

## 2015 Club Officers

<b>President :</b>	<b>Jim Wright, N2GXJ</b>	<b>Trustees - 4 year term</b>
<b>Vice President :</b>	<b>Cory Sickles, WA3UVV</b>	<b>Martin Wilt, W2ILT (2012-2015)</b>
<b>Treasurer :</b>	<b>Al Arrison, KB2AYU</b>	<b>Ray Martin, W2RM (2014-2016)</b>
<b>Recording Secretary :</b>	<b>Sheldon Parker, K2MEN</b>	<b>Brian Jones, KD2BXD (2014-2017)</b>
<b>Corresponding Secretary :</b>	<b>Ron Block, NR2B</b>	<b>Bob Demola, KD2GFL (2015-2018)</b>

### Board of Directors - 3 year term

<b>Jeffrey Garth, KC2WCS</b>	<b>(2013-2015)</b>	<b>John Zaruba Jr, K2ZA</b>	<b>(2014-2016)</b>
<b>Mark Townsend, W2OCY</b>	<b>(2013-2015)</b>	<b>Chuck Colabrese, WA2TML</b>	<b>(2015-2017)</b>
<b>Dan Tremolini, N2TXG</b>	<b>(2014-2016)</b>	<b>Bill Price, NJ2S</b>	<b>(2015-2017)</b>

### This Month's Calendar...

#### General Membership Meeting

Wednesday, March 4, 2015 @ 1930 Hours  
Pfeiffer Community Center

#### Fox Hunt VII : "Has Spring Sprung?"

Saturday, March 7, 2015 @ 0800 Hours

#### Tech Saturdays Forum

Saturday, March 7, 2015 @ 0900 Hours  
GCARC Clubhouse

#### VE License Testing Session

Thursday, March 12, 2015 @ 1900 Hours  
Franklin Township Public Library  
Gary Reed, N2QEE  
glreed49 <at> verizon <dot> net

#### Board of Directors Meeting

Wednesday, March 18, 2015 @ 1900 Hours  
GCARC Clubhouse

#### GCARC 2M Ragchew Net

Thursday, March 19, 2015 @ 2000 Hours  
147.180 MHz Repeater

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# President's Message



Where is La Aurora International Airport? And why was it closed? If you answered the Republic of Guatemala, and the erupting Fuego Volcano as the reason, you would be right. And bonus point if you knew the Club of Amateur Radio of Guatemala activated their emergency station TG0AA on 7.118 MHz during the event in which tourists who were hiking on the volcano and those living in nearby villages had to be evacuated.



Seeking reliable backup communications in a crisis is nothing new. What many in this info age are beginning to realize is that wide-area infrastructure-based communication systems cannot be relied on for local crisis management. It is with no surprise to us that emergency managers are finding new solutions to this problem that involve ham radio.

From Cooper Hospital, to the Clayton EOC, ham radio is part of our region's emergency response. More importantly, you, as a ham radio operator, can be part of the solution should there be a local crisis. Interested in learning more? You will want to come out to our Wednesday March 4, 2015 club meeting. Guest speaker for the evening will be our section's Emergency Coordinator, John Zaruba Jr., K2ZA, who will be treating GCARC to one of the first public unveilings of "the Pod". You can get an insider's sneak-peak ahead of the meeting on our Facebook page ([www.facebook.com/W2MMD](http://www.facebook.com/W2MMD)) or on page 5 of this issue.

While on the topic of club meetings, a special thank you goes out to newly elected section manager, Skip Arey, N2EI, for visiting and speaking with us at our February club meeting. Welcome to your new role in our section! Also, a special thank you to Steve Molo, KI4KWR, representing GigaParts, for the free "swag", and our first look at Yaesu's new FT-991 transceiver. It was a very informative meeting for all.

Beyond the unveiling of "the Pod" at the March 4 club meeting, we are excited to announce that legendary radio historian John Dilks, K2TQN will be our guest on Wednesday, April 1, and that Nobel Prize recipient Dr. Joseph Taylor, K1JT will be speaking at our club meeting on Wednesday, May 6. Mark your calendars; invite a friend! Visitors and guests are always welcome at our club meetings and events!

Speaking of events, we have some coming up that you might want to set reminders for. Come join us for a "Has Spring Sprung?" radio direction finding hunt activity @ 0800, followed by "Tech Saturdays" @ 0900 at the Clubhouse on March 7. On Sunday, April 26, make plans to be a guest radio operator on board the museum ship Battleship New Jersey! And it's not too soon to mark your calendar for Field Day (June 27 and 28), and (yes!) our GCARC Summer PotLuck Picnic on Saturday, July 25 @ 1300 Hours! More details on these and other events can be found in this edition of Crosstalk, and on our web site, [www.w2mmd.org](http://www.w2mmd.org).

See you at the meeting on Wednesday March 4.

Respectfully, Jim Wright, N2GXJ Ω



## Down Jersey DXing

By Bill Grim, WØMHK

So how did you fare working a very rare one that was close to Down Jersey???? Congratulations to all of you that made it into the K1N Navassa DXpedition log book!!! I saw a number of reports that club members did find themselves in that great Club Log on-line update of their QSOs. Boy, does that help to ease the tension of not knowing whether or not you made the QSO through some possibly heavy QRM. The effort was quite aware of the needs of radio amateurs around the corner and around the world. All and all, I felt it was one of the best conducted DXpeditions ever. I especially liked their attempts at the end of their island-stay to only work ATNO's - All-Time New Ones - and get as many possible individual calls into their database.

Were YOU consistent and competent in using your split-frequency capability while trying to work K1N? Did you know your XCVR well enough to change bands quickly while hunting them and still maintain split operation? Did you find a way of using your rig's filters to hear them better on many different modes and bands? I'm a firm believer in spending time, even with your manual if necessary, to get to know ALL the capabilities of your rig. Even after a few years of ownership, you may discover a better way to receive a most wanted signal with different filter and digital enhancements on your transceiver.

Listening to how the K1N operators handled pile-ups and who they came back to is a big part of successful DXing. Identifying what frequency was used by the last successful caller is a great way to hunt down your DX QSO. I like to be on the same frequency or close to it when I call after the last established QSO. Often the DX will be moving UP or DOWN from the last station worked. Try to anticipate this movement and drop your call sign in just ahead (or behind) of that frequency. Super Stations can call and call on what they consider to be a "relatively" clean frequency to work the DX. We "less endowed" (height, elements and power) stations need to use some skill to overcome the Big Guns' advantages.

Finally, I can't emphasize enough the efficiency of CW over SSB and RTTY for working DX. Gotta put a "plug" in here for my favorite mode that has helped me work many rare ones over the decades. CW's narrow bandwidth and simplicity of on/off keying as opposed to complex voice recognition of syllables is just a winner when it comes to pile-ups and weak signal DX success. Ham Radio is a great fraternity, but until you have mastered some CW, I don't think you really know how special the hobby really is. Master CW and you will have a leg up on anyone trying to excel in DX.

If you want more of the K1N style excitement, this same group is hoping to activate KP5, Desecheo Island, in the near future! Hopefully, your experiences and mistakes with Navassa will help you to "bag" KP5 in the not too distant future. Watch their website – [www.kp5.us](http://www.kp5.us) – for more information.



Remember to check this month with **NG3K's Announced**

**DX Operations** website to see what the DX "menu" will look like for the ARRL DX International Phone Contest slated for March 7-8. It's a great place to "clean-up" some of your North American and European needs with a simple "5-9 New Jersey" exchange to work a new one. The high bands in this contest are also a great place to work South American destinations. The paths are usually quite good to the South this time of the year.

*Down Jersey DXing - Continued on page 4*

**Down Jersey DXing - Continued from page 3**

Some additional March DX picks are included below as we hope for Spring and unfrozen rotors.....

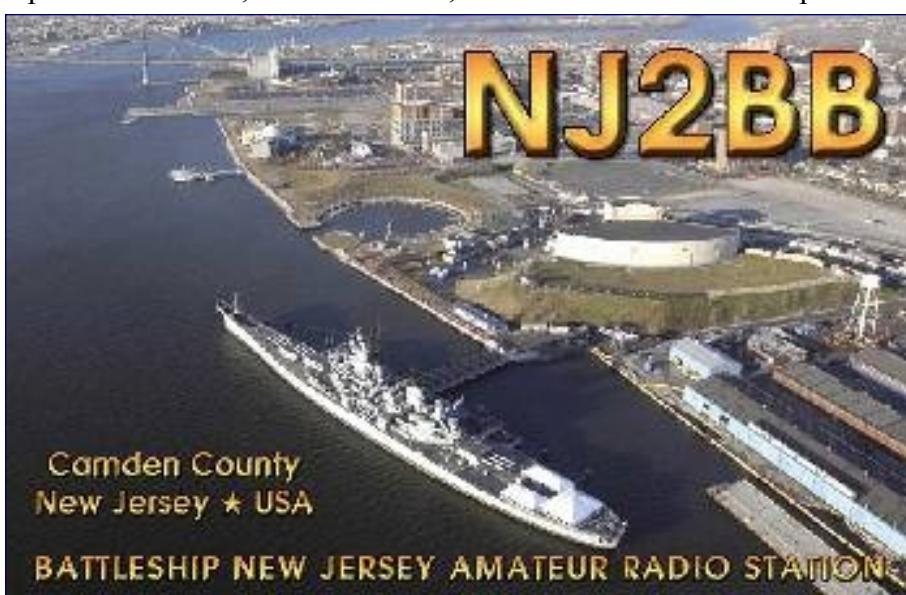
CALL	DATES	HIGHLIGHTS	DIFFICULTY (5=MOST RARE)	ENTITY
PZ5LP	03/05 - 05/06	80-10M/SSB, Digital	2	Surinam
CT9	03/05 - 04/01	Focus on WARC/Mainly CW	1	Madeira Island
VU4	03/06 - 05/18	VU OPS/MNI Bands/Modes	4	Andaman Island
9Q0HQ	03/10 - 03/25	160-6M/CW, SSB, RTTY	3	Democratic Republic of the Congo
7QAA	03/11 - 04/01	160-6M/CW, SSB, RTTY	3	Malawi
A6	03/18 - 03/27	40-10M/CW, Digital	2	United Arab Emirates
KH2	03/19 - 03/23	160-10M/CW, SSB, Digital	3	Guam
VK9M	03/20 - 03/27	40-10M/SSB, Digital	3	Norfolk Island
C21EU	03/25 - 04/04	40-10M/CW, SSB, RTTY	3	Nauru
V6Z	03/27 - 04/09	80-10M/CW, SSB, RTTY?	3	Micronesia

Credits : NG3K Announce DX Operations : [www.ng3k.com/Misc/adxo.html](http://www.ng3k.com/Misc/adxo.html)

## Battleship New Jersey : [www.nj2bb.org](http://www.nj2bb.org)

By Jim Wright, N2GXJ

Battleship New Jersey Radio Club president Harry Bryant, AA2WN, has graciously invited interested GCARC club members the opportunity to be guest radio operators on board the museum ship Battleship New Jersey, Sunday afternoon, April 26! If you are interested in participating in this by-invitation event, I will have a sign-up sheet available, with directions, at both the March 4 and April 1 club meetings. Ω





## March 4, 2015 Program Outlook

By Cory Sickles, WA3UVV

Last Month's program was a "double header", with an overview from our new Section Manager – TJ "Skip" Arey, N2EI and a demonstration of Yaesu's new FT-991 transceiver, by Steve Molo, KI4KWR. I counted over 50 heads at our well-attended meeting – which is wonderful.



