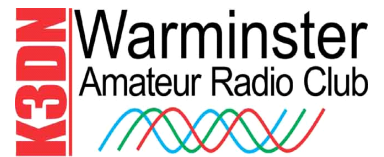




FEEDBACK



Web Site k3dn.org

Warminster Amateur Radio Club

December 2014

Next Meeting December 4th, 2014 - Holiday Dinner

President's Message

I am writing this message a few days after Thanksgiving. Family has finally left and the house has quieted down before the next holiday. As I reflect back on 2014, I am thankful for a wonderful family, friends and numerous grandchildren who we enjoy spoiling like our grandparents did for us when we were young. And of course, my beautiful wife who convinced me to go to the hospital when I had a heart attack last week. Two stents and four days later I returned home in time for our annual family gathering, thanksgiving dinner.

If you have not been on the air lately, you're missing a lot of activity. 10 Meters has been open to Europe and Asia and it's contest season. CQWW SSB and ARRL Sweepstakes contests are behind us and this past weekend was the CQWW C'W contest. My thanks to Andy, KD3RF, who operated with me as I recuperate and helped repair my 40 Meter vertical antenna in the middle of the contest.



In December we find the ARRL 10 Meter contest. If band conditions continue to favor the top bands, this is an easy one to work and primarily focuses on US States and Canadian Provinces. An excellent way to earn your Worked All States Award.

We need a Hamfest Chairperson. Without one there will be no Hamfest!

There are many individuals in WARC who dedicate their time to help with club functions and community service activities. They always seem to be the same people. Whether it's work or increased family responsibilities, it's becoming tougher to find WARC members to take on important responsibilities. One example, is that we are in need of a Hamfest Chairperson. The Hamfest Chairperson's role is to coordinate the activities of Team Leaders who have already volunteered. If no one steps forward to help out in this role, WARC will not hold a Hamfest in 2015. So, take time and think about volunteering. Many of us have run the Hamfest in the past and are able to assist a Chairman in this role.

As WARC implements electronic voting and member surveys, we need to have a Master Emailing list of all members. Currently we have a number of mailing lists that include Feedback, WARC-talk, Website access Lists, etc, that have not been updated or validated against our Master Membership List in many years. When we looked at these lists we find multiple email addresses for the same individual and numerous email addresses that are not associated with a Name or Call Sign. In addition, we use only WARC-Talk and Feedback to communicate with our members. You have the option to opt-out of receiving Feedback or WARC Talk, but as we implement electronic voting and member surveys in the future, we still need a way to communicate with our members. In December, Vinny, K3VJP and Andy, KD3RF will be working on this project for the club. To start, you will be receiving an email asking you to validate your name and call sign. Please keep a lookout for it and respond to this email in a timely fashion.

Our December meeting is the annual Holiday Dinner Party on December 4th. A presentation on Emergency preparedness/Go-Kits is scheduled for our January meeting. February meeting will feature our annual WARC Club Auction. Since our January meeting falls on New Year's Day in 2015, our January meeting is being moved to Thursday, January 8th.

Our club station is currently off the air as the Senior Citizens Center recently replaced their roof. We have permission from the Township to reinstall our Alpha Delta antenna and hope to have it up again soon. Once that has been accomplished, the club station will open 1 1/2 hours before our club meeting (6 pm to 7:30 pm). It's a great opportunity to get on the air. So, if you have a license and no home station...no more excuses to getting on the air!

Our club radio classes will start again in the Spring with Tech Classes being offered.

(Continued on page 2) _

(Continued from page 1)

Have fun and get on the Air!

Happy Holidays -
Irwin, KD3TB
WARC President

A CENTURY OF AMATEUR RADIO AND THE ARRL

VHF/UHF scanners had become very common by the 1990s, and many local and state governments enacted laws making their use illegal. At the same time, several manufacturers of amateur VHF/UHF equipment started including scanners in their amateur transceivers, which provided reception outside the ham bands. This put some hams between a rock and a hard place.

In the late 1980s, the ARRL launched an effort to have the FCC clarify its rules regarding scanners. Finally, on August 20, 1993, FCC published a Memorandum and Order to settle the issue. The Order stated that hams have a federal right to own and operate their equipment, which preempts state and local radio laws. Furthermore, the FCC's decision supported, at length, the very essence of the purpose of the Amateur Service. Once again, the League represented our interests and preserved our place in radio.

One of the Nobel Prizes awarded in 1993 went to Joe Taylor, K1JT, and Russell Hulse, ex-WB2LAV, for their discovery of binary pulsars and their investigation of the gravitational fields exerted by those ultra-dense stars. Joe credited his interest in Amateur Radio while still a teenager as leading to his chosen field of physics and to his Nobel Prize.

By 1995, the FCC had implemented electronic filing of license applications, greatly reducing the time lapse between passing a license exam and getting the license. The new system often reduced the waiting period to as little as 2 weeks.

By the 1990s, digital signal processing (DSP) was coming into use in the form of both homebrewed and factory-made devices. "DSP – An Intuitive Approach," by W9GR, in the February 1996 issue of *QST* explained how DSP works and urged hams to give it a try.

After many years of political unrest in Myanmar that resulted in the banning of Amateur Radio, the country formerly known as Burma starting cracking the door open to hams in 1994. Following 3 years of negotiations with Myanmar officials and two small-scale DXpeditions to that country, Martti Laine, OH2BH, obtained permission for a large-scale DXpedition that would demonstrate the value of ham radio to the government. A multinational ham team operating as XZ1A made many thousands of contacts and even operated in the CQ World Wide DX SSB contest. The article, "DXing from the Golden Land," published in the March 1996 issue of *QST*, told the fascinating story.

For many years, interest in 10 GHz operation had been building, spurred on by the ARRL's 10 GHz contests. By the mid 1990s, many hams were heading to the mountaintops with their small dishes to operate at 10 GHz. Coastal hams with pleasure boats would often go offshore to operate from the rarer grids, but sometimes they would have to suspend operation, when seas became high enough to make dish-pointing from their bouncing boats almost impossible.

Gate 1 of the long-awaited vanity call sign program finally opened on May 31, 1996, after many delays -- including a total federal government shutdown at the beginning of that year, because Congress could not pass a budget. Gate 1 accepted applications from former holders of expired and unused call signs and from hams asking for the call signs once held by now-deceased relatives. Gate 2 opened on September 23, 1996, for Amateur Extra class licensees to apply.

An interesting juxtaposition of two "the old and the new" articles appeared in the September 1996 issue of *QST*. The first was an article explaining how the then-new Global Positioning System (GPS) works. The next article looked far into ham radio's past as it attempted to explain the inexplicable mysteries of the Wouff-Hong and the Rettysnitch. The Wouff Hong and Rettysnitch were fictional tools that sprang from the imagination of "The Old Man" (Hiram Percy Maxim), to be used for punishing Amateur Radio operators who demonstrate poor operating practices.

