# The Compass!

Official Newsletter of the Great South Bay Amateur Radio Club, INC.

October 2018 Volume 46 #10


## Next General Membership Meeting: Thurs., Oct. 25th, 8 PM

*Inside this issue:*


- *AM Modulation vs. SSB Modulation*
- *The Squirrel Cage — a column*
- *KB6NU's Guest Column*
- *Review of Nifty E-Z Guide to D-Star Operation*
- *Club Trailer Gets Upgrades*



*Club Trailer Gets Operating Position Upgrades*

## *URGENT!!!*

***Volunteers are still needed for the Hope For Warriors Run which takes place on Saturday, November 10th.***

***6 a.m. to noon***

***To volunteer email John Melfi, W2HCB at w2hcb@arrl.net***

SUNSPOTS = 0. ZIP. NADA. NUTTIN'. NONE. BUPKISS

*Long Island's Friendliest Amateur Radio Club!*

# President's Message

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October is here – and what's going on? Well, in our club a lot's going on!

We're always looking at ways to improve our club trailer. We use that trailer for everything from Field Day to public service special events and emergency communications (if ever needed for that, we're ready). We have now added four computers that take up no room on the operating position with 24-inch monitors that are mounted on fully articulating mounts. They are all set up for N1MM and for fldigi and flmsg as well. They will also have the hurricane software installed shortly. Thank you to Gary N2ADC and Walter KA2CAQ. It was a long day but we got them all configured and running on Sept. 29. We also have the same set-up for the north side. That's right: no more laptops and worrying about batteries and whatever.

We also have a bunch of events coming up. JOTA is starting on Oct. 19 at the EOC. Please contact Phil W2UV if you can help out. It ends on Oct. 21. Important: You must have the Scouting Youth Protection Certification to help with this event.

Next up is the Suffolk County Marathon. Please visit ***www.islipares.org*** to sign up for that event. After that is the annual Hope for the Warriors run – and we still need operators. Why do we harp on public service? Well if we are seen people know we are still relevant. It also is a way of staying in the minds of the local and state elected officials. So I cannot stress enough how important it is to take part in public service events.

So once again, I am requesting your participation in the Hope for the Warriors run. Please send me an email at ***w2hcb@arrl.net*** ASAP and let me know you're available.

As president of a great club, I find it is always great to have so many projects going on. We have done so many great projects over the last 10 years. It is unbelievable! I am looking forward to doing even more exciting projects in the future. Amateur radio is always a way for one to be part of something special and our club is very fortunate to have a great place to call home. There's always something going on. We have members from all walks of life and I am pleased to see that we all have a great time together. Amateur radio has sparked many other interests -- from kit-building and experimenting with robotics to all kinds of computer projects.

As we continue on with new projects and finish up older ones, we hope everyone enjoys what we have to offer in our free classes with Kevin AB2ZI. He is always doing a fabulous job helping the newbies get their first license then of course upgrading to higher classes to operate on the low bands. So many people have come and have taken the technician class then gone on to get their Extra Class by Field Day. Just think of that: If you sat in the free classes that start in September, by June you could be an Extra Class operator!

This brings me to the proposed rule change on upgrades. I know so many of you all feel the same way as I do – especially those of you who studied very hard to pass to get your Extra frequencies. This bothers me. I had to study very hard to pass my Extra Class test and now they want to give away some of those frequencies to inexperienced people.

As you know, there is an election going on for Hudson Division Director. We had both candidates come and speak to our club. Ria N2RJ came and spoke us in August and she is opposed to this change. Last month Mike N2YBB came and spoke to our club and is favor of the change. I know many of our members are not happy about this and they've told me. I am not telling you who to vote for – that's a decision you make for yourself. But I hope whichever candidate wins does not disappear until it's time for re-election, as many do. So, whoever wins, we'd like to see you at some of our events!

If you are an ARRL member, make sure you vote. The ballot will be mailed to you in early November. Please make sure your voice is heard. Fill it out and mail it back before the deadline. All ballots must be up at the ARRL no later than Nov. 15. So keep an eye on the mail for the envelope from the ARRL.

Our club is always looking for new ideas if you have one please let us know email us at i***nfo@gsbarc.org***

Did you all see "Last Man Standing"? It was a great show! Tim Allen is one of my favorite funny guys and I am so happy for our member John Amodeo AA6JA. As a matter of fact the show after "Last Man Standing" is "Big Kids," and that's another show he produces. Great job, John!

