



HARMONICS

1916

South Jersey Radio Association

2013



HAM TECH

Vol 4 No. 6 by John - WY2J

wy2j at arrl dot net

Single and Multiband HF Wire Antennas Part 2 of 4: Tuned EDZ and OCF Dipoles

Introduction - Last month we explored four simple center fed dipoles with electrical lengths varying from 0.5 to 1.5 wavelengths. All produce useful but different azimuth radiation patterns and significantly different feed impedances. Three of the four are commonly used in ham applications and two of them have developed nicknames over the years. One of these, the Extended Double Zepp (EDZ) can be improved with two simple additions to suppress the approximate -12 dB sidelobes and match into a 50 ohm coaxial line or a 450 ohm balanced line without a tuner. It also increases the bandwidth of the antenna which can be significant on 40 and 80 meters.

Next we will explore an antenna that has been around since 1929 in at least three forms, the Windom, the Off Center Fed (OCF) dipole and the Carolina Windom. These are antennas that work poorly at best but the later two are still sold in the ham market place today. There is a lot of peanut butter sold but I still don't like it. I will present some data on these antennas and you can make up your mind on whether to build or buy one, or do something different.

The Tuned EDZ - The standard EDZ antenna is covered in part one of this series

of articles and was published in last month's Harmonics. The EDZ provides two well formed broadside main lobes in the azimuth plane with about 3 dB gain over a half wave dipole and with four relatively low sidelobes. The feed impedance is complex with a relatively large reactive term which leads to less bandwidth than could be achieved if the impedance was resistive. Rudy Severns, N6LR, who you may remember from his multiple QEX articles on vertical antenna ground systems, recognized that by placing capacitor in series with each of the two elements of the antenna and setting the value of capacitance and location relative to antenna center, he could tune out the reactance and set the resistive value of impedance over a wide range of values. He reported on this in the Antenna Compendium No. 4. It is also included in recent editions of the ARRL Antenna Book.

Rudy built this antenna at 40 meters with each leg of the antenna 85 foot long with 9.1 pf capacitors at 25 foot from the center feed point and obtained a full band SWR of 1.4:1 maximum. The SWR is referenced to a $Z_0 = 450$ ohms which can be transformed to 50 ohms with a 9:1 current balun at the transceiver. I modeled this antenna in EZNEC to verify the claims. The SWR curve is shown in Figure 1.

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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 K2AA DX Cluster (145.770) located in Mt. Laurel, NJ. The repeater and DX Cluster are open for use without restriction to all licensed amateur operators. The DX Cluster is also accessible on line (see www.sjra.org for information).

There are currently over 150 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
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 Joe Fisher, KC2TN, is the SJRA/ARRL WAS card checker

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Ways & Means: Ray Golley, N3RG
Property: Jon Mac Millan, W2MC

Harmonics Staff:

Publisher/Editor: Ted Groke, W2TAG
 or Don Beaulieu, WA2DUE
Circulation: Mary VonLintig, KV2M;
 Jim Vecchiola, KR2T

 ★ **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> ★

LOCAL WEEKLY NETS

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

Harmonics Deadline

Articles submitted for the next HARMONICS will be accepted until Monday, July 8, 2013. 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

Minutes of the General Meeting May 22, 2013

The meeting opened at 7:35, chaired by Ken, K2WB. Everyone was asked to introduce themselves, and Ken introduced his grandson Logan. We opened with the salute to the flag. Ray, N3RG, reported that there was money in the treasury, and we were currently at 109 members. Motion to accept by N3RG/N2HQL. Motion passed.

New members were presented by Jim, KR2T, and only Alan, WA3ZKI, was present.

Programs by Kathy KM2KME, for June we have the post field day wrapup, and for July we have Bob Rose who will explain the Laurel amateur radio club volunteer examiner coordinator system.

Health and welfare by Kathy, was a quick report that all birthdays had gone out. WY2J gave a report on Gordo, N2YU. Gordo is currently at home, not accepting visitors. While he was up John reported on nets, stating the repeater is working better for the last three Mondays. Attendance appears to be up. John is looking for a net control for 10 m. Matt, W2MAT, reported on a visit with Joe, W2ORA. Joe did not recognize Matt or Don, WA2DUE.

