# THE COMPASS

*Official Newsletter of the Great South Bay Amateur Radio Club*

March 2015 | Volume 43 | Issue #3


## Upcoming Club Events

### Next General Meeting:

**Thursday, Mar. 26th, 8 PM at the EOC**

### Our First Upcoming Special Events for 2015:

**MS Walk @ Belmont State Park May 3rd.**

**Air Power Museum Republic Airport, Farmingdale, NY May 16th & 17th**

**GSBARC's FREE license classes are on Tuesday evenings from 7:30 to 9:30 PM. The Amateur Extra Classes are currently running.**

Visit us on Facebook at [www.facebook.com/gsbarc](www.facebook.com/gsbarc)


## Despair Not! Better Weather is Coming!!!

### Inside this issue of The Compass...



### Upcoming Special Events

*MS Walk @ Belmont State Park*
*May 3rd*

*Air Power Museum*
*May 16th & 17th*

*Field Day*
*June 27th & 28th*

*Maggie Fisher Cross Bay Swim*
*July 17th*

*Fire Island Lighthouse*
*August 15th & 16th*

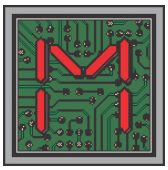
*Babylon Village Fair*
*September 13th*

*Hope for the Warriors Run*
*November 7th (Sat)*

# President's Message

-.-. --- .-.  -.-. --- .-.  -.-. --- .-.  --- .

--.- ..--- .... .-.. .... ....- .-- ..--- -.. --- -...



arch is here and with it daylight savings time. All I can say is it looks like I picked the perfect time to have my knee fixed. So you may ask, what does that have to with amateur radio? I made a bunch of DX contacts and finished a few projects in the shack now. Now with the repaired knee I should be back to running around like a nut on field day come June.

I hope everyone has been okay over this long snowy season. I don't know about you all but it was a *real* winter which has been missing from our area for a while. Once the snow is gone we can resume our many projects and start getting ready for field day. We need to do some trailer maintenance and upgrades such as installing a dc distribution system, and a dc back up power supply with an on board battery charging system with an integrated solar charging system.

The continuing work at the EOC also needs to be finished up as well as our many repeater projects and the Mesh network and Packet system. Many of you have been on packet and we have established some pretty good coverage. We've tested the system from Babylon Village to town hall and also to Massapequa, Copiague and Huntington Station. We're working on expanding this system at the Saturday open houses so if you need any help getting setup with your own Mesh or packet radio station come down on a Saturday and we'll help get you up and running.

Winter has also been rough on some of our open houses and class sessions. Due to several snow and freezing rain events we've found it prudent to cancel a class or open house rather than risk having people attempt to travel in hazardous conditions.

Don't forget, we will be holding field day training sessions for all of the new operators that have not yet participated in field day. Field day work parties will start mid April. We will be performing tests on our dipoles and making any necessary adjustments. If you have your own headset that you'd like to use when operating on field day, please make sure you have an adapter to use with an ICOM radio. We're planning on having another successful field day.

Our website team has been very busy adding new features to the club's webpage, such as a DX cluster and listings for *Swap and Shop* so stop by our site and make use of these additions. We also want to encourage use of the 2 meter repeater to let other members know about any DX stations you may have heard on the air. For example, if you hear *3G0ZC* on the air on 14.255 MHz and you're able to work them, get on the 2 meter machine and say, *QST, QST this is W2HCB, 3 gulf zero zulu charlie is operating on 20 meters on 14.255 MHz*... This will give others who may be near their HF radios a shot at working them too.

By the way *HB125FMS* has been on the air, check them out on QRZ, also I hope you all got the chance to work *W1BSA* on the *USS Massachusetts,* they had a very big signal into the EOC

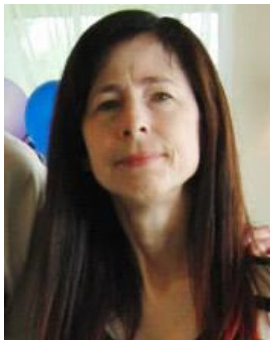
To those of you who missed the general meeting, you missed seeing the members that made a ton of contacts with the *K1N Navassa Island DX Expedition*. They all received a special token for keeping the DX alive in our club. To all of you that participate in contesting with us, I hope you all had fun in the *International DX SSB Contest*.