As the "It Seems to Us" editorial related in the October 1996 issue of *QST*, "August was ushered in by a sudden announcement of rewritten FCC rules governing human exposure to RF fields, creating a mountain of uncertainty and concern in the Amateur Radio community." The "Happenings" column in that issue provided more details. An article in the January 1997 issue of *QST* further explained how the new rules would affect hams.

(Continued on page 3)

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In January 1997 a high-tech, massive, expensive, and very successful DXpedition was mounted to operate as VK0IR from Heard Island in the Antarctic. The 20-man crew, led by KK6EK and ON6TT, made a remarkable 80,673 contacts! The VK0IR story was told in detail in the September 1997 issue of *QST*.

The ARRL Board of Directors designated 1997 as Amateur Radio's Year of Public Service, with two aims. One was to publicize ham radio's major role in public service over its many decades of existence. The other was a large public relations effort to tell non-hams about ham radio.

The Phase 3D amateur satellite had been in the works for some time and was nearing its launch date. A five-part series of *QST* articles in 1996 and 1997 described the bird and how hams could use it. As told in the June 1997 issue of *QST*, for his Eagle Scout public service project, Brian, KC4LLD, volunteered to build the Phase 3D shipping container. The project eventually required the help of 21 other Scouts to complete.

On August 6, 1997, Gate 3 of the vanity call sign program was opened, with about 1500 immediate applicants. During 1997, Congress considered the wording of a bill telephone signals and to market equipments. The ARRL put forth a successful not be affected by the bill. -- *Al Brog-*

Courtesy of the ARRL Newsletter

to make it illegal to listen in on cellular service frequency that covered cellular service frequency effort to be sure that radio amateurs would *don, WIAB*

How High Should my Dipole Be? The Effect of Height Above Ground By Andy Vavra KD3RF



pole Be? Ground

We frequently hear the question: how high should my dipole be? Or alternatively, will my dipole work well at this or that height? Unfortunately, these questions can not be answered without first stating what you want the dipole to actually DO, i.e. how you plan to operate with it. Some possible goals for a dipole might be:

1. DX work.
2. Local work: nets and rag chewing.
3. Directionality: gain in one direction, or nulls in some other direction
4. Omni-directionality.
5. Feed point impedance of 50 ohms.

As you may surmise, many of these potential goals are mutually exclusive, or at least tradeoffs.

(Continued on page 4)

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However, once you define what you want to do with your dipole, then you can look at the radiation patterns to see if it will accomplish those goals.

I make the assumption that anyone reading this understands that DX work requires a low angle of radiation, with gain in the favored direction being desirable. Nets and rag chewing require a much higher angle of radiation and an omni-directional pattern. A null aimed in some direction may be desirable in various situations. Something close to 50 ohms impedance will aide matching and power transfer to/from coax cable.

There are many other potential goals for a dipole, but the ones I have listed are those that are most dependent on it's height above ground. Thus this discussion will not touch upon the issues of multi – banded operation, tuned open wire feeders, and the like. So, lets limit the issue at hand to: how the character of a dipole varies with its height above ground.

To investigate this problem, I have modeled a hypothetical wire dipole using the EZNEC program (from W7EL). This model is well within the verified capability of EZNEC.

For those interested in the modeling details, this dipole, named D40M, has the following specifications:

Material: #12 copper wire.

Length: 69.057 feet.

Ground Type: good (.005,13) NEC Sommerfield.

Frequency: 7.00 MHz nominal, but the comparative patterns were computed by adjusting the frequency slightly for resonance at each height.

Height	Height		Fav Dir	Fav Dir		End Dir	End Dir			
Wave			Gain	Angle/		Gain	Angle/		Feedpt	Res.
Lengths	Feet		(dbi)	Bmwidth		(dbi)	Bmwidth		Z	Freq
4.0*	560		7.75	4 / 4		5.57	72 / 13			6.93
3.0	420		7.83	5 / 5		5.25	68 / 14		77+ j11	6.94
2.0*	280		7.80	7 / 7		0	39 /		75 + j12	6.95
1.5	210		7.72	9 / 10		-2.50	33 /		75 + j11	6.96
1.0*	140		7.64	14 / 15		-11.00	20 /		74 + j08	6.96
.9	126		7.03	16 / 17		-8.30	22 /		85 + j13	6.94
.8	112		7.16	18 / 19		-6.40	25 /		84 + j26	6.88
.7*	98		7.95	20 / 22		-4.50	30 /		70 + j30	6.88
.6	84		8.35	23 / 26		-1.95	40 /		60 + j16	6.94
.5*	70		7.45	28 / 33		-0.51	43 / 33		71 – j00	7.00
.4	56		6.06	35 / 47		1.30	59 / 102		93 + j04	6.98
.3*	42		5.59	50 / 137		4.71	90 / 80		100 + j32	6.86
.2	28		6.70	90 / 118		6.70	90 / 67		71 + j56	6.77
.1*	14		8.21	90 / 103		8.21	90 / 66		23 + j39	6.84
.05	7		9.61	90 / 99		9.60	90 / 72		7 + j12	6.95

The dipole was modeled at various heights from .05 wavelengths (7 feet) to 4 wavelengths (560 feet) above good ground. One may argue that 560 feet is ridiculous for a 40 meter dipole, but keep in mind that the data can be scaled down to a 10 meter dipole with similar results.

The table below tabulates the results. In the first two columns, the antenna's height above ground is given in wavelengths and in feet. The next two columns show the maximum gain in the favored direction (i.e. broadside to the wire), followed by the launch angle and

the -3 dB vertical beam width. The next two columns once again present the gain and launch angle / beam width, but for the axial

(Continued on page 5)

Analysis, Favored Direction:

The first thing to notice is that the gain in the favored (broadside) direction varies very little with height. The important change in the broadside pattern occurs in the launch angle of the primary lobe. As the antenna moves closer to the ground, the launch angle of radiation gets higher and the -3 dB vertical beam width becomes broader. Note that below the benchmark height of 1/2 wavelength, the launch angle increases rapidly. Once the dipole is lowered to 0.3 wavelengths, most of the radiation goes in a vertical direction. This explains the frequently heard "rule" that a dipole must be at least 1/2 wavelength high to work. The seeming anomaly with the beam width below 0.4 wavelengths is easier to understand by viewing the plots shown below.

Analysis, End-Fire Direction:

One frequently sees a dipole azimuth pattern depicting a very sharp null off of the ends of a dipole. While technically accurate, this can be very misleading as the table above shows, and is a result of trying to depict a 3 dimensional pattern in 2 dimensions. This often seen null is only evident at the same launch angle as the maximum broadside gain. Of major significance is the large amount of gain off the ends at higher launch angles. Due to multiple lobes forming above 1/2 wavelength, this is not easily shown in tabular form. I have arbitrarily chosen to list gain and launch angle for the secondary lobe with the lowest launch angle, but recognize that there is frequently a stronger primary lobe at higher angles. Consult the plots below for a better visualization.