This month, John Zaruba, K2ZA, Bob Saunders, KC2UYS, and yours truly will be conducting an unveiling of sorts – with one of the Communications Pods we designed and had built – using grant funds made available to us through our close relationship with the New Jersey - South Region – Healthcare Emergency Preparedness Coalition.

The CommPods are essentially a deconstructed communications trailer – which removes all of the downside elements (registration, insurance, inspection, heavy-duty towing vehicle requirement, etc) and retains the core elements that we want and need. Each CommPod is small enough to fit through an ADA doorway, into a helicopter or passenger rail car and be towed by any vehicle with a class 3 trailer hitch.

The first three have high-current, deep-cycle batteries installed and solar panels are included. Also, HF through SHF capabilities were designed in – for analog and digital voice, plus high-speed data transmissions. They'll be valuable assets for public service events like the MS-150, Tour de Pitman and Field Day – plus demonstration opportunities.

Please attend the March meeting to see what is "under the hood" and share an invitation with anyone you know that's interested in EMCOMM work and promoting the positive value of amateur radio for public service. Ω



# **Gloucester County Amateur Radio Club E-mail List**

## **GCARC <at> Mailman <dot> QTH <dot> Net**

### **Acceptable Use Policy**

The Gloucester County Amateur Radio Club mailing list provides a forum for the discussion of Club activities in particular and amateur radio topics in general.

#### **Acceptable Content**

The club embraces a diversity of opinions and values. In order to preserve a constructive environment, we do insist that messages contain appropriate content and are respectful of the members and readers of the list. All posts should contain the author's first name and callsign or full name if not licensed. Examples of on-topic posts include:

- Announcements of GCARC activities, requests for member participation, or other pertinent items of interest to members.
- Technical discussions.
- DXpeditions or on-air activities.
- Contests.
- Inquiries and suggestions about choosing equipment, learning operating techniques, or troubleshooting problems.
- Notices of personal equipment for sale.

#### **Unacceptable Content**

Strong disagreements on issues can occur from time to time, but the GCARC mailing list is not the place for exchanges which become spiteful or unproductive. If you must have a heated exchange, it should be conducted privately and not in public on the e-mail list. Unacceptable content is defined as anything that is:

- Unlawful or seeks to entice to unlawful activity.
- Insulting, abusive, harassing, or threatening.
- Knowingly false or misrepresentative.
- Commercial advertising.
- Off-topic (political, religious, internet rumors, or otherwise outside the scope of amateur radio).
- Solicitations of a non-amateur radio related nature.

#### **Enforcement of this Acceptable Use Policy**

Access to the GCARC mailing list is a privilege and not a right. While these rules cover most common situations, they cannot anticipate everything. Consequently, the Club reserves the right take any actions it deems appropriate to insure this forum is not disrupted or abused. Violators of this policy may be subjected to manual moderation or have their ability to post messages suspended. Violators may or may not be warned prior to enforcement.

This policy and the guidelines listed on page 30 are posted on our website on the **E-Mail Reflector** page.  
Ω



## Tech Saturday Forum- March 7, 2015

By John Zaruba, K2ZA

The objective of the Tech Saturday Forum is to have an open discussion of subjects of Amateur Radio interest. All questions are welcome as well as a venue for members to show off their latest ham radio projects or gadgets. All are welcome - hams and non-hams - club members and non-club members.



Take a guided tour of our clubhouse. View our HF and VHF/UHF Operation Facilities and our vast antenna farm.

The Tech Saturday Forum is held on the Saturday after the General Membership meeting. The next one is March 7th, 2015 at 0900 Hours. For more information, go to [www.w2mmd.org](http://www.w2mmd.org) on the Tech Saturday Forum page. Ω

## Welcome New Club Members:

Bart Kleczynski, AC2PT, who has an Amateur Extra class license and lives in Sicklerville, NJ.  
Matthew Rainey, KD2HVJ, who has a General class license and lives in Elmer, NJ.  
Gary Hewitt, N2WHV, who has a General class license and lives in Bridgeton, NJ.  
Gary Bender, KC2YWJ, who has a Technician class license and lives in Franklinville, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club events, activities, and meetings. Ω



## 100 Watts at the Clubhouse Station - December 20, 2014

By Mark Gottlieb, WA2DIY

Date	Time	Call	Band	Freq	Mode	Grid	Country	Comments
12/20	18:57	V31MA	10M	28.480	SSB	EK571d	Belize	Marc M.
12/20	19:07	W1AW/KH6	15M	21.280	SSB	FN31pr	United States	Hawaii - ARRL HQ Operators Club
12/20	20:22	ZS6MAL	20M	14.190	SSB	KG43ar	South Africa	Malcolm De Beer
12/20	20:31	W1AW/KH6	17M	18.152	SSB	FN31pr	United States	Hawaii - ARRL HQ Operators Club
12/20	20:41	NK7Z	10M	28.390	SSB	CN871a	United States	Oregon - David Cole
12/20	20:45	OX3XR	10M	28.429	SSB	GP44de	Greenland	Peter Thulesen
12/20	20:51	OF9X	20M	14.227	SSB	KP17uw	Finland	Santa Claus World
12/20	21:22	KL7YK	10M	28.395	SSB	BP51bd	United States	Alaska - Ronald R Keech Sr

## ARRL Ham Radio License Exam Practice Website

<http://arrlexamreview.appspot.com/>

## **Color Me Gone**

By Cory Sickles, WA3UVV

In other D-STAR news, the ID-51A has been discontinued and may well be sold out by the time you read this. The 50<sup>th</sup> Anniversary models have been significantly discounted and will be SOWG (Sold Out When Gone – a term popular within Radio Shack – which now sadly defines the entire company).



If you are still looking for a more-distinctive D-STAR and FM dual-bander, then this is your last chance to get one in red, green, blue, white or black with gold trim. These will be replaced by the “Plus” model (which is what the Anniversary radios actually are) in the coming weeks.

The Plus’ have a firmware upgrade that allows significantly faster data throughput, selected analog FM machines in the “Near Repeater” database, a better antenna and printed manual. Hopefully, the pricing will remain a bit more competitive and in line with what is offered in Japan – as Yaesu’s FT2DR portable enters the market and settles in for the long haul. **Ω**

## **IF YOU GET KIDS INTERESTED IN AMATEUR RADIO**



**THEY WILL NEVER HAVE MONEY  
FOR ALCOHOL OR DRUGS**



## "WE'RE ON OUR WAY"

By Skip Arey, N2EI

First off, many thanks to outgoing Section manager George Strayline, W2GSS. I took on this position with his support and I look forward to his continued advise and council as I go forward in this opportunity to give back to the hobby that has given me so much pleasure over the years.

As of this writing, I am working closely with the Assistant Section Managers and other members of the Section Team to assure that all Section Appointments are up to date and taking further steps to fill in any gaps. To this end, I am pleased to announce the appointment of Frank J. Palecek, KC2TKD as SNJ Section Affiliated Club Coordinator and Bob Applegate, K2UT as SNJ Section Youth Coordinator.

We still have one major vacancy in the Section Team, that being, \*State Government Liaison. The ASM's and I will be happy to talk with anyone with government experience that might want to take on this position.

Throughout the month of February, I will begin to visit all of our Section Clubs to get to know more of you and get a better sense of how we will be able to find new ways to work together.

Scheduled so far are:

Gloucester County Amateur Radio Club ([www.w2mmd.org](http://www.w2mmd.org)) - February 4

Delaware Valley Radio Amateurs ([www.w2zq.com](http://www.w2zq.com)) - February 11

Cape May County Amateur Radio Club ([www.cmearc.org](http://www.cmearc.org)) - February 18

Gloucester City Amateur Radio Club HamFest ([www.nj2gc.org](http://www.nj2gc.org)) - February 21

Old Barney Amateur Radio Club ([www.obarc.org](http://www.obarc.org)) - March 3

Please feel free to contact me about attending any other meetings or events within our Section.

We are working to keep the SNJ Section Web Page ([www.arrl.org/groups/view/southern-new-jersey](http://www.arrl.org/groups/view/southern-new-jersey)) on the ARRL Web Site up to date. We would very much like to hear from members and clubs who participate in ham activities that would be of interest to the section, pictures included.

I can be reached at the following numbers, e-mails and Social Media Locations.

n2ei@arrl.net

skipn2ei@gmail.com

609-280-0006

Facebook = Skip Arey

Twitter = @Skip\_Arey\_N2EI

LinkedIn = Thomas Arey N2EI

I am looking forward to working with everyone in our Section

73, DE

T.J. "SKIP" AREY N2EI

ARRL Southern New Jersey Section

n2ei@arrl.org

\* Note : See update on page 19 Ω

## 2014 Licensing Statistics

The following 2014 year-end report of FCC licenses issued is supplied by Maria Somma, AB1FM, ARRL VEC Manager.

At the end of December, the total number of U.S. Radio Amateurs licensed in the FCC database was 726,275, the highest number ever!

New amateur licenses issued were up by an incredible 15% compared to 2013 (33,241 versus 28,886), setting a record in recent years.

Upgraded amateur licenses were also up in 2014 by an unprecedented 13% (10,556 versus 9,325).

FCC RESULTS THROUGH DECEMBER			
License Action	2013	2014	% Change
New Licenses	28,886	33,241	15%
Upgraded Licenses	9,325	10,556	13%

*Article credit: Radio Waves, Winter 2015 and The American Radio Relay League*

## RADIOSHACK – The End of an Era

By Cory Sickles, WA3UVV

Much has been written about the decline of Radio Shack – once the preeminent retailer of popular electronics, including stereo systems, CB and ham rigs, in-vehicle sound systems, microcomputers and - of course – parts. I won't dwell on about how they could have kept from failing or the multiple steps they took toward their demise.

Radio Shack has a special place in my heart, as I worked for the company – starting while still in high school. From a part-time salesperson to eventually managing a Computer Center, those years were filled with fun, learning, hard work and frustrating days (you truly don't have any idea how many arrogant idiots there are in the world, until you work retail) - spent with some of the best friends a guy could have. There were several mentors in the group and it was an interesting place to grow up.



It was with some sorrow when I saw the list of stores being closed in the first round and found the one I worked in (and helped build from scratch) on that list. Even as recently as a few years ago, I could still visit that store, introduce myself and hear "Oh, you're Cory – we've heard lots of stories about you."

