

SPARKS

P.O. Box 342768 * Memphis, Tennessee 38134-2768 * Volume 90 * July 2023



Delta Amateur Radio Club (DARC)

Sparks Newsletter

Website: <http://deltaclub.org>

Facebook:

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

W4BS

REPEATER SYSTEM

146.820 ^{-107.2}	147.360 ^{+107.2}
146.625 ^{-107.2}	443.200 ^{+107.2}
224.420 ^{-107.2}	443.700 ^{+107.2*}
144.390 Digipeater	*Fusion

This month's meeting will be **IN PERSON ONLY** at 7 pm on Tuesday, July 11, 2023.

*****NEW MEETING LOCATION FOR JULY*****

The July meeting will be held at Mid-America Theological Seminary located at 2095 Appling Rd, Memphis, TN 38016. See the Delta Club webpage at: <http://www.deltaclub.org> for detailed instructions on how to find the correct entrance. Parking is in the back of the south end of the building. The meeting will be in the Betty Howard Special Events Room.

There will be FCC Testing Tuesday in Room B201.

Program: “*Emergency Power Discussion*” led by John Reiners, KN4BVH. Links to some of the products John will reference in the discussion are as follows:

Chunzehui PWRgate \$44.00

https://www.amazon.com/Chunzehui-F-1006-PWRpath-PowerPath-PWRgate/dp/B0794V58BK/ref=sr_1_15?crid=LMZVN9IFVR5I&keywords=pwr+gate&qid=1688589340&sprefix=pwr+gate%2Caps%2C113&sr=8-15

Paradan Radio DC Gate 40+ Dx Engineering \$100.00

<https://www.dxengineering.com/parts/pdn-dcgate40plus>

West Mountain Radio Super PWRgate Battery Backup Systems PG40S \$139.95

<https://www.dxengineering.com/parts/wmt-58403-1046>

West Mountain Radio Epic PWRgate Battery Backup Systems 58404-1673 \$189.95 (Out of Stock)

<https://www.dxengineering.com/parts/wmt-58404-1673>

VE TESTING: Don't forget the monthly ARRL Volunteer Examiner testing session prior to in-person meetings. Registration begins at 5:30 PM and testing begins by 6:00 PM. Please remember to bring two (2) forms of identification, at least one a photo ID, and copies of any existing licenses or CSCE's you might have. Please be on time for registration, as you will not be allowed to enter the testing session after 6:00 PM. This is to allow our volunteer VE team to finish in time to attend the club meeting. Candidates **MUST** have an FCC Federal Registration Number (FRN) **BEFORE** coming to the testing session. For more VE testing, or FCC FRN information, please contact:

Bob Vawter, KW4RJ, VE Liaison

Phone: 901-438-4563

Email: KW4RJ@ARRL.net

HUNTSVILLE HAMFEST BUS TRIP - AUGUST 19, 2023
Submitted by Joe Lowenthal WA4OVO, Director of Training

DARC is sponsoring a 50-passenger bus trip to go to the Huntsville Hamfest on Saturday, August 19, 2023. The fare is \$99 if paid by July 12th and \$119 after July 12th. A spouse or child living at the same address can accompany a full fare rider for \$75. The fare includes the \$15 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 or at Field Day. 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 ham, sausage 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 6:30am. The bus will leave Huntsville immediately after the 4pm door prize drawing and return to Germantown Baptist Church approximately 7:45pm.

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.

The Huntsville Hamfest website is www.hamfest.org.

Announcements

2023 A Day In The Park

The Mississippi Section sponsors A Day in the Park once a year with clubs around the state. This year it will be held October 14, 2023 at Olive Branch Park coordinated by both the Chickasaw Amateur Radio Association and the Olive Branch Amateur Radio Club.

The following is a link to their flyer:

[https://groups.io/g/CARA-](https://groups.io/g/CARA-MS/files/2023%20A%20Day%20in%20the%20Park%202.0/A%20Day%20in%20the%20Park%202023%20flyer.pdf)

[MS/files/2023%20A%20Day%20in%20the%20Park%202.0/A%20Day%20in%20the%20Park%202023%20flyer.pdf](https://groups.io/g/CARA-MS/files/2023%20A%20Day%20in%20the%20Park%202.0/A%20Day%20in%20the%20Park%202023%20flyer.pdf)

President's Corner

Submitted by Mary Jean Hall, KY4FB

There has been a lot going on the past few weeks. It was great to see everyone who came out to participate during Field Day. Just a few hours after Field Day ended, it felt like Field Day 2.0 kicked off. On June 25, 2023 around 7pm, 70-90 mph straight-line winds roared through the Memphis area. About 122,000 in Shelby County lost power, and many were without power for several days. Later that week, heat indices soared to 110-115.

In the Bartlett/Ellendale area, massive trees were uprooted everywhere, and many took out powerlines as they fell. The Ellendale Church of Christ Fellowship Hall, our long-time meeting location, sustained roof damage during the storm. As restoration started throughout the week, many experienced frequent, and sometimes lengthy, cell phone service disruptions. For those without power and Wi-Fi, these cell service disruptions left many without a way to communicate – except those with an Amateur Radio license and radio.

Despite no power, Wi-Fi and cell service, the Delta Club Nightly Information Net consistently met. The Friday following the big storm, there was a widespread, regional Verizon service outage. Despite this outage, we were still able to communicate with others in our community via ham radio.

By the end of the experience, I had been without power for about eight days. Over a week without power was “tough,” but I can honestly say that my experiences through Delta Club and ham radio made me better prepared for it. We were lucky enough to get ahold of a generator. For the first few days without power, however, I used my ham radio battery go-box to power several cell phones, flashlights and other devices. It allowed us to charge everything from the comfort and safety of our home versus sitting out in the car at 11pm waiting for things to charge. I even used my battery box to charge my neighbor’s phone a few times. In the Ellendale area, it seemed like we had cell service disruptions nearly every day. So, I carried my handheld

radio with me wherever I went. I had comfort knowing I could communicate with others should an emergency arrive during a cell service outage.

