

SPARKS

P.O. Box 342768 * Memphis, Tennessee 38134-2768 * Volume 23 * May 2017



Welcome to the Delta Amateur Radio Club

Visit our home on the web at: <http://www.deltaclub.org>

EMAIL: darc4you@gmail.com

Facebook: <https://www.facebook.com/darcmem>

Newsletters: <http://www.deltaclub.org/sparks.html>

W4BS

REPEATER SYSTEM

146.820 ^{-107.2}	* 147.360 ^{+107.2}
146.625 ^{-107.2}	443.200 ^{+107.2}
224.420 ^{-107.2}	
144.390 Digipeater	*Fusion

This month's meeting begins at 7pm on May 9, 2017, at Ellendale Church of Christ, 7365 Highway 70 Memphis, TN (1 ½ miles north of Highway 64 (Stage Road)).

In this month's program we welcome Geoff Smith, KB9KQU. Geoff will enlighten us with how and why he built his strange Hentenna, his first homebrew antenna. He will explain the "strange" aspect and talk about the antenna's history, performance, and his plans to enhance its gain. Geoff grew up on an Angus cattle farm in Illinois, farmed, then spent most of his career as a District Sales Manager for Dekalb Seed. Geoff received his Technician license in about 1995, but was never active. His license lapsed after moving here from Illinois; re-testing in March, 2012, generated a new KK4HYF call sign. He recovered his original call sign, KB9KQU, as a vanity call sign. Using an outside antenna, two attic antennas, and a variety of rigs, Geoff monitors and scans virtually all repeaters within about 60 miles. He regularly checks into the Bullfrog, Delta, Olive Branch and Chickasaw nets.

Delta Club FCC testing sessions are held monthly except December. Registration begins at 5:30 PM; testing begins by 6:00 PM. Please bring a photo ID and another form of identification, copies of existing licenses or CSCEs, and your FCC Registration Number (FRN) if one has been issued. Please be on time for registration to allow our Volunteer Examiner (VE) team to complete their work prior to the club meeting. The 2017 test fee is \$15 (cash or check). Individuals receiving their initial FCC license grant at a Delta Club test session or through a Delta Club training class will receive a complimentary individual club membership for the remainder of the current calendar year when they also show proof of ARRL membership. For more information, please email our VE Liaison, Jeff Krause, AJ4GY, or call at 901-301-6776.

Congratulations to those who passed exams during Delta's March, 2017, test session: new General James Hammerich, KN4BVI.

President's Corner

Submitted by Ken Laseter, KI4AOH

At this month's Delta Club Meeting, next Tuesday evening at 7:00 pm, we will be taking orders for Delta Club shirts. We will have samples of different sizes available for you to evaluate so that you order the size that fits you best. These shirts will have the Delta Club logo embroidered on them and can have your name and call sign embroidered as well. So, bring your checkbook and place your order at the meeting.

Field Day is the 24th & 25th of NEXT MONTH. We will soon have additional information for you on this year's setup and asking for volunteers. Again, I'm so looking forward to this year's Field Day. It will be even bigger and better than last year. So mark the date and don't miss it!

I believe FreeFest was a great success again this year. A big THANK YOU to everyone that volunteered to help with this event and those that attended and purchased tickets. Remember, we get the pleasure of participating in this event and the children of Le Bonheur Children's Hospital reap the benefits.

Don't forget to check into the Delta Club information net on the 146.820 repeater at 8:00 pm each evening, and when you check-in, make sure to thank the net control operator for taking time from their family and busy schedule to call the net for us. They are some of our most valuable assets!

As a closing note, if you have not renewed your club membership now is the time. Linda will be glad to accept your renewal application and cash, check or money order.

See you at the meeting Tuesday night!

73

Kenneth Laseter
KI4AOH

Treasurer's Report
Submitted by Linda Laseter, KJ4CTX

DELTA AMATEUR RADIO CLUB
Monthly Treasurer's Report
For month ended April 30, 2017
Submitted by Linda Laseter Treasurer

CHECKING ACCOUNT

BEGINNING BALANCE		
BEGINNING BALANCE	as of April 01, 2017	\$4,966.87

INCOME			
Date			Amount
04/12/17	Equipment Sales		\$ 1,480.00
04/12/17	Equipment Sales		\$ 1,130.00
04/13/17	Huntsville Bus Trip		\$ 60.00
04/24/17	Huntsville Bus Trip		\$ 120.00
04/24/17	Huntsville Bus Trip		\$ 60.00
04/28/17	Patch Sales		\$ 10.00
04/28/17	Huntsville Bus Trip		\$ 120.00
04/28/17	Membership Dues		\$ 100.00
04/28/17	Membership Dues		\$ 25.00
TOTAL INCOME			\$ 3,105.00

EXPENSES				
Date	Check #	To	Description	Amount
04/04/17	1414	Scott Adams	Refreshments	\$ (200.04)
TOTAL EXPENSES				\$ (200.04)

ENDING BALANCE	as of April 30, 2017	\$ 7,871.83
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CERTIFICATES OF DEPOSIT			
	Maturity Date	Balance as of	
Certificate of Deposit #1	10/10/2018	4/29/2017	\$ 10,469.69
Certificate of Deposit #2	10/19/2022	3/31/2017	\$ 10,039.27

TOTAL DARC CASH ASSETS	\$ 28,380.79
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This Month's Board Meeting Minutes

May 2, 2017 -- Submitted by Barri Munday, WB4SWP

Attendees: Steve Frazier, KK4VPT, Scott Adams, KM4PMU, Barri Munday, WB4SWP, Joe Lowenthal, WA4OVO, Bill Stevens, WC9S, Dan Lasley, NE7JN, Ken Laseter, KI4AOH, Linda Laseter, KJ4CTX, Kevin Zent, K4KLZ, and Len Grice, W4MKS.

Ken called the meeting to order at 7:00.

Linda gave the Treasurers Report.

Len brought polo shirts for us to preview and try on. The shirt is to have the Delta Club logo, with our name and call sign. See <http://carbheat.net/Sparks/DeltaShirt.html> for sizes and prices and an order form. The blue shirt was chosen as the club shirt.

Bill reported the new Yaesu Fusion repeater has come in. He is planning to make an offer to Mrs. Griffin for the remainder of that estate sale.

Kevin told us about future programs: June, David Campbell, KD4NOQ, Field Day; July, Keith Miller, N9DGK, ARRL; August, Beverly Perkins, Memphis Light Gas & Water, smart meters.

Joe is planning a Tech class on Monday nights beginning on July 10th through August 14th at the EMHC Ambulance location.

Bill Stevens moved to adjourn at 8:11pm.

Minutes of Last Month's Club Meeting

April 11, 2017 – Submitted by Barri Munday, WB4SWP

Ken Laseter, KI4AOH, opened the meeting with everyone introducing themselves by name and call sign and also reminded everyone to sign in and put a ticket in the container.

Ham Hillard, W4GMM, moved to accept the prior meeting minutes as published in Sparks; seconded by Dean Plessala, KC5RDP.

Ham Hillard, W4GMM, moved to accept the Treasurer's report as published in Sparks; seconded by Dean Plessala, KC5RDP.

Linda Laseter, KJ4CTX, asked for volunteers for the March of Dimes March for Babies to be held on May 6th and provided a sign-up sheet at the front table.

Jim Cissell, KI4I, announced that he had brought ham magazines for those interested.

Joe Lowenthal, WA4OVO, announced a Tech class will be held after July 4th with the location to be determined. The class ending in mid-April produced four Techs, one General, and one Extra. Joe also told us the Huntsville August bus trip fee will be \$60 if paid in May, \$65 if paid in June and \$70 thereafter. Attendees are to meet at Germantown Baptist Church on August 19. There will be only one pick up point this year, not two as in prior years.

Ken asked for a count to see how many people would be interested in purchasing a Delta polo shirt with name and call sign to be worn at activities. Fifty people were interested.

The program was by Glen Popiel, KW5GP, and was his fourth program on the Arduino.

John Reiners, KN4BVH, won the evening's drawing, a Chick fil A gift card.

The meeting adjourned at 9:00 pm.

In Memoriam

"Don Manly Savage, who was 100 years old, born in Rochester, MN in December of 1916, passed away on Sunday April 16th 2017, Easter Morning.

His hobby was playing golf, and he used a Golf Scholarship to attend Washington University in St. Louis, MO, earning a degree in Mechanical Engineering. At Washington University he met a young girl from Little Rock, AR, Katherine Louis Barlow, and she and Don were married in November of 1940. Katherine predeceased Don in 2009, just shy of their 69th wedding anniversary.

Upon graduation he was employed by a Defense Contractor building machines to build military equipment, but Don wanted to fly in the Army Air Corp, and he finally got released from his job with barely enough time to join the Air Corp. After many months of training, he was assigned to a B-29 crew as a flight engineer. On the way to the war zone, the plane was recalled -- the war was over. He stayed in the Air Corp on reserve duty as an officer, and was recalled to active duty in the Korean Conflict, and assigned to Barksdale AFB. As a civilian, he went to work for Esso, based out of Little Rock, AR, in the late 1940's. He was transferred to the District office in Memphis TN, in 1953.

While in Memphis he was active with USAF reserve and served as the Squadron Commander of Supply on the base at the Memphis Airport. In 1960, He was then transferred by Esso to the office in New Orleans, where stayed until that office was closed. While in the Gulf Coast area he was on active reserve duty at Eglin, AFB, Fort Walton Beach, FL. In 1966, he returned to the now Region Esso Office in Memphis. Upon returning to Memphis, he joined the Colonial Country Club, joined the Memphis Open Gallery Marshalls helping in the Golf Event in 1967. Don Savage continued with this event becoming the Captain of the Gallery Marshalls on the 18th Hole at the FedEx Classic when play was started at the Southwind course. This would have been his 50th year, after missing one due to work in 1968. Don was an avid golfer playing until he was 95 years old. Don retired from the USAF as Lt Col. with 28 years of service. Don stayed with Esso/Exxon until the Memphis Office was closed, in the early 1980s.

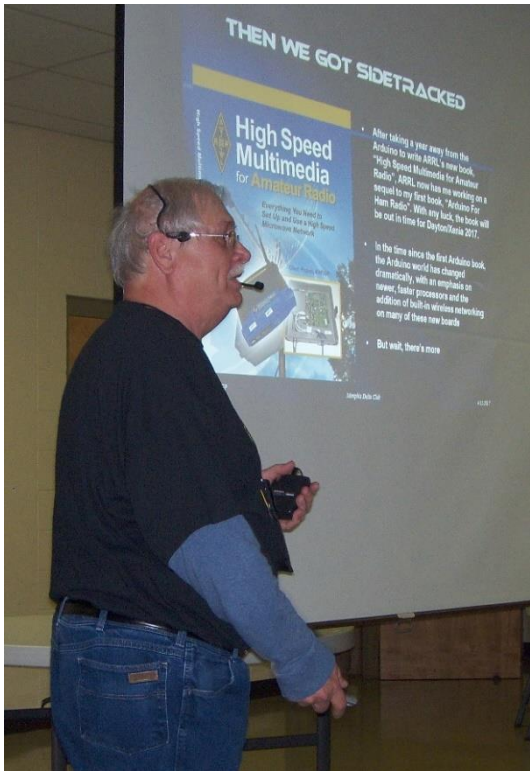
Don volunteered to serve as an usher at the 8 AM Sunday Service at The Church of the Holy Communion, and has faithfully served in that position for the 40 years. He also was a member of the Brotherhood of Saint Andrew, an Episcopalian Organization.

Don Savage served as President of the Esso/Exxon annuitants club, as president of the Mid-South B-29's club, was a perpetual member of the Military Order of the World Wars, serving as Memphis Chapter Commander. He was also a member of MOAA, Memphis Engineers' Club, as TN State Licensed Professional Engineer. A Life member of Kappa Sigma Fraternity, a 50 plus year member of the Magnolia #69 Free and Accepted Masons, Little Rock, AR. Don was a member of the Midsouth Amateur Radio Association, the Delta Amateur Radio Club,

ARRL, and Air Force Mars. He was an amateur radio operator since 1978, his call was KA4BMI, and was a Technician License holder."

Don's son Ned, KA4BLL, is a long-term member of Delta Amateur Radio Club and has held positions of President, Vice-President, Treasurer, and Director of Meetings and Special Events. Our thoughts and prayers go out to Ned and family.

Submitted by Dan Lasley, NE7JN, with the grateful acknowledgement of contributions by Rick Tillman, WA4NVM, and Tony Brignole, WA4KHN. [Obituary](#) courtesy of www.canalefuneraldirectors.com.



In *Then We Got Sidetracked*, Glen briefly mentioned his second book, [High Speed Multimedia for Amateur Radio](#).



Glen was sidetracked again by his show cats. He says, "These are Maine Coon cats. They're sisters, top show cats, and there's just the two of them, Angel and Shadow (aka Godzilla and

Rodan). I couldn't keep up with any more than that, it's like having a pair of Tasmanian Devils running loose." Tasmanian Devils image by Glen Popiel, KW5GP



In *The Next Generation*, Glen told us about such new devices as the Sparkfun Microview OLED, Adafruit Feather MO, Nano, Star Otto, the Teensy Series, the Sparkfun ESP8266, and many more.

Here Glen shows us an Arduino. Can you tell which one? I can't – it's about the size of a couple of postage stamps!

Glen mentioned a number of Arduino-based transceivers, including the HamShield Kickstarter project, a 134-174/200-260/400-520 MHz FM transceiver with an output of 1/2 watt, a built-in LiPo battery charger, and many more features.

The HamShield operates on CW and FM voice and can serve in beacon, repeater, Echolink, APRS, and packet functions.



Image by Glen Popiel, KW5GP

Glen pictured a veritable smorgasbord of projects from his second book, *More Arduino Projects for Ham Radio*. The day before this issue of *Sparks* went out to the ham community, the ARRL made [Glen's new book](#) available. It looks like another winner from Glen!

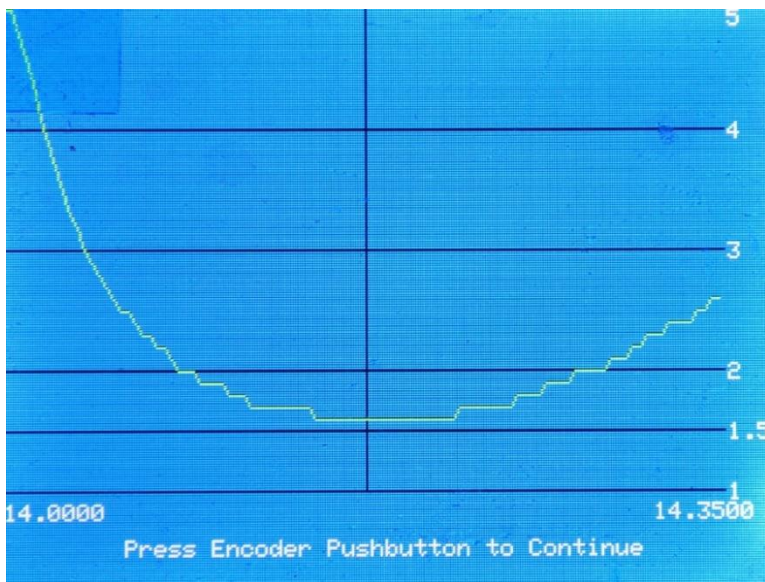


Image by Glen Popiel, KW5GP

My favorite new project of Glen's is his Arduino Antenna Analyzer (display shown here).

Glen's Arduino Antenna Analyzer would cost about \$40 to duplicate. Watch out, MFJ, you have competition!

Folks mobbed Glen after his presentation. In spite of the fact that I've seen smaller pile-ups at NFL games, David Webb, KV4QI, was able to snag a printed copy of Glen's [Arduino Reference Material](#).

We thank Glen for another extremely interesting Delta presentation and we hope he will join us for a new presentation next April.

Memorial Day, 2017

Submitted with reverence and respect by Dan Lasley, NE7JN,
contributions by Jim Cissell, KI4I

This year, as we look forward to summer celebrations with friends and family and a day away from work, let us remember that April 18, 2017, was the 75th Anniversary of the Doolittle Raid which occurred on April 18, 1942. After the Japanese attacked Pearl Harbor the prior December, their "military forces had taken Wake Island and Guam, the British garrisons at Hong Kong and Singapore, and had gained control of all of southeast Asia. In addition, almost all of the Philippines had been conquered, except for the troops defending the small island of Corregidor." ("Jimmy Doolittle" by Carroll V. Glines, page 1.)

American morale was at a very low ebb. U.S. military leaders decided to strike a blow at the heart of the Japanese empire by sending two carriers and support ships close to Japan, launching 16 B-25 bombers, and striking military targets in Tokyo and four other cities. After the strikes the aircraft were to head for landing strips in China, refuel, and begin the flight home.

As the task force approached Japan, a Japanese fishing boat spotted the task force and radioed a warning. The decision was made to launch Doolittle and his men early so the task force would less likely be the target of attacks by Japanese navy vessels.



<https://media.defense.gov/2012/May/14/2000152205/-1/-1/0/120514-F-DW547-014.JPG>

Of the 16 B-25s, 15 hit their targets. After leaving Japan one of the B-25s diverted to Vladivostok, Russia, where the crew was interned for more than a year. The remaining aircraft flew to China, but none were able to reach their landing fields due to lack of fuel. Several B-25s landed in the water; the crews of the other aircraft bailed out in darkness over China.

Doolittle thought he was destined for court martial; all aircraft had been lost, three dead, several grievously wounded, eight captured by the Japanese. When he returned home, Delta Amateur Radio Club

however, President Roosevelt awarded him the Medal of Honor. All crew members received the Distinguished Flying Cross and two crew members received the Silver Star for helping fellow crew members avoid capture by Japanese troops in China.

Carroll Glines (page 148) summarizes the Doolittle Raid: "The entire Japanese offensive war strategy was changed as a direct result of this single air action. And it was this change that encouraged the Japanese to engage American air and naval forces at Midway Island two months later and suffer their first major defeat at the hands of the United States."



Crew No. 1 (Plane #40-2344, target Tokyo): 34th Bombardment Squadron, Lt. Col. James H. Doolittle, pilot; Lt. Richard E. Cole, copilot; Lt. Henry A. Potter, navigator; SSgt. Fred A. Braemer, bombardier; SSgt. Paul J. Leonard, flight engineer/gunner.

