

SPARKS

P.O. Box 342768 * Memphis, Tennessee 38134-2768 * Volume 23 * July 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 July 11, 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 Keith Miller, N9DGK, ARRL Tennessee Section Manager. Keith will tell us which subjects the ARRL board is focusing on in 2017 and will then field questions and comments from the audience. He lives in Rutherford County near Murfreesboro. Like so many of us, he became interested in Amateur Radio as a child. Keith was licensed as a Novice in 1981 as KA9KSV in Indiana. In 1983 he moved to Rutherford County and became involved with the Stones River Amateur Radio Club, first working Field Day, parades, and other special events, then his attentions turned to the emergency service side of the hobby. Keith enjoys contesting and QSO parties and works DX when time permits. He also enjoys writing. He contributed an article to the May, 2009, issue of QST on the use of the ICS-213 Form by radio amateurs. He has been an ordained minister and pastor for 40 years and still continues his ministry in addition to his amateur radio "work." He plans to run for re-election as ARRL Section Manager.

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](mailto:Jeff.Krause@AJ4GY.com), or call at 901-301-6776.

Congratulations to those who passed exams during Delta's June, 2017, test session: new Technician Carlos O'Neill, KN4EAC, and new General Geoffrey Krasner, KN4DDH.

President's Corner

Submitted by Ken Laseter, KI4AOH

Hope everyone enjoyed field day again this year. If not, you missed another great opportunity to enjoy good food, great fellowship, and to work the world on the airwaves. For those of you who attended, please let me know what your ideas for improvement are so I can put them on my list for next year.

Don't forget that next month is the Huntsville Hamfest. This is a great opportunity for new hams to corner the more experienced hams (Elmers) to ask them those questions you just can't seem to find the answers for. I personally know this works, because it's what I did some years ago, and it worked GREAT for me. Furthermore, the Huntsville Hamfest is one of the best in the country, you can find almost anything you need for setting up your hamshack or that one special fitting you need, but not sure exactly what it's called. So if you would like to go with us, contact Joe Lowenthal, WA4OVO, and buy your ticket. I promise you, we always have fun!

Once again, it's the time of year we start thinking about election of new officers in November. This year I believe we will have more positions to fill than in the past several years. So, now is your opportunity to become an officer and serve on the board of directors. As you know, this is an old club and many of the senior members have already served on the board, some for several years. I believe we need some younger hams to help guide this club. I believe they will bring enthusiasm, energy, and a fresh outlook for the club. If you think you may be interested, don't hesitate to discuss it with one of the board members.

As always, please 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 our most valuable assets!

If you have not renewed your club membership now is the time. I think we still have some members who are procrastinating or have forgotten. Linda, KJ4CTX, will be glad to accept your renewal application and cash, check or money order, either at a club meeting or via snail mail.

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 June 30, 2017
Submitted by Linda Laseter Treasurer

CHECKING ACCOUNT

BEGINNING BALANCE		
BEGINNING BALANCE	as of June 1, 2017	\$5,709.83

INCOME			
Date		Amount	
06/14/17	Patch sale	\$ 5.00	
06/15/17	Shirt sales	\$ 81.00	
06/15/17	Rye Estate sale	\$ 50.00	
06/15/17	Membership dues 2017	\$ 45.00	
06/22/17	Huntsville bus trip	\$ 120.00	
TOTAL INCOME		\$ 301.00	\$ 301.00

EXPENSES				
Date	Check #	To	Description	Amount
06/13/17	1418	Dan Lasley	Domain registration	\$ (76.00)
TOTAL EXPENSES				\$ (76.00) \$ (76.00)

ENDING BALANCE as of June 30, 2017 \$ 5,934.83

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 \$ 26,443.79

This Month's Board Meeting Minutes
July 3, 2017, submitted by Dan Lasley, NE7JN

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

Ken called the meeting to order at 7pm and began by showing us a certificate of appreciation to Delta from the American Red Cross (see next page).

Linda covered the budget for the quarter just ended.

Len suggested we send Sparks' Field Day coverage to Cathy Goodrich, W4CMG, Tennessee Section's ARRL Public Information Coordinator, for distribution to the wider ham community.

Len made a motion, seconded by Dan, to use proceeds from the sale of club polo shirts to provide the cost of a bus ticket to the Huntsville hamfest to an eleven year old student in Joe's Technician class. The board approved the motion.

Joe told us we have 25 of the 39 paying customers we need for break-even costs of the Huntsville bus trip. He said he anticipates having 16 people in his next Technician class, which is scheduled to begin July 10th.

Steve is to send Field Day photos and videos to Dan for posting on the club web site.

Bill discussed the successes of Field Day and mentioned several possible areas of improvement. He is transitioning out of the role of Delta Field Day coordinator and asks for someone to take over this role.

Dan reported on the progress of the new club web site; the go-live date is expected in early July.

Ken said Steve plans to run for position of club president next year and the positions held by Barri (secretary), Bill (repeater trustee), Steve (vice president), and Dan (publications) will be open. Club members are urged to consider running for one of the open positions.

Ken completed the review of the by-laws with input from board members and he will provide an updated document which will be posted to the new web site.

At the conclusion of business, Dan moved to adjourn the meeting at 8:55pm, seconded by Steve.



**American
Red Cross**

Disaster Services Technology

Would like to acknowledge:

Delta Amateur Radio Club

For demonstrating the capabilities of Amateur Radio to work
in less than optimal conditions

Morgan Woods Park
Germantown, TN
ARRL Field Day 2017

Thank you for being "Red Cross Ready"

Certificate presented to the Delta Amateur Radio Club in recognition of operating off the power grid during Field Day, 2017.

Minutes of Last Month's Club Meeting

June 13, 2017 – Submitted by Barri Munday, WB4SWP

Club President Ken Laseter, KI4AOH, opened the meeting at 7:00 pm and reminded everyone to sign in and drop a ticket in the bucket. Introductions were then made by name and call sign.