Jack, N2VW, gave the DX report. He reported Korea, DS4DRE, on Halo Island until December 2013. Isle of Jersey on air between 24 and 30 May. Eland Island on the air from 25 May until 7 June. There is a special event in Australia from May 23 to May 27. Togian Island, off Indonesia from May 22 to May 26.

Minutes were approved as printed in Harmonics, motion N2HQL/W2RDS.

Ken introduced the band captains for the amateur radio workshop/picnic. Joe, KC2TN, reported on his trip to Dayton. An election was held for director since there were seven seats and eight candidates. Roy, WB2EOD, received the fewest votes. For those offices unopposed, the recording Sec. cast one ballot to elect them.

The membership, upon being apprised of the situation with the pine Hill repeater, voted to merge with the Camden County Auto Patch System.

A motion by W2MC/K2WJL to donate the club half of the 50-50 to the storm robotics team passed. We then adjourned for a presentation by the robotics team.

Minutes of the Board Meeting June 5, 2013

The meeting was opened at 1930 at the Gibson house in Marlton New Jersey. All officers and directors were present except Ira, W2IRA. Minutes of the May meeting were approved as printed, motion by N2HQL/N3 AVT. There was no treasurers report but Ray was presented with a few bills, including printing for the VE team.

Membership, by Mary, KV2M: T J AREY, Don Creite, and Gary Triplo. All were accepted on a motion by W2MC/KR2T.

The repeater is working well after the cable replacement. Upcoming contests:

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(Ham Tech from page 1)

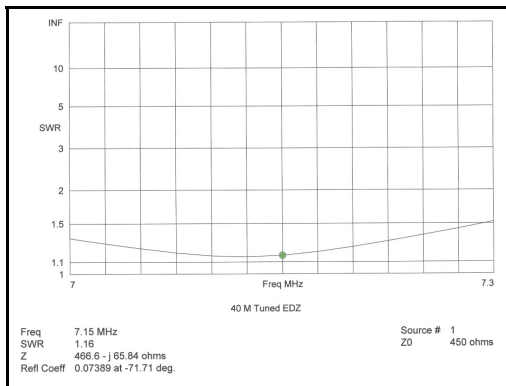


Figure 1 – SWR of a 40 M Tuned EDZ Antenna.

My modeled antenna has nearly identical SWR with a real resonant impedance of 467 ohms at 7.125 MHz. I did have to increase the capacitor values to 15 pf. I believe the difference between the 15 pf simulation value and the 9.1 pf real implemented value is stray capacitance in the fabricated antenna at the junction of the 25 and 60 ft legs. These capacitors have several thousand volts across them at 1500 watts PEP power and require extremely good insulation that will stand up to the weather.

The azimuth pattern is significantly improved with tuning as shown in Figure 2.

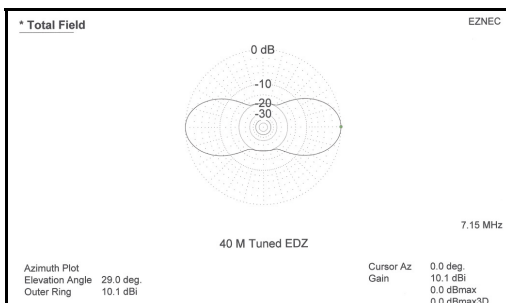


Figure 2 – Azimuth Pattern of a 40 M Tuned EDZ.

The 1929 Windom Antenna – Originally known as the “Single Feeder Hertz Antenna” it was described by Loren G. Windom W8GZ in the September 1929 issue of QST. I tried to retrieve a copy of the article from the QST electronic archive but was unsuccessful. A short description was obtained from the ARRL Antenna Book 20th edition. It is a 130 ft horizontal wire fed with a single wire feeder 14 percent or 18 ft off center for operation at 3.75 MHz. There is a claim that the antenna is effective on its harmonics but no other technical information is given including the length of the feeder. Since a great deal of radiation comes from this highly unbalanced feeder it is a major part of the antenna and has to be included in any computer modeling. I believe that this antenna is just another variant of the top loaded vertical or Marconi antenna that was popular in the first two decades of the 20th century. Mathematical analysis of antennas was poor in 1929.

