THE COMPASS

Official Newsletter of the Great South Bay Amateur Radio Club

April 2017 | Volume 45 | Issue #4

Upcoming Club Events

Next General Meeting: Thurs. Apr. 27th, 8 PM at the EOC

GSBARC's FREE License Classes Tuesday nights 7–9:30 PM.

Technician License Class Begins April 25th.

In Memory of Terry, K2TRC

A group of her friends has purchased a bench with her name to be dedicated on Sat., May 20, 2017. This will be 4 days after the first anniversary of her death. A group of friends is meeting on the dock at Kismet, F.I. at noon and will walk to the tennis courts where the bench is installed and do a balloon launch. They will then head over to The Kismet Inn, 1 Oak St., to raise a glass or two in her memory. Her friends are extending an invitation to join them on that day. All are welcome! Mark your calendar.

Open Houses on Wednesday nights from 7:30 to 9:30 p.m. and also Saturdays from noon to 3 p.m

Visit us on Facebook at www.facebook.com/gsbarc

Members at the March General Meeting during the Skype Presentation with DXEngineering's Tim Duffy, K3LR

Inside this issue of The Compass...

- The Squirrel Cage
- Pictures from the General Meeting
- 6 Meter Repeater Available
- Math without a Calculator on the Amateur Extra Test
- KB6NU's Guest Column

Upcoming Special Events

American Air Power Museum, May 20-21

Field Day: June 24-25

Maggie Fischer X-Bay Swim: July 14th

Fire Island Lighthouse Weekend: August 19th & 20th

President's Message

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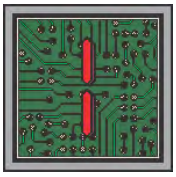


s it really spring? All I know is it's been cold in the early a.m. Working outdoors year round, I don't let it bother me too much. As for putting up antennas and doing things that are supposed to be fun, well, when it's less than comfortable it's not fun for many. With that said, I am hoping that the big warm-up starts to help everyone get their antenna projects done and get ready for all the fun on all the bands.

I was looking back at a newsletter from December 2008. That's when I became president of this awesome club. You can see how much we have -- and I mean WE -- improved GSBARC. Members past and present have selflessly donated countless hours of labor and financial support. Many people do not know what it takes to keep everything up and running for everyone to enjoy. We welcome everyone to come enjoy all that our club has to offer whether they are a member or not. Promoting amateur radio is what we do -- from encouraging new operators to try the low bands at the club station at special events and of course Field Day. Being a 501c3, we offer free classes for all three levels of amateur radio licenses to anyone willing to take the time to learn what it takes to get started or advance to high level of operating.

Moving on to what we are doing the next few months: As you all know, the event at the American Airpower Museum is on May 20th and 21st and K2TV is the head of this event. Please speak to him if you would like to help set up operate or help with take down at the end of the event.

Of course starting ASAP is the Field Day prep on Saturdays, beginning with radio checkups, interfacing with laptops, upgrading the N1MM software and making sure everything is in each box so we have no issues at all. I would like to have a station set up at the Saturday open houses and start training new operators as soon as possible. That means N1MM training as well for all the new operators and a refresher for everyone else who can benefit from it. As soon as we get a warm Saturday, we will set the frames of the two shelters to insure we have no parts missing and re-mark the parts to make it easy to identify and make for a quick deployment. If possible, if AB2ZI, has the new boxes ready we will repack them. Yes, they will have wheels!

Field Day is June 24th and 25th -- We will need a lot of help with set-up, operating and take-down. This means six stations, many antennas and power cords, tables and chairs. It takes a large crew to do it. We have many people who come from afar to be operators and help us do a killer job with their great operating skills.

So with that in mind, if you enjoy putting up antennas and taking them down and helping with set-up and take-down only -- no worries -- if you're not physically able to help with setting up -- no worries -- there is plenty you can do. Just let us know.

We have a public service event on Friday, July 14: A very special event called The Maggie Fischer Memorial Great South Bay Cross Bay Swim. We need radio operators for this event – operators on shore and also at marine posts. Please let me know ASAP if you can help. Email me at w2hcb@arrl.net so we can get a jump on this. We must know if you like boats and are comfortable on them to help with those positions.

K2IZ will be the net control for this event this year.

