

Linear Lines

**Trident Amateur Radio Club Newsletter
February 2015**



President's Message

We are flying into 2015 with a lot of items on the calendar. Just to name a few we are hosting a special event station for the HL Hunley, the annual TARC Tailgate, Operating Day, and the ARRL Field Day. We have made changes to the membership meeting format; we will have a short business update and spend the remaining time giving presentations, or work on projects that have been requested as being of interest to the members. All members are urged to make requests. Ron Davis, K4TCP, will be sending out a survey to all the members to get a general summary of the members interest, so watch for that this month. This month's presentation will be videos on satellite communications with the ISS hams, the March presentation will be CW during WWII by Ken, KC4ETW, and the April presentation will be on the basics of Contesting by Alan, W4ANT. For those interested in military related ham radio special events, check out the American Legion Amateur Radio Club website at www.legion.org/hamradio. 73 Steve, KE4THX



Local & Statewide 2M Nets

Days	Time	Name	Frequency	Tone	Location
Sundays	8:00pm & 8:20pm	Local ARES Net & Links to State Net	145.410-	123.0	Seabrook Island
			146.730-	123.0	Trident Med.
			146.790-	123.0	USS Yorktown
Tuesdays	7:30pm & 8:00pm	TARC CW Net TARC Voice Net	146.940-	123.0	Knightsville
			146.985-	123.0	Summerville Med.
			147.045+	103.5	St. George
1st & 3rd Tuesdays	9:00pm	Lowcountry Skywarn Net	147.270+	123.0	Dorchester EOC
			147.345+	123.0	Adams Run
Thursdays	9:00am	SCHEART Net	441.450+	123.0	Knightsville
Thursdays	8:00pm	Newcomers Net	441.575+	123.0	Wallace
Saturdays	9:30am	QCWA Net	442.150+	123.0	Trident Med.

Statewide HF Nets

Days	Time	Name	Frequency
1st & 3rd Mondays	6:00pm	South Carolina ARES Net	3.990 MHz Alt. 3.9935 MHz
Daily	7:00pm	South Carolina SSB Net	3.915 MHz
Daily	8:00pm	Carolinas Slow Net (CW)	3.695 MHz

TARC Net Report—January 2015

Nets	Check-Ins	Traffic	Sessions	Reported By
2 Meter Voice	87	17	4	W4DAX
2 Meter CW	12	0	4	W4DAX

Inside this issue:

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February Birthdays

David Merritts



Thanks to TARC for...

Per Joel Thompson—"This is just a short note to thank you all for last night's exam. I appreciated the light heartedness of the group as well as the professionalism and attention to detail. I hold several licenses and certifications and this test experience ranks among the top of them all. Thank you for volunteering your time and making my first Ham experience such a pleasure. I

New Hams & Upgrades Congratulations!

- Drew Moreland, KM4HKX
- Roy E. Simpson, KM4HKY
- Joel F. Thompson, KM4HKZ
- David Eslinger, KM4HLB
- Gary Melton, KM4HLA
- Shelby Merrick, KW4FB



look forward to getting to know you all a little better in the future and again, thank you for your time".

Per Shelby Merrick—"Just wanted to say thanks to the club and the local VE team for last night's exam session. See ya on the air soon!"

Silent Keys

- William Corbin, KK4GCH
- Charles Johnson, KG4ECU

Drawing Winner

Carl Dinger, WD4CXW

If there's something you want to see in Linear Lines, please send it to Michelle, KK4WQO, at KK4WQO@sc.rr.com by the 5th of the month



Upcoming Events

2/2/15—TARC Board meeting (all are welcome) starts at 7:30pm at Red Cross Building

2/7/15—Charleston Hamfest starts at 8:30am and ends at 3:00pm sponsored by CARS

2/7/15—ARRL VE Testing starts at 1:00pm at the Charleston Hamfest - CARS sponsored

2/9/15—CARS Meeting at Ryan's West Ashley starts at 7:00pm

2/12—3/28/2015—24-hr Basic Community Emergency Response Team Training, at the Summerville Fire Training Center

2/12/15—TARC Club Dinner at **Katsu** at 6:30pm (RSVP to KK4WQO, Michelle Mantooth at KK4WQO@sc.rr.com)

2/14/15—Dorchester ART at the Emergency Services Office starts at 9am

2/16/15—TARC Monthly Meeting starts at 7:30pm at the RedCross Building

2/17/15—151st H L Hunley Celebration at Breach Inlet starting at 12:00pm and ends at 6:00pm—TARC sponsored

2/18/15—Lowcountry VE Licensing Testing starts at 7:00pm at the Masonic Lodge in Goose Creek—TARC sponsored

2/21/15—Charleston ARES starts at 9am at the Charleston County EOC

January's Meeting Recap

Short Meeting Recap from January 19, 2015 at 7:04pm. For the full official minutes, please visit the TARC web-site: <http://www.tridenthams.org>

1. Bridge run - March 28 - needs people
2. MS run - needs people too - contact Linda Selleck
3. Discussion on other possible things than radios for monthly drawings - email president for next board meeting discussion
4. David - brought up a potential Ham event at the River Dogs event or a Stingrays event
5. Posting minutes on the web-site vs. discussing them
6. Linear Lines has changed editors to Michelle Mantooth
7. Facebook updates from Ron - needs antennas articles and other articles for things to post on Facebook - linking to them for Linear Lines as well
8. Hunley event advertising and updates on some of the final preparations
9. Updating By-laws
10. Survey Monkey - concerning making TARC a better, more active club - improvements in the organization
11. Tail gate this year - possibly in April - trying to coordinate with Lodge's pancake breakfast
12. Operating day this weekend has been cancelled - looking to set one up in March
13. Ham fest - February 7th - at Armory Park - will be a table for TARC - free coffee until 8am, breakfast biscuits, hot dogs and BBQ for the eats



Treasurer's Report



The current club bank balance \$2198 as of January 19th, 2015. There are several checks outstanding at this time which have not been deducted from the balance above.

TARC QSL Cards Received and Sent Out—David Merritts

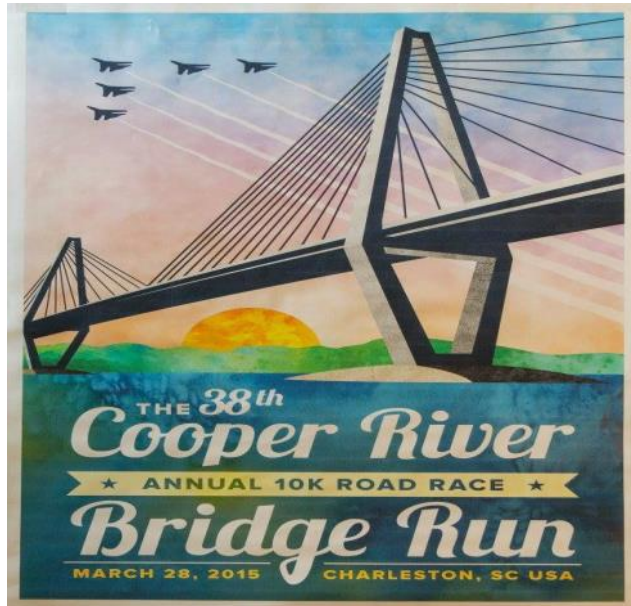
This past year has been a slow one for your QSL Manager. Our logs show we have worked almost all of the states and 25 countries. To date, we have only responded with QSL Cards upon receipt of a card/request for our QSL. Given that, QSLs were sent to only three state-side calls (Florida, Texas and North Carolina). On the foreign side, 17 cards were sent. We had contacts with Germany (4 stations including a Cruise Ship), 2 each from Spain, Poland and Slovenia, and one each from Antigua, Azores, Columbia, Finland, France, Italy and Venezuela. I will continue to respond to the QSLs we receive. Look forward to upcoming reports on the number of contacts we make on each of our Operating Days, JOTA and Field Days.

Volunteers Needed & Contact Information

3/28/15—Cooper River Bridge Run, Contact Doug, KU4OC, DClark@glickboehm.com

4/11/15—MS Walk, Contact Linda, KK4EUV, linda.b.selleck@gmail.com

TARC Tail Gate, Fox Hunt, Club Picnic, Balloon Launch, and Technician License Classes—dates and contacts to be announced



By-Laws Updates

Tom Lufkin—is currently working on updating the club's by-laws and will be helped by Michelle Mantooh. It is hoped that this will be available for the membership to review and vote on in late February or early March.

If there's something you want to see in Linear Lines, please send it to Michelle, KK4WQO, at KK4WQO@sc.rr.com by the 5th of the month

Upcoming Contesting Events of Interest

<http://www.arri.org/contest-calendar> (for more events including non-ARRL events)

February 9—13: School Club Round Up

February 21—22: International DX—CW

TARC CW Net Lessons for February

Contacts Tom Lufkin, W4DAX, wa4dax@hotmail.com and Tom Glaab, AJ4UQ, tglaab@clutter.com

The CW training net is held each Tuesday evening at 7:30 PM on the local linked repeaters. The purpose of the net is to encourage local hams to learn the first digital method of communications, Morse Code. The net controllers have decided to change the format. Like W1AW, the CW net will send plain text at 5 WPM. Amateurs are encouraged to check into the net using CW, but voice check ins are also welcome. If you have any suggestions for improvement of the net or you would like to try your hand at serving as net control, contact Tom, AJ4UQ at tglaab@clutter.com or Tom, W4DAX at wa4dax@hotmail.com. Sometime in the near future, CW Net participants will be able to see the upcoming training sessions under the new training segment out on the TARC web-site: <http://www.tridenthams.org>

It has also been proposed to do a run of code practice oscillators as an upcoming Builder's Group project to attempt to get more hams out on the CW net or for those looking for a bit more of a challenge to build CW communications tools using Arduino-based technology.

HL Hunley Update

This is the article printed in the Post and Courier on 1/21/15 and authored by Brian Hicks.

The web link to the article is: <http://www.postandcourier.com/article/20150121/PC16/150129883>

The H.L. Hunley doesn't look nearly as old as she once did. Amazing what a face-lift can do. Now, for the first time in more than 150 years, the Hunley's bare skin is visible. And its iron hull doesn't look that much older than, say, the Cold War-era sub Clamagore.

In fact, the results of the Hunley's deconcretion so far are picture-perfect, which means the sub looks exactly as artist Conrad Wise Chapman depicted it in an 1863 painting.

"Chapman was extremely precise," said Paul Mardikian, senior conservator at the Warren Lasch Conservation Center. "It's as if we have been looking at a fuzzy image and are just now getting the picture in focus."

Just as in the Chapman painting, the Confederate sub appears to have been mostly black — the natural color of iron in water. The sub was not painted, but Mardikian said there is some evidence of a coating probably used to waterproof the hull, which has dozens — if not hundreds — of seams where pieces were fitted together.

Mardikian hopes this clear look at the Hunley's hull will provide archaeologists with some insights into the sub's construction, adventures and eventual sinking. But they are just now beginning to uncover the sub's "forensic hot spots," as he calls them.

The Hunley is made of two different types of iron — cast and wrought. Cast iron is made from molds while wrought iron is heated and worked with tools. Cast iron tends to be more brittle. The main hull is exclusively comprised of wrought iron, and that

is the 70 percent of the fish boat now visible.

The biggest discoveries so far are two dents just below the sub's dive fins, which may be damage incurred during recovery efforts the first two times the Hunley sank in Charleston Harbor.

They've also found the letters "CN" stamped into the iron.

Right now, scientists assume the letters are the mark of the foundry where the iron was forged.

The most startling revelation is how much damage the unforgiving sea inflicted on the sub. The starboard side of the boat has been heavily sanded down by years of saltwater currents running along its side. Two holes in the sub's starboard side were almost certainly caused by these vicious currents running along the hull.

Like an eraser, this erosion may have wiped away important evidence that could explain what caused the sub to sink in the winter of 1864.

Now, Mardikian and his team are moving on to the cast-iron pieces of the sub — its bow, stern, keel blocks and two conning towers. These are the places they expect to find more detailed information about the Hunley.

Wrought iron does not retain its surface as well as cast iron, which is more likely to preserve the fingerprints of history. But cast iron is also more fragile.

The scraping of these pieces will be much more delicate and time-consuming.

"There is no room for error for working on a one-of-a-kind artifact like the Hunley," said Nestor Gonzalez, associate director of

Clemson's Lasch Center.

The trick, Mardikian explains, is to not do any damage to the historical record imprinted on the hull. Where the concretion ends and the iron begins is sometimes hard to detect.

"You have to be careful that you are not removing something you are trying to preserve," Mardikian said.

The forward conning tower will be the most nerve-wracking work of all. Testimony from the crew of the USS Housatonic, which the Hunley sank on Feb. 17, 1864, suggests that the Union sailors fired dozens of small-arms shots at the sub, concentrating mainly on its cast-iron forward conning tower.

Conservators wanted to hone their deconcretion skills on the sturdier wrought iron, and now will move on to the more delicate work of scraping the cast-iron pieces. Mardikian has already started working on the sub's bow.

In the coming weeks, the crew will move to that forward conning tower. There, they could learn what caused the only port-side hole in the sub, or they could come away no closer to answering the question that has perplexed Civil War historians for 150 years.



Membership Report for January 2015—Ron Davis

The current membership roster contains 40 active members. We are averaging about 25 members, who attend the club meetings on a regular basis. If you have not paid your dues for the 2015 Fiscal year you can do so now (see Ron at the next meeting) and be reinstated as an active member. This will give you full voting privileges as well as allow you to enter the drawing we have at each regular club meeting. If you did not know, the club raffles off a Baofeng HT radio at the club meetings. The rules are you must be an active member and buy into the giveaway, the cost is \$2. A radio is guaranteed to be given away every other club meeting.

I want to thank everyone that has renewed their membership this year, I appreciate your support of the club and its activities. Stay tuned for coming events and training/testing activities, our goal is to get more people "radio active" this year!

If there's something you want to see in Linear Lines,
 please send it to Michelle, KK4WQO, at
KK4WQO@sc.rr.com by the 5th of the month

Emergency Preparedness—Skywarn Storm Spotter Program

<http://www.weather.gov/chs/skywarn>

“The SKYWARN Storm Spotter Program was created by the National Weather Service (NWS) to improve warning services. The NWS needs real-time reports of hail size, wind damage, flash flooding, heavy rain, tornadoes, and waterspouts to effectively warn the public of inclement weather. Even as new technology allows the NWS to issue warnings with more lead time, spotters will always be needed as links between radar indications of severe weather and ground truth. Storm Spotter volunteers serve as severe weather spotters for the NWS and local emergency management programs, and generally have two things in common—an interest in the weather and desire to serve their community.”

The link in the title above will take you to the above description of what the Skywarn Storm Spotter Program describing the importance of the services provided by the program. One can also use the link to see the course dates beyond those listed below and the on-line course offerings.

Date	Location	Time	Registration Contact
Feb. 9	Screven County—Screven Co. Recreation Dept. Sylvania, GA	6-8pm	Mikki Saxon scfdaa1@gmail.com 912-564-2709
Feb. 10	Charleston County—ABC News 4, 888 Allbritton Blvd., Mt. Pleasant, SC	7-9:30pm	Dave Williams daverwilliams@sbgvtv.com
Feb. 12	Colleton County—Colleton Co. Career Skill Center, 1085 Thunderbolt Drive, Walterboro, SC	10am – Noon	cocepa@colletoncounty.org 843-549-5632

Builder's Group Page

Contacts Ron Davis, K4TCP, ron.davis@gmx.us & Tom Lufkin, W4DAX, wa4dax@hotmail.com

The TARC builders group continues to provide local Amateurs a location, tools and guidance to encourage the building of HF, VHF and UHF antennas, fox hunt attenuators and other related devices. If anyone is interested in building an antenna, Arduino related project or just sit and discuss related topics let us know and we will hold a session. Currently, there are no regularly scheduled sessions, but we do hold them as the need or interest arises. The builders group also has coax and connectors available for purchase.



The next two projects in the planning stages are to complete the APRS HAB tracker and then the dual local

and UTC clock.

The APRS tracker uses a GPS module, temperature sensors (internal and external), an SD card data logger to record all measurements at a 1hz rate, the HX1 NBFM radio module for transmission of the APRS packet, the Arduino PRO MINI and power management circuitry. This module will augment the ZLOG7 balloon module by making redundant recordings of latitude, longitude, temperature, altitude, speed and battery voltage in addition to transmitting that data via APRS to the Internet. Planned completion is by March 16th in time for the next balloon launch.

The dual clock will use the GPS satellites to provide the correct UTC time. The local time will be calculated by the time offset that will be preprogrammed by the user. Provisions will be made to provide a display of the user's call sign and possibly an alarm that sounds the user's call sign in morse code. Power will be provided by 12v power source.

There are plans to assist Joe Chapman where needed on the DigiVOX interface (from Skip Teller) and use of FL-Digi software. There are several other kits on the clubs list, tape measure antennas, how to make a balun, installing a dipole or OCF Windom antenna, SDR projects, copper J-pole antenna, slim-jim antenna, 40m Regen receiver, CPO, etc.

ARRL News & Updates

ARRL Library Update

After several months of planning, the ARRL Library is now live! This online library is a free repository of educational presentations and oral histories. It is aimed at helping to preserve Amateur Radio's history and to educate clubs and individuals. "This long-term project will be home to what is hoped will eventually become one of the largest repositories of Amateur Radio-related papers and presentations, created by and for the Amateur Radio community, said ARRL Media and Public Relations Manager, Sean Kutzko, KX9X. "This is everyone's opportunity to submit material for the betterment and education of all radio amateurs". Kutzko said the Library will initially consist of 3 major areas. These will include PowerPoint presentations that may be used at club meetings, for outreach to the general public, or for other public presentations; PDFs of general educational material about Amateur Radio, and oral histories of radio amateurs describing their

personal experiences with Amateur Radio. Current content includes presentations on operating digital modes, HF basics, and impedance matching. While the available material is sparse right now, Kutzko invites all radio amateurs to submit material for consideration — as long as it relates to Amateur Radio. The Public Relations Committee will vet all submissions, and once a submission is approved. It will be added to the ARRL Library. **(This exact announcement can be found at the following link: <http://www.arrl.org/news/the-arrrl-library-goes-live>)**

Other Headlines from the ARRL—ARRL Letter for 2/5/15

[Participation in ARRL Centennial On-the-Air Events Exceeds All Expectations](#)

[Eric Nichols, KL7AJ, Selected as 2014 Bill Orr, W6SAI, Technical Writing Award Winner](#)

[ARRL Selects 15 Possible ISS Amateur Radio Contact Hosts for 2015 Events](#)

[K1N Navassa Island DXpedition Dominates HF Bands](#)

[RadioShack's Long, Slow Downward Slide Nears the End](#)

[Amateur Radio Payloads Share Ride into Space with Soil Moisture Monitoring Satellite](#)

[Ham Among Devil's Brigade Members to Receive Medal](#)

[Past ARRL Dakota Division Director Howard Mark, K3HM, SK](#)

[Nevada Section Manager Gary Grant, K7VY, SK](#)

[Long-time ARRL Kansas Section Manager Robert M. "Bob" Summers, K0BXF, SK](#)

[The K7RA Solar Update](#)

[Just Ahead in Radiosport](#)

[Upcoming ARRL Section, State, and Division Conventions and Events](#)

Ron's URL Reference of Helpful Ham Links

Below is a list of miscellaneous URL and links to various sites I use on occasion. This might be useful to those of you that like to homebrew electronics. This list does not represent endorsement from Trident Amateur Radio Club and we were not paid to provide these links.

Embedded electronics:

SparkFun Electronics <https://www.sparkfun.com/>

Adafruit Industries <https://www.adafruit.com/>

The Custom Geek <http://thecustomgeek.com/>

Modern Device <http://moderndevice.com/>

Allspectrum Electronics <http://www.allspectrum.com/store/>

Bald Engineer <http://www.baldengineer.com/>

Electronic Goldmine <http://www.goldmine-elec-products.com/>

Mouser <http://www.mouser.com/>

DigiKey <http://www.digikey.com/>

AllElectronics <http://www.allelectronics.com/>

MPJA Online <http://www.mpja.com/>

Jameco <http://www.jameco.com/>

RF Parts:

Dan's small parts <http://www.danssmallpartsandkits.net/> (closed until Jan 2015)

RF Parts <http://www.rfparts.com/>

Radiometrix <http://www.radiometrix.com/> (home of the HX1)

The Toroid King <http://www.kitsandparts.com/>

eBay Stores:

The following eBay stores I have purchased from many times and appear to be trustworthy of your consideration. If you are looking to source some cheap Chinese suppliers I present this list to hopefully eliminate the fear of buying from an unknown source.

anycircuit (US/Canada based, ships fast, process slightly higher than Chinese sources, good quality)

Czb Electronic (China based, shipping is 1-2 weeks, low prices, my go to supplier)

Electronics-Salon (China based, shipping is 1-2 weeks, prices slightly higher, wide selection)

eshop4u05 (China based, shipping is 1-2 weeks, prices slightly higher, wide selection)

IC Touch Store (China based, shipping is 1-2 weeks, prices slightly higher, good component assortments)

oddWires (US based, shipping 1 week, robotics/adruino, HAM friendly)

Rf_Cable_Assemblies (China based, shipping is 1-2 weeks, the go to store for RF connectors)

RadioShack (US based, fast shipping, way more parts than brick and mortar store)

Thai Shine (China based, shipping is very fast, large selection of discrete components)

This list was last updated 11/18/2014.

Trident Amateur Radio Club

PO Box 60732
North Charleston, SC 29419

Phone: 843-608-4780
E-mail: KK4WQO@sc.rr.com



We're on the Web!

[http://
www.tridenthams.org](http://www.tridenthams.org)

More Ron's URL Reference of Helpful Ham Links

Below is a list of miscellaneous URL and links to various sites I use on occasion. This might be useful to those of you that like to homebrew electronics. This list does not represent endorsement from Trident Amateur Radio Club and we were not paid to provide these links.

YouTube tutorials:

Afrotechmods <http://www.afrotechmods.com/tutorials/>

Derek Molloy <http://derekmolloy.ie/>

Human Hard Drive <https://www.youtube.com/user/humanHardDrive>

EEVBlog <http://www.eevblog.com/>

W2AEW <https://www.youtube.com/user/w2aew>

Arduino:

Arduino main site <http://www.arduino.cc/>

AVR Freaks <http://www.avrfreaks.net/>

GPS Tutorial <http://www.jeremyblum.com/2012/07/16/tutorial-15-for-arduino-gps-tracking/>

Arduino I/O <http://tronixstuff.com/2011/08/26/tutorial-maximising-your-arduinos-io-ports/>

Baofeng:

Baofeng Tech <http://baofengtech.com/>

Baofeng/Pofung <http://www.baofengradio.com/en/>

Miklor <http://www.miklor.com/> (Instructions on how to recover a bricked Baofeng)

CHIRP <http://chirp.danplanet.com/projects/chirp/wiki/Home>

CHIRP Download Win Installer <http://chirp.danplanet.com/download/0.4.1/chirp-0.4.1-installer.exe>

Design:

Ponoko Making system <https://www.ponoko.com>

Diptrace PCB desing <http://diptrace.com/>

Fritzing <http://fritzing.org/home/> (Great design app)

This list is not an all-inclusive list but it's a good start for beginners in the embedded electronics world. Please feel free to add to this list by sending updates to: Ron K4TCP – ron.davis@gmx.us

This list was last updated 11/18/2014.