I am satisfied how I was able to handle that situation, but I know there are areas that can be improved. I would be remiss to not mention how much I appreciate so many of you for taking the time to give advice and tips over the years – whether that be helping me learn how to program radios or sharing tips about power options and generators. It definitely made a difference that week when everything else seemed to be failing.

Whether you dealt with outages or not, don't let that experience go by without learning something from it. What did you do well? What can you do to be better prepared next time? Is there anything as a club that we can try to do to help you better prepare, such as offering specific programs or events? How can you share your experiences to encourage your family, friends and neighbors to check ham radio out as well?

There will be more power outages. There will be more cell service outages. It's a matter of *when* and not *if* it will happen. So, how can you be prepared for it? See you all Tuesday!

73,
Mary Jean KY4FB

Treasurer's Report
Submitted by Jim Martin, KD4FUU

Please renew your membership right away, so you won't forget about it! The membership application may be downloaded from our website (for both renewals *and* new members) at:

<https://deltaclub.org/membership>

Annual membership fee is \$20 per individual or \$25 per family. Completed applications and payment may be mailed to:

Delta Amateur Radio Club
PO Box 342768
Memphis, TN 38184-2768

If you prefer you can print and bring the completed form, along with the membership fee, to any in-person meeting. Please contact Jim Martin KD4FUU at **kd4fuu@gmail.com** with any questions or concerns regarding application submission and/or payment of annual dues.

LIFEGREEN CHECKING FOR BUSINESS

June 1, 2023 through June 30, 2023

SUMMARY

Beginning Balance	\$20,836.63	Minimum Daily Balance	\$20,836
Deposits & Credits	\$1,320.00 +	Average Monthly Statement Balance	\$21,662
Withdrawals	\$0.00 -		
Fees	\$0.00 -		
Automatic Transfers	\$0.00 +		
Checks	\$0.00 -		
Ending Balance	\$22,156.63		

DEPOSITS & CREDITS

06/02	Deposit - Thank You	99.00
06/05	Deposit - Thank You	198.00
06/14	Deposit - Thank You	768.00
06/14	Deposit - Thank You	215.00
06/30	Deposit - Thank You	20.00
06/30	Deposit - Thank You	20.00
Total Deposits & Credits		\$1,320.00

DAILY BALANCE SUMMARY

<u>Date</u>	<u>Balance</u>	<u>Date</u>	<u>Balance</u>	<u>Date</u>	<u>Balance</u>
06/02	20,935.63	06/14	22,116.63	06/30	22,156.63
06/05	21,133.63				

SMALL BUSINESS CD *8481

Available Balance	<u>INTEREST RATE</u>	<u>YTD INTEREST</u>	<u>INTEREST EARNED NOT PAID</u>
\$5,049.61	1.980 %	\$49.61	\$18.66
<u>SHOW ACCOUNT NUMBER</u>			
*8481			
<u>ISSUE DATE</u>	<u>LAST INTEREST AMOUNT PAID</u>	<u>PREVIOUS YEAR INTEREST</u>	
10/28/2022	\$24.60	\$0.00	
<u>ISSUE VALUE</u>	<u>DATE LAST INTEREST PAID</u>	<u>MATURITY DATE</u>	
\$5,000.00	4/28/2023	11/25/2023	
▲ Hide More Details			

SMALL BUSINESS CD *8503

Available Balance	<u>INTEREST RATE</u>	<u>YTD INTEREST</u>	<u>INTEREST EARNED NOT PAID</u>
\$11,122.99	2.230 %	\$122.99	\$46.31
<u>SHOW ACCOUNT NUMBER</u>			
*8503			
<u>ISSUE DATE</u>	<u>LAST INTEREST AMOUNT PAID</u>	<u>PREVIOUS YEAR INTEREST</u>	
10/28/2022	\$60.99	\$0.00	
<u>ISSUE VALUE</u>	<u>DATE LAST INTEREST PAID</u>	<u>MATURITY DATE</u>	
\$11,000.00	4/28/2023	11/26/2024	
▲ Hide More Details			

Applications Received - June 2023

(1) New Membership(s) - Pro-Rated Dues	\$10.00
(0) New Membership(s) - Dues Waived	\$0.00
(0) New Membership(s)	\$0.00
(6) Membership Renewal(s)	\$130.00
(2) Donations Received	\$115.00
Total Dues Received	\$255.00

Other Deposits & Credits

(0) ARRL Club Commission - New Members (\$15.00)	\$0.00
(0) ARRL Club Commission - Renewals (\$5.00)	\$0.00
Huntsville Hamfest - Collected Bus Fare	\$1,065.00
Total Other Deposits	\$1,065.00

Total Deposits \$1,320.00

Withdrawals

None	\$0.00
Total Withdrawals	\$0.00

Checks

None	\$0.00
Total Payments	\$0.00

DARC Board of Directors Meeting Minutes

Submitted by Paul Broom, KY4MX

DARC Board of Directors Meeting Minutes for July 5, 2023

Attendees: Mary Jean Hall KY4FB, Perry Hayes N4GJ, Paul Broom KY4MX, Jim Martin KD4FUU, Joe Lowenthal WA4OVO, Mike Harrison KM4MRW, John Reiners KN4BVH, Scott Adams KM4PMU, and Barry McDonald W5CJ.

Absent: Len Grice W4MKS

Guests: None.

The regular monthly meeting of the Delta Amateur Radio Club Board of Directors was held on Wednesday, July 5, 2023 at 6:30 PM on a Zoom video conference call, with the President serving as chair and the Secretary being present. President Mary Jean Hall called the meeting to order.

Unfinished Business

Mary Jean Hall KY4FB gave a recap of Field Day that took place on June 24 and 25. Joe Lowenthal WA4OVO indicated that there was a total of 60 people sign in for the event. It was also agreed that Nashoba and Delta Club would split the cost of Field Day as MARA contributed the vast majority of food and snacks to the event.