If you were at last month's general meeting, you got to Skype with Tim Duffy K3LR and get the tour of that awesome killer contest station. I would like to thank Tim for taking the time to explain and joke around with us. It was a great presentation without a doubt. Tim and DX Engineering has helped us out and I myself have purchased a great many items. I can tell you from my personal experience with the huge club purchase and my own --- no problems at all. Thank you, Tim, for your support of amateur radio and we hope to see you again soon.

I know we have talked about digital messaging. I am pleased to see the numbers of operators getting into it but we do need more. The software is free and most of you have the equipment so why not get on the digital band wagon we are using fldigi 3.23.21 and flmsg 4.0.1 local and long distance.

The Paumanok Pursuit 70K Trail Run and Relay took place on April 2nd – and I would like to tell you that BTG Communications did a great job setting up the whole plan for the event – ham operators and GMRS worked so well together as volunteers. It was a long day but there were no problems. Thank you to GSBARC and BTG members who were there. (We could have used a few more but we did it!) Thanks to K2LIE and KD2BAH for their hospitality with the BBQ at the command post. We started there at 6 a.m. and didn't leave till about 6 p.m. (Someone got lost in the

woods but the person was located by both the GMRS and ham operators during the search.)

REPEATER UPDATE: The new 2 meter repeater is in a testing mode to make sure it is reliable and ready. KD2ADC and WB2QGZ have put in hundreds if not thousands of hours making sure it is perfect. Once it is online we will explain all the new features for all to enjoy

As you can see, there are a lot of things to do in amateur radio so be more active come to more open houses meetings and events we would love to see more and more of you at everything we do.

73, John Melfi, W2HCB

News from the ARRL Website

ISS Packet System is Back on VHF

(04/14/2017) — The Amateur Radio on the International Space Station (ARISS) packet digipeater system is again operating on VHF — 145.825 MHz. The failure of an Ericsson handheld VHF transceiver on board the ISS last fall had caused ARISS to shift packet operation to 70 centimeters. A cargo resupply mission in February delivered a new Ericsson 2 meter handheld, to replace the one that had failed, which had been used in the Columbus module for school group contacts and for Amateur Radio packet.

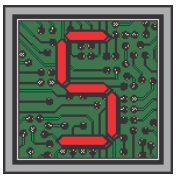
While the VHF transceiver was offline, ARISS shifted school contacts from NA1SS to the Kenwood TM-D710 transceiver in the Russian Service Module. NASA ISS Ham Project Coordinator Kenneth Ransom, N5VHO, said the VHF capability now back in Columbus can be used in conjunction with passes involving the HamTV digital amateur television (DATV) system, which operates on 2.4 GHz.

ARISS International Chair Frank Bauer, KA3HDO, said recently that ARISS continues to make progress on the development of the new interoperable radio system on the ISS "that we hope to use to replace our aging radio infrastructure in the Columbus module and the Service module."

Packets digipeated in a valid APRS format via the ISS system and picked up by an Internet gateway station are documented on the "Amateur Radio Stations heard via ISS" page. ***— Thanks to Kenneth Ransom, N5VHO, ISS Ham Project Coordinator***

Six meter FM repeater for GSBARC?

By Bob Myers K2TV



everal of our members have been asking why we don't have a six meter FM repeater sponsored by the club. Building a six meter repeater is an expensive undertaking. A duplexer is needed for single-site antenna operation which is very, very large and expensive. If a duplexer is out of the question, then you need to have a split-site system complete with a linking system which is another expensive undertaking. A split site is where the repeater receiver is at one location and the transmitter is at a different location. The link is needed to get the received signals to the transmitter site.

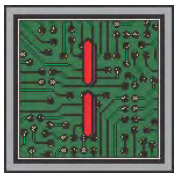
Fortunately we have another solution in our area. John WB2CIK has a six meter FM repeater in the Melville area that has really great coverage on Long Island and southern Connecticut. He has graciously invited GSBARC members to use it. The repeater is on 53.110 mHz with an input of 51.330 mHz and a PL frequency of 107.2 HZ. A nice feature of the repeater is that besides using vertical polarization, it has an additional horizontally polarized receive antenna for those stations that are horizontally polarized.

So if you have six meter FM capability and would like to try six meter FM, this is the place to be. Our thanks to John WB2CIK for making the repeater available to GSBARC members.

If anyone needs instruction on the N1MM plus logging program for Field Day, please see Bob K2TV or Tom KA2D at any Saturday open house. We can walk you through it so when you operate on Field Day, you will be an expert.