Everything has its time and it looks like Radio Shack is about to become history. I don't know who will take over the space at the one in my hometown, but I hope my mark on the store stays there – the HVAC breakers marked as "LIFE SUPPORT".  $\Omega$

## Have You “Heard”?

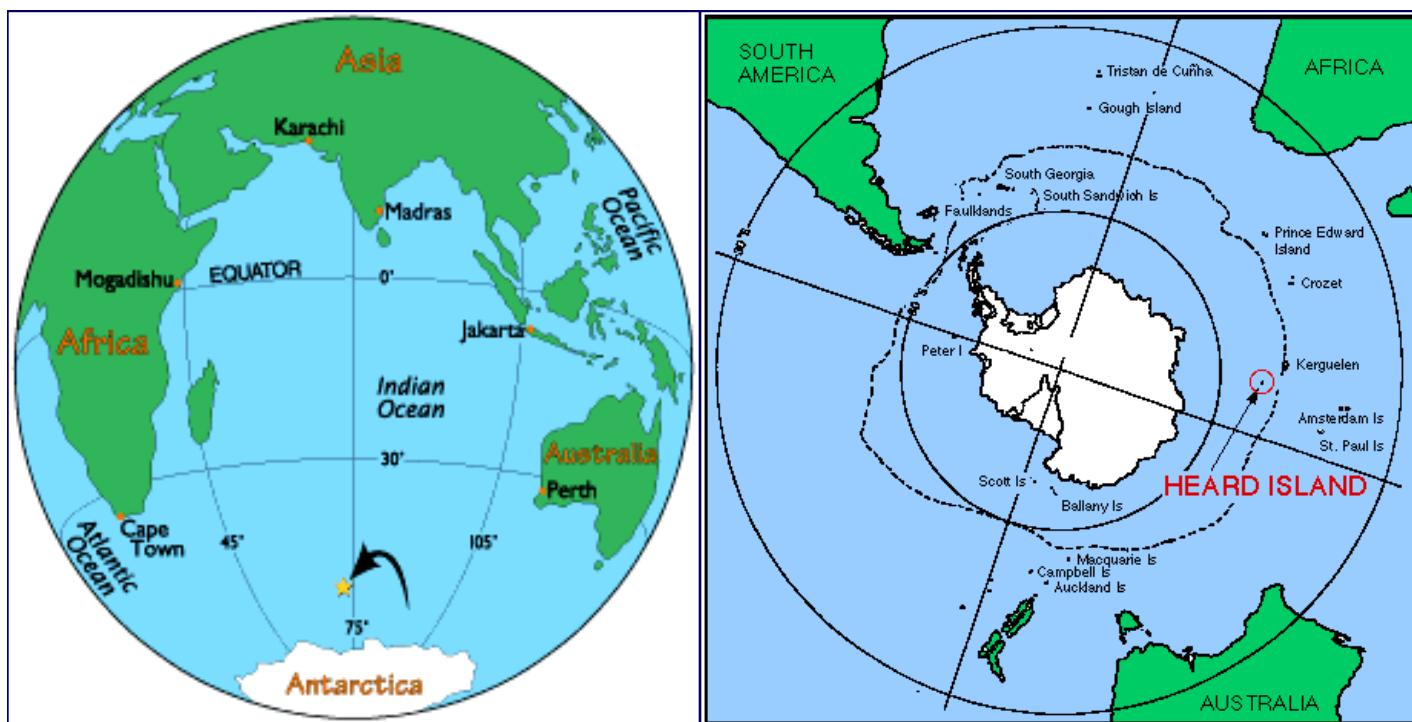
By Jim Wright, N2GXJ

One of the columns in this Crosstalk newsletter (or should we now say Crosstalk magazine?) that I look forward to each edition is Bill Grim's W0MHK monthly “Down Jersey DXing” column. Did you catch the tip last month on the differences between KG4 calls with two letter vs three letter suffixes? I did not know that. And thank you for the “heads up” about Kenya going to be on the air. Though not yet “in the log”, I hope to catch them soon.

With this decade's K1N Navassa Island DX expedition now in the books, who is next in your top-10 list of most wanted DX entities in the DXCC program's list, and when will they go on the air?

If you're wondering what all this talk of Bill's column and DX expeditions has to do with the title of this article (Have you “Heard”?), the answer is simple. There's a place called “Heard Island” that is on the DXCC list, that might have a big goose egg on your DXCC list, because the last time it was activated was eighteen years ago. To put that in perspective, for some, that was a LIFETIME ago. Well, there was a reference in the Amateur Radio Newsline™ ([www.arnewsline.org](http://www.arnewsline.org)) report that hinted that it might get activated around Thanksgiving break this year. And now there's a web site, [www.vk0ek.org](http://www.vk0ek.org), that confirms those rumors.

Where in the world is this place anyway? Somewhere near Australia, I gather. I'll have to look that up. It's still a ways off, but is definitely worth looking forward to this year. Hum, now Mark WA2DIY has had good luck using his own equipment at our clubhouse... maybe I could do the same... set up at the clubhouse, like he does, and point that beam antenna west..... As we get closer, like you, I'll keep looking forward to reading Bill's articles to see what other hints and tips he might have for us here, as we chase DX “Down Jersey”. Ω

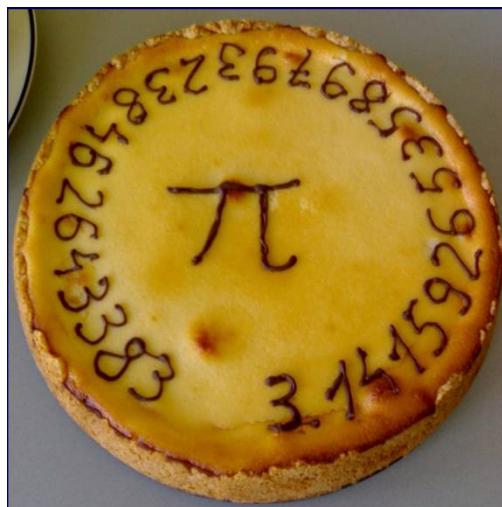
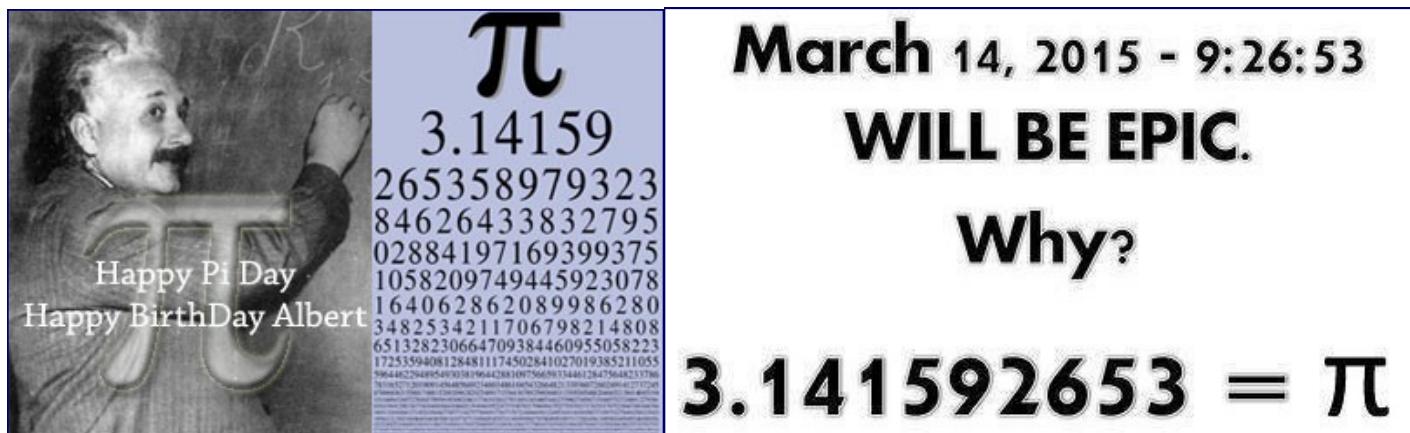


# It's a Lovely Day for Pi

By Cory Sickles, WA3UVV

Every March 14<sup>th</sup>, the good folks in Princeton celebrate Pi Day. This year, it's being billed as the Ultimate Pi Day, as 3.14159263... will be represented by the month, day, year and time – something that won't happen again for a long, long time.

If you can free up the day, it's a good time to visit Princeton and have some mathematical and geeky fun. They have a excellent variety of restaurants and specialty stores for you and your family to explore. Plus, you might find an unique dessert among the mix.  $\Omega$



## **March 8, 2015 @ 0200 Hours**



# The DBJ-2: A Portable VHF-UHF Roll-Up J-pole Antenna for ARES

WB6IQN reviews the theory of the dual band 2 meter / 70 cm J-pole antenna and then makes detailed measurements of a practical, easy to replicate, "roll-up" portable antenna.

Edison Fong, WB6IQN

Reprinted with permission from Dr Edison Fong, WB6IQN, and the American Radio Relay League. Copyright ARRL.

**I**t has now been more than three years since my article on the dual band J-pole (DBJ-1) appeared in the February 2003 issue of *QST*.<sup>1</sup> I have had over 500 inquires regarding that antenna. Users have reported good results, and a few individuals even built the antenna and confirmed the reported measurements. Several major cities are using this antenna for their schools, churches and emergency operations center. When asked why they choose the DBJ-1, the most common answer was value. When budgets are tight and you want a good performance-to-price ratio, the DBJ-1 (*Dual Band J-pole-J*) is an excellent choice.

In quantity, the materials cost about \$5 per antenna and what you get is a VHF/UHF base station antenna with  $\lambda/2$  vertical performance on both VHF and UHF bands. If a small city builds a dozen of these antennas for schools, public buildings, etc it would cost about \$60. Not for one, but the entire dozen!

Since it is constructed using PVC pipe, it is UV protected and it is waterproof. To date I have personally constructed over 400 of these antennas for various groups and individuals and have had excellent results. One has withstood harsh winter conditions in the mountains of McCall, Idaho for four years.

The most common request from users is for a portable "roll-up" version of this antenna for backpacking or emergency use. To address this request, I will describe how the principles of the DBJ-1 can be extended to a portable roll-up antenna. Since it is the second version of this antenna, I call it the DBJ-2.

## Principles of the DBJ-1

The earlier DBJ-1 is based on the J-pole,<sup>2</sup> shown in Figure 1. Unlike the popular ground plane antenna, it doesn't need ground

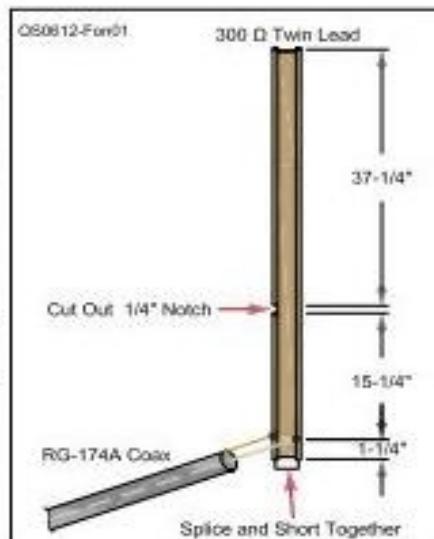


Figure 1 — The original 2 meter ribbon J-pole antenna.

radials. The DBJ-1 is easy to construct using inexpensive materials from your local hardware store. For its simplicity and small size, the DBJ-1 offers excellent performance and consistently outperforms a ground plane antenna.

Its radiation pattern is close to that of an ideal vertical dipole because it is end-fed, with virtually no distortion of the radiation pattern due to the feed line. A vertically polarized, center-fed dipole will always have some distortion of its pattern because the feed line comes out at its center, even when a balun is used. A vertically polarized, center-fed antenna is also physically more difficult to construct because of that feed line coming out horizontally from the center.

The basic J-pole antenna is a half-wave vertical configuration. Unlike a vertical dipole, which because of its center feed is usually mounted alongside a tower or some kind of metal supporting structure, the radi-

ation pattern of an end-fed J-pole mounted at the top of a tower is not distorted.