Joe Lowenthal WA4OVO gave an update on the bus for Huntsville Hamfest on August 19. The bus has been reserved and 11 people have paid thus far. A discussion was held on the minimum number of people required for the trip to be financially viable. Estimates were between 25 and 28 attendees. The decision on the minimum requirement is being postponed pending the interest shown at the July member meeting. The club has also paid for two tables at the convention center to be used for display of estate equipment for sale.

New Business

Jim Martin KD4FUU reviewed the treasurer's report with the group.

Paul Broom KY4MX presented 1 new member and 4 renewal applications. Joe Lowenthal WA4OVO moved that all applications be approved, with Barry McDonald W5CJ seconding the motion. The motion passed with no objections.

Ty McMahan KX4MQ submitted a proposal to the Board to replace one of the existing analog repeaters with a Motorola DMR repeater and linking it to NWS Memphis. While there was much interest in pursuing this, given the current issues with 146.82 and potential issues with the 443.700 repeaters, it was decided to defer further action on this to a later date.

Board/Officer Reports

Barry McDonald W5CJ had nothing to report.

Joe Lowenthal gave an update on the search for temporary meeting space given the inability to use the regular facility due to recent storm damage. He has reached out to the Mid-America Theological Seminary across from Bellevue Baptist Church and also the Appling Farms Station of the Memphis Police Department. Other potential locations discussed were the sanctuary at Ellendale Church or Christ and the Red Cross offices on Madison. After discussion it was decided to hold on other options pending a response from the Seminary. (**Note:** Subsequent to the Board meeting, approval has been obtained to have the July meeting at the Mid-America Theological Seminary, 2095 Appling Rd, Memphis TN 38016. The meeting will be held in the Betty Howard Special Events room, with testing being conducted in room B-201.)

Mary Jean Hall KY4FB and Joe Lowenthal WA4OVO went to the church and moved the Delta Club equipment and supplies to temporary storage at Mary Jean's house. The plan is to go through everything and organize before moving to longer-term storage at Steve Frazier's father's KK4VPT house. Scott Adams KM4PMU will be storing meeting snacks and supplies.

Joe Lowenthal WA4VO gave an update on the upcoming Technician Training class that will be held for 6 Monday night's starting on July 10. He currently has 13 students enrolled and plans to cutoff enrollment at 15. He will be looking to find a place to do testing on August 7. He also alerted Bob Vawter KW4RJ of the need to change locations for the monthly testing prior to meetings.

John Reiners KN4BVH announced that this month's program would be about Emergency Power. It will be an interactive program with several members talking about how they were able to utilize emergency power during the recent grid outages.

Scott Adams KM4PMU had nothing to report.

Mike Harrison KM4MRW indicated that he is waiting on information for Sparks which will go out this weekend.

Perry Hayes N4GJ indicated that the recent efforts to recognize visitors and new members has been well received.

Mary Jean Hall KY4FB adjourned the meeting at 7:52 pm. The next regular Board of Directors meeting is scheduled for Tuesday, August 1, 2023, at 6:30 PM on Zoom.

Respectfully submitted by Paul Broom KY4MX, Secretary

Minutes of Last Month's Club Meeting
Submitted by Paul Broom, KY4MX

DARC Meeting Minutes for June 13, 2023

Call to Order and Opening Remarks

The regular monthly meeting of the Delta Amateur Radio Club was held on Tuesday, June 13, 2023, at 7:00 PM at the Ellendale Church of Christ, with the President serving as chair and the Secretary being present. Club President Mary Jean Hall KY4FB called the meeting to order and then welcomed everyone to the meeting. At least 43 members and guests were present for the meeting.

Mary Jean Hall KY4FB recognized recent new members of the Delta Club and asked that everyone greet them during a break or after the meeting. She then took a roll call of those present and reminded everyone to sign in on the membership roster and also to sign one ticket for the November drawing.

Minutes and Treasurer's Report

Ham Hilliard W4GMM moved to approve the Treasurer's Report and Minutes as published in Sparks. Ned Savage KA4BLL seconded the motion. The motion was adopted by the club without objection.

Announcements

Bob Vawter KW4RJ gave the VE update which included one upgrade to General during pre-meeting testing.

Joe Lowenthal WA4OVO gave an update on future training. A Technician training class will be starting on Monday in July 10, running for 6 Monday nights from 6:15 to 9:30. The class will be held in person at the Appling Farms Station of the Memphis Police Department, except for the 5th

class on August 7, which will be held at a location still to be determined. He asked that interested individuals email him at WA4OVO@gmail.com with the subject line "Tech Class" with their name, email address and cell phone number. There are currently 7 students signed up for the class.

Joe Lowenthal WA4OVO provided an update on the bus for the Huntsville Hamfest that will be on August 19th. The bus will leave from the Germantown Baptist Church parking lot at 6:30 am and will return at approximately 8:00 pm. The fare for the trip is \$99 per person if paid by July 12th, increasing to \$119 after that date. The fare includes the bus transportation, soft drink and water, snacks and breakfast biscuits on the bus, and the \$15 Hamfest admission. He also pointed out that concessions at the Von Braun center will only accept credit/debit cards this year. There are currently 7 people paid, and with 2 or 3 others that have expressed interest. With the current level of interest in the trip being low, a determination will be made after the July meeting as to whether or not the trip will be held. Approximately 28 people are needed in order for the trip to be viable from a financial perspective.

Mary Jean Hall KY4FB gave an update on Field Day which is coming up the fourth weekend in June (June 24-25). It will run from 1:00 PM on Saturday to 1:00 PM on Sunday. The Delta Club is partnering with the Nashoba Amateur Radio Club, the Midsouth Amateur Radio Association (MARA) and the Shelby County Amateur Radio Emergency Service (ARES) for the event which will be held at the Germantown Municipal Park. Stations for the event will include:

- Information Table – Joe Lowenthal WA4OVO and Len Grice W4MKS
- Get on the Air (GOTA) - Steve Frazier KK4VPT
- 15 and 80 meter phone – Matt Ryan W2MJR
- 20 meter phone – Fred Miller KS2X
- Digital utilizing solar – David Wilke W5DJW
- Satellite – Rick Tillman WA4NVM
- CW – Pat Lane W4OQG
- Logging and networking – John Reiners KN4BVH

Lunch, dinner, breakfast and snacks will be provided. While there is a contesting component to the event, it is more geared toward public demonstration of amateur radio and how it can be used when other forms of communications are not available. Stations will be run utilizing solar, generators, and battery power.

