W8KEA
MARC
SPECIAL SERVICES CLUB
MIDLAND AMATEUR RADIO CLUB
PO BOX 1049, MIDLAND, MICHIGAN 48641
www.w8kea.org

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	Pat Mullet KC8RTW	(989) 828-6657
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	Chuck Cribley WA8LQD	(989) 488-9409
	Keith Johnson KB8SOE	(989) 488-4337
	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 January 7, 2016, 6:00 PM
Law Enforcement Center, 2727 Rodd St.
Next CLUB Meeting — Thursday January 7, 2016, 7:30 PM
Salvation Army Building, 330 Waldo.
Talk-in 147.000+

January 2016

Static Discharge

John Wolters, W8QN

I want to thank Pat Russell for his presentation on his SteppIR vertical. For those that missed it, Pat suggested that he was planning to build his own version of the vertical. Others in the audience asked if they could join in and Pat agreed. If you're interested in participating, contact Pat Russell for more information.

I am looking for a Field Day chairman. If you're interested please let me know. Also – no chairman to organize and lead – no Field Day.

I hope your holiday season is a safe and happy one. Merry Christmas and Happy New Year to all.

-John, W8QN

MARC Minutes

Linda Hodges, KC8MUD

The meeting was called to order by John W8QN at 7:30 P.M. with 34 members and guests present. A sign-in sheet was passed around and introductions were made.

Please bring any additions or corrections to the minutes to the attention of our secretary Linda KC8MUD. John W8QN has requested an E-Mail Check. Please send new or corrected e-mail addresses to John W8QN.

Presentation-Pat W8PMR-Pat taught us about SteppIR Vertical Antennas. Thank-you Pat. Following the presentation was a lively TEN-TEC discussion.

• John W8QN, EC Report—Roger Garner to retire. Jennifer Boyer will be his replacement as Emergency Coordinator. Training Session- We'll be testing *FLDigi*, experimenting with simplex point to point contacts.

• SWAP—Pat W8PMR—Committee members are Pat W8PMR and Chuck WA8LQD with Keith KB8SOE as an adviser. Please see any of them to offer your assistance to helping make our Swap a huge success. We need ideas for programs and how to get the word out about the swap.

• Art— Call your senator about upcoming legislation. Amateur Radio Parity Act is about to be voted on that says HOA's have to reasonably accommodate homeowner's antenna size and structure.

• Literature— Larry N8CGP—We can leave literature at rest stops to advertise the swap.

• Treasurer's Report Larry N8CGP —Thank-you to all who renewed their dues.

• Christmas Party—Dorie N8WTQ—The party is January 15th at 5:30 P.M. The cost is $11.00 per person. Please pay Dorie by the Jan. club meeting. Don't forget your white elephant gift.

• USS Edson—Lou says the Edson Club call is KE8CPP. They will be honoring Pearl Harbor Day at the ship. Contacts will receive a QSL Card from the Edson Radio Club. There are no dues to be a club member.

• High School Club Report—Dennis N8ERF—Thank-you to the guys who attended Antenna party on Friday to repair broken wires on the roof of Midland High School. We are selling bread or taking a donations for a student trip to U of M.

• Dennis N8ERF—has the boxes that completes the Oct. 3rd radio build. Student trip to U of M on December 5th. VE Session coming on December12th.

• MiQSO Party—Steve WA8Y—Steve took 3rd place in the Michigan QSO party. Congratulations Steve.

• Mike KD8HMM—Saginaw Club is having pot luck and elections coming up. Also we are sorry for Joe Turner's loss of his wife Janet.

• Another passing—John WB8RCR—Noted the passing of Ann Travis K8AE.

• Lee KC8ITI—There are sale items at the back of the room. Please leave a donation for your selections in the donation bucket. Also an auction of surplus club equipment is in the works.

• Del WB8FYR—Del announced that his son is retiring from the Navy and he and his family will be returning to this area to live. Congratulations Del and Ruth.

Net Control:
Dec. 10th Steve WA8Y
Dec. 17th John W8QN

A motion to adjourn made by Larry N8CGP and seconded by Cindy WD8BDM.

Meeting adjourned at 8:40 P.M.

Respectfully submitted by
Linda KC8MUD
MARC Secretary

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/examsearch.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 (cherryredirocz@sbcglobal.net)

Amateur Radio is a Contact Sport!

My Two Cents — Pat Mullet, KC8RTW

Welcome back to my ramblings. First, I have to clear up a major "ooops" from last month: I referred to Icom's entry level rig which I replaced this spring with the IC-7000 as the IC-817. Big mistake—it is, of course, the IC-718. I'm continually confusing the model numbers of the IC-718 and Yaesu's portable FT-817, go figure.

Anyway, back to my fun with my IC-7000.

Even though I have yet to connect a VHF/UHF antenna to the rig, I did want to program the memories with local repeaters so I would be ready to rock as soon as I got one set up. Rather than attempt to fill the memories by hand, and since I already had a rig/computer interface cable for the Icom system, I went looking for programming software. First on the list was *CHIRP!*, a freeware program supporting a multitude of brands and rigs. Unfortunately, when it comes to the IC-7000, you have to have at least one repeater already entered into memory so that you can download the memory parameters, then you supposedly cut & paste the rest of your repeater list into the program, then upload it to the rig. I was never able to download anything from the rig, let alone upload it. Later on, I discovered that *CHIRP!* would only manage one of the IC-7000's five memories.

