



W8KEA



MARC

MIDLAND AMATEUR RADIO CLUB  
PO BOX 1049, MIDLAND, MICHIGAN 48641  
www.w8kea.org

President	John Wolters W8QN	(989) 832-9122
Vice President	Keith Johnson KB8SOE	(989) 488-4337
Secretary	Linda Hodges KC8MUD	(989) 486-3771
Treasurer	Larry Macklin N8CGP	(989) 631-7748
W8KEA Station Trustee	Larry Macklin N8CGP	(989) 631-7748
Midland County EC/RO	John Wolters W8QN	(989) 832-9122
Midland County AEC	Chris Rose KB8UIH	(989) 832-7179
Newsletter Editor	Pat Mullet KC8RTW	(989) 828-6657
Newsletter Publisher	Art Peters KOACP	(989) 400-3745
ARRL Liaison	John Tallman KB8PGW	(989) 859-0364
Web Page Chairman	John McDonough WB8RCR	(989) 631-0178
Club Historian	Stan Rowe K6VWE	(989) 837-7252
Quartermaster	Lee Hodges KC8ITI	(989) 486-3771
Public Information Officer	Pat Mullet KC8RTW	(989) 828-6657
Field Day Committee		
	Pat Mullet KC8RTW	(989) 828-6657
Swap Committee		
	Pat Mullet KC8RTW	(989) 828-6657

LIFE MEMBERS

Don W8WOJ, Lee KC8ITI, Dennis N8ERF, Larry N8CGP, Denny WD8BPT, John WB8RCR

Midland County Public Service Net, Thursdays at 9 PM  
W8KEA Repeater — 147.000 MHz+ PL 103.5 • W8QN Repeater — 443.325 MHz+ PL 103.5  
W8KEA Digipeater — 145.090 MHz

Next ARES®/RACES Meeting — Thursday December 3, 2015, 6:00 PM  
Law Enforcement Center, 2727 Rodd St.

Next CLUB Meeting — Thursday December 3, 2015, 7:30 PM  
Salvation Army Building, 330 Waldo.  
Talk-in 147.000+

December 2015

Static Discharge

John Wolters, W8QN

It was a pleasure to see some new and old returning faces at the November club meeting. Hope this holds in the future. Thanks again to Steve Linley, WA8Y, for stepping in to take over the newsletter in a time of need and welcome back Pat Mullet, KC8RTW. The program for the December meeting will be given by Pat Russell, W8PMR1 and cover his experiences with the SteppIR vertical. I have used it and it works great. Skywarn Recognition Day is scheduled to occur on December 5<sup>th</sup>. If you would like to operate the NWS radio station at White Lake during the “contest” please contact either myself or Chris Rose for more information. And finally we are coming to the end of another year. Mother Nature has graced us with a few more warm days so I hope it has helped you with your unfinished outdoor projects. As I look at the loooong range

**When all else fails...  
...Amateur Radio!**



forecast it looks like we might not see some of the dreaded white stuff until sometime mid-Decem-

ber. That sounds good so let's hope so. So enough of my ramblings, I'll see you at the Decem-

ber meeting.

John, W8QN

## MARC Minutes

Linda Hodges, KC8MUD

John W8QN brought the meeting to order at 7:30 P.M. with 28 people present. Introductions were made and a sign-in sheet was passed around.

All corrections and additions

### MARC MEETINGS

Keith Johnson, KB8SOE, is in charge of special events and topics for the MARC monthly meetings. If you have any agenda items, or topics for the meetings, please contact Keith at (989) 488-4337, or via e-mail: kb8soe@arrl.net.

### COMMUNICATIONS

Pat Mullet, KC8RTW, is in charge of communications and publicity for the club. If you have any questions or ideas regarding these areas, please contact Pat at kc8rtw@arrl.net

### EXAMINATION SCHEDULE

Saginaw - All future VE testing will be done on an appointment basis only.

Corunna - Contact Thomas Carpenter (517) 579-0599 ki8as@charter.net.

Bay City - All future VE testing will be done on an appointment basis only.