Ham Hilliard W4GMM also announced that there will not be a Field Day event in Millington due to past lack of participation at that location. He reiterated that it is a great public event, but that the spirit of Field Day is to give hams the ability to operate their equipment in a simulated emergency situation. He also indicated that propagation should be very good for the event.

Discussion / Program

John Reiners KN4BVH introduced Steve Frazier KK4VPT who gave a presentation on logging with N3FJP which will be used for Field Day.

An interesting Q&A followed.

Closing Remarks

Delta Club President Mary Jean Hall KY4FB adjourned the meeting at 8:23 PM.

The next Delta Amateur Radio Club meeting will be Tuesday, July 11th, 2023, at 7:00 PM (location to be determined due to storm damage at Ellendale Church of Christ).

Respectfully submitted by Paul Broom, Secretary (2023)

Delta Ham License Training, 2023

Submitted by Joe Lowenthal, WA4OVO, DIRECTOR OF TRAINING

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. The FCC implemented a \$35 administration fee on April 19, 2022.

If you want to take a class, send an email to Joe at wa4ovo@gmail.com with the class name; ie, Tech Class, General Class, or Extra Class, on the Subject line and name, callsign if you have one, email address, and cellphone number in the text.

Licenses Earned in 2023 from Delta Classes

3 Technician

1 General

3 Extra

Note:

As of April 19, 2022 there is a \$35 FCC application fee for new hams, renewals, Vanity callsigns, etc except for license upgrade, systematic callsign issue, name, address or email changes. This is in addition to the \$15 ARRL VEC FCC exam fee.

The new Technician ARRL Ham Radio License Manual is the Fifth Edition with question pool that becomes effective July 1, 2022 for four years.

The current ARRL General Class License Manual is the Ninth Edition with question pool that became effective July 1, 2019 for four years.

The current ARRL Extra Class License Manual is the Twelfth Edition with question pool that became effective July 1, 2020 for four years. *This question pool will expire on June 30, 2023,*

As of late 2019, expired Amateur Radio license holders can get their license back by taking the current Technician exam and show proof of their previous license class. A previous Advanced Class licensee will only be able to get a General Class license.

PROPOSED CLASSES

All classes will be 3-1/4 to 4 hours long for six or seven sessions; one per week on a week night 6:15pm-9:30pm or Saturday day 9am-1pm.

If interested in a class, send an email to wa4ovo@gmail.com with Subject line: Tech, General or Extra Class and name, email address and cellphone number is text.

The next **General** license class will probably start in early November 2023

The next **Extra Class** license class will probably start in early January 2024

Tech Class 3-23 – July 10 – August 14, 2023

A Technician license class will be held in person on six Monday nights from 6:15-9:30pm on July 10,14,21,28, August 7 & 14. The first four classes will be instructional and the sixth class will be informational on FM radio basics, APRS, satellite, and digital modes the students can operate on. Classes 1,2,3,4 and 6 will be at the Memphis Police Department Appling Farms Station precinct, 6850 Appling Farms Pkwy, Memphis. The fifth class on August 7th will be a review of the 399 questions and answers in the FCC question pool with an opportunity to take the FCC exam(s) at a location to be determined. There are 13 students registered. To register, send an email with the Subject: Tech Class with name, email address and cellphone number.

CURRENT CLASS

None

COMPLETED CLASSES

Tech Class 2-23 – February 27 – April 3, 2023

A Technician license class began on six Monday nights from 6:15-9:30pm on February 27, March 6, 13, 20, 27 and April 3rd. There were thirteen students registered for the class. After the second class, it was down to ten. The first four classes were via Zoom. The fifth and sixth classes were in-person at Ellendale Church of Christ, 7365 Hwy 70 (Summer Ave). The fifth class was an opportunity to take the FCC exam.

Congratulations to Scott Holmes KQ4HJF, Caleb Wise KQ4HGG and Randy Redd KQ4HJH for earning their Technician licenses.



Tech Class 2-23 Testing

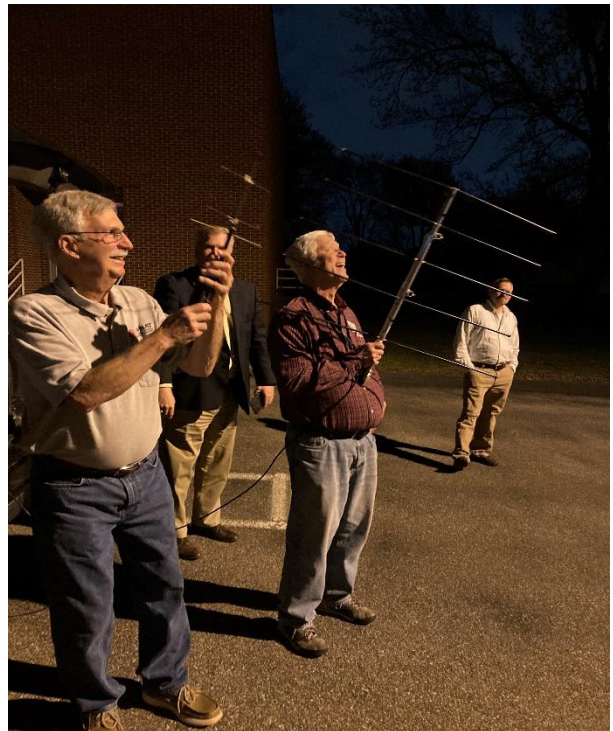
Photo by Mary Jean Hall KY4FB

The instructors were Joe WA4OVO, Paul KA4X, Park AI5CY, Bobby KD5BS, John KN4BVH, Perry N4GJ, David KY4FH and Carolyn KX4QF.



