

# SPARKS

P.O. Box 342768 \* Memphis, Tennessee 38134-2768 \* Volume 22 \* September 2016



## Welcome to the Delta Amateur Radio Club

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

EMAIL: [darc4you@gmail.com](mailto:darc4you@gmail.com)

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

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

## W4BS

### REPEATER SYSTEM

146.820<sup>-107.2</sup> 147.360<sup>+107.2</sup>

146.625<sup>-107.2</sup> 443.200<sup>+107.2</sup>

224.420<sup>-107.2</sup>

**This month's meeting** begins at 7pm on September 13, 2016, 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 Tina R. McElravey, KM4PMZ, MPH, BSN, RN. Tina joined the Public Health Preparedness Program (PHEPP) in 2015 as the Nurse Educator/Medical Reserve Corps Coordinator. Tina directs the recruitment, retention, and training of Medical Reserve Corps (MRC) volunteers who may be asked to assist during a public health emergency. She also facilitates and teaches specialized medical and emergency preparedness training for Shelby County Health Department (SCHD) staff and MRC volunteers.

A graduate of Millington Central High School, she received her BSN from the University of Memphis and her MPH in Health Services Administration from East Tennessee State University. She also has a post graduate certification in Applied Epidemiology from the University of Tennessee Health Science Center.

As a public health nurse, Tina has participated in numerous Point of Dispensing (POD) and Tabletop exercises. She volunteers in her community and in various professional nursing organizations. She has been a recipient of Celebrate Nursing's Top 100 Nurses and received the coveted Celebrate Nursing's Virginia McAskill Award for Excellence in Nursing.

Tina was recently selected by the American Nurses Credentialing Center (ANCC) to participate in the development of the National Healthcare Disaster Certification. She received her Technician License in December 2015 and is a member of the Delta Club.

Tina enjoys spending time boating, traveling, and finding treasures at estate sales.

**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 2016 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@ARRL.org), or call at 901-301-6776.

**Congratulations** to those who passed exams during Delta's August, 2016, test session: new Technicians Steven Burns, KG5OVT, and Eddie Holmes, KM4VYH, and new Generals Jeffrey Hogue, KM4VYI, Parnell Lewis, KM4VLZ, and Darren Greenburg, KM4TCW.

## President's Corner

Submitted by Ken Laseter, KI4AOH

IT'S STILL HOT!

Once again, we survived the Dog Days of summer! According to the Old Farmer's Almanac, traditionally the period from July 3<sup>rd</sup> through August 11<sup>th</sup> is considered to be the Dog Days of summer. Feels like they are running behind schedule this year.

I'm ready for some cooler weather and hope we actually have a Fall this year!

Don't forget the Multiple Sclerosis 150-mile bike ride from the Lander's Center to Tunica and back starts Saturday morning. This is a two-day event and if you can't make it tomorrow maybe you can participate Sunday. Contact information is in Sparks!

If you missed the bus to the Huntsville Hamfest you missed a FUN trip. I think we had a couple of empty seats so you could have gone with us. Now would be a good time to put the 2017 Huntsville Hamfest bus trip on your schedule. I think it is held the third full weekend in August each year, and we schedule the bus trip on that Saturday.

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 of 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 August 31, 2016

Submitted by: Linda Laseter, KJ4CTX Treasurer

**CHECKING ACCOUNT**

BEGINNING BALANCE		
BEGINNING BALANCE	as of August 1, 2016	\$ 11,307.63

INCOME			
Date	Description	Amount	
8/12/2016	Huntsville bus trip	\$ 60.00	
8/16/2016	Huntsville bus trip	\$ 75.00	
8/19/2016	Huntsville bus trip	\$ 75.00	
8/20/2016	Huntsville bus trip	\$ 75.00	
8/30/2016	Refund on Huntsville tkts	\$ 8.00	
<b>TOTAL INCOME</b>		<b>\$ 293.00</b>	<b>\$ 293.00</b>

EXPENSES				
Date	Check #	To	Description	Amount
8/2/2016	1377	Michael Knight	Visitors Welcome Banner	\$ (76.74)
8/2/2016	1378	Linda Laseter	Postage and stamps	\$ (6.06)
8/3/2016	1379	Cline Tours	2016 Huntsville bus	\$ (1,750.00)
8/9/2016	1380	Linda Laseter	Tickets & gifts for drawing	\$ (44.28)
8/20/2016	1381	Huntsville Hamfest	Tickets Huntsville Fest	\$ (312.00)
8/9/2016	1382	Steve Frazier	Refreshments	\$ (51.82)
8/10/2016	1383	RSC Insurance	Equipment insurance	\$ (194.92)
8/10/2016	1384	RSC Insurance	Liability Insurance	\$ (200.00)
8/20/2016	1385	Joe Lowenthal	Huntsville bus driver tip	\$ (75.00)
8/22/2016	1386	Joe Lowenthal	Refreshments Huntsville	\$ (177.89)
<b>TOTAL EXPENSES</b>				<b>\$ (2,888.71)</b>

ENDING BALANCE	as of August 31, 2016	<u>\$ 8,711.92</u>
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CERTIFICATES OF DEPOSIT			
	Maturity Date	Balance as of	
Certificate of Deposit #1	10/10/2018	7/13/2016	\$ 10,372.85
Certificate of Deposit #2	10/11/2016	10/9/2015	\$ 5,050.12

TOTAL DARC CASH ASSETS		<u>\$ 24,134.89</u>
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## **This Month's Board Meeting Minutes**

September 6, 2016 -- Submitted by Barri Munday, WB4SWP

Attendees: Bill Stevens, WC9S, Michael Knight, KK4IOH, Steve Frazier, KK4VPT, Dan Lasley, NE7JN, Ken Laseter, KI4AOH, Linda Laseter, KJ4CTX, Len Grice, KM4MRY, Joe Lowenthal, WA4OVO, Jim Cissell, KI4I, and Barri Munday, WB4SWP.