Analysis, Feed Point Impedance:

The reference antenna length was chosen to resonate at the 1/2 wavelength height. As expected, the feed point impedance oscillates significantly as the height changes from our reference point. Thus we verify the old adage that you must trim the dipole to fit your particular QTH (height being very important). The corresponding resonant frequency for each height is shown in the last column for reference, since complex impedance's may be of less practical importance to some.

So, How High should the dipole be to work well?

Now we are back to looking at what we want the dipole to achieve.

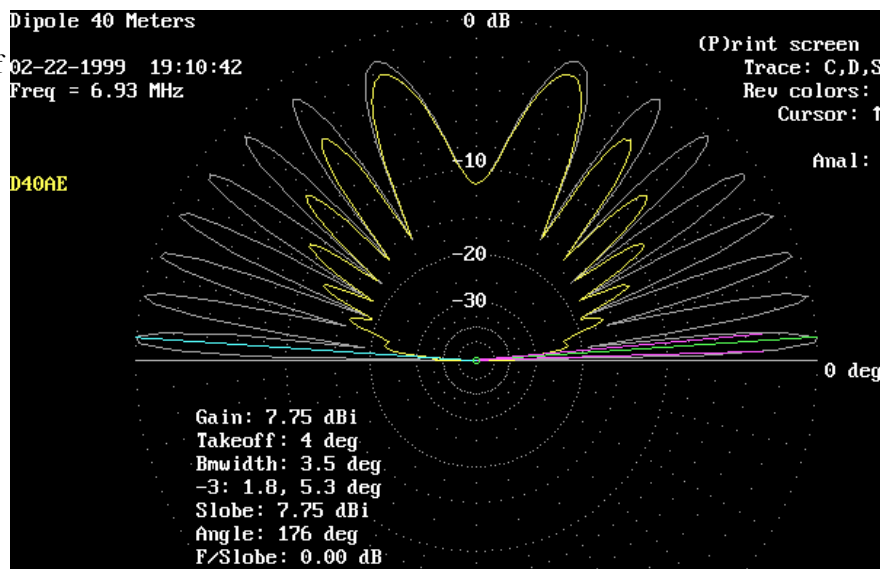
For DX work, higher placement is warranted, since more power concentrated between 5 and 15 degrees is reported to be of major benefit. Heights around one wavelength are necessary to get the broadside lobe to launch in this range. However, higher may not always be better. Pay careful attention to the magnitude of secondary lobes in the broadside direction, as well as high angle radiation off the ends. Some heights would appear better than others due to concerns with nulling out local QRM. A complete discussion of of this aspect is beyond the scope of this article, but may be investigated at a later date.

For local work, lower heights appear to be more beneficial. Note especially how omni-directional our dipole becomes at lower heights. Below 0.4 wavelengths, there is less than 1 dB of attenuation in the end fire direction, which suggests a height between 0.4 and 0.3 might be an ideal compromise for local nets and rag chewing.

Feed point impedance and matching does not seem to be of major concern except at very low heights. The effect of height on 2:1 SWR bandwidth was not investigated.

Radiation Plots

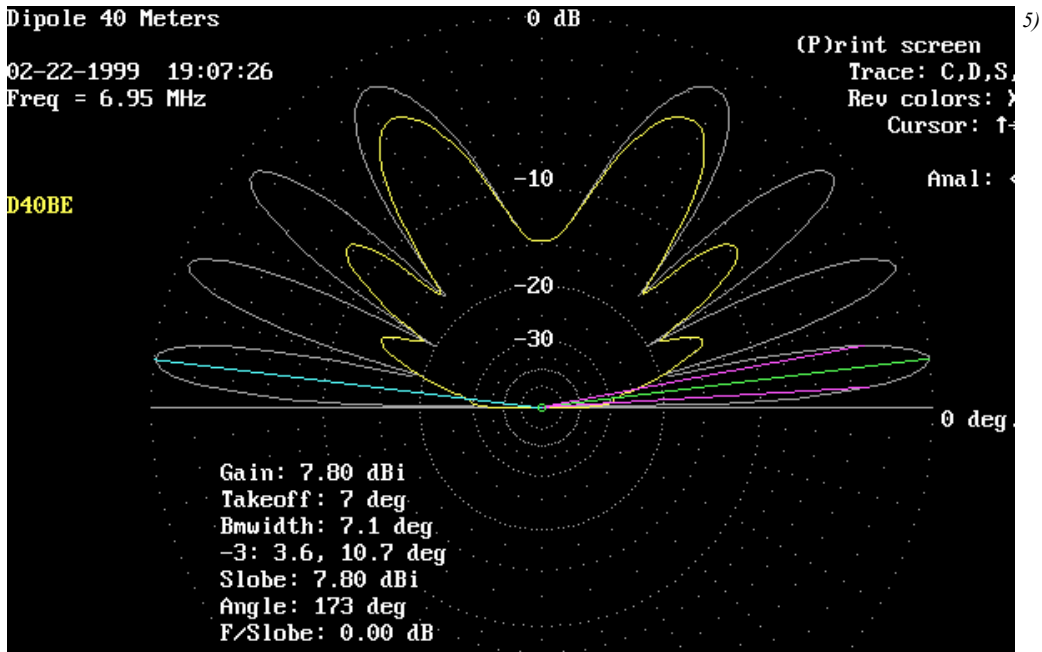
direction (off the ends of the last 2 columns list the the feed point, and the quency at that specific



the wire). Finally, the complex impedance at actual resonance frequency.

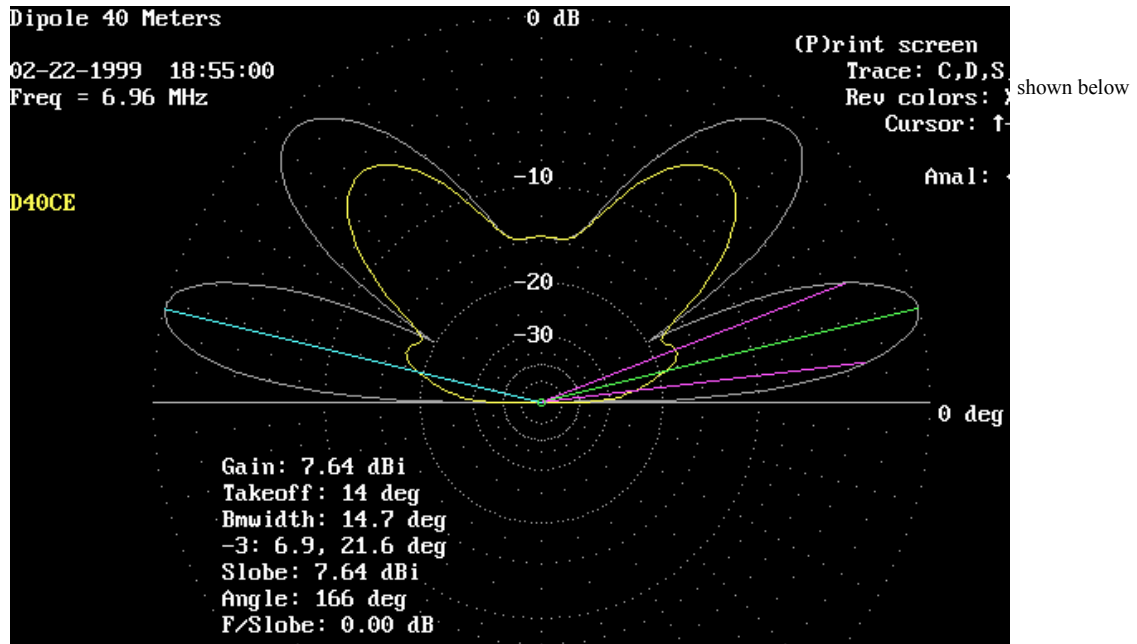
This plot shows the elevation patterns at a height of 2 wavelengths, or 280 feet.
White trace is broadside. Yellow trace is axial (off the ends).
Still Lots of high angle radiation.