John KN4BVH on Digital Modes

Photo by Joe Lowenthal WA4OVO



The sixth class was for equipment demonstrations. The demonstrators were Joe WA4OVO on FM Radio Basics and Echolink, Rick KJ4NWQ on APRS operations: John KN4BVH on DMR, DSTAR, and Yaesu digital modes; and Rick WA4NVM and Richard K4DXF working satellites and the ISS.

Extra Class 1-23 – January 7 – February 25, 2023

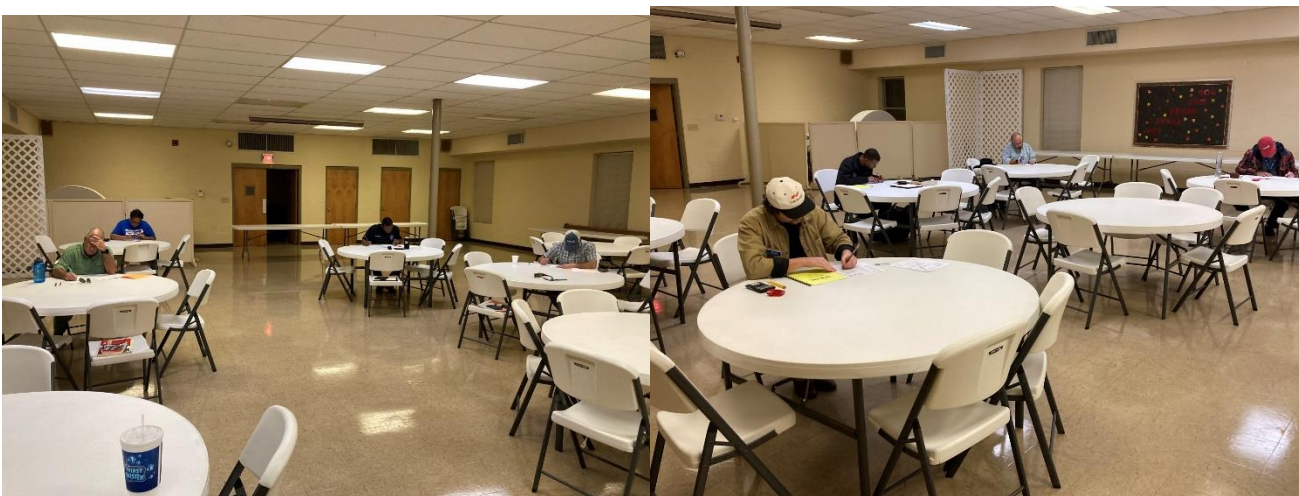
An Extra Class license class was held for five Saturdays from 9am to 1pm on January 7,14,21, February 11 and 18 via Zoom. There were eight students in the class; four from out of town. Since only two students were wanting to take the FCC exam on the 25th and Joe WA4OVO was in quarantine, they were directed to take their exam online by finding one on hamstudy.org or at the next local test session.

Congratulations to Peter Finch K1EXR who passed his exam at the Port City ARC (PCARC) test session on February 4th. Congratulations to Mark Estabrook KO4GQV who upgraded on March 2nd at the Chattanooga test session. Congratulations to Richard Werner KC1DZK for upgrading at the PCARC test session on March 4th. Two of the Memphis students should be testing on the 14th at the Delta Club test session and one at the CARA test session on the 20th. The instructors were Joe WA4OVO, John KN4BVH, David KY4FH, Barry W5CJ, Dave AD4Q, Paul KA4X. Pat W4OQG, Park AI5CY and Bobby KD5BS.

General Class 5-22 – November 7 – December 5, 2022

A General Class license class was held for five Monday nights from 6:15-9:30pm from November 7th to December 5th. The first four classes were via Zoom with the fifth class in person at Ellendale Church of Christ, 7365 Hwy 70 (Summer Ave). The ARRL FCC exam was offered on the fifth night of class. There were 13 students registered for the class. Seven students completed the class with only four testing.

Congratulations to Davis Colston K5TGR, Bob O'Gradr KO4ZCJ and Will Tenney KO4TLY for upgrading to General.



General Class 5-22 ARRL FCC test session Photo by Joe Lowenthal WA4OVO

Congratulations to Dane Kunkler KI5EJD who upgraded at the Huntsville TX ARRL test session on March 11, 2023.

The instructors were Joe WA4OVO, Steve KK4VPT, Perry N4GJ, Paul KA4X, Barry W5CJ, Len W4MKS, Park AI5CY and David KY4FH.

The Delta Club ARRL VE Team of Bob KW4RJ, Mary Jean KY4FB, Perry N4GJ, Bob AI4GI and Joe WA4OVO provided the opportunity for FCC testing.



General Class 5-22 VEs

Photo by Joe Lowenthal WA4OVO

Field Day 2023
Submitted by Mary Jean Hall, KY4FB









Visit the link below for video of Field Day 2023.
https://www.youtube.com/watch?v=eRQZ8iWqR_0

Meet the Lithium-Sulfur Battery

Submitted by Bob Vawter, KW4RJ

By Ryan Clancy

The lithium-sulfur (Li-S) battery has been under development for several years now and it is looking like it could be the next big thing in battery technology. This type of battery has a lot of potential advantages over traditional lithium-ion (Li-ion) batteries, including performance at extreme temperatures, significant weight reduction and low cost.

There is still some work to be done before the Li-S battery is ready for mass production and commercialization, but this type of battery is looking like it could become a mainstream solution in the near-future.

How do Li-S batteries work?

These are a type of rechargeable battery that could challenge Li-ion technology for dominance due to their high energy density. The batteries use sulfur as the cathode and lithium metal as the anode with a solid electrolyte between them. Due to the low cost and abundance of sulfur, Li-S batteries present an economically viable alternative to traditional Li-ion batteries, which mostly utilize cobalt in its cathode material.