Isabella/Clare Counties - Contact Gus Glass, K8GUS at k8gus@arrl.net

With all examinations, your original license, a copy of that license, a second photo identification (drivers license, etc.) and a check or money order for \$15.00 made out to "ARRL/VEC" are required.

The address listed below gives testing sessions scheduled for Michigan. <http://www.arrl.org/arrlvec/exam-search.phtml?State=MI>

### SUBMISSIONS FOR NEWSLETTER

Contact Pat Mullet, KC8RTW at kc8rtw@arrl.net if you want to submit anything for the newsletter.

I need your items by the 15th of the month. Anything received after that may not make it into the newsletter for that month.

If you prefer to download the MARC newsletter from our web site, or have trouble with delivery via USPS, contact John, W8QN at w8qn@arrl.net.

### MEDIA HITS!

Have you seen or heard mention of the Midland Amateur Radio Club in the news or in the paper? If so, please forward it, or mention of it to either Pat, KC8RTW (kc8rtw@arrl.net) or Kevin (cherryrediroc@sbcglobal.net)

to the minutes should be brought to the attention of the secretary Linda KC8MUD.

- Presentation- Repeater tower restoration report-John W8QN- A lengthy discussion followed about the age and condition of the tower as well as the new cable and spruce-up work done. There was also a web page and Facebook discussion.

- EC/RO -John W8QN- Laptop practice, sending and receiving messages as a tool. Also be aware that it's been reported that the *FLDigi* website was hacked, be careful when downloading.

- The USS Edson- Lou N8LOU - An invitation to members from all area radio clubs to join the Museum Ship Edson Radio Club. This club could restore the ship's radio room and use it for future events. If you are interested please contact Lou at N8LOU@ARRL.NET.

- School Club-Dennis N8ERF- Dennis reported on the High School Club's Balloon Launch and the Middle School Club.

- Treasurer's report-Larry N8CGP- Thank-you to all who renew your memberships.

- Tube sales-Dorie N8WTQ- Thank you to Dorie for housing and selling the tubes for the club.

- Santa Parade -Linda KC8MUD- Sat. November 21<sup>st</sup> is the Santa Parade. Line up starts at

8:00 A.M. Leaves at 10:00 A.M. Walkers, riders and wrapped candy donations are needed.

- Fund-raiser Dennis N8ERF -High School Club will be having a fund-raiser to make money for Ann Arbor Trip.

- After Christmas Party-Dorie N8WTQ- January 15<sup>th</sup> is the day of this year's MARC Christmas Party. Bring a white elephant gift and enjoy the fun. \$11.00 per ticket and will be at the new Lee Township Hall.

- Show and Tell- Steve WA8Y- Steve brought his radio made at the kit build and some other things.

- Certificates-John W8QN- Congrats on two certificates that were awarded. The first to Steve WA8Y for taking over the newsletter duties until Pat KC8RTW was back. The second to Dennis N8ERF. He got the OMG Certificate for his report on the amount of kids that wanted to join the Middle School Electronics Club.

NET Control:

Nov 12<sup>th</sup> Lee KC8ITI

Nov 19<sup>th</sup> John W8QN

A motion to adjourn made by Larry N8CGP and seconded by Dennis WD8BPT.

The meeting was adjourned at 8:57 P.M.

Respectfully Submitted,

Linda KC8MUD

MARC Secretary

My Two Cents

Pat Mullet, KC8RTW

Like the proverbial bad penny, I'm back! I'm ready once more to take up the reigns of the newsletter, and I'd like Steve Linley,

WA8Y for filling in while I was ill. Thanks so much, Steve.

And now, on to our story....

A mix-up in instructions for

# Amateur Radio is a Contact Sport!

meds during a bladder infection sent me into the hospital for a couple of weeks as I recovered from congestive heart failure. Next, I was whisked off to a care facility where I spent the next two months undergoing physical therapy to get me back on my feet again-so much for how I spent my summer vacation.

One thing that really caught me once I was back home and able to put some time into ham radio again was the big change in HF propagation in the short time I was gone. Towards the end of June, the propagation banners on websites such as QRZ.com showed good conditions on 20-10 meters during the day, with 80-20 meters being good at night. Now, those same banners are only showing fair conditions on 40-20 meters, and poor conditions on the other bands, both day and night. I certainly hope conditions on 80-20 meters improve during the coming winter, or we're going to need something else to do during those cold, snowy nights.

