



News Beacon

Medina County Amateur Radio Club

Editor's Preface

"August slipped away into a moment in time, 'cause it was never mine."
Taylor Swift

August is slipping away, and soon autumn will bring crisp breezes and whispers of winter. So, make time to enjoy the hazy days of late summer, soaking in the warmth and enjoying some laziness by sitting in the shade, walking in the park or riding out in the country. Festivals and fairs are always an option.

It is also a great time to work on your antenna configuration and perform maintenance on your towers. Better now than with frozen fingers!

You may have noticed that our two meter repeater is temporarily offline. Our repeater gurus, Ed K8NVR and Ken K8TV are working out the glitches and will report at our August 14th General Meeting.

PLEASE NOTE: Due to the ongoing renovation of the Medina County Career Center (JVS), the **August 14th meeting will be held at the Senior Center** located in the Medina County Office for Older Adults, 246 Northland Drive, Medina, OH 44256. (See page 6).

Thank you for your interest in the Medina County Amateur Radio Club. We have the best members!

73, Jane@K8JGR.radio

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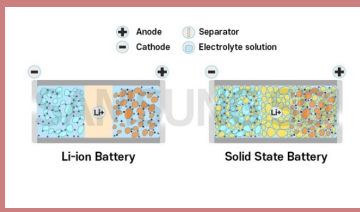


Hmmmmmm...

This Ham arrives home at 3 am. His wife asks him, "Wire you, insulate?"

He replies, "Watt's it to you? I'm Ohm, aren't I?"

Solid-state Battery Development



[Structure of Li-ion battery(left) and solid-state battery(right)]

What is a Solid-state Battery?

A lithium-ion battery is composed of cathode, anode, separator and electrolyte. A lithium-ion battery applied at smartphones, power tools and EVs uses liquid electrolyte solution. On the other hand, a solid-state battery uses solid electrolyte, not liquid.

If you look at the image to the left, the Li-ion battery, which is commercially used, has a separator that keeps cathode and anode apart, with liquid electrolyte solution. On the other hand, the solid-state battery uses solid electrolyte, not liquid electrolyte solution, and the solid electrolyte plays a role of a separator as well.

What users most worry about a lithium-ion battery is safety. The current Li-ion battery has a risk of battery damage such as swelling caused by temperature change or leakage caused by external force since it uses liquid electrolyte solution. Therefore, we need devices or components that can improve safety.

However, a solid-state battery with solid electrolyte shows improved stability with a solid structure, and increased safety since it maintains the form even if the electrolyte is damaged.

Reasons to develop a solid-state battery

Then, why do we need a solid-state battery? It is to increase capacity of EV batteries.

Market research companies expect that EVs will replace ICEVs (internal combustion engine vehicles), and become the mainstream in the auto industry. And to become the unarguable leader in the industry, EV should have the similar level of mileage as the current ICEV, and it is important to increase the battery capacity of an EV battery to do so.

There are two ways to increase capacity. First is increasing the number of batteries. But in this case, the battery price goes up and batteries take up so much space in the vehicle.

A solid-state battery has higher energy density than a Li-ion battery that uses liquid electrolyte solution. It doesn't have a risk of explosion or fire, so there is no need to have components for safety, thus saving more space. Then we have more space to put more active materials which increase battery capacity in the battery.

A solid-state battery can increase energy density per unit area since only a small number of batteries are needed. For that reason, a solid-state battery is perfect to make an EV battery system of module and pack, which needs high capacity. See image on left.

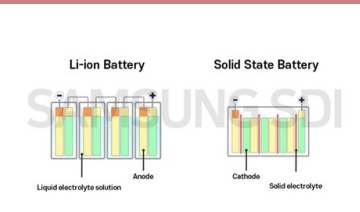
Market trend of a solid-state battery

Samsung SDI is currently working on developing the solid-state battery. We are also jointly developing the battery with other institutes such as Samsung Advanced Institute of Technology, Samsung R&D Institute Japan and others.