So how do these Li-S batteries work? During the charging process, a Li ion is oxidized and becomes an electron; this electron then travels to the cathode. The sulfur atoms in the cathode react with the Li ion and form polysulfide molecules, which act as a bridge between two Li ions.

This initiates eight sulfur atoms to form a ring and consecutively trigger a reduction reaction to gradually shorten and become linear structures of lithium sulfide. During discharging, oxidation occurs in the reverse order — converting back into polysulfide molecules, which again transfer electrons from one side of the battery to another. This process releases energy in the form of electricity.

Why are Li-S batteries solid-state?

Li-S cells are solid state, meaning they do not require the liquid electrolyte found in traditional Li-ion cells. This gives them a number of advantages, including higher energy density and better safety than their liquid counterparts.

What makes Li-S cells solid state is their unique structure. Unlike traditional Li-ion cells, Li-S batteries have a bipolar architecture, with both cathode and anode materials located on either

side of the separator. The cathode material is typically sulfur, and the anode material can be lithium metal or a lithium alloy. The active materials are then held in place by a solid separator, typically made of polyethylene or other polymer material.

The lack of liquid electrolyte in Li-S cells gives them several physical advantages over other types of batteries. Solid state batteries can hold more energy due to their higher storage density. Additionally, since there is no liquid electrolyte present, the risk of short circuiting and thermal runaway is greatly reduced. This makes them far safer than traditional cells, which can catch fire if punctured or damaged.

Advantages of Li-S over Li-ion batteries

Li-S batteries are the next generation of energy storage technology that offer unprecedented advantages over traditional Li-ion batteries. The unique combination of lighter weight, higher energy density, increased safety, lower cost and energy to produce, and superior performance in weathered conditions make Li-S an ideal choice for many applications.

One major advantage of Li-S is its unprecedented energy density. With a theoretical capacity of up to 2,500 Wh/kg — significantly more than most Li-ion cells — it can store twice as much power in a single battery. This significantly reduces the size and weight of the battery while providing maximum power output. Furthermore, this high energy density translates into a longer range for electric vehicles (EVs), making Li-S batteries ideal for transportation.

Li-S is also much more cost effective and requires less energy to produce than Li-ion batteries. Material costs are up to 70% lower due to the use of sulfur as an active material, which reduces the need for expensive rare Earth materials used in Li-ion cells. Additionally, fewer components and simpler production processes result in reduced energy costs and improved sustainability compared with traditional batteries.

The stability of Li-S batteries is also impressive. Under extreme conditions such as temperatures of -70°C and under 1/25 atmospheric pressure, the performance remains stable. This allows them to be used in applications where a traditional Li-ion battery could not survive, making them highly versatile and useful for various industries.

Summary

The combination of these advantages makes Li-S batteries an ideal choice for many applications ranging from consumer electronics to EVs and more. Their low cost, energy density, sustainability, superior performance in weathered conditions, and unparalleled safety make them a smart alternative to traditional Li-ion cells.

The Li-S battery is a serious contender for becoming the next-gen battery, as these boast many advantages over the current version, the Li-ion battery. Some of these advantages include having a higher energy density and being more environmentally friendly.

Even though there are some challenges that need to be faced before mass production can begin, such as cycle life and cost, it is clear that the potential benefits outweigh the negatives.

<https://electronics360.globalspec.com/article/19327/meet-the-lithium-sulfur-battery?uid=430837&uh=fd80b2&md=230321&mh=8588d4&Vol=Vol23Issue12&Pub=1&LinkId=2127673&keyword=link%5F2127673&itemid=386554&frmtrk=newsletter&cid=nl>

73,
W4WTN

ARRL DUES SURVEY RESULTS (Conducted in May 2023) Submitted by Joe Lowenthal WA4OVO, Director of Training

ARRL invited members to participate in a dues survey in May. If you are one of the over 20,000 members who participated...THANK YOU! The survey results are being used by the ARRL Board of Directors to aid their analysis and discussions.

The Board will hold its Second Meeting, July 21 - 22, 2023, when we anticipate any decisions or outcomes involving dues.

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Survey conducted in May 2023.

Total of 20,077 members responded.

Member Response Rate by Division

16.9% Dakota

16.6% Midwest

15.9% Central

15.7% New England

15% Roanoke

14.3% West Gulf

14.1% Delta

14% Great Lakes

13.6% Rocky Mountain

13.6% Southeastern

12.6% Hudson

12.4% Pacific

11.7% Atlantic

10.5% Northwestern

10% International

9.8% Southwestern

QUESTION 1. Members receive all four ARRL magazines in digital format. If we were to separate the printed magazine from being

included in the base membership, would you still choose to receive it as an add on?

43% I want a printed magazine included with my ARRL membership

39% I'll go digital only

18% I would pay more to add a printed magazine to my membership

QUESTION 2. Which of the following ARRL membership benefits, services, and programs have you used in the last 12 months?

(Please select all that apply)

16,579 Printed edition of QST and/or On the Air magazines

11,735 Members-only e-newsletters, including ARRL News and the weekly ARRL Letter

10,933 Digital editions of ARRL magazines

8,861 Logbook of The World – LoTW

7,907 Product reviews and ARRL Lab equipment testing

7,026 E-mail forwarding service (your_callsign@arrl.net)

6,867 ARRL's online, searchable Periodical Archive

4,039 ARRL Radiosport; contests, events, and awards

3,945 Amateur Radio Emergency Service – ARES

3,762 ARRL Volunteer Examiner

2,120 Help with FCC rules, antenna/zoning restrictions. (ARRL Regulatory Information Branch)

2,026 ARRL Learning Center (learn.arrl.org)

1,897 Outgoing QSL Bureau

1,529 Help with technical and operating questions, or using the ARRL Technical Information Service

1,439 Ham Radio Equipment Insurance Plan

978 I am active as an ARRL Field Organization Volunteer

546 NONE OF THESE

QUESTION 3. I value my membership for ARRL's work in the following areas: (Please select all that apply)

15,662 Spectrum defense

14,605 Advocacy in local, national, and international regulation and policymaking

13,766 Promoting amateur radio to the public

13,531 Support for amateur radio licensing, instruction, and exams

12,953 ARRL's fight against interference and spectrum pollution

12,652 ARRL books and published content

9,852 On-air ARRL contests and events. (Field Day, International DX, Sweepstakes, VHF, etc.)