ARES members please make sure your credentials are in order. I need to know the ones that you have. You must have ICS 100, 200, 700, 800. EC01 is a plus. The district EC is

***Continued on page 5***

# *ARRL President Suggests That We "Re-Brand" Amateur Radio*

By Dan Romanchik, KB6NU

This Week in Amateur Radio recently reported (***https://www.stitcher.com/podcast/this-week-in-amateur-radio/e/51325707***) on a speech given by ARRL president, Rick Roderick, K5UR, at the 60th annual West Virginia State ARRL convention held August 25th at WVU Jackson's Mill Conference Center. Here are some things that he had to say:

> *"Are we even relevant anymore as ham radio operators? Well, let's see: We're world communicators. We provide public service. We help in emergencies and disasters. We help save lives. We talk to the jungles of Africa…to the beaches of the South Pacific. We bounce signals off the moon. We talk to astronauts. We promote technology. We do positive things. So absolutely—we are relevant.*
>
> *"We've got to accept change and we've got to adapt if we're going to bridge that gap to that next generation. So the question that I have here that I have challenged my colleagues at ARRL with is this: is it time to rebrand ham radio? Maybe we need to rebrand the American Radio Relay League. That's a pretty profound statement."*

Of course, I agree with K5UR on this and said so myself (***https://www.kb6nu.com/are-we-amateurs-or-what/***) several years ago. Unfortunately, according to the report, he retreated to the same old ideas that the ARRL has been spouting for years:

> *"Well I think we ought to get out there and stir things up. That's what I think we ought to do. I think you ought to go back and rejuvenate your club. Over the next year, get somebody into ham radio. The second thing I want you to do….I want you to help a ham that needs your help. And the third thing I want you to do is—if you're not a member of the American Radio Relay League, you need to join today…because you know that whether you like us or not, we're all you've got; ain't nobody else in Washington D.C. helping us. I want you to ask yourself this question: don't you think it's time to give something back? Now I believe as a group, if we all did that we'll make a difference in this hobby as we go forward. Be a champion of ham radio. Let's work together and get it done. Thank you very much."*

I'd like to challenge K5UR and the ARRL to really stir things up. There are lots of us out here giving back by teaching classes, conducting exam sessions, and helping hams get on the air. That's not the problem.

What we need from the ARRL is real leadership, not just talk. Exhorting the troops is only going to go so far. For most hams, amateur radio is only a hobby, and they do what they can. It's really up to the ARRL to provide the leadership that ties it all together and provide the framework that will allow us all to be successful.

Saying, "Whether you like us or not, we're all you've got; ain't nobody else in Washington D.C. helping us" doesn't really cut it. You have to show people that you're really making a difference, not just say you are.

***When he's not giving the ARRL the benefit of his opinions, Dan blogs about amateur radio, writes exam study guides (www.kb6nu.com/study-guides), and operates CW on the HF bands. Look for him on 30m, 40m, and 80m. You can email him your thoughts about the ARRL at cwgeek@kb6nu.com.***