Interesting Gadgets I Wish I Had Time For

By Dan Romanchik, KB6NU

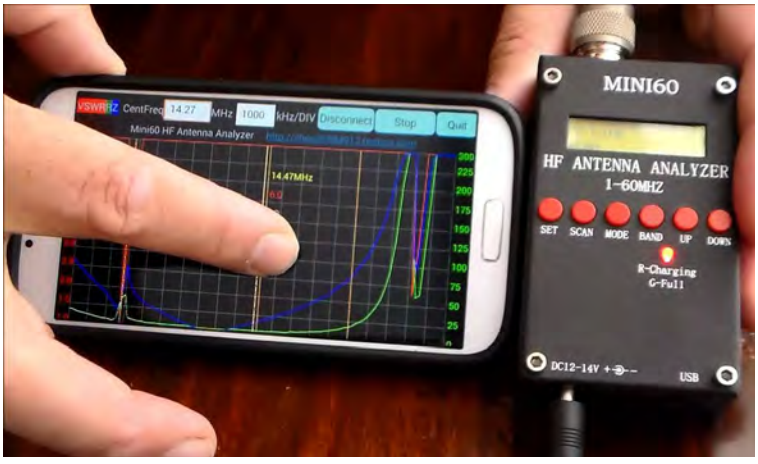


I'm on a lot of mailing lists and participate in a bunch of amateur radio forums. As a result, I see a lot of interesting gadgets that guys are buying or are thinking about buying. Here are three of the latest that look interesting to me. I wish I had time (and money) to purchase all of these and try them out.

Android antenna analyzer

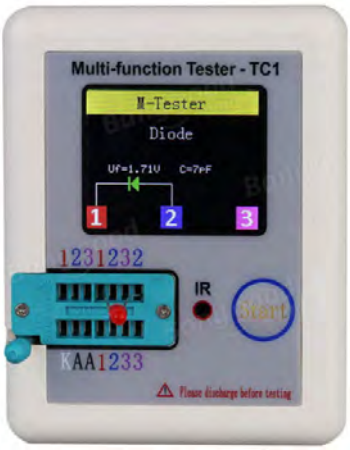
On Reddit (***https://www.reddit.com/r/amateurradio/comments/60nnp1/finally_got_my_mini60_ebay_antenna_analyzer_time/***), some of the guys have been talking about the Mini60 Antenna Analyzer (***http://www.ebay.com/itm/CW-USB-Interface-Cable-WINKEYER-compatible-3-5mm-plug-/132121085623?hash=item1ec307c6b7:g:up8AAOSw241YeTei***). Its frequency range is 1 – 60MHz, but the cool thing about this device is that you can use it standalone with the built-in LCD display or with some software (***http://www.jtelectronics.co.nz/information_links/MINI60/Add-Bluetooth-Module-To-MINI60-Antenna-Analyser.htm***) and a tablet with a Bluetooth interface to get fancy frequency vs. SWR plots. See ***http://www.kb6nu.com/wp-content/uploads/2017/03/mini60-ant-analyzer.jpg*** for a photo of the Mini60 Antenna Analyzer being used with an Android tablet.

Of course, this is made in China, but how can you beat the price? It costs $112 shipped.



Multi-functional component tester

Here's another marvel of Chinese engineering and manufacture – a smart component tester (***http://www.banggood.com/3_5inch-Colorful-Display-Multi-functional-TFT-Backlight-Transistor-Tester-p-1083042.html***) for only $30, shipped. It identifies and characterizes NPN and PNP transistors, capacitors, resistors, diodes (including Zener diodes), N-channel and P-channel MOSFET, IGBT, JFET, triacs, and batteries.



This isn't the first smart component tester to hit the market, but the unique thing about this unit is that it has a graphical display that not only identifies the type of component that you've connected to it, but also draws the schematic symbol of the part. You can see a video of this tester in action at ***https://www.youtube.com/watch?v=07FH6tjzwWg***.

