



HARMONICS

1916

South Jersey Radio Association

2015



35 Years of Field Day!

By Lary, K2NA

In 1957, a Boy Scout intent on learning Morse code to make 1st Class Scout, helped out with SJRA Field Day. Young and eager, helping with setting up, climbing towers, tying knots, and “camping” out in the field came naturally. The mysteries of operating radios, copying code, logging, and staying awake all night, were skills to be learned and practiced...

With the help of an Elmer or two, that scout was licensed in 1959 as WA2HSP. In 1962, he helped plan, set up, operate, and tear down the K2AA Field Day operation (remember the Pennsauken Mart?).

Every year after that, until 1992, he participated in Field Day where ever living (college, Navy stations, civilian job). Do the math, that's *34 Years Straight*.

What About 35? That young kid is an old timer now. He remembers the old timers who urged him along and shared what they learned. They also listened and encouraged new ideas.

SJRA operates K2AA for Field Day in June 2015. It is calling to WA2HSP (now K2NA) to get going. Time to restart a string. A few changes over the years (automated logging, bonus points, etc.), but the basics remain: *Learn and Practice* field operation so that when our neighbors need us to respond, we know how to do it. Oh yeah, and

do it well enough to earn a good score, if possible.

So What's To Do? If the same things worked well for years, don't change anything... Wait a minute, what about the new person who doesn't know much about it or doesn't feel able to contribute??

So What Should We Do? Old experienced hands know that setup, support for operations, operating, and teardown need plenty of help. *Everyone* can contribute: setup, support, operate, tear down, and *maybe* learn to operate at the elbow of a seasoned operator. Listening to the old timers in the 1950s and 60s (extra set of headphones at each station) was the best way to learn how to operate. All of the other essential stuff: check the generator, pull the plug for lightning, feed and water the operators, adapt to changes - comes along with participation, a little or a lot!

Every Field Day is different and each has taught me lessons. In Colorado in 1992, K2NA/0 made 3571 contacts, with 2 stations and 13 people who setup, operated and tore down. We worked hard and had a great time. Some first time operators “caught the bug” and continue Field Day from Colorado to this day. Participation is the key.

Come help, learn, suggest, contribute, enjoy, and have fun leading SJRA - K2AA at Field Day 2015 into its 100th year!

SOUTH JERSEY RADIO ASSOCIATION

HARMONICS is published monthly and is the official news letter of the South Jersey Radio Association. The SJRA was established on June 16, 1916 and has been meeting continuously since its inception. The club has been affiliated with the American Radio Relay League since 1920.

The SJRA meets each month on the fourth Wednesday, January through September; and usually the third Wednesday, October, November and December; in one of the Meeting Room of the Gibson House at 525 East Main Street, Marlton, NJ 08053. Visitors are always welcome at our general meetings. **“Our Meetings are Smoke Free”**

SJRA operates the K2AA Repeater (145.290 - PL 91.5) located in Medford, NJ and the K2UK Repeaters (146.865 and 442.350 - PL 131.8) located in Pine Hill, NJ. The repeaters are open for use without restriction to all licensed amateur operators.

There are currently over 100 SJRA members active in most all aspects of amateur radio. Membership is by application and is subject to the approval of the Board of Directors. Club dues are currently \$30/yr. for memberships, \$22.50/yr. for retired-person membership (62 plus 1 yr membership), and \$15/yr. for additional family members and student membership. Membership information is available on the K2AA Repeater or from Mary Von Lintig, KV2M, 856-772-6475

EMAIL: [sjra at sjra dot org](mailto:sjra@sjra.org) SJRA's web page: www.sjra.org

SJRA VE Team: ve@sjra.org is the SJRA/ARRL VUCC card checker

Joe Fisher, KC2TN, is the SJRA/ARRL WAS card checker

 ★ **Harmonics** is now available on the WEB in pdf format at: ★
 ★ <http://www.sjra.org> ★
 ★ **South Jersey ARRL Section News** is available on the WEB at: ★
 ★ <http://www.arrl.org/sections/?sect=SNJ> ★

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Picnic: **Vacant (Please Volunteer)**
Ways & Means: Ray Golley, N3RG
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Harmonics Staff:

Publisher/Editor: Ted Groke, W2TAG
Alternate Editor: Rick Stoneking, W2RDS
Circulation: Mary VonLintig, KV2M; Jim Vecchiola, KR2T