I have had some time to play with the Icom IC-7000 I purchased this last spring. This radio does so much more than my Icom IC-817 that I've had to spend a lot of time with the manual in order to do more than just turn it on and make a couple of quick phone contacts. Learning how to program VHF/UHF memories to operate local repeaters or to operate split frequencies to work a pileup means you have to drill through the menus to find the settings you want. I have to admit that once

you get the hang of it, setting up for split operation is much easier than on the venerable '817, however.

The wider operating range of the IC-7000 caused me to go back to the manual for the LDG IT-100 auto-tuner that gave me such good service with the '817. The tuner's range is from 160-50 meters, so I should be able to use my G5RV to explore both the "top band" and the "magic band" this winter.

I've also been able to get my APRS digipeater/I-Gate back up on the air. I'd hoped to be able to make the hop the Coleman digi, but apparently, it's off the air. Maybe in the spring, I can get an antenna up further away from my dual-bander and a bit higher than the temporary one I'm using now.

I also need to make up a new cable for my sound card interface. I was able to re-use the one that used the '817's accessory port, but on the '7000, that port is limited to HF use with the way the cable is wired. Once I make up a cable for the 6-pin mini-din data port, I should be good to go from "DC to daylight!"

What with the coming holidays, all this ought to keep me busy up until the first of the year, at least. One of the great things about this hobby is that there is always something out there ready to grab your attention and keep you busy.

That's enough for this time around. Hope to catch you on the air.

73, Pat, KC8RTW

**ARES®/RACES** John Wolters, W8QN

At the November ARES®/RACES meeting everyone brought a laptop and learned a little bit about the use of *FLDIGI*. We sent messages to each other using only the audio output and microphone input of each laptop. Some were more successful than others depending on age of hardware but all were able to get a successful reception of a message. At the December meet-

ing we plan to continue our practice with *FLDIGI* but this time using a radio to assist in the reception and possible transmission. The current plan is for each person to bring their laptop, and a hand-held radio with a cable from the speaker output to the laptop microphone input. With so many hand-helds out there it will be the responsibility of each person to

Upcoming Events

11/21	Santa Parade
12/5	Skywarn Recognition Day
12/31	Straight Key Night
1/15	MARC Christmas Party
4/16	MI QSO Party
6/25-26	Field Day

Michigan Hamfests

12/6	Harrison Township
1/24	Madison Heights
2/13	Traverse City
2/21	Livonia
5/7	Cadillac
6/18	MARC Hamfest*
10/16	Kalamazoo

\* Denotes date based on 2015 event

Area Nets

SVARA; Mn, 147.24 MHz, 2100 ET  
 Gladwin; Tu, 147.18 MHz, 2000 ET  
 BAARC; Tu, 145.31 MHz, 2100 ET  
 Isabella Co EOC 146.72 Mhz, 1900 ET  
 Canadian Lks, Wed, 146.8, 2100 ET  
 Edmore, Th, 146.8, 2000 ET  
 MARC; Th, 147.00 MHz, 2100 ET  
 District 3 ARPSC; Su, 145.31 MHz, 1830 ET  
 Mi VHF Trffc Net; MWF, 145.15 MHz, 0900 ET  
 TMMTN; Mon-Sat, 147.30 MHz, 2130 ET  
 MACS; Sun-Sat, 3953 kHz 1100 ET  
 MIARPSC; Su, 3932 kHz, 17:00 ET  
 UPN; Sun-Sat, 3920 kHz, 17:00 ET  
 MITN; Sun-Sat, 3952 kHz, 1800 ET  
 QMN; Sun-Fri, 3563 kHz, 1830 & 2200 ET  
 WSSBN, 3932 kHz, 1900 ET  
 UP-ARES; Fr, 3932 kHz, 1930 ET  
 GLETN; Sun-Sat, 3932 kHz, 2030 ET  
 SEMTN; Sun-Sat, 145.33, 2215 ET  
 MIDTN - 1900 local Tu, Th, Sat 3.583  
 +waterfall, Oivia 8/500

MARC MERCHANDISE

T-Shirt	S- XL	\$10
	2X - 3X	\$12
Long-Sleeve Tee	S- XL	\$12
	2X - 3X	\$15
Crew Sweatshirt	S- XL	\$18
	2X - 3X	\$20
Hoodie	S- XL	\$24
	2X - 3X	\$26
Zipper Hoodie	S- 3X	\$30
Winter Coat	S- XL	\$42
	2X - 3X	\$45
Spring Jacket	S- XL	\$32
	2X - 3X	\$35
Hat		\$10

All garments are royal blue with white print and embroidered name and number. Extended sizes available.

Please call Bill Lee at B&C Sportswear with questions @ (989) 839-4537.

figure out what cable they will need and determine where to plug it into the laptop. Handhelds are not a requirement so if you have

some other type of radio to use for connection (scanner?) bring it and join in.

Hope to see you there.

John Wolters, W8QN

## Ham Tests Scheduled for Dec. 15<sup>th</sup>

An Amateur Radio Licensing session will be conducted on Saturday, December 12, 2015 at 9:00 with registration starting at 8:30. The session will be held at the Salvation Army Building, 220 S.

Waldo Ave., Midland, MI 48642.

Candidates are reminded to bring two pieces of identification, pencils, and photocopies of any current licenses. Calculators are allowed. The test fee is \$15.00.

Checks should be made out to ARRL/VEC.

Testing for all classes of license — Technician, General and Extra — will be offered.

## Annual MARC Christmas Party

Dorie, N8WTQ

The Christmas party will be held on January 15<sup>th</sup> with gathering at 5:30 and eat at 6 p.m. Carousel Catering will be serving the dinner at a cost of \$11.00 a per-

son. I have to have the names of those who want to attend by the January MARC meeting so I can let the caterers know who many to plan for. Don't forget to bring a

white elephant gift. If you have any questions you can call me at (989) 835-5562 or email me at [doris.french@outlook.com](mailto:doris.french@outlook.com).

Dorie, N8WTQ

## USS Edson Radio Club Forming

Louie Stempek (N8LOU) made a pitch for the possible formation of a radio club around the USS Edson (DD-946), a Forrest Sherman-class destroyer docked in Bay City as part of the Saginaw Valley Naval Ship Museum. This group would have a

larger focus on activation of the radio room on weekends and special events such as the Museum Ships Weekend sponsored by the Battleship New Jersey Amateur Radio Station held the first weekend of June each year. If you are interested in more information

please contact:

Louie Stempek  
305 E Ashman St  
Midland, Mi 48642

(989) 631-5915  
or [N8LOU@ARRL.NET](mailto:N8LOU@ARRL.NET)

## 2015 SKYWARN<sup>TM</sup> Recognition Day

Developed in 1999 by the National Weather Service and the American Radio Relay League SKYWARN<sup>TM</sup> Recognition Day (SRD) celebrates the contributions that volunteer SKYWARN<sup>TM</sup> radio operators make to the National Weather Service. During the day SKYWARN<sup>TM</sup> operators visit NWS offices and contact other radio operators across the world. This year's event runs December 5, 2015,

from 0000z to 2400z.

Home bound hams and Amateur Radio clubs will exchange QSO information with as many National Weather Service Stations as possible on 80, 40, 20, 15, 10, 6, and 2 meter bands plus the 70 centimeter band. Contacts via repeaters are permitted. SKYWARN<sup>TM</sup> Recognition Day serves to celebrate the contributions to public safety made by amateur radio operators during threatening

weather.

The exchange for SRD consists of Call sign, signal report, QTH, and a one or two word description of the weather occurring at your site.

Participants can earn a variety of certificates based on the number of NWS stations worked during the operating event.

For more information see the NWS SRD website: [www.wrh.noaa.gov/mtr/hamradio](http://www.wrh.noaa.gov/mtr/hamradio).

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# It's Not Your Grandfather's Amateur Radio!

## Michigan Section News - November, 2015

Greetings to the Hams of Michigan:

Welcome to the end of 2015. Six more weeks and we will be working Straight Key Night and pondering what 2016 has in store for us. It seems like it was just last week that we were recovering from sensory overload from many, many hours on the air during the Centennial QSO Party. Time flies when you are having fun!

### *Veteran's Day*

While this is a slightly belated thank you, I would like to pass along my sincerest appreciation to all Veterans, wartime and peacetime alike. It is through your service to your country that has helped to make this country the great place that it is. Thank you for your service and thank you for your sacrifice on behalf of the American people.

### *Thanksgiving Day.*

This is the time of year when the weather is beginning to turn

colder, frost in on the pumpkin and our thoughts turn to family and the upcoming Thanksgiving Day. While our nation is facing a lot of challenges, we all should be thankful for the bounty that is ours in this great country. Enjoy your thanksgiving with family and friends and remember those that made this all possible. Diane and I send best wishes from our family to yours.

### *SKYWARN™ Recognition Day is December 5<sup>th</sup>*

The 17<sup>th</sup> annual SKYWARN Recognition Day (SRD) special event will take place Saturday, December 5, 2015, from 0000 UTC to 2400 UTC. SKYWARN Recognition Day, co-sponsored by the American Radio Relay League and the National Weather Service, pays tribute to Amateur Radio operators for the vital public service they perform. During the 24-hour event, Amateur Radio operators visit their local National Weather Service (NWS) office and work as a team to contact other hams across the world. This event is also aimed at strengthening the

bond between Amateur Radio operators and local NWS offices.

The National Weather Service provides event information on this Web site: <http://hamradio.noaa.gov>.

The following is courtesy of our Affiliated Club Coordinator, Joe Miller, KJ8O:

### *ARRL Affiliated and Special Service Clubs*

It is time to complete those annual club reports which will keep your club current at the ARRL. No affiliated club or special service club is ever removed from the lists. If you do not complete the annual reports for either or both, then your club becomes inactive.

You can easily update your club information here: <http://www.arrl.org/club-update>. This should be completed at the beginning of each calendar year.

Until next time, 73,

Larry Camp, WB8R  
ARRL Michigan Section Manager  
[wb8r@arrl.org](mailto:wb8r@arrl.org)

## Division News - November 2015

Greetings everyone, welcome to "Dale's Tales" for November 2015.

Special Event: Recent activities at the Michigan State University Radio Club, W8SH, have been running in high gear. First, was the club's hosting Katie Breen WY7YL and Sean Kutzko KX9X from ARRL HQ to meet with MSU's Scott Westerman W9WSW to investigate new ways to market ham radio to a new generation of potential hams.

Then there was "Sparticipation" a Field Day-like event to welcome 8000 new students to the campus, and this included an active demonstration from the MSU Radio Club. Several potential hams registered their interest in getting licensed and the club welcomed a couple of hams with the incoming freshmen class.

Then...well, MSU alumnus Gregg WB8LZG says it like this: "The 1st Spartan Radio Tailgate Party was a good one! We had the chance to meet and play radio

with several of the new incoming Hams! It looks like we're off to a great start this year! Ed Ozer, Reece Cole & I went to the shack a bit early to make sure all was in readiness for the event. There was a crock pot full of Ed's famous 'busted QSO chili', and lots of snacks and chips, including MSU Football cupcakes! Wow, this really is a tailgate party! At the starting bell the students took right over and started making QSO's! They did quite well too. A rough tally shows 44 QSO's, in 19 states, the Galapagos Is, Marti-

# Explore the World with Amateur Radio!

nique, El Salvador, and others. Just to keep things exciting they also had a few pileups! Alumnus Mike, KB8ZGL helped out by connecting to the "Mike LINC" so that we could garner some more check in's via 'echo link'. This proved very worthwhile; also as we had many hams reach us on that link. ... how nice it was to see the shack FULL of students all having fun, as well as learning from each other. To sum it up, our 1<sup>st</sup> installment to the 'Spartan Tailgate Special Event' went very

well." Gregg says we can look for W8SH and the Spartan Tailgate Special Event as part of every MSU home game.