Jim told us that Tina McElravey, KM4PMZ, will present this month's program, followed by James Butler, KB4LJV, in October, and Hugh Wardlaw, WB4SLI, in November.

Linda presented the Treasurer's report and began a discussion regarding prizes for the last meeting or two in 2016. We will have more to report later.

Joe reported that testing in his most recent class produced ten new Technicians and two new Generals. One student will test at the Nashoba club meeting. Joe is proposing a General class in November and he also told us a Radio Merit Badge for Scout Troop 64 will be held on November 12th from 9am-2pm at the Germantown Methodist Church Scout Meeting House on Germantown Road across from the church.

Bill says a swap meet will be held on Saturday, October 8th from 9am-1pm at Delta's meeting site, Ellendale Church of Christ, 7365 Highway 70 Memphis, TN.

## Minutes of Last Month's Club Meeting

August 9, 2016 – Submitted by Barri Munday, WB4SWP

Ken Laseter, KI4AOH, welcomed everyone and reminded people to sign in. Everyone introduced themselves by name and call sign.

Rosalinda Melena, WN2V, moved to accept the previous meeting minutes as noted in Sparks; seconded by Ned Savage, KA4BLL. The motion was accepted by acclamation.

Len Grice, W4MKS, moved to accept the Treasurer's report as noted in Sparks; seconded by Bill Covington, KC4SXT. The motion was accepted by acclamation.

Jeff Krause, AJ4GY, announced that as a result of tonight's exams, we have three new Technicians and two new Generals. Congratulations to all five.

Joe Lowenthal, WA4OVO, announced he will be testing 15 people in his Technician class and also discussed the bus trip to Huntsville on August 20th.

Steve Smith, W5VAA, reminded everyone the Shelby County Office of Emergency Preparedness will be holding an AuxComm exercise this weekend, August 16th.

Darryl Sheffield, KK4D, called for volunteers for the MS 150 Bike Ride on September 10th & 11th. Hams are to meet at Landers Center at 6:00am on the 10th.

Bill Stevens, WC9S, thanked everyone for their contribution to Field Day and said the Germantown aldermen and mayor were very impressed. Bill also said the Delta Club is planning to have a swap meet at the church soon.

Jim Cissell, KI4I, asked for volunteers for programs.

Len Grice recognized Delta Club members who had been ARRL members for 40 years or more.

Keith Barton, KT4EP, presented a very enjoyable program showing his ham shack.

Len Grice was tonight's prize winner.

Bill Covington moved to adjourn and Errol Hook, KK4PRV, seconded.



## Amateur Hardware Update

Article and image submitted by James Butler, KB4LJV

One nice option you can do in your shack is under-shelf lighting. Fixtures are made for this, but they can be expensive. Companies are now making LED strips to provide lighting. You can buy these in different lengths. You can also get ones that run on different voltages. The color of the LEDs can also be selected. I picked several strings of blue LEDs about a foot long. They run on 12 VDC to run on one of my 12 volt power supplies. The LEDs are easy to install with the included double sided tape on them. They also have the advantage of being easily powered by a battery for emergency light. I have seen these for under \$1.00 with free shipping. Do an EBay search for "LED strip" to look at what EBay has.



## **Amateur Packet Update**

Submitted by James Butler, KB4LJV

Many times we use Ferrite cores for ham radio. We use ferrites for impedance transforming for antennas. We use iron powder toroid cores in our circuits. We even use them for designing radio frequency interference hardware to solve interference problems. Palomar sells toroids and complete kits for noise elimination and antenna matching. Their website also has a wealth of information on using toroids. If you are looking for toroid products check out Palomar Engineers. The web address is <http://palomar-engineers.com/>.

## **Field Day 2016, Part Four**

Submitted by Dan Lasley, NE7JN

In the "Field Day 2016, Part Two" article on page 16 of last month's [Sparks](#), I mentioned that Jim Thannum, KK4CSX, lost a pair of sunglasses on Field Day. I'm happy to report that David Jackson, KM4SEC, found Jim's sunglasses and went out of his way to return them to Jim. Thank you, David, for your consideration!

## **Jamboree On The Air, October 14 and 15**

Submitted by Hugh Wardlaw, WB4SLI

The World Organization of Scouting sponsors this event annually in October. This is an event where the Scouts use amateur radio to communicate with Scouts all over the world. I am saying Scouts meaning both Boy Scouts and Girl Scouts.

This is not a contest. The whole focus is to have Scouts talking with Scouts. There are no points or any type of scoring.

When considering doing this I would remind everyone that today's youth are the future of the hobby. I have had the most success setting up at a park or church grounds and operating outside.

Please seriously consider connecting with a Scout organization and offering your service.



## Ham Questions 101

Submitted by Linda Laseter, KJ4CTX

Ham Questions 101 continues to grow. Several hams dropped by for our August session, some to ask questions and some just to visit. Everyone seems to be enjoying the sessions, especially the Elmers, as they have an opportunity to share their knowledge. Four very knowledgeable Elmers regularly attend HQ 101 and answer questions. So bring your questions and see if you can stump our Elmers or maybe you are just curious and want to listen in. No problem, you are welcome to join us.

URLs were the topic of discussion for August and Dan, NE7JN, provided a list of very informative sites for us to check out.

Several questions were put forth and discussed, such as HF and getting on the air, sites to learn CW, can a J Pole antenna be tuned, sound card interface, and a brief discussion about Linux.