<https://media.defense.gov/2006/Feb/17/2000567624/-1/-1/0/060217-F-1234P-017.JPG>

Of the 80 volunteers who took part in the Doolittle Raid, only one is still with us: Lt. Col. Richard E. Cole, who served as Doolittle's co-pilot. As you celebrate Memorial Day, keep in mind the exceptionally brave men of the Doolittle Raid and the more than 1,354,000 men and women have died in our country's various wars and conflicts from 1775 to the present.

Freedom is not free and, once lost, will never return. If you enjoy the freedoms defined by our Constitution and the Bill of Rights, take a moment to thank the deity of your choice for those who have given everything so that we may continue to live in a free society.

Remember the words of Benjamin Franklin in 1759: "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor freedom."

Never let anyone in government even think about taking away any of your freedoms.

QSO Party Weekend

Submitted by Dan Lasley, NE7JN

The ARRL Contest Update for May 3, 2017, reminds us that "May 6-7 is a big QSO Party weekend. With the New England QSO Party, 7th Call Area QSO Party, Indiana QSO Party, and Delaware QSO Party on the same weekend, even with poor conditions there will be stations to work." If you're working on WAS, lots of operators will be active during that weekend.

Volunteers Needed for March of Dimes March for Babies!

Submitted by Linda Laseter, KJ4CTX

Saturday, May 6, 2017, is the date for this year's March of Dimes March for Babies. We will be back at Shelby Farms Park this year supporting the March of Dimes and enjoying all the new facilities in the park and hopefully some beautiful weather. I need a few more volunteers to help out from 7:30 a.m. until noon. If you can help, please send an email to [Linda Laseter](mailto:Linda.Laseter@shelbyfarms.com) or call Linda Laseter at 901-268-1766. I appreciate everyone's support. Thank you and I look forward to working with you.

Huntsville Hamfest Bus Trip

Submitted by Joe Lowenthal, WA4OVO, Director of Training

DARC is sponsoring a 50-passenger bus trip to go to the Huntsville Hamfest on August 19, 2017. There is a graduated scale fare for the bus trip. The fare is \$60 if paid by May 31, 2017. The fare is \$65 if paid by June 30, 2017, and \$70 if paid after June 30th. The fare includes the \$10 hamfest entry ticket. There will be biscuit sandwiches, water, sodas, chips, and fruit on the bus going to Huntsville and whatever is left for the trip back. There are no refunds, but you can sell your seat to someone else if you cannot go. Let me know.

Cash or checks will be accepted for payment. Make checks payable to Delta Amateur Radio Club. You can pay at a meeting. You can also send your check to Joe Lowenthal, WA4OVO, 6675 Ashbridge Cove, Memphis, TN 38120. Please include your name, callsign, cell phone number, and email address. **Reservations will be on a first come first paid basis.**

The bus will leave Germantown Baptist Church, 9450 Poplar Avenue at Johnson Road, Germantown, TN at 6:00am. The bus will leave Huntsville immediately after the 4pm door prize drawing and return to Germantown Baptist Church at approximately 7:30pm.

Germantown Baptist Church has asked us to park in the back on the northeast side of the church so there will be security cameras on the cars like last year.

Amateur Hardware Update

Article and image submitted by James Butler, KB4LJV

Having a portable color composite video monitor is a nice accessory. Hooking up to older computers to display digital modes, portable amateur television applications, in car TV with a tuner for storm chasers are a few applications. These monitors used to be expensive. Now the smaller TFT displays are being sold at great prices. I bought a 4.3 inch color screen that runs on 12 volts D.C. for under \$12.00. It has two composite video inputs with auto switching. They can be used in the car in car video players or backup cameras. These can be bought in several different screen sizes. Do an Ebay search for "TFT monitor".



Amateur Packet Update

Submitted by James Butler, KB4LJV

A new feature of the ARRL is a Podcast called "The Doctor Is In". This is a twice monthly Podcast that answers questions about Ham radio. You can go to the site and send in your question. Past shows have answered questions on Powerpole connectors, mobile antennas, coax, solar minimum, and software defined radios. Each Podcast is about 20 to 25 minutes long. You can stream it live or play back recorded back episodes. These Podcasts contain a lot of good information. If you want to check out these programs here is the web address: <http://www.arrl.org/doctor>

Armed Forces Communications Test

Submitted by Joe Lowenthal, WA4OVO

The Corps of Engineers Memphis District is sponsoring a station (WUG2) for the Armed Forces Communications Test on Saturday May 13th. It will be in Millington at the Navy base at W4ODR in Building N-100 in the southeast corner of the north side of the base. Operating from 8am-8pm. For more information and military frequencies to listen for, go to [FINAL 2017 ANNUAL ARMED FORCES DAY v1.pdf](#).

All are welcome. You do not need to be a MARS member. If you want to operate or observe, please let Pat Lane (w4oqg@bellsouth.net) or Joe Lowenthal (wa4ovo@gmail.com or 628-4318) know that you will be coming. Room is somewhat limited. Antennas will be set up on Thursday May 11th starting about 9am.

Directions: Go east on Navy Rd from Hwy 51 to blinking light at Singleton Ave. Turn left (north) onto Singleton Ave to first street. Turn right on ATTU Street; go past golf course club house on left. ATTU Street will curve left and becomes ATTU Ext. Pass the child care building on the right to Neptune Street. Turn right onto Neptune Street. Go one block to Corsair. Turn right onto Corsair Drive and go to the end. Take gravel drive to building. W4ODR is on the right.

2017 FreeFest

Submitted by Dan Lasley, NE7JN, with a special thanks to Liz and "Satellite" Sam Adams, KG4JMN, for being two of the nicest folks I ever knew

2017 FreeFest was another huge success. If you were there, I hope you had at least half the fun I did! Here are some cameos.



(L-R) MARA Board Member Rick Kanschat, NOKYN, MARA Secretary Cindy Foster, KJ4VUV, and MARA FreeFest Organizer and Wrangler Tony Brignole, WA4KHN, process another FreeFest prize winner.

Tony did his usual fantastic job organizing FreeFest. All the inside tables were spoken for, almost all the outside tail-gating spots were filled, the prize list was enormous,

and FreeFest drew folks from all over the mid-south and as far away as Carbondale, IL!

FreeFest provides a chance to obtain your first license or to upgrade an existing license. Congratulations to new Technician Gary L. Woodard, Jr., KG5SQP, and to new Generals Mark E. Blair, KC5AJS, Scott H. Hunter, KD5APU, and James R. Kimmelman, KG5PXU. As the youngest new Technician. Gary received a drone courtesy of "Satellite" Sam Adams, KG4JMN. Thanks to Gary Weatherford, W5EMA, and to Denise Walls, KM4IRR, for providing testing information.



Art Barnett, WA4PSS, takes a break from his duties as MARA treasurer and ticket-puller. If you won a prize at FreeFest, thank Art for pulling your ticket!

I'll bet fifty bucks Art is wondering where he could find a Tab!



The table immediately behind Tommy Ferrer, K4VOZ, is empty; Tommy bought it all and is checking his bank balance to determine whether his bank account is freaking out as a result!

While talking to Tommy, I met his friend, Al Luna, NP4AC, and discovered Al bought the rig that belonged to Bob Gruner, W4UFT (SK). Al, Bob would be happy to know his rig will be put to good use.



Jim Thannum, KK4CSX (left), and Rick Tillman, WA4NVM, discuss a fine point of the art and science of amateur radio. Or of trains or perhaps aircraft!



Kim Coryat, W8KAY, demonstrates the workings of her and OM John's [Aim-Light](#).

Entrepreneurs Kim and John also have a very successful [Radar Now](#) weather app, available in versions for the [Android](#) and for the [iPhone](#).



"Satellite" Sam Adams, KG4JMN, and XYL Liz in front of their tables. It's always a pleasure to see both of you at FreeFest. MARA thanks you for your generous donation of two drones for FreeFest prizes. Have a safe trip back to Virginia and we hope to see you at FreeFest 2018!



Delbert Metcalf, KT4AB, checks out Kim's Aim-Light. MARA thanks Delbert for helping unload Satellite Sam's tons of goodies for sale!

FreeFest attracts a number of ham radio vendors, such as [JMR Sales](#), [MFJ Enterprises Inc.](#) and [Ham World, Inc.](#)

We were disappointed that [Main Trading Company](#) of Paris, TX, was forced to cancel at the last minute due to family illness.



The past and the future! There's a good chance all of us played with tin cans and string as communications devices in our younger days before we discovered amateur radio. Quade Warhurst, son of Curt Warhurst, KX4BH, experiments with simplex mode. He will discover, as we did, that tin cans and string work reasonably well for short distances at resonance, but there's not much chance of working DX.

The future of amateur radio is in the hands of Quade and his generation. Let's hope they find as much enjoyment in the art and science of amateur radio as our generation and previous generations have!

Delta Ham License Training, 2017

Submitted by Joe Lowenthal, WA4OVO

There is no charge for classes, but the student is responsible for the purchase of the license manual and the \$15 ARRL FCC examination fee.

Licenses Earned in 2017 from Delta Classes

6 Technician
2 General
6 Extra

If you are interested in attending a training class, send an email to [Joe Lowenthal](mailto:Joe.Lowenthal@arrl.org) with the desired class name in the subject line, along with your name, email address and cell phone number in the text.

The new [Technician question pool](#) is effective July 1, 2014, through June 30, 2018. You will need the [ARRL Ham Radio License Manual 3rd Edition](#) to study for the Technician exam.

The new [General question pool](#) is effective July 1, 2015, through June 30, 2019. You will need the [ARRL General Class License Manual 8th Edition](#) to study for the General exam.

The new [Extra question pool](#) is effective July 1, 2016, through June 30, 2020. You will need the [ARRL Extra Class License Manual 11th Edition](#) to study for the Extra exam.

Classes Completed

Tech Class 2-17: February 25 -- April 15, 2017

Tech Class 2-17 was held on six Saturdays from 9am to 1pm at EMHC ambulance company training room, 6872 Appling Farms Parkway, from February 25th to April 15th except for March 25th and April 8th. There were 11 students in the beginning with six finishing the class that included two YLs.

The WCARS FCC VE team led by Gary Weatherford, W5EMA, provided the test opportunity on April 1st. Congratulations to John Reiners, KN4BVH, who tested early at the Delta Club meeting test session on March 14th earning both Tech and General. Then he earned his Extra Class license at class testing. Congratulations to Rob Stalcup, KN4CHR, for getting his Tech and General. Congratulations to Teresa White, KN4CHS, Olivia Ritter, KN4CHT, and Jacob Haynes, KN4CHW, for earning their Technician licenses. Congratulations to Joey Craig, KN4SUW, for earning his Technician license at the Chickasaw Amateur Radio Club Laurel VEC test session on April 22nd. The instructors were Joe Lowenthal, WA4OVO, Perry Hayes, N4PSH, Len Grice, W4MKS, Pat Lane, W4OQG, and David Webb, KV4QI, with assistance by Tom Dichiara, AC5MR.

On April 15th the equipment demonstrators were Joe Lowenthal, WA4OVO, on repeater basics, Rick Tillman, WA4NVM, on satellite, Pat Lane, W4OQG, on Winlink with long wire antenna and Rick Pellicciotti, KJ4NWQ, on APRS.



Rick Tillman, WA4NVM, giving instruction prior to a satellite contact on SO-50.

Photo by Joe Lowenthal, WA4OVO.



Pat Lane, W4OQG, briefing Tech Class 2-17 on Winlink and HF operations.

Photo by Joe Lowenthal, WA4OVO.



Rick Pellicciotti, KJ4NWQ, explaining APRS Smart Beacons to Tech Class 2-17.
Photo by Joe Lowenthal, WA4OVO

Planned Classes

Tech Class 3-17 is being planned to start in the second week of July on either Monday or Thursday nights for six weeks from 6:15pm to 9:15pm. The location will be determined closer to class time. If interested in the Technician class, send an email to [Joe](#) with Subject line: Tech Class and name, email address and cellphone in the text area.

Women in Radio

Submitted by Cathy Goodrich, W4CMG, ARRL Public Information Coordinator,
Tennessee Section

Editor's note: we are continuing a new column about women with significant accomplishments in the art and science of radio. Each article is written by a woman and most of the writers are hams. YLs, please contribute more articles!

New Year, New Call Sign!!!

Getting tired of working through a huge pile-up, only to have a "busted call"? Does it take so long to say your call sign phonetically that the station you're chasing is finishing up his QSO with someone else by the time you finish saying yours? Missing contacts in a contest because you have a tongue-twister of a call? Change your call sign!

For many of the reasons above, I decided it was time to look for a call sign that was shorter, more CW-friendly, easier to say. It sounded like a great idea (and it was), but... there are a few things to consider.

Looking for a vanity call was not a simple task. I checked [Radio QTH](#) for weeks, looking for a call 2x1 or a 1x2 call that was about to become available. I finally found one, submitted my FCC request within minutes of the call becoming "available", only to receive a rejection letter weeks later. The process for granting new vanity calls is not necessarily first-come, first-served.

Then I looked (again) for a call with my initials, and discovered to my great pleasure that there was a 1x3 with my initials (W4CMG) available. I submitted the request to the FCC and waited... for what seemed like an eternity. (It was really about 4 weeks.) I even asked Santa (through a local ham club) to please bring me a new call sign.

Christmas came and went, and there was no email from the FCC, no letter, not even a badge with my new call sign (to give me hope) in my Christmas stocking. At last, shortly after the New Year began, the email notification with my new call sign arrived! Then the "fun" began....

Things to remember when making the change:

YLs who took their OM's last name when they married can certainly relate to the experience. The longer you have had your original call, the more "stuff" you need to change to your new call. Here are a few things for your "New Call Sign Checklist." Some things are pretty simple, and cost nothing, others, not so much:

- ARRL and QRZ get automated feeds, so not too difficult.

- ARRL-- update membership account, print your new membership card and certificate, update your email address if you are using your new call in your email address. Request and apply your LoTW TQSL Certificate. Request a new VE ID (if you are a VE).
- Create a new email account before you start making changes to your accounts. You will need it to finish updating MANY of the places you might be registered. HINT: It's a good way to filter the "clutter" from your email.
- Other things to update/notify, in no particular order: eQSL, VECs, any others you may test for in addition to ARRL, HAM Club memberships, ARES--you will need to be updated on their roster to be issued an updated membership card. Ladies--will need to update YLRL membership info with your new call sign.
- Echolink, Winlink, FLDigi, N1MM Logger, APRS/APRS phone app, NWS (for NWS Chat), ClubLog, your personal website (e.g., WordPress or domain--either change or redirect).
- Ready To Copy, HRD, other Amateur Radio Soft-ware you might use. Don't forget about Social Media -- Facebook, Twitter, LinkedIn, etc.
- Advise net control stations or net managers of your change--in advance if possible--for the nets you call into regularly. This will save time and avoid confusion when you call in with your new call sign.
- QSL Cards, business cards, address labels and ink stamps, membership cards for various clubs and organizations. Any publications where you might publish your email address, subscriptions to magazines/periodicals.
- Reprogram your radios that show your call sign, and print an infinite number of ID labels to put on all of your equipment.
- Badges, Hats, Shirts etc.--with your new call sign--so you can remember who you are, and others might start to recognize you with your new identity!

Is it worth it? ABSOLUTELY! But I don't foresee changing my call sign--or my name--again in this lifetime!

Cathy Goodrich, W4CMG: The NWS SKYWARN Appreciation Day in early 2012 was the springboard into many exciting Amateur Radio adventures. The KK4IWN call sign was issued with Cathy's Technician license in April, 2012. During the rest of 2012, Cathy earned her General Class license and later the same year upgraded to an Amateur Extra Class license, on the same day as her husband Jim, WA4VGZ. When she is not doing her day job as a Senior IT Project Manager, Cathy enjoys her role as ARRL Tennessee Section Public Information Coordinator (PIC). Early in 2017, she changed her call sign to W4CMG and joined the "Initials in the Call Sign Club." An active ARES and YLRL Member, Cathy also enjoys serving as an ARRL and CAVEC (Central America Volunteer Examiner Coordinator) Volunteer Examiner, contesting and learning CW.

HF Digital Modes on a Budget

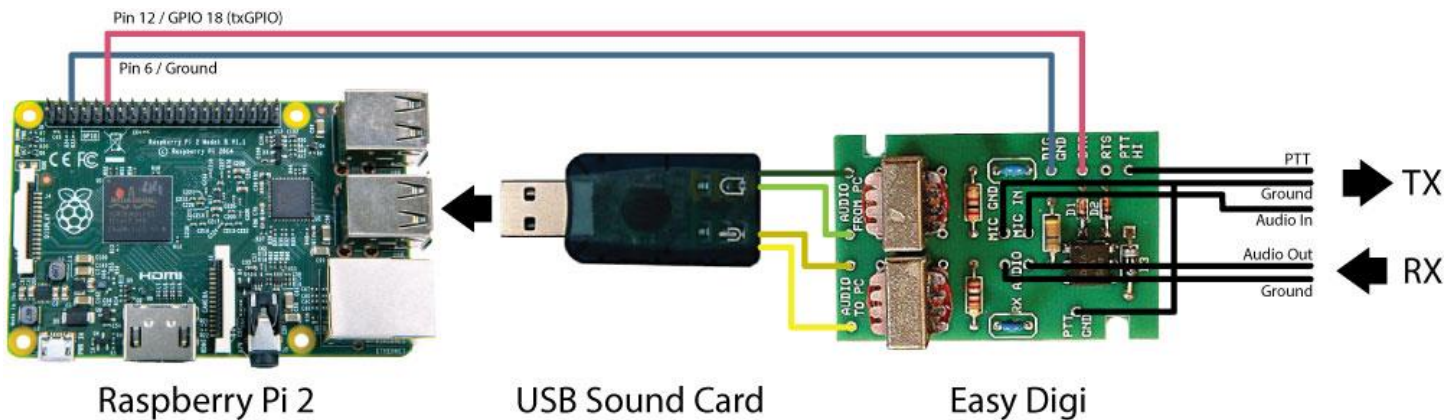
Submitted by Hugh Wardlaw, WB4SLI

I was doing some work on some digital equipment for my Raspberry Pi and noticed that what I was doing could be accomplished with one's Laptop, PC, or MAC. To do the soundcard digital modes you would be well advised to have a separate card for digital modes so that warnings and the like will not be transmitted. There are some inexpensive cards available on Amazon. The one that I am using is an Aukey USB Sound Card. It cost me all of \$5.99. I actually picked up five of them.

The next need is the interface between the computer and the rig. This requires a sound card interface. I was directed to eBay by a group on the web. There is an Easy Digi card that had what I needed for interfacing to the rig. There are three flavors of the device.

1. Fully assembled in a case costs \$22.95
2. Fully assembled without a case costs \$15.95
3. The board and parts (as a kit) cost \$9.95

I opted for the \$15.95 device. Another expense will be a USB to serial interface. Amazon has them for \$9.99 and up. So for under \$50 you can be on the air. The easy digi card comes with schematic diagram and an explanation of how to employ the device. Below is the top view of the board with wiring.



The pin 12 and Pin 18 on the Raspberry Pi will be the ground and Request To Send (RTS) on your RS-232 interface. Happiness for me is a warm soldering iron. Have fun!

Editor's note: Hugh says he uses [fldigi](#) and [flrig](#) on the Raspberry Pi; these are free downloads. Thanks to Hugh for volunteering another very interesting article! Where are the articles from the rest of you who also cozy up to warm soldering irons?

An LoTW Success Story

Submitted by Dan Lasley, NE7JN, contributions by Tommy Ferrer, K4VOZ

I was talking to Tommy Ferrer, K4VOZ, at April's Delta Club meeting and he told me an interesting story about the ARRL's [Logbook of the World](#) (LoTW). He recently signed up for LoTW and said it was a (mostly) painless process. When I asked why he decided to use LoTW, he said, "After getting involved in the Parks on the Air (WWFF) program I needed to upload my logs of my activations to give credit to the chasers and that's when I realized how easy it was to confirm QSOs electronically, so I decided to give LoTW a try."

Because Tommy used [Ham Radio Deluxe](#) for logging, once he signed up for LoTW, he was able to upload about 2,500 QSOs into LoTW. After LoTW processed his contacts, Tommy discovered he was eligible for several mixed-band awards: DXCC, WAC, CQ WPX, and he had 49 of 50 states toward WAS! The remaining state is, curiously, next door (Arkansas).

Three confirmed awards and 49/50ths of another award is an excellent result considering that prior to LoTW Tommy had no award confirmations with the ARRL!

I asked Tommy whether he was abandoning QSL cards; he replied, "I like collecting QSL cards so I will continue doing paper to respond to QSLs sent to me and to get confirmation from operators that don't use LoTW."

Coax Characteristic Impedance

Submitted by Dan Lasley, NE7JN

I recently asked a ham friend if his spectrum analyzer would tell me the impedance of a piece of mystery coax; he said it would. As fate would have it, a day or so later I happened to read "The Doctor Is In" column by Joel Hallas, W1ZR, in the July, 2011, QST, page 55. Joel says all we need to determine the characteristic impedance of coax is to figure out the material comprising the dielectric, make two measurements, and punch a few numbers into a calculator!

Let's start with the dielectric. If the material surrounding the inner conductor is more or less transparent and tough, it's probably solid polyethylene. If it's white and possibly not quite so tough, it's probably polyethylene foam. In the equation and table below, V_r is 0.66 for solid polyethylene and 0.85 for polyethylene foam.

Strip an inch or two of outer material and all shields (there may be a thin metallic shield beneath the wire mesh), thus exposing the outer surface of the dielectric. Remove about half the length of the dielectric to expose the inner conductor. Using the tool of your choice (I used an inexpensive digital caliper from Harbor Freight), carefully measure the diameter of the dielectric; this will be "D" in the equation below. Next measure the diameter of the conductor; this will be "d" in the equation below.

Note: Don't rely on a single measurement of D or d; make several measurements and average if necessary. Don't measure in an area where either the dielectric or the conductor is out of round!

Let's look at some sample coax and see the results of several calculations.



Coax (L-R): RG 6, RG 58, RG 8, and an unknown sample.

The characteristic impedance of coax, Z_0 , is

$$Z_0 = 138 \cdot V_r \cdot \log \frac{D}{d}$$

where "log" is the base 10 log, not the base e log.

Plugging the D and d measurements and V_r into the equation gives the calculated Z_0 :

cable	published Z_0	D	d	V_r	calculated Z_0
RG 6	75 ohms	0.176"	0.04"	0.85	75.4 ohms
RG 58	50 ohms	0.117"	0.0315"	0.66	51.9 ohms
RG 8	50 ohms	0.281"	0.105"	0.85	50.1 ohms
unknown	?	0.0865"	0.0265"	0.85	60.3 ohms

As you see, the published and calculated values for Z_0 are surprisingly close and we didn't need a \$5,000 spectrum analyzer to figure out the various Z_0 values!

I don't plan to use the 60 ohm coax for ham stuff. I suspect this coax is likely meant for audio signals.

As an aside, page 56 of Joel's article talks about hot pepper oil and squirrels. If you have a problem with squirrels chewing or scratching your house or your coax or other objects, please read page 56 of Joel's article!

To find Joel's article or anything else published in QST since 1915, go to <http://www.arrl.org/arrl-periodicals-archive-search> and, at a minimum, enter the author's call sign and month and year of publication. The QST Periodicals Archive is one of the most useful aspects of your ARRL membership!

YL News

Text and photos by Linda Laseter, KJ4CTX

YL LUNCHEON – Colton’s Steak House was our restaurant of choice this month. For those who have never been you will find all types of western attire and pictures decorating the walls. There is even a saddle stool at the bar. They have a varied menu and the YLs chose several different menu items (salad, pork chops, Santa Fe Eggrolls, and I think there may have been a steak or two ordered). The rolls are wonderful and there are buckets of peanuts to munch on while you wait for your entree.

We were so glad Stacy, KJ4MDA, was able to join us for this month’s luncheon. As you know she is one of the YL Net Control Operators and we have missed seeing her at the luncheons. Unfortunate she normally works on Saturday and is not able to attend. Hope you will be able to join us again soon, Stacy.

We have plans to have a program/learning session at our luncheons every other month starting in August. If you have something you would be interested in learning more about, please send me an email and we will work it into our program.

I (Linda, KJ4CTX) won the door prize this month which was a set of flameless candles. Perfect for my Jacuzzi.



(Clockwise from left) Gale, KI4VDI, Ann, WB4FAA, Kate, KJ4KUL, Janice, KX4BB, Stacy, KJ4MDA, Betsy, KD4KOM. Photo by Linda, KJ4CTX.

Our May luncheon will be at 11:30 a.m. on Saturday, May 20, 2017, at Olympic Steak & Pizza, 6250 Hwy 64, Oakland, TN 38060. Olympic has a huge salad bar complete with banana pudding most days and a varied menu that includes steak, chicken, spaghetti, lasagna and pizza plus much more. Hope to see you there!

YL NET – We have several YL's who check in regularly each Saturday night and they would love to have you join in. Some of the OMs join us as well. Always glad to have them check in. Randy, KM4CMJ, provided us with some information on an Arkansas YL net that meets on 145.45. Hopefully we will be able to check-in on their net. Will keep you posted.

If you would be interested in becoming one of our YL Net Control Operators, please send me an [email](#) or call 901 268-1766. It is easy and fun. Just follow the Preamble and jot down the call signs (suffix only) of the hams that check in. You gain experience on the radio and it builds your confidence as well. We never know who will check-in and it is always exciting to hear from someone new.

Please join us each Saturday night at 8:45 p.m. on the 146.820 repeater.

33,
[Linda Laseter](#), KJ4CTX

HQ 101

Submitted by Dan Lasley, NE7JN



April's HQ 101 CW class covered the letters K, L, M, N, and O plus a review of A-J. None of the students in the class are copying or sending perfectly but we continue to persevere.

I am reminded of Winston Churchill's famous quote from World War II. Learning CW isn't easy, but don't give up!

Harold Crouch, KC9SZC, suggested [Learn CW Online](#) as a way to learn CW. With this very cool site, you can paste text and get back an mp3 file of the equivalent CW!

Please join us at HQ 101 this month for P, Q, R, S, and T, and tell instructor Jim Cissell, KI4I, thanks!

HF Propagation, Part 8

Submitted by Dan Lasley, NE7JN



Image from <http://www.hamqsl.com/solargraph.php>.

This is going to be another of those articles in which I have more questions than answers. Who has the answers?

The yellow line in the graph above represents the sunspot number between March 12 and April 10. Thanks to the archive at spaceweather.com, we know the sunspot number pushed above zero on March 22, peaked at 97 on April 4, and dropped back to zero on April 9.

Due to other commitments, I didn't have much of an opportunity to get on HF between the sunspot peak at April 4 and a return to zero on April 9. As a result, I don't know whether HF propagation improved in this interval.

If anyone noticed a significant improvement in HF propagation in the indicated interval, please let [me](#) know.

SPARKS Newsletter & Delta Club Information

SPARKS is published monthly by the Delta Amateur Radio Club and emailed to club members. All information published in this newsletter is provided as a service. While every reasonable effort has been made to ensure accuracy, neither the Delta Amateur Radio Club nor its officers assume any liability resulting from errors or omissions. All correspondence may be mailed to:

Delta Amateur Radio Club * P.O. Box 342768 * Memphis, Tennessee 38184-2768

An alternative email address to offer the Board your suggestions, ask questions, and voice complaints is darc4you@gmail.com.

Please note that you must provide your name and call sign if you're requesting specific actions or personal follow-ups, and also be aware that any profane or mean-spirited comments will be unceremoniously discarded without consideration.

Delta Club Members Can Like Us/Follow Posts On Facebook! Go to <https://www.facebook.com/darcmem>.

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Board members beginning their positions in 2017 are listed in *italics*.

Public Service Events

If you are a coordinator for any of these events, please review the listed information. Please [email](#) corrections or additions.

2017 Date	Event	Contact Information
Jan. 15	Swamp Stompers 50K/25K Run	Keith Barton, KT4EP
May 6	March of Dimes March for Babies	Linda Laseter, KJ4CTX
TBD	Diabetes Tour de Cure	Pat Lane, W4OQG
Sep. 9-10	2017 Bike MS: FedEx Rock-N-Roll	Darrell Sheffield, KK4D
Oct. 7	Bluff City Blues 100 Ride	Danny Banks, KJ4FXZ
Dec. 2	St. Jude Marathon	Roger Schlichter, WR4R

Note: Dates in **red** are tentative.

Tennessee Ham Radio License Plate Submitted by Joe Lowenthal, WA4OVO

The link below is for information and instructions about Tennessee ham radio call sign Emergency/Safety automobile license plates:

<http://www.tn.gov/revenue/article/emergency-safety>

The application can be found at this link:

<http://www.tn.gov/assets/entities/revenue/attachments/f1312601Fill-in.pdf>

Other Notes of Possible Interest

Submitted by David Webb, KV4QI

It's Time to Renew Your 2017 Annual Memberships! Download the latest Delta Club [Membership Application Form](#). The 2017 membership renewal fee remains a very modest \$20 for an individual, with an additional \$5 fee for family membership. Thanks for Your Active Support of Delta Amateur Radio Club!

Memphis Area VHF/UHF Nets

Updated September, 2016

Name of Net	Freq. MHz	Tone	Local Time	Day of Week
Delta Club Information Net	146.820	- (107.2)	8:00p	Daily
YL Net	146.820	- (107.2)	8:45p	Sat
Mid-South Barefooted Bullfrog Net	146.535	[simplex]	7:30p	Daily
Secret Service Net	224.780	[no tone]	8:30p	Mon
Elmer Net	145.210	- (107.2)	9:00p	Mon
The Short Winded Net	146.850	- (107.2)	8:30p	Tue
MedMERS Net	146.820	- (107.2)	12:00p	Wed
CERTPlus Net	443.200	+ (107.2)	8:30p	Wed
ARES Training Net	146.880	- (107.2)	9:00p	Thu
Super Sunday Niner Net	927.6125	- (146.2)	8:30p	Sun

Delta Club sponsored Nets are shown in red.

TENNESSEE HF NETS

As of December, 2015

All times are Central Time

Net Name	Freq. MHz	Local Time	Day of Week
Tennessee CW Net	3.563	7:00p	Daily
Tennessee Slow CW Net	3.682	7:30p	Tue-Sun
Tennessee Alternate Phone Net	7.238		As needed
CUSEC (Center for United States Earthquake Consortium)	3.810		As needed
CUSEC (Center for United States Earthquake Consortium)	7.180		As needed

3980 kHz – TN Phone Net

Mon-Fri - 5:40 AM, 6:45 AM & 6:30 PM

Saturday - 8:00 AM & 6:30 PM

Sunday - 8:00 AM only

Holidays - 8:00 AM only

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We offer our continued thanks to EMHC ambulance company for generously providing their training room for the many ham radio classes given there.

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