Make your Raspberry Pi into a desktop PC

Newark/element 14 will soon start selling a kit of part that will make it easier to turn your Raspberry Pi into a desktop PC (***https://www.element14.com/community/docs/DOC-83477?CMP=e-email-SEPO-210317-e14PI&et_cid=28941683&et_rid=1231362216&cmp=***). The kit includes:

- Intelligent and Safe Power Controller
- Interface to connect mSATA SSD (upto 1TB)
- Real Time Clock to keep track of time
- Heat Sink
- Enclosure

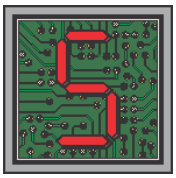
They don't list the price just yet, but this might be what I need to actually make use of the Raspberry Pi 3 I bought several months ago.

If you have one of these gadgets, or buy one in the future, please let me know how you like it. I'll put your review up on my blog, so that everyone can benefit from your experience.

When he's not drooling over electronic gadgets, Dan blogs about amateur radio at KB6NU.Com, writes the "No Nonsense" amateur radio study guides and teaches ham classes. You can contact him by e-mailing cwgeek@kb6nu.com.

Inside the Squirrel Cage

by Caryn, KD2GUT



ize matters.

Ask any ham with the highest tower in town or the one whose shack is a converted 3-car garage.

Ask anyone who doesn't do a double-take when you point out that "rig" just a few letters away from "big."

And then there's folks like me: I've got a small but respectable Yaesu starter HF rig that may well end up being my forever transceiver. I'm operating barefoot for now on 100 watts and my shack fits comfortably in the smallest of the three bedrooms at home. Yes, everything I have sits easily atop my modest-sized oak desk, straight key and Kenwood dual-bander included.

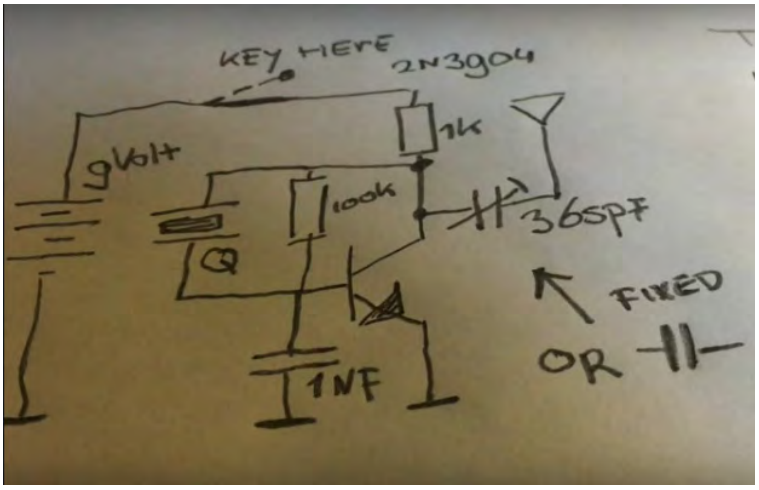
So imagine my delight at getting an email recently from Jarno de Haan PA3DMI in Amsterdam. I'd written him last month in hopes he'd tell me more about The Walnut. This was his famous, smaller-than-small 50mW to 60mW CW transmitter, powered as much by his imagination as by its external 9-volt battery. With postings on YouTube and later Hackaday.com, this amateur radio Walnut was soon gobbled up with the same voracity normally accorded a bunch of starving squirrels (Admit it: you knew I'd find a way to work these bushytails into the story).

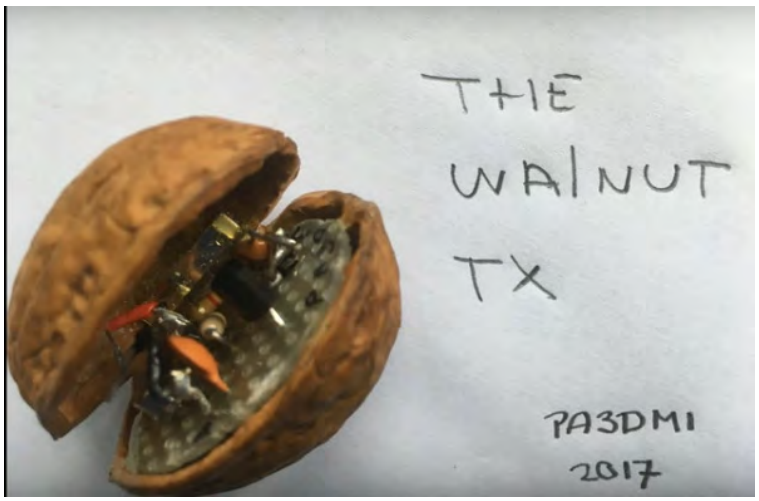
When Jarno wrote me last month, he said he had yet to field test The Walnut, but he was hopeful, of course, about its success. He had even found ultra-tiny hinges that allow him to open and shut the small radio, keeping things neat and tidy.