LOCAL WEEKLY NETS

Monday	K2AA, Medford	145.290 @ 8PM
Alternating Thursday	Various Locations	28.405 @ 8PM

Harmonics Deadline

Articles submitted for the next Harmonics will be accepted until Monday, June 8, 2015. Email: [ted.w2tag at gmail dot com](mailto:ted.w2tag@gmail.com)

SWAP SHOP - For Sale/Wanted ads are free of charge and are accepted for Amateur Radio related items only. While ads are not restricted to SJRA members, there is only limited space available and members have priority for listings. No items will be accepted for inclusion in the Swap Shop from commercial vendors or traders. All ads must be submitted at least three weeks prior to the scheduled SJRA general meeting date.

GENERAL ADVERTISING - Limited commercial advertising is accepted on a space available basis. Annual advertising rates range from \$25/yr (Min 1/8 page) to \$200/yr (Full Page). Information is available from Ken Botterbrodt, K2WB.

Meeting Minutes

General Meeting of 22 April 2015

The meeting was as usual, held at the Gibson House in Marlton, NJ. It was opened at 1930 by Jon, W2MC, with a flag salute. Minutes were approved as printed in Harmonics, motion by W2RDS/NJ2IT. Treasurer's report- We have one!. There are 98 paid members and the monies in the ledger match the bank! Accepted on a motion by W2HJG/ KR2T.

New members by Mary, KV2M: W2PUA, a rejoin who originally signed up in 1942 !. As club Historian, Mary presented what she thinks is the oldest membership card in the archives, from 1932.

Programs by Rich, W2JAZ: May- SJ Storm; June- Field Day preparation; July- Field Day wrap-up; August Bob, K2UT, on Arduino.

VE Team by Al, N3AVT: Three candidates passed their test last month .

DX report by Jack, N2VW: Lots of War memorializing events. Kazakhstan- End of WW2 till 01 May; VK, Australia, on ANZAC day April 25, they will use AX (Gallipoli) prefix; ZL, New Zealand. ZL100 ANZAC, 25 April to 25 May; International Marconi Day, 25 April (His Birthday). Rare ones coming: Juan DeNova (FR/J) March 2016 (last on in 1980); Palmyra, (KH5) January 2016

Health & Welfare: April birthday cards out (only tracking by month not day). Sent get well to N2EAC, Joe LeMaris is feeling better, W2MAT is reported as feeling better.

Contests by John, W2FDJ: CQWPX, End of May; 10-10 int'l Spring Digital this weekend; June 13 thru 15, June VHF/ UHF, June 27 and 28, Field Day!

Repeaters by Joe, KC2TN: K2AA working well, a question regarding digital usage revealed low interest; K2UK repeaters, the fire company will not be expanding for some time, money for planned expansion not available; Club Stuff, small centennial patches have been ordered, large centennial patches still available for \$25 each. Joe reported his attendance at New England Weak Signal Group meeting where they had great door prizes!

Report of Nominating Committee, by KR2T: President, Ken, K2WB; Vice President, Jon, W2MC; Recording Secretary, Lou, N2HQL; Corresponding Secretary, Dennis, AC2FO; Treasurer, Ray, N3RG. Board of Directors: Roy, WB2EOD; Rich, KV2R; Rick, W2JAZ; IRA, W2IRA; Al, N3AVT; Tony, N2ATB; Ted KD2ARD. There being no nominations from the floor, nominations were closed. At The May meeting, the recording secretary will cast one ballot for all Officers and Directors.

Old Business- None

New Business- A reminder that K2UT needs volunteers at Rancocas Park this Saturday to work radios for a Scouting event. Expected time is 0830-1500.

Recess At 2010, At 2025 the program- Joe Eberhart, N2CX, presented his program.