Ham Hilliard, W4GMM, moved to approve the previous meeting minutes as recorded in Sparks, seconded by Jim Norton, WD4T; the minutes were approved by acclamation.

Ham moved to approve the Treasurer's report as recorded in Sparks, seconded by Jim Norton, WD4T; the report was approved by acclamation.

Linda Laseter, KJ4CTX, told us the YL net is going strong after nine months.

Bill Stevens, WC9S, announced two folks passed tonight's VE exams, one Technician and one General. Bill asked for help with Field Day set up on the prior Friday afternoon and said to expect Marco's pizza for lunch on Saturday. Everyone will have to sign in to get a ticket for lunch and dinner. Everyone is encouraged to meet for breakfast at Piccadilly on Saturday morning at 7:30.

Len Grice, W4MKS, announced that the polo shirts had arrived and he would be passing them out. Shirt orders are being accepted tonight.

Joe Lowenthal, WA4OVO (in absentia), said a Technician class will be offered from July 10th to August 7th at EMHC Ambulance on Appling Farms Parkway.

Tour de Peddler was to be held on June 17th but was cancelled at the last minute. The reason for the cancellation is unknown.

Jim Cissell, KI4I, offered old magazines from the estate of Bob Gruner, W4UFT.

Ken mentioned the upcoming election of officers at the November meeting. Several positions will be open; please consider volunteering for one of the positions.

David Campbell, KD4NOQ, presented tonight's program.

Jim Norton, WD4T, won tonight's prize of Chick-fil-A coupons.

Ham moved to adjourn at 8:30 pm.

In Memoriam

At last month's Delta Club meeting, attendees were saddened to hear of the passing on May 27 of Warren Stone, W4OBS, husband of Nina Stone, WB4CHH. Warren and Nina were married in 1961 and he had been a ham since 1956. Warren leaves Nina, daughter Wendy, and Wendy's four children. He was predeceased by son Charles "Charlie" Warren Stone III who, as a long time survivor from St. Jude, passed on in October, 2016.

Warren worked for 35 years at Sweet's Trailer Hitch, five years at DeWalt, and five years for his son-in-law.

In Warren's ham activities, he supported Field Day, public service events such as the Heart Fund and the March of Dimes, and the early local ham fests.

Our thoughts and prayers go out to Nina and her family.

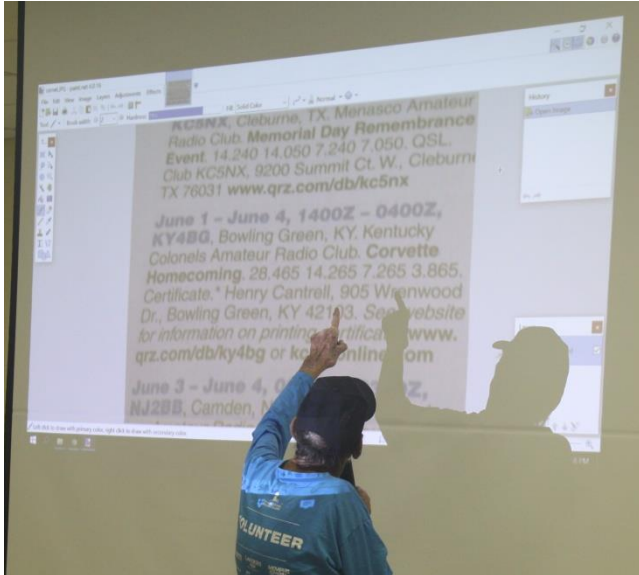
Joan Thorne, KN4PM, reports the passing of Roger Stallings, AK4QQ, in Saulsbury, TN, on June 17th. In an [obituary](#), Harrell Davidson, WD4LAR, 3980 Morning net Manager, notes that "Roger was a friend and checked in on the Tennessee Phone Net all the time. The "Ham" radio operators on 3980 will miss Roger - AK4QQ very much. Our prayers for the family in this great loss."

Submitted by Dan Lasley, NE7JN, with the grateful acknowledgement of contributions by Nina Stone, WB4CHH, Pat Lane, W4OQG, and Joan Thorne, KN4PM.

Last Month's Program

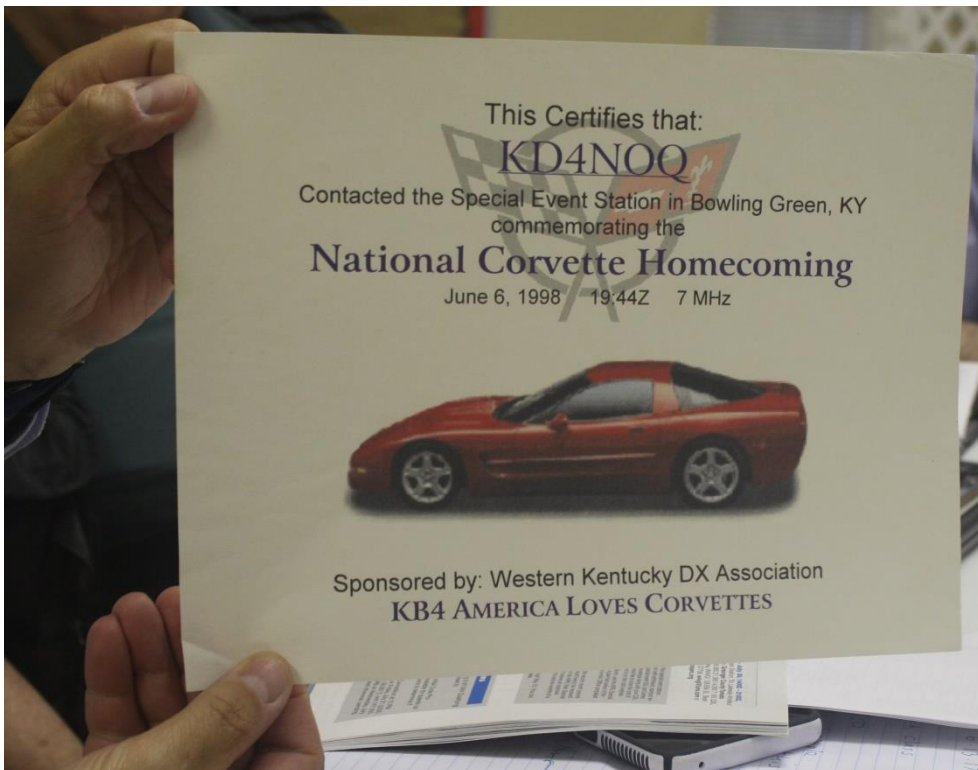
Submitted by Dan Lasley, NE7JN, contribution by Perry Hayes, N4PSH