The Off Center Fed Dipole (OCF) – Around 1950 the classic 130 ft long 1929 Windom was resurrected with a 300 ohm TV twin lead feeder inserted at 19.7 ft off of center. All the same unsupported claims were made. As a young ham, WN3TNM, I built one to work with my 75 watt Novice station on 80 meters. I had no end of RF in the shack, a shocking key, so I went to center feed and solved that problem. But you can analyze this antenna with EZNEC, which I did with a 200 ohm zero length feeder. The SWR is shown on Figure 3.

The SWR on 75/80 meters is reasonable and the azimuth pattern is nearly circular at the high vertical radiation angle of an electrically low (0.19 wavelength) antenna. The SWR remains below 2.0:1 at resonance on 40 and 20 meters but the resonant frequencies

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(Ham Tech from page 4)

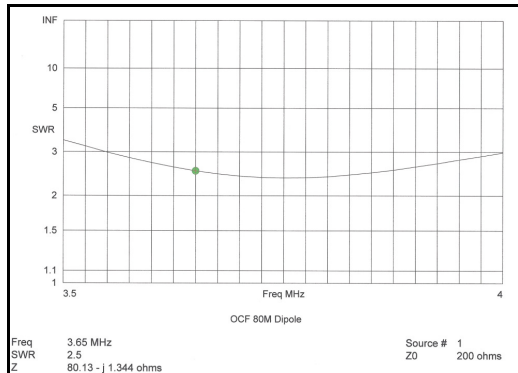


Figure 3 SWR for 80 M OCF Dipole. $Z_0 = 200$ ohm

are 7.475 and 15.025 MHz, outside of both bands. At useful in band frequencies the SWR climbs to between 3 and 5:1 on 40 and between 6 and 10:1 on 20. The azimuth pattern breaks up into 4 asymmetrical lobes on 40 and 6 on 20 meters. All of this assumes a non-radiating feed line since I modeled it with zero length. It will have a significant effect, depending on its length, since the feeder carries highly unbalanced currents.

Enter The Carolina Windom -The Carolina Windom inventors recognized that the transmission line radiates and must be included in the analysis. They placed a 4:1 transformer at the antenna to drop the impedance to about 50 ohms and fed the transformer with 22 ft. of RG-8x run vertically. Additional coax to run into the shack is isolated with a current isolation balun. Azimuth patterns at both 10 and 20 meters are given in the referenced Antenna Book. The best gain achieved is equal to a halfwave dipole on 20 meters.

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Monthly Puzzle

Don – WA2DUE, wa2due at arrl dot net

Reviewing lastmonths puzzles:

The secant of one of the angles of a right triangle is 2. State the angles in degrees of this triangle?

Solution: The secant is the reciprocal of the cosine therefore the triangle consists of a 90, 60, and 30 degree angles.

A capacitor with a reactance of 12 Ohms is in parallel with a resistance of 16 Ohms. What is the resulting impedance and phase angle?

Solution: A parallel combination of resistance and reactance can be solved by vector addition of susceptance and conductance. $Y = (G^2 + B^2)^{0.5}$ where $Y = \text{admittance} = 1/Z$, $G = \text{conductance or } 1/R$, and $B = \text{susceptance or } 1/X$. Substituting we get $B = 0.0833$ and $G = 0.0625$ and $Y = 0.104$ and therefore $Z = 1/Y$ or 9.6 Ohms. The phase angle in terms of conductance and susceptance is $\theta = \arctan (B/G) = \arctan (0.0833/0.0625) = \arctan (1.33) = 53.1$ degrees.

Fred, W2EKB has submitted a solution to one of the puzzles.

Here are this months puzzles:

If one number of a Pythagorean triplet is 16, select the other two numbers from the set: 66,65;56,55; 75,74 and 65,63. This multiple choice question was found on an old 8 grade test paper before slide rules or calculators were generally available.

If 200 Volt AC is applied to an inductor of 100 Ohms reactance in series with a 75 Ohm resistor, what amount of power is consumed across each element?

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

Long May It Wave

Memorial Day, the day when we honor those who gave their lives – the ultimate sacrifice – so that we may live under the spacious skies of freedom is now history for the year 2013. Our colors fly at half staff until noon and then are raised to full staff.