There is still space available in our J Pole transmission line antenna class that is planned for Saturday, September 24, 2016, 9:00 a.m. to 1:00 p.m. Hopefully the weather will cooperate and it will be cooler. Ham, W4GMM, will be teaching the class. If you would be interested in making a J pole transmission line antenna and joining the class, please send an email to [Linda Laseter](mailto:Linda.Laseter@deltaclub.org) or you may sign up at the September Delta Club meeting. The cost of the class is \$30.00.

This month our topic for discussion will be **“What is a Repeater and Repeater Operating Practices”**.

We hope you will join us. This is a small informal group setting. We are here to help you, so bring those questions and join in.

We meet upstairs in the Ellendale Church at 6:00 p.m. just prior to the regularly scheduled monthly Delta Club meeting. If you are not able to attend the forum, then please send us your questions via email.

For information, contact [Linda Laseter](mailto:Linda.Laseter@deltaclub.org), KJ4CTX, or [Dan Lasley](mailto:Dan.Lasley@deltaclub.org), NE7JN.

**Delta Ham License Training 2016**  
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 2016 from Delta Classes

17 Technician  
7 General  
5 Extra

If you are interested in attending a training class, send an email to [Joe Lowenthal](mailto:Joe.Lowenthal@deltaamateurradio.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

#### Technician Class 4-16: July 7 -- August 18, 2016.

Tech Class 4-16 was held on six Thursday nights from July 7th until August 18th from 6:15pm to 9:30pm at the Germantown Police training room. Thirteen students completed the class; ten students received their licenses. Congratulations to Eric Johnsen, KM4VXV, Bill Johnsen, KM4VXW, Edward Macdonald, KM4VXX, Mike Lumpkin, KM4VXY, Mike McGee, KM4VXZ, Steve Evans, KM4VYA, Daniel Allen, KM4VYC, and Amanda Barnett, KG5OVB, for Technician licenses. Double congratulations for Rob Cosgrove, KM4VXU, and Rob Jones, KM4VYG, for earning both Technician and General licenses.



Photo by Len Grice W4MKS

The smiling faces of Bill, KM4VXW, (left) and Eric, KM4VXV, (right) Johnsen with instructor Joe, WA4OVO, (center) after they passed their Technician exam. Eric missed fewer questions than his father did.



Photo by Len Grice, W4MKS

Rick Tillman, WA4NVM, is setting up for the XW2-F SSB bird.





Pat Lane, W4OQG, demonstrating HF Winlink. Photo by Joe, WA4OVO.

The instructors were Bob Vawter, KW4RJ, Pat Lane, W4OQG, and Joe Lowenthal, WA4OVO. Class Elmers were Adrian Moseley, N4EMO, Henry Leggett, WD4Q, and Len Grice, W4MKS (formerly KM4MRY). The equipment demonstrators on the last night of classes were Rick Tillman, WA4NVM, on satellite, Joe, WA4OVO, on FM repeaters and on digital for Echolink, D-STAR, Fusion and Allstar, Pat Lane, W4OQG, on HF, Winlink and MARS, and Rick Pellicciotti, KJ4NWQ, on APRS.

Thanks to the Germantown Police Department for the use of their training room.

### Planned Classes

The next Technician license class will not start until probably November.

## Last Month's Program

Submitted by Dan Lasley, NE7JN, with text and  
photos by Keith Barton, KT4EP

Keith Barton, KT4EP, presented the August program on his operating environment. My Android phone's camera did a less than spectacular job of capturing Keith's presentation, so he forwarded some of his slides for your enlightenment and edification.



Keith is pictured mixing concrete for his tower. Note the date!





Keith says, "During the presentation, I forgot to mention the Yaesu MD-100 desk microphone works with several radios including the new FT-991, my old FT-840, and the 817. An added bonus for me is that the cable from the microphone to the radio is reversible with an 8 pin connector on one side and the modular connector on the other. So I can use it with my 840 and 817 - just swap the cable around."



Keith says, "I use a section of PVC pipe to hold my HT by the clip. This way I can connect a hand microphone to the radio and not drag it all over the desk when trying to use the radio. Also, it holds the radio securely if I want to connect an external antenna via coax to the radio." Cool invention, Keith, can you patent that idea?





Some of Keith's log books; he has pictured nine here. Although all my logging is on paper, my one log is only 80% filled! You're making me feel like a slacker, Keith.

Thanks to Keith for a very interesting presentation, which covers much more than I can show here, including some very cool "stealth" antenna work he has done.

## 2016 Route 66 On The Air

Submitted by Dan Lasley, NE7JN

For those of you who like to make HF contacts, the 2016 [Route 66 On The Air](#) event will be held Saturday, September 10th, through Sunday, September 18th, and will be operating on 80, 40, 30, 20, 17, 15, 12, 10, and 6 meters. Note that not all stations, especially the two rovers, will be operating on all bands.

U.S. Highway 66 was established in 1926 as one of the first highways in the U.S. Highway System. Route 66, as it became known, was removed from the highway system in 1986 after being replaced by the Interstate Highway System. Parts of Route 66 are still in use in several states. For example, Route 66 goes through Flagstaff, AZ, and runs eastward for more than 20 miles. If you've lived in or spent much time in the West, you'll probably know Route 66 by the term the "Mother Road."



Public domain Wikipedia.org image

Route 66 traversed California (5), Arizona (4), New Mexico (1), Texas (1), Oklahoma (3), Kansas (1), Missouri (4), and Illinois (2). The numbers in parentheses indicate how many ham clubs in each state participate in the Route 66 On The Air event. See the list of participating clubs at [http://w6jbt.org/?page\\_id=117](http://w6jbt.org/?page_id=117). I've never made a "Clean Sweep" of all 21 stations, but it isn't from lack of trying!

If you are interested in obtaining QSL cards, see special event stations W6A through W6U (there are several exceptions) at [qrz.com](http://qrz.com). [Certificates](#) and [decals](#) are also available; see [http://w6jbt.org/?page\\_id=23](http://w6jbt.org/?page_id=23). Note that the sample certificate and decal are from the 2015 event.

Three of the Arizona stations in and near Flagstaff, W6T, W6G, and W6S, offer individual [QSL cards](#) that, when placed side-by-side, show panoramic views of Arizona. The 2015 QSL cards (shown below) portray the location of Route 66 through northern Arizona. In this image, immediately below the "ns" of "Two Guns" is a small, light-colored circle with a dark center. This is [Meteor Crater](#), a huge hole in the ground about 3/4 mile across and more than 600 feet deep, a **very impressive sight** from the rim of the crater! Click on the link below for a higher resolution image.



[https://s3.amazonaws.com/files.qrz.com/t/w6t/Rt\\_66\\_OTA\\_2015\\_3\\_Card\\_png.jpg](https://s3.amazonaws.com/files.qrz.com/t/w6t/Rt_66_OTA_2015_3_Card_png.jpg)

I first participated in Route 66 On The Air in 2014, which was also the 100 year celebration of the ARRL. If you were on HF in 2014, you no doubt heard W1AW/portable stations which were operating from all 50 states and several U.S. dependencies. Many, many hams were active on the last day of 2014 to accumulate as many points as possible for the year. One of the 48 contacts I made that day was Bob Wertz, NF7E; he mentioned that he participates in one of the Route 66 On The Air special event stations. Later I discovered that the Northern Arizona DX Association (NADXA) in Flagstaff originated the Route 66 On The Air event in the year 2000.

Nicholas Elias, N3AIU, described the very interesting early history of Route 66 On The Air in "Get Your QSOs on Route 66!" in the May, 2001, issue of QST. Nicholas writes "Route 66 is a big road and an even bigger concept, so Bob Wertz, NF7E, proposed that we enlist the help of other Amateur Radio clubs in cities along the highway." Starting with twelve clubs and about 14,000 QSOs in the first year, Route 66 has grown to 21 clubs and about 44,000 QSOs per year.

Bob, NF7E (now President of NADXA), met with my XYL and me when we were in Flagstaff last year and we had a great eyeball QSO. Bob is the only ham I know to have graced the cover of a ham magazine! He was on the front cover of the March, 2004, issue of CQ magazine and also was on the November page of the 2004 CQ calendar.

If you are working on a WAS award, Route 66 On The Air is an excellent path to multiple bands for eight states!



## Huntsville Hamfest

Submitted by Dan Lasley, NE7JN, contributions by Joe Lowenthal, WA4OVO

In early August Ron Kritzman, K9ID, dropped into the 40M group I'm in every morning. Ron told us he had been in a restaurant bathroom and reached into his coat pocket to retrieve an item. When he did, he accidentally triggered the transmit button on his HT and was surprised to see both paper towel dispensers kick out more paper towels! Being the inquisitive ham as most of us are, he hit the transmit button again to determine whether his HT really did cause the dispensers to operate. They did! When Ron said he would be at one of the vendor

booths at the Huntsville hamfest, my devious mind immediately hatched a plot.

At the hamfest I pulled out about three feet of paper towel from a dispenser, wrote Ron a note, and found his booth. I plopped the paper towel down in front of Ron and asked if he would read it. Ron started reading the note and busted out laughing!

Here's the note: "Ron, I was in the bathroom and the paper dispenser goes off by itself. Have you been playing with your HT again?"

Not only is Ron a good sport, he also does excellent work with his personalized caps, shirts, jackets, and name badges. If you are in the market for any of these items, visit his [website](#).

Don't miss the video of the paper towel incident at his [qrz.com](#) page!



Photo by Dan Lasley, NE7JN



Once again, Delta rented a bus for the trip to Huntsville. Notice all the red t-shirts in the image below? Icom graciously furnished the t-shirts, as well as ball caps, pens, and notepads. Thank you, [icom](http://icom.com)!



Photo by Joe Lowenthal, WA4OVO

Delta brought 38 troops ready to storm the doors! (L-R) Left to right-Steve Evans KM4VYA, Joe Lowenthal WA4OVO, Jim Barnes N4YOK, Richard Smith KJ4UZK, Jim Walton K4ZFQ, Marlin Mogy KM4DPP, Joe Clark W5SQ, Tom Butas KM4AEM, Danny Malone AA4DM, Del Earnheart AJ4EM, Hal Kravig W4OZL (hidden), Dwayne Love N5XUL, Wade Wingfield KB5SSG, Tom Ernst N4LIA, Paul Rosenblatt KK4DMD, Steve Frazier KK4VPT, Betsy Freeman KD4KOM, Dave Church AD4Q, Ned Savage KA4BLL, Pat Lane W4OQG, Bennie Holland KM4FIC, Henry Leggett WD4Q, Barri Munday WB4SWP, Tom Dichiara AC5MR, Tim Green W4TKG, Dan Lasley NE7JN, Curt Warhurst KM4MRT, John Cummings N4BKN, Ken Laseter KI4AOH, Bill Johnsen KM4VXW (hidden), Ray Cole N5RLC, Scott Adams KM4PMU, Eric Johnsen KM4VXV, Russell Chatham AD4TN, Lisa Alex NOAMO (hidden), David Campbell KD4NOQ. Not shown: Kat Smith KJ4UZL and Ray Turner AE0AE.

Vendors at Huntsville are always happy to see me; they know I'm going to swap hard-earned cash for some of their whatnots. If you like to experiment with electronic circuits, I can recommend NightFire Electronics. They had rack after rack after rack of simple yet interesting kits. When I bought some components, the lady behind the counter told me this is a family owned and operated business. Their business card lists Agustin Acosta, KM4OFE, as the owner. I can't speak for you, but I really like dealing with hamfest businesses owned by hams.