In closing I don't know about the rest of you, but I am ready for spring! I hope to see you all at the next general meeting on March 26th.

*73, John Melfi, W2HCB*

# *Inside the Squirrel Cage*

by Caryn, KD2GUT



When I got my ticket last year, I'd hoped to become the kind of ham who would have made Fred Flintstone proud. I wanted to do things old school — none of this computer stuff — and the worship of Hertz, Marconi and Fesssenden would be my personal bedrock. In essence, I would set my beam antenna high atop a willing, agreeable brontosaurus or possibly hoist an inverted vee atop a T-rex (would that make him a V-rex?) And I'd tell the world, just watch this radio dino soar.

No, there'd be no room for those software-driven, digitally-boosted toys. My effort would be honorable and honest; I would discover fire by rubbing electromagnetic waves and the ionosphere together to produce blazingly brilliant RST reports to shine brightly in other hemispheres.

Ah, but my Flintstones hadn't counted on the Jetsons moving in next door, and I simply hadn't counted on digging digital.

Soon, *EchoLink* was granting clean, long-distance QSOs on my HT, even sustaining me with a much-needed QSO fix during my mid-shift break at work via an app on my smartphone. (Look Ma, no radio!) At home, *IRLP* promised to land me and my Yaesu on other coasts and other continents when conditions on the HF bands weren't so welcoming. And *IRLP* delivered.

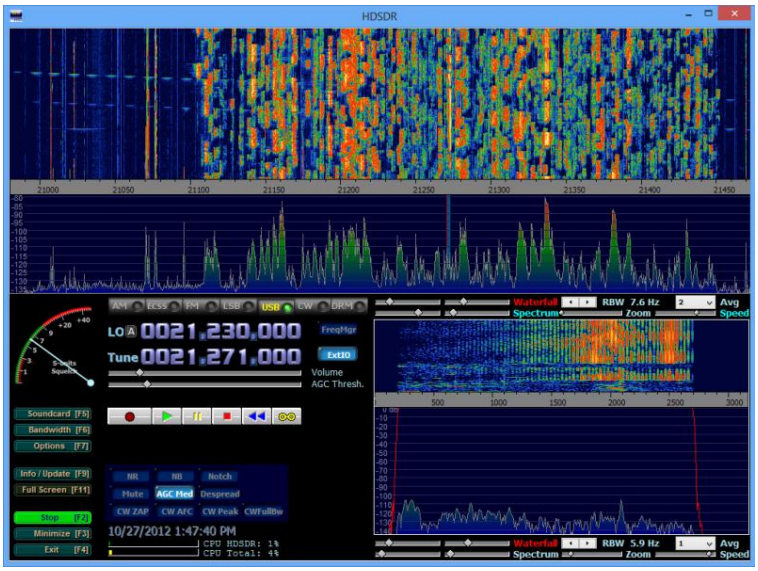


Soon, I was gripped by *D-STAR* fever, after a presentation at a recent GSBARC meeting. Now, SDR whispers in my ear (although my budget responds, in my other ear, "not yet.")

D-STAR

Fred and Wilma WHO??

Still, my dreams of relearning Morse have hardly been dashed (or dotted, for that matter). When that time comes, I may even opt for a simple straight key. But I'd be less than honest if I didn't confess to keeping my Samsung tablet at the ready in my shack, so I can visit those websites that help me track — and chase — some choice DX. And I read only this week on ***qrz.now*** about the advent of Pizzicato, the world's first fully digital HF transmitter.




Well hey, this is exciting stuff.

I guess when it comes to accepting the digital side of amateur radio, I'd rather cave — than live in one with Fred and Wilma forever.