***Mike N2YBB giving his pitch to the club on why he should be elected Hudson Division Director***

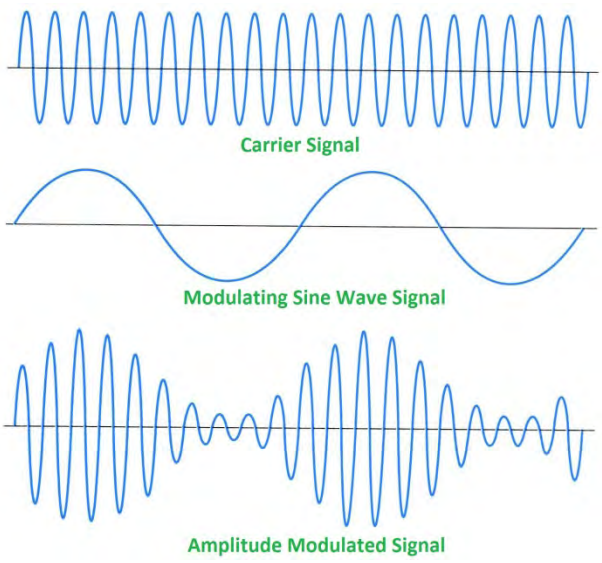
# *In the Classroom with AB2ZI*

**AM Modulation VS Single Sideband (SSB)**

By Kevin, AB2ZI

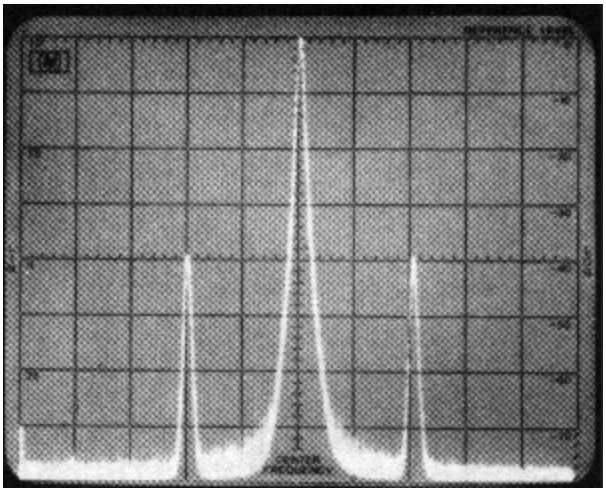
With AM modulation (amplitude modulation) you are mixing the voice, music, tones, whatever, with the carrier frequency and producing a waveform that has an envelope representing that signal.

For a single tone sine wave on the carrier you get this:



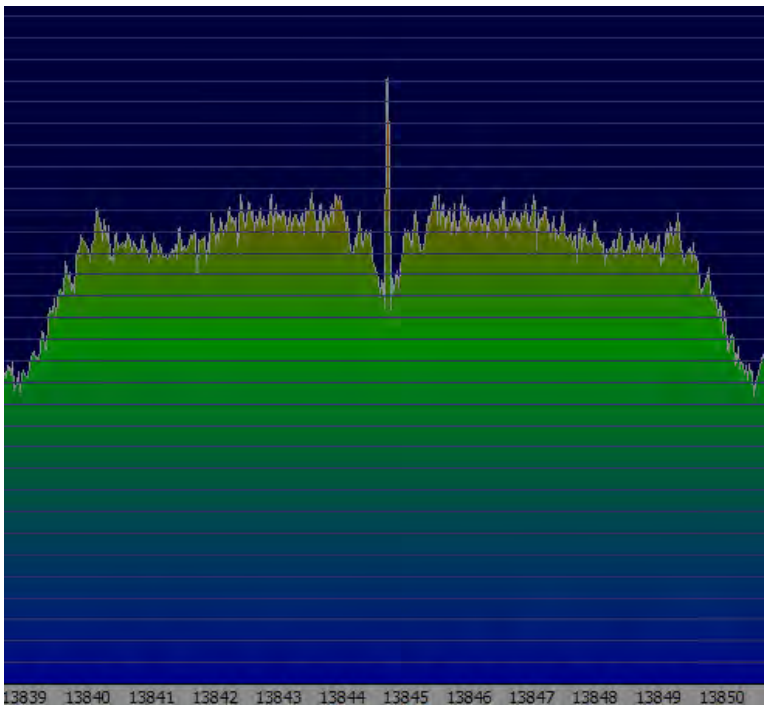

Notice that the amplitude (how big) of the carrier is changing at the same rate as the modulating signal. This creates 2 copies of the information (modulating waveform). One on the upper side (upper side band) and one on the lower (lower side band).

When looking at the spectrum on a spectrum analyzer (in class I was using a software defined radio receiver signal) where you are looking at the amplitude of signals at the frequencies they are at you see this:



The large spike in the center is the carrier frequency. If the modulating wave is 1 kHz they you have a sideband signal 1 kHz above and below the carrier. An AM receiver (or SSB, LSB, FM) is tuned to the carrier frequency which it removes as part of the demodulating process in the receiver. Any other frequencies above and below (within the bandwidth being processed) are demodulated as audio. So an AM receiver would output that 1 kHz tone as audio.

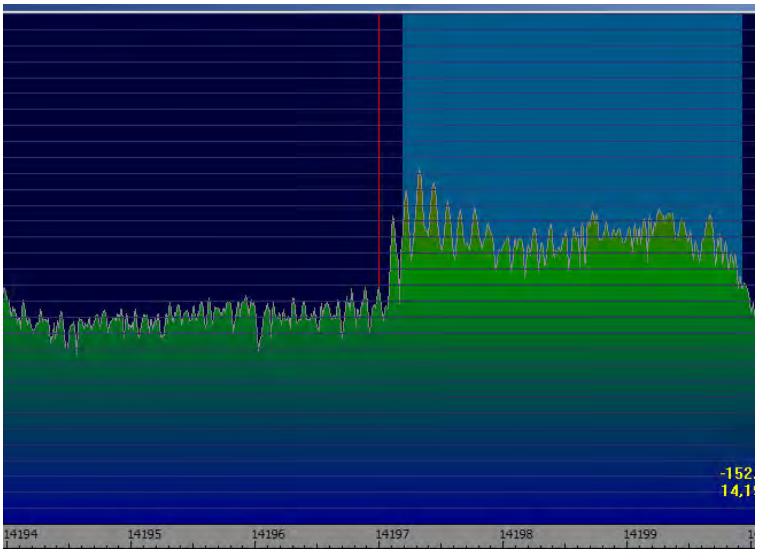
If you look at an AM signal with full audio on it, this is what you see (the spike in the center is the carrier frequency. Note: this is a commercial AM signal and is over 12 kHz wide--that's 6 kHz to either side of the carrier. Amateur radio is restricted to a 6 kHz wide total signal for AM modulation which is 3 kHz per sideband):




With SSB (single sideband) the transmitter is still tuned to a carrier frequency and modulated in the same way as with the AM transmitter. The difference is that after the carrier is modulated a filter removes the carrier frequency

and one of the sidebands (it doesn't matter which one). The remaining sideband, which is a frequency mixture of carrier plus modulating wave or carrier minus modulating wave is then transmitted. Because you are not sending the carrier or other sideband you can put all of the transmitter power into just that sideband signal. In the case of a 1 kHz tone modulating a 14 MHz carrier, we would initially generate the carrier at 14 MHz plus 1 kHz and the carrier minus 1 kHz, so from low to high you would generate signals at 13.999 MHz, 14 MHz and 14.001 MHz. Before being transmitted (let's use USB) the carrier frequency and the 13.999 MHz difference frequency are filtered out and only the 14.001 MHz sum is transmitted. Now for you to hear that 1 kHz tone you would have to tune to the carrier frequency, in this case 14 MHz, and your receiver would subtract that 14 MHz from the 14.001 MHz received signal leaving just the 1 kHz tone which is what you would hear at the speaker.

Here's a 20 meter SSB signal using USB modulation. I am including a capture of 6 kHz of spectrum from 14.194 to 14.200 MHz (plus/minus 3 kHz from the center or carrier frequency which you don't see because it isn't being transmitted):




The red line is the carrier frequency which is the frequency you are actually tuned to in order to listen to this signal. Here this ham is transmitting on 14.197 MHz, USB mode. Notice that all you see is the 3 kHz of the upper sideband. This means another ham could tune to 14.194 MHz, USB and not interfere with the first one.

At the receiver end, the receiver has to be tuned to the carrier frequency the sideband was generated at in order for the demodulating circuits to subtract that carrier frequency from the modulated wave and leave the modulating audio as a result.

LSB and USB are the same except for whether you are looking for a sum or difference at the receive end. By convention (not a law) on 40 meters and below LSB is the mode used. Over 40 meters we use USB. That said you can (and will) find some people using USB on 40M or LSB on 20M.

If you try to listen to a LSB signal with your receiver set to USB mode you will not be able to get intelligible audio out. You can tell there's a voice signal there but it will be distorted sounding and unintelligible.

However, if you are listening to an AM signal you can use either USB or LSB to listen to the transmission because both sidebands are present and contain exact copies of the information!

How's that?

***President's Message... cont'd from page 2***

requesting this info so please email your list of credentials. He is doing this to make sure that everyone who is in ARES has what they need to stay active.

I hope that everyone has a wonderful month. So many great things happen during our brief fall season. One thing to do: See that your antenna is in good repair. See what needs fixing -- or upgrade your antenna system. Check all your connections! I can tell you that when I checked mine I was surprised to find that a few in my enclosed junction box needed to be tightened. So take it from me: Make sure you take care of everything before it gets to cold. The importance of a good antenna system cannot be overlooked. Trust me, you don't want find out during a storm that you have a problem.

The last thing I must stress is the importance of public service events. I know I mentioned it earlier in my message but I cannot say it enough: We need more operators for them. This is our way of giving back for all that we get. How many times have heard from people say they thought ham radio was dead and nobody does that anymore? Well, guess what? There are plenty of us but if you're not out there to be seen they don't think we are still around -- so how do we fix this? Step up and help out with an event or two. It's the least we can do for all we get in return.

*73, John Melfi, W2HCB*

# *Inside the Squirrel Cage*

by Caryn, KD2GUT

I was never a big fan of Pepsi or Coca-Cola so when 7-Up came along years ago with its advertised claim as "the UnCola," I was impressed. But in ham radio, DXing is the equivalent of Coke Classic for me – it's what I have always had a taste for and it's what initially drew me to pursue my ticket many decades ago. It ultimately brought me back to finally get it.

Lately, however, my thirst for DX has gone unquenched thanks to sunspots – or lack thereof. That's what led me to sample the "UnDX," an alternate menu option to see me through these sunspot-challenged moments. DMR has delivered a refreshing splash of QSOs, from the Canadian operating mobile as he traveled home to Quebec from Toronto, to the goat farmer in Sweden who answered my call while tucking his herd – and his two Shetland ponies – in for the night. (He'd also had two pigs last year but added, somewhat matter-of-factly: "Then Christmas came." Needless to say, I avoided any followup questions.) Hamvention 2018 had sent me home obsessed with DMR and it's proven more radioworthy to me than EchoLink or IRLP ever seemed to me, though I can't say why. Was it the prospect of using a super-cheap radio? Or the chance to perfect my pronunciation of new and colorful expletives while learning to program the codeplug? I can hit two, maybe three, repeaters from my home QTH, so I have a wider choice of TalkGroups and there's always the option to add a hotspot later for greater global access.

I like knowing I can still flip the tab on that big can of HF and listen to the bands fizzing whenever I'm in the shack – and I still do – but the UnDX meanwhile has kept me from becoming too unhappy. And that's pretty refreshing.

# *Club Trailer Upgrades*

If you've ever operated inside Great South Bay's Communcations Trailer, you know that it's very tight , cramped and when you get 3 or 4 operators in there it can be unbearably hot. While there is a floor AC unit, for summer operations, all the doors have to be closed and the person sitting next to it freezes.

Well good news everyone! The club has replaced the desktop computers with Intel NUC mini computers that are the size of a few stacked CDs. These little guys are running Windows 10 and Gary, N2ADC, has installed N1MM on all of them. These small units mount directly to the back of a monitor. Speaking of monitors, we also bought new monitors for each operating position.

As for the environmental control, a new roof-mounted combination heating and air conditioning unit was purchased and is set to be installed.

Bet you can't wait to volunteer to operate field day now, eh?



***(Top) Installing NUCs and new monitors.***
***(Bottom) Trailer at W2YW's shop ready for roof-mounted AC installation.***

***The "Nifty E-Z Guide to D-STAR Operation" book***

A review by Bob Myers K2TV

I've been operating D-STAR for quite some time and always have had the feeling I was missing out on a lot of features. There were times when there were conversations on the various reflectors about these different features of which I had little or no knowledge. The manual supplied by Icom with their radios shows some of the rudimentary features but there is much more that has been developed since the inception of the D-STAR mode. Outside developers have come up with many software and hardware enhancements.

While perusing the goodies at Ham Radio Outlet in New Castle, Delaware recently I ran across the "Nifty E-Z Guide to D-STAR Operation," a book by Bernie Lafreniere N6FN which seemed to be exactly what I was looking for to fill in the gaps. Those of us who have been using the "Nifty Guides" for various radios are already familiar the way N6FN simplifies very complicated radio setups on modern day equipment.

There are 17 chapters in the book along with several appendix guides at the end.

Chapter 1: D-STAR Overview.

Chapter 2: Icom G2 Gateway Operation.

Chapter 3: Dplus Gateway Operation.

Chapter 4: Gateway User Registration.

Chapter 5: DV Mode Callsign Setting.

Chapter 6: DR Mode Callsign Setting.