(Continued from page

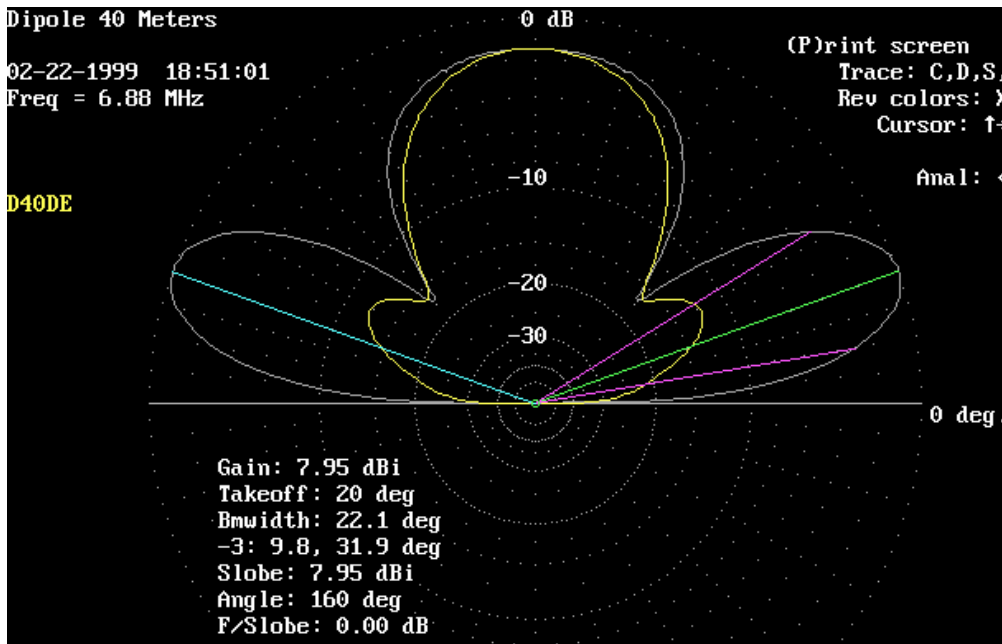


This plot shows the elevation patterns at a height of 1 wavelength, or 140 feet.
White trace is broadside. Yellow trace is axial (off the ends).
The secondary lobe is down to 47 degrees, but the primary lobe is up to 14 degrees.