Best of all, he said, he still had ample raw material — a half-kilo of walnuts remaining from his neighbor's tree - so he could later fashion a complementary receiver, antenna tuner and a CW key. Who says shacks don't grow on trees? (The nuts are still available, I presume, unless he got really hungry in the weeks that followed his note to me.)

Well, after hearing from Jarno I started feeling a little more pride in having a workable yet modest setup. So bedazzled by the biggest and the best and the most booming, I just couldn't see the forest for the trees.

In this case, they just happened to be walnut trees somewhere out there in Amsterdam.

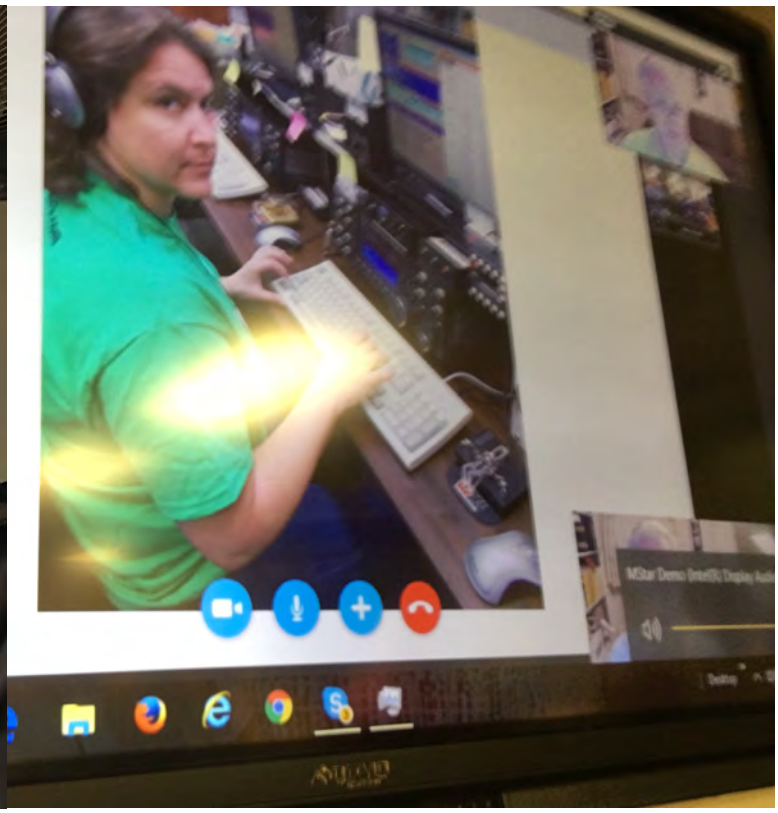




You can watch the YouTube video here:

https://youtu.be/OUGWnxQbQDg

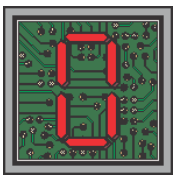
DXEngineering's Tim Duffy, K3LR Via SKYPE!



In the Classroom with AB2ZI

No Calculator Needed!

By Kevin AB2ZI



One of the biggest reasons I push learning the math in my classes is that by getting familiar with the math you get a much better understanding of what's going on inside of the circuits. The more practice you put into the math, the easier doing the calculations becomes. One of the side benefits of this is that once you are comfortable doing the math many of the underlying relationships make themselves known and you get an intuitive understanding that in many cases allow you to find the answer to a test question without the need to pick up a calculator.

For example, question E5B11 from the new Amateur Extra pool asks;

What is the phase angle between the voltage across and the current through a series RLC circuit if X_C is 25 ohms, R is 100 ohms, and X_L is 50 ohms?

Looking at this question we can first ask ourselves, "what is the question looking for, and what information is given that I can use in answering it?"

This question is looking for a phase angle between the voltage and current through a series RLC circuit. Given that we should know by now, since the concept of phase shift in reactive components (i.e. inductors and capacitors) was introduced in the General Class License material, the mnemonic *ELI the ICE* man. ELI reminds us that an inductor phase shifts voltage and current 90 degrees with the voltage leading the current (we can also say the current *lags* the voltage and this is important to remember). The opposite is true of capacitors: ICE reminds us that current leads the voltage (or voltage lags current) by 90 degrees.