As an example of NightFire wares, their [Linear IC Design Kit #1](#) provides 18 ICs (all through-hole, no surface mount), plus a battery clip, capacitors, a clock oscillator, crystals, diodes (zener, power, and switching), headers and jumpers, inductors, LEDs, a microphone, a 162-hole PCB prototype board, potentiometers, resistors, a speaker, switches, and bipolar and FET transistors, a total of 289 parts for \$19!

If that's not good enough, the link also points to specifications for five of the eight ICs (the remaining three, which are voltage regulator ICs, are easy to find on the web) and you can choose to add one or two Arduinos and two Arduino add-on modules as well!

Another vendor with lots of interesting goodies is [Wired Communications](#). They had great prices on coax and coax jumpers, lithium batteries, a **huge** variety of LED lighting, and too many other items to mention here. If I hadn't been running short on time (the bus was scheduled to leave at 4pm), I would have investigated their [USB to Bluetooth Adapter](#) and their [150Mbps Mini USB WiFi Wireless Adapter](#).

I want Bluetooth for my main Linux machine and I also want to connect that machine to the QTH network wirelessly. Is it too early to start thinking about the 2017 Huntsville hamfest? Of course not!

## Swap Meet

Submitted by Dan Lasley, NE7JN

The Delta Amateur Radio Club will host a swap meet on Saturday, October 8, from 9am to 1pm at the club's meeting place, Ellendale Church of Christ, 7365 Highway 70 Memphis, TN. The swap meet is open to all hams and to anyone with an interest in amateur radio. We will have tables available if you wish to bring items for sale or trade. Turnout is always good, so the earlier you can join us, the better your chances of taking home something of value.

At my first swap meet, I bought two years of back issues of QST for the princely sum of one dollar per year (thank you, Dick, K3ORS). At another swap meet, I picked up an HF rig (thank you, Jim, KI4I) and at a third swap meet, I found a new-in-the-package spare microphone for the HF rig at a very good price (thank you, Bill, WC9S).

Delta Club members and friends Steve Smith, W5VAA, Rosalinda Melena, WN2V, and Ham Hilliard, W4GMM, from [Mid-South Amateur Radio Supply](#) are planning to attend. They will help you with antennas and mounts, coax, connectors, LDG antenna tuners, accessories and more.

Admission is free, the tables are free, the camaraderie is priceless!

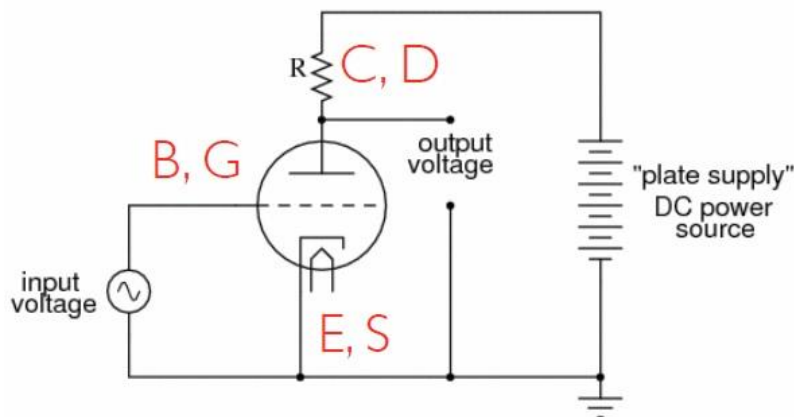
# The Mighty Transistor

Submitted by Dan Lasley, NE7JN, from material provided by Kristen McIntyre, K6WX

I was looking at the hamfest schedule for [Wired Communications](#) and happened to see Duke City Hamfest. I didn't have a clue where that hamfest was, so a bit of googling not only turned up Albuquerque, but it also turned up a link to the hamfest forum files and then to "[The Mighty Transistor](#)," a presentation by Kristen A. McIntyre, K6WX.

She begins with the device physics of diodes, bipolar junction transistors, and multiple types of field effect transistors, then shows DC and AC circuit models. After discussing common emitter, common base, and common collector (i.e., emitter follower) circuits and describing

*Triode amplifier circuit*

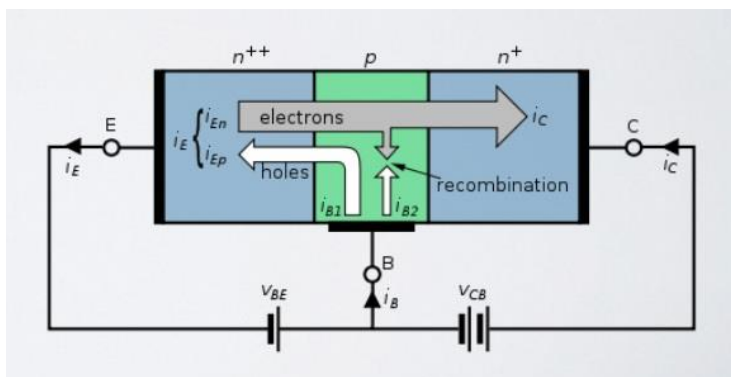


the plusses and minuses of each, she tells us that bipolar junction transistors, field effect transistors, and vacuum tubes can be the active device in each of the three types of "common" circuits. In this circuit, from top to bottom, C and D represent the collector or drain of transistor circuits and occupy an analogous position of the vacuum tube's plate connection. B and G represent the base or gate of transistor circuits; the vacuum tube analog is the grid. At

the bottom of the diagram, E and S represent the emitter or source of transistor circuits and the vacuum tube analog is the cathode.