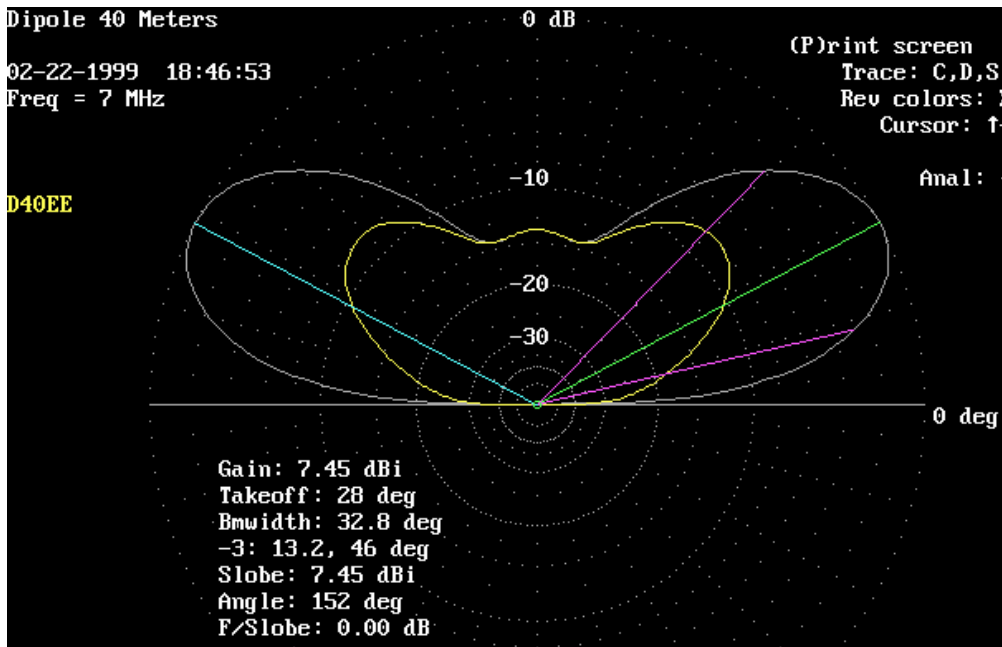
* Elevation plots



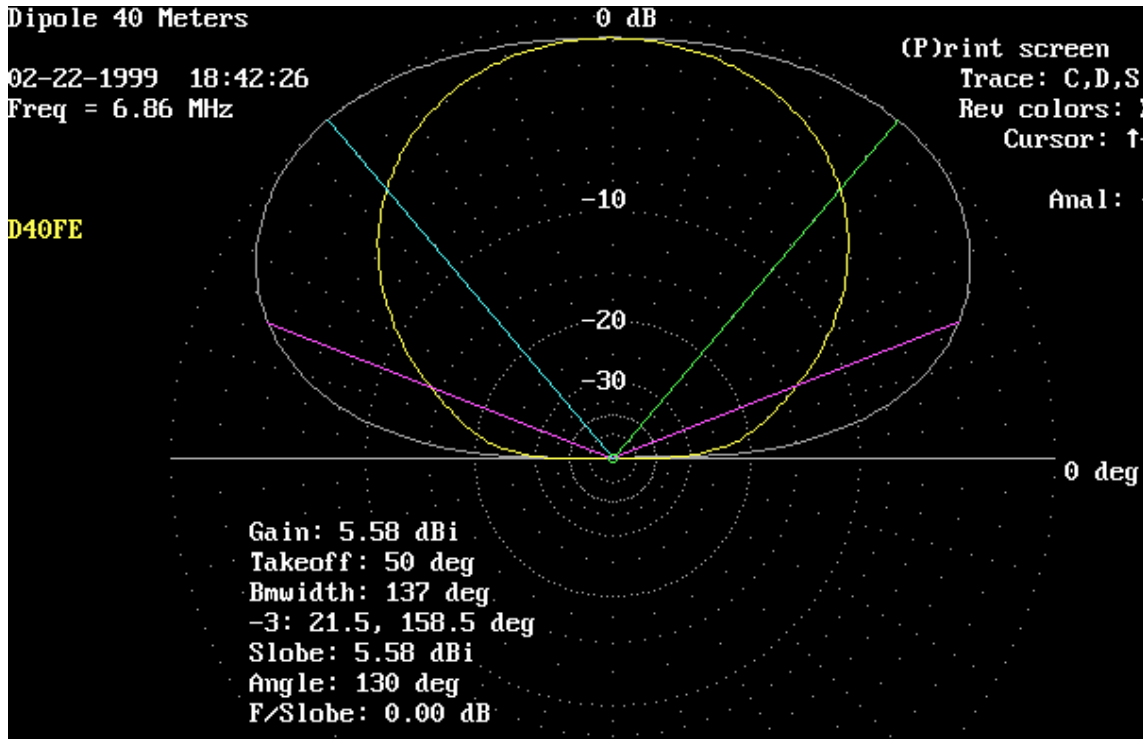
This plot shows the elevation patterns at a height of 0.7 wavelength, or 98 feet.
 White trace is broadside. Yellow trace is axial (off the ends).
 The primary lobe is up to 20 degrees.
 Note the large vertical lobe which has appeared!



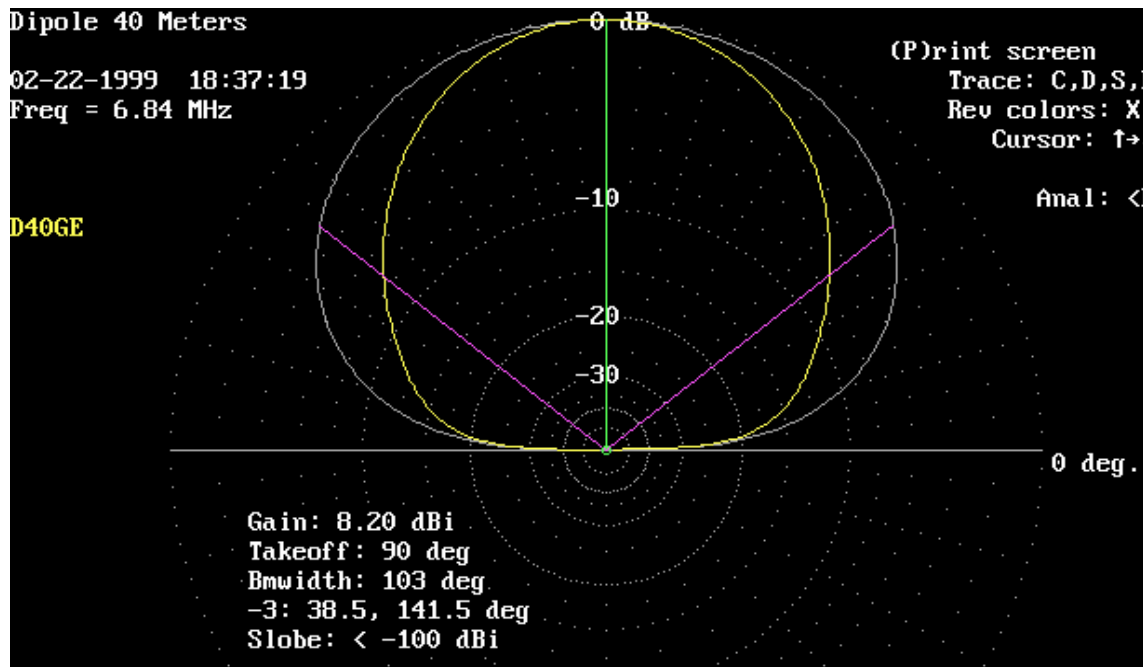
This plot shows the elevation patterns at a height of 1/2 wavelength, or 70 feet.
 White trace is broadside. Yellow trace is axial (off the ends).
 Now that's a classical dipole pattern!



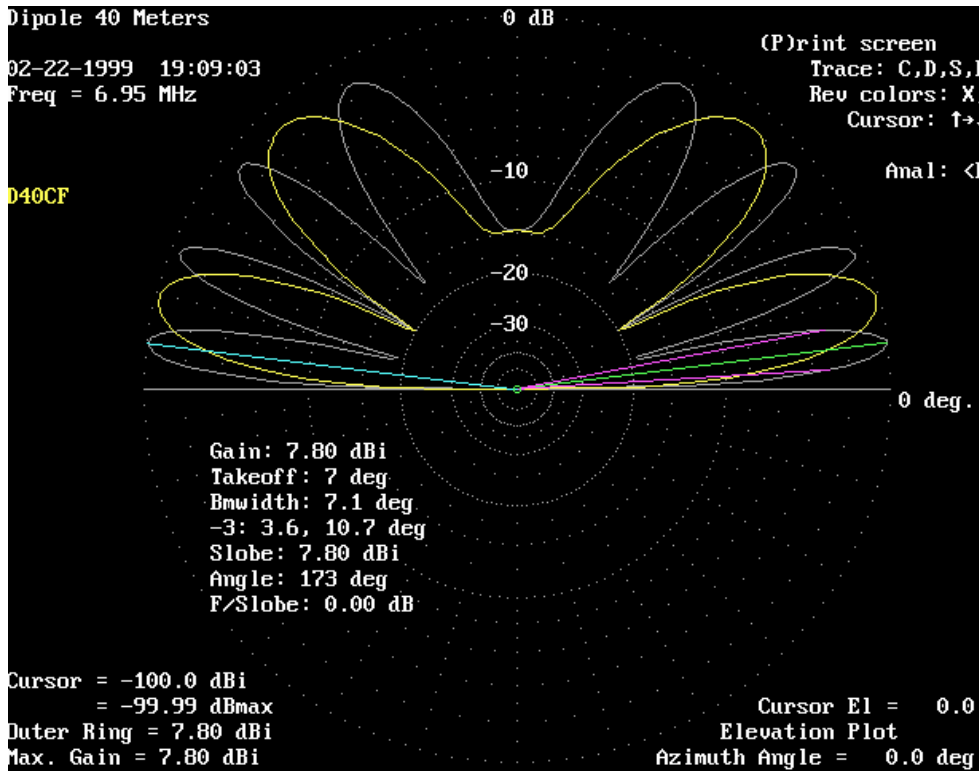
This plot shows the elevation patterns at a height of 0.3 wavelength, or 42 feet.
White trace is broadside. Yellow trace is axial (off the ends).
We are entering the "skywarmer" mode here.