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HAM TECH

Vol 6 No. 5 by John - WY2J

wy2j at arrl dot net

Understanding Common Multiband Antennas

Part 2 of 3: The G5RV Antenna

Introduction - The G5RV antenna is an HF multiband dipole, 10 to 80 meters, first described by Louis Varney G5RV and has become quite popular in modern ham stations. It is easy to build and MFJ sells a complete antenna with the transmission line matching section, their part number MFJ1778 priced at \$44.95 in their 2015 catalog. A review of the author's old technical manuals found no mention of it in the 1955 ARRL Antenna Manual, the 1956 and 1967 ARRL Handbook but there was a rather complete description of the G5RV in the L. A. Moxon G6XN "HF Antennas for all locations" book published in 1982. It is also included in the recent ARRL Antenna Handbook 20th edition. But there is very little quantitative data on its performance. Moxon states that you can feed the input of the transmission line matching section directly with 75 ohm coax or twin lead (no longer available) on 20 meters but a wide range tuner is required on the other HF bands. The same computer modeling used on the 135 foot dipole last month will be used on three versions of the G5RV with performance and feed losses calculated for each. So don't tear down your 135 foot dipole and make MFJ a little richer until you see the results.

The G5RV Model - The flat top center fed dipole is exactly the same as the dipole described in last month's HAM TECH except it is cut down from 135 to 102 feet. The transmission line of version A is 100 feet of 400 ohm window line just like last month. Version B has a half wavelength at 20 meters or

31.6 feet of 400 ohm window line feeding the antenna followed with 68.4 feet of RG-8X coax to the shack. Version C places the tuner at the end of the window line matching section. One to one current baluns are used between the matching section and tuner in version C, the window line and coax in version B and the window line and the tuner in the shack in version A.

Azimuth Antenna Patterns - The G5RV is a center fed dipole just like the antenna described in last month's HAM TECH and the radiation patterns are governed by the electrical length in wavelengths. The 135 foot dipole is 2 wavelengths at 20 meters and has a big null at broadside as shown in Figure 3 in last month's article. At 102 feet the 20 meter length is 1.5 wavelengths and the azimuth pattern is more circular as shown in Figure 1 below.

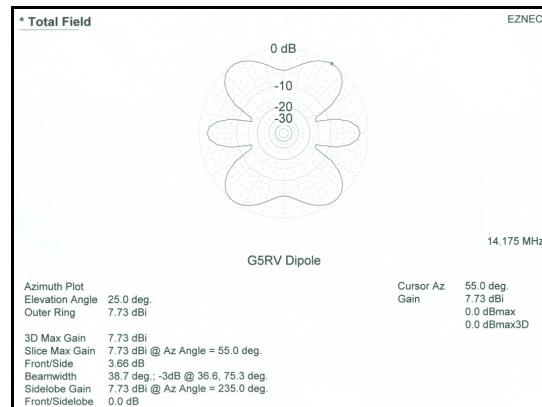


Figure 1 G5RV Azimuth Pattern at 20 Meters

Not only is the azimuth pattern more desirable for the G5RV but the feed impedance is lower and easier to match into. The impedance and SWR for the G5RV at 20 meters is shown in Figure 2 below.

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(Ham Tech from page 4)

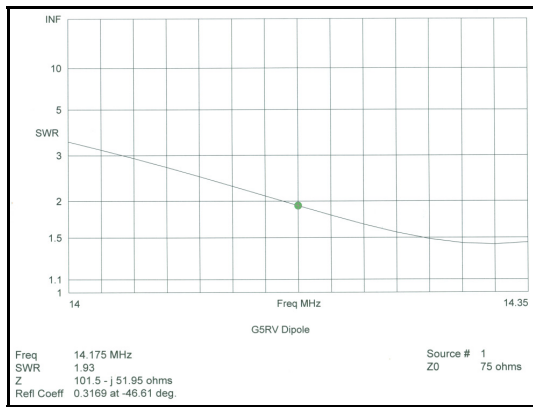


Figure 2: G5RV Impedance and SWR at 20 Meters

The antenna is tuned slightly high but could be re-tuned for a minimum SWR at band center resulting in an SWR of no more than 2.0:1 over the band when fed with 75 ohm twin lead. Fixing the 20 meter performance is about all Lou Varney promised for his antenna. The azimuth patterns at 80, 40 and 30 meters are figure 8 broadside maximum radiation but above 20 they all show the distorted characteristics of the 135 foot dipole, just not as bad.

Feeding the G5RV on 10 to 80 M - The G5RV is very easy to feed at 20 meters, just attach a piece of 50 or 75 ohm coax with a current balun at the antenna and your rig tuner will take care of the residual SWR. But life is not so simple on the other bands as you will need a broad range antenna tuner. I analyzed three configurations that are commonly suggested for this antenna. Version A is a 100 foot window line feeder with a tuner in the shack. Version B feeds the antenna with 31.6 feet of 400 ohm window line followed by 68.4 feet of RG-8X with a tuner in the shack. This is the MFJ Antenna. And Version C places the antenna tuner at the input to the 31.6 foot window line. All will

yield a low SWR match on all bands but what's important is what are the losses and how much power gets to the antenna. Table 1 below shows the impedance seen by the tuner, total line and tuner loss in dB and power radiated for 100 watts into the tuner.