Flag Day, that day when we show off our Nation's colors for all to see is now history for the year 2013. Again KV2R and KV2M placed our flag with loving care into the flag holder to wave from our front porch for all to see.

July 4th is that most special day when we celebrate the beginning of our hard won battle for liberty, freedom, and justice for all, as one nation under God

19 August 1813 – another special day for the flag of the United States of America

It started its life during a sweltering hot day in July 1813 on the floor of Claggett's Brewery located in East Baltimore, the only place in the area large enough to accommodate its greatness. At that time, Mary Pickersgill, one of the best flag makers in Baltimore received a rush order from Maj. George Armistead, the 33 year old commander of Fort McHenry. This rush order was for a huge flag to measure 30 feet by 42 feet. The flag's destination was the federal garrison guarding the entrance to Baltimore's waterfront, Fort McHenry. When this giant flag was raised, Armistead wanted to be sure that the British would be sure to see it from miles away.

Mary and her daughter Caroline, along with others got right to work. They had to deal with over 300 yards of English worsted wool bunting on the floor of Claggett's Brewery in hot summer weather. Ms. Pickersgill overlapped and stitched eight stripes

of red wood and alternated them with seven strips of undyed white wool for the stripes. The bunting that she used was only made in 18 inch widths, but the stripes were two feet wide so she had to splice the extra six inches all the way across. The flag's canton was a deep blue rectangle 16 feet by 21 feet. While seated on the brewery floor, she stitched five-pointed stars into the canton. Each star was made from white cotton and was nearly two feet across. Mary then turned the flag over and snipped out blue material from the backs of the stars, tightly binding the edges. Now the stars could be seen from the other side. By the middle of August the flag was done. This new flag had 15 stars and 15 stripes, acknowledging the two newest States – Vermont and Kentucky.

Ms. Pickersgill also made a smaller flag – 17 feet by 25 feet. This flag was to be flown in bad weather thereby saving wear and tear on the more expensive big flag. The large flag cost the government \$405.90 and the smaller one \$168.54. The giant flag along with the smaller version were delivered on 19 August 1813. It is believed that the giant flag was first raised over Fort McHenry as soon as the flags were delivered.

The British began the assault on Baltimore on 13 September 1814 and the battle raged for 25 hours. At about 2:00 PM on 13 September, the smaller flag – the storm flag was most likely raised in place of its larger version. At about 7:00 AM on 14 September, Admiral Cochrane ordered a halt to the barrage. By 9:00 AM the British had retreated.

A young lawyer and poet, Francis Scott Key had witnessed the battle from an American truce ship, The President. On the morning of 14 September, Francis Scott Key

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also saw our colors proudly and defiantly waving over the fort. That very evening Key completed a long poem about the battle with its "rockets red glare" and "bombs bursting in air". He referred to our flag as a "star spangled banner". Thus was the beginning of our national anthem. I am sure that if we review the history of our great country, we would find something special that happened on each day of the year.

My uncle Henry who recently passed away served in the Army Air Corps during WWII flew the flag every day of the year - weather permitting. When he was laid to rest taps was sounded, the American flag from his casket was solemnly folded and presented to my other Uncle Raymond.

I am privileged and proud to be an American - both by birth and by choice - and I am going to display our colors more often. After all, living in freedom each day is reason enough to display that red, white, and blue in honor of all that the United States of America means to me.

73 to all and God bless America

Mary, KV2M

P.S. The Leap Year Specials will be continued but were put on hold to honor our Flag.

President's Message

Ken - K2WB

Field Day is one of those club events that helps bring club members together. This common goal of success has been a tradition with the SJRA from the beginning of Field Day in 1933.

This is a time to come out and do what you can to help your club succeed. One of the best side effects of Field Day is the friendships that grow and the exchange of ideas or techniques. I look forward to seeing everyone at Savich Farm at Field Day.

The picnic will be around 3:00 PM on Saturday June 22nd, the club will be providing water, soft drinks, and a grill. If you are planning on attending the picnic you will need to bring your own food and a folding chair.

The Rice School demonstration at the Rice School went very well. A special Thanks to Art, N2CPR; Rick, W2RDS; Mary, KV2M; Rich, KV2R; Roy, WB2EOD; Dara, KC2THQ; and John, W1II for stepping up to talk to the students. I had problems with 2m (not related to the repeater), all operations ended up on 40m. It was a fun day, I am very thankful for my trusty 40m full size ¼ wave portable vertical.