Samsung SDI has been presenting mid-to-long term solid-state battery technologies at the motor show or battery exhibitions since 2013. And we are currently at the element technology development phase for commercialization. We also said in the second quarter 2020 earnings conference call that "we have seen the possibility of developing a high-energy density and high-safety battery by combining tested materials technology and our new materials such as solid electrolyte."

In March, the Samsung Advanced Institute of Technology showed the research result of a solid-state battery that can be charged/discharged over 1,000 times with 800km of mileage on a single charge. The study about the technology that increases life cycle and safety, and reduces the size of a solid-state battery in half was published in the 'Nature Energy', a global scientific journal.

We must develop the solid-state battery to make the EV that goes farther and runs safely. There may be many obstacles ahead since we are at the early stage of development, but Samsung SDI will do our best to develop the 'super-gap' technology.



[A downsized solid-state battery(right) with the same capacity as the Li-ion battery(left)]

With thanks to Bob K8MD who brings attention to this needed technology. Samsung is but one of the innovators.

<https://www.samsungsdi.com/column/technology>

July In-Person General Meeting Minutes

The monthly General Meeting, was held July 10th 2023, in-person at the Medina County Career Center (JVS). The meeting was called to order by President, Ed K8NVR and the Pledge of Allegiance was recited at 7:05 pm. The following fifteen (15) paid members and three (3) guests attended, so quorum (9) was reached.



ED K8NVR	Baji K8IIT	Doug KD8SST	<i>Dudley Chapman WA1X</i>
Diane KD8SSX	Bob K8MD	Toby WT8O	<i>Ken Dorsey KA8OAD</i>
Amy K2KSU	Steve KE8BJD	Jane K8JGR	<i>Sue Harman</i>
Tracey W8TWL	Tamara WA8KGV	Gail KD8GGM	
Dave KE8APO	James KD8FHY	Fred K8FH	

Secretary’s report: Reading of the minutes of the June meeting as published in the July Club newsletter was suspended. Minutes were approved without corrections or additions.

Treasurer’s report for June was read by Treasurer, Toby WT8O. Motion to approve: Diane KD8SSX, Second: Gail KD8GGM. Approved.

President’s Report: *Access to the Career Center will vary due to construction issues. Tonight access was through the S1 door only. Next month Ed K8NVR will arrive at 5:30 pm to gain access and will radio specific access directions to members over the 2m repeater prior to the meeting. *Reminder to submit articles to Jane K8JGR for inclusion in the club newsletter. *The NOARS club is having a Hamfest on Saturday July 15 and a meet-and-greet potluck on Sunday July 23. *There is still some donated Ham equipment from KC8F available including a Rigblaster and an Astron power supply. See Ed for details

Net Control: Baji K8IIT stated that the net control schedule is good for the near term.

Repeaters: The new 220 MHz repeater failed last week, and the old one was installed so the failed one can be sent for repair. It is likely still under warranty.

Field Day: Band conditions were not optimal, but turnout and setup/teardown was good. We had four overnight operators. There was a generator issue and also some FT8 technical logging issues. Kudos to Fred K8FH who supplies the majority of the equipment needed for a successful event. Guest, Sue Harman, attended field day and is here at our meeting tonight with plans to study for her license in the fall.

Programs: There is a need for an August technical presentation subject. Ed plans to cover modulation and transmitter theory in the Sept/Oct sessions.

Announcements & Comments: Twin Sizzler event went well with Marcs radios to test coverage instead of Amateur radios.

Meeting was Adjourned: At 7:35 pm followed by a technical presentation by Ken Dorsey KA8OAD on Hamshack Hotline.

Respectfully submitted by Dave KE8APO

**BE KIND TO
EVERYONE YOU MEET.**



**THEY MAY BE
STUDYING TO BECOME
A HAM.**

Club Meetings

The MCARC General Meeting for August will be held in the basement of the **Medina County Senior Center** at 7:00pm.

Main entrance with the awning will be closed due to renovations. Please use south entrance at rear of the building.