This is a very interesting diagram! I'm not sure if I've ever seen anyone portray the similarities of bipolar junction transistors, field effect transistors, and vacuum tubes in this way before.

Kristen continues with a bit about key transistor specifications, then jumps into my favorite part, circuits! She begins with a constant current source, a differential pair, Darlingtons, a  $V_{be}$  multiplier, a complementary pair, a Class-A amplifier, a cascode circuit, oscillators, filters, high current amplifiers, switches, timers, gates, and R.F. circuits.



Is this an NPN or a PNP transistor? If you read Kristen's presentation, you'll know! (Hint: see page 8.)

Thanks to Kristen for a very nice presentation and for graciously allowing me to provide the URL and to adapt two of her images.

## A Call for Women Writers!

Submitted by Dan Lasley, NE7JN

In 2017 I want to publish an article on women and radio in each month's issue of the Delta Amateur Radio Club's Sparks newsletter. I would prefer that the author of each article be a YL, but I'm willing to publish articles written by women who are not hams. The women subjects don't have to be hams, but I want a tie-in between the women subjects and some aspect of the art and science of radio (but not necessarily ham radio).

I've received three completed articles and I have a commitment for a fourth article.

I'm looking for women who can write about some aspect of the following ideas:

- Women who participated in cryptographic activities in World War II, including code breakers and translators who worked at Bletchley Park, Arlington Hall, and other crypto locations and women who copied and transcribed the encrypted CW traffic of enemy nations.
- A "Rosie the Riveter" who built radio, radar, etc., equipment during World War II.
- The first female ham. See [http://p1k.arrl.org/pubs\\_archive/65042](http://p1k.arrl.org/pubs_archive/65042).
- The first female DXCC recipient.
- Lee Fish, K5FF, wife of Fred Fish, W5FF (first holder of the FFMA); she "was the first YL to work WAS on 2 meters - also has WAS on 220." See [w9fz.com/csvhfs/FFFJ.doc](http://w9fz.com/csvhfs/FFFJ.doc).
- Women's contributions to the Delta Amateur Radio Club.
- YLs who have made significant contributions to ARES, RACES, the ARRL; women who work as net controllers, as Public Information Officers, in AuxComm positions, or in related fields.
- YLs as organizers.

- Women who made discoveries in radio or who worked in research and development (e.g., Bell Labs, MIT's Radiation Laboratory, etc.).
- YL contesters.
- Women's ham organizations: [ylrl.org](http://ylrl.org), [ylsystem.org](http://ylsystem.org) (on 14.332 MHz and other frequencies); women podcasters, etc.
- Women who are both astronauts and hams. [Three Radio Amateurs on the ISS Head Home on June 18](#) says, "NASA astronaut Kate Rubins, KG5FYJ ... scheduled to launch on July 6 from Baikonur, Kazakhstan." Who will interview Kate and write about her? See also <http://www.nasa.gov/feature/five-things-to-know-about-nasa-astronaut-kate-rubins>.
- Women CW operators. See [http://p1k.arrl.org/pubs\\_archive/58551](http://p1k.arrl.org/pubs_archive/58551).
- Women involved with the mysterious [numbers stations](#).
- Marie de Forest, widow of Dr. Lee de Forest (father of the vacuum tube), held the call WB6ZJR. See [http://p1k.arrl.org/pubs\\_archive/65042](http://p1k.arrl.org/pubs_archive/65042).
- Limor "Ladyada" Fried, AC2SN, honored as one of 10 "Champions of Change for Making." See <http://www.arrl.org/news/white-house-honors-limor-fried-ac2sn-among-champions-of-change-for-making> and <https://www.adafruit.com/about>.
- Kay Craigie, N3KN. Kay recently retired from the position of ARRL President.

If you have an idea for an article, [contact me](#). I'm open to suggestions, but keep in mind that I need a tie-in between the women subjects and some aspect of the art and science of radio.

If you need resources for an article, consider the Internet, the ARRL archive, a list of women DARC officers, etc.

Come on, YLs, step up to the plate and hit one out of the park!



**ARRL Appoints Memphis Area Public Information Officer**  
Submitted by Dan Lasley, NE7JN, contributions by Len Grice, W4MKS



Photo by Michael Knight, KK4IOH

Quoting from the news release:

"Keith Miller, N9DGK, Section Manager for the Tennessee Section of the American Radio Relay League (ARRL), has appointed Len Grice, W4MKS, of Germantown and a Delta Amateur Radio Club member, Public Information Officer for the Memphis Area ARRL.

In announcing his appointment, Miller stated Grice would work closely with the Public Information Coordinator of the Tennessee Section of the ARRL, Cathy Goodrich, KK4IWN, of Nashville.

"Grice, who is a retired healthcare executive with more than 40 years in the marketing, public relations and public information world, brings a wealth of experience with him for his new role," said Goodrich. "He also currently serves as the Delta Amateur Radio Club's PIO."

Responsibilities as PIO for the Memphis Area include:

- Contact for the local media.
- Keeps informed of activities by local hams and identifies and publicizes those that are newsworthy.
- Assists the section PIC in recruiting hams for the section's Speakers Bureau; promotes interest among community and service organizations in finding out more about Amateur Radio through the bureau and relays requests to the PIC.
- Helps individual hams and radio clubs to develop and promote good ideas for community projects and special events."

Congratulations, Len!



## The Lancaster/Marston Corner

Submitted by Dan Lasley, NE7JN

Those of you who are long-time readers of Nuts & Volts magazine will recognize the author T.J. Byers. While perhaps not as wildly prolific as Don Lancaster, T.J. (who, sadly, is no longer with us) wrote the Q&A column for a number of years and provided very interesting answers to readers' questions. One metric of a good designer is someone who can provide solutions which are not only reliable and economical but are also not intuitive. T.J. certainly fit that metric! Here are a few columns from T.J.; I think you will find them interesting.