Freq. MHz	Tuner Load Ohm	Total Loss dB	Power Out Watts
3.6	595-j2266	1.0	79.5
7.15	53.3+j10	0.27	94
10.1	54-j312	0.63	86.6
14.175	120.9+j154	0.29	93.6
21.225	195+j705	0.83	82.7
28.5	69.3-j170	0.61	86.9

Table 1: Version A: 100 ft Window Line

Freq. MHz	Tuner Load Ohm	Total Loss dB	Power Out Watts
3.6	56.5-j59.2	0.9	81.2
7.15	13.8-j22.7	1.7	67.3
10.1	11.7+38.5	4.2	38.0
14.175	23.5+3.9	1.4	73.3
21.225	12.5+j12.2	3.6	43.4
28.5	185+j147	10.5	9.2

Table 2: Version B: Window Line and RG-8X

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Leaders of the Pack – All Our SJRA Presidents

Part 4 – From 1988 to 2015

Leading the SJRA for 1988 was one of our former presidents, who had already served the club in the years 1979 - 1980 and 1982 - 1983. Ed - AB2Y not only served as a prior president, and present president, but was destined to become our future president during the years 1992 - 1993. When you have a good thing, it is wise to keep it around.

Edward J. Ramming: 1988. Call AB2Y (Also see 1979 - 1980, 1982 - 1983, and 1992 - 1993).

Alan P. Sherman: 1989. Call KE2VX former WB2OEZ Also President in 1994 - 1995.

Card in membership file. Date of application - 25 March 1987. License class - General. Call - WB2OEZ. Address - 222 Park Avenue, Marlton Lakes, NJ. Age - 48. Occupation - Dentist. Sponsor - Ed Ramming, AB2Y.

J. Wesley Sammis (Wes): 1990 - 1991. Call W2YRW (Also see 1954).

Card in membership file. Date of application - 24 July 1985. License class - Advanced. Call - W2YRW. Address - 300 East Haverford Avenue, Somerdale, NJ and 8 East Haverford Avenue, Cherry Hill NJ. Age - 65. Occupation - Engineer. Sponsor - Mark Kernagis, KA2MSM.

Edward J. Ramming: 1992 - 1993. Call AB2Y (Also see 1979 - 1980, 1982 - 1983, and 1988).

Alan Sherman: 1994 - 1995. Call KE2VX former WB2OEZ (Also see 1989).

Robert Applegate: 1996 - 1997. Calls K2UT former WA2ZZX.

Card in membership file. Date of acceptance - 5 July 1991. License class - General. Call - WA2ZZX. Address - 102 Peachfield Court, Marlton, NJ, Age - 28. Occupation - Independent software consultant. Sponsor - Frank W. Widmann, WA2YSW. Bob rejoined SJRA on 25 October 2013. License class - Extra. Call - K2UT. Address - 3 Corsham Drive, Medford, NJ. Occupation - Software Consultant. Sponsor - Mary, KV2M.

Kenneth W. Botterbrodt: 1989 - 1990. Call K2WB former WA2CVJ (Also see 2009).

Two cards in membership file. Card No. 1, Date of application - 27 March 1974. License class - Novice. Call WN2UAD. Address - 25 Wallace Avenue, Clementon, NJ. Age - 14. Occupation - Student. Sponsor - Bill Eppley, W2SDB. Card No. 2, Date of Application - 22 September 1993. License class - Advanced then upgraded to Extra. Call WA2CVJ. Address - 15 Pelham Road, Marlton, NJ. Age - 33. Occupation - Manager/engineer. Sponsor - Joe Duffin, W2ORA. (Note: Ken has had many, many calls. That is a whole separate article.)

Richard M. Kloidt: 2000. Call N1RK former KD2KS.

Card in membership file. Date of application - 10 December 1994. License class - Advanced. Call - KD2KS. Address - 35 School House Drive, Medford, NJ. Age - 56. Occupation - Service engineering/jet eng. test cells. Sponsor - Ken, WA2CVJ.