# *Packet Radio Makes a Come Back!*

By Bob Myers K2TV

here has been an interest lately in resurrecting the old packet radio system on 145.050 MHz. Several club members have setup a packet station on that frequency and the Town of Babyon EOC mailbox station W2TOB-1 is operating there also. In addition on the adjacent packet channel 145.070 MHz there is a new Flexnode W2KPQ which is run by the Long Island Mobile Amateur Radio Club (LIMARC) which allows you to connect many other nodes, station and bulletin boards. There is also a mail forwarding PBBS W2KPQ-4 that you can read and send mail and bulletins.

For those who are unfamiliar with packet radio, it is basically a texting system using RF. It was popular several years ago, but fell out of favor mainly because of its slow transmission speed. Also the Flex-node WA2PNU became unusable on the South Shore of Long Island and there was no way to move packet traffic outside of the area. Hurricane Sandy showed a need for digital texting capability by Amateur Operators handling emergency and welfare traffic. We were able to use it in a limited fashion to and from a shelter during Sandy. Thus the renewed interest in packet radio.

To operate a basic system on packet you would need a computer, two meter FM radio and a terminal node controller also called a TNC. Most people use an older transceiver as there is no need for a PL so there may be new life for that old transceiver collecting dust on the shelf. Terminal node controllers can be found inexpensively at a Hamfest or one line. The packet software is readily available on the internet.

Now packet does not make use of a graphical interface because it is command prompt oriented. That is, commands are given from a prompt on the screen. For those that remember the older CPM and DOS operating systems, it is much like that with simpler commands. For example C for connect; B for bye; L for list, etc. Learning the basic commands is really easy once the system is set up.

Does the idea of packet radio pique your interest? If so there will be on going help available at the Saturday and Wednesday GSBARC "open Houses. This will be hands on operation showing how to set it up and how to operate it. What equipment is needed and where to get it. Sound interesting? Well come on down on Wednesday evenings between 7:30 PM and 9:30 PM or Saturdays at 12 Noon to 2PM (most times later) at the Babylon Town Hall EOC, 200 East Sunrise Highway in North Lindenhurst. Talk-in on the W2GSB repeater 146.685 MHz (110.9 HZ PL),

Remember to attend any of the GSBARC open houses; you need not be a member. Guests and visitors are always welcome.

# *How To Get Awesome Receive Audio Out Of Your HF Rig*

By John Melfi, W2HCB

f you were at the meeting that had the Bob Heil, K9EID Skype presentation then you learned that the matching speakers we all have don't do the audio justice and he was 100 percent right. I took his advice and have to report back to all.

The XENYX802 Mixer/EQ and the *JBL Control Room Powered Speakers* are awesome. If you want to get the best receive audio out of your rigs this is the way to go and I found everything at ***www.Sweetwater.com***

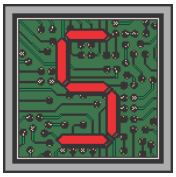
***This is the mixer and one of my 2 speakers***

I am totally amazed by the sound of my HF rig now you will be too if you take the plunge into this great set

Thank you Bob Heil for the insight into great audio in HF land

# *On The Bench*

by Ed Felix, KD2ADC

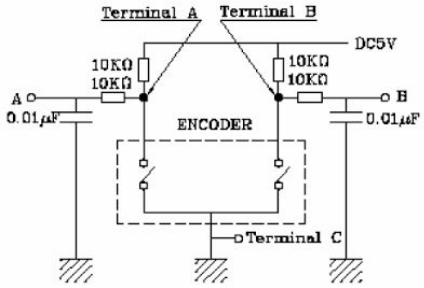


omewhere, in the mid to late 90's *AOR Corp*. sold a communications receiver manufactured in Japan.

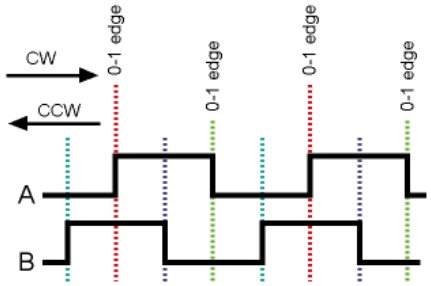
This was at the time state of the art, and very expensive with a price tag of $1799.00!!!