Chapter 7: Memory Mode Callsign Setting.

Chapter 8: Received Call History.

Chapter 9: Misc. Operating Procedures.

Chapter 10: DV Short Text Messaging.

Chapter 11: Internet Resources.

Chapter 12: Radio Programming Software.

Chapter 13: DV Mode Slow Speed Data.

Chapter 14: D*Chat Data Communication.

Chapter 15: D-Rats Data Communication.

Chapter 16: DV Dongle, D-STAR Adapter.

Chapter 17: DV Access Point Dongle.

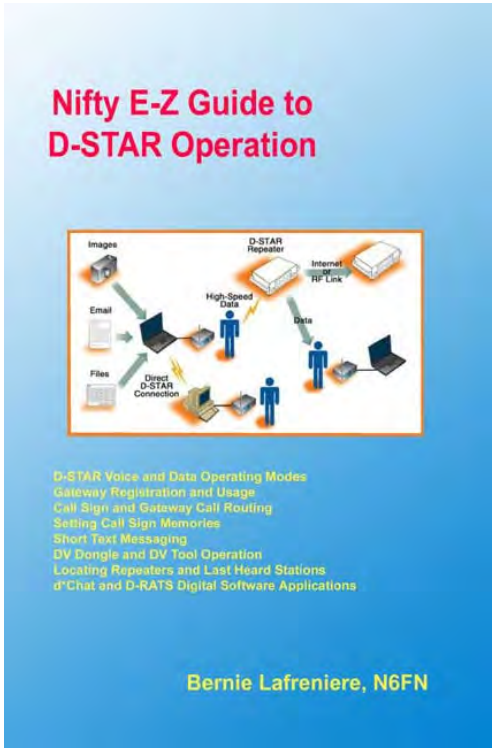
Appendix A: Useful D-STAR Web Pages.

Appendix B: Error Code Listings.

Appendix C: Guides for Icom Radios.

If you read the entire book or at least the chapters that interest you, it will make you somewhat of a D-STAR expert. I say "somewhat" of an expert because D-STAR is an ever-evolving mode with new features and equipment being added all the time. The book is fairly up to date, but doesn't include things like the SharkRF Openspot or the latest versions of the new radios out on the market. Hopefully there will be a fourth edition with that information.

I highly recommend the book for anyone serious about operating D-STAR. It is available from Amazon and most ham radio stores such as Ham Radio Outlet, DX Engineering and Gigaparts.



***GSBARC is no longer using Yahoo Groups due to issues with the platform. We have transferred everyone over to https://groups.io/***

***If you were a member of any of the Yahoo groups just sign up for a free groups.io account and you will have access to the new groups. Groups.io has most of the same features as the Yahoo groups and some additional ones as well, like the ability to have live chats.***

## 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: Removed & Currently Vacant***
***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:*** Eddie Schnell, WZ2Y, 864-973-9250
***Div. 10—Shelter Island ARES/RACES***
***EC/RO: Vacant (Neal Raymond, N2QZA, SK)***

***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***

***FREE- Old Homebrew amplifier***

Comes with two American made 572Bs. All original schematics 1961 QST. Needs repair of metering circuits--which I am no longer able to do. Impressive cabinet work. See photos K2OHK profile on QRZ.com.

Would happily GIVE to ham who would put it back on the air. —Ed, K2OHK 631 265 6463

# *2018 VE Session Dates*

- October 27th
- November 24th
- December 22nd

***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.***

## The GSBARC Repeater List

**146.685 W2GSB - shift 110.9 Hz Enc/Dec**

223.860 W2GSB - shift 110.9 Hz Enc/Dec w/ ECHOLINK

**223.860 - shift 156.7 Hz Enc/Dec Local use**

440.850 W2GSB + shift 110.9 Hz Enc/Dec

**446.775 KB2UR - shift 110.9 Hz Enc/Dec**

927.3125 W2YMM - shift D606 Enc/Dec

**440.250 W2TOB/B + shift DSTAR REF020A Babylon**

445.725 WD2NY/B - shift DSTAR *REF020A* Selden

Grow Giant Vegetables with ***MAGIC MANURE,*** manufactured daily on the farm. 40- to 50-lb bags free for the taking, already bagged. Pick-up or Delivery to EOC available. References available upon request. Contact Salli at: ***k2ryd@arrl.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"