The **Medina County Senior Center** is located in the Medina County Office for Older Adults, 246 Northland Drive, Ground Medina, OH 44256

Member Birthdays

Julio Esis KE8JIE	08/07
Stephen Kinford N8WB	08/17
Anthony Crespo KC8PTQ	08/31

MCARC Calendar

August 7 7:30pm Monday Night 2M Net (Repeater repair dependent)
August 14 7:00pm IN-PERSON MEETING at SENIOR CENTER (see pg 6)
August 21 7:30pm Monday Night 2M Net (Repeater repair dependent)
August 28 7:30pm Monday Night 2M Net (Repeater repair dependent)

ARRL Ohio Hamfests

08/05/2023 - 2023 Columbus Hamfest

Location: Grove City, OH
Sponsor: Aladdin Shrine Audio Unit
Website: <http://www.columbushamfest.com>

08/12/2023 - Cincinnati HamfestSM

Location: Owensville , OH
Sponsor: Milford ARC
Website: <https://CincinnatiHamfest.org>

08/19/2023 - Portsmouth Radio Club Hamfest

Location: New Boston, OH
Sponsor: Jett Fire, Shawnee Computer
Website: <http://www.portsmouthradioclub.org>

08/20/2023 - WARA Tailgate Swap Meet

Location: Cortland, OH
Sponsor: Warren Amateur Radio Association
Website: <http://www.w8vtd.com/hamfest/>

Radiosport Contests

August 5-6 North American QSO Party—CW
August 5-6 ARRL 222 MHz and Up Distance Contest
August 12-13 ARRL EME - 2.3 GHz & Up
August 19-20 North American QSO Party—SSB
August 19-20 ARRL 10 GHz & Up – Round 1
August 20 ARRL Rookie Roundup – RTTY
August 26-27 WW Digi DX Contest

Saturday 8am Breakfast

Check with your friends to see if they will be joining you at the **Cracked Egg Restaurant** at 1475 Pearl Rd in Brunswick, opposite the Middle School, Saturdays at 8am.



Military Auxiliary Radio System (MARS)

The Military Auxiliary Radio System (MARS) is a United States Department of Defense sponsored program, established as a separately managed and operated program by the United States Army, and the United States Air Force. The United States Navy-Marine Corps program closed in 2015. The program is a civilian auxiliary consisting primarily of licensed amateur radio operators who are interested in assisting the military with communications on a regional and national level when access to traditional forms of communication may no longer be available.

MARS has a long history of providing worldwide auxiliary emergency communications during times of need. The combined two-service MARS programs (Army, and Air Force), volunteer force of over 3,000 dedicated and skilled amateur radio operators provide the backbone of the MARS program. The main benefit of MARS membership is enjoying the amateur radio hobby through an ever-expanding horizon of MARS service to the nation. MARS members work by the slogans "Proudly Serving Those Who Serve" and "Proud, Professional, and Ready."

All individual civilian MARS volunteers must meet minimum eligibility criteria for membership in MARS, see [MARS Guide to new Membership v1](#). Because MARS is a dynamic volunteer organization with the mission of supporting multiple agencies and organizations through the Department of Defense during situations of national emergencies, membership is an honorable contribution to our nation's well being.

Official AFMARS Website

Armed Forces Day Crossband Test

This annual event [on the third Saturday of May] is **open to all licensed amateur radio operators** and will not impact any public or private communications. For more than 50 years, military and amateur stations have taken part in this event.

The AFD Crossband Test is a unique opportunity to test two-way communications between military communicators and radio stations in the Amateur Radio Service (ARS), as authorized in 47 CFR 97.111. These tests provide opportunities and challenges for radio operators to demonstrate individual technical skills in a tightly controlled exercise scenario.

Military stations will transmit on selected frequencies and will announce the specific ARS frequencies monitored. All of the times are Zulu (Z), and all frequencies are Upper Side Band (USB) unless otherwise noted. The frequencies used for the test will not stray outside the confines of the exercise.

