and under Ham supervision operated a 2M radio (talking to the Battleship NJ (thanks for your support!) and HF radio (talking to points in the mid-west and South).

ROSTER: A current list of paid up 2015 members will be provided by Lance.

PROGRAMS: Gary Wilson, Program Director listed the February and March programs.

RADIO FUND: At this point $1480 has been raised toward the $2000 goal for the new radio for the shack.

HAMFEST: Frank Paleck KC2TKD said that planning meetings will be kicked off shortly for this year's hamfest.

The meeting ended at 7:40 pm.

PROGRAM: YAESU's "System Fusion" by Cory.

Submitted by: Lance E. Weight KC2MTO, Secretary, DVRA
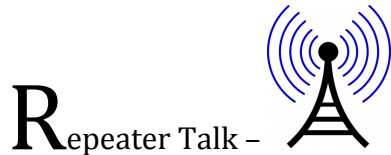
Repeater Talk –

DVRA has recently made the decision to move ahead with a renewal of our repeater systems using the Yaesu System Fusion technology. The club has recently ordered two of the DR-1X machines to upgrade our existing 2 meters and 440 units. DVRA will be joining a rapidly growing national community of System Fusion repeater sites not only in our great state of NJ, but also Pennsylvania, Delaware and New York.

As Yaesu is backordered on these innovative repeaters, the club expects delivery in the March-April timeframe. The initial set up would utilize our clubs infrastructure to quickly get the machines on the air, however many ideas are being offered by interested club members on how to implement the new machines and improve coverage and use.

In the meantime Yaesu System Fusion HT's and Portables are currently available from your favorite HAM vendor and offer both traditional and digital modes for flexibility.

If you're interested in sharing ideas or being a part of the repeater working group / subcommittee contact me via NJ3U @ ARRL.NET.

The Yaesu System Fusion is a repeater system that utilizes the latest technology at the same time it offers the best of both Analog and Digital worlds. The DR-1X machine is capable of handling both analog and digital communications this allows clubs to transition their user community from pure analog FM into the world of Digital C4FM without losing the use of legacy equipment for the sake of the new digital approach.

While digital UHF/VHF communications is not unique to Yaesu, the ability to have a dual mode repeater with Automatic Mode Select (AMS) is. The AMS function allows the machine to detect the type of incoming signal and either repeat it in a similar mode or to a preset mode.

The AMS function allows the club several options during the implementation of these new machines that would allow the users of traditional FM HT's, Portable or Base units to continue using their equipment and open the door to the digital technology.

Stayed tuned to the club web page and the DVRA Wireless Hill Beacon newsletter for news on the Yaesu System Fusion technology as well our plans for the clubs repeater system. As I wrote earlier if you would like to contribute with ideas to the working group/subcommittee contact me directly via my call @ arrl.net

73 NJ3U Rory

With Just a WSPR
By Dan Romanchik, KB6NU

It's really amazing what you can do with computers in amateur radio, and there's been an explosion in the number of digital modes. One interesting mode that I've recently been introduced to is WSPR, which is short for Weak Signal Propagation Reporting. The protocol and the original WSPR program was written by Joe Taylor, K1JT, and is designed for sending and receiving low-power transmissions on the HF bands to test propagation paths.

I won't try to cover all the technical details here. There are several sites that cover them pretty well:
        * Wikipedia: WSPR
(http://en.wikipedia.org/wiki/WSPR_%28amateur_radio_software%29)
        * G4ILO's Shack: WSPT - Distant Whispers
(http://www.g4ilo.com/wspr.html)

I was introduced to WSPR by my friend, Joe, AC8ES. He posted a message to our club mailing list asking if anyone had a toroid core that he could buy to make a QRP balun for 10 MHz. When I asked what he was going to use it for, he said that he was making a WSPR transmitter with a Raspberry Pi, and the balun was for the dipole he built for it. He said that he'd gotten roped into doing this because he'd attended a local Raspberry Pi users' group, and when he mentioned he was an amateur radio operator, they encouraged him to try this project.

How could I refuse a request like that? I have a whole kit of ferrite cores, and after some back and forth, we found a small core that he could use.

The software he chose is WsprryPi (https://github.com/JamesP6000/WsprryPi). It's described a "Raspberry Pi transmitter using NTP-based frequency calibration." It uses a GPIO port to generate WSPR signals anywhere from 0 to 250 MHz. Joe said that there are several Raspberry Pi programs that run WSPR, but that he chose this one because it seemed to have more features than the others.

Figure 1 shows Joe's setup. Since the output generates a square wave, a low-pass filter is needed to filter out the high-frequency components. As you can see, the GPIO output is fed through a 0.1uF decoupling capacitor into a Mini-Circuits 10.7MHz low-pass filter, then to a 1:1 balun, which is connected directly to the

dipole elements.

Joe says, "The antenna is just a dipole taped up to the walls of my living room and hallway." As you can see he made the balun and dipole from 24 ga speaker wire.

The performance of this setup has been kind of amazing. In one e-mail, Joe reported, "Your toroid seems to be working well. Got the balun and antenna finished and executed seven WSPR transmissions from the Raspberry Pi. The WSPR reporting website WSPRnet (http://wsprnet.org) came back with a couple dozen reception reports; typical distance is ~300+ miles, max was 593 miles." In a second e-mail, Joe writes, "Did a few more beacon transmissions and checked the WSPR signal reports again. Someone picked up my 5 mW signal from 1010 miles away in Canada."

Joe's turned into quite a WSPR fan. He's even written an Android app - WSPRnet Viewer (https://play.google.com/store/apps/details?id=com.glandorf1.joe.wsprnetviewer.app) to retrieve and displays report from www.wsprnet.org. Tapping on a specific report displays more details about it, along with a world map that shows transmitter and receiver locations.

Unfortunately, I don't have a Raspberry Pi, or I'd try this as well. I do have a BeageBone Black, but there doesn't seem to be software that I can download and install as easily as the Raspberry Pi software. That being the case, this might be a good excuse to purchase one of those new, cheaper RPis.

When he's not digging through his junk box or teaching amateur radio classes, KB6NU writes about amateur radio at KB6NU.Com. He has just released The CW Geek's Guide to Having Fun with Morse Code. The book is available on Amazon.Com or on KB6NU.Com.