The SJRA VE team congratulates the following individuals who have given permission to post their 06/12/2013 Amateur Radio License achievements in Harmonics.

Michael McDonell
447 Manor Ave.
Millville, NJ
Passed his General Class exam.

Charles Wilkins
404 Bradford Rd.
Cherry Hill, NJ
Michele Taylor
12 Megan Dr.
Millville, NJ

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General Class Announcement

Many Techs in South Jersey have been asking for a General Class, so they can upgrade. I am happy to announce the following!

DATES:

Starting Wednesday, July 10th through Friday, July 12th at 6~9 PM - then Saturday, July 13th at 8~10 AM for a recap. Testing will follow immediately thereafter.

VENUE:

Camden County EOC
Charles J. DePalma Complex
2311 Egg Harbor Rd
Lindenwold NJ, 08021

IMPORTANT:

Because of room size, we have to limit this class to 30 students. If you are *certain* you are going to come to the class and take the test, you must send an email to that effect, with your complete contact information, i.e., callsign and cell phone number, to wa3uvv at arrl dot net. *Please* do not sign up if you aren't going to be able to commit to the schedule. Otherwise, you might be preventing someone else from upgrading.

Also, note that this is a General Class session - only. The instructors will not be teaching the Technician Class information as part of this. It is expected that students will already have their Tech license and some on-air experience. When you pass your General test, you are welcome to stay and sit for the Extra exam.

This is an ARRL VE session. ARRL License Study Guides are available locally through Ham Radio Outlet in New Castle, DE or from the League. It is expected that you will have already studied the Guide before class starts. If you have any special questions about the material covered, please write them down and bring them with you, as we will allow time to cover them.

This is not strictly a "ham-cram" setting. During the evenings, we'll be covering the questions and discussing some background, so you have a better understanding of "what it all means".

Thank you. I look forward to seeing you there!

Cory Sickles - WA3UVV
SNJ PIC, VE

My father, Gordon Skorup (N2YU, SK)

I wanted you to know that my father passed away yesterday morning (Friday, 5/24). He had been diagnosed with melanoma Stage IV in December, didn't want any treatment, was in hospital in March for pneumonia and congestive heart failure, bounced back, went to therapy and came home 4 weeks ago, but on Mother's Day his right side went weak and we found out that the cancer had spread to the brain. He has

been home on hospice (where he wanted) and he passed with all five of us and my mother right there. My mother wanted to see him open his eyes one last time before his last breath and she got her wish. They are a very close couple of 59 years. At least my father was not in a lot of pain. Here are the arrangements. I do not need meals, etc. thanks as we have a big family and I will be in and out. Just prayers. Thanks.

Eileen O'Rourke
Gibbsboro, NJ

Invite a Kid to Field Day

By Dan Romanchik, KB6NU

If you've been around ham radio for any length of time, you'll notice that ham radio operators like to complain. One of the most frequently heard complaints is, "Kids aren't interested in amateur radio anymore." While I'm not so sure that's true, I do know that now is the time for you to do something about it.

How? Invite a kid to Field Day.

Invite them to help you set up antennas.

Show them how you power the rigs with a generator, or even cooler, by charging a battery with a solar panel.

Let them sit in front of the rig, show them how to make contacts, and log for them. To make it easier for them, make up a cheat sheet with the callsign spelled out phonetically and the exchange, also spelled out phonetically.

Let them operate for as long as they're interested. When they're done, thank them on contributing to your club's total score.

Answer every single one of their questions.

This may not win them over immediately, but I can assure you that it will make an impression on them. To increase your chances of success, find a kid that's already technically inclined. Invite a bunch of them from the high school's robotics team, for example.

If you don't have any plans for Field Day, then make some. Then, go find that kid. If you don't, then you don't have any right to complain that there are no kids in ham radio.

21 Things To Do After You Get Your Ham Radio License

Dan, KB6NU, *cwgeek at kb6nu dot com*

In addition to joining your local amateur radio club, you should also join the American Radio Relay League (ARRL). The ARRL is that national association for radio amateurs and offers many services for amateur radio operators:

QST. QST is the ARRL's monthly magazine. Every month, you'll receive a magazine full of good information, projects, and news about amateur radio.