Last month David Campbell, KD4NOQ, told us about special events and about some of the "wallpaper" (QSL cards and certificates) he has collected.



David began by referring to the "Special Event Stations" column in QST magazine (see, for example, pages 100-101 of the June, 2017, issue). David said that special event stations typically provide QSL cards or certificates (and sometimes both) when you work a station.

David is pointing out last month's Corvette Homecoming special event hosted by the [Kentucky Colonels Amateur Radio Club](#) in Bowling Green, Kentucky.

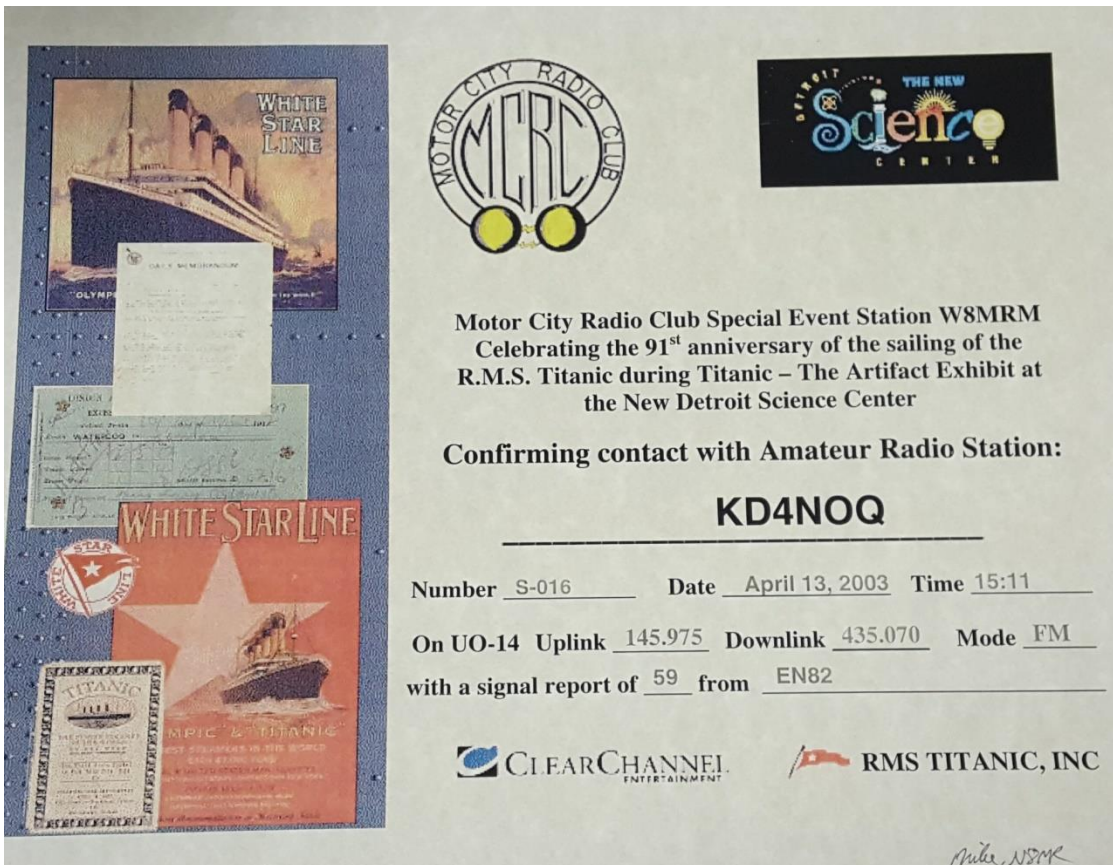


Here is a certificate David collected from the National Corvette Homecoming special event in June, 1998. The event was sponsored by the [Western Kentucky DX Association](#) which is not only still active, but will sponsor the [2017 Kentucky QSO Party](#).

If you need QSL cards from Kentucky, mark the Kentucky QSO Party (November 11 and 12) on your calendar!



David passed around a number of interesting and intriguing QSL cards and certificates, including certificates for three contacts with the International Space Station, multiple contacts with the [Titan Missile Museum](#) near Tucson, Arizona (hosted by the [Green Valley Amateur Radio Club](#)), the 91st anniversary of the sailing of the Titanic (see below), and many others.



Thanks, David, for another nicely done presentation for Delta!

Photo by Perry Hayes, N4PSH

Field Day, 2017

Submitted by Dan Lasley, NE7JN,
additional photos by Perry Hayes, N4PSH, and Steve Frazier, KK4VPT

This year's Field Day setup began about 5:30pm on Friday, June 23rd, and ended about 15 minutes later. We weren't finished, but a cold front pushed the remnants of Tropical Storm Cindy through the area and stirred up a major thunderstorm; we gave up for the evening.

We met again for breakfast at 7:30am the next morning and began setup anew. Most stations and infrastructure (power, logging, [networking](#), etc.) were ready to go when lunch arrived about noon.



Shown above are hams taking a lunch break.



The first thing I noticed after leaving the chow hall was our flag. If you don't feel anything inside when looking at this photo, please check your pulse.

The tower also supports three-band and six meter beams.