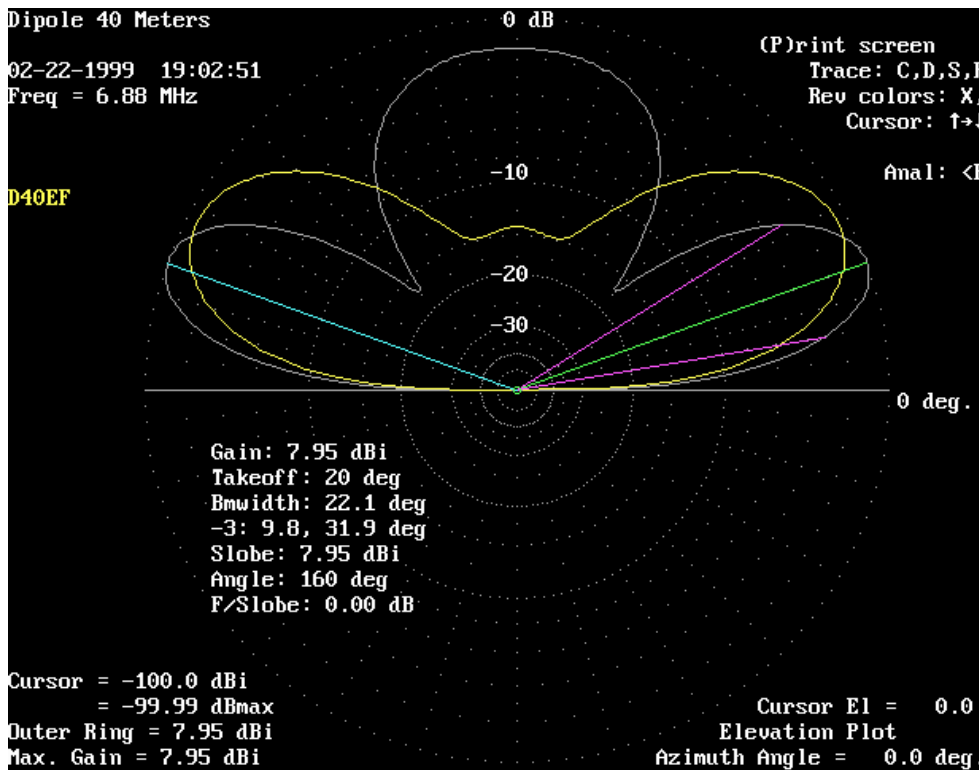
This plot shows the elevation patterns at a height of 0.1 wavelength, or 14 feet.
White trace is broadside. Yellow trace is axial (off the ends).



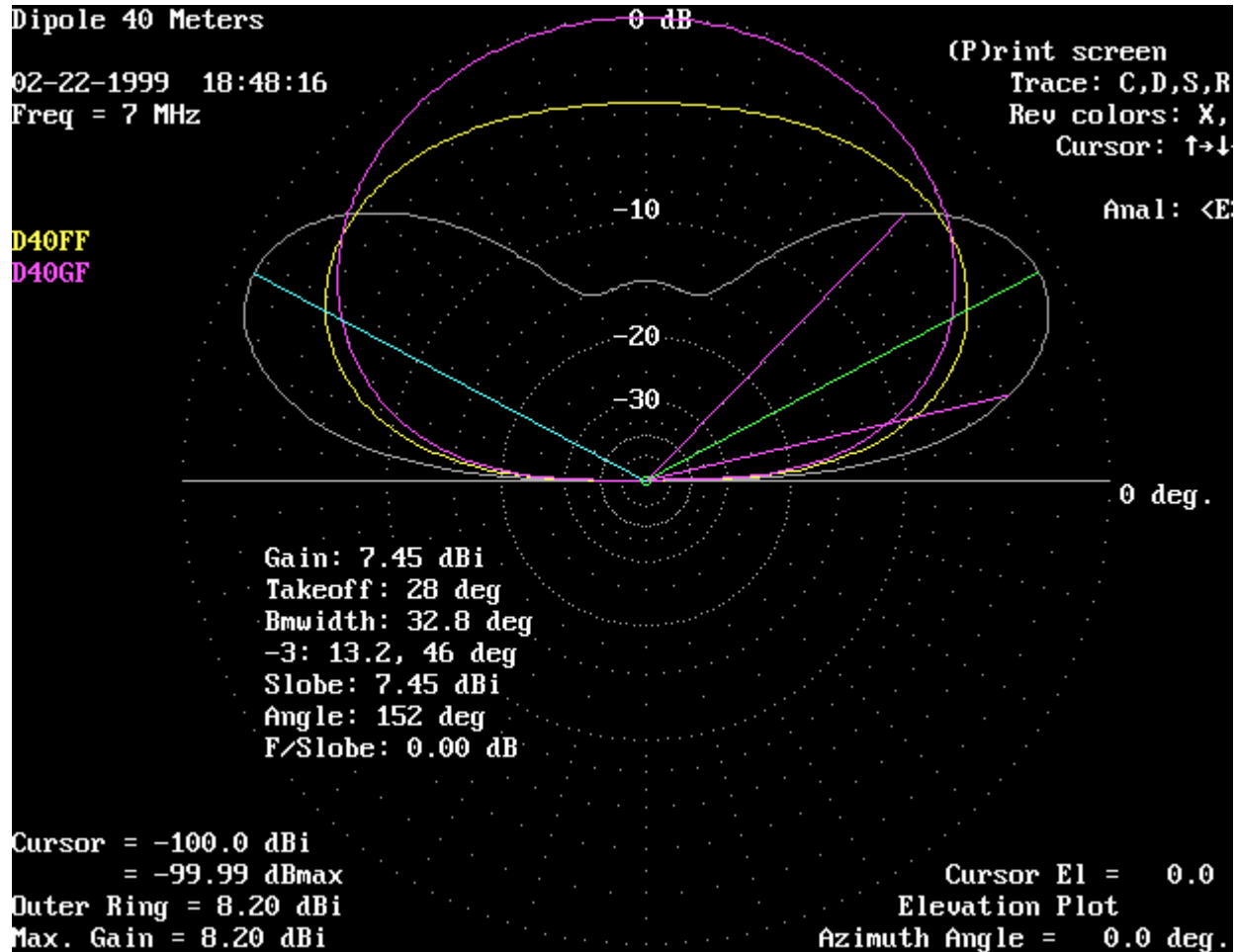
This plot shows comparative elevation patterns, in the broadside direction only,
 White trace is for 2 wavelengths, 280 feet.
 Yellow trace is for 1 wavelength, 140 feet.



This plot shows comparative elevation patterns, in the broadside direction only.
 White trace is for 0.7 wavelengths, 98 feet.
 Yellow trace is for 0.5 wavelengths, 70 feet.