The J-pole works by matching a low impedance ( $50 \Omega$ ) feed line to the high impedance at the end of a  $\lambda/2$  vertical dipole. This is accomplished with a  $\lambda/4$  matching stub shorted at one end and open at the other. The impedance repeats every  $\lambda/2$ , or every  $360^\circ$  around the Smith Chart. Between the shorted end and the high impedance end of the  $\lambda/4$  shorted stub, there is a point that is close to  $50 \Omega$  and this is where the  $50 \Omega$  coax is connected.

By experimenting, this point is found to be about  $1\frac{1}{4}$  inches from the shorted end on 2 meters. This makes intuitive sense since  $50 \Omega$  is closer to a short than to an open circuit. Although the Smith Chart shows that this point is slightly inductive, it is still an excellent match to  $50 \Omega$  coax. At resonance the SWR is below 1.2:1. Figure 1 shows the dimensions for a 2-meter J-pole. The  $15\frac{1}{4}$  inch  $\lambda/4$  section serves as the quarter wave matching transformer.

A commonly asked question is, "Why  $15\frac{1}{4}$  inches?" Isn't a  $\lambda/4$  at 2 meters about  $18\frac{1}{2}$  inches? Yes, but twinlead has a reduced velocity factor (about 0.8) compared to air and must thus be shortened by about 20%.

A conventional J-pole configuration works well because there is decoupling of the feed line from the  $\lambda/2$  radiator element, since the feed line is in line with the radiating  $\lambda/2$  element. Thus, pattern distortion is minimized. But this only describes a single band VHF J-pole. How do we make this into a dual band J-pole?

## Adding a Second Band to the J pole

To incorporate UHF coverage into a VHF J-pole requires some explanation. (A more detailed explanation is given in my February 2003 *QST* article.) First, a 2 meter antenna does resonate at UHF. The key word here is

<sup>1</sup>Notes appear on page 00.

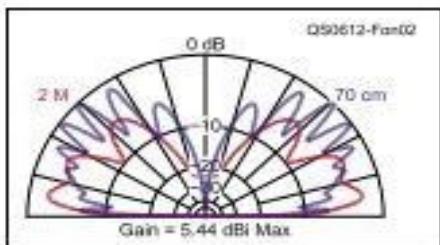


Figure 2 — Elevation plane pattern comparing 2 meter J-pole on fundamental and on third harmonic frequency (70 cm), with the antenna mounted 8 feet above ground. Most of the energy at the third harmonic is launched at 44°.

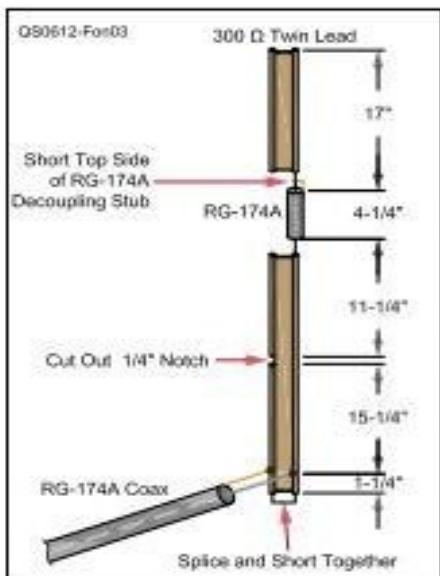


Figure 3 — The original DBJ-1 dual-band J-pole. The dimensions given assume that the antenna is inserted into a  $\frac{3}{4}$  inch Class 200 PVC pipe.

**resonate.** For example, any LC circuit can be resonant, but that does not imply that it works well as an antenna. Resonating is one thing; working well as an antenna is another. You should understand that a  $\lambda/4$  146 MHz matching stub works as a  $3\lambda/4$  matching stub at 450 MHz, except for the small amount of extra transmission line losses of the extra  $\lambda/2$  at UHF. The UHF signal is simply taking one more revolution around the Smith Chart.

The uniqueness of the DBJ-1 concept is that it not only resonates on both bands but also actually performs as a  $\lambda/2$  radiator on both bands. An interesting fact to note is that almost all antennas will resonate at their third harmonic (it will resonate on any odd harmonic 3, 5, 7, etc). This is why a 40 meter dipole can be used on 15 meters. The difference is that the performance at the third harmonic is poor when the antenna is

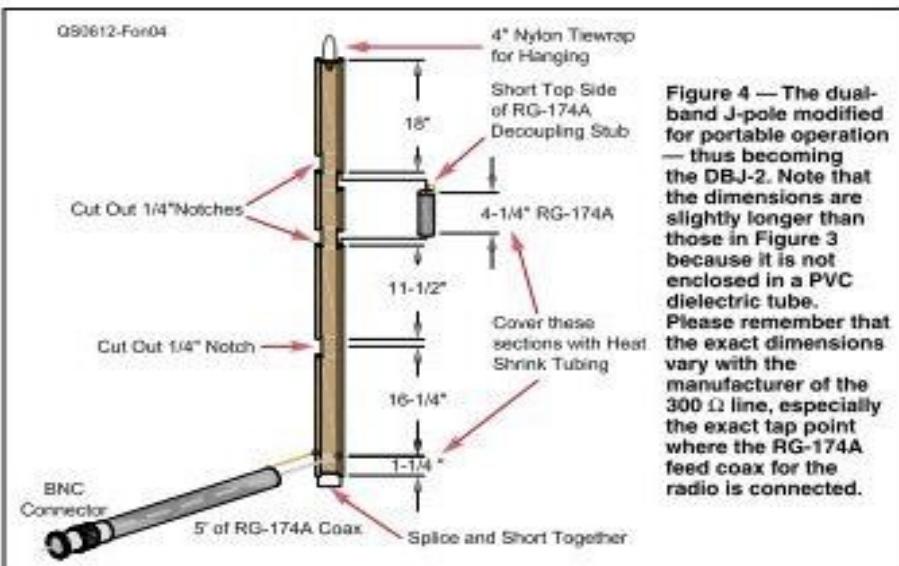


Figure 4 — The dual-band J-pole modified for portable operation — thus becoming the DBJ-2. Note that the dimensions are slightly longer than those in Figure 3 because it is not enclosed in a PVC dielectric tube. Please remember that the exact dimensions vary with the manufacturer of the  $300 \Omega$  line, especially the exact tap point where the RG-174A feed coax for the radio is connected.



Figure 5 — The  $\lambda/4$  UHF decoupling stub made of RG-174A, covered with heat shrink tubing. This is shown next to the BNC connector that goes to the transceiver.

used in a vertical configuration, as in the J pole shown in Figure 1. This can be best explained by a 19 inch 2 meter vertical over an ideal ground plane. At 2 meters, it is a  $\lambda/4$  length vertical (approximately 18 inches). At UHF (450 MHz) it is a  $3\lambda/4$  vertical. Unfortunately, the additional  $\lambda/2$  at UHF is out of phase with the bottom  $\lambda/4$ . This means cancellation occurs in the radiation pattern and the majority of the energy is launched at a takeoff angle of 45°. This results in about a 4 to 6 dB loss in the horizontal plane compared to a conventional  $\lambda/4$  vertical placed over a ground plane. A horizontal radiation pattern obtained from EZNEC is shown in Figure 2. Notice that the  $3\lambda/4$  radiator has most of its energy at 45°.

Thus, although an antenna can be made to work at its third harmonic, its performance is poor. What we need is a simple, reliable method to decouple the remaining  $\lambda/2$  at UHF of a 2 meter radiator, but have it remain electrically unaffected at VHF. We want independent  $\lambda/2$  radiators at both VHF and UHF frequencies. The original DBJ-1 used a combination of coaxial stubs and  $300 \Omega$  twinlead cable, as shown in Figure 3.

Refer to Figure 3, and start from the connector at the bottom. Proceed vertically to the RG-174A lead in cable. To connect to the antenna, about 5 feet of RG-174A was used with a BNC connector on the other end. The  $\lambda/4$  VHF impedance transformer is made from  $300 \Omega$  twin lead. Its approximate length is 15 inches due to the velocity factor of the  $300 \Omega$  material. The  $\lambda/4$  piece is shorted at the bottom and thus is an open circuit (high impedance) at the end of the  $\lambda/4$  section. This matches well to the  $\lambda/2$  radiator for VHF. The  $50 \Omega$  tap is about  $1\frac{1}{4}$  inches from the short, as mentioned before.

For UHF operation, the  $\lambda/4$  matching stub at VHF is now a  $3\lambda/4$  matching stub. This is electrically a  $\lambda/4$  stub with an additional  $\lambda/2$  in series. Since the purpose of the matching stub is for impedance matching and not for radiation, it does not directly affect the radiation efficiency of the antenna. It does, however, suffer some transmission loss from the additional  $\lambda/2$ , which would not be needed if it were not for the dual band operation. I estimate this loss at about 0.1 dB. Next comes the  $\lambda/2$  radiating element for UHF, which is about 12 inches. To

**Table 1****Measured Relative Performance of the Dual-band Antenna at 146 MHz**

VHF $\lambda/4$ GP 4 radials 0 dB reference	VHF flexible Antenna	Standard VHF J-Pole	Dual-Band J-Pole
	-5.9 dB	+1.2 dB	+1.2 dB

**Table 2****Measured Relative Performance of the Dual-band Antenna at 445 MHz**

UHF $\lambda/4$ GP 4 radials 0 dB reference	UHF flexible Antenna	Standard UHF J-Pole	Dual-Band J-Pole
	-2.0 dB	-5.6 dB	0.5 dB

make it electrically terminate at 12 inches, a  $\lambda/4$  shorted stub at UHF is constructed using RG-174A. The open end is then connected to the end of the 12 inches of  $300\Omega$  twinlead. The open circuit of this  $\lambda/4$  coax is only valid at UHF. Also, notice that it is  $4\frac{1}{2}$  inches and not 6 inches due to the velocity factor of RG-174A, which is about 0.6.

At the shorted end of the  $4\frac{1}{2}$  inch RG-174A is the final 18 inches of  $300\Omega$  twinlead. Thus the 12 inches for the UHF  $\lambda/2$ , the  $4\frac{1}{2}$  inches of RG-174A for the decoupling stub at UHF, and the 18 inches of twinlead provide for the  $\lambda/2$  at 2 meters. The total does not add up to a full 36 inches that you might think. This is because the  $\lambda/4$  UHF RG-174A shorted stub is inductive at 2 meters, thus slightly shortening the antenna.

### Making it Portable

The single most common question that people asked regarding the DBJ-1 is how it could be made portable. The original DBJ-1 had the antenna inserted into Class 200 PVC pipe that was 6 feet long. This was fine for fixed operation but would hardly be suitable for portable use. Basically the new antenna had to have the ability to be rolled up when not in use and had to be durable enough for use in emergency communications.

The challenge was to transfer the concepts developed for the DBJ-1 and apply them to a durable roll-up portable antenna. After much thought and experimenting, I adopted the configuration shown in Figure 4.

The major challenge was keeping the electrical characteristics the same as the original DBJ-1 but physically constructing it from a continuous piece of  $300\Omega$  twinlead. Any full splices on the twinlead would compromise the durability, so to electrically disconnect sections of the twinlead, I cut small  $\frac{1}{4}$  inch notches to achieve the proper resonances. I left the insulating backbone of the  $300\Omega$  twinlead fully intact. I determined the two notches close to the  $\lambda/4$  UHF decoupling stub by experiment to give the best SWR and bandwidth.

