

SPARKS

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



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}

This month's meeting begins at 7pm on May 10, 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 Michael Knight, KK4IOH, Delta Club Vice President. Michael will discuss June's Field Day preparations.

Delta Club FCC testing sessions are held every month except December. Registration begins at 5:30 PM and testing begins by 6:00 PM. Please remember to bring two forms of identification, one of which is a photo ID, and copies of any existing licenses or CSCEs. You need to know your FCC Registration Number (FRN) if one has been issued. Please be on time for registration to allow our Volunteer Examiner (VE) team to finish in time to attend the club meeting. The 2016 test fee is \$15 (cash or check). Individuals who successfully test for 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 contact our VE Liaison, Jeff Krause, AJ4GY, 901-301-6776 or AJ4GY@comcast.net.

Congratulations to those who passed exams during Delta's April, 2016, test session: new Extra Louis Rhinehardt, KM4RCX, and new Technician Zachary Spears, KM4THS.

President's Corner

Submitted by Ken Laseter, KI4AOH

Again, I don't have much for this month's article so I'll mention a couple of things below and simply say that I look forward to seeing everyone at the Delta Club meeting this coming Tuesday evening at 7:00 pm.

Don't forget that Field Day is the 25th & 26th of next month. Now is the time to purchase your Field Day T-shirts and hats from ARRL for this year's event. We will soon have additional information for you on this year's setup and asking for volunteers. I'm so looking forward to this year's Field Day. It will be like no other you have ever seen. So mark the date and don't miss it!

I think FreeFest was a great success again this year. 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.

Again, 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, 2016

Submitted by: Linda Laseter, KJ4CTX Treasurer

CHECKING ACCOUNT

BEGINNING BALANCE

BEGINNING BALANCE as of April 1, 2016	\$ 7,401.80
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INCOME

Date	Description	Amount	
4/6/2016	Beebe equipment sales	\$ 1,175.00	
4/14/2016	Rye consignment sales	\$ 1,243.00	
4/14/2016	Patch and donation	\$ 10.00	
4/14/2016	Annual membership dues	\$ 135.00	
4/14/2016	Sparks advertisement	\$ 90.00	
4/14/2016	Huntsville bus trip	\$ 220.00	
4/14/2016	Rye consignment sale	\$ 2,030.00	
4/18/2016	Huntsville bus trip	\$ 55.00	
4/25/2016	Huntsville bus trip	\$ 55.00	
4/28/2016	Huntsville bus trip	\$ 110.00	
TOTAL INCOME		\$ 5,123.00	\$ 5,123.00

EXPENSES

Date	Check #	To	Description	Amount	
4/12/2016	1371	Linda Laseter	Donation Free Fest 4/\$50	\$ (200.00)	
4/18/2016	1372	Sandra Rye	Equip sold less 20%	\$ (2,618.40)	
4/29/2016			Regions deposit books	\$ (54.95)	
TOTAL EXPENSES				\$ (2,873.35)	\$ (2,873.35)

ENDING BALANCE as of April 30, 2016	\$ 9,651.45
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CERTIFICATES OF DEPOSIT

	Maturity Date	Balance as of	
Certificate of Deposit #1	7/10/2016	1/9/2015	\$ 10,280.23
Certificate of Deposit #2	10/11/2016	10/9/2015	\$ 5,050.12

TOTAL DARC CASH ASSETS	\$ 24,981.80
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This Month's Board Meeting Minutes

7:00pm, May 3, 2016 - Submitted by Dan Lasley, NE7JN

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

Ken called the meeting to order at 7:08pm.

Bill discussed a number planning topics for Field Day, including expecting lots of visitors, the number of radio stations needed, and how to mesh the ham community with the Emergency Management community. Bill also mentioned a ban on drones, since a horse show will be held nearby.

Michael made a motion to purchase a banner for the Delta Club table for Field Day, Joe seconded; the motion passed by acclamation.

Joe discussed planning for the bus trip to Huntsville, and noted that a Technician class is planned for July 7th through August 18th (skipping July 21st), location to be determined.

Michael is to present May's club program on Field Day planning. He also mentioned Amanda Nash, KM4MSC, can set up access to a private Facebook page for Delta Club members.

Jim has a commitment for a June club program, and mentioned ideas for several other programs, but no other commitments at this point.

Ken gave us the bad news that Barri has resigned as secretary due to demands on her time. Ken will ask for a replacement for Barri at the May meeting. (Editor's note: Ken, good luck finding someone as good and as personable as Barri!) Ken will also ask Danny Banks, KJ4FXZ, to request the net controllers mention the need for a new secretary on the 146.82 repeater during the nightly Delta Club Information Net.

Linda moved to adjourn at 8:45pm, seconded by Michael, and the group departed in high spirits and looking forward to the May club meeting.

Observing Memorial Day

Submitted with reverence by Dan Lasley, NE7JN

I had to refer to a Wikipedia article to refresh my memory on the many influences that created Memorial Day, a federal holiday to remember those ["who died while serving in the country's armed forces."](#) Another Wikipedia [article](#) told me that more than 1,354,664 men and women have died in the country's various wars and conflicts from 1775 to the present.



I didn't need Wikipedia, the Internet, or any other source to remind me of the brave men and women who have given their lives so that we may continue to enjoy the freedoms shared by no other country on this planet.

As we choose "leaders" (I use that phrase with no small measure of caution) in this election year, please keep in mind that some of these alleged leaders will gladly chip away at our many freedoms in order to further their acquisition of wealth and power. We do an injustice to those who have fallen by accepting some of these alleged leaders rather than tarring and feathering them and running them out of town on a rail.

public domain image from Wikipedia

Freedom is not free and, once given away, will never return. If you enjoy the freedoms defined by the 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.

Last Month's General Club Meeting Minutes
April 12, 2016 - Submitted by Barri Munday, WB4SWP

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 made by name and call sign.

Ham Hilliard, W4GMM, moved to approve the meeting minutes, seconded by Steve Smith, W5VAA; the minutes were approved by acclamation.

Ham Hilliard moved to approve the Treasurer's report, seconded by Rosalinda Melina, WN2V; the report was approved by acclamation.

Linda Laseter, KJ4CTX, asked for 3 or 4 additional volunteers for the March for Babies event on April 30th. Linda also announced that on the Delta Club meeting night we will have Elmers upstairs in one of the classrooms at 6pm to answer questions for new hams, for those returning to the ham community after an absence, or for anyone wanting to learn something new. If you would like to volunteer as an Elmer for this class, contact Linda.

Rosalinda Melina reminded everyone about the N2S *Sultana* Special Event in Marion, Arkansas, on April 30th from 9am-3pm, with setup on the preceding Friday afternoon.

Of Joe Lowenthal's seven students in his Technician class, three of those passing the Tech exam also passed the General exam. One of the new Generals also passed the Extra exam the same evening. Another of the new Generals passed the Extra exam at FreeFest. Tonight's testing produced one new Tech and one new Extra. Congratulations to all!

Bill Stevens, WC9S, spoke about equipment from two estates. The equipment not sold at FreeFest will be available for sale tonight.

Ham Hilliard is having a J-pole class on April 23rd at 1:00pm. The charge is \$30 for supplies. The location will be 6631 Vallendar Cove, Bartlett, TN.

Steve Smith announced the Shelby County Office of Preparedness exercise on April 2nd was a great success. There will be another on May 6-7.

Field Day is June 25th and 26th with all local clubs participating. There will be many people coming to check out what we do.

Joe Lowenthal talked about the upcoming bus trip to the Huntsville hamfest on August 20th. See his article elsewhere in this issue of Sparks.

Glen Popiel, KW5GP, presented tonight's program on Arduino topics related to ham radio.

Ham Hilliard moved to adjourn, seconded by Dean Plessala, KC5RDP.

Amateur Packet Update

Article Submitted by James Butler, KB4LJV

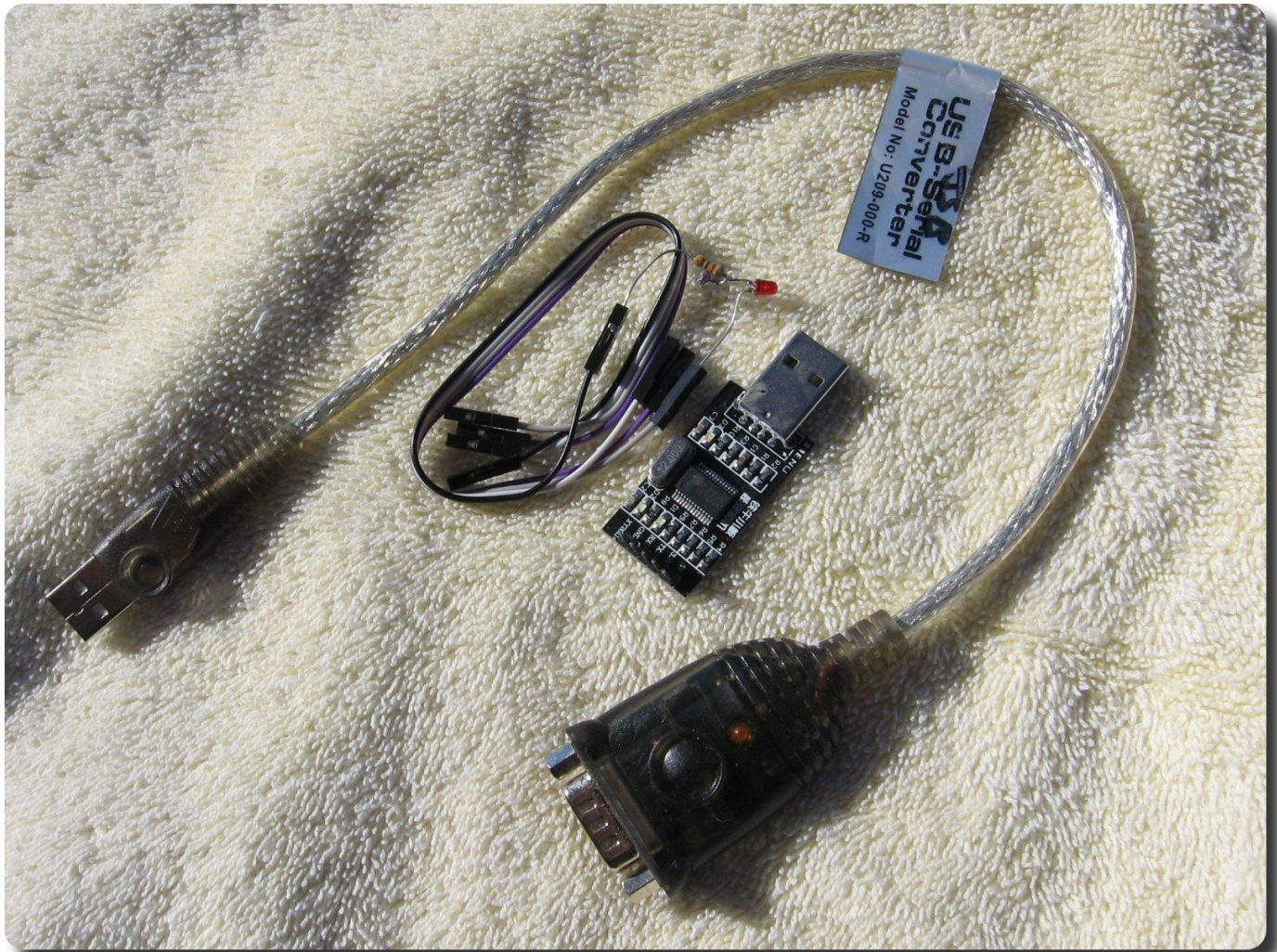
R&L Electronics is now offering a new power supply. The unit is a switching power supply with lots of features. The [Jetstream JTPS30LCD](#) offers a 25 AMP continuous rating with a 30 AMP surge. The voltage can be fixed at 13.8 VDC or adjusted from 9 to 15 VDC. The unit runs on 120 or 220 VAC. It has lots of connectors for equipment hook ups. The high power terminals are in the back. The unit has quick connect low current terminals up front along with a cigarette lighter jack. The power supply also has an LCD screen which displays the voltage and the current at the same time. If you are looking for a nice power supply for under \$100.00 take a look at this one.

Amateur Hardware Update

Article and image submitted by James Butler, KB4LJV

Many Amateurs continue to run accessories on our computers that use the DB-9 or DB-25 serial interface. This was a standard on all older computers and did a great job. In order to get faster transfer speeds newer computers now have the USB interface. When you upgrade to a new computer there is no serial port for you to hook up older serial equipment. Luckily, there is a USB to serial adapter to allow connections between new computers and the older equipment. You can buy a completed unit with a DB-9 serial at one end and a USB connector at the other end of the cable. You usually get a software disk for the driver that works with your version of Windows. They also sell a small PC board with a USB connector and circuit to do RS-232 at 5 volt levels for hook up to Arduino or Raspberry PI single board computers. To buy your adapter go to [eBay](#) and search for "USB to RS232 adapter". You can get these for under \$5.00.

See a photo of the USB to serial adapter on the next page.



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

7 Technician

5 General

5 Extra

If you are interested in attending a training class, send an email to Joe Lowenthal at wa4ovo@gmail.com with the desired class name in the subject line, along with your name, email address and (cell) phone number in the text.

Classes Completed

General Class 2-16: February 27 -- April 9, 2016

This General class began on February 27th for five Saturdays from 9am to 1pm at EMHC ambulance company training room, 6972 Appling Farms Parkway. There were three students in the class: Scott Adams, KM4PMU, Jim Barnes, N4YOK, and Clay Hancock, KD4VXN. Testing was conducted at FreeFest on April 9th. The instructors were Joe Lowenthal, WA4OVO, Pat Lane, W4OQG, and Jack Moody, KW4RH (formerly KK4VPY). The Elmer was Mike Sparks, KW4RI (formerly KK4VPZ).

Classes Scheduled

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

This class will be held on six Thursday nights beginning July 7th until August 18th from 6:15 pm to 9:30pm at a location to be determined. There will not be a class on July 21st.

Pre-registration is required. Email Joe Lowenthal WA4OVO at wa4ovo@gmail.com with **Tech Class 4-16** in the subject line and name, email address and cellphone number in the message area. The manual is The ARRL Ham Radio License Manual, Third Edition.

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

Huntsville Hamfest Bus Trip -- August 20, 2016

Submitted by Joe Lowenthal, WA4OVO

DARC is sponsoring a 50-passenger bus trip to go to the Huntsville Hamfest on August 20, 2016. There is a graduated scale fare for the bus trip. The fare is \$55 if paid by May 31, 2016. The fare is \$65 if paid by June 30, 2016, and \$75 if paid after June 30th. The fare includes the \$8 hamfest entry ticket. There will be two 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 Ellendale Church of Christ, 7365 Highway 70, Bartlett, TN at 6:00am on August 20th. A second pickup point will be at Germantown Baptist Church, 9450 Poplar Avenue at Johnson Road, Germantown, TN, at approximately 6:30am. The bus will leave Huntsville immediately after the 4pm door prize drawing and return to Germantown Baptist Church approximately 7:30pm and Ellendale Church of Christ at approximately 8:15pm.

Ellendale Church of Christ has asked us to park in the larger parking lot on the west side of the building to leave the east side open for church activity parking.

Note the new location for the pickup point at Germantown Baptist Church. It will be on the northeast side of the church (toward Collierville) in back of the church east of the tree-lined median so security cameras can oversee the cars.

Last Month's Program

Submitted by Dan Lasley, NE7JN, contributions by Glen Popiel, KW5GP

Glen Popiel, KW5GP, author of [Arduino for Ham Radio](#), presented the program for April's Delta Club meeting, a whirlwind tour not only of various sizes, speeds, and capabilities of the [Arduino](#) and some of its many peripherals, but also of some of the amazing technological treats that Glen has designed and built.

Glen began by telling us a bit of the [history](#) of the Arduino, a very small microcontroller-based computer offering both open-source hardware and open-source software. The Arduino originated at the Interaction Design Institute Ivrea (IDII) in Ivrea, Italy. His presentation indicates the Arduino was "designed for a non-technical audience of artists, designers, and other students in the creative fields."

You won't have to skip a mortgage payment to buy an Arduino. The Arduino UNO, with an eight-bit, 16 MHz processor, is available for the princely sum of \$3.22.

Powering the Arduino is a simple matter; most versions will accept a 7 to 20 volt input or you can power it via a USB connection.

An Arduino program written with the integrated development environment (IDE) is called a "sketch;" Glen says the name is a tip-of-the-hat to its origins in an art institute (the IDII). Because the IDE provides a very extensive variety of blocks of working code, your sketch can be short yet at the same time deliver significant functionality. As an example, Glen showed a sketch that would listen to CW coming from your radio, convert the sounds to letters, numbers, and symbols, and display those characters on the Arduino's screen. The sketch is small enough to fit in one screen on the IDE!

If you need hardware not provided on the Arduino itself, you can buy many, many different add-on boards (called "shields") for the Arduino. Available shields include Ethernet networking, GPS, stepper motor controllers, voice recognition, small color displays, prototyping, and various radio-oriented shields. Imagine what you could do with a shield that generated a signal from DC to daylight! (Ok, I got carried away; how about a range of 8 KHz to 160 MHz?)

Glen's next slide says, "Theoretically, with an Arduino and a handful of inexpensive parts, we can conceivably build our own feature-rich Arduino-powered QRP CW Transceiver with a built-in keyer," then he derives reality from theory to create just such a QRP rig!



Image by Glen Popiel, KW5GP

You might think his Arduino-based QRP rig (shown to the left) would be the highlight of his presentation. You would be wrong!

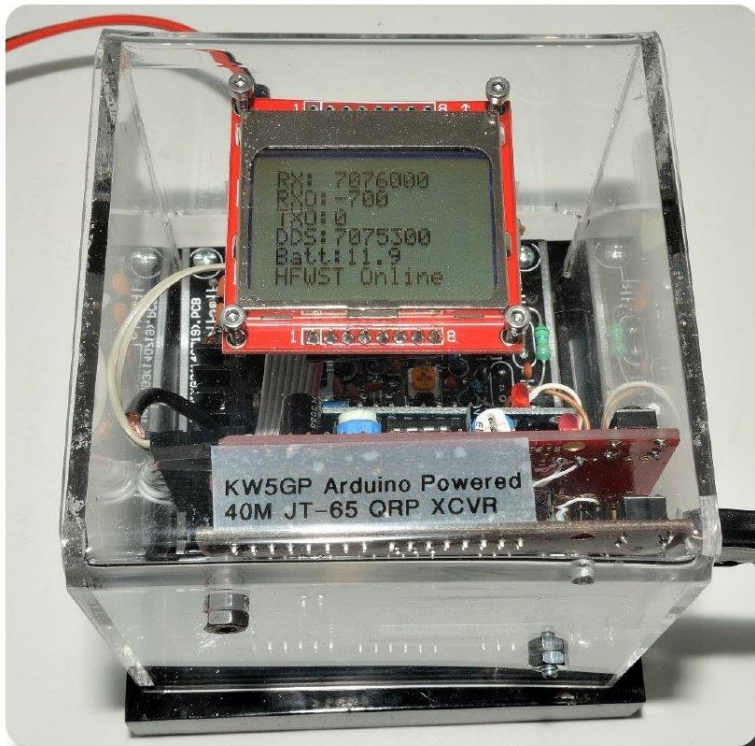


Image by Glen Popiel, KW5GP

Ordinarily, the JT-65 mode requires an SSB rig and a sound card. Glen, however, is no ordinary designer; he has shoe-horned "the world's first (?) homebuilt DDFSK JT-65 transceiver" into a clear plastic cube about five inches on a side!

If you would like to review Glen's presentation, he kindly supplied it as a pdf; you can read it [here](#). Page 55 of the presentation provides a number of references on the Arduino.

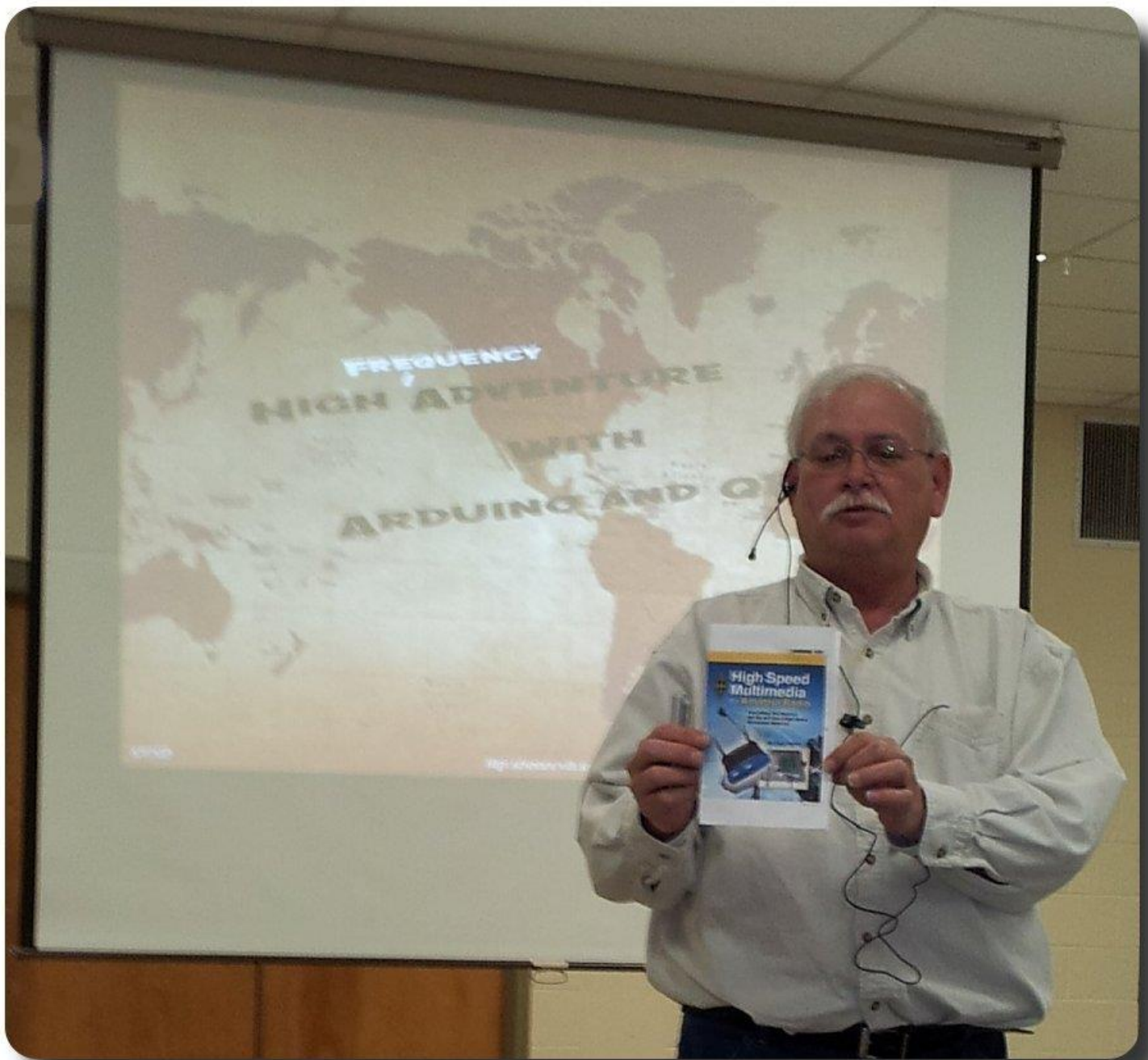


Photo by Dan Lasley, NE7JN

I asked Glen to hold up the flyer for his newest book, [High Speed Multimedia for Amateur Radio](#). He replied, "Every presentation needs at least one shameless commercial plug!" Congratulations on your newest ARRL book!

Thanks, Glen, for an awesome presentation. We hope you'll visit us again next spring about the time your third ARRL book is ready for publication.

2016 Armed Forces Day Communications Exercise

Submitted by Joe Lowenthal, WA4OVO

May 14th will be this year's 2016 Armed Forces Day Communications Exercise, frequently called the MARS crossband exercise. The US Army Corps of Engineers call WUG2 will operate from W4ODR at Navy Support Activity Midsouth in Building N-100 located in the southeast corner of the north side of the Navy base in Millington. For more information, contact Pat Lane W4OQG at 301-9738 or Ham Hilliard W4GMM at 387-9051.



2014 event: Rosalinda Melena, WN2V, operating and Steve Smith, W5VAA, logging. Photo by Ham Hilliard, W4GMM.

An Astronaut Landed at Corky's

Submitted by Joe Lowenthal, WA4OVO

On April 28th eleven Memphis area hams had the pleasure of dining with astronaut Doug Wheelock, KF5BOC, at Corky's on Poplar. Col. Wheelock was a member of International Space Station (ISS) Expedition 24 and commander during ISS Expedition 25 in the fall of 2010. He was very ham-friendly giving much of his personal time in space to activating [NA1SS](#). A Corky's dinner, sent by Tom, W5KUB, was waiting for Col. Doug on his return to the Johnson Space Center. These hams had made ISS contacts with him in 2010.



Pictured seated left to right: David Campbell, KD4NOQ, Tom Medlin W5KUB, Col. Doug Wheelock, KF5BOC, John Gallarno, AJ4AT, Rick Pinelli, KA2BSM, Rick Tillman, WA4NVM, Bill Stevens WC9S (hidden), Joe Wray, WD4GXI, Damion Runion, WA4HFN, Randy Wilder, WB4LHD. Not pictured David Perry, AJ4KF, and Joe Lowenthal, WA4OVO. Photo by Joe Lowenthal, WA4OVO.

Germantown Middle School Career Day

Submitted by Joe Lowenthal, WA4OVO

Nashoba ARC and the Delta Club co-sponsored a table at Germantown Middle School's Career Day. Thanks to Mike Hefner, KJ4WOR, Henry Leggett, WD4Q, Adrian Mosley, N4EMO, and Joe Lowenthal, WA4OVO, for staffing the table. There was a check-in to the MedMERS Net at 12 noon, and Henry showed some students about the radio during a QSO. Government and businesses had tables in the gym. The Tennessee Highway Patrol had a Bell helicopter there. Germantown Fire and Police also had vehicles there.



Henry Leggett, WD4Q, demonstrating radio procedures to students. Photo by Joe Lowenthal, WA4OVO.



Henry and Mike Hefner, KJ4WOR, talking to students. Photo by Joe Lowenthal, WA4OVO.

Mid-South Amateur Radio Supply's J Pole Antenna Class

Submitted by Dan Lasley, NE7JN, contributions by Rosalinda Melena, WN2V

The principals of Mid-South Amateur Radio Supply, Ham Hilliard, W4GMM, Steve Smith, W5VAA, and Rosalinda Melena, WN2V conducted a build-it-yourself J Pole antenna class on Saturday, April 23.



(L-R, back row) Randy Depew, KM4OSF, Bruce Depew, KM4OSE, Scott Adams, KM4PMU.
(L-R, front row) Hosts and Elmers Steve and Rosalinda. Photo by Dan Lasley, NE7JN.



(L-R) Dan Lasley, NE7JN, Joe Lowenthal, WA4OVO, Lee Myers, KM4OSI, Ted Blackwell, KM4SBH, host and Elmer, Ham. Photo by Rosalinda Melena, WN2V.

With the help and encouragement of Rosalinda, Steve, and Ham, seven hams went home with sturdy, low SWR J pole antennas.

When I got home, I connected the J pole to my 4 watt H-T. With the help of Larry May, K4QZF (thanks, Larry!), I checked out the J pole and discovered the H-T receives Delta's 146.82 repeater *much* better than using a mag mount antenna atop a filing cabinet!

Thanks to Rosalinda, Steve, and Ham for a fun and productive afternoon. I want to send a special thank you to Rosalinda for the "fuzzy pickles."

March of Dimes March for Babies

Submitted by Linda Laseter, KJ4CTX

No matter how many meetings you have or how many months you spend planning an event you cannot control Mother Nature. This was true once again for the March for Babies event on Saturday, April 30th. We knew the forecast was for rain and we hoped for the best, but after all the tents were set up and the supplies were delivered the rain did not let up and the March was cancelled for the safety of all participants.

As with most of the events we work we show up rain or shine and this event was no exception. We Hams sat under the Botanic Gardens Pavilion talking, eating sausage and biscuits, and watching the geese with their baby goslings parading around in the rain. They seemed to be enjoying the weather and were not concerned about us.

I would like to thank all the Hams who volunteered for this event. You deserve a special thank you when you brave the elements like you did Saturday. You are all real troopers and without you these events would not be possible.

2016 FreeFest

Article and several photos by Dan Lasley, NE7JN, with contributions by Jim Cissell, KI4I, Tony Brignole, WA4KHN, John Coryat, and a special thanks to "Satellite" Sam Adams, KG4JMN, for being a generous and courteous ham.

I hope everyone enjoyed this year's FreeFest as much as I did! I helped set up, saw a bunch of old friends, met some new friends, bought a few goodies, and helped tear down. Yes, setting up and tearing down is work, but the more you give, the more you get back in return.

If you would like to help with 2017 FreeFest, contact Tony Brignole. You'll contribute to the camaraderie of the ham community.

Enough philosophy, here are some photos of the event.



Photo by Dan Lasley, NE7JN.

Tom Vickers, N4TV, Tony Brignole, WA4KHN, and Mary Brignole, KA4OAW (L-R).

Tony did yet another fantastic job as FreeFest organizer, and Mary is a sweetheart who somehow puts up with Tony (we're not exactly sure how).

Tom is an ARRL card counter and can verify your claim to DXCC, WAS, WAC, and other ARRL awards.

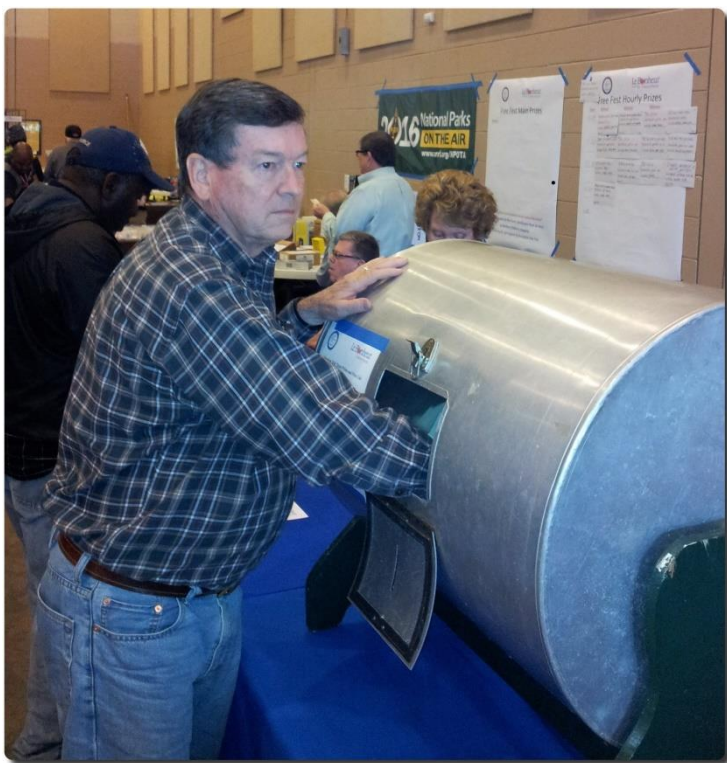


Photo by Dan Lasley, NE7JN.

No, the drum isn't eating Art Barnett, WA4PSS. Art is extracting a winning raffle ticket and is about to make another FreeFest attendee a happy camper!

A lucky ham took home the \$600 grand prize, only one of many prizes worth an estimated total of more than \$3,000!



Liz and "Satellite" Sam Adams, KG4JMN, drove from their QTH in Virginia to participate in FreeFest. They brought tons of goodies for sale.

Thanks, Sam, for your donations of two drones as FreeFest prizes.

The grapevine says you'll be back at FreeFest next year. We're looking forward to seeing you and Liz again.

Photo by Dan Lasley, NE7JN.



Kim Coryat, W8KAY, and OM, John, share a strong entrepreneurial drive. FreeFest was the world debut for their [Aim-Light](#).

The picture frame on the left shows their [Radar Now](#) weather app, available in versions for the [Android](#) and for the [iPhone](#).

Photo by John Coryat.

Ham Questions 101 -- Coming This Month!

Submitted by Linda Laseter, KJ4CTX, with contributions by
Jim Cissell, KI4I, David Campbell, KD4NOQ, and Michael Knight, KK4IOH

Do you have questions regarding how to get involved in Delta Club, antennas, ham fests, or various other ham radio topics? Then please join us. We are here to help you find answers.

Starting this month Delta Club will be offering an open question and answer forum. Elmers (experienced hams) will be available to answer your questions from 6:00 p.m. until 6:45 p.m. upstairs in the Ellendale Church of Christ. This is just prior to the regularly scheduled Delta Club meeting which starts at 7:00 p.m.

Come for one session or come every month. This is an open forum. No textbook and no set number of sessions to attend. Bring your questions and join us for this new opportunity! The sessions are free and open to hams of all ages and levels of experience.

We will also be offering a topic for discussion each month. This month's topic (by special request) will be Fox Hunting (locating hidden transmitters). Michael Knight, KK4IOH, and David Campbell, KD4NOQ, will demonstrate how to Direction Find, which is the process used for Fox Hunting and will show how the various equipment works. After meeting upstairs we will go outside, so bring a radio and a directional antenna if you have one.

Michael says, "This will be a quick overview that will prepare someone to go on the hunt. We recommend new hunters pair up with more experienced hunters for additional learning on the job." Michael also recommends that you visit Delta's public [Facebook](#) page for additional Fox Hunt information and a good photo.

Come join the fun! Sunday, May 15th is a scheduled Fox Hunt. David Campbell, KD4NOQ, will be the rabbit. We will meet at 2:00 p.m. in the parking lot of Marshall's Department Store, 3001 Covington Pike, just north of Stage Road. At the end of the hunt David will be available to check antennas with his field strength meter.

For more information, please email Linda Laseter, KJ4CTX, at LindaLaseter@gmail.com or Dan Lasley, NE7JN, at sparks@carbheat.net.

Equipment for Sale

Submitted by Dan Lasley, NE7JN, contributions by Bill Stevens, WC9S

Most of the equipment listed below is from the estate of Jimmy Rye, Jr., KG4TKY. All equipment will be available for sale at May's Delta Club meeting.

Thanks to Bill, WC9S, for being the equipment wrangler. I hope everyone appreciates what a time consuming and laborious task this is!

Jimmy Rye Jr KG4TKY Estate	
Tentec Orion II HF transceiver #566	\$2,000.00
Tentec Antenna Tuner #238b	\$350.00
Tentec External Speaker #307	\$75.00
Tentec Power Supply #963	\$80.00
TenTec Encoder/Keypad #302	\$75.00
TenTec Desk Mic. By Heil	\$100.00
Kenwood TR-2500 HT 2 meter with desk charger	\$25.00
Drake UV-3 KM Transceiver & Drake PS-3 Power Supply	\$450.00
Miscellaneous Antennas	
Tentec receiver kit #1254	\$100.00
Tentec QRP 40 meter CW transceiver kit	\$60.00
Tentec 2 meter FM transceiver kit	\$100.00
Left over from last sale	
Ameritron AL-811H Amplifier + Interface Buffer	\$475.00
MFJ-267 Dummy Load / Watt meter	\$75.00
MFJ-986 Differential-T tuner	\$125.00

The Lancaster/Marston Corner

Submitted by Dan Lasley, NE7JN

The Lancaster/Marston Corner refers to the works of Don Lancaster and Ray Marston, both of whom published extensively in various electronics magazines and in other publications. This column will cover wide-ranging topics in electronics but won't be limited to Lancaster and Marston; we'll cover other authors as well.

In last month's [Sparks](#), I presented three op-amp tutorials for readers at all levels of expertise. This month we will discuss "Mastering Oscillator Circuits Through Projects & Experiments" by Joseph J. "Joe" Carr, K4IPV (SK). This book is available from the public library, call number 621.381533 C311m.

In case the reader is a beginner in electronics, Carr spends the first 98 pages (five chapters) on a gentle introduction to such topics as power supplies, breadboards, instruments (multimeters, signal generators, oscilloscopes), and other necessities. In chapter two he talks about the various types of oscillator outputs, such as sine waves, square waves, triangle waves, and sawtooth waves. He devotes all of chapter three to building a power supply that is useful for the remainder of the book.

Chapter four covers the biasing and frequency characteristics of bipolar, field-effect, and MOSFET transistors. This chapter is very useful for many circuits other than oscillators. Carr introduces integrated circuits in chapter six.

On page 99, after having done a good job of establishing the basics for oscillators, he begins a discussion of oscillator circuits and shows what must be one of the simplest possible oscillators: 90 volts driving a resistor, capacitor, and neon bulb in a relaxation oscillator.

Carr presents a good introduction to RF resonant circuits in chapter 8. Chapter 11 tackles monostable and astable multivibrator circuits, converts sine waves to square waves, and ends with a six-decade square wave generator using one integrated circuit and a handful of passive components.

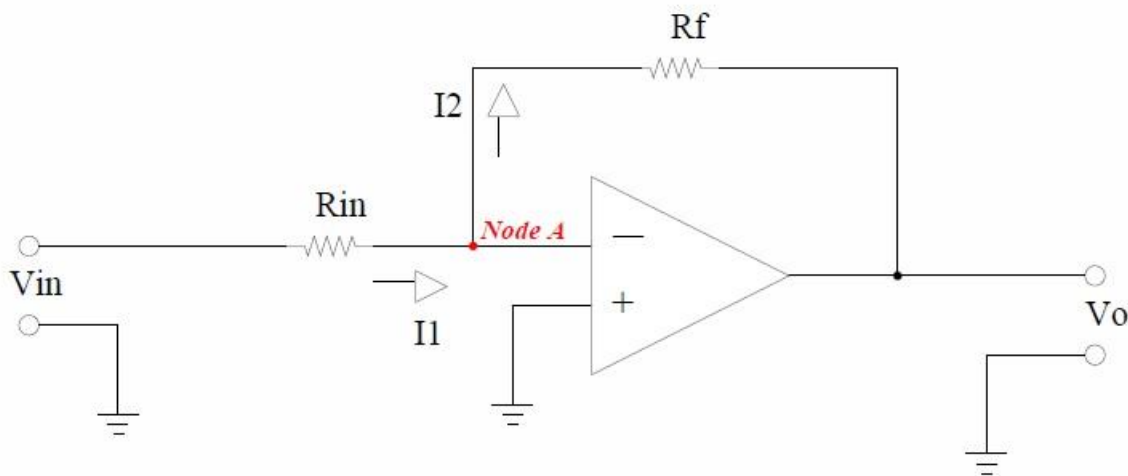
Chapter 14 shows how to build a number of different types of sine wave audio oscillators. Chapter 15 jumps into voltage controlled oscillators; its second circuit is varactor-tuned VFO circuit with one transistor and a dozen passive components. Carr doesn't tell us the VFO frequency, but a 60 pF capacitor and a 4 uH inductor give us a clue. He continues with VFOs in chapter 16 by discussing Armstrong, Hartley, Colpitts, and Clapp oscillators and presenting circuits for three of the four oscillator types.

No book on oscillators would be complete without lots of NE-555 timer circuits and Carr's chapter 17 doesn't disappoint the reader!

Maybe I wasn't paying full attention, but in all the years I've spent reading about electronic devices, I've never seen a diagram showing where the various cuts of a quartz crystal are located. Carr's figure 18-4 in chapter 18 erased that hole in my knowledge! This chapter continues by showing the reader how to build a wide variety of simple crystal oscillators.

Carr's book is an excellent summary of many types of oscillators from the audio range well up into UHF frequencies. The volume I reviewed is a first printing of the first edition and would have benefitted from a closer inspection that should have eliminated a number of minor errors that, while annoying, aren't generally significant. I will use errors in two equations to demonstrate to the audience that *any amateur radio operator in this country* could not only have noticed these errors, but could have corrected them as well!

In the circuit below (Carr's figure 5-7), Node A is a "virtual ground," meaning that the op amp - input is grounded just as the + input is grounded.



Carr's equations 5-2 and 5-3 from page 83 are shown below and both are incorrect.

$$I_1 = \frac{V_{in}}{V_o}$$

$$I_2 = \frac{V_o}{R_{in}}$$

Can you correct these two equations? The short answer: yes, you can!

The point of this exercise is to make you realize you have more knowledge than you think you do, even to the point of correcting an otherwise excellent book!

Next month we'll look at the correct equations and explore more of Carr's book.

DX News

Submitted by Dan Lasley, NE7JN

In *DX News* I'll relay information for those of you who like to work DX. Most of this information is a digest of emails from the ARRL DX Bulletin, the ARRL Contest Update, and the ARRL Letter. Yes, some of it may be a bit cryptic. No, it isn't rocket science. If you're interested but don't understand the terminology, ask a ham friend who works DX.

This is a bit off topic, but the ARRL Letter for April 7, 2016, mentions the [leveling](#) of the Voice of America Antenna Farm in North Carolina. One wag noted the reporter's first name was, ironically, "Ariel".

If you are interested in pursuing the [DXCC award](#), you'll need the ARRL's [official country list](#).

The [ARRL](#) reports "The [Reverse Beacon Network](#) (RBN) can be a useful tool for determining the best times to attempt working a DXpedition, since it provides a glimpse at real-time propagation."

Tom Callas, KC0W, was QRV beginning in April with his ["Cows Over the World DXpedition"](#) which will be active in several DXCC entities in the Pacific and Asia including American Samoa (KH8), Tutuila Island, Samoa (5W), Tokelau, Solomon Islands, Temotu Province, and Bangladesh. No ending date was given, but he will likely be active in May. Note that this is a CW only DXpedition. QSL direct to KC0W with an SASE and two green stamps.

Svein, LA9JKA, will be QRV as JX9JKA from April 12 to October 4. Activity will be on 160 to 6 meters using SSB and various digital modes in his spare time. QSL direct to home call.

MALTA, 9H. Mek, SQ3RX will be active as 9H3SQ from Marsalforn, Gozo Island (EU-023) from May 13 to 19. Activity will be on 40 to 10 meters, and possibly 80 meters, using CW and SSB. QSL via SQ3RX, direct or via the bureau.

TURKEY, TC. Look for special event station TC2016ANT to be active during Expo 2016 Antalya, with the theme of Flowers and Children, between April 23 and October 30. QSL via TA4ED.

From The ARRL Contest Update: "If you are using 40 meters, remember to stay clear of Ecuador earthquake relief operations around 7.060 MHz. They're using SSB, so please be extra vigilant in checking the frequency before you transmit."

The ARRL Contest Update also mentions that not only is "73" well known within the amateur community, but is linked to The Big Bang Theory, it is the sixth "emirp" (no, that's not a typo), it's a binary palindrome, it has links to capacitors, and it has other interesting [properties](#) as well.

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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Upcoming Public Service Events

If you are a coordinator for any of these events, please review the listed information. Email corrections to sparks@carbheat.net.

<u>Event Date</u>	<u>Event</u>	<u>Contact Information</u>
June 18, 2016	<u>Tour de Peddler for the Diabetes Association</u> Starts at one of 3 Peddler locations; 13 hams needed	Pat Lane, W4OQG w4oqg@bellsouth.net 901-301-9738
Sept. 10, 2016	<u>Bike MS: Rock-N-Roll 2016</u> Landers Center in Southaven to Gold Strike Casino in Tunica and back on 2 nd day; Multiple Sclerosis fundraising event	Darrell Sheffield, KK4D darrell.sheffield@memphistn.gov (901) 277-8122
October 1, 2016	<u>Bluff City Blues 100 Ride</u> Start from downtown Memphis	Danny Banks, KJ4FXZ dbanksd@bellsouth.net 901-517-7661
Dec. 3, 2016	<u>St. Jude Marathon</u> 26.2 mile fund raiser in downtown Memphis	Roger Schlichter, WR4R wr4r@bellsouth.net

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 Nov, 2015

Name of Net	Freq. MHz	Tone	Local Time	Day of Week
Delta Club Information Net	146.820	- (107.2)	8:00p	Daily
Mid-South Barefooted Bullfrog Net	146.535		7:30p	Daily
Secret Service Net	224.780		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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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.

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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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