Edward Baud: 2000 - 2002. Call N2YAJ

Card in membership file. Date of application - 27 April 1994. License class - Tech. Call - N2YAJ. Address - 214 Edward Avenue, Hamilton, NJ. Age - 49. Occupation - Healthcare Administration. Sponsor - Frank Widmann - WA2YSW.

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(SJRA Presidents, 1988-2015 from page 6)

Patrick Doyle: 2003 - 2004. Call KD2P former KA2GSL.

Card in membership file. Date of application - 22 September 1993. License class - Advanced and upgrade to Extra. Call - KA2GSL. Address - 4 Lakeside Drive, Marlton, NJ. Occupation - Engineer. Sponsor - Joe, W2ORA.

Jon MacMillan: 2005 - 2006. Call W2MC former KC2DPV.

Card in membership file. Date of application - 3 September 1998. License class - Tech Plus (waiting for). Call - KC2DPV. Address - 7 Cedar Street, Medford, NJ. Age - 35. Occupation - Electrical Engineer. Sponsor - Joe, W2ORA.

Shawn MacDonald: 2006 - 2008. Call K2SMD former KD4HZW.

Card in membership file (application to rejoin). Date of application - 25 October 1995. License class - Tech and HF. Call - KD4HZW. Address - 2160 Atco Avenue, Ste A, Atco, NJ. Age - 33. Occupation - Rigger. Sponsor - Joe, W2ORA.

Kenneth W. Botterbrodt: 2009 - 2015 etc., etc., etc. Call K2WB former WA2CVJ and many more (Also see 1998 - 1999).

Not unlike Ed Ramming, AB2Y, Ken, K2WB served SJRA a prior president during the years 1998 - 1999. He holds the distinguished honor of having led and guided our club for the longest time. Ken will also lead SJRA into her 100th Anniversary during the year 2016. When you have a good thing, stay with it. Our current President is obviously a really good thing and we, as members of SJRA know a good thing when we see it. We certainly do choose our leaders wisely.

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What Would You Do?

Dan, KB6NU, cwgeek at kb6nu dot com

For the past three or four years, I've been threatening to buy a new radio to replace my ICOM IC-746PRO. The IC-746PRO is a great rig, though, and I've had trouble pulling the trigger on a \$3k - \$5k or more purchase. The radio that I've had my eye on is the Elecraft K3. Without a doubt the K3 is a better rig than the 746PRO, and it's certainly worth the price that Elecraft is asking. The question I keep asking myself, though, is, "Am I going to have \$5,000 more fun with a K3?"

To put it another way, the question is, assuming that I have a \$5,000 budget to spend on amateur radio gear over the next year or two or three, what's the best way to spend it? How can I maximize my purchases so that I have the most fun?

At this point, I think that I've decided not to buy that new rig and instead buy equipment that will help me make my own rigs. Some of the items that I have my eye on include:

1. Aoyue 968A+ SMD Digital Hot Air Rework Station (I have actually already purchased this unit.)
2. Rigol DS1102E 100MHz, Dual Channel, 1 GSa/s Digital Oscilloscope
3. Rigol DSA815-TG Spectrum Analyzer
4. A more professional workbench to replace the folding table that I'm currently using.
5. Peaberry SDR V2 Kit
6. More keys! I'd love to get a fancy

(Continued on page 11)

(Meeting Minutes from page 3)

Board Meeting of 6 May 2015

The meeting was opened at the Gibson House by Ken, K2WB. Minutes approved as printed, motion by N2HQL/WB2EOD. Treasurer reported 101 paid up members.

Membership by Mary- KV2M- Application from Joseph Shevlin, KC2PHM, sponsored by N3RG, accepted on a motion by KV2M/N2HQL. Mary reported she will not be at the May meeting, Jim, KR2T will substitute. Corresponding Secretary, Dennis AC2FO, reported he updated our club information in CQ magazine.

Harmonics: Usual deadline.

Club stuff: Still available

Health & Welfare: May Birthday Cards sent; Mary reported that Robert Haworth, W2PUA, is due out of hospital

Programs- Jersey Storm in May. Attempting to get John Dilks, W2TQN, as program or speaker at Centennial Brunch.

VE Team: Al, N3AVT, 125 tests administered so far.

We need a little spruce up on Website.

