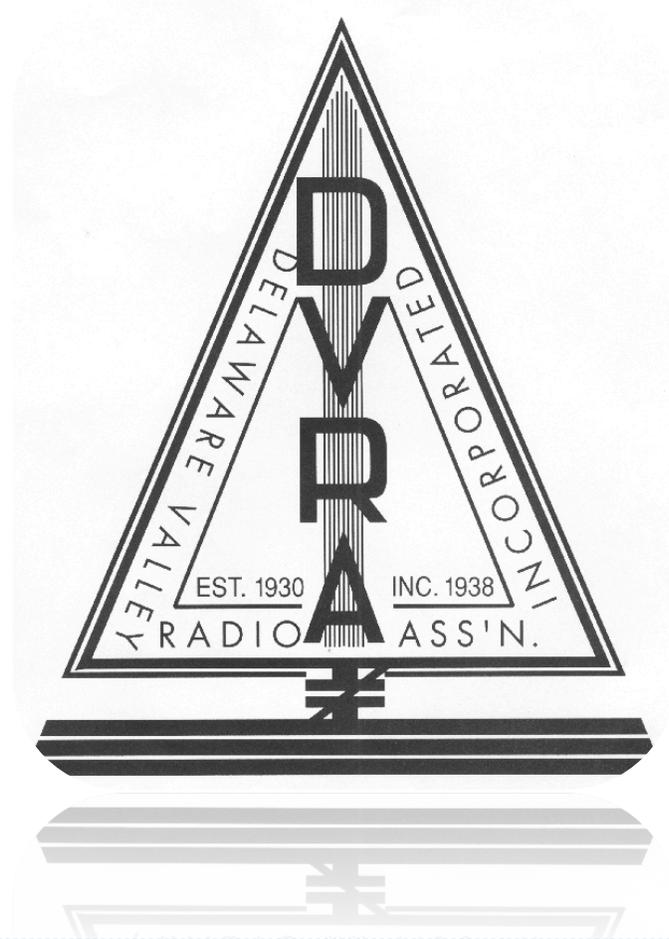


# WIRELESS HILL BEACON

## Delaware Valley Radio Association



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M. Juza, KC2TGM  
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R. Schroeder, N2HX  
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  
N. Perez, NY8N  
Web Service  
M. Juza, KC2TGM  
Hamfests  
Open

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### **Meeting – June 12th 2013**

The regular monthly meeting will be held at 7:30 PM on Wednesday, July 10<sup>th</sup>, 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 is 1 hour earlier at the club shack.

## Meeting Minutes

### Minutes for the Directors & General Meetings

Directors meeting convened at 6:30pm

1. Lawn mower needs a new engine (contact Tom KC2GYC may have the answer)
2. Both generators were auctioned off
3. Gary will generate a new mailing list on Yahoo groups.
4. Hy measured oil at the shack- 5/8 full
5. Tim got the permit for the picnic on Aug.14th, 6:30 to 8:30pm, no alcohol! Club provides burgers, hotdogs, soda, members provide pot-luck salads, food, desserts.
6. Club shack needs painting-job for a work party?