The welcome tent (below) welcomes hams, guests, and visitors. Shown here (L-R) are Denise Walls, KM4IRR, Bill Stevens, WC9S, George Freeman, KK4KUO, and Tom Ernst, N4LIA.

Photo by Steve Frazier, KK4VPT.





(L-R) Jerry Klein, N4POY, logs at the 20 meter SSB station for operator Fred Miller, KS2X. Victor Worley, KW4IJ, observes the proceedings.



Above (L-R), Ham Hilliard, W4GMM, operates the 80/15/10 meter SSB station with William Thomas, K1AWT, logging. Below (L-R), Barri Munday, WB4SWP, logs as Pat Lane, W4OQG, just absolutely rips the ionosphere asunder with what sounded like 50 words-per-minute CW! Glen Ellis, K4KKQ, Jim Cissell, KI4I, and Pat Tobin, KJ4PT, observe the proceedings.





(L-R) Len Grice, W4MKS, cracks up Jim Cissell, K14I, and Amanda Nash, KM4MSC, with some "10-4 good buddy" CB chatter as Jim and Amanda troubleshoot a problem. In the interests of keeping Len from being drummed out of the ham community, I should point out that Len **was not** transmitting!



Roger Schlichter, WR4R (right), aims to string antennas in the trees as Richard Martin, K4DXF, decides which way to run. It is believed no more than three bystanders were struck by wayward projectiles.

Photo by Steve Frazier, KK4VPT.



Above, Robert Spann, K4RAS, mugging for the camera with his call sign hat sideways and logging while Hugh Wardlaw, WB4SLI, operates PSK 31. Below (L-R) Sam Eichold, K4SOF, Ryan Turner, K0RET, and Adrian Moseley, N4EMO, take a lunch break at the [HamWAN](#) tent.



Sam's Chow, Rooney, is under the table and hoping for a few bites of pizza.



Photo by Perry Hayes, N4PSH.

Delta club members show off their new club polo shirts (L-R): Gale Tisdale, KI4VDI, Bill Fullerton, AF5HA, Linda Laseter, KJ4CTX, Ken Laseter, KI4AOH, Betsy Freeman, KD4KOM, Joe Wray, WD4GXJ, Steve Frazier, KK4VPT, Steve Evans, KM4VYA, Ham Hilliard, W4GMM, Mike Hefner, KI4YOR, Len Grice, W4MKS, Joe Lowenthal, WA4OVO. Below (L-R) Steve Evans, KM4VYA, and Ray Miller, AA4UK, discuss Ray's CW program.



Photo by Perry Hayes, N4PSH.

June HQ 101

Text and photos by Dan Lasley, NE7JN



Above (L-R) Linda Laseter, KJ4CTX, Glen Ellis, K4KKQ, Ken Laseter, KI4AOH, and Tom Dichiaro, AC5MR, attend a CW class presented by Jim Cissell, KI4I, just prior to the June meeting. Jim finished covering A through Z and gave us practice with the letters U through Z.

At left, Linda sends code on Jim's J-37 knee key.

This concludes Jim's CW class and we thank him profusely for mentoring the class which began in January of this year.

The July HQ 101 will be on the VHF/UFH band plan, including simplex frequencies and use. Please join us for the class.

Amateur Hardware Update

Article and image submitted by James Butler, KB4LJV

Many times we need to keep equipment cool when we operate. Older tube equipment has vents in the cabinet to help. Solid state usually has heat fins on the back to help get rid of excess heat. Ebay sells small clip on fans for laptop computers that help keep them cool. They also have a fan on a large base that works perfectly for older tube equipment. The smaller clip-on style can be connected to the heat sink on the back of solid state rigs to let them run cooler. They have a USB connector and run on 5 volts DC. Any wall charger with a USB connector will run the units. These run from \$2.00 to \$7.00 and might just help that hot rig run cooler. Do a search on Ebay for "laptop cooling fan."



Amateur Packet Update

Submitted by James Butler, KB4LJV

Many times when running portable we look for support hardware. QSRADIO has a complete selection of hardware for portable and emergency use. They have lots of Powerpole cables which are becoming the standard for portable operations. They also have Powerpole panels and pods for connecting your equipment. QSRADIO sells their Hammo Can to put a complete station in a box so it can be safely transported. This equipment along with coax and lots of Powerpole accessories makes QSRADIO a go-to place for emergency supplies. Check them out at their website. The web address is www.qsradio.com.

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. The fare is \$70 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 can not 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, email address and whether you want bacon, ham or plain biscuits.

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 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.

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@delta-radio.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.

Scheduled Classes

Tech Class 3-17 will be held on six Monday nights from July 10th until August 14th from 6:15pm-9:30pm at EMHC ambulance company training room, 6972 Appling Farms Parkway. There are 15 students registered as of this report. The FCC exam will be offered on August 7th. If interested in the Technician class, send an email to [Joe](mailto:Joe.Lowenthal@delta-radio.org) with Subject line: Tech Class and name, email address and cellphone in the text area.

Solar Eclipse QSO Party

Submitted by Dan Lasley, NE7JN

A total eclipse of the sun is due in the area on August 21, 2017. Here is the path:



<https://www.greatamericaneclipse.com/tennessee/>

Skywave propagation depends on various types of ionizing radiation from the sun. With the moon temporarily blocking the sun's output, how will propagation change? The [Ham Radio Science Citizen Investigation](#) (HamSCI) folks want to find out. See their 2017 [Eclipse Experiment Description](#) for details.

HamSCI is also sponsoring a [Solar Eclipse QSO Party](#). You can find the QSO Party rules [here](#).

If you don't have an interest in operating during the eclipse but you'd like to be outside and watch it, <https://www.greatamericaneclipse.com> has tons of very useful information on the eclipse.

If you can't make the 2017 total eclipse, there will be others in the continental U.S. in 2024, 2044, 2045, and 2052. See [this map](#) for a guide to future total solar eclipses.