QST archive. In the past couple of years, the ARRL has digitized every issue of QST that they've ever published. It's available on the ARRL website, but only to current members.

E-mail newsletters. In addition to QST, the ARRL publishes e-mail newsletters on a variety of topics, including:

The ARRL Letter is a weekly newsletter with news about amateur radio.

Contest Update is a bi-weekly newsletter for contest enthusiasts. I strongly suggest signing up for this newsletter, as it's about much more than contesting.

The ARES E-Letter is for those amateur radio operators involved in public service and emergency communications.

Section manager and division manager newsletters.

Technical Information Service (TIS). As a member, you can call or e-mail ARRL Technical Information Service specialists for answers to technical and operating questions.

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(Meeting Minutes from page 3)

June VHF; June 8 and 9: Field Day; June 22 and 23. No Ways and Means report. Picnic, by Debbie, W9QWN, who reports that she will not be able to attend. Ken, trustee, reports no citations.

Health and welfare: N2YU is now silent key. Flowers were sent. The XYL of KC2JJT is having bypass surgery.

Awards; Lou to prepare a plaque for Compex, who supplies our testing facility.

Programs: June, FD; July, Bob Rose AA3RR on LARC VE testing; August, Ray and Joe on weak signal VHF; September, member consignment auction; October, more homebrew, possibly into November; December is awards night.

VE report; four tested, three passed.

Website, doing well, constant improvement seen.

Field Day; we lost a shelter and the GOTA station. Need more ops on all bands. We received notice that the President of the United States and the Governor of New Jersey would not be able to attend. We expect a freeholder and a Councilman to attend.

100th anniversary - K2WJL and KD2P have volunteered for the committee.

Good of the club; we need to formalize our estate policy, board members to consider a policy before the next meeting.

Adjournment at 9:10 PM.

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

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

(Ham Tech from page 5)

The pattern has many lobes with up to 10 dB of ripple. There are many other antennas that out-perform the OCF and Windom antennas without the feed line radiation problem.

Next month we take an in-depth look at the trap dipole, the basis of many multi-band antennas.

(21 Things from page 9)

Legislative advocacy. The ARRL is the only group that effectively speaks for amateur radio with the FCC and Congress. Without this representation, our spectrum would be fair game whenever the political winds shift.

Outgoing QSL bureau. QSL bureaus help save postage when sending and receiving QSL cards from foreign stations. Only ARRL members can use the outgoing bureau.

Equipment insurance. Your homeowner's or renter's insurance may or may not cover your amateur radio equipment. This insurance program covers your amateur station, antennas and mobile equipment should they be damaged by lightning, theft, accident, fire, flood, tornado and other natural disasters.

There are lots of naysayers out there who will advise you to not to join the ARRL and tell you it's a waste of money. I think that you should find out for yourself. Join the ARRL and participate in some of its activities. After you've done that, you can make a better decision about whether membership is right for you or not.

For more information on joining the ARRL, go to <https://www.arrl.org/join-arrl-renew-membership/>.

SJRA Jackets, Shirts, Hats

Order NOW - Next order going in soon!



Spring Jacket is \$44 (S,M,L,XL), Fall Jacket is \$55 (S,M,L,XL),
Shirts are \$27 (S,M,L,XL), Hats are \$25 (one size fits all)
Name and Call Sign embroidery included....Larger sizes slightly more!
Email Joe, KC2TN, with orders or additional info:
kc2tn at comcast dot net

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@SJRA.org. A calendar and more information can be found on the SJRA web site.

June Meeting
Fourth Wednesday

June 26, 2013

“Our Meetings are Smoke Free”

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 June:

Our June meeting will be reports from Field Day!! Don't miss out!!

June 2013 Health and Welfare:

Happy Birthday to our members with June birthdays. Kathy Edwards, KM2KME

(VE Exam Results Continued from page 7)

Robert Seay
 25 Clover Ave.
 West Berlin, NJ

Don Cavallaro
 430 Kelham Ct.
 Mount Laurel, NJ

The last four people have passed
 their Technician Class License exam

First Class Mail

South Jersey Radio Association
 PO Box 1026
 Haddonfield, NJ 08033