Unfortunately it had a few issues. These receivers used mechanical encoders to control the volume and tuning which, as it turned out, were prone to failure after only a few years of use.

There are many encoder types: mechanical, optical, magnetic, absolute, incremental etc. The ones used in the *AOR* are the mechanical incremental switch type.

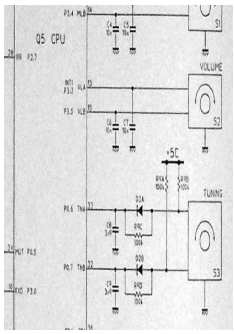



Depending on the relationship of the A and B phase, the circuit it is connected to determines the CW or CCW rotation.



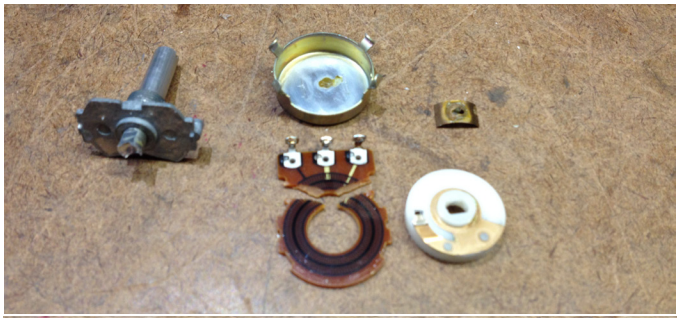

Encoders also come in varying *PPR* or *pulse per revolution* specs which determines how much resolution you have. For example; 64 PPR = 1 pulse every 5.625 Degrees of rotation (360/64)

The encoder is connected to the THA and THB pins on the CPU. By alternately grounding A, B, AB, or AB open the encoder pulses the CPU which tunes the receiver.




This receiver belongs to Bud, WA2QAV who bought this used.

The radio appeared to have been dropped on its face and the encoders damaged by the previous owner. Upon disassembly the damage was obvious.



Bud was able to procure a new volume control encoder, but the one for the tuning was long out of production and no suitable substitutes could be adapted. The only option was to replace it with an optical encoder and a circuit to handle the switching.

***Continued on page 7...***

# *Make Your Own Dipoles With These Center Insulators*

By Dan Romanchik, KB6NU

One of the things that always gets my goat is the price some companies charge for dipole antennas. It's not that they're charging an outrageously large sum of money, and I certainly don't begrudge them making a profit for their efforts. It's just that if hams would just buy their own wire and parts, they would not only save money over the long run, but be encouraged to experiment with antennas. That's what I started doing about ten years ago, and I've been very happy with the results.

One of the first things that I did was to purchase ten Budwig HQ-1 center insulators and ten HQ-2 end insulators (***http://www.budwig.com/antenna-connector-insulators.html***). I've made a bunch of antennas with these insulators, including several 40m/20m inverted vees for portable use (such as Field Day and special events), a 17m dipole, and a 10m loop antenna. These insulators are very well-made, and can easily be reused, too.

***Budwig HQ-1 Center Insulator***

Universal Radio sells the set (***http://universal-radio.com/catalog/antsup/1782.html***) for $18.50. I just placed another order for ten HQ-1s and 20 HQ-2s (the minimum number that you can purchase to get a quantity discount). The price, including shipping, is $143.

There are a bunch of other center insulators on the market, including:

- The Alpha Delta Delta-C antenna hardware kit (***http://universal-radio.com/catalog/antsup/0297.html***) consists of a Delta-C Center Insulator, antenna connecting hardware, 1 SEP Arc-Plug™ static protector (installed in Delta-C) and 2 Delta-CIN end insulators. This is a little heavier-duty than the Budwig insulators, but it costs more, too ($30 at Universal Radio). Unless you're going to be running a kW, I don't see the need to spend nearly twice as much money on these insulators.</li>
- The TEN-TEC ACRO-BAT Antenna Connector & Hanger (***http://www.tentec.com/products/ACRO%252dBAT-Antenna-Connector-%26-Hanger.html***) is an interesting product. Unlike the Budwig and Alpha-Delta insulators, this product does not have an SO-239. Instead, this insulator clamps over the coax and antenna wire, and in doing so, provides strain relief. I haven't tried this one, but it seems like a nice design. The cost is $10, directly from TEN-TEC or from Universal Radio.
- The Unadilla W2AU ANsulator (***http://universal-radio.com/catalog/antsup/0913.html***) is made from PCV tubing and include eyelets for terminating the antenna wire and for supporting the insulator in the middle. For $15, I think I'd rather have the Budwig insulator. Also, you should be able to make one of these insulators for less than 15 bucks.
- The Hy-Gain C-1C Center Insulator (***http://www.hy-gain.com/Product.php?productid=C-1C***) has a screw for tightening down the antenna wire, so you don't have to do any soldering, but overall, I don't think I like the looks of this model. And, at 30 bucks, it seems kind of pricey.
- The W8AMZ Dipole Antenna Starter Kit (***http://www.w8amz.com/W8AMZ_ACC_Page.html***) comes a center insulator made from PVC pipe, similar to the Unadilla W2AU ANsulator and two end insulators. It costs $18.

If none of these strikes your fancy, you can always make your own. WP4AOH has some very good instructions on how to do this using PVC pipe and fasteners that you can find at your local hardware store (***http://wp4aoh.blogspot.com/2012/07/dipole-antenna-center-insulator.html***).

Whatever route you take, I encourage you to keep several on hand and enough antenna wire and coax to complete the antenna. You never know when the urge will strike you to build an antenna, and if you don't have the parts you've missed an opportunity to do some experimenting.

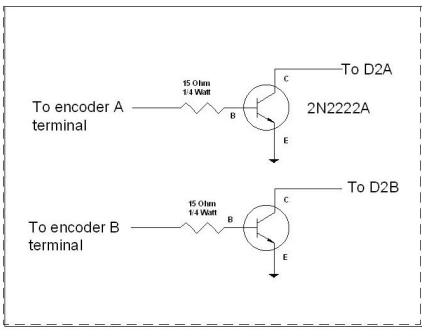
***When not checking his stock of antenna parts, you'll find KB6NU working on updates to his "No Nonsense" study guides, blogging about amateur radio at www.kb6nu.com, or working 30m CW.***

***On the Bench, cont'd from page 5...***

Optical incremental encoders work the opposite of the mechanical ones, rather than sinking current (they are not switches) their output consists of highs and lows.

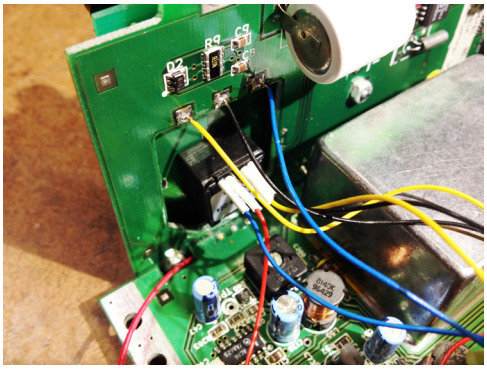
We needed to devise a circuit to alternately sink the THA and THB pins on the CPU in response to the optical encoder output. My first attempt was to use a high speed optocoupler, but after testing we found the optocoupler would not sink the 5V below 800mV which caused erratic behavior in the tuning steps.

The better solution was to use a 2 NPN transistor switch. The output of the encoder was fed to the transistors which are connected to D2A and D2B (see the schematic) to turn them on and off.

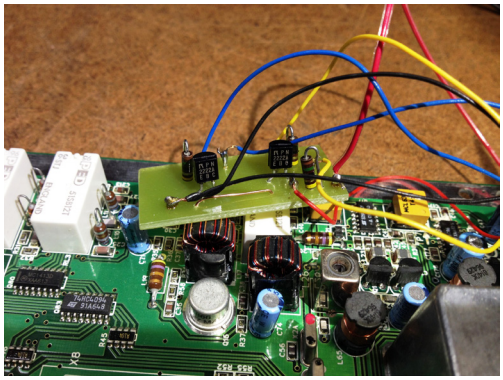



Here are the installation pictures.