Club Opportunities: So this begs the question: "With all of the excellent colleges and universities in the Great Lakes Division, Ohio, Kentucky and Michigan, what are others doing to promote the growth of Amateur Radio?" I am very interested in reporting the activities of all of our Division's college radio clubs

and we can do this in "Dale's Tales" over the next few months. Let me know. This is a wonderful opportunity to share some truly innovative ideas. Following this, we can introduce our cadre of High School Clubs and their recruitment ideas and activities.

73, see you on the bands.

Dale Williams WA8EFK  
Director  
Great Lakes Division  
wa8efk@arrl.org

## Technical Topics and Information

(ARRL Contest Update for October 21, 2015) If you're looking for a new 160m receive antenna for a space constrained location, perhaps you should give the [DHDL antenna](#) a look. Developed for the TX3A DXpedition, it's a Double Helix Delta Loop, and boasts an RDF improvement of 2.5 dB over a single flag antenna of similar dimension. DH1TW tried this antenna at ED1R, and [reported his favorable results](#). (WWDXC reflector)

◆ Quantum computers will use a different architecture, and work with different concepts than computing until now. We'll have to think about how to frame problems in a different way, using [new computer languages](#) suited to the new models.

◆ Recently, a [new distance record for 'Quantum Teleportation'](#) was set. Single entangled photons were transmitted and detected across 100km of fiber. This record was a result of a refinement of the detector capability. (Thanks N6KI)

◆ Sometimes all it takes is one project to instill a life-long in-

terest in building electronic projects - here's a [headphone amplifier](#) that could be that project. It's a relatively simple design, with parts and resources available from numerous sources.

◆ [Memristors are shipping!](#) These devices can be "programmed" with a current to exhibit a particular resistance when subsequently read with a (smaller) current. It is thought that they'll be able to spur the creation of new types of non-volatile storage. One currently available device has eight memristors in one single package.

◆ SMD parts are usually small, requiring tools to handle. An [inexpensive suction-type tool for picking and placing parts is available from Electronics Goldmine](#) which could be just the thing you need for parts that are too 'slippery' for tweezers. (QRP-L mailing list)

◆ (At Pacificon) "I walked down the aisle and found a vendor selling a box that meters in the positive lead! I bought one immediately. It's marked EZ-meter II. Metering (current) in the positive

lead is critical - you can't measure current drawn by interconnected equipment in the negative lead, because all the bonds between gear and the coax running between them causes DC current to divide by Ohm's Law. <http://www.ham-source.com/ezmeter.html>" - (Thanks K9YC)

*Technical Web Site of the Week* - [Building an FSK Decoder](#) using open source tools for use in high-altitude balloon telemetry. Written by David Rowe, VK5DGR, author of FreeDV, this is a great blog post illustrating how a design for a software modem was developed using open source software, tested, and deployed against real-world signals. Some interesting findings include that using reasonable hardware, performance was adequate using GNU Octave, without compiling the design further, to decode real-world signals, and that a real-world driver must be able to accommodate variation in the sender's clock rate. Perhaps this article will spur others to do their own RTTY decoder design and experimentation.

## More Technical Topics and Information

(ARRL Contest Update for November 4, 2015) Using your signal generator and an oscillo-

scope, [you can also create your own Time Domain Reflectometer \(TDR\)](#). The article has a great

background on the theory and practice.

◆ F5OEO was able to con-

struct a proof-of-concept using a [Raspberry Pi Single board computer to generate FM, AM, SSB, SSTV, and FSQ signals between 130 KHz and 750 MHz](#) . While it's not suitable to be on the air as is as the signal is rich in harmonics, those could be cleaned up with some outboard filtering. Maybe this will spur a slew of interesting projects using the Pi.

◆ "Cabrillo Statistics Program (CBS) users: Please use the updated [CBS-specific CTY.DAT file included in the CBS software for Windows and Mac](#). The growing CTY.DAT files distributed by AD1C are too large to be used with the CBS program. Send any questions or comments to me." - Bob, N6TV (via his ARRL.NET email address)

◆ Using passwords that we must write down because we can't

remember them is not a "best practice." [Researchers think they have found a way to make great passwords from easy to remember poems](#). You may want to take a pass on their additional offer to email you a password-poem from information you mail to them - Though they promise that the information they used to generate your poem, and your poem, is deleted... how do you really know?

◆ [Dupont is shipping conductive ink to be used for part molding](#), enabling electrical conductors to be molded right into plastic parts. The benefit is to increase reliability and the possibility of eliminating separate printed circuit boards.

◆ Here's a tractor beam Bones could use! [Ultrasonic waves can be combined and shaped to manipulate small objects](#), with the in-

tent to be able to precisely place objects or deliver drugs in the human body.

◆ Small devices slow down and talk less to communicate reliably: here's a good overview on [recent technical innovations to utilize license-free RF spectrum to link small devices](#).

*Technical Web Site of the Week* - [RemoteQTH.com](#)

Perhaps better known outside the US, this web site has a number of interesting station automation and station accessory oriented projects, which may provide inspiration or a foundation for your own. Schematics are available for nearly everything on the site, as part of the Open Source Hardware philosophy. If you need a PCB or parts, links are provided.

## MARC Vital Statistics

Memberships Expiring in November

KC8IHB

Memberships Expiring in December

NONE

Memberships Expiring in January

AC8QF

KD8RMG

Current Active Club Membership 38

Birthdays Celebrated in November/December

KD8ZKG 11/4  
K6VWE 11/13  
N8UPP 11/14  
KC8GQK 11/19  
KD8FQF 11/21  
KB8UIH 11/27

N8NVL 11/28  
KC8TQV 12/1  
KD8COB 12/5  
WB8WNF 12/7  
N8KS 12/10  
N8ERF 12/10

KB8TSO 12/13  
N8CGP 12/21  
NX8A 12/22  
WD8KEW 12/28  
WD8KTB 12/28

Anniversaries Celebrated in November/December

N8DHF and KB8QWO 11/17  
KB8QWO and N8DHF 11/17  
KC8KOC and Jennifer 11/23  
KB8UIH and Shelley 12/8  
W8WOJ and KD8HIF 12/12

W8PMR and KD8IWB 12/16  
KD8FQF and KD8GRQ 12/19  
K7GTK and WZ8Z 12/22  
N8ERF and N8NNA 12/23  
W8ZSX and WD8BDM 12/23

Information is from data received 10/13/2015

Any corrections or questions contact Larry, N8CGP

# Amateur Radio. . . We Do That!



Pat Mullet  
Newsletter Editor  
171 E. Orchard Ave.  
Shepherd, MI 48883

If you desire to join the Midland Amateur Radio Club, the dues are \$20 per year for an individual membership. A family membership is available for an additional \$5 per year which covers all of the individual's family members. Family members must reside at the same address as the primary member to be eligible for the family member rate. The membership dues help to cover the operating expenses of the Club, and its radio systems. Membership includes Autopatch privileges on the W8KEA repeater (147.000+), voting privileges at MARC meetings, and a monthly newsletter. Please supply the following information:

Name: \_\_\_\_\_ Callsign: \_\_\_\_\_ License Class \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Home Phone (\_\_\_\_) \_\_\_\_\_ Work Phone (\_\_\_\_) \_\_\_\_\_  
E-mail address \_\_\_\_\_  
Spouse: \_\_\_\_\_ Callsign: \_\_\_\_\_ License Class \_\_\_\_\_  
Birthday: (mm/dd) \_\_\_\_\_ Anniversary: (mm/dd) \_\_\_\_\_  
Desired newsletter format: Paper copy via USPS \_\_\_\_\_ or via e-mail \_\_\_\_\_

Are you an ARRL Member? Y/N      Do you want an ARES Application? Y/N

We request this information so we can communicate with you regarding MARC business, and periodically send you newsletters and congratulatory birthday & anniversary greetings. We do not sell this information nor will we knowingly publicize private information without your permission. Information that is publicly available may be distributed to Club members for various purposes, including membership lists, without prior notification.

You may give this completed form to the MARC treasurer, or you may mail it to:

MARC, PO Box 1049, Midland, MI 48641-1049