YL News

Submitted by Linda Laseter, KJ4CTX

YL NET – We know the summer months are busy for everyone and lots of us are on vacation or out of town for various reasons and not able to check-in every Saturday night. We hope you will support the YL Net by taking a few minutes of your time on Saturday night to check-in. If you can't check-in every Saturday night, that's okay, just check-in when you can. We would love to hear from you.

YL Net - Saturday night at 8:45 p.m. on the 146.820 repeater.

YL LUNCHEON – Fat Larry's was certainly busy this past Saturday (June 10th). Not only were the YLs there for lunch, but a group of 30 or so with a ball team were also enjoying the Bar-B-Q. Fortunately management had the foresight to sit us as far away from the ball team as possible. Luckily there were enough tables to accommodate us because in addition to most of our regular YL luncheon group, Lisa, K4POM, joined us with her guest and Betsy, KD4KOM, also had a couple of guests join us as well.

Tom, AC5MR, showed up and we tried to persuade him to join us, but he said he had plans. Can't imagine why he wouldn't want to join us!!!!!!

As usual we ordered a variety of items. Dry ribs, wet ribs, chicken strips and I think there was a hamburger or two ordered. The food was good and the company even better. Busy as they were we had no problem with the service. Our order went in before the ball teams. Thank goodness!

We are planning a "Pot Luck Luncheon" and "Practice Using Your Radio Day" Saturday, August 5, 2017, at the Ellendale Church of Christ. We hope you will join us for some good food and the opportunity to meet some of the other YLs in the club. And what a great opportunity to gain confidence and skills using your radio in a relaxed setting

Lisa, K4POM, won the door prize for June. Two very nice lanterns. I know she will enjoy decorating with them.

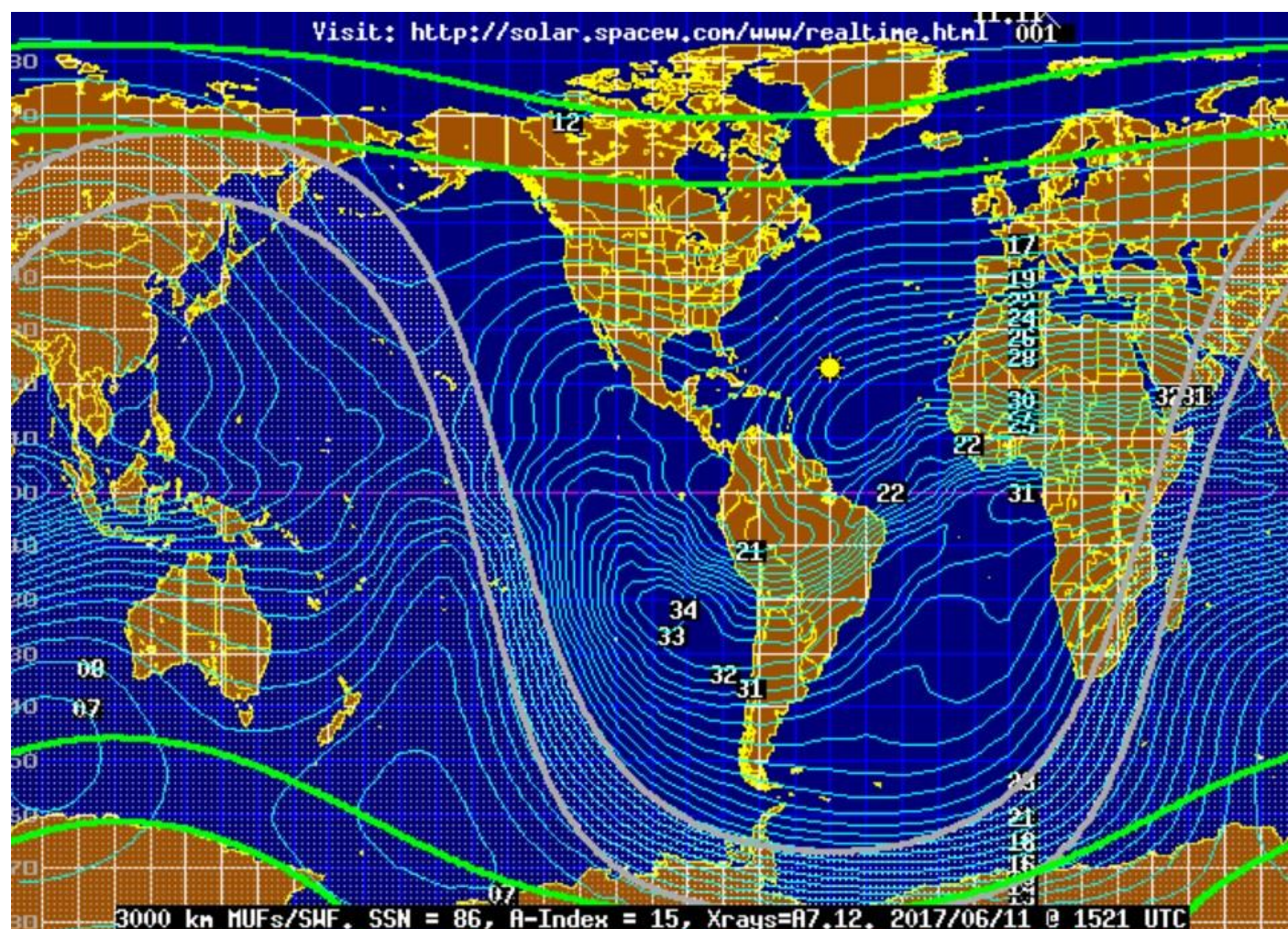
Our July luncheon is as follows:

**11:30 a.m.
Saturday, July 15, 2017
Sweet Peas
5824 Stage Road
Bartlett, TN 38134**

HF Propagation, Part 10: MUF, Grey Line, and Where is the Sun?