Because this antenna does not sit inside a dielectric PVC tube, the dimensions are about 5% longer than the original DBJ-1.

I used heat shrink tubing to cover and protect the UHF  $\lambda/4$  decoupling stub and the four  $\frac{1}{4}$  inch notches. Similarly, I protected with heat shrink tubing the RG-174A coax interface to the  $300\Omega$  twinlead. I also attached a small Teflon tie strap to the top of the antenna so that it may be conveniently attached to a nonconductive support string.

Figure 5 shows a picture of the  $\lambda/4$  UHF matching stub inside the heat shrink tubing. The DBJ-2 can easily fit inside a pouch or a large pocket. It is far less complex than what would be needed for a single band ground plane, yet the performance of this antenna will consistently outperform a ground plane using 3 or 4 radials. Setup time is less than a minute.

I've constructed more than a hundred of these antennas. The top of the DBJ-2 is a high impedance point, so objects (even if they are nonmetallic) must be as far away as possible for best performance. The other sensitive points are the open end of the  $\lambda/4$  VHF matching section and the open end of the  $\lambda/4$  UHF decoupling stub.

As with any antenna, it works best as high as possible and in the clear. To hoist the antenna, use non-conducting string. Fishing line also works well.

### Measured Results

I measured the DBJ-2 in an open field using an Advantest R3361 Spectrum Analyzer. The results are shown in Table 1. The antenna gives a 7 dB improvement over a flexible antenna at VHF. In actual practice, since the antenna can be mounted higher than the flexible antenna at the end of your handheld, results of +10 dB are not uncommon. This is the electrical equivalent of giving a 4 W handheld a boost to 40 W.

The DBJ-2 performs as predicted on 2 meters. It basically has the same performance as a single band J-pole, which gives about a 1 dB improvement over a  $\lambda/4$  ground plane antenna. There is no measurable degradation in performance by incorporating the UHF capability into a conventional J-pole.

The DBJ-2's improved performance is apparent at UHF, where it outperforms the single band 2 meter J-pole operating

at UHF by about 6 dB. See Table 2. This is significant. I have confidence in these measurements since the flexible antenna is about -6 dB from that of the  $\frac{1}{4}$  wave ground plane antenna, which agrees well with the literature.

Also notice that at UHF, the loss for the flex antenna is only 2.0 dB, compared to the ground plane. This is because the flexible antenna at UHF is already 6 inches long, which is a quarter wave. So the major difference for the flexible antenna at UHF is the lack of ground radials.

### Summary

I presented how to construct a portable, roll-up dual-band J-pole. I've discussed its basic theory of operation, and have presented experimental results comparing the DBJ-2 to a standard ground plane, a traditional 2 meter J-pole and a flexible antenna antenna. The DBJ-2 antenna is easy to construct, is low cost and is very compact. It should be an asset for ARES applications. It offers significant improvement in both the VHF and UHF bands compared to the stock flexible antenna antenna included with a handheld transceiver.

If you do not have the equipment to construct or tune this antenna at both VHF and UHF, the antenna is available from the author tuned to your desired frequency. Cost is \$20. E-mail him for details.

### Notes

- <sup>1</sup>E. Fong, "The DBJ-1: A VHF-UHF Dual-Band J-Pole," *QST*, Feb 2003, pp 38-40.
- <sup>2</sup>J. Reynante, "An Easy Dual-Band VHF/UHF Antenna," *QST*, Sep 1994, pp 61-62.

*Ed Fong was first licensed in 1968 as WN6IQN. He later upgraded to Amateur Extra class with his present call of WB6IQN. He obtained BSEE and MSEE degrees from the University of California at Berkeley and his PhD from the University of San Francisco. A Senior Member of the IEEE, he has 8 patents, 24 published papers and a book in the area of communications and integrated circuit design. Presently, he is employed by the University of California at Berkeley teaching graduate classes in RF design and is a Principal Engineer at National Semiconductor, Santa Clara, California working with CMOS analog circuits. You can reach the author at edison\_fong@hotmail.com.*

## CQ Continues to Readjust

By Cory Sickles, WA3UVV



With another combined issue behind us, the March CQ should put us back on schedule for a monthly magazine as additional tweaks are made. The digital version continues to become available the first week of the cover month, but it remains to be seen as to how much of a lag there is with the print edition.

While at Hamcation, CQ floated an idea about going totally digital. Other magazines have done this - such as The Spectrum Monitor – and have seen success in this approach. What digital magazines lack is a way to promote their presence at news stands and ham radio retailers. Perhaps if CQ went solely digital, but offered a quarterly print edition – with unique content that could be discovered by those interested in amateur radio - that might be a good compromise.

One fact that is inescapable is that eventually, most magazines will be digital. The costs – both in dollars and environment – are increasing. With a way to provide more immediacy, relevance and compelling content at a more affordable price, perhaps it's time to adopt this as a standard. Widespread acceptance could also encourage other digital magazines to become available – which can serve to better inform and inspire us all.

What do you think? CQ (and others) would like to know.  $\Omega$

## MS150 / Tour de Pitman

By Cory Sickles, WA3UVV

This year's MS-150 will be held on October 3<sup>rd</sup> and 4<sup>th</sup>, 2015. I know that sounds like a long time off, but it will be here before you know it. Last year, we had a record-level of participation from members of our club, plus their friends and family members – so much so that we were given an award.



This year, I'd like to see the number increase, as the MS Society always needs additional volunteers and communicators for the event. So, start thinking now about participating again (or for the first time) and showing how ham radio can be used to serve our communities and neighbors.

Along the same lines, the Tour de Pitman bike races will be held on June 13, 2015. Our participation helps assure rider safety and provides us with an additional opportunity to work closely together with police officers and other first responders.

Are there other community or charity cycling events you know about where ham radio could be an asset? Please let us know about it. We're always looking for ways to be of value.  $\Omega$

Tour de Pitman website: [www.uptownpitman.com/events/tour-de-pitman](http://www.uptownpitman.com/events/tour-de-pitman)

Bike MS: City to Shore: <http://www.nationalmssociety.org/Chapters/PAE/Fundraising-Events>



# K1N Navassa Island DXpedition 2015

## The trials and tribulations of club members trying to contact K1N Navassa Island

**Vinnie, N4NYY:** Just got home from Wisconsin, and bagged them on 10M SSB using my usual 100W on a vertical. Got them on my 3<sup>rd</sup> try.

**Ken, N2CQ:**

KP1/N0TG	SSB 80M	December 02, 1978	03:46	K1N	CW 20M	February 04, 2015	23:04
KP1/W0RJU	CW 40M	December 02, 1978	04:11	K1N	CW 12M	February 04, 2015	23:20
KP1/W0RJU	CW 10M	December 02, 1978	14:26	K1N	CW 17M	February 05, 2015	20:02
KP1/N0TG	SSB 20M	December 02, 1978	15:40	K1N	RTTY 20M	February 05, 2015	20:51
KP1/K2PA	CW 15M	March 20, 1982	21:10				

**Jim, K2OWE:** Congrats to Dave, W2YC, for the K1N sweep! (Keeping an eye on you Dave) Very nice! Nice run on the bands for Dave AC2IQ also.

10M CW SSB; 12M CW; 15M CW SSB; 17M CW SSB;  
20M CW SSB; 30M CW; 40M CW SSB; 80M CW SSB;  
160M - Loud on 160, did not want to key into 80M dipole. Rf.; 60M - Loud on 5403.5, but IC765 not modded for TX.; TI9/3Z9DX in log today on 28.455 @ 21:33z and 14.245 @ 21:39z.

P.S. Some of the best operators and conduct on both sides of the pileup I have heard in a long time. Listening to K9CT run stations from K1N was a real pleasure. The man is a machine. Kudos. With that said, some of the worst behavior in the pileups and on the cluster has taken place. A lot of complaining from stations whose ops have no idea what it is like to run complete calls 4 to 5 deep with the world calling, staying focused and polite all while you are exhausted in 116 degree heat. Not to mention the financial and family burden on them. The DXpedition ops deserve our respect. The world is a better place.

**Darrell, AB2E:** Got K1N, all CW, on the following bands:

10M; 15M; 20M; 30M; 40M; 80M; 160M

No SSB or RTTY, did not have the time. QSLs KP1 in the '70s on SSB, so not an issue.

**Dennis, K2SE:** Got K1N on 7 band modes; 20 SSB and 12, 15, 20, 40, 30 and 80M on CW. I work during the day so I missed a lot of the SSB activity.

Generally great ops. The crap in the pile-ups was about the norm for a major DXpedition, if not a bit better than some recent operations. It's amazing how many people don't listen to the op and call almost non-stop, as if the DX will hear them during an exchange.

*The Trials of K1N - Continued on page 18*

**Jim, N2GXJ:** K1N - just one contact. Had just about given up on ever getting through those 20 KHz-wide pile-ups. I was down to one day left to try and work them before I had to go on a business trip. Restless, I woke up on my own at 2 am. Belinda was still downstairs. She'd fallen asleep watching TV on the couch. Not completely willing to give up without one more try, I reached over onto the night stand, put on the headset, and turned on the radio, just to see if I could hear them or anyone else out there. I tuned around, and then yes! I could hear them! Excited, I set the split as directed, listened to the cadence of his answers, and then pounced. 07-Feb-2015 7:06 UTC, 20 Meters, SSB, 80 watts into attic dipole. Sorry Belinda for my middle-of-the-night victory celebration! But there it is! The one little green check-box that confirms it! I'm in the log! Ω



## Budget Approved

By Jim Wright, N2GXJ

At the regularly scheduled club meeting on February 4<sup>th</sup>, our 2015 budget was approved. Included are line items for clubhouse operations, field day, a summer picnic, corporate expenses, and more.

For those who have paid your dues for 2015, we thank you. For those who have not yet, it would be a shame to have to promptly remove you from our club's roster, Crosstalk mailings, field day, summer picnic, and other lists if you are not paid up by March 31<sup>st</sup>. If you've not renewed, don't let that happen to you. It's still only \$20 for full membership. You can pay in person at our next club meeting on March 4<sup>th</sup>, or via postal mail with your name and callsign on the check sent to our PO Box listed below. Special circumstances, please contact me direct. Once again, thank you to the majority who are already paid up!

DUES PAYMENTS: Gloucester County ARC, PO Box 370, Pitman NJ 08071





## How about a little humor???

By Bill Szkromiuk, W4WCS

### YOU KNOW YOU'RE A HAM OPERATOR IF:

- You buy electrical black tape in ten packs.
- You've stripped wire with your teeth.
- You've told your son that, "One day, all this will be yours", and he doesn't respond.
- You'd rather help a buddy put up a new tower than mow the lawn.
- You've grabbed the wrong end of a soldering iron.
- You start giving out RST reports when you are on the telephone.
- The propagation forecast means far more to you than the local weather forecast.
- The microphone or visual aids at a meeting don't work and you rush up to the front to fix it.
- You tell the XYL, when she notices a new rig in the shack, "Why that has been there for years".
- Your watch is set only to UTC.
- At night, when you pray, it starts off something like: CQ CQ CQ GOD DE (your callsign).
- You ever had to patch your roof after an antenna project.
- Ham radio magazines comprise more than 50% of your bathroom library.
- You ever put a GPS tracker in the XYL's car, just so you could watch her on APRS.
- You and the XYL took a cruise so you could visit the radio room.
- You ever tapped out HI in Morse on your car horn to another ham.
- You ever had an antenna fall down.
- Your teenager refuses to ride in your car because it looks like a porcupine.
- You know the Latitude and Longitude of your home QTH.
- You go into the local Radio Shack store and the clerk asks **you** where something is.