This plot shows comparative elevation patterns, in the broadside direction only.
 White trace is for 0.5 wavelengths, 70 feet.
 Yellow trace is for 0.3 wavelengths, 42 feet.
 Pink trace is for 0.1 wavelengths, 14 feet.



CLASSES STARTING IN MARCH

We will have Tech classes in March. Starting date will be March 9th (a Monday) at 7:00pm till 9. Classes will run for 8 Mondays.

CLUB INFO

PUBLIC SERVICE

CLUB STATION

The WARC club station is open to anyone with an interest, on Tuesday evenings between the hours of 7:00 and 9:00 pm. For further information, call George Brechmann N3HBT at 215-443-5656.

WARC ALUMNI MEMBERSHIP

An Alumni membership category is available for WARC members who are unable to attend meetings and club activities on a regular basis because of health considerations, travel impediments, or other hardships. Dues for the Alumni membership are \$10.00 annually. Please contact the Membership Committee for more information if interested."

ATTENTION MEMBERS

The Membership Committee can provide Club badges. Two types are available: an engraved plastic callsign and name badge for \$5 or a free, laminated plastic, photo ID badge/card. The photo id badge is included with your membership when a facial photo is provided by you. Please see members' photos on club website for proper facial composition. If you do not have at least a Warminster Amateur Radio Club badge with your picture on it, please contact your Membership Chairs at the WARC monthly meetings. Otherwise, please contact Membership by email at: membership@k3dn.org.

If you want to have your picture taken to be placed on the 'Members' Photos' section of the www.k3dn.org website, please contact Membership with your interest. When we get enough people who are interested we will post a notice in Feedback and have a camera ready at the following club meeting.

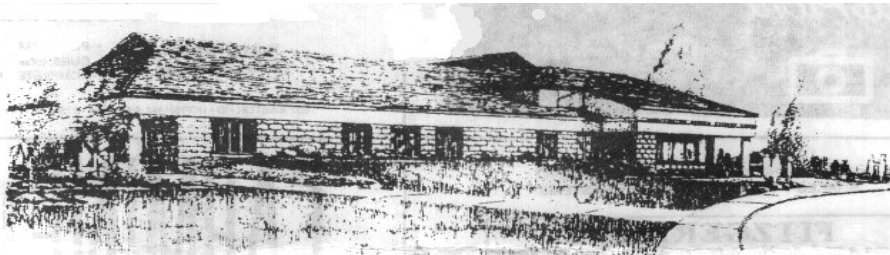
PROGRAMS 2014

December - Annual Holiday Dinner
 January - Emergency Preparedness , Vinny K3VJP
 February - Annual Club Auction
 March - Antenna's and Antenna Analyzers - Joe AA3JH and Andy, KD3RF

The Club Station - K3DN - is located at the Benjamin Wilson Senior Center, Delmont Avenue, Warminster, PA. The station is open for club members and the interested general public on non-holiday Tuesday evenings from 7 to 9 pm . The station is fully operational on HF (80 meters through 10 meters) both phone and CW. There is an assortment of amateur radio shareware which may be copied under the shareware licensing agreement.

For additional information on the Club Station please call the Station Manager N3HBT - George at 215-443-5656.

- **WARC Meetings are held the first Thursday of each month at 7:30 pm at the Benjamin Wilson Senior Center, Delmont Avenue, Warminster, PA. Talk in is available on the 147.09 & 443.950 repeaters.**



2014 - 2015 Contest Calendar

DECEMBER

5-7 160 Meter

2200 UTC Friday, ends 1600 UTC Sunday

13 - 14 10 Meter

Starts 0000 UTC Saturday; runs through 2359 UTC Sunday

21 Rookie Roundup (CW)

1800 UTC through 2359 UTC

JANUARY

3-4 RTTY Roundup

1800 UTC 1/3, ends 2400 UTC 1/4

24-26 VHF Contest

1900 UTC 1/24, 0359 UTC 1/26

➤ ATLANTIC DIV. HAMFESTS - 2015



January 24 - Harrisburg Radio Amateurs' Club Winterfest

Cooper Student Union

1 HACC Drive

Harrisburg, PA 17101

<http://www.w3uu.org>

January 25 - Post Holiday Hamfest

Odenton Volunteer Fire Department

1425 Annapolis Road

Odenton, MD 21113

<https://sites.google.com/site/marylandmobileers/hamfests-1/hamfest-2>

V.E. TEST LOCATIONS

Confirm all information, in advance, with the contact person. Licensed applicants must bring the original, and one photocopy of their license. All applicants, including children, must bring two forms of positive ID. Also bring the original, and a copy, of any Certificate of Successful Completion needed to prove current status. The ARRL VEC'S 2015 test fee is **\$15.00**.

Warminster Amateur Radio Club, Monthly, Last Mon. 7:00 pm at the Wilson Senior Community Center 580 Delmont Avenue Warminster, PA 18974 George Brechmann (215) 443-5656.

Atco, NJ, The fourth (4th) Tuesday of each month, at 7 p.m. Winslow Township Senior Center, 33 Cooper Folly Road, 08004-2603.

Mark (K2AX) jtra@comcast.net

Levittown, PA, Monthly, 3rd Monday at 6:30. Falls Township Building - Ben Johns, K3JQH, 215-657-5994

Telford, PA, Monthly, RF Hill ARC. 3rd Monday at the Indian Valley Library. Charles Schmell, KB3CEZ, 215-257-6368 days 215-538-7458 evenings.

Philadelphia, PA, Testing is done on the 4th, non holiday Thursday of the month at the, Community Ambulance Association of Ambler, 1414 E Butler Pike, Ambler PA 19002 at 7:00 PM We also are testing on Saturdays at least once per quarter at 9:00 AM. For further information contact James McCloskey at jmccloskey@msn.com and by phone 215-275-2979.

Lansdale, PA Testing on the first non-holiday Tuesday of the month starting at 7:00 PM. The Lansdale Library Community Room Vine St. and Susquehanna Ave. Lansdale, Pa. Registration is required 48 hrs. or more before the scheduled exam date. If there are no registrations the scheduled exam date will be canceled. NO WALK-INS. You can register by contacting:

Olaf N. Markert ----- Phone (610) 517-5074, E-mail w3pa@arrl.net

SKYWARN INFORMATION

MOUNT HOLLY NWSFO SKYWARN Weekly Information Net: EVERY THURSDAY AT 21:00 HOURS
SKYWARN Net Repeater Listing/ Streaming Audio of scheduled SKYWARN Net: <http://www.skywarnnet.net>
You do NOT have to be a certified SKYWARN Weather Spotter to check into the Net

Bucks County SKYWARN Weather Spotter PRIMARY FREQUENCY: 147.300MHZ (+ 131.8)
 Fairless Hills, PA (many remote access locations throughout Bucks County)

Mount Holly NWSFO SKYWARN Homepage:
<http://www.erh.noaa.gov/phi/skywarn/index.html>