9,331 STEM outreach; schools, teachers, and youth

8,996 Finding hamfests and conventions (www.arrl.org/hamfests)

555 NONE OF THESE

QUESTION 4. ARRL cannot continue to operate at the current dues level. What annual dues rate do you feel is reasonable for ARRL to set?

39% \$59

28% \$54

17 % \$49 (current dues rate)

9% \$69

7% \$64

Average of all responses = \$57.14

Average of only responses for increasing dues = \$58.79

QUESTION 5. Do you (or could you) support ARRL financially beyond annual dues through Diamond Club, Spectrum Defense Fund, or other donation opportunities?

67% Not at this time

14% I am willing to

10% I am unwilling

9% I already do

QUESTION 6. ARRL Life Membership does not cover expenses for the membership. For future Life Memberships should ARRL:

45% Have Life Membership be priced at a level that covers program costs

24% Keep Life Membership as it is

19% Change Life Membership from a paid program with benefits to a recognition program based on years of membership

12% Eliminate Life Membership

QUESTION 7 included open-ended responses.

QUESTION 8. Do you consider yourself an active ham?

58% Yes

26% Kind of

6% No

QUESTION 9. Which of the following statements best describes your participation in amateur radio? (Please select all that apply)

14,667 Ham radio is the hobby of a lifetime.

10,371 When all else fails... amateur radio.

10,311 I want to tune in the world with amateur radio.

7,461 Ham radio influenced my education and/or career.

7,217 I want to know how radio works.

4,048 All my friends are hams. I enjoy being a part of the community.

3,279 Why buy equipment when you can build it yourself!?

1,948 I long for the days of vacuum tubes.

727 NONE OF THESE

QUESTION 10. Without ARRL, amateur radio might not exist today.

53% True

37% Maybe

10% False

QUESTION 11. What, if anything, might help you stay active (or become more active) in amateur radio? (Please select one)

24% Other hams who share my interests

19% Online, recorded, courses and training

19% NOTHING

12% Support from a local radio club

10% OTHER

8% Help with my own station and equipment

4% A mentor

4% Online, live, interactive training

QUESTION 12. ARRL currently sells an end-fed half-wave antenna kit. Should ARRL offer more kits and radio products?

79% Yes

21% No

QUESTION 13 included open-ended responses.

How to Print Your FCC License

1. Go to **<https://wireless2.fcc.gov/UlsEntry/licManager/login.jsp>**
2. Enter your FCC Federal Registration Number (FRN) and Password
 - a. If you do not know your FRN, go to Search box and click on License
Click on Amateur; Enter your callsign in Callsign box;
Your FRN is in center of page after your name
(If you do not know your Password, click on Contact Tech Support after Forgot your Password)
3. In When My Licenses screen comes up, click on **Now** in the green line reading “Change your paper authorization preferences [here](#), or download your official electronic authorizations now”
4. In Under Download Authorizations screen, highlight your callsign in the My Authorization area at the bottom left.
5. Click on ADD to right of the highlighted callsign.
6. Highlight your callsign in Authorization to Download and then click on Download on bottom right of screen.
7. If pop-ups are blocked, click on Allow One
8. Click Open at bottom and Print your License.

INDIVIDUAL EMAIL ADDRESS IN QRZ
Submitted by Joe Lowenthal, WA4OVO

Consider going to QRZ.COM and log in. Then enter your email address on their QRZ page so other hams can contact you vial email rather snail mail. Anyone looking for email addresses has to log in to QRZ to be able to see the ham's email address.

ARRL Benefits

ARRL amateur radio community. When you renew, a few of the benefits you will enjoy are: - Your choice of a print magazine. Eligible US-based ARRL members can elect to receive QST, the official membership journal of ARRL or On the Air, aimed at helping new and emerging radio communicators get active and on the air. - Digital access to all four ARRL publications -- QST, On the Air, and now QEX, covering topics related to radio communications experimentation, and National Contest Journal (NCJ), covering radio contesting. - Access to ARRLs Technical Information Service to assist with technical problems and help with your projects. To secure these amazing members-only benefits and many more in the coming year, visit www.arrl.org/join/WE1 to renew or call us toll-free at: 1-888-277-5289 (US Only) , Monday Friday, 8 a.m. to 5 p.m. ET. International members call (860) 594-0338. **If you join or renew through Delta Club, the club receives a commission. For new ARRL members or expired membership over 2 years there is a \$15 commission; for renewals a \$5 commission** ARRL Application.pdf

ARRL MEMBERSHIP COMMISSIONS Submitted by Joe Lowenthal, WA4OVO

Recently ARRL revised their membership commissions to ARRL clubs that process individual ARRL memberships through the club. The club can receive \$15 for new memberships or renewals of past ARRL memberships over two years old. Current renewals generate a \$5 commission. Current ARRL members can renew/extend their ARRL membership at any time. If you renew early, your ARRL membership is extended for the renewal period from the expiration of your current ARRL membership. The club only gets \$5 for each renewal application no matter how many years being renewed.

Here is a link to the ARRL membership renewal form.

[ARRL-Membership-Application.pdf](#)

Fill it out and bring a check made payable to ARRL to the meeting or mail to the Delta Amateur Radio Club at PO Box 342768, Bartlett TN 38134-2768. Or, you can pay Jim Martin KD4FUU in cash at a meeting. Even though credit card information is on the application, the Delta Club does not want to have access to credit cards so we will not accept an application with a credit card information for payment.