Centennial Committee: We had a good meeting. Chris, KC2GNQ, is working on getting some programming on the History Channel. Still working on getting a schedule with the space station. Centennial member application from Jeff Pennel, KA2DHE, a novice, accepted on a motion by K2WB/N2RG. Jeff is centennial member No. 5. His Uncle, Roger Barrington, W2LY was a founding member.

Field Day: 51 days! All band captains are filled.

Nominating Committee: All positions filled, no election needed. Installation at June meeting.

Ken will be working from Rice School in June.

Historian: Clipping, 2925- World distance record broken, Gloucester City to India. A new historian is still needed. No other business. Adjourn at 2055.

Recording Secretary, Lou, N2HQL

100th Anniversary Happenings

So far the 100th anniversary committee has had 8 meetings (many more to come). Just to keep everyone up to date here is where we are:

Over 50 coffee cups have been sold. There are plenty more to go. Mugs may be acquired to SJRA members by a minimum donation of \$10.00. There will be coffee mugs available at the General Membership Meeting on May 27th, 2015.

The first of the fund raising raffles is still in the planning stages.

We now have 5 centennial members. Our goal would be to have at least 2 members in each of the States. At least 1 member in each of the ARRL sections and at least 1 member in 100 countries. This will make some of radio sport events planned very exciting. Pass the word around.

The decision has been made to have the 100th anniversary banquet at the Trump National Golf Course in Pine Hill, NJ. It will be

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Monthly Puzzle

Don – WA2DUE, wa2due at arrl dot net

Last month we posed the following:

The polar form of Voltage across a circuit is $161(\cos 337 + j\sin 337)$ Volts. The polar form of the impedance is $32(\cos 300 + j\sin 300)$ Ohms. Find the polar form of the current.

Answer: We divide the voltage by the impedance $161/32(\cos 37 + j\sin 37)$ and get $5.039(\cos 37 + j\sin 37)$ Amperes.

Find a six-digit number containing no zeros and no repeated digits that satisfies the following conditions: the first and fourth digits sum to the last digit, as do the third and fifth digits; the first and second digits when read as a two-digit number equal one-quarter the fourth and fifth digits when they are also read as a two-digits number; and the last digit is four times the third digit.

Answer: 192768 -- I started by realizing that the last digit had to be an even number and the only one to fit the situation was 8. Therefore the third digit was 2 and the fifth digit was 6. For the first two digit to be one-quarter of the fourth and fifth digits made the fifth digit 7 and the first two-digits 19.

For this month let us consider the following:

At a hamfest a used HT and an antenna tuner were bought. The amount paid was the same for each. If the HT had cost \$30 less and the antenna tuner \$20 more, the HT would have cost half the price of the antenna tuner. How much was spent for the two items?

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President's Message

Ken – K2WB

The May meeting program promises to be very exciting. Our friends *Storm* from the robot club of Lenape and Cherokee High Schools will be showing us their latest competitor. Last year's demonstration was very impressive and I trust this years will be at the same.

The SJRA will be demonstrating Amateur Radio on Friday June 10th, 2015 at the Rice School in Marlton, NJ. We will be using the club call sign K2AA in three sessions starting around 9:20 AM. We need stations to contact either on the repeater or on 40 meters. Watch for emails on the SJRA member's reflector for more information.

We need your help with Field Day (it will be here before we know it) mark your calendars. Field Day is June 27-28 with setup on the 26th. We will be having several workshops such as erecting temporary antennas, operating etc. Please help us be volunteering early and helping with this club event.

If you have questions or like to help please contact me at ken at k2wb dot com or call me at 856.983.1924.

I want to thank Mary, KV2M, and Jim, KR2T, for their many years of service to the SJRA and the Board of Directors. There help in running the SJRA will be missed.

List Your "For Sale" Ham Stuff in the SJRA Harmonics

Email Ted, W2TAG, with your listing, ted.w2tag at gmail dot com

(100th Anniversary Happenings from page 8)

a brunch type of event. More details of the dates and times will come in the future.

Rick, W2JAZ, and Joe, KC2TN, have started the process in getting an ISS contact arranged to commemorate the club. They will need a lot of help with paperwork, equipment, and more paperwork.

Chris, KC2GNQ, has made a lot of progress with trying to get one of the cable network channels to help us get a program put together.

We still need a lot of money to achieve our goals and objectives. Our anniversary is only 402 days away.