Submitted by Dan Lasley, NE7JN, contributions by Larry May, K4QZF

One morning the 40 meter group was discussing the Maximum Useable Frequency (MUF). [Wikipedia.org](http://en.wikipedia.org) says MUF is "the highest radio frequency that can be used for transmission between two points via reflection from the ionosphere (skywave or "skip" propagation) at a specified time, independent of transmitter power." Someone asked why Boulder, CO, was typically the only [NIST](http://www.nist.gov) reference point for MUF? Boulder is more than 1,000 miles from Memphis. We're here, not in Boulder, so who cares what Boulder's MUF is?



<http://www.spacew.com/www/realtime.php>

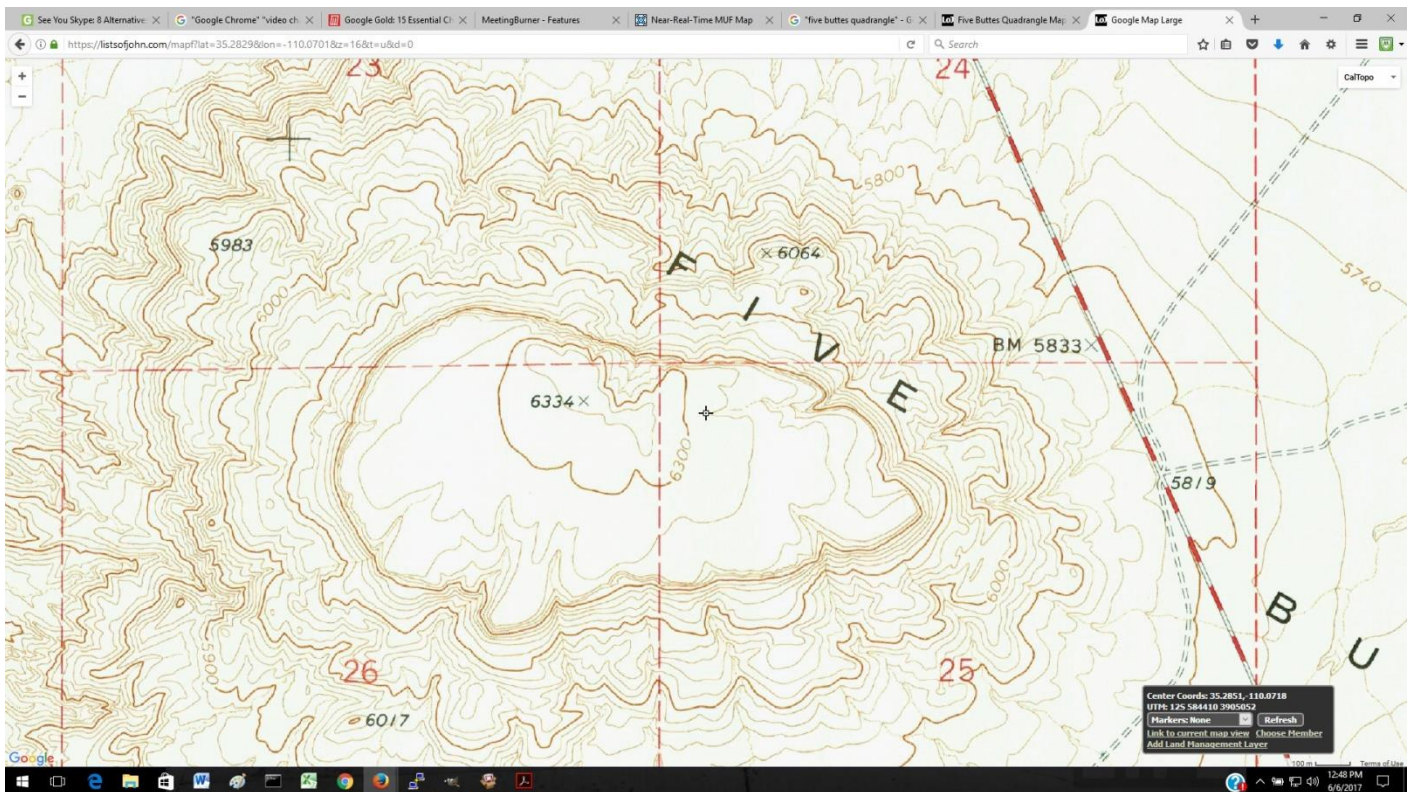
Once again Larry May, K4QZF, came to the rescue by providing a [Near-Real-Time MUF Map](http://www.spacew.com/www/realtime.php). Not only does this map show the estimated MUF for every location of planet earth, it also shows the "grey line," defined by <http://dx.qsl.net/propagation/greylines.html> as "a band around the Earth that separates daylight from darkness. Propagation along the grey line is very efficient. One major reason for this is that the D layer, which absorbs HF signals, disappears rapidly on the sunset side of the grey line, and it has not yet built upon the sunrise side."

If you combine our MUF (about 16 MHz from the map) with the grey line, you might be able to work Madagascar (the island off the southeast coast of Africa) on 17 meters or lower frequencies. qrz.com shows 93 5R (Madagascar) call signs. If you're lucky, maybe one is awake and operating.



See the bright yellow dot between the western coast of Africa and Florida? That's the location of the sun as of 1521Z on June 11, 2017. A couple of years ago I had a very interesting QSO with an older ham who had an unpublished, 390-page book on propagation. He told me that the strongest DX signals occurred for two given stations when those stations were on opposite sides of the sun and equidistant (presumably in terms of latitude) from the sun. I've never heard that bit of wisdom before or since, but now the Near-Real-Time MUF Map gives me a tool to help verify that assertion. The sun is on the -50 degree meridian, about half way between Memphis and western Europe and western Africa; those regions should be in prime DX territory around 1521Z (10:21 am CDT) if the above assertion is correct.