*Courtesy of: Ron Fields, W5WWW*

Ω

## What Trenton Makes... (Reprise)

By Cory Sickles, WA3UVV

Last month I mentioned a need for a Section Government Liaison. Happily, we had someone with a strongly-related background step forward to assume this important position - Chris Cannatella, KC2GNQ.

Please join me in welcoming him as an SNJ leader. Ω

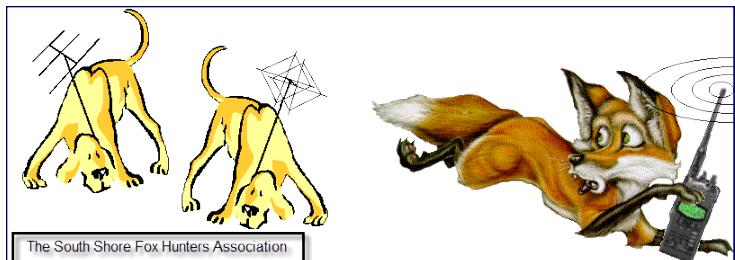


# Has Spring Sprung?

By Jim Wright, N2GXJ

Has Spring Sprung? Asked as a question, but we know the answer. If not yes now, then soon! Call a friend, hop in a car, and get out of the house for some Radiosport adventure, Saturday morning

March 7, 2015! Why? Because it is the “Has Spring Sprung?” Fox Hunt VII!



If you've never been on a radio fox hunt, or if it has been a long time since you have, then what is your excuse? This could be your lucky #7 day! It can be lots of fun; even more so when you team up with someone who can do the driving while the other fiddles with a radio and does the navigating. So team up with a family member, a partner, or whomever, and see if you can find our hidden transmitter by homing in on the signal strength of its periodic transmissions using your hand-held Baofeng, favorite radio, or whatever you can dream up to help you find it!

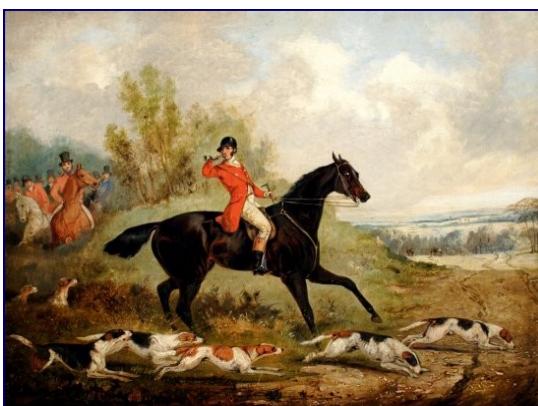
Since it was the team of my wife driving, and me fiddling with the radio that were the first to find the hidden transmitter last time, we get the honors of hiding it this time. Once again, it will be hidden somewhere in Gloucester County, in a public location, for you to find. The hunt area within Gloucester County will be announced in advance, via email and posted to our website, to let you start within a few miles of the transmitter's location. For this hunt, it will generally be in the vicinity of our Clubhouse.

Teams participating check-in with the hunt coordinator at the designated start time on our club's 2 meter repeater, and will get various clues from the fox on that frequency as to where the transmitter might be hidden. If there are any teams still searching at the end of an hour, they'll be talked in to the finish. After this hunt, we'll head over to the clubhouse to join the monthly “Tech Saturday Forum”, to exchange hunt stories with each other, and other club members.



For this hunt, start time is 0800 Hours, Saturday March 7. Location within Gloucester County to be announced (but will generally be in the vicinity of our Clubhouse). If you want to set up a channel on your radio in advance, the hidden transmitter will operate on the generally recognized fox hunt simplex frequency of 146.565 MHz (FM). When you get close, you can probably also hear it on 439.695 MHz (the third harmonic) as well.

We'll have the transmitter on display at the March club meeting, if you want to check it out. Alright! Time for some Radiosport! Who are you going to team up with for this event? **Ω**



## The CS7000 – Call Me, Maybe

By Cory Sickles, WA3UVV

In early February, Connect Systems announced another delay in bringing the CS7000 portable to market. At this point, it's been pushed back six months from the originally-stated delivery time.

For those of you who might not know, the CS7000 is an upgrade of the single-band CS700 portable, which offers analog FM and DMR operation. The CS7000 is supposed to have the additional inclusion of D-STAR capabilities – which has generated quite a bit of vaporware buzz. The original press release also mentioned that the '7000 would “*speak*” System Fusion, P25 and NXDN. In recent months, some backpedaling has taken place – seemingly leaving the inclusion of these methodologies to possible third-party developers.

While it could be nice to have a non-ICOM radio available for D-STAR, it remains to be seen how real this possibility is and whether the CS7000 (with an originally-specified 2-line display) will be competitive with other DMR offerings and the ICOM ID-31A.  $\Omega$



QST de W1AW  
Space Bulletin 002 ARLS002  
From ARRL Headquarters  
Newington, CT February 2, 2015  
To all radio amateurs

## SB SPACE ARL ARLS002 Amateur Radio Payloads Share Ride into Space with Soil Moisture Monitoring Satellite

Four NASA Educational Launch of Nanosatellites (ELaNA-X) CubeSats carrying Amateur Radio payloads launched successfully January 31 from California's Vandenberg Air Force Base. The primary payload for the Delta II launcher was the Soil Moisture Active Passive (SMAP) satellite. SMAP's onboard radar will share Amateur Radio spectrum at 1.26 GHz. Amateur Radio is secondary on the 23 centimeter band, which covers 1240 to 1300 MHz.

"This is a good example of a compatible sharing partner," ARRL CEO David Sumner, K1ZZ, observed. "Any interference to amateur communication in the band will be brief as the satellite passes overhead."

SMAP and the four CubeSats all deployed successfully. The research CubeSats, launched on behalf of universities, will downlink their telemetry on the 70 centimeter band. The CubeSats and their downlink frequencies (modes) are:

Firebird II FU3 437.405 MHz (19k2 FSK)  
Firebird I FU4 437.230 MHz (19k2 FSK)  
GRIFEX 437.485 MHz (9k6 FSK)  
ExoCube (CP-10) 437.270 MHz (9k6 FSK)

The GRIFEX satellite is a University of Michigan project, in cooperation with JPL, while ExoCube (CP-10) is a space weather satellite developed by the California Polytechnic State University-San Luis Obispo and the University of Wisconsin in partnership with NASA, and sponsored by the National Science Foundation.

The FIREBIRD program is a collaborative CubeSat space weather mission of two CubeSats designed and developed by Montana State University, the University of New Hampshire, The Aerospace Corporation, and Los Alamos National Laboratories - the FIREBIRD consortium. The FIREBIRD mission also is funded by the NSF.

SMAP carries a "synthetic aperture radar." The L band (1.26 GHz) radar is designed to measure backscatter off the Earth's surface. The amount of backscatter returned to the radar changes with the amount of moisture in the soil. RF pulses at this frequency are less affected by weather or by a moderate vegetation cover.

The satellite is at approximately 425 miles up in a near-polar, sun-synchronous orbit. SMAP also includes a radiometer operating at 1.41 GHz to measure naturally occurring RF energy given off by Earth's surface.

Ω

## Regional Hamfest and Events

**March 07, 2015 :** Cherryville Hamfest, Cherryville Repeater Association, North Hunterdon Regional High School, 1445 Route 31 South, Clinton (Annandale), NJ. [www.qsl.net/w2cra](http://www.qsl.net/w2cra)

**March 14, 2015 :** New Jersey Antique Radio Club Fall Swap Meet, Parsippany Police Athletic League (PAL) Building, Smith Field, 33 Baldwin Road, Parsippany, NJ. [www.njarc.org](http://www.njarc.org)

**March 15, 2015 :** BARA Auction, Bergen Amateur Radio Association, Westwood Regional High School, 701 Ridgewood Road, Washington Township (Bergen County), NJ. [www.bara.org](http://www.bara.org)

**March 16, 2015 :** Penn Wireless Association Auction & Meeting, Falls Township Community Building, 188 Lincoln Highway, Fairless Hills, PA. [www.pennwireless.org](http://www.pennwireless.org)

**March 16, 2015 :** Frederick Amateur Radio Club Hamfest/Convention, Independent Hose Company Fire Station, Social Hall, 310 Baughmans Lane, Frederick, MD. [www.frederickarc.org](http://www.frederickarc.org)

**March 21, 2015 :** Trenton Computer Festival & Amateur Radio Preparatory Classes/Exams, 40<sup>th</sup> Trenton Computer Festival, Delaware Valley Radio Association Hamfest, The College of New Jersey, Route 31 South, Ewing, NJ. [www.tcf-nj.org](http://www.tcf-nj.org) Ω

### GCARC Needs You!

By Cory Sickles, WA3UVV

I just looked at our membership roster. With the 4 new members we welcome this month, we now have 132 hams as part of the GCARC family. How many we'll have in April depends on you and whether your dues (and membership) are current.

About a year ago, I asked for suggestions on what everyone wanted to see more of, less of and other feedback. While there wasn't an overwhelming response, we've tried to act on the ones we got. Some of the meeting programs, Tech Saturday Forum, club-house improvements and other activities you see are related to all this.

Your membership is important and so is your participation. You don't need to be a part of everything we do, but as a general-interest organization, there should be at least "something" that's worthwhile to you. If you have additional suggestions and/or critiques on what we do as a progressive amateur radio club, then please let us know – either with a direct email to me, note in the Suggestion Box, message sent via the "Contact Us" page on the website, or an old-fashioned letter to the Board. Ω



**March 20, 2015 @ 1845 Hours**

## DA's and DIT's

The **442.100 MHz Repeater** is back on the air after a short Winter *break*, but it is not the System Fusion repeater - that is off-line being repaired.

**Gary Reed, N2QEE** reports that the February 12, 2015 VE session had 2 new Generals: Ralph, KD2HVH and Gregory, KD2HRU.

**The Bike MS: City to Shore Ride is scheduled for October 3 & 4, 2015.**

<http://www.nationalmssociety.org/Chapters/PAE/Fundraising-Events>

**The Tour de Pitman is scheduled for June 13, 2015.**

[www.uptownpitman.com/events/tour-de-pitman](http://www.uptownpitman.com/events/tour-de-pitman)

**Amateur Radio Roundtable**, a new series of [www.W5KUB.com](http://www.W5KUB.com) live weekly webcasts airs every Tuesday night at 2100 Hours. It is an informal discussion of all aspects of ham radio with the intent of allowing viewers to watch this live webcast or be a guest via Skype or Google Hangout. A question and answer session with viewers will follow each topic. The show covers all aspects of ham radio; such as, balloon launches, Satellite, go-kits, emergency comm, SDR, digital modes, DXing, home brewing, and much more.