ARRL Website





Submitted by Bob K8MD

Hamatuer Antix

Protesting with "Resistance"



MCARC will be holding Technical Sessions during most of our in-person General Meetings on the 2nd Monday of each month.

August 14th General Meeting

Come join us at our **In-Person General Meeting on August 14th, to be held** in the basement of the **Medina County Senior Center** at 7:00pm.

Main entrance under the awning will be closed due to renovations. Please use south entrance at rear of the building.

The **Medina County Senior Center** is located in the Medina County Office for Older Adults, 246 Northland Drive, Medina, OH 44256

There will be no Technical Session in August, but there will be an extended discussion about a few things that cropped up that affect Club operations.

Dits and Dahs

- **NOTE VENUE CHANGE**

Our **AUGUST 14TH General Meeting** will be held at 7:00pm, in the basement of the **Medina County Senior Center**.

Main entrance with the awning will be closed due. Please use south entrance at rear of the building.

The Medina County Senior Center is located in the Medina County Office for Older Adults, 246 Northland Drive, Medina, OH 44256

- **Our 2-Meter repeater is temporarily offline.**

When back on, our 2-Meter Nets are held at 7:30pm, except for the second Monday of each month when we hold our General Meeting. More info on the MCARC Net is found on page 8.

- **Skywarn**

In the unlikely event of any Medina SKYWARN activation in the next few days any activity will occur on 147.285R with a PL of 110.9, the listed backup frequency. Tracey Liston W8TWL, Medina County SKYWARN

- **November MCARC Elections**

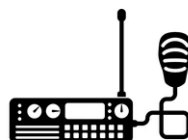
It is not too early to start thinking about becoming more active in the Medina County Amateur Radio Society. Page nine lists all positions that make up the backbone of our Club. We need fresh perspectives to propel MCARC forward in innovation, relevance and community visibility. Please consider volunteering for a committee assignment. All officer positions and two trustee positions will be on the ballot in November for elected positions. And, we are always looking for members to share their expertise at a Technical Session. Thank you for your consideration.

- **Newsletter Contributions**

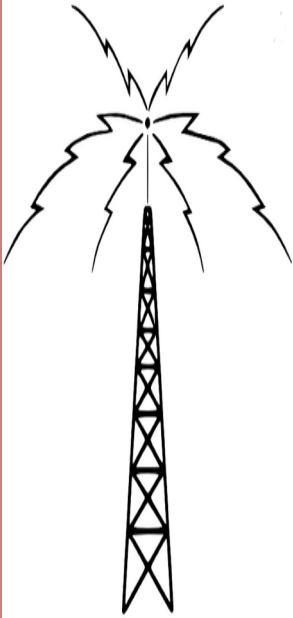
While we are on the subject of helping our Club, please send any material about your projects, Amateur Radio news, technical articles, DXing, or radio cartoons to our newsletter editor—Jane@K8JGR.radio. Thank you.

- **Cool Website**

NASA, Space Exploration and Astronomy News. Get the latest space exploration, innovation and astronomy news. **Space.com** celebrates humanity's ongoing expansion across the final frontier.



MCARC Repeaters



Call	Location	Function	Repeater Input	Repeater Out	CTCSS (PL)	Band
W8EOC	Medina (Main Site)	Repeater TX & RX	147.630	147.030	141.3 One Beep	2 Meter
W8EOC	Brunswick (North)	Receive only	147.630	From Main Site	131.8 Two Beeps	2 Meter
W8EOC	Lafayette (South)	Receive only	147.630	From Main Site	88.5 Three Beeps	2 Meter
W8EOC	Lafayette (South)	Split Site Repeater	51.160	51.660	N/A	6 Meter
	Brunswick Hills					
W8HN	Medina Main Site)	Digital C4FM TX & RX Repeater	147.885	147.285	(0)	2 Meter
		Analog TX & RX Repeater	147.885	147.285	(110.9)	2 Meter
W8EOC	Medina (Main Site)	Repeater TX & RX	223.260	224.860	-	1.25 Meter
W8EOC	Lafayette (South)	Repeater TX & RX	449.925	444.925	131.8	70 CM

TRAVELING? Check out <https://repeaterbook.com/> for a free, worldwide repeater reference. It supports GMRS as well.