So, I googled memory management software for the IC-7000, and came across Capelli Mauro, IZ2BKT's *ic7000bkt* rig control software. This package not only allows full rig control from your computer, it allows full uploading and management of all the rig's memories, even to the extent of importing files generated by the ARRL's *TravelPlus for Repeaters* software, making setup a snap. And if you're into satellite communications, Capelli includes a DDE module that interfaces with *Orbitron*, the Satellite Tracking System by Sebastian Stoff. This allows *Orbitron* to change your radio's up- and downlink frequencies to compensate for doppler shift. *Ic7000bkt* is €15.00, ($16.30 approx USD) payable with credit card or PayPal.

Capelli also has the freeware program *BktTimeSync* posted on his site which allows automated syncing of your computer's clock to an internet time server (NTP server) or a GPS receiver plugged into your computer, a neat little app if you happen to be portable, say at Field Day, without internet access.

Most of Icom's radios since the IC-756 Pro II have had a Digital Voice Recorder/CW recorder as a standard feature. This recorder allows storing and on-air playback of four messages running a total of 90 seconds—great for saving your voice while CQing and delivering exchanges during contests. The only problem is that you access the function via the nested menus. Luckily, Icom took this into consideration, and allowed for operation of the DVR via an external keypad plugged into the microphone connection. I've seen many simple external keypads online which enable this, but the best I've seen so far is by Larry Handwerger, N2LH. His Digital Voice Recorder/Keyer Controller for the IC-756Pro II not only incorporates the DVR keypad, but an adapter to allow the use of a computer boomset and a footswitch for PTT.

Finally, by now everyone know that Microsoft's Windows 10 has hit the market, and is shipping on all new Windows OS computers, though you can still find a few old stock Win7/8 computers in stores and outlets. What you may not know is that Win10 is supposedly the last named iteration of the Windows OS planned. Rather than having new versions made available for sale, upgrades will be automatically downloaded to your computers at MS's convenience. That, in itself, is bad enough, but it is reported that owners of Win7/8 will be subjected to downloads of a

Upcoming Events

12/1-1/1	Straight Key Night
3/3	Skywarn Training/Midland
4/16-17	Mi QSO Party
4/30	MS Walk*
5/21	Dow Run*
6/4-6/5	Museum Ships Weekend
6/25-26	Field Day

Michigan Hamfests

1/24	Madison Heights
2/13	Traverse City
2/21	Livonia
3/19	Kalamazoo
5/7	Cadillac
6/18	Midland *
10/16	Kalamazoo
10/30	Madison Heights

* 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.

variety of nagware designed to get them to upgrade, purportedly even to the extent that the OS may be downloaded to desktops, notebooks and tablets and stored in hidden partitions for the owner's "ease of upgrade." For more information on this subject and how you can "inoculate" your computer from what he calls "crapware," check out Stephan Smith, WA8LMF's *Windows 10 Info* page. Stephan is one of the Michigan Section's Digital Mode/APRS advisers, so this is good information.

Well, that pretty much does it for this month. Hope to hear you on the air.

73, Pat, KC8RTW

ARES® / RACES

John Wolters, W8QN

Well we continue to work on learning to use *FLDigi* at our meeting. I am also conducting a VHF digital net after the Thursday night VHF net. The first net was on Dec 10th but was poorly attended. I will try again on Dec 17th and then give it a rest until after the New Year.

It appears that the *FLMsg* segment of *FLDigi* has been infected with a virus. I have downloaded various versions and each virus scan continues to detect something. So take care if you download a version.

With the New Year comes a new Midland County Emergency Manager. For those that may not know, Roger Garner has retired. With change comes new possibilities, I hope ours are positive.

-John, W8QN

Dec. 12 License Exam Results

The Midland Amateur Radio Club Volunteer Examiner team held a license examination session Saturday, December 12th at the Midland Salvation Army building, 330 Waldo Rd.

Four candidates successfully sat for their exams, all of whom started with no license. They were: Blaine Colbry of St. Louis, earning a Technician License; Brant Colbry of Essexville, earning a General License; Timothy Tanner of Harrison, earning a Technician License and James Kim of Midland, earning a General License.

The VE's who proctored the exam were: Dennis Klipa, N8ERF; Lee Hodges, KC8ITI; Pat Russell, W8PMR; Del Lafeavor, WB8FYR and Bob Winchester, W8LSS.

Congratulations to our area's newest hams!

Upcoming Club Auction

From time to time equipment gets donated to the Midland Amateur Radio Club. Sometimes we can find a use for the donated equipment and maintain it in club inventory for use as needed. Other times we, as a club, offer the surplus gear for sale, usually at various swaps around the area. Finally the club puts the equipment up for auction. I've just finished an inventory of the surplus club equipment and have sent the list to the club president for consultation on what we should put up for auction. John, W8QN and I will be deciding what equipment still needs to be in club inventory and what can be put up for auction. Hopefully, we can complete this process by the January meeting. As soon as we finish we will post the rules for the auction and a list of equipment available.

Lee – KC8ITI MARC Quartermaster

Club Classes

I feel it is in the club's interest to offer amateur radio licensing classes on regular basis and I'm more than willing to teach these classes. But it takes students interested in getting their amateur radio licenses for the system to work. The last couple of Technician classes I've tried to start have met will a spectacular lack of success. Matter of fact, the last class had one individual show up and

It's Not Your Grandfather's Amateur Radio!

they couldn't make a commitment to attend all of the class sessions. I normally get