**Gary, WA3SVW**, has graciously agreed to teach another FLDigi class. At this point we are looking at Saturday, March 28, 2015. The class will be split into 2 sessions: Basic FLDigi in the morning, and Advanced FLDigi topics in the afternoon. The location for the class is still TBD, but it will most likely be in Gloucester County. If you took the basic class back in the Fall please bring your handout. All participants should have a laptop and HT. Please use the link to register. <http://mbcurl.me/10KWB>

The GCARC Summer Potluck Picnic is schedule for Saturday, July 25, 2015 at 1300 Hours. It will be at the Red Bank Battlefield Park in National Park, NJ. Stay tuned for more details.

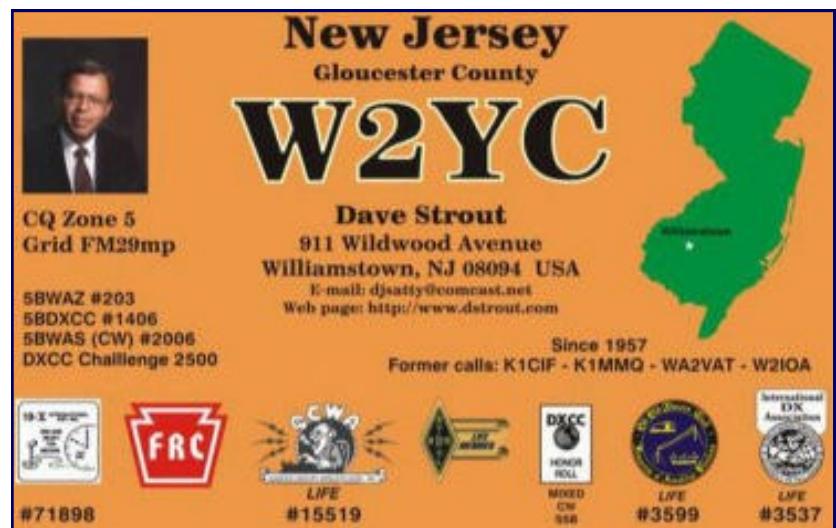
Condolences to Peter Marek, KD2EYU, and his family for the passing of his mother, Ingeborg Marek.

## King of the W1AW Portables

By Jim Wright, N2GXJ

Congratulations to Dave Strout, W2YC, undisputed King of our W1AW Portable Stations Leader Board, with over 770 individual W1AW portable contacts, as tracked by Kenny Denson, WB2P, on our club's web site, w2mmd.org!

Congratulations also to the 15 other members of our club represented on the list, with a combined total of over 1,600 W1AW portable contacts last year! I had fun, and I hope that others did too. Centennial celebrations don't come along that often (once every hundred years? hihi), so thanks to everyone that participated! Ω



## Regional Yaesu System Fusion Repeaters

Location	City	Callsign/Club	Frequency	Off-Set	PL Tone
Atlantic County, NJ	West Atlantic City	<a href="#">W2HRW/SPARC</a>	443.250 MHz	Plus	146.2 Hz
*Atlantic County, NJ	Atlantic City	<b>K2ACY</b>	<b>449.625 MHz</b>	Minus	<b>156.7 Hz</b>
Camden County, NJ	Runnemede	<b>WA2WUN</b>	<b>147.225 MHz</b>	Plus	<b>192.8 Hz</b>
Camden County, NJ	Blue Anchor	<b>KB2AYS</b>	<b>445.125 MHz</b>	Minus	<b>91.5 Hz</b>
Gloucester County, NJ	Pitman	<a href="#">W2MMD/GCARC</a>	147.180 MHz	Plus	131.8 Hz
Gloucester County, NJ	Pitman	<a href="#">W2MMD/GCARC</a>	442.100 MHz	Plus	131.8 Hz
Ocean County, NJ	Manchester	<a href="#">WA2RES/OCARES</a>	145.170 MHz	Minus	131.8 Hz
Ocean County, NJ	Toms River	<a href="#">NJ2AR/JSARS</a>	448.625 MHz	Minus	141.3 Hz
Salem County, NJ	Pennsville	<b>N2KEJ/SCRA</b>	<b>146.625 MHz</b>	Minus	<b>131.8 Hz</b>
Berks County, PA	Reading	<b>KB3WLV</b>	<b>445.175 MHz</b>	Minus	<b>114.8 Hz</b>
Bucks County, PA	Southampton	<a href="#">W3SK/PWA</a>	448.225 MHz	Minus	131.8 Hz
Chester County, PA	Paoli	<a href="#">WB3JOE/MARC</a>	445.675 MHz	Minus	131.8 Hz
Lancaster County, PA	Holtwood	<b>KX3B</b>	<b>146.745 MHz</b>	Minus	<b>114.8 Hz</b>
Lawrence County, PA	Ellwood City	<a href="#">N3ZJM/ECARA</a>	443.625 MHz	Plus	131.8 Hz
Lawrence County, PA	New Castle	<a href="#">N3ETV/ARLLC</a>	444.725 MHz	Plus	131.8 Hz
Monroe County, PA	East Stroudsburg	<a href="#">KB3TEM</a>	144.920 MHz	Input 446.550	D343
Montgomery County, PA	Horsham	<b>K3JJQ/DRC</b>	<b>147.165 MHz</b>	Plus	<b>162.2 Hz</b>
Philadelphia County, PA	Roxborough	<a href="#">W3QV/Phil-Mont</a>	444.800 MHz	Plus	186.2 Hz
Kent County, DE	Dover	<a href="#">KC3ARC/KCARC</a>	146.970 MHz	Minus	77.0 Hz
Sussex County, DE	Selbyville	<a href="#">WS3ARA/SARA</a>	145.250 MHz	Minus	156.7 Hz

This list seems to be getting longer every day. I have shortened this list to just New Jersey, Eastern Pennsylvania, and Delaware. See our website on the System Fusion Repeaters page for a longer list which includes Southern New York, all of Pennsylvania, Maryland, Virginia, and West Virginia.

\*New entry as of the issue.



<https://www.facebook.com/W2MMD>



## March Birthdays

Congratulations to these members celebrating birthdays

Michael Andresscavage N2ICV

Ed Champion N2RO

Jeff Garth KC2WCS

Andrew Muenzenberger KF2AQ

Paul Munzenmayer K2DX

Bill Price NJ2S

Dave Strout W2YC

Mark Townsend W2OCY

Dan Tremolini N2TXG

Gary Triplo KD2EBX

Wayne Wilson WA2LET

Jim Wright N2GXJ (President 2014, 2015)

John Zaruba Jr K2ZA



## In Memoriam March Birthdays

### Silent Keys:

James Castro Sr N2IMH

Stuart Cleveland N2WUP

Larry Ferrari WA2MKI

Doug Gehring WA2NPD (President 1975, 2008, 2009)

Milton Marder WA2FGA



## Crosstalk Submissions

*This is your Club newsletter. Make use of it.*

If you have stories or photos of your hobby that you would like to share with the Club, please do so!

We will keep covering all of the GCARC events, but it is also nice to get those personal perspectives to include in every issue.

Connecting through experiences is what makes the Gloucester County Amateur Radio Club a ***REAL*** club.

All submissions, queries, comments and editorials should be addressed to Jeffrey Garth, KC2WCS at [jeff.garth <at> comcast.net](mailto:jeff.garth@comcast.net).

**Submission deadline for the April 2015 issue: Saturday, March 21, 2015**

**Club Website <http://www.w2mmd.org>**

**Club E-Mail Reflector: [gcarc@mailman.qth.net](mailto:gcarc@mailman.qth.net)**



**Raise your hand if you know who this is!  
Did you know that Larry Ferrari was a ham!  
Did you also know he was a member of our club (1978-1981)!**

Larry Ferrari, a quiet, humble man with fingers of gold who played - and smiled - his way to international recognition, died on November 20, 1997. He lived in Cinnaminson, N.J.

For almost 45 years, the Philadelphia legend hosted "The Larry Ferrari Show" on WPVI-TV (Channel 6). It was the second-longest running show on the station - next to **Chief Halftown** - becoming as much a Sunday morning staple as home fries and scrapple. It was believed to be the only show of its kind in the country. Not bad for a guy who was once told, "Organ music on television will never go." In addition to his weekly Sunday morning show, Ferrari, who once had a fear of flying, travelled across the country and around the world performing at shows, concerts and benefits.

An only child, Lazarus Louis Ferrari was born on March 4, 1932 in Boston. When he was about 11, a nun at St. Mary's Parochial School suggested he do something about the name Lazarus. "Why not change it to Larry," the nun suggested. As a child, he attended Sunday Mass at St. Mary's with his mother. "I remember always turning around and looking up to the choir loft to see who was playing," Ferrari said in a 1991 interview with the Daily News. When he was 7, his father, a chef, and his mother, who worked in a hotel kitchen, bought their son a small toy piano. "I wanted nothing else to do in life, but play music," he said in the News interview. "I didn't know how I was going to do it, but I knew I was."

His start came while a private at Fort Dix, N.J. "On Thursday evenings we would have talent shows at the station [then WFIL] with soldiers from Fort Dix," recalled Lew Klein, the station's former program director. "Larry came every Thursday." When he was discharged from the Army, Ferrari was hired to fill a half-hour slot on Saturday nights following boxing or wrestling matches. Sometimes the matches would run late, and Ferrari wound up playing only 10 minutes. Thus his theme song: ***Once in a While***. "Larry was a humble, loving, gentle, concerned individual, extremely sensitive to other people," said Klein. "I know that sounds trite," added Klein, "but in a business such as ours, entertainment, there are so many prima donnas, people with egos, Larry was absolutely the opposite." Carter Merbreier knew Ferrari for almost three decades, ever since Merbreier's show, Capt. Noah, made its debut. "He played the show's background music," said Merbreier. **Q**

**Minnesota QSO Party  
February 7, 2015**

**Call:** N2CQ  
**Operator (s) :** N2CQ  
**Station:** N2CQ

**Class:** Single Op LP  
**QTH:** SNJ  
**Operating Time (hrs):** 6  
**Location:** Out of State/Province

**Summary: Compare Scores**

**Band** CW-RTTY QSOs Phone QSOs

**160:**

**80:**

**40:**

**17**

**1**

**20:**

**47**

**10**

**15:**

**8**

**6**

**10:**

**6:**

**2:**

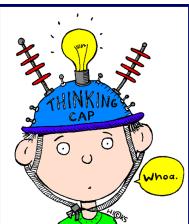
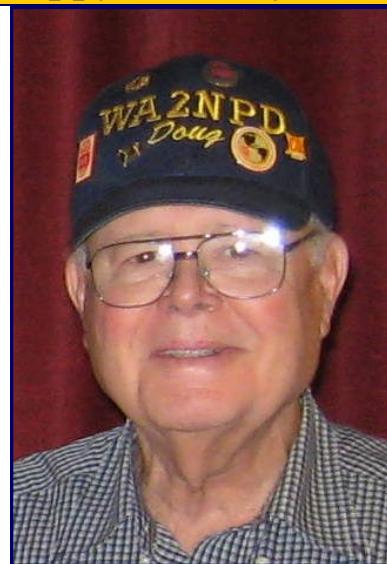
**Total:** 72 **17**

**Mults:** 50

**Total Score:** 8,900

**Club:** Gloucester County Amateur Radio Club

**Happy Birthday, Doug**



## **Interview With A Ham...Reboot**

**By Jeff Garth, KC2WCS**

Many moons ago, Crosstalk used to have a column called ‘Interview with a ham’. I would like to bring it back, but I need your help. I would like to “hire” a reporter. He or she would interview a fellow club member and gather some basic information about that member such as:

- Name, callsigns, member pictures
- How and when they got started in Amateur Radio
- Their radio equipment, hamshack pictures
- Etc. - Whatever information the interviewee feels comfortable revealing.