With that said, Joe, KC2TN, is already selling 100th Anniversary clothing and hats. Contact Joe should you want to have the *New SJRA Look*.

There is still a lot to do and we need your help. Please contact me if you are interested in helping with the 100th.

(SJRA Presidents, 1988-2015 from page 7)

The office of President of the South Jersey Radio Association is indeed a great honor and it takes a very special and dedicated person to guide its members through the trials of time and change. These sixty-four have guided us with integrity and strength through nearly a century. As long as there are people like them in our radio club who are willing to serve and dedicate themselves to the ideals set forth by those who have served as president, the South Jersey Radio Association will continue and become better with age.

73 to all and I am History
Mary, KV2M (former KC2AZU)

(Monthly Puzzle from page 9)

There was a 61 year old father whose daughter was 37 years of age. How many years ago was she one-quarter as old as he?

Please submit solutions and/or comments to wa2due at arrl dot net

(Ham Tech from page 5)

Freq. MHz	Tuner Load Ohm	Total Loss dB	Power Out Watts
3.6	16+j3.2	0.35	92.2
7.15	54.6-j109	0.1	97.6
10.1	143+j315	0.19	95.7
14.175	102-j51.2	0.1	97.8
21.225	393-j1139	0.3	93.3
28.5	2710-j917	0.38	91.6

Table 3: Version C: 31.6 ft matching line plus antenna tuner (ATU)

Conclusions - The G5RV and the 135 foot 80 meter half wave dipole are very similar however the G5RV has better pattern stability at least up thru 20 meters. The half wave window line matching section definitely eases the impedance match if it is driven directly with an antenna tuner and the losses are minimized. The limited distance between the antenna center and the tuner may present physical difficulty but weather proof ATUs are available. The MFJ G5RV approach with window line plus coax feed is definitely inferior with more than half your power wasted on 3 of the 6 bands.

Next Month - We conclude the series with a look at the 43 foot vertical antenna.

(What Would You Do? from page 7)

Begali or N3ZN paddle, and the other day someone told me about the UR5CDX keys, which look like great deals.

Even if I purchased everything on this list, I'll have spent less than \$5,000.

One consequence of going this route is that I'll have less time for operating. I'm betting (hoping?) that the extra time spent on tinkering will be just as much fun, or even more fun than I'm having now.

It also means that I'll be going to Dayton with a much different mindset than I have the past couple of years. Instead of spending my time configuring the perfect K3 in my head, I'll be looking for kits and scouring the flea market looking for parts.

I may be over thinking this, but like most amateurs, I have a limited budget to spend on amateur radio. That being the case, making conscious decisions about how to spend that money should help me have more fun with ham radio, and that's the goal, isn't it?

What do you think? Is this the right way to go, or am I going to regret this decision? If you've made a similar decision, I'd love to hear from you.



When not making crucial decisions about his amateur radio career, you'll find KB6NU working on updates to his "No Nonsense" study guides, teaching one-day Tech classes, or blogging about amateur radio at www.kb6nu.com.



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Amateur Radio FCC License Testing

The SJRA sponsors *FREE* Amateur Radio FCC License testing on the second Wednesday of each month. The location is: 443 Commerce Lane, Suite 5, West Berlin, NJ 08091. Registration is at 7:00 PM and testing begins at 7:30PM. Walk-ins are accepted.

VE team members can be reached at VE *at* SJRA *dot* org. A calendar and more information can be found on the SJRA web site.

May Meeting:

Fourth Wednesday, May 27, 2015

The meeting commences promptly at 7:30PM in the first floor Meeting Room of the Gibson House on Main Street, Marlton, NJ 08053. Guests are always welcome.

Program For May:

The Storm Robotics Team will be our program for May 27th. Please make the effort in attending this wonderful program of kids and their love for electronics and making robots for competition...They are a great group of kids and love talking about what they do!

SJRA Member June Birthdays

Mario Dianora, N2AK; Bob Novelle, W2RWN; Roy Herman, WB2EOD; Jon MacMillan, W2MC; Jean Priestley, KA2YKN; Jim Edwards, KC2QCS; Christian Pycik, KD2FHA; Raymond Haines, KC2IYC; Dennis Cioffi AC2FO; Raymond Smith, KD2FMX; William Bowen, KD2DOP; and David May, K3MUA.

Health and Welfare Co-chairpersons: Roy, WB2EOD, and Dara, KC2THQ

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