Let's look at one more thing in the MUF map. Notice how the equal-value MUF lines are crowded closely together in the mid-Pacific west of South America? Compare to the closely crowded lines of equal altitude in this segment of a [topographical map](#):



The area nearly devoid of lines of altitude is the flat top of an extinct volcano in the Five Buttes area of the Navajo reservation in northeast Arizona. Crowded equal-altitude lines represent the steep sides of the volcano. What (if anything) do the crowded equal-value MUF lines represent? If you know, please send [me](#) the answer.

A Little Light Reading

Submitted by Dan Lasley, NE7JN

Beginning in 1922 AT&T published the Bell System Technical Journal (BSTJ) which, according to [The Online Books Page](#), was "a journal on the 'scientific and engineering aspects of electrical communication' and related technological subjects. It was published by Bell Labs, which was originally the research arm of AT&T." Why would hams care about the BSTJ?

[Wikipedia](#) says, "Researchers working at Bell Labs are credited with the development of radio astronomy, the transistor, the laser, the charge-coupled device (CCD), information theory, [Unix and other] operating systems, and the programming languages C and C + +. Eight Nobel Prizes have been awarded for work completed at Bell Laboratories." You may be using some of these developments in ham radio.

The world hasn't always been covered with copper and optical cables; AT&T once based some of its long distance calls on radio transmissions. In order to use radio transmissions successfully, AT&T needed to understand propagation. See "[Radio Propagation Fundamentals](#)" by Kenneth Bullington, May, 1957, as one example of propagation research.

Publication of the original BSTJ continued until the original Bell System was broken up in 1983. For many years BSTJ publications were available to all on the Internet. Sadly, later owners of Bell Labs turned over BSTJ content to the IEEE, at which time the IEEE provided BSTJ articles only in exchange for payment.

You can read volumes 1-36 (excluding volume 34) at [The Online Books Page](#). It appears that the [Internet Archive](#) contains all 62 volumes, but finding individual articles is somewhat tortuous. Start at <https://archive.org/details/>, then search for "bell system technical journal" (use the quotes) and go from there.

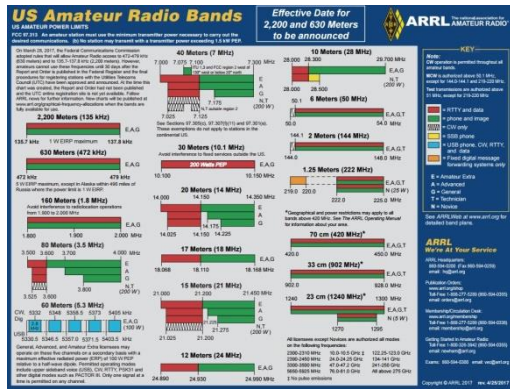
I haven't found an index to the 62 volumes of the BSTJ. If you are aware of one, let [me](#) know.

Odds and Ends

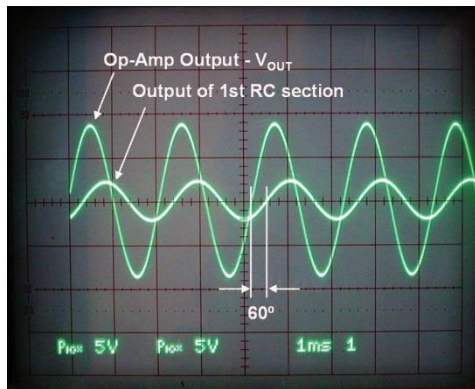
Submitted by Dan Lasley, NE7JN

From the ARRL Contest Update for April 5, 2017:

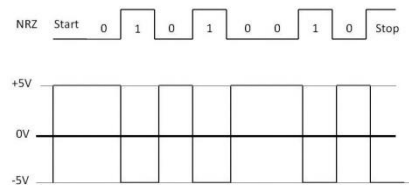
- "An [EETimes contributor](#) reviewed the relatively inexpensive CSI Premier soldering station." At \$59 it looks like a decent unit.
- "Here's a [CW decoder](#) based on the ubiquitous Arduino processor, with source code so you can experiment with it."



From the ARRL Letter for May 18, 2017: ARRL has revised and updated its "[US Amateur Radio Bands](#)" charts. These PDF documents, available in color or gray scale presentations, are now available for download. The revised allocation charts reflect the new 630- and 2,200-meter bands, but also emphasize that these bands are not yet available for Amateur Radio use.



Ward Silver, NOAX, has written two very interesting articles on oscillators ([part 1](#) and [part 2](#)). All you hardware types take notice!



See articles on Serial I/O Data Interfaces by Lou Frenzel, W5LEF ([part 1](#) and [part 2](#)).

DX News

Submitted by Dan Lasley, NE7JN

This information is courtesy of the ARRL's DX news emails.

ANTIGUA AND BARBUDA, V2. Tim, VE6SH will be QRV from July 23 to August 7 as V29SH. Listen for his vacation style operation mostly on 30 and 17 meters. QSL via VE6SH and LoTW.

ANTIGUA, V2. Bill, KG4ZXN is QRV as V21XN during the month of July. Activity is on the HF bands using CW, SSB and various digital modes. QSL to home call.

BOLIVIA, CP. Antonio, EA5RM is QRV as CP1XRM until August 14 while working as a NGO volunteer doing maintenance to the emergency radio network that both Solidaridad Medica and the Radioamateur Without Frontiers have on duty. Activity is in his spare time on the HF bands using SSB and various digital modes. QSL direct to home call.

BOSNIA-HERZEGOVINA, E7. Members of the radio club from Zenica are QRV as E770BAB until the end of 2017 to its 70th anniversary. QSL via E71EYC.

CHATHAM ISLANDS, ZL7. Chris, ZL2DX and Catherine, ZL2QT are QRV as as ZL7DX and ZL7QT, respectively, for the next three years. QSL direct to home calls.

CRETE, SV9. Ron, WB2GAI will be QRV as SV9/WB2GAI/p from July 2 to September 29. Activity will be on 80 to 10 meters. QSL to home call.

DJIBOUTI, J2. Dane, S53T is staying here until the end of 2019 and is active as J28ND. QSL via S57DX.