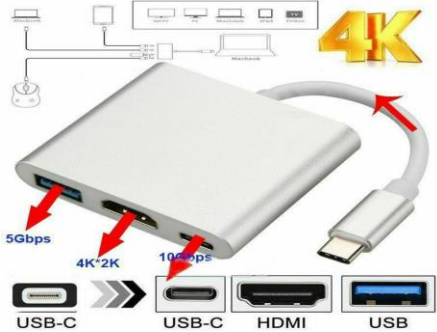
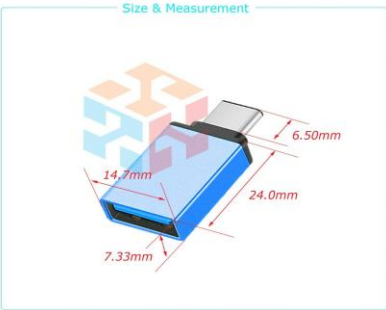
Also, here is a link to the Delta Club Membership Application:

[application-15-3.pdf \(wsimg.com\)](#)

Packet Update

By: James Butler KB4LJV

We are always connecting other devices to our computers. The newest standard for this connection is the USB-C. The speed the connection it has is much greater than older connectors. USB-C stands for universal serial bus type C. The connector size is smaller to allow use on smaller electronics. The connector can also carry video and audio information for hookup to TVs and computer monitors via HDMI. For data they make a USB-A to USB-C adapter to go to older systems. The companies also make a cable to allow for an HDMI video connection. If you want to have it all they have the ultimate hub which has a USB-A connection, 2 USB-C connections, HDMI video connection, power supply input for computer, SD card connection, and Ethernet connection. This interface on newer computers is very fast and versatile. To see all the USB-C adapters you can get do a search on Ebay for a “USB-C adapter”.



Amateur Hardware Update

By: James Butler KB4LJV

Many amateurs are looking for a cheap and small QRP antenna they can run in the field. MFJ Enterprises has developed a small QRP loop antenna tuner for portable use. The small box has two wire nuts to hook up the loop of wire you supply. The box has a 50 ohm connection from the radio. The length of wire you supply for the loop is determined by the band you want to work. MFJ has the suggested lengths in the manual. The MFJ-9232 operates on 40 through 10 meters with the proper wire length. 80 meters is possible with limited bandwidth. The power limit for the tuner is 25 watts. The MFJ manual also explains how to adjust the tuner for best operation. MFJ even allows you to go to their site and download the manual for the MFJ-9232 so you can see all the information about it before you buy. With a price of about \$90 it represents a good value for the money. To learn more about this tuner go to the MFJ website. The web address is <https://www.mfjenterprises.com>



**Amateur Radio Emergency Service (ARES)
Emergency Coordinator (EC) - John Reiners KN4BVH**

If you are interested in joining Shelby County ARES, complete an application at <https://www.tnares.com>. Click (do not pull down) on INFORMATION on the top right of the page. Next, go to TN ARES Membership and Appointment Application Forms and then click on ARES Membership Application: FSD-98. Complete the form and click SUBMIT at the bottom of the page. You should get an acknowledgment soon after submitting.

**YL News
Submitted by Mary Jean Hall, KY4FB**

The YL Net is every Saturday at 8:45 pm. We normally meet on the 146.820 frequency, which has a PL tone of 107.2 Hz. We are currently meeting on a secondary frequency, which is on the 443.700 W4BS repeater. This has a +5 MHz offset and a PL Tone of 107.2 Hz.

We encourage all YLs and OMs to check in with us on the YL Net!

Sparks Newsletter and 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 38134-2768

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>.

2023 Board of Directors

President

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ky4fb@arrl.net
901-356-1475

Vice President

Perry Hayes, N4GJ
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Immediate Past President

Steve Frazier, KK4VPT
sfrazier1@bellsouth.net
901-218-6385

Repeater Trustee

Barry McDonald, W5CJ
W5CJ@ARRL.NET
901-853-0510

Upcoming Events

For more information go to <http://hamcalendar.com/>

August 19, 2023: Huntsville Hamfest
September 30, 2023: Bluff City Blues Bike Ride, Shelby Forest
October 14, 2023: A Day in the Park

Memphis Area VHF/UHF Nets

Name of Net	Frequency (MHz)	Offset/Tone	Local Time	Day of Week
Delta Club Info Net (Primary)	146.82	- (107.2)	8:00p	Daily
Delta Club Info Net (Secondary)	443.7	+(107.2)	8:00p	Daily
Four-Forty Net	443.7	+(107.2)	8:30p	Friday
YL Net (Primary)	146.82	- (107.2)	8:45p	Saturday
YL Net (Secondary)	443.7	+(107.2)	8:45p	Saturday
Mid-South Bullfrog Net	146.535	[simplex]	7:30p	Daily
Elmer Net	444.175	+ (107.2)	9:00p	Sunday
MedMERS Net	146.82	- (107.2)	12:00p	Wednesday
ARES Training Net	146.85	- (107.2)	9:00p	Thursday
Sunday Super Niner Net	927.6125	- (146.2)	8:30p	Sunday
TN Statewide DMR Net	Digital – DMR		8:00p	Friday
Crittenden ARO	147.15	+ (107.2)	7:30p	Sunday
Crittenden ARO	442.4	+ (107.2)	8:00p	Thursday
Olive Branch ARC	147.255	+ (79.9)	8:30p	Thursday
Linked	444.7	+ (107.2)	8:30p	Thursday
Desoto County EMA	146.91	+ (107.2)	8:30p	Monday
Tipton ARS	145.49	+ (100.0)	7:30p	Thursday

TENNESSEE HF NETS

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	3.810		As needed
CUSEC	7.180		As needed

(Center for United States Earthquake Consortium)

3980 kHz – Tennessee Phone Net

Mon-Fri - 5:40 AM, 6:45 AM & **5:30 PM** (5:30 pm beginning Nov. 9 evening)

Saturday - 8:00 AM & 5:30 PM

Sunday - 8:00 AM only

Holidays - 8:00 AM only

DELTA CLUB ADVERTISEMENTS

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
 146.82- 147.36+ (107.2Hz tone)
 224.42- 443.20+ (107.2Hz tone)



Joe Miller
Owner

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