It’s an easy gig. It does not have to be every month, whatever fits your schedule.

So, let me know at jeff.garth <at> comcast.net or see me at a meeting.

P.S. In my opinion, the first interview I would do would be Charles Sketchley, K2PQD, our oldest original club member. **Ω**

## Contest Calendar

**For more information on the contests, please go to the WA7BNM Contest Calendar website:  
[www.hornucopia.com/contestcal](http://www.hornucopia.com/contestcal)**

<b>March 2015</b>	
+ NSARA Contest	1200Z-1600Z, Mar 1 and 1800Z-2200Z, Mar 1
+ SARL Hamnet 40m Simulated Emerg Contest	1200Z-1400Z, Mar 1
+ North Carolina QSO Party	1500Z, Mar 1 to 0059Z, Mar 2
+ RSGB 80m Club Championship, Data	2000Z-2130Z, Mar 2
+ ARS Spartan Sprint	0200Z-0400Z, Mar 3
+ AGCW YL-CW Party	1900Z-2100Z, Mar 3
+ QRP Fox Hunt	0200Z-0330Z, Mar 4
+ CWops Mini-CWT Test	1300Z-1400Z, Mar 4 and 1900Z-2000Z, Mar 4 and 0300Z-0400Z, Mar 5
+ AWA John Rollins Memorial DX Contest	2300Z, Mar 4 to 2300Z, Mar 5 and 2300Z, Mar 7 to 2300Z, Mar 8
+ NRAU 10m Activity Contest	1800Z-1900Z, Mar 5 (CW) and 1900Z-2000Z, Mar 5 (SSB) and 2000Z-2100Z, Mar 5 (FM) and 2100Z-2200Z, Mar 5 (Dig)
+ QRP Fox Hunt	0200Z-0330Z, Mar 6
+ ARRL Inter. DX Contest, SSB	0000Z, Mar 7 to 2400Z, Mar 8
+ Wake-Up! QRP Sprint	0600Z-0629Z, Mar 7 and 0630Z-0659Z, Mar 7 and 0700Z-0729Z, Mar 7 and 0730Z-0800Z, Mar 7
+ UBA Spring Contest, CW	0700Z-1100Z, Mar 8
+ DARC 10-Meter Digital Contest	1100Z-1700Z, Mar 8
+ QRP Fox Hunt	0100Z-0230Z, Mar 11
+ CWops Mini-CWT Test	1300Z-1400Z, Mar 11 and 1900Z-2000Z, Mar 11 and 0300Z-0400Z, Mar 12
+ RSGB 80m Club Championship, CW	2000Z-2130Z, Mar 11
+ QRP Fox Hunt	0100Z-0230Z, Mar 13
+ F9AA Cup, SSB	1200Z, Mar 14 to 1200Z, Mar 15
+ AGCW QRP Contest	1400Z-2000Z, Mar 14
+ EA PSK63 Contest	1600Z, Mar 14 to 1600Z, Mar 15
+ Idaho QSO Party	1900Z, Mar 14 to 1900Z, Mar 15
+ North American Sprint, RTTY	0000Z-0400Z, Mar 15
+ UBA Spring Contest, 2m	0700Z-1100Z, Mar 15
+ Wisconsin QSO Party	1800Z, Mar 15 to 0100Z, Mar 16
+ Run for the Bacon QRP Contest	0200Z-0400Z, Mar 16
+ QRP Fox Hunt	0100Z-0230Z, Mar 18
+ CWops Mini-CWT Test	1300Z-1400Z, Mar 18 and 1900Z-2000Z, Mar 18 and 0300Z-0400Z, Mar 19
+ NAQCC CW Sprint	0030Z-0230Z, Mar 19
+ RSGB 80m Club Championship, SSB	2000Z-2130Z, Mar 19
+ QRP Fox Hunt	0100Z-0230Z, Mar 20
+ BARTG HF RTTY Contest	0200Z, Mar 21 to 0200Z, Mar 23
+ SARL VHF/UHF Analogue/Digital Contest	1000Z, Mar 21 to 1000Z, Mar 22
+ Russian DX Contest	1200Z, Mar 21 to 1200Z, Mar 22
+ AGCW VHF/UHF Contest	1400Z-1700Z, Mar 21 (144) and 1700Z-1800Z, Mar 21 (432)
+ Feld Hell Sprint	1700Z-1859Z, Mar 21
+ UBA Spring Contest, SSB	0700Z-1100Z, Mar 22
+ QRP Fox Hunt	0100Z-0230Z, Mar 25
+ CWops Mini-CWT Test	1300Z-1400Z, Mar 25 and 1900Z-2000Z, Mar 25 and 0300Z-0400Z, Mar 26
+ QRP Fox Hunt	0100Z-0230Z, Mar 27
+ CQ WW WPX Contest, SSB	0000Z, Mar 28 to 2400Z, Mar 29

# Committee Chairs

<b>ARES/RACES</b>	<b>Ed Champion, N2RO</b>
<b>Awards and Contests</b>	<b>Kenny Denson, WB2P</b>
<b>Budget*</b>	<b>Al Arrison, KB2AYU</b>
<b>Club Publications</b>	<b>Jeffrey Garth, KC2WCS</b>
• <b>Crosstalk Magazine</b>	
• <b>Website</b>	
<b>Clubhouse Site/Operations*</b>	<b>Al Arrison, KB2AYU</b>
<b>Constitution and By-Laws*</b>	<b>Ron Block, NR2B</b>
<b>DX</b>	<b>Bill Grim, W0MHK</b>
<b>Field Day*</b>	<b>Kenny Denson, WB2P</b>
<b>Fox Hunts</b>	<b>Jim Wright, N2GXJ</b>
<b>Hamfest*</b>	<b>Sheldon Parker, K2MEN and Bill Price, NJ2S</b>
• <b>Hamfest Contact</b>	<b>Cory Sickles, WA3UVV</b>
<b>Health and Welfare*</b>	<b>Ray Martin, W2RM</b>
<b>Historian</b>	<b>Jeffrey Garth, KC2WCS</b>
<b>Hospitality*</b>	<b>Dave MacDonald, WB3JOY</b>
<b>License Testing, VEC Liaison</b>	<b>Gary Reed, N2QEE</b>
<b>License Trustee</b>	<b>Darrell Neron, AB2E</b>
<b>Member Database</b>	<b>Ken Newman, N2CQ</b>
<b>Membership*</b>	<b>Cory Sickles, WA3UVV</b>
<b>Nominations*</b>	<b>Jim Wright, N2GXJ</b>
<b>Programs</b>	<b>Cory Sickles, WA3UVV</b>
<b>Publicity*</b>	<b>Cory Sickles, WA3UVV</b>
<b>Repeaters*</b>	<b>Cory Sickles, WA3UVV</b>
<b>Scout Liaison</b>	<b>Frank Simila, KC2SJ</b>
<b>Summer Picnic</b>	<b>Jennifer Robinson, KD2EYR</b>
<b>Technical and TVI</b>	<b>Chuck Colabrese, WA2TML</b>

\* Denotes Standing Committees

## GCARC@mailman.qth.net e-mail reflector guidelines

1. **No attachments** (e.g. pictures, files) are allowed on the reflector.
2. If you have club-related pictures that you would like to share, you can send them to the webmaster, he will put them on the website and he will send out a general e-mail to all the members.
3. Otherwise, the pictures will have to be sent to the members' addresses.
4. URLs/Hyperlinks are acceptable on the reflector.
5. Do not send any messages with e-mail addresses in the **BCC (Blind Carbon Copy)** field. The message will be rejected. Use only the **To:** or **CC:** fields.
6. Members are subscribed to the reflector using the member's e-mail address from the roster database. You must use that address when sending an e-mail via the reflector.
7. If you use another address on the reflector, the message will get rejected or "*bounced*", because the reflector does not recognize that address.
8. Whenever a message sent to reflector is rejected or "*bounced*" for various reasons, the administrator has to log-in to the Mailman.QTH website and approve the message.

If the admin recognizes the address as belonging to a club member, the message is accepted and passed on to the reflector.

FYI...If you use Comcast e-mail, you are limited to 100 addresses per message.

For more information about the e-mail reflector, goto : [www.mailman.qth.net](http://www.mailman.qth.net) Ω

## The W2MMD Repeaters

Output: 147.180 MHz

Input: 147.780 MHz

Offset: +600 kHz - PL: 131.8 Hz

(Conventional FM plus C4FM Capability)

Output: 442.100 MHz

Input: 447.100 MHz

Offset: +5 MHz - PL: 131.8 Hz

(Temporarily Conventional FM)

Output: 1284.400 MHz

Input: 1272.400 MHz

Offset: -12.0 MHz

PL Tone: None

The above 3 repeaters are all

located in Pitman, NJ

GPS: 39.728481°, -75.131088°

Output: 224.660 MHz

Input: 223.060 MHz

Offset: -1.6 MHz

PL Tone: 131.8 Hz

Location: Sewell, NJ

GPS: 39.781382°, -75.099963°

## Area Repeater Nets

### **South Jersey Traffic Net**

Sunday @ 1900: 147.180 MHz

Tuesday & Thursday @ 1900: 147.345 MHz

### **N3MSS MS Event Communications Net**

Tuesday @ 1930: BEARS Repeater System

### **SKYWARN™ Net**

Sunday @ 1945: 147.180 MHz

### **Gloucester County ARES/RACES Net**

Sunday @ 2000: 147.180 MHz

## Meeting Calendar

### **General Membership Meeting**

Wednesday, March 4, 2015 @ 1930 Hours

Pfeiffer Community Center

301 Blue Bell Road

(Main Street and Blue Bell Road)

Williamstown, NJ

### **Board of Directors Meeting**

Wednesday, March 18, 2015 @ 1900 Hours

GCARC Clubhouse

Gloucester County 4-H Fairgrounds

235 Bridgeton Pike (Rt 77), Mullica Hill, NJ

## March Club Meeting Program

**John Zaruba, K2ZA**

**Bob Saunders, KC2UYS**

**Cory Sickles, WA3UVV**

### **Communications Pods**

## **GCARC 11:00 am Brunch**

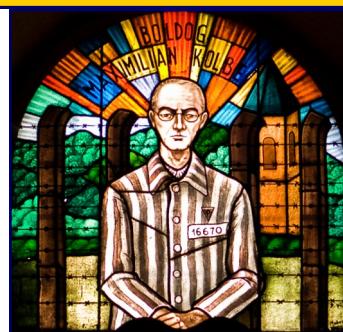
**Every Friday @**

**The Seven Star Diner**

**1890 Hurffville Road, Sewell, NJ**

**Maximilian Kolbe, SP3RN**

**Patron Saint of Amateur Radio Operators**



Ω

**Gloucester County Amateur Radio Club - P. O. Box 370 - Pitman, NJ 08071**