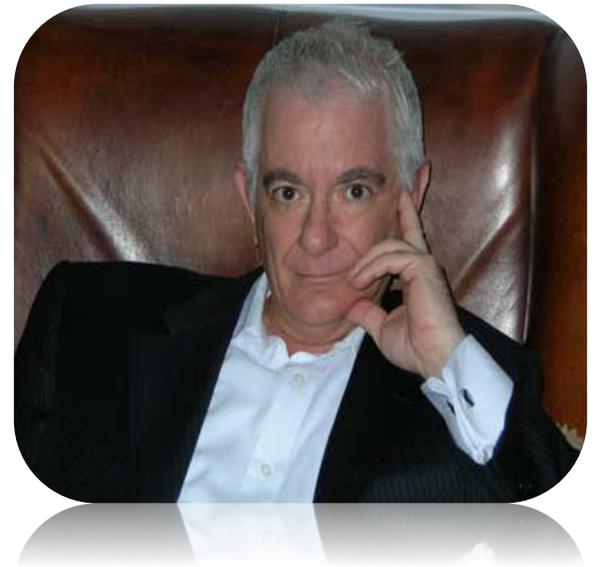
General meeting convened at 7:30pm

1. treasurer reports balance of \$1608.
2. Steve reports NJ Triathlon July20 and 21stat mercer county park. Maps are available on line, please sign up on work sheet for the 22 locations. This our main fund raiser for the year and we need all hands to show up! Each participant will ear \$25. for the club. (hours are 6am - noon) both days.
3. Loyd, N2KPC, Field day was held at the shack on June 22-23. He was at the shack on Friday, Saturday and Sunday. This was a casual approach not a contest, but a learning experience! Hotdogs were available. I saw several interesting new antennas on Saturday. We will get a full report at the next meeting.
4. July 27 and 28 there will be a N.J. counties QSO party sponsored by the Burlington county club.
5. Frank Palachak will be in charge of the Hamfest at West Windsor Park on Sept.14th in the pool area. permit cost was wavered.
6. Frank also weded all the cracks on the south tower. They were caused by erosion from the grounding straps, which grounding straps need to be fastened to the steel brace at the bottom.
7. The picnic will be at Ewing park, Lance is Chairman, he will make a list for the potluck.
8. Joe fixed the rotator cable connections, 2 were bad. Its working now but a new rotator cable is needed.
9. Mark gave a report on the Toure de Cure for diabetes. A new approach was to use the computer and APRS (radio and gps) to show route locations in real time. It was a learning experience but was well received by the Toure saying we are well ahead of the curve for next year.
10. Loyd reported on a new transceiver for QRP from Tentec at a reasonable price.
11. Dvra would like to thank KC3AHY for her donation of the proceeds from the sale of two pieces of artwork
12. 3 new members were inducted: Lisa Jakubek KC3AHY, Dave Morrison KD2AVE, Gary Kinney KC2ULS

BALANCED LINES 2013 Installment 7  
by Bob Schroeder, N2HX  
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### THE ELUSIVE TM 11-314

How it came to be in my possession, I can't recall. One of the more unusual books in my military collection is my copy of War Department Technical Manual TM 11-314, "Antennas and Antenna Systems" which was published by the War Department and dated 30 November 1943. The warning on the front cover states that the material contained within the book is restricted. Nowadays, you can find the exact same thing in any RF book, particularly the ARRL Antenna Handbook.



And speaking of the ARRL Antenna Book, it is a very curious coincidence that my 1949 edition of the ARRL Antenna Book looks almost exactly like the 1943 TM 11-314. Both books have the same glossy page stock and use the exact same font. Even the diagrams and tables are the same. If you were to compare the two side by side, you might think that one publisher plagiarized the other. I asked Steve Ford, WB8IMY, the QST Editor-In-Chief and Publications Manager for the ARRL if he had any information on the TM 11-314. He informed me that no one at the ARRL had any direct memory of such collaboration; however, some staffers recalled that the League did produce some reference manuals for the U.S. military during World War II. It would appear then that we have two important connections between the military and the League. Hiram Percy Maxim's father, Hiram Stevens Maxim, produced the first fully automatic machine gun. And now we learn that the League supported the army signal corps by producing radio communications field manuals.

Why all this interest in a WW II radio manual? For one thing, the information contained within its pages is still valid today. The principles of high frequency radio haven't changed just because the war is over. In fact, if you're an HF enthusiast, this tech manual is quite useful. Another reason I find this particular copy interesting is its nostalgia value. The name stamped on the front cover is a Capt. F. J. Biltz of the Signal Corps. He didn't write any notes in the book; however, I can't help wondering whatever happened to him.

As of this writing, there are some copies of the TM 11-314 available on Amazon as well as eBay. If you enjoy collecting old books as much as I do, you should add this to your collection.

## ALL TAPPED OUT

Before you read any further, please take a minute and use your favorite search engine to look up the term “pen register”. Then come back here and finish reading. But be aware, Big Brother is watching your every web page.

If you did your homework assignment, you learned that the pen register goes back to the days of Samuel F. B. Morse. The Wikipedia article covers the topic pretty well. To contrast between the Morse code register and the modern day “dialed number recorder” or DNR, it’s important to learn the evolution. The telegraph, as we all know, used pulses of direct current to operate a sounder and, in the case of a pen register, to record the dots and dashes created by those key clicks. Because the original telephone used a rotary dial (sort of a redundant term!), it was very easy to adapt the Morse code machine to a telephone DNR. Pulses of DC are pulses of DC; it doesn’t matter where they came from. This technique also gave rise to the paper tape fire call box encoders that were very prevalent on the streets of Trenton when I was growing up.

Even as the Edward Snowden NSA story continues to unfold, one thing is certainly clear: capturing the numbers that a telephone subscriber dials is at least sixty years old. When I worked in the wiretapping and electronic surveillance profession for a government agency back in the Seventies, pen register machines operated on a wind-up clock mechanism and came in beautifully handmade mahogany cases. The mechanism itself was magnificently crafted from brushed brass. It held a spool of paper tape not unlike the kind used on a 1920’s stock market ticker.

In those days, when the Constitution still meant something, a law enforcement agency used plain old-fashioned detective work to establish probable cause against a suspected criminal. The collected evidence was brought before a judge for evaluation. If he was sufficiently convinced that probable cause was present, the judge signed an order to set up a DNR for that subject. There was an agreement with the Bell System that they would provide law enforcement with pair and cable information if there was a court order to back it up. All other things being equal, the pen register would be attached to the subject’s telephone and the outgoing dialed numbers would be recorded on the paper tape. No audio, just numbers. It was up to the law enforcement agency’s team of intelligence analysts to get a “reverse look-up” on each outgoing number. What I call a “family tree” was created (much like on Ancestry.com) which would depict in a graphical manner the relationship between the suspect and the people he or she called. Furthermore, it would establish a relationship between any of those people between themselves. Pending further evidence, the recording of actual conversations might be required. If so, another court order would be required as well. In the 1970s something called the “minimization law” was created to protect the wiretapped subject’s privacy of conversation. This necessitated the creation of a new technology and monitoring procedure that required the actual eavesdropping to be kept to a minimum (hence the name). Police were allowed to “punch in” and listen to the actual call only sporadically to hear if anything

relevant to the crime was being discussed. If the conversation contained no such relevance, they had to stop recording. The law itself can be found in 18 U.S.C. Section 2518(5) and in many other places.

By now it should be clear that the practice of capturing only dialed numbers is old news. Also old news is the practice of sniffing out certain “words of interest” both in telephonic and Internet conversations using classified programs such as Carnivore and Echelon. The salient difference between then and now is that in the old days, it required gumshoe police work to run down tips and leads on a suspected criminal. Now, thanks to modern technology and the transmission of digital information, it is much easier to simply trawl an entire communications network and hope that something juicy will pop up. A little known fact is that the federal government requires all telephone and cellular switching equipment used in the U.S. to be designed so that it is “tap-able”. When a company like Verizon is handed a subpoena to turn over subscriber information, said information (euphemistically called *metadata*) must be obtainable. For many years, public libraries have been forced to cooperate with the FBI to provide lending data for certain borrowers who might be suspected of a crime. With all this warrantless trawling, is it any wonder that the NSA has to build a \$2 billion data center in Utah just to sift through all this metadata? I’ve already written in a previous column about the monstrous power consumption that all this monitoring drains upon our power grid due to the sheer computing power that is required. In case you missed it, you can read the story on *Wired* magazine’s web site.

[http://www.wired.com/threatlevel/2012/03/ff\\_nsadatacenter/](http://www.wired.com/threatlevel/2012/03/ff_nsadatacenter/)

A few years ago I watched an episode of NOVA on PBS about non-lethal law enforcement technologies. One of the techniques that was presented involved the use of so-called “software updates” like those that Microsoft and Apple provide to their users. Nearly every computer owner dutifully obeys the recommendation to download these “critical updates” lest they think their computer will suffer some kind of malady. As the NOVA program showed, law enforcement can very easily embed spyware programs into every Windows or Mac computer by disguising it as one of these routine software updates. And if you think that Microsoft and Apple would not secretly cooperate with the federal government, you’d be wrong. Each one of us probably has some government-implanted software on our computers right now that was disguised as a “critical update”. (Naturally, this secret software would escape detection by civilian anti-virus and anti-spyware programs.) The new iPhone iOS 7 upgrade that was announced on June 10 might very well contain secret features that would assist government surveillance. Apple will never tell.

All for now.

Comments invited.

Bob Schroeder, N2HX  
Past President, DVRA

**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.

**Logbook of The World**

Mike AB2IO reports that the current W2ZQ LOTW

Latest QSL matches 5/23/2013

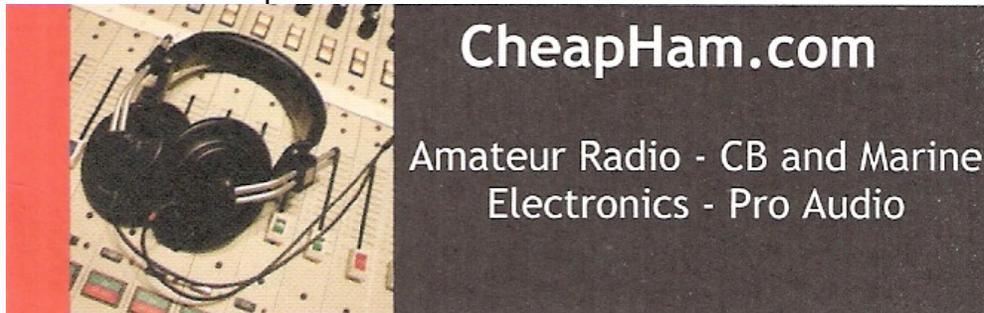
5209/16555 = LOTW QSLs/Total worked

9A4KW	2008-03-02	15:29:49	20M	SSB	14.26793	CROATIA
F8CRS	2008-03-02	20:40:49	20M	SSB	14.17300	FRANCE
PA1T	2007-10-28	18:06:16	20M	SSB	14.16670	NETHERLANDS
PA1T	2006-10-29	13:25:02	20M	SSB	14.189	NETHERLANDS

**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](mailto:ab2rc@ab2rc.net)

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