2-Meter Net

OUR 2-METER REPEATER IS temporarily OFFLINE.

When back on, remember to join us on 147.030 Monday evenings at 7:30pm except for 2nd Monday of each month when we have our **In-person** meetings.

You do not have to be a member of MCARC to participate.

MCARC Monday Night 2-Meter Net Control

		07-Aug-2023	KE8APO
14-Aug-2023	Meeting	21-Aug-2023	
28-Aug-2023	K8TV	04-Sep-2023	

Contact Baji K8IIT, ohiobaji@gmail.com, if you would like to serve as NCO.

NCO openings can be found at:

<https://b.link/2023-nco>

MCARC Membership

Please become a member or renew your **Medina County Amateur Radio Club** membership. Dues are our primary source of income and are used to pay for the administrative costs of liability insurance, website domain registration fees, web hosting for www.W8EOC.org., maintenance costs of repeater and towers along with passing on fun perks to you, our members. Our new/renewal Membership Form and information can be found on our website <http://w8eoc.org/membership>.

ARRL Membership

Consider paying your dues for **ARRL membership** through our club Membership Chair, Diane KD8SSX. MCARC will retain \$15.00 for each NEW membership and \$2.00 for each renewal. A copy of the ARRL Membership Application/Renewal form can be obtained from Diane. Email her at d.snider@frontier.com.

Please consider volunteering. We really would enjoy seeing fresh faces and hearing new ideas to keep the MCARC relevant and viable in 2022. Do you like designing or maintaining websites, organizing speakers for technical sessions, writing for the newsletter or teaching members new skills? Please let Jane K8JGR know. Thank you.

Who's Who

President:

Ed Eyerdom K8NVR
eyerdom@gmail.com

VP: Jane Reed K8JGR
jane@K8JGR.radio

Treasurer:

Toby Kolman WT8O

Secretary:

Dave Swancer KE8APO

W8EOC Repeaters:

Ed Eyerdom K8NVR
Ken Koyan K8TV

Sunshine:

Diane Snider KD8SSX

Trustees:

Doug McClure KD8SST
Dave Oravec N8JNX
Ray Orobona K2RWO
Amy Panchumarti K2KSU
Steven Stein KE8BJD

Newsletter:

Jane Reed K8JGR

Field Day:

Fred Helwig K8FH

Membership:

Diane Snider KD8SSX

Program:

Open

Websites:

Jane Reed K8JGR
Jeff Crow KE8UUF

Net Scheduling:

Baji Panchumarti K8IIT

Social Events:

Gail Helwig KD8GGM

Skywarn:

Tracey Liston W8TWL

ARES:

Bob Mueller K8MD

RACES:

Dave Rickon NF8O



MCARC on the World Wide Web

www.W8EOC.org

Also,
"Like Us" on **Facebook**

[www.facebook.com/
MedinaCountyAmateur
RadioClub](http://www.facebook.com/MedinaCountyAmateurRadioClub)

About Our Organization

The Medina Two Meter Group (M2M) Inc. DBA: the **Medina County Amateur Radio Club** is a nonprofit, ARRL Special Service registered, Amateur Radio organization based in Medina County, Ohio dedicated to communication, public service, education and fellowship.

Many of our members are also involved with Skywarn, ARES, RACES, and assist with emergency communication or community events such as bicycle and foot races.

We usually meet on the second Monday of each month at the Medina County Career (JVS) Center, upstairs Room 246.



Medina Two Meter Group (M2M) Inc.
DBA:
Medina County Amateur Radio Club
1254 Hadcock Road
Brunswick, Ohio 44212

Admin@W8EOC.org

PLEASE
PLACE
STAMP
HERE

TO: