



# THE SCOPE



The Central Michigan Amateur Radio Club and Lansing Civil Defense Repeater Association

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CENTRALMIARC.COM

## Field Day 2021 - CW Station in Review

By Gregg Mulder , WB8LZG



PHOTO BY: SHANNON RANES / WA2NVK

**W**ith 2020 in the rear-view mirror, most of us were thinking about Field Day. In March and April, we were unsure if we would even have a regular Field Day. As late as the end of May, we could not secure permission to set up in Rayner Park in Mason. The Board decided to go with the camping area in the Ingham Co. Fairgrounds. This would mean a new site and different preparations and opportunities.

Our biggest concern this year turned out to be the weather. The forecast called for rain all weekend, and for once, the weatherman was right on. Friday afternoon setup time brought lots of rain. Even in rain pants and poncho, I was soaked to the bone in short order. I had my bow n arrow, and Al Conn brought along his “potato cannon”

launcher. We soon had enough lines up in the trees to support several antennas.

We decided to make some changes from some of our previous operations with a new area for aerals. Ken Faiver homebrewed a 20-meter vertical and a 40-meter full-wave loop to try. I bought out the time-proven Bruce Array and something new; a long wire. By 7 pm, we had the vertical and the Bruce Array up in the air. The 40-meter loop was up but not fully raised. However, we had to lower the far end for the night to avoid having it hit by a car from sagging during the storm. Tom Rocheleau graciously brought his camper for the CW operating position.

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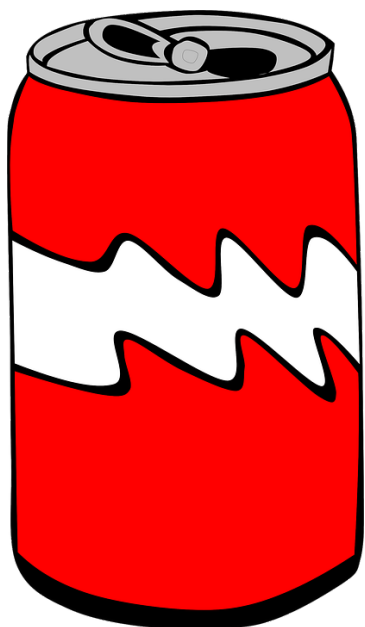
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The Scope is a bi-monthly joint publication of the Central Michigan Amateur Radio Club and the Lansing Civil Defense Repeater Association.

Please send any articles, classified ads, or other items to the Editor, Chris Ranes, NS8Q at [scope@centralmiarc.com](mailto:scope@centralmiarc.com). Pictures should be mailed in .jpeg format, and articles in Microsoft Word or TXT format.

The views and opinions expressed by our contributing authors do not necessarily reflect the views of the Central Michigan Amateur Radio Club or the Lansing Civil Defense Repeater Association.

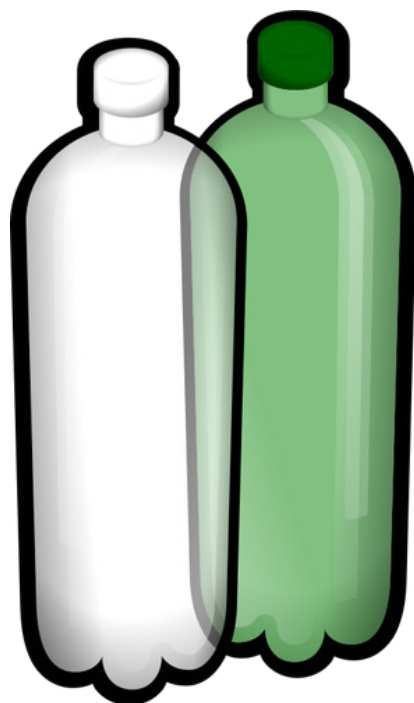
# Central Michigan Amateur Radio Club's



## CAN & BOTTLE DRIVE

An effort is underway to raise money for CMARC's Building Fund. The Building Fund has been designated by the Board to be used for the purpose of moving our club house / club station.

If you would like to participate, please return the bottles and cans you have been accumulating at home. Then consider mailing a check or money order to our Treasurer, made out to CMARC.



Shannon Ranes, WA2NVK  
1728 Cooper Ave  
Lansing, MI 48910

## Treasurer's Report – May 2021

Shannon Ranes / WA2NVK – CMARC Treasurer

<b><u>Beginning Business Checking Account Balance</u></b>	<b>\$4,683.24</b>
Total Monthly Income	\$27.87
Total Monthly Business Expenditures	(\$200.00)
Total Business Checking	\$4,511.11
Petty Cash	\$1.00
Outstanding Checks	(\$80.00)
<b>Sub Total + Petty Cash</b>	<b>\$4,432.11</b>

### **Primary Shared Accounts**

Humphrey's Fund	\$384.52
Club Station	\$19.09
Building Fund	\$260.07
Field Day	\$178.95
<b>Total Net Worth</b>	<b>\$5,274.74</b>
Youth Fund Balance*	\$254.89

\*Separate from CMARC Funds

### **Notes**

Checking – Deposited \$20 Dues + \$7.87 Amazon Smile.

Building – \$0.01 interest.

Two \$40 memorial checks have not cleared.

Paid \$200 ARRL Liability Insurance.

## Make a Tax-Deductible Donation.

Did you know you can make a tax-deductible donation to CMARC because we are a 501(c)3?

Checks can be made out and mailed to:

CMARC

PO Box 54

Mason, MI 48854-0054.

Please include your email address so our Treasurer can email a receipt to you for your records.

## Upcoming Meetings Held on the Zoom Platform

**CMARC General Meeting held on the second Friday of each month at 7 pm.**

<https://us02web.zoom.us/j/89916190971?pwd=bWh4V2lVQXZLZTlMeFBmaWVGK3haZz09>

Meeting ID: 899 1619 0971 Password: 891964

**LCDRA Meetings held at 7 pm (January 21, April 15, July 15, and October 21).**

<https://us02web.zoom.us/j/82349525177?pwd=TlRYTkJNUUNEbnNIWFY5ZlhzVll2QT09>

Meeting ID: 823 4952 5177 Password: LCDRA

**ARPSC Meetings held on the third Monday of each month at 7 pm.**

<https://us02web.zoom.us/j/84852196879?pwd=OE9TV2pVcXRHRWFXQm9rSUo1RUVkdz09>

Meeting ID: 848 5219 6879 Password: 601694

## Vibroplex Challenge

By: Gregg Mulder, WB8LZG

As many of you know, for many years I have refurbished keys and paddles as a side hobby for my enjoyment in the fine art of Morse code. Many Vibroplex's have passed through the shack restoration process and operate as new when I finish.

What most of you CMARC members may not know is, for years now I have given away Vibroplex paddles and bugs to worthy recipients. 9 of them so far in a 20 year period. "Given away, no fooling" you say. Wow! That's a bunch of Vibroplexes. "How do I get one" You ask?

"When will I be worthy"?

Well here's the scoop.

From now until Field Day 2021 you must convince me that you're a "worthy recipient". No you don't have to impress me with 20WPM speed. Just show that you are learning and using Morse code "on the air". With a little practice you can master CW in as little as 3 or 4 months. Show me that you are learning and enjoying the art of CW by Summer Field Day 2021, and a beautiful Vibroplex Vibrokeyer can be yours! **FREE.**

**I CHALLENGE YOU ALL!**

# Ingham Co. Volunteer Examiner Team

## West Lansing Church of Christ

5505 West St Joe Hwy | Lansing, MI 48917

A special Thank You to Michael Wetzel, W8QF for securing a temporary testing facility for us to use during the cold winter months of the pandemic! The pictures below are from the January 9th testing session. We had a total of 22 candidates, with 36 total tests administered. Congratulations to all the successful test takers!

If you are ready to take your exam(s), then feel free to join us on a date(s) listed below. Please contact Don McLain, KB8RAD if you have questions or if you would like to register for your exam. As always, walk-ins are welcome.

**Don McLain (KB8RAD) (517)930-7707 KB8RAD@arrl.net**



PHOTOS BY: GORDY SMITH / KE8JKS

**Test sessions will be held on the dates listed below at 11:00 am.**

**You may check-in as early as 10:30 am with no check-ins allowed after 11:30 am.**

**June 12, 2021    July 10, 2021    August 14, 2021    September 11, 2021**  
**October 9, 2021    November 13, 2021    December 11, 2021**

# Custom Woodworking Pieces by Jim Hannahs, KC8QWH

ginhannahs@gmail.com (517) 589-8346

100% of the proceeds will benefit  
LCDRA (Lansing Civil Defense Repeater Association)



Bat House - \$15



Blue Bird House - \$15



Bobbing Head Bird - \$20



Butterfly House - \$20



Large Wheelborrow - \$35



Log Cabin Bird Feeder - \$45



Small Wheelborrow - \$30



Regular Bird House - \$15



Suet Feeder - \$15



Trellis - \$20

PHOTOS BY: GINNY HANNAHS / KD8HPG

With an hour or so of daylight left, we got a short break from the rain. Perfect time to “test out” the antenna setup. I broke out the Elecraft K2 and gel-cell battery and soon had her hooked up to the feedlines. A quick check showed the Bruce array was a 1:1 match. Having used the array for over 10 years of Field Days, I was confident in its operation. I really wanted to know how Ken’s homebrew vertical was going to play. We hooked it up to the coax and heard several European stations calling CQ. I answered one and had a nice QSO with UR4ARI/A in the Ukraine. Ken and I both smiled at each other with satisfaction; we were ready. Tired, sweaty, and very wet, we “turned in” for the evening. Anticipating lots of action at the starting bell Saturday.

Ed Oxer started us off with the K2 at 10 watts on solar power for our natural power bonus. In short order, we had the 5 solar contacts and went to the big rig. While Ed, Chris Ranes, and Dale Cole were busy “putting em in the log,” Ken and I were putting the finishing touches on the 40-meter loop and the long wire. Both aerials were raised to their operating heights high up in the trees.

Bob Berger took over from Dale and started out the evening. The rain was coming down in buckets, but we were dry in the trailer. Ken and Tom took over on the late shift. I started about 3 am and went to around 10 am, when Ed, Chris, and Dale took over. Just when we thought we might escape “Murphy’s” wrath this year, about 1230pm, the generator quit. Our fuel was gone. No more propane. What to do? With just over an hour left, we broke out the K2 again and pressed it into service. I quickly hooked up the rig to the battery and was soon logging QSOs. For those of you who think running 10 watts in a contest is crazy, well, it is! But it’s a lot of fun when the band is open. In the last hour and 10 minutes on 15 meters, I worked 35 more stations before shutdown. I even had a “run” working 22 QSOs in just 30 minutes. Fantastic! We were grinning ear to ear with Chris logging as we continued to work stations on solar power. We sent Ol’ Murphy home with his tail between his legs! This is what we QRP ops live for!

And all too soon, it was time to pack it all up for next

year (sigh). The support lines were all untied, and the Bruce array fell from its lofty perch. The other antennas were all wound up on reels and “thrown” into the back of the truck to be removed stored later when fatigue wasn’t an issue.



Looking North/Northwest at the trailer. Vertical on the right. Bruce array barely visible in the trees.



Ed / W8EO and Dale / K8TS in the CW trailer

Here are the statistics. We had a total of 438 QSOs, 40 of them were 10 watts QRP and solar power. 85 were on 80m, 131 were on 40m, 166 were on 20m, and 51 were on 15m. We worked a total of 70 ARRL sections.

PHOTOS BY: GREGG MULDER / WB8LZG

See **Field Day - CW**, Page 9



Here is a picture of the Sections Worked Map

#### Comments and observations:

We all were happy just to be doing our limited operation for being a smaller group than usual. We missed FD last year!

Really missed the Field Day picnic; however, Shannon and others helped prepare food enough to keep the trenchermen well-fed and pounding brass.

We used Brian Visser's propane generator. This made refueling in the middle of the night very easy. Unscrew the empty tank, hook up a full tank, and back in business in about 1 minute. No messing with gas in the dark or spilling it all over. Very handy and probably safer also.

The best rate I could muster up this year was on 20m, where the best run I managed was 54 in an hour. Close to the 1/min mark, yet so far...

A new venue means new antennas to try out. These are the "skyhooks" we used during this year's Field Day. The Bruce Array. The antenna was invented in 1932 by Edmund Bruce. It's Basically lots of wire in the shape of a square wave. Fed in the middle of one of the vertical sides, it has respectable gain over a dipole. Our 5 element 20-meter curtain has about 5 dB gain over a dipole in two directions. The Bruce array not only looks cool, but it's also a great FD aerial.

The 20 meter vertical. This was a homebrew job from Ken Faiver. He took parts from other old antennas and crafted a FB vertical with an elevated radial system that really worked well. There were several times where it was "louder" than the Bruce array in certain directions. It filled in the gaps nicely.

Full-wave loop for 40m. Another homebrew from Ken. He had it in a "diamond" shape feed at the bottom about 8 ft off the ground. The upper end and current lobe raised to about 50+ feet up. The entire loop was slanted at 60 degrees. Sloping to the North. It performed well. The long wire. This was a leftover "spool of wire" that I had hoped would have at least 300 feet of wire left on it. Fed it the campsite with radials attached to the tuner. Al Conn used the "tater cannon" to launch the wire high and far. It was in the shape of an inverted U with the top span up 50-60 feet, and the far end sloping down and anchored off to the horse barn. ( we won't tell ) We paced off the length to near 380 ft. We were hoping to play on 160, but not much activity there. It performed nice on 80, though, Where it really shined when we ran out of gas and went to 15 meters with the QRP rig. At 21 Mcs, the long wire is 7 plus wavelengths long. Giving it approx. 6 to 7 dB gain over a dipole, That's like hooking up a 3 element Yagi-Uda. This simple aerial is going to be part of our "antenna arsenal" from now on.

Finally, I'd like to thank all the operators, loggers, helpers, cooks, and those who helped make this Field Day one of my favorites. Despite the rain and inclement weather, we all had good camaraderie, fun and did it safely. Well done to all. ■

# Make amateur radio club nets fun

By Dan Romanchik , KB6NU

If your club owns a repeater, or has access to one, your club should have a weekly net. These nets inform members about club events, provide a forum for club members to get help with any technical problems they may have, build camaraderie among club members, and are just fun. At least they should be fun.

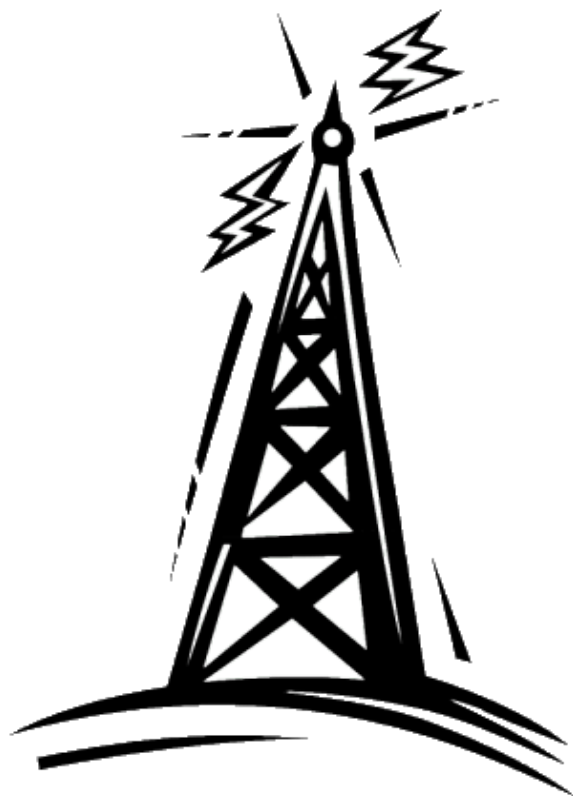
Too often, these nets turn out to be a drudge-fest. Net controls slog through a list of check-ins, who dutifully say when called upon, “No traffic.” If your net is like this, you’re missing an opportunity.

When I’m net control, I like to get personal to get people talking. When I call a station, I’ll say things like, “Next is W8ABC. How’s life in your part of town tonight, Joe?” or “What are you up to tonight, Sam?” or “How’s that antenna project coming, Don?” or “Worked any DX lately, Steve?” If someone has joined the net from outside our local area, I’ll say something like, “K8XYZ, you’re our DX station tonight. How are things in your part of the world?”

Often, I’ll continue a conversation by asking a question about a topic brought up by a previous station. For example, if one guy says that he’s having tacos for dinner, I’ll ask the next person what they’re having for dinner or what kind of tacos they like.

To get people to show up in the first place, make sure that your club members know about the net. An announcement should be in every club newsletter, and if your club has a mailing list, send out an email announcement every week. People are busy, and things like this can often slip through the cracks. After the net, reply to the announcement email with a list of who checked in and what you discussed. If someone sees that their buddy checked in to a net, they are more likely to check in the next week. Similarly, if they see that a topic of interest was discussed, they might join the net next week to chime in on the topic.

You might try doing some different things, too. For example, before this week’s net, one guy asked if he could try sending an SSTV image over the repeater during the



net. What a great idea! I, of course, said yes. On his first transmission, this guy mentioned that he was going to try this at the beginning of the second round and then pointed people towards an app—Robot36—that they could download to their Android phones. I downloaded Robot36 to my Android phone, and on his second transmission, I was able to copy the image. That was something different and fun. I’m thinking that we might even try RTTY or some other digital mode in the future.

I think you get the idea. Making a net fun will draw members, and more members means more fun. I think it’s working here in Ann Arbor. Last Monday’s net had 17 check-ins and a run time of 70 minutes.

Now, tell me how you make your club net fun. ■

# Introduction to FPV

By Trent Harrison, KE8RWV

**H**ello and welcome to a brief introduction to FPV. My name is Trent Harrison KE8RWV and I'm new to HAM radio. Well, technically I'm not new to it, my father Mike Harrison N8FGZ has been (and still is) in HAM radio since before I was born. It only took me 40 years to get motivated and get my license but hey, life's a journey right?

To keep this article interesting and useful for everyone, I'm going to start by explaining exactly what FPV is and how it relates to HAM radio. Then I'll go over the various rules and regulations that govern FPV in a quick primer-like way that will be useful even for guys that are not interested in actually flying FPV. Finally I'll touch on exactly what you need to get into FPV if you decide it's for you.

## FP... What?

FPV stands for First Person View. And I get that's a strange moniker for what most people think of flying a drone, but as you will find out, FPV is bigger than flying or drones. So what is it exactly?

While it's probably easier for me to show you than to explain it verbally, I'm going to attempt to do the latter first then link you a video so you can see it in action. FPV is basically the idea of having some sort of remote control vehicle, like a quadcopter or car or boat or fixed wing aircraft or helicopter.... Literally anything that can and does move under remote control. You then put a tiny camera on said RC vehicle and hook a VTX transmitter to it which broadcasts the images the camera sees to some sort of a screen the pilot looks at, usually in the form of goggles or headset. This allows the controller to essentially see through the vehicle, as if he shrunk himself to a small size and was actively piloting/driving said vehicle.

Have you ever wanted to fly without your feet leaving the safety of the ground? FPV is the answer. Ever wanted to realize your NASCAR dreams in an environment where

the local law enforcement cannot charge you an admission fee? FPV again. Ever wanted to check your tower setup for damage after a particularly nasty storm but you are having a hard time finding someone to be your second while you climb all the way up there? Right? Rrrrrright? You are finding a second right?

FPV does all of this and most of all, it's fun.

Video I promised right? Here you go: [Best FPV Drone Flying Compilation \(2020\) - Epic FPV Drone Cinematics - YouTube](#)

I'm not a fan how he forgets to credit the pilots, as these guys are way better than I am, but it gets the point across of seeing different FPV flight like freestyle, racing, and long range exploration. Enjoy the footage.

## Surely you need a license for that!

Welcome back. By now you are either breathlessly excited or terrified beyond rational thought. I bet watching that you would think, what do I need to do that, an Extra License? That is incorrect. You don't even need a General license. As a Technician, you have access to the 2.4 GHz and the 5.8 GHz bands that standard FPV utilizes.

Remote control typically uses the 2.4 GHz band for the uplink and downlink. Uplink to beam the control inputs from the control operator to the vehicle, then downlink for telemetry data back to the operator like voltage, RSSI measurements, etc. The 5.8 GHz band is used for video signal, i.e. the video being broadcast from the vehicle to the pilot's goggles as a one way transmission. Because of this relationship, any number of people can tune into your vehicle's broadcast channel and watch you pilot. This is typically how we do "ride-a-longs".

Quick thinkers will wonder why you need a Tech license at all. We all know how crowded the 2.4 GHz band is, and the 5.8 GHz is just as public, albeit less crowded.

See FPV, Page 12

As a HAM operator you are legally allowed to operate with more power than someone lacking a license. Also most transmitters and receivers are not FCC certified for Part 15, meaning, without a license, you could be facing steep fines for operating.

In addition, we also get access to other bands. The 900 MHz band has become quite popular for RC control lately, mainly because of the longer range and better signal penetration. Tech level licenses can also increase the power on that 900 MHz band for some really impressive range and control.

### Introducing the FCC's wicked sister: The FAA

For those of you looking to fly we need to next look to the FAA. And you have to ask yourself a question. Are you flying for fun? Or are you going to use this flight for some sort of profit? If you are going to make money or other compensation from the flight then you

should be flying under Part 107 and you must have a remote pilot license. This includes posting video of your flights to sites like YouTube where ad revenue functions in the FAA's mind as "monetary gain" no matter how large or small. I would encourage everyone to get this if you have even the slightest desire to get in the air, just to be on the safe side.

The FAA has deemed those flying for fun "recreational hobbyists" to be exempt from Part 107 Rules. You may have to register your drone (more on that in a second). However, there are still some things you need to keep in mind even when exempt. And oddly, a lot of the following rules are pretty much verbatim what we Part 107 Pilots adhere to. Things like keeping the drone in visual line of sight, having a visual observer, flying below 400 feet in Class G airspace, fly at or below 400 feet with proper authorization in controlled airspace, steering clear of manned aircraft, not operating in a dangerous manner and keeping the registration (if



This is a picture of my newest drone build. The four motors run to the 4-in-1 ESC that is then connected to the Flight Controller. The ESC is underneath the FC on the stack in the center of the Quad. From that FC, wires connect the camera in the front and the VTX/Receiver in the back. The loose red/black/green/blue wire you see pictured here goes from the FC to the ExpressLRS receiver serves as the control link to the radio.



The completed, buttoned down Quad. You can see the two boards here, as well as the antennas in the back. The blue circular is for the VTX, the small black wire below that is the 2.4 GHz antenna for radio control. This quad is built for 4S batteries, so the batter will sit on top of the quad just above the VTX where a strap will lock it down.

See FPV, Page 13

needed) with you. The FAA is also working on something they call the TRUST exam (The Recreational UAS Safety Test) that will become mandatory at some point. My understanding is they hope to release that soon (June of 2021). You can find all these rules at the FAADroneZone website which has a wealth of knowledge and links to register your drone.

As far as that aforementioned registration, the FAA requires you register any drone that weighs more than .55 pounds or 250 grams. This requirement applies to both Part 107 pilots as well as pilots flying under the recreational flyer exception. I believe it is \$15 for a three year registration. So unless you are flying a lightweight drone for pure fun, the FAA will be part of your dreams. Stay on their good side.

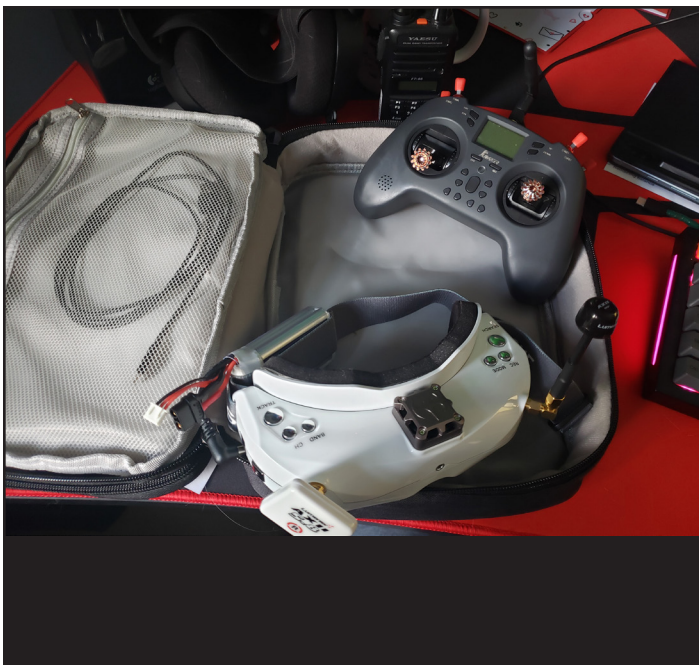
### Rules are killjoys. How do I get in?

Still interested? Awesome. While you can throw a camera on any RC vehicle, the majority of the time this is done on quadcopters. We call them quadcopters or quads because “drones” is generally considered a

derogatory term amongst the community. So to get you in the air for the lowest amount of money we turn to computers.

I get you want to fly, settle down. Small steps here will pay off in the end because until you LEARN to fly it could get quite expensive when you crash. Repeatedly. Trust me on this. Crashing is easy, landing is hard. Best to get some experience under those wings before you try out the real thing.

To that end, I would suggest a simulator. “Computer Drone Simulators” have gotten quite good at mimicking the feel of a quadcopter in the air. They make excellent learning and practice tools, as when you crash (and you will, crash), repeatedly, a simple button press gets you up and flying again. This is definitely preferable to the long, lonely walk of shame as you head to your crashed quad hoping there isn’t any damage. Another benefit is if you dislike flying quads you spend minimal amount of money to gain that knowledge rather than popping for an entire setup. Which can be upwards of \$1000.



Finally the control links. Pictured here is my Jumper T-lite controller (the gamepad looking thing) and the Skyzone Sky 02X goggles that serve as my eyes in the sky when flying.



This is the Emax Tinyhawk 2 Freestyle, a pre-built bind and fly quadcopter. It’s small (note the Yaesu FT-65 for scale) but it will bind to a quality RC controller and have you flying (and crashing) in no time!

See FPV, Page 14

So to start your simulation training I would suggest two things. A quality RC controller and a simulator.

There are several simulators out there now. For those of you into my other hobby of video gaming, you already know of Steam. Steam has several games you can buy and download right away. Some of the better ones are Liftoff, Drone Racing League, and FPV Freerider. Velocidrone is another good simulator but it is not available on Steam. Instead, it is a direct download from their website. Velocidrone is the only one I haven't tried. FPV Freerider is the cheapest and feature free version. If you are looking to just get in and fly, that might be the easiest ticket. Liftoff in my opinion is the best one, and it is the current one I use to practice. It is a bit more feature rich and you can get lost in the options, so for simplicity sake I would recommend FPV Freerider if you just want to try flying.

As for controllers I would recommend an actual RC controller. Hear me out on this one. You can use whatever gaming controller you have lying around but it is not the same feel, especially since the throttle gimbal does not automatically center like most game controllers do. Also, if you get a decent radio controller and find out you don't want to fly after all, you can sell that controller back on Ebay or Marketplace and recover some of the cost.

I use a Jumper T-lite (with the 4 in 1 module) as my controller of choice, as I like the "gamepad" style controller better than the box-like version. Also I use my thumbs to control the sticks, whereas some guys like to

pinch the sticks with their thumb and forefinger. So for me, a gamepad style is the best. If you like the bigger controllers or feel like pinching might be a better way

to control, then a larger controller like the Radiomaster TX16S might be a better fit.

There are cheaper controllers available. I would strongly stress that you avoid this impulse for two reasons. The first being the controller (and later, goggles) will be how you interact with your drone. Never cheap out on your control links. An apt comparison for us HAMS is buying a couple thousand dollar HF radio and pairing it with a \$10 antenna. Second, the radio and goggles will transcend the first quad you buy usually in every case. So as you go along in the hobby and get more or better quads, the goggles and radio will usually be a one-time purchase since you won't be crashing those.

I could go on for longer about gear and progression but I think you get the point by now. If there is interest I could write another article about some more in-depth topics. In the meantime, if you have any questions you can hit me up at [trentmharrison@outlook.com](mailto:trentmharrison@outlook.com) or catch me on the repeater sometime.

If nothing else, this a great way to get more and younger people into HAM radio. If you see people flying inquire if they are HAM radio operators. If they are, congratulations, you just made a QSO IRL. If not, introduce them to our hobby and maybe you'll introduce someone to a wider world. After all, if I can get a Tech license, anyone can. More is usually better.

Happy flying! ■

## CENTRAL MICHIGAN AMATEUR RADIO CLUB BOARD OF DIRECTORS MEETING MINUTES

Saturday, May 8, 2021

### **Attendance**

Board Members Present: S. Ranes (WA2NVK), D. Vick (W8ZZX), D. McLain (KB8RAD),  
G. Mulder (WB8LZG) K. Fitzgerald (N9PC)

Board Members Absent: G. Smith (KE8JKS), D. Dembinski (KD8YDE)

Visitors: C. Ranes (NS8Q), J. Doornhaag (KD8NNQ), D. Beuchert (WX8MOJ)

### **Call to Order**

- The meeting began at 7:15pm

### **Club Business**

- **Food Trucks / ZiegenLadies Picnic:** Director Fitzgerald has "auditioned" a few food trucks, and gave her approval. The next step will be setting a date and location. It was noted that the City of Lansing will not permit any commercial food truck in any city park, so if we hold the Ladies' Night/Ziegenbein Award picnic in a park pavilion we will need to get creative with the food. Treasurer Ranes also mentioned pre-ordering food from a food truck for early pick-up, to get around the City restriction. Further discussion ensued. Dan Beuchert mentioned possibly holding the picnic at the Ingham County Fairgrounds. Dates being considered are in June and July, or we could have the event in lieu of our August Board meeting, the evening of the second Saturday. The Board is leaning toward August 14th.
- **Clubhouse:** No news is good news.
- **Field Day 2021:** Dan Beuchert reported that the City of Mason has approved our use of Rayner Park for Field Day this June. He also mentioned using the south end of the Ingham County Fairgrounds, where the camping spots are laid out. We will not have access to the State of Michigan's EmComm generator this year, so having shore power at the Fairgrounds would be convenient. Discussion ensued of how we could most effectively use the layout at the Fairgrounds, with generally favorable opinions voiced. We also discussed the pros & cons of the Fairgrounds vs returning to Rayner Park. Discussion also ensued regarding holding Field Day in the Fairgrounds at the same time other events are happening, and scaling down our "normal" Field Day operations to focus on actual operations, and not as much on the social aspects, such as VE sessions and/or potlucks, due to an abundance of caution surrounding the COVID-19 pandemic. It was decided to bring this all up to the membership at the May GMM on Friday the 14th, and also to present a list of follow-up questions to the Fair Director. We will also send out a questionnaire to the membership to ascertain who might be interested in setting up, operating, and tearing down.
- **VE Session:** The Team had ten people show up to test, and administered nineteen tests. CMARC Member Alana "Mickey" Blunt (KE8FXG) earned her Extra upgrade, although her son failed to achieve his Tech License. John Doornhaag noted that with the new electronic filing, the FCC is now returning new call signs within a few days instead of two weeks. VE Team member Ted Sadilek (WA8MFQ) achieved his 100th VE Session today.

### **Adjournment**

- With no further business to discuss, it was Moved by Secretary Vick, seconded by Director Mulder to adjourn the May Board Meeting at 8:31pm.

Respectfully submitted,

Dave Vick, W8ZZX  
CMARC Secretary

**CENTRAL MICHIGAN AMATEUR RADIO CLUB**  
**GENERAL MEETING MINUTES**  
**FRIDAY, MAY 14, 2021**  
**ON ZOOM**

**Attendance**

Board Members Present	Kelly Fitzgerald (N9PC), Don McLain (KB8RAD), Gregg Mulder (WB8LZG)
Board Members Absent:	Dan Dembinski (KD8YDE), Shannon Ranes (WA2NVK), Gordy Smith (KE8JKS), Dave Vick (W8ZZX)
General Members:	18
Visitors:	1

**Call to Order**

- Gregg called the meeting to order at 7:15 pm.
- The Pledge of Allegiance was said.

**Cards and Flowers Report:**

- Nothing to report.
- Moment of silence.

**Treasurer's Report**

- MOTION did not take place since only three of seven CMARC Board members were in attendance.

**Secretary's Report**

- MOTION did not take place since only three of seven CMARC Board members were in attendance.

**Field Day**

- Dan Beuchert (WX8MOJ) gave an update of the current Field Day plans.

**Ladies Night**

- With the state of Michigan "opening up" due to COVID, we may be able to have Ladies Night at a restaurant instead of having it at a park.

**HamFest**

- Still planning on September 18, 2021, but we'll see how things progress in Michigan for "opening up" and the vendor responses.

**Adjournment**

**MOTION:** *With no further business to discuss, the meeting was adjourned at 7:45 pm.*

Respectfully submitted,  
Shannon Ranes (WA2NVK)  
CMARC Treasurer

# CLASSIFIEDS

**Ed Hude / WA8QJE**  
**Cell: (517) 420-7550**  
[ebhude@yahoo.com](mailto:ebhude@yahoo.com)

**\$125**

## **Alinco DJ-V27T**

222 Mhz handheld radio, unused like new in the box with battery, ac wall charger, belt clip and hand strap along with antenna in factory box. Manual is a reproduction.

Purchased new from HRO and never used.



**Jimmy Dunahoo / KD8IWQ**  
**517-743-1604**

**\$125**

## **MFJ-989C Versa Tuner V (3KW)**

Covers 1.8-30MHz, including MARC and WARC Bands. Built-in 300w dummy load. Comes with manual.

**\$25**

## **Workman SX-144/430 SWR-Wattmeter**

Covers 2m/440 (120-500 MHz). Dial has a cross-needle display. Meter has three ranges (10W, 100W, and 500W).

**Dan Stockwell / KD8YVA**  
**Cell: (517) 775-7750**  
[dstockwe52@gmail.com](mailto:dstockwe52@gmail.com)

## **\$250 Package Deal**

### **Icom ID51a DStar HT**

Package comes with the Diamond SRG77CA antenna, wall charger, car charger, Icom microphone, and a car mag mount antenna.

The best way to reach me is via text message or at the email listed above.



## **Huge Shack Cleanout Sale!!!**

Call or email Gregg Mulder / WB8LZG. *Let's haggle!!*  
**Phone: (517)646-6257 after 1 pm. Email: [wb8lzg@sbcglobal.net](mailto:wb8lzg@sbcglobal.net)**



### **Radios and Amplifiers**

**\$1,200**

#### **Ameritron AL-80B HF Linear Amp**

CW QSK-5 built-in for full break-in. Not many hours on this amp as I am a QRP OP. Includes 1 new spare EIMAC 3-500Z tube.

**\$725**

#### **Yaesu FT-990 HF XCVR**

Has built-in power supply, tuner, all the filters, mic, and comp infc. Includes the SP6 matching speaker with the Timewave DSP 59Y unit factory installed. Nice HF pair!

**\$400**

#### **Elecraft K1 HF QRP XCVR Kit**

Unbuilt, new in box, 4-band, noise blanker, backlite kit, finger dimple, plus spare 2-band board, extra faceplate, and a customer "Kingswood" spinner knob.

### **CW Keys and Keyers**

*All Vibroplex keys are "Like New" in looks and operation!*

**\$225**

#### **Vibroplex "Vibrokeyer Gold" Key**

Comes with a gold base and chrome parts, Made in 1994 with Serial No. 80280. BEAUTIFUL!!

**\$200**

#### **Vibroplex "Original Presentation" Bug**

Made in 1963 with Serial No. 235471. It has been under glass for 30 years.

**\$150 each**

#### **Vibroplex "Lightning Bug" Standard**

Made in 1950 with Serial No. 166225. Has a red base and was refurbished to original luster.

**\$70 each**

#### **K8FF Qrp Kit Key, BUILT**

The prototype to the "code warrior". Comes with a black emron base with brass parts, magnetic return action, custom "Kingswood" finger pieces, and plastic dust cover.

**\$50 each**

#### **J-38 Straight Key**

The real deal! The best starter key you can buy!

**\$40**

#### **KK-1 QRP Straight Key Kit**

Includes all the bagged parts needed to build a nice mini key!

**\$20 each**

#### **Little Bugger Keyer**

Reed relays & keys any rig. Very tiny. Runs on 9V.

#### **MFJ "Grand Master II" Memory Keyer**

Comes with power supply. Keys any rig! Includes 8 memories.

#### **"Tick 4" Keyer**

Self-contained with 9V battery. Has 2 memories.

### **Power Supplies**

**\$100**

#### **Astron Transformer Power Supply**

Supplies 12VDC at 35-Amps. Comes with meter.

**\$20**

#### **Tripp-Lite Power Supply**

Supplies 12VDC at 7-Amps. Good for powering mobile rigs from home.

### **Antennas**

**\$100**

#### **TH3jr Tribander for 20-15-10m**

Oldie but goodie! A small lightweight beam with a big signal! Comes disassembled, but all parts are there. It could use a few new trap seals (available from MFJ).

**\$50 each**

#### **Hygain "Butterfly Beam" for 20-10m**

Needs some TLC, cleaning, and a couple new stainless wire spans which are included. It comes disassembled and wrapped up.

#### **Hygain 15m 3-Element Mono-Bander**

Handles full legal power

#### **Hustler HF Mobile Package**

Comes with fold over base section with spring top, and coils for 40, 20, 15, and 10 meters.

**\$10**

#### **75-meter Hamstock Mobile Whip**

**3 for \$5**

#### **5-FT Stainless Steel Whips**

Continued on Page 20

# CLASSIFIEDS

## Huge Shack Cleanout Sale!!!

Call or email Gregg Mulder / WB8LZG. *Let's haggle!!*  
Phone: (517)646-6257 after 1 pm. Email: [wb8lzg@sbcglobal.net](mailto:wb8lzg@sbcglobal.net)



### Coax and Connectors

#### \$50

#### **200 FT Hughes Sat. Cable on Reel**

Brand new. RG8 size, 100% shield, solid center conductor, buriable, good up to 5 GHz, very low loss.

#### \$30

#### **200 FT, RG-6**

Full shielded coax in reel out box.

#### \$25 each

#### **150 FT, RG58**

New, old stock, double shielded, solid inner conductor plenum cable.

#### **Box of Connectors**

Box is full of RF cable ends and adapters. N, BNC, PL259, TNC, more.

### Accessories

#### \$30

#### **Kodak Z740 5MP Digital Camera**

Includes 10x zoom and 2 extra SD cards, case, and tripod.

#### \$25 each

#### **Poly-Phasers with "N" Connectors**

New in bag (\$69.95 new)

#### \$20 each

#### **\*Palomar Engineers RX Noise Bridge**

#### **\*Realistic 30-watt PA Amp**

AC/DC Operation. Comes with PA speaker.

#### \$10 each

#### **\*Weller Soldering "Gun"**

#### **\*Step Attenuator w/ SO-239 Connectors**

#### \$5 each

#### **New Old Stock Ten-Tec TG24**

Enclosures nice box for projects!

### Books

#### \$5 each

#### **Beam Antenna Handbook**

by Bill Orr

#### **VHF Handbook**

by Bill Orr

#### **RSGB VHF-UHF Manual**

by The Radio Society of Great Britain

#### **ARRL Antenna Anthology, 1st Edition**

by The Amateur Radio Relay League

### Electronic Parts for Projects

I have a large selection of parts: speakers, coils, toroids, variable capacitors, diodes, zeners, transistors, wire, coax, stainless whips, plugs and jacks, knobs, and many other Homebrewer needs. **Building or repairing something? Call Me!!**



## From the Estate of Dave Hayhurst / K8QH

Call or email Gregg Mulder / WB8LZG. *Let's haggle!!*  
Phone: (517)646-6257 after 1 pm. Email: [wb8lzg@sbcglobal.net](mailto:wb8lzg@sbcglobal.net)

### CW Keyer

#### \$20

#### **MFJ Grandmaster Model 282B**

### Antennas

#### \$25

#### **Cushcraft 440 UHF Vertical**

Must be removed from home.

#### \$20

#### **Antenex Compact 2M Mobile**

Comes with mag mount. Only 5" tall.

#### \$15

#### **MFJ 1738 Mobile Antenna**

"On the Glass" type. New in bag.

#### \$10

#### **75-meter Mobile Whip**

It's red! Possible MFJ??

### Accessories

#### \$20 each

#### **Palomar Engineers Model 827**

Digital SWR/PWR Meter

#### **(2) RF Detector Pick-Ups**

Covers up to 1 GHz with "N" connectors

#### **Power Inverter**

Supplies up to 400 watts. Comes with cables.

#### **RTL-SDR Dongle**

Comes with antenna. Is used with free Airspy software.

#### \$10 each

#### **Foot Switch for PTT Contesting**

Comes with 8-foot cord and phono plugs

#### **4:1 Balun (100W)**

Comes inside a waterproof Cantex box.

#### **(2) GE Mobile Speakers**

Tuned for voice.

#### **HAM IV Rotator Control Box**

### Books

#### \$5 each

#### **Hints & Kinks**

by The Amateur Radio Relay

League, 1992 and 1999 Editions

#### **73 Dipole & Longwire Antennas**

by Ed Noll

#### **Gill Cartoon Book**

# Vintage Ham Radio

## Across

1. Radio named for a bird
5. Lake \_\_\_\_ swing
9. An SB-220, very broadly speaking
14. Oscar's follower
15. In the middle of EME
16. Tough, durable wood
17. Times past
18. Fine tuning, on some vintage receivers
20. Presses the upper left key
22. They get disqualified in a contest, probably
23. Vibroplex manual item
24. Iowa ham equipment maker, informally
25. Cartoonist Schultz, on CW maybe?
26. \_\_\_\_ generator
28. A step lower in frequency than Re's
29. Proof ender, maybe on CW too
32. Meadow sound
34. Volatile computer storage
35. Four digits of nothing, on CW, for short
36. An R-390 on a carrier?
41. Part of S.R.O.
42. What log entries were often written in, before computers
43. Sixty-one-forty-\_\_\_\_
44. Foxhunt (abbr.)
45. Delight
46. Pertaining to a point of connection, in a circuit or network
50. Base predecessor?
51. W2 summer time
53. Dir. beaming Billings from Boise
54. Bad, if a tire...; good, if SWR...
57. Desk Kilowatt maker
59. Lots of Hertz, in the early days
62. ARRL Op-\_\_\_\_ (dupe sheets were #6)

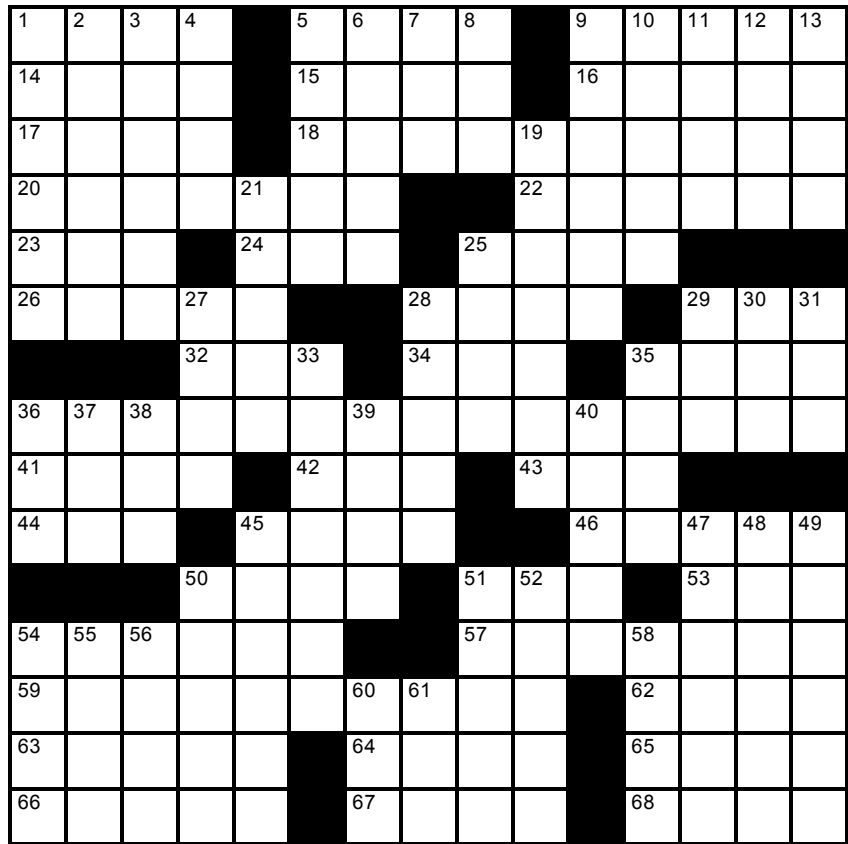
63. Receiver maker in HPM's time
64. Walk back and forth
65. Natural antenna support
66. A YL, after getting an X
67. Jet-setters' jets, once
68. Wisdom says that sometimes it's more

## Down

1. 20 WPM, 300 Baud, and others
2. SP capital
3. To AMers it's the scratchy one from Heath
4. AMSAT partner
5. Glowing remnant
6. Effect of 5-down on a hot dog
7. Sometimes it's plus sometimes minus
8. AR, on CW

9. Some amplifiers, starting around 1970
10. "Who \_\_\_\_?"
11. Part of EAN, CAN, PAN
12. Future doc's exam
13. Docs of another kind
19. Arrangements or organizations - in databases
21. Like a ruling in HV-land
25. Layer, as with paint
27. Pac. div. ARRL sect.
28. Their dials are greenish-blue
29. Miamisburg, to 28-down
30. Maker of 9-down, once
31. Serial port pin
33. Code proficiency, say
35. Extra stable freq. ref.
36. Kind of logic gate
37. Another kind of logic gate

38. What the original ham band is called today
39. Linear (but not an amp), briefly
40. IN district
45. Honored or favored
47. Covet, as a big antenna farm
48. Collectors' ancestors?
49. Contacts (but not QSOs)
50. \_\_\_\_ King 500
51. VCR button
52. Prescribed amounts
54. Italy, No. Ireland, in prefixes
55. McCartney, Lancelot and others
56. Took a 707
58. Mfgr. of HRO rcvrs
60. Hz, to Hertz
61. A step higher in frequency than so's



# 2021 HAMFEST



AT THE OKEMOS CONFERENCE CENTER BALLROOM

**Saturday, Sept 18th, 2021 - 9 am - 2 pm**

**ADMISSION:** ADULTS AND KIDS: \$5 (5 years old and under: FREE)

• Talk-in: 145.390 tone 100.0 • Free Parking • Handicap Accessible • Convenient Restrooms



*The CENTRAL MICHIGAN AMATEUR RADIO CLUB  
is proud to announce our annual HAMFEST at a **NEW LOCATION**.*

*Sell unneeded gear for extra cash!  
Find that perfect addition for your rig or shack.*

## VE TESTING

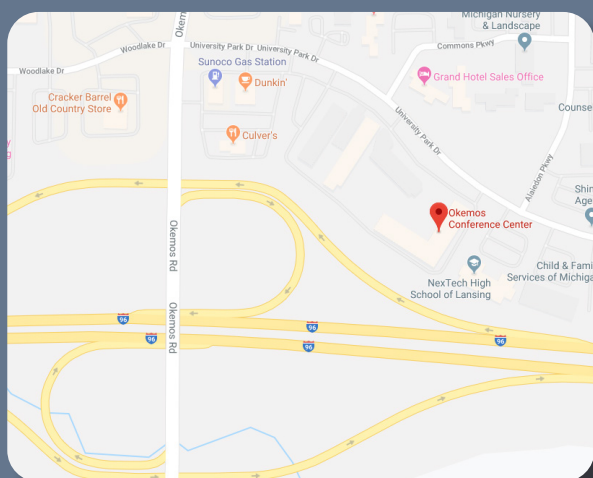
**Technician, General & Extra Exams**

**Testing Fee: \$15**

**Testing Begins: 11:00 am**

*\* No one will be admitted for testing after 11:00 am.*

*\* Be sure to bring your FRN number with you.*



## DOOR PRIZES

**Vendor Spaces (including 2'x6' table):**

**1st Space: \$5 (incl. 1 Paid Admission) •**

**Each Additional Space or Person: \$5**

**Vendor Setup: 7 am - 9 am**

Spaces are limited! Pre-Registration is suggested.  
Registrations, including payment, must be received  
one week prior via Check to guarantee your spot(s).

***SORRY, NO TRUNK SALES ALLOWED!***



**2187 University Park Dr., Okemos, MI 48864**

**FOR MORE INFO OR TO REGISTER:**  
[www.centralmiarc.com/hamfest.php](http://www.centralmiarc.com/hamfest.php)

**CONTACT US:**  
[hamfest@centralmiarc.com](mailto:hamfest@centralmiarc.com)



# Central Michigan Amateur Radio Club

## W8PLP/W8MAA

### Membership Form

For Year (s) \_\_\_\_\_



Please complete **ALL** sections in their **ENTIRETY** before submitting your application.

Membership is for the current calendar year unless otherwise specified above.

Mail completed form to Membership Chairman (see address below) or take to Club meeting for processing. Please include payment if applicable. (Checks or Money Orders should be made payable to "CMARC").

**John Doornhaag | 1165 South Ainger Rd | Charlotte, MI 48813-9540**

Membership Type		<input type="checkbox"/> New	<input type="checkbox"/> Renewal
<b>Full:</b>	<input type="checkbox"/> Annual Dues: \$20.00 <i>Includes voting rights and an annual subscription to The Scope.</i>		
<b>Associate:</b>	<input type="checkbox"/> Annual Dues: \$5.00 <i>Includes an annual subscription to The Scope but NO voting rights.</i>		
<b>New Licensee:</b>	<input type="checkbox"/> Current Calendar Year Free <i>(must submit your application within first 30 days of licensure)</i>		
<b>Under 18:</b>	<input type="checkbox"/> Annual Dues: Free		

Contact Information	
<b>First Name:</b> _____	<b>Last Name:</b> _____
<b>Call Sign:</b> _____	<b>License Class:</b> _____ <b>Phone #:</b> _____
<b>Address:</b> _____	<b>Apt/Unit:</b> _____
<b>City:</b> _____	<b>State:</b> _____ <b>Zip Code:</b> _____
<b>Birthday:</b> _____	<b>Anniversary:</b> _____
<b>Email:</b> _____	<b>Sign up for the List Serv:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
<i>Note: Email is used by club officers to communicate club business and may appear in the club directory for use by club members. CMARC does not share/sell contact information to other parties.</i>	

Club Communications	
<b>Newsletter Preference</b> <i>(select only one option)</i>	<input type="checkbox"/> I will download from the web site.
	<input type="checkbox"/> Please mail to my address <i>(Note: Direct mailing increases postage costs.)</i>
<b>ARRL Affiliation</b>	<input type="checkbox"/> I am an ARRL member

# Lansing Civil Defense Repeater Association

## Membership Form



For Year (s) \_\_\_\_\_

Please complete ALL sections in their ENTIRETY before submitting your application.

LCDRA oversees the operation and maintenance of all Lansing Area repeaters. Use of the repeaters does NOT require LCDRA or CMARC membership, but your support is welcome and appreciated.

Mail completed form to Membership Chairman (see address below) or take to a meeting for processing. Please include payment if applicable. (Checks or Money Orders should be made payable to "LCDRA").

**Michael Boensch | 1897 Sunnymede Ln | Lansing, MI 48906-1356**

**If you would like a membership card mailed to you,  
please include an SASE with your payment. Thank you.**

Membership Type		<input type="checkbox"/> New	<input type="checkbox"/> Renewal
<b>Full:</b>	<input type="checkbox"/> Annual Dues: \$15.00 <i>Includes voting rights.</i>		
<b>Family Mbrs:</b>	<input type="checkbox"/> Annual Dues: \$7.50 ea. <b>No. of Family Members:</b> _____		
<b>ARRL Affiliation</b>	<input type="checkbox"/> I am an ARRL member <b>Membership Card</b> <input type="checkbox"/> Yes <i>(Please see above)</i>		

Contact Information	
<b>First Name:</b> _____	<b>Last Name:</b> _____
<b>Call Sign:</b> _____	<b>License Class:</b> _____ <b>Phone #:</b> _____
<b>Address:</b> _____	<b>Apt/Unit:</b> _____
<b>City:</b> _____	<b>State:</b> _____ <b>Zip Code:</b> _____
<b>Birthday:</b> _____	<b>Anniversary:</b> _____
<b>Email:</b> _____	
<small>Note: Email is used by club officers to communicate club business and may appear in the club directory for use by club members. <u>LCDRA does not share/sell contact information to other parties.</u></small>	

Central Michigan Amateur Radio  
P.O. Box 54  
Mason, MI 48854-0054

STAMP

To:

May Solution

S	L	A	M		C	A	R	R		H	A	F	T	S
M	I	D	I		O	B	I	T		E	L	A	T	E
D	E	E	D		L	U	S	T		L	I	L	L	E
S	U	N	S	P	O	T	C	Y	C	L	E	S		
				T	E	N	S			H	O	N	E	S
	S	T	R	A	Y		Q	R	U			S	E	A
E	T	H	E	R		G	U	A	R		S	T	N	S
G	R	E	A	T	C	I	R	C	L	E	P	A	T	H
G	E	R	M		E	B	A	Y		M	O	R	A	Y
S	A	M			D	E	N			T	O	R	T	S
	K	O	A	L	A				M	I	T	T		
		S	P	O	R	A	D	I	C	E	S	K	I	P
S	E	T	A	C			D	O	C	K		M	I	C
S	P	A	R	K			C	U	R	E		A	L	O
B	A	T	T	S			S	P	O	T		N	O	N

June Solution

S	W	A	N		E	R	I	E		A	C	A	M	P
P	A	P	A		M	O	O	N		L	A	R	C	H
E	R	A	S		B	A	N	D	S	P	R	E	A	D
E	S	C	A	P	E	S				C	H	E	A	T
D	A	H			A	R	T			C	H	A	S	
S	W	E	E	P				D	O	E	S		Q	E
				B	A	A			R	A	M		T	T
N	A	V	A	L	B	O	A	T	A	N	C	H	O	R
O	N	L	Y			I	N	K		S	I	X		
R	D	F			G	L	E	E			N	O	D	A
				G	R	I	D			E	D	T		E
I	S	F	L	A	T					J	O	H	N	S
K	I	L	O	C	Y	C	L	E	S		A	I	D	S
G	R	E	B	E			P	A	C	E		T	R	E
I	S	W	E	D			S	S	T	S		L	E	S