- [Capacitor Primer](#) -- how to select from among ceramic, polyester, silver mica, polypropylene, and tantalum capacitors.
- [Relay Contact Life](#) -- this is an excellent discussion which also mentions arcing across relay contacts and how to suppress it.
- [EMF Suppression](#) -- everybody knows you should place a diode across the coil of a relay to protect the device (typically a transistor) supplying current to the coil. Did you also know the diode "causes current to flow longer and lengthens the hold-in time of the relay?" Read the article for a work-around.
- [All About LEDs](#) -- T.J. says we have ultraviolet, violet, blue, blue-green, green, green-yellow, yellow-green, amber-yellow, yellow, orange, red-orange, red, and infrared LEDs. Wait a minute, isn't green-yellow the same as yellow-green? Wait another minute, don't all LEDs have about a two-volt drop across them? The answers are no and no; read the article to find out why. And while you're reading, see T.J.'s link to [The LED Light website](#) for more LED information and technical data.
- [I'll Just Follow The Sun](#) -- T.J. shows how to build a simple sun tracker. This thing would be perfect for a sun-tracking solar array for Field Day or to prevent the local utility company from draining your bank account.
- [555 Shows Its Ugly Side](#) -- the 555 has an ugly side? Say it ain't so, T.J.! He also provides a link to a [555 Timer/Oscillator Tutorial](#) by Tony van Roon, VA3AVR. Figure 9 of Tony's tutorial shows a Schmitt trigger that could be useful for digitizing CW and perhaps RTTY signals for the experimenters in the audience.
- [Permeability Defined](#) and [Permeability Measured](#) -- good stuff for all you coil winders. The second article provides a simple circuit to determine the value of an unknown inductor. The range is given as 100  $\mu$ H to 5  $\mu$ H but the upper limit is probably a typo that should be 5 mH.

## YL News

Submitted by Linda Laseter, KJ4CTX

**YL LUNCHEON** – The O’Charley’s luncheon was a success! We had a good turnout and I believe everyone enjoyed the food and the company and hopefully received some useful information. I know I enjoyed meeting and talking to everyone. Ann Cissell, WB4FAA, won the door prize which was a nice fall door or wall hanging.



(L-R) Janice Shaner, KM4HZY, Betsy Freeman, KD4KOM, Gale Tisdale, KI4VDI, Kandy Bernskoetter, KK4IUX, Ann Cissell, WB4FAA, Linda Laseter, KJ4CTX, Jan Sporre, KK4VQA, Barri Munday, WB4SWP, Lee Race, W8ZQX, and Janet Kelly, KK4PRT. Not shown: Jackie Butler, KG5DMW.

Next month we will meet on **Saturday, September 17, 2016, 11:30 a.m. at the Wolfchase Bahama Breeze Island Grille, 2040 N. Germantown Parkway, Memphis, TN 38133.** This is on the corner of Highway 64 and Germantown Parkway.

It would be nice if we could find a restaurant with a private area for us to meet. Fox Ridge Pizza and Panera Bread have been suggested. If anyone has a favorite restaurant that has a meeting room that would accommodate 15 – 20 persons, please [email me](#) and we can discuss it at the next meeting.

Thank you so much and I look forward to seeing everyone at the upcoming luncheon.

**YL NET** – The Delta Club YL Net is on the air! We officially began the net on September 3. Even though it was a holiday weekend several YLs checked in and a number of OMs checked in as well.

Our discussion segment was brief but informative. The question of the evening was “What does it mean to use a double break in an emergency situation?” Answer: Should you have an emergency and need to use the radio when the frequency is in use you would say “Break, Break” followed by your call sign and then of course state your emergency and what you need help with.

And since we are on the subject of emergencies, Memphis has been very fortunate unlike Louisiana, California, Florida, and the eastern coast recently. What would you do if Memphis had an emergency situation like one of these states and you were home alone with no power or phone service? Do you know how to use your radio or your OM’s radio to call for help? Now is a good time to learn to use the equipment available to you and the YL Net is a great opportunity to fine-tune your radio skills. So why not join us and get accustomed to using your radio, ask questions, and visit with other YLs. It is a learning experience for us all and what better time or place to practice talking on the radio! We hope you will join us on the 146.820 repeater at 8:45 p.m. on Saturday nights to visit, to learn, or just to listen to what everyone has to say. We will be listening for you.

Thank you to everyone who checked in, making our first 2016 YL Net a success.

33,  
[Linda Laseter](#), KJ4CTX

## DX News

Submitted by Dan Lasley, NE7JN

This information is courtesy of the ARRL's DX news emails and the ARRL Letter email for September 8, 2016.

2016 TN QSO Party 18:00 UTC Sunday 4 September until 03:00 UTC Monday 5 September (from the ARRL TN Section Public Information Newsletter). Yes, I know the TN QSO party event notification was too late for this month's newsletter, but you could add it to next year's calendar. I have!

EUROPEAN RUSSIA, UA. Special event station R870T will be QRV from August 15 to September 20 to celebrate the 870th anniversary of the city of Tula. QSL via R2PT.

VANUATU, YJ. Tom, KC0W will be QRV as YJ0COW from August 21 to September 21. Activity will be on the HF bands using only CW. QSL direct to home call.

ST. LUCIA, J6. William, K9HZ is QRV as J68HZ from Labrelotte Bay, Castries, IOTA NA-108, until September 11. Activity is on 160 to 6 meters using CW, SSB and RTTY. QSL to home call.

MONGOLIA, JT. David, OK1DBS and Josef, OK1XC will be QRV as JT1DBS and JT1XC, respectively, from August 30 to September 24. The first week they will be active from Ulaanbaatar, and for the remainder of the time they will be QRV as JT1DBS/3 and JT1XC/3, respectively, from Batshireet. QSL all calls to home calls.

BULGARIA, LZ. Special event station LZ18ARDF is QRV until September 30 during the context of the 18th World ARDF Championships in Albena, being held September 3 to 9. Activity is on the HF bands using CW, SSB and various digital modes. QSL via bureau.

AUSTRALIA, VK. A group of operators are QRV using special event call sign VI6BLT50 to commemorate the 50th anniversary of the Battle of Long Tan. Other BLT50 stations may be active as well. QSL via operators' instructions. (Note: ending date not provided.)

Mark Bowers, VY1MAB, will activate the Klondike Gold Rush National Historical Park (HP21), for the National Parks on the Air (NPOTA) program on Saturday and Sunday, September 17 and 18. VY1MAB/KL7 will begin operation at 1700 UTC on both days, continuing for as long as he can on Saturday and wrapping up at 2100 UTC on Sunday. He will run 100 W into a Buddipole and dipole antennas. Plans call for operating SSB, PSK31, and WSJT modes.

## Odds-n-Ends

Submitted by Dan Lasley, NE7JN

From Larry May, K4QZF: [Foundations of Amateur Radio podcasts](#), by Onno Benschop, VK6FLAB. He has a considerable number of subjects available. At a recent ham breakfast, I mentioned that I had never heard of a VK with a 2x4 call sign and asked whether anyone had heard of a 2x4 before. Tony Brignole, WA4KHN, said that a 2x4 is a piece of wood commonly used in building construction. Thanks, Tony, for that useful tidbit! Those of you who know Tony also know I can't (and don't need to) make up stuff like this!

The ARRL Contest Update email provided a link to [50 Million Tinnitus Sufferers Just Got Some Bad News and Some Good News](#). If you are afflicted, you may find this interesting.

Ken Faria, NTOY, reports good luck with [Metal & Plastic Materials](#), an on-line vendor for small quantities of aluminum, brass, bronze, copper, nickel, titanium, stainless, tool steel, beryllium copper, zinc, wrought iron, and various types of plastics. The vendor requires no minimum order and offers pieces cut to size.

The [Homebrewer's Hobby Page](#) by Paul Harden, NA5N, offers tutorials, articles, and construction projects. Paul's day job is at the National Radio Astronomy Observatory's Very Large Array radio telescope 50 miles west of Socorro, New Mexico. If you watched [Contact](#), you've seen this array.

The August 24, 2016, ARRL Contest Update email points directly (or indirectly) to several useful links:

- [the free online book "Signal Processing For Communications"](#)
- ["Facts about SWR and Loss"](#)
- Edmund A. Laport's textbook [Radio Antenna Engineering](#) is now available in electronic form
- [Electromagnetic Waves and Antennas](#) by Sophocles J. Orfanidis. From the web site: "This book provides a broad and applications-oriented introduction to electromagnetic waves and antennas, with MATLAB examples."

The Foothills Amateur Radio Society's web site offers [Articles on Amateur Radio](#) and [Amateur Radio Resources](#).

From the web site: "[ManualMan](#) specializes in amateur radio, audio, and radio-related manuals primarily from manufacturers who no longer support certain older equipment models or from manufacturers who no longer exist." The site promises "reasonable pricing."



## 40 years (or more) of ARRL membership

Submitted by Dan Lasley, NE7JN

At last month's meeting, Delta's Public Information Officer, Len Grice, W4MKS, recognized six club members who are life members of the ARRL or have been members of the ARRL for 40 years or more.



Photo by Dan Lasley, NE7JN

Congratulations to these members: (L-R) Rick Tillman, WA4NVM, Bill Hall, N4GCF, Ned Savage, KA4BLL, Jim Cissell, KI4I, Joe Lowenthal, WA4OVO, and Pat Lane, W4OQG.



## 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](mailto: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>.

### **2016 BOARD OF DIRECTORS**

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Board members beginning their positions in 2016 are listed in *italics*.

## Upcoming Public Service Events

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

<b><u>2016 Event Date</u></b>	<b><u>Event</u></b>	<b><u>Contact Information</u></b>
Sept. 10-11	<a href="#">Bike MS: Rock-N-Roll 2016</a> Landers Center in Southaven to Gold Strike Casino in Tunica and back on 2 <sup>nd</sup> day; Multiple Sclerosis fundraising event	<a href="#">Darrell Sheffield, KK4D</a> (901) 277-8122
October 1	<a href="#">Bluff City Blues 100 Ride</a> Start from downtown Memphis	<a href="#">Danny Banks, KJ4FXZ</a> 901-517-7661
Dec. 3	<b>St. Jude Marathon</b> 26.2 mile fund raiser in downtown Memphis	<a href="#">Roger Schlichter, WR4R</a>
<b><u>2017 Event Date</u></b>	<b><u>Event</u></b>	<b><u>Contact Information</u></b>
May 6	<a href="#">March of Dimes March for Babies</a>	<a href="#">Linda Laseter, KJ4CTX</a>

## 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 2016 Annual Memberships! Download the latest Delta Club [Membership Application Form](#). Thanks for Your Active Support of Delta Amateur Radio Club!

## Memphis Area VHF/UHF Nets

Updated Sep, 2016

Name of Net	Freq. MHz	Tone	Local Time	Day of Week
<b>Delta Club Information Net</b>	<b>146.820</b>	<b>- (107.2)</b>	<b>8:00p</b>	<b>Daily</b>
<b>YL Net</b>	<b>146.820</b>	<b>- (107.2)</b>	<b>8:45p</b>	<b>Sat</b>
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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See Advertisement Order Form for Instructions.



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**DARC** Meeting: Second  
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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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