Bourns 64PPR encoder mounted in place.

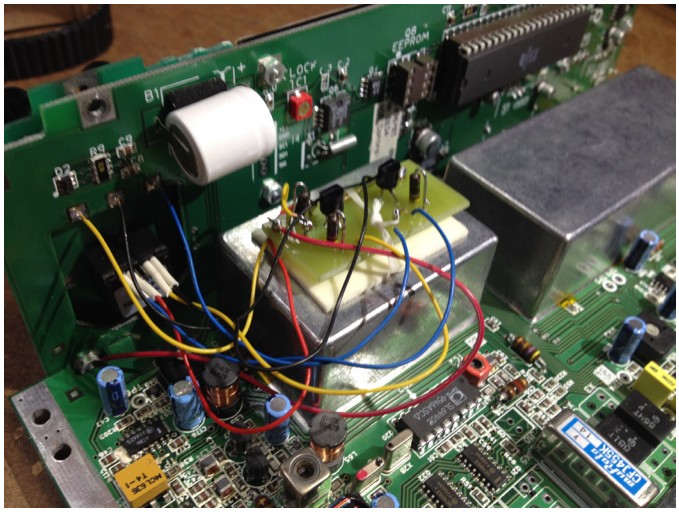


The Manhattan style PCB.

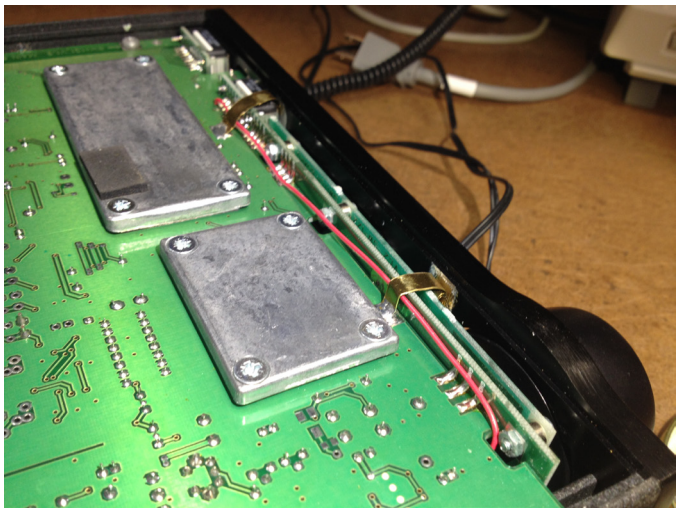


The extra resistor is a current limiter supplying the encoder with +5 volts

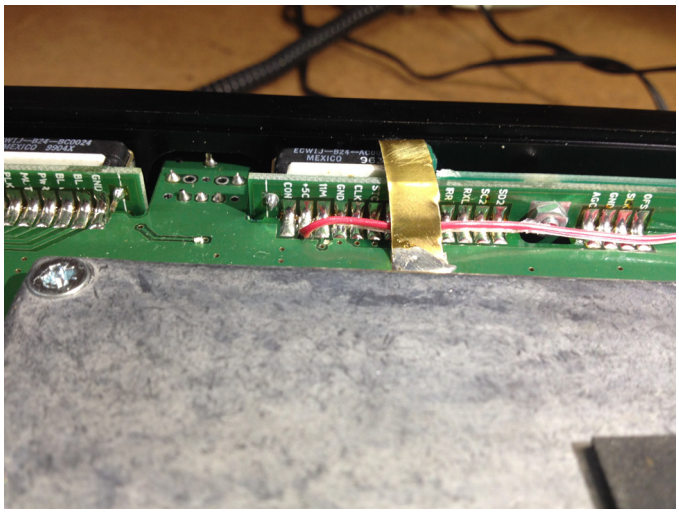
The PCB was mounted with 2 sided tape and Lacing cord.