FRANZ JOSEF LAND, RI1. Eugene, UA4RX will be active as RI1FJ from Heiss Island (EU-019) starting sometime in July until August 2017. Activity will be on 160 to 10 meters using CW, SSB and digital modes. QSL via UA2FM, direct, ClubLog's OQRS or LoTW.

GREECE, SV. Dave, SV8/GM0LVI/p will be operating holiday style from August 31 to September 19. He will be QRP. QSL direct or bureau to GM0LVI.

JAPAN, JA. The Japan Ladies Radio Society (JLRS) celebrates its 60th anniversary with the call 8N60JLRS until the end of March 2018. QSL via bureau or direct to JQ6FQI.

MALI, TZ. Denis, F8DAK is QRV as TZ8BB from Bamako and is here for about 18 months. Activity is on 20 meters. QSL to home call. In addition, Jeff, TZ4AM is QRV from Bamako. He is active on the HF bands, and possibly on 6 meters as well. QSL to W3HMK.

MALI, TZ. Fredo, TZ4PR is QRV until October. Activity is casual on the HF bands. QSL direct to F1UIJ.

MINAMI TORISHIMA, JD1. Take, JG8NQJ will be QRV as JG8NQJ/JD1 from May 15 to July 15. Activity will be on 80 to 6 meters using CW and RTTY. QSL via JA8CJY.

SAUDI ARABIA, HZ. Ed, NI6S will be QRV as 7Z1ES from Riyadh from April 2017 to February 2019. QSL via IZ8CLM.

ST PIERRE AND MIQUELON, FP. Eric, KV1J will be QRV as FP/KV1J from Miquelon Island, IOTA NA-032, from July 4 to 18. Activity will be on 160 to 6 meters using primarily SSB and RTTY with some CW and other digital modes. He plans to be active on the linear satellites as well as the upcoming IARU, NAQP RTTY, and CQ VHF contests. QSL to home call.

ST. HELENA, ZD7. Peter, ZD7FT has been active on 17 and 15 meters at various times. QSL via operator's instructions.

SWEDEN, SM. Members of the Gotlands Radioklubb are QRV with special callsigns 7S1GRK and SK70BL from Gotland Island, IOTA EU-020, until December 31 to celebrate the club's 70th anniversary. Activity is on various HF bands. All QSOs will be confirmed automatically via the bureau.

SWITZERLAND, HB. Special event station HB600NVF is QRV until the end of 2017 to mark the 600 years since the patron saint of Switzerland Niklaus von Flue was born. QSL via HB9JOE.

THAILAND, E2. E2HQ will be on 6 meters until July 17, including the CQWW VHF Contest. The national association, RAST, got special permission to operate on the 6 meter band.

UKRAINE, UR. Special event station EO25P is QRV until December 31 to celebrate the 25 years of the Volyn Amateur Radio League. QSL via operators' instructions.

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
June 17	Diabetes Tour de Cure	Pat Lane, W4OQG
Sep. 23-24	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

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	Offset/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

DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.



MID-SOUTH AMATEUR RADIO SUPPLY (MSARS)

6631 Vallendar Cv., Bartlett, Tennessee 38135

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CURRENTLY STOCKING			
Antennas	Antenna Mounts	Connectors	Coax & Cable
HT	Magnet	UHF	RG-213
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HF	Window Mount	BNC	450 & 300 Ohm
Wire	Swivel Ball	RCA	Rotor Cable

LDG Electronics	Accessories	Miscellaneous
Automatic Antenna Tuners	RF Chokes	Gordon West Books
Remote Tuners	Power Poles	Coax Seal
Brand Specific Antenna Tuners	Antenna Switches	Fuse Holders
Baluns	SWR/Power Meters	Remote Tuner Boxes
Ununs	Mic Holders	Dog Bone Insulators

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Operators**

Steve
W5VAA

Rosalinda
WN2V

Ham
W4GMM

Mid-South Amateur Radio Supply, (MSARS.COM) is owned and operated by local hams who are dedicated to promoting the hobby and providing help to anyone interested in ham radio. We actively support the local amateur radio clubs and are ARRL members.

MSARS offers free antenna building classes each year and help many new hams with guidance on their first radio, setting up a ham shack, programming a radio and much more. We are proud to be a part of the ham radio community and are *here to help you*.

Please thank our sponsors by using their services and mentioning that you saw their ad in the Delta Club SPARKS Newsletter!

This ad space is available

DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.

DELTA AMATEUR RADIO CLUB

P.O. Box 342768
Memphis, TN 38134-2768

DARC Meeting: Second
Tuesday of every month
at Ellendale Church of Christ
7365 Hwy 70, Bartlett TN



W4BS REPEATER SYSTEM
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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.

**Delta Amateur Radio Club
Sparks Advertising Order Form**

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Name: _____

Call Sign: _____ Phone: _____ Email: _____

TO PLACE AN ORDER

1. Mark the box below indicating the ad size you are purchasing and the months you want your ad to appear in Sparks.
2. Submit this completed order form and your camera ready ad, via email at sparks@carbheat.net
Make check payable to Delta Amateur Radio Club (DARC) at monthly Delta Club meeting, or send US Mail to club mailing address at P.O. Box 432768, Memphis, TN 38134-2768. Camera ready means that ad copy is exactly as you wish it to appear, scaled to fit within the dimensions specified below. Ads may be submitted in .gif or .jpg format, or submitted as a hard copy (we will scan and place your ad for you).
3. Your ad order and payment must be received on or before the first Tuesday of the **month before** you want it to appear in Sparks.

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FULL PAGE			HALF PAGE			¼ PAGE			BUSINESS CARD		
\$50.00			\$25.00			\$15.00			\$10.00		
for 3 Months			for 3 Months			for 3 Months			for 3 Months		
7" w X 8 ½" h			7" w X 4" h			3 ½" w X 4" h			3 ½" w X 2" h		
Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	July 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017