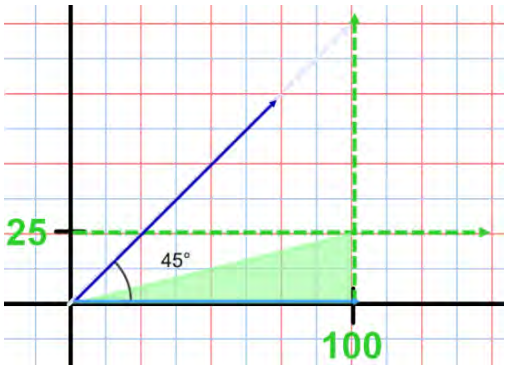
So, we have identified that we are looking for a phase shift and we understand the difference between inductive and capacitive circuits. So far so good and we haven't had to do any math yet. Moving on we know need to determine what the circuit looks like. We are given that X_C is 25 ohms and X_L is 50 ohms. Since X_L is a positive reactance and X_C is negative we can subtract the negative 25 ohms from the positive 50 and are left with 25 ohms of positive X_L. We now know our circuit looks inductive and so the phase angle will be positive (capacitive circuits would have a negative phase angle) with voltage leading the current. Let's take a look at the answers we have to choose from and do some quick elimination:

~~A. 14 degrees with the voltage lagging the current~~
B. 14 degrees with the voltage leading the current
~~C. 76 degrees with the voltage lagging the current~~
D. 76 degrees with the voltage leading the current

There are 2 possible answers with voltage leading current; answers B and D, so we can eliminate A and C and are now left with a 50-50 choice.

If we know think about how an angle is formed we can deduce the correct choice. We all know what a 90-degree angle looks like. If we have a perfect square all the angles are 90 degrees and all the sides are equal length. If we draw a line from one corner across to another we split that 90-degree angle in half and are left with a 45-degree angle that splits our box into 2 right angle triangles. So if both sides of a right angle triangle are equal the phase angle is 45 degrees. If the bottom side is longer than the side that goes "up" then the angle is smaller than 45 degrees. If the side going up gets larger, the phase angle would increase from 45 degrees to some larger angle.

So what does our triangle look like? Well, we have 25 ohms (the "up" or vertical side of the triangle) and our resistance is given to us as 100 ohms (the horizontal side of the triangle). The bottom side is 4 times longer than the up side:



Therefore our phase angle will be smaller than 45 degrees which means that answer B, 14 degrees, would be the correct answer! There, we've solved an impedance problem on the Amateur Extra test and never had to pick up the calculator to do it.

YAHOO!

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:

https://groups.yahoo.com/neo/groups/gsb-arc/info

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, *http://www.huntingtonnyaresraces.org/*

Div. 3—Town of Islip ARES/RACES
Mondays 8:30 PM
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: Rich Johnston, KC2TON, 631-872-4039

Div. 5—Town of Brookhaven ARES/RACES
EC/RO: Ted Debowy, AC2IR, 631-751-6576

Div. 6—Riverhead ARES/RACES
EC/RO: Steve Casko, W2SFC, 917-701-3919

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 - 146.820 (136.5 PL)

New York State RACES Net (HF)
Sundays 0900 Local, 3993.5 KHz LSB

2017 VE Session Dates

- April 22nd
- May 27th
- June 17th
- July 22nd
- August 26th
- September 23rd
- October 28th
- November 25th
- December 23rd

All sessions are at the Town of Babylon EOC at 10 a.m., 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".

Visit FCC Universal Licensing System site to register for an FRN number to use on the paperwork.

GSBARC Free License Class Schedule:

Technician: April 25th thru June 20th.

Note: All Classes Tuesday evenings from 7 to 9:30 PM. Class text book is the current ARRL License Manual for that level. For more info email Kevin, AB2ZI at kmorgan6@optonline.net

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"

2017 Annual GSBARC Field Day Raffle is here!

Prizes for 2017 are:

1st Prize: ICOM ID-5100 VHF/UHF Transceiver

2nd Prize: UHF Digital Voice Access Point (DVAP)

3rd Prize: BTECH/Baofeng UV5X3 Tri-Band HT

Tickets are $5 each or a book of 5 for $20

Winner Need Not be Present to Win.