The 5 V for the encoder was routed under the grounding straps to keep it out of the way of the case.



A tap point for the 5 volts was conveniently found on the back of the vertical PCB.



Bud can now sit back and spin the dial listening to stations from around the world!

More to follow...

***GSBARC has a New Yahoo Group and the old one has been deleted***

***If you are a member in good standing and want to join the club's new Yahoo group, go to:***

***http://groups.yahoo.com/neo/groups/gsb-arc/***

***and click on "Join Group" Be sure to add a note when filling out your information with your call sign so we know who you are!***

## Club Apparel

Want a shirt, jacket, hat, sweatshirt or t-shirt with a Great South Bay club logo? We now use *Mr. Shirt,* located at 80 East Montauk Hwy in Lindenhurst (***www.mrshirt.com***). Now you can get color matched backgrounds on your logo too. Check them out...

## ARES/RACES Information

***Div. 1—Town of Babylon ARES/RACES***
***Net:*** 146.685/R, Mondays 8:15 PM
***EC/RO:*** John Melfi, W2HCB, (631) 669-6321
***Div. 2—Town of Huntington ARES/RACES***
***Net:*** 147.210 MHz +600/ PL 136.5, Mondays 7:00 PM
***EC/RO*** Steven W. Hines, N2PQJ, (###) ###-####
***Div. 3—Town of Islip ARES/RACES***
***EC/RO:*** John J Blowsky, KB2SCS, 631-467-2410
***Div. 4—Town of Smithtown ARES/RACES***
***Net:*** 145.430 MHz, PL136.5, Mondays 7:30 PM
***EC/RO:*** Joe Albertus , KB2JOE, 631-664-6709
***Div. 5—Town of Brookhaven ARES/RACES***
***EC/RO:*** Joe Werner, KC2BPS, 631-730-8694
***Div. 6—Riverhead ARES/RACES***
***EC/RO:*** Donald Rollock, W2EUL, 631-929-0705
***Div. 7—Southampton ARES/RACES***
***EC/RO:*** Dennis O'Rourke, KB2ZWW, 631-728-5424
***Div. 8—Southold ARES/RACES***
***EC:*** Don Fisher, N2QHV, 631-765-2757
***RO:*** Charles Burnham, K2GLP, 516-779-4983
***Div. 9—East Hampton ARES/RACES***
***EC/RO:*** Nat Raynor, N2NEI, 631-324-3738
***Div. 10—Shelter Island ARES/RACES***
***EC/RO:*** Neal Raymond, N2QZA, 631-749-9330

## Suffolk County ARES/RACES Net:

***Mondays 2100 Local - 145.330/R (136. 5PL)***
***Alternate Frequency - 145.370 (136.5 PL)***

## New York State RACES Net (HF)

***Sundays 0900 Local, 3993.5 KHz LSB***

## 2015 VE Session Dates

- March 28th
- April 25th
- May 23rd
- June 20th (3rd Sat. due to Field Day folowing weekend)
- July 25th
- August 22nd

***All sessions are at the Town of Babylon EOC, located in the basement in the rear of town hall. Please bring photo ID, a copy and your original amateur radio license (if you have one), and any CSCE's you may have. Non programmable calculators are allowed. The exam fee is $15 payable by cash or a check made out to "ARRL VEC".***



## Need Antenna Work?

***Sign-up on the list at the EOC. Please supply as much information about your situation so the committee can be properly prepared with assistance and tools when they come to your QTH.***

## Club Name Badges

Club name badges are available from ***The Sign Man (www.thesignman.com)*** of Baton Rouge, LA.

The badges which are 1-3/4 in. x 3 in. If you visit The Sign Man's webpage you can order the badges by using a drop down selection on the orders page and clicking on "Great South Bay ARC - NY"


## March Birthdays

***John, NU2Q***
***Jay, N2PIK***
***Jeff, N2OEP***
***Brian, N2NGE***
***Walter, KA2CAQ***
***Bill, W2ANQ***