THE COMPASS

Official Newsletter of the Great South Bay Amateur Radio Club

May 2017 | Volume 45 | Issue #5

Upcoming Club Events

Next General Meeting: Thurs. May 25th, 8 PM at the EOC

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

Technician License Class Currently Running

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

Don't miss this weekend's special event at the American Air Power Museum on New Highway in Farmingdale

The W2GSB Special Event QSL Card Given to all who have QSO with the event and submit thier own cards.

Inside this issue of The Compass...

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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April showers bring May flowers?? All I can say is I think they got it wrong the last few weeks.

How about that rain that the first week this month? I recorded over 2 inches at my weather station!

I hope you all have been getting ready for the special event operations. Our first is only a few weeks away at the American Airpower Museum. Bob K2TV is the coordinator of this event so please reach out to him if you are available for set up and take down as well as operating.

Meanwhile, Kevin AB2ZI has been working very hard building storage boxes for the clubs' shelters and Tony N2ATP has labeled all the parts to make it very easy for all to see and understand.

I hope you all enjoyed the Skype presentation at last month's meeting about the high attitude amateur radio adventures. After some technical issues, we were on our way! As we grow as a club, we need to upgrade some equipment -- such as computers. As you know too well, that wiz bang computer you bought becomes out-of-date and behind the times rather quickly. We are going to install a computer for one job only at the EOC. It will be used for the smartboard-only Skype and the playing of DVDs or files for a presentation. Nothing else!

The better weather is here and we will need to do some antenna maintenance once again at the EOC. We will set a date and get it done. We always need a lot of help with Field Day set up and take down so if you want to help, please do so. If you want, bring a friend and just maybe they will get bitten by the amateur radio bug!

I have not been able to get to many of the open houses due to work. I hope that you all have been getting used to the N1MM software and the 7600 radios. This will make it easier on Field Day for you.

As we grow as a club, I must say that it is great to have such vast amount of talent within the club. I am very proud of the fact that we welcome everyone to enjoy amateur radio. Thank you to all of you that set it up and help our club stand out. I personally want to thank you all myself. There is no way one man can do what we have done together.

I hope to see you at the Airpower Museum event on May 20th and 21st. (I will be there on the 21st as I have an event on the 20th)

Once again, get outside -- play radio -- put up that antenna -- and have some fun!!

73, John Melfi, W2HCB

Shelter Storage Boxes

Designed and built by Kevin, AB2ZI, these 2 storage boxes are able to be rolled to their sites like a wheelbarrow and also stand on end casters to be able to fit into the town hall elevator and be stored vertically.

MFJ-939 Automatic Antenna Tuner Review

By Bob Myers K2TV

Most modern-day transceivers come with a built-in automatic antenna tuner. They work fine when the load to be matched has an SWR of 2.5 to 1 or less. Wanting to have a wider matching range, I looked through the ham catalogs and websites for a suitable automatic external tuner that would work with my rig. After looking at the specifications of several tuners, I selected the MFJ-939 for several reasons.

- It is compact: Measuring 6 ½ x 2 1/8 x 8 ¼ inches and weighs 2.3 pounds.
- It has a wide matching range: 6 to 1,600 ohms. SWR up to 8:1 for less than 50 ohms and 32:1 for greater than 50 ohms.
- RF power capability of up to 200 watts.
- Covers 160 through 10 meters.
- It draws 750 mA or less and can be either powered by the rig or powered from a separate power supply with the supplied cables.
- The internal memory has over 20,000 non-volatile memory locations for tuner settings.
- The unit has a 24 month warranty and is manufactured in the U.S.A.

The tuner comes complete with an interface cable for the radio you are going to use. In my case it was an Icom IC-756ProII. The interface cable plugs into the external tuner connector on the rear of the radio and the other end plugs into the MFJ-939. MFJ supplies cables for most radios on the market today. If you change radios, there is no need to buy another tuner because cables are available for about $20 each for other manufacture's transceivers. In my case I bought another interface cable to use with my Alinco DX-70 go kit HF radio on the road. Moving the tuner from one installation to another is a simple task. In one instance it might involve changing a jumper internally in the unit, but for most setups only the interface cable need be changed

The rear of the tuner has two SO-239 connectors for input (rig out) and output (antenna) and a ground lug. Tuning can be accomplished by pressing the TUNE button on the radio. Initially the tuner will take a few seconds to adjust for the lowest SWR match to the rig. The transceiver will drop the power to the tuner to a safe level while the tuning process takes place. After the tuning process the tuner will store the settings in memory for that frequency measured with the tuners internal frequency meter.

Actually the tuner can be used without the supplied rig interface cable by pressing the tune button on the front of the tuner itself, but RF power must be manually reduced to about 10 to 20 watts from the transmitter before doing so. The output of the tuner is unbalanced and end fed long wires can be used with the supplied terminal jack that fits into the center pin of the SO239 antenna output connector. If a balanced line is used then an external balun would have to be used on the output to balance the line. Bypassing the tuner can be accomplished from the front panel or simply by turning off the power with the tuner's power switch.

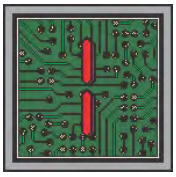
A printed manual is not supplied, but a comprehensive instruction manual complete with schematics is available from the ***MFJ website***. I printed mine out and placed it in a binder.

Opening the cabinet, I found the unit to be very well made with lots of surface mount components on the circuit board. The relays appeared to be plenty large enough to do the job.

If you are looking for a versatile auto tuner, check this one out.

QRP Labs Shack Clock Kit

By John Smale, K2IZ



In order to keep the kit-building interest alive in the club -- and for those not club members -- a few of us are always on the lookout for interesting kit-building projects. There are a lot of kits out there. It becomes a matter of doing GOOGLE searches to find ones that are interesting and useful.

I came across the QRP Labs website: http://qrp-labs.com/ which has a large selection of kits available, something for everyone. I ordered the Shack Clock kit and the QLG1 GPS Receiver kit. Why? Old school habit, I guess: In the Navy, one of the jobs of the midnight-to-eight watch was to synchronize all the clocks in the radio shack with WWV, Fort Collins, Colorado and the watch supervisor would make an entry in the supervisor's log that it had been done. One of the first things the Chief Radioman did when he came into the radio shack, after he had poured his first cup of coffee for the day, was to check all the clocks in the shack. If he saw any discrepancies, he'd take a look at the supervisor's log. If it hadn't been entered that a time check had been done the previous night (or nights), a vehicle would be dispatched to the barracks with orders to get the supervisor out of his rack and brought back to the hangar. Those were called "Yes Chief!" conversations, kind of one-sided.

In my shack, I have four sources to check date and time. They are: MFJ-107B 24-hour LCD clock (won as a door prize at HRU many years ago); the clock setting on my computer, the clock setting on my DAVIS Vantage VUE weather station and an old CASIO wristwatch that receives the atomic clock signals from Fort Collins. Any one of them do the job but sooner or later, I start looking at the different sources and I see a couple of minutes' difference between them. How many of us have gotten the MFJ-24 Hour LCD clock and after a few years, the display is unreadable and you don't have any spare button-type batteries or even know what batteries fit it? The clock either gets tossed into the junk drawer or right into the garbage.

The instructions are very well-written, available for download from the QRP Labs website. On the first page, under "Design," it says:

For best results, please ensure the use of a well-regulated, clean and solid 5V power supply. The majority of problems with the kits arise due to poor power supplies! Not all wall-wart type or switched mode supplies are clean enough to power the kit.

Very interesting comments, we all have wall warts in the junk parts bin. I had previously built the JYE O'scope that Kevin, AB2ZI, has started as a club project. It was quite interesting to look at some of the outputs of various wall warts I had laying around, which led to Ed, KA2ADC, giving me a few parts and a quick diagram on how to make a filter for the wall warts using nothing more than an LM7805 voltage regulator, a couple of capacitors (and the explanation of which one did what) and a small piece of vector board. I was able to build a regulator that provided a very smooth output picture on the scope.

The kit is shipped from Japan, for me the shipping time was six days. Everything arrived in a small, well-sealed, padded box, one of the things that the people from QRP Labs ask is to tell them how long it took the package to arrive. They do ship worldwide and they track the shipping time for each country.

As I mentioned, the assembly instructions are available on their website. It's easier to make changes there rather than put addendums in the packages. It is noted that the clock kit comes with extra parts and it is suggested to go through the parts and check everything against the inventory list. There are also some personal tips that make some of the building steps a bit easier but above all, READ BEFORE YOU BUILD!

The time it takes to build depends on you. It took me a couple of hours, with breaks, to put everything together. As I mentioned, the manuals are filled with tips and suggestions, explanations of just exactly why they did something. Over all, it is a fairly easy build, no surface-mount solder is involved, just through-the-board soldering.

Once I got everything together, the fun began: I turned it on, got the startup display and that was it, just empty slots where things should have been. The website also provides a manual on how to configure the clock ("you mean I have to tell it what to do?")

This is the part of amateur radio that I like, digging into the RRS (Real Radio Stuff). I don't know what the programming language is, I've never done any kind of programming. Certain characters and letters/numbers tell the clock what to do. With the GPS Mode settings, you have to tell the clock that there is a GPS unit plugged in. It took me a couple of tries, but I finally got the right setting entered and the clock came alive! It displayed the day/month/year (yes you can change the format), time in GMT/Z/UTC -- whatever you want to call it – and displayed the number of satellites it was seeing and the number it was using to make its calculations (in some cases it's seeing 10 satellites and using 8 for the calculations.)

After reading and rereading the configuration instructions and the sample, I was able to change my display settings to show my longitude, latitude and Maidenhead Grid. Yes I know you can do this with a computer or cell phone but for me this is something that keeps my mind active in retirement.

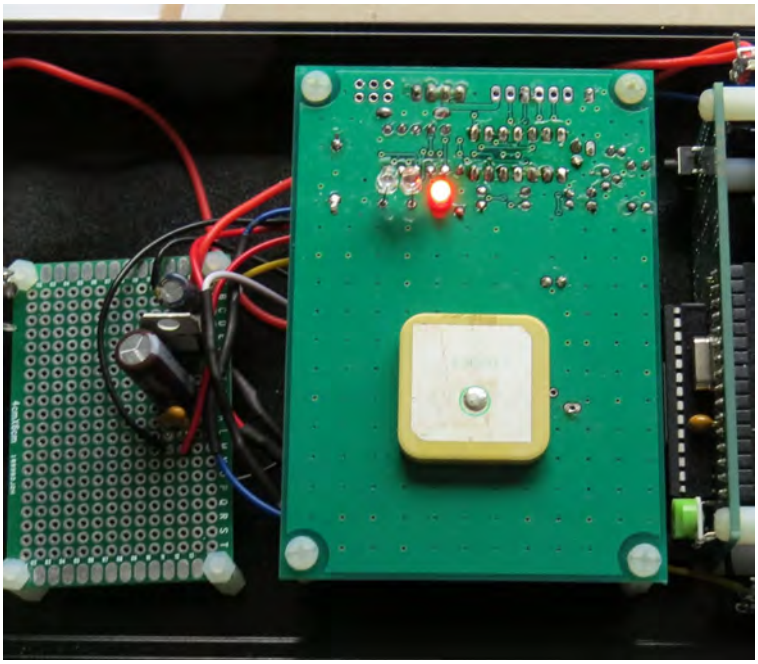
They do have a very active support group. I posted something and got a reply from a 78-year-old ham in Australia. They also have a very large worldwide following on WSPR mode of transmitting and receiving. At the last club meeting the owner, Hans G0UPL, gave an excellent presentation of WSPR and how people are using it to track balloons that they launch with a WSPR transmitter and antenna. Most of the balloons they use are the Mylar ones you can buy in the dollar store.

The group can be found at QRPLabs@groups.io – but you have to apply to join. As I mentioned, they are a very large, worldwide group.

The first picture shows the front panel of the working clock, the second line flashes between showing the number of satellites visible, how many were used in the calculation, and if you configure it right it then changes to local Longitude, Latitude, and Maiden Head grid square.

The next picture shows the GPS receiver board—the square piece all by itself is the actual receive antenna. To the left of that is the "ugly" construction voltage regulator made with 2 capacitors, an LM-7805 voltage regulator which provides a constant output of 5 VDC with input DC voltages up to 30V. The capacitors filter out any noise on the power that would affect the received signal. The wires I used for the pins are the female-female bread board jumper wires like those used with Arduino kits. This is much easier than trying to solder wires on pins.

The Working Clock



GPS Receiver Board (right) and homebrew voltage regulator/filter on left.

Inside the Squirrel Cage

by Caryn, KD2GUT

ell I'm not exactly headed to Navassa or Heard Island, and there's bound to be running water and functioning bathrooms (at least I hope so), but I'm hours away from embarking on my first DXpedition.

OK, so Dayton (well, Xenia, to be precise) Ohio isn't considered a rare DX but my ham radio travels haven't really taken me much further than our own Fire Island so yes, this is quite the high adventure for me. Ten hours and 650 highway miles west of here, I'll probably have more QSOs in two days than I've had in the not-quite-three-years since I got my ticket.

This year, even the grizzled Hamvention veterans are newbies since Hara Arena is history and everyone's arriving fresh to the fairgrounds in Xenia. There's as much excitement about the new location as there is about the various programs and no doubt there will be side trips – a pilgrimage by the faithful to the old Hara site, and a jaunt 45 minutes south to the Voice of America Museum, which is keeping extended hours to accommodate visiting amateurs.

Best of all, for local students, school's out! Dayton area schools have cancelled classes to encourage kids to come and check out the action.

With everyone crammed into one QTH, more or less, we're not talking about a particularly remote venue. This isn't exactly Antarctica. Most of us have scooped up rooms in comfortable hotels and are planning a formal sampling of the authentic regional cuisine in spots such as Skyline Chili. Roughing it was never so regal.

Well, the thing is this: I've worked stations in Ohio – but I've never actually been there. If one of the best parts of this hobby is the off-air experience, the chance to connect with the person on the other end of those sine waves, I'm about to fulfill that mission. After all, this isn't just a hobby built out of circuit boards, software, resistors and coax. Friendship is one of amateur radio's best components – and it doesn't even require soldering for it to endure.

News from the ARRL Website:

Midway and Kure Islands Reinstated as DXCC Entities

(5/11/2017) On March 31, 2017, the DXCC desk announced the deletion of Midway Island and Kure Island from the DXCC entities list. The stated reason for this action was because of changes in the administration resulting from changes in Papahānaumokuākea Marine National Monument, formerly known as the Northwestern Hawaiian Islands Marine National Monument, of which the Midway Atoll National Wildlife Refuge and the Battle of Midway National Memorial, the Hawaii State Seabird Sanctuary at Kure Atoll, and the Northwestern Hawaiian Islands State Marine Refuge, of which they are all included.

After further review it has been found that the deletion of these two entities is not supported by the changes that were made to the relevant administrations. Therefore, the deletions from the DXCC list should not have occurred and the two entities, Midway Island KH4 and Kure Island KH7K, will return to the DXCC list as separate entities.

The K7RA Solar Update

(5/12/2017) Average daily sunspot numbers this week (May 4-10) were 17.1, down from 25.1 last week. Average daily solar flux declined from 76.9 to 71.5.

There were three consecutive days with zero sunspots this week, May 9-11. Spaceweather.com noted that Thursday was the thirty-third day with zero sunspots in 2017, and through all of 2016 there were 32 days with no sunspots. Being early May, this indicates an acceleration of the decline of the current solar cycle.

Predicted solar flux is 71 on May 12-13, 70 on May 14-17, 80 on May 18-23, 77 on May 24-27, 75 on May 28 through June 1, 73 on June 2, 72 on June 3-4, 70 on June 5-8, 72 on June 9-10, 75 on June 11, and 80 on June 12-19.

Predicted planetary A index is 6 on May 12, 5 on May 13-16, 15 on May 17-18, then 8, 15, 30, 20, 10 and 8 on May 19-24, 5 on May 25 through June 3, 8 on June 4, 5 on June 5-7, then 8, 5, 5 and 8 on June 8-11, then 15, 30, 15 and 8 on June 12-15.

Both above Ap and 10.7 cm SF forecasts are from Wednesday May 10. As of 1430 UTC Friday the Thursday May 11 forecast (normally out after 2100 UTC daily) was still unavailable.
You can check ftp://ftp.swpc.noaa.gov/pub/forecasts/45DF/ for daily updates of predicted Ap

Continued on page 7...

In the Classroom with AB2ZI

Expanded Class Schedule

By Kevin AB2ZI

K, for those looking to get their Technician license, or upgrade to General, I've scheduled 2 new classes, one of which is already underway.

On April 25th I started a new Technician class, this one running for 9 weeks which will bring its conclusion to just prior to Field Day. My goal is to get everyone ready for the exam in time to receive their calls before Field Day weekend, June 24-25.

Following Field Day I will be starting a General Class on Tuesday night June 27th. This class will run for 10 weeks ending on August 29th.

After these special summer classes I will be running an 11 week Technician Class from September 5th through November 14th.

A week later on November 21st will be the start of a General class, also 11 weeks taking us to the end of January 2018.

The Amateur Extra class will follow on the first Tuesday of February 2018. While I've scheduled the class for 16 weeks it will be open ended, that is, if we need more than 16 weeks for everyone to get up to speed on the material then that is what we will do.

So if you or someone you know is interested in getting their license or upgrading please pass the word.

ARRL News, continued from page 6...

(planetary A index) and solar flux predictions.
OK1HH gives us his geomagnetic activity forecast for May 12-June 7, 2017.

Geomagnetic field will be:
Quiet on May 14-15, June 1,
Mostly quiet on May 13, June 4
Quiet to unsettled May 12, 23-30, June 3, 5-7
Quiet to active on May 16, 20, 21-22, June 2
Active to disturbed on May (17-19, 31)

Amplifications of the solar wind from coronal holes are expected May 16-19 (and maybe about May 29-30 and June 3, 6, 7-8)

Remark:
- Parenthesis means lower probability of activity enhancement and/or
lower reliability of prediction.

F.K. Janda, OK1HH
Czech Propagation Interested Group
OK1HH compiling weekly forecasts since 1978.

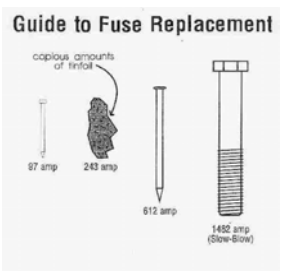
For more information concerning radio propagation, see the ARRL Technical Information Service at http://arrl.org/propagation-of-rf-signals. For an explanation of numbers used in this bulletin, see http://arrl.org/the-sun-the-earth-the-ionosphere.

An archive of past propagation bulletins is at http://arrl.org/w1aw-bulletins-archive-propagation. More good information and tutorials on propagation are at http://k9la.us/.

Monthly propagation charts between four USA regions and twelve overseas locations are at http://arrl.org/propagation.

Instructions for starting or ending email distribution of ARRL bulletins are at http://arrl.org/bulletins.

Sunspot numbers for May 4 through May 10, 2017 were 29, 31, 26, 23, 11, 0, and 0, with a mean of 17.1. 10.7 cm flux was 74.2, 73.5, 72.8, 71.7, 70.5, 68.9, and 68.6, with a mean of 71.5. Estimated planetary A indices were 7, 6, 5, 8, 6, 6, and 6, with a mean of 6.3. Estimated mid-latitude A indices were 6, 5, 5, 7, 7, 5, and 6, with a mean of 5.9.



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

- 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.