SKYWARN Basic Weather Spotter Educational Programs URL:
<http://www.erh.noaa.gov/phi/skywarn/training.html#sched>

➤ **CLUB EQUIPMENT**

WARC has purchased four Vertex Standard 2-meter HT's that are available for use by members of the club. The HT's are available on a month-by-month basis and have been purchased primarily to help new hams get on the air. However, they may also be used by any club member who is in need of a temporary 2-meter radio. They are also available for use by participants in WARC's public service activities. DE, Vinny Porcaro K3VJP
 215-493-0783

Area Repeaters

VHF

- 145.310 R.F. Hill
- 145.350 Doylestown R.C.
- 146.790 Penn Wireless
- 145.330 Hilltown
- 146.670 DVRA
- 146.685 Holmesburg
- 146.925 Willingboro
- 147.000 Ham Buergers
- 147.030 Phil-Mont
- 147.090 Warminster
- 147.270 Frankford
- 147.300 BEARS
- 147.390 CBRA

220

- 224.580 PackRats
- 223.76 K3NAL

UHF

- 442.650 DVRA
- 443.250 TAG
- 443.050 Metro-Comm
- 443.950 Warminster
- 444.200 BEARS
- 447.475 WR3B
- 448.225 Penn Wireless

D-STAR

- 146.61000 K3PDR DV
- 445.18125 K3PDR DV
- 445.01875 AA3E Montco RACES

6 Mtr

- 53.030 WA3BXW
- 53.230 N3DQZ
- 53.320 K3MFI

*The Warminster Amateur Radio Club
 Announces Free Ham Radio Instructional Classes*



If you're interested in Ham Radio, or think you might be, this is your opportunity. Perhaps you'd like to learn about digital communications, Morse code, VHF, UHF, satellite, or perhaps you'd rather sit down and chat with someone in South Africa, Russia, Great Britain or in the space station.

For further information contact George Brechmann, N3HBT at 215-443-5656.

We will have Tech classes in March. Starting date will be March 9th (a Monday) at 7:00pm

till 9. Classes will run for 8 Mondays.

Bucks County Amateur Radio Emergency Service (BCARES)

www.bucksares.org
 Bucks County ARES will be on the air Wednesdays, at 9:00 PM . We will be using Warminster Amateur Radio Club's repeater on 147.090, pl 131.8. This net is linked as shown in the Net Schedule box for the Wednesday night net. It may also be linked to 147.300.

Winlink Gateway Stations:

Upper Bucks	NJ3A-10	145.610 Riegelsville
Lower Bucks	NY3J-10	145.530 Bensalem
Montco	W3CF-10	145.950 Hatfield
Chester County	W3EOC-10	145.690

Net Schedules

Sunday	2100	10 Meter Net	28.445 MHz
Wednesday	2030	2 Meter Net	147.09 Rptr.
Wednesday	2030	Linked w/ 2 Meter Net	443.95
Rptr. Wednesday	2030	Linked w/ 2 Meter Net	53.230 Rptr.
Sunday	2030	Informal Net	223.5 Simplex
Thursday	1900	Mont. Cnty RACES Net	146.835 Rptr.

Are you submitting an article for the Feedback ?

Contributions of articles to be published are always accepted for consideration. Please follow these guidelines:

- E-Mail to:
wa4ywm@comcast.net
- Or via snail mail to:
FEEDBACK EDITOR
Warminster Amateur Radio Club
Box 113
Warminster, Pa 18974
- Use both upper and lower case letters.
- Use your program's spell check.
- If you don't have a computer, then typewritten sheets are o.k. but please use both upper and lower case.
- Put your name and call at the beginning or end of the article, and show credits if you are using material from another source.
- Deadline for articles is the Saturday before the regular meeting.

For general club correspondence:
k3dn@k3dn.org

Visit our Home Page at:
<http://www.k3dn.org>

The annual dues rate structure is as follows:

Full Member:	\$ 20.00
2nd Family Member:	\$ 10.00
Student:	\$ 10.00
Alumni:	\$ 10.00
Associate:	\$ 5.00

- Are your dues current ?
- Check the date on your Feedback mailing label.

2014 Officers

Executive Officers

President	Irwin Darack	KD3TB	215-343-8170
Vice-President	Vinny Porcaro	K3VJP	215-493-0783
Secretary	Tony Cuttone	W3FLH	267-679-9297
Treasurer	Bill Ballantine	K3FMQ	215-766-0764
Director (A)	George Brechmann	N3HBT	215-443-5656
Director (E)	Joe Horanzy	AA3JH	215 962-9592
Director (A)	Al Konschak	WI3Z	215-491-9941
Director (E)	Andy Vavra	KD3RF	610 287-3295
Past President	Richard Luce	AG3L	215-441-8264

Committee Chairpersons

Archives			
ARES/RACES Liason	Karl Harris	K3KH	215-264-1855
Arri Liason	Richard Luce	AG3L	215-441-8264
Awards Manager	Vince Pironti	KD3TC	215-674-0446
Classes	George Altemus	KA3WXV	215-855-3856
Digital and APRS	Ron Wenig	NY3J	215-638-9257
DXpedition	Doc Whitticar	W3GAD	215-968-6397
Feedback Editor	Jim Elmore	WA4YWM	215-538-1889
Field Day 14	Mark Kempisty	AA3K	215-953-1493
Fundraising	Adam Huffnagle	KB3JCP	215-442-9526
Hamfest 14	Richard Luce	AG3L	215-441-8264
Hamwear	Herb Hickmott	KB3VMN	267-718-3601
Holiday Dinner	George Brechmann	N3HBT	215-443-5656
Membership	Michelle London	KB3MTW	215-672-7578
Membership	Bill Strunk	K3ZMA	215-822-0749
Net Manager	George Brechmann	N3HBT	215-443-5656
PA QSO Party	Mark Kempisty	AA3K	215-953-1493
Publicity	Bernice Kraut	KB3PCX	215-884-8195
Refreshments	Doc Morein	KA3RAU	215-542-0593
Refreshments	Randy Gehman	N3LJE	215-822-9473
RF Interference	Andy Vavra	KD3RF	610-287-3295
RF Interference	Bill Ballantine	K3FMQ	215-766-0764
Repeater Coordinator	Brian Taylor	N3EXA	215-257-6303
Safety Officer	Vinny Porcaro	K3VJP	215-493-0783
Skywarn Liason			
Station Trustee	George Brechmann	N3HBT	215-443-5656
Sunshine Club	Vince Pironti	KD3TC	215-674-0446
Township Liason	Richard Luce	AG3L	215-441-8264
VE License Testing	Larry Abbott	WA3ELQ	215-704-3282
VHF/UHF/MW	George Altemus	KA3WXV	215-855-3856
Website Coordinator	Al Konschak	WI3Z	215-491-9941
Youth Programs	Steve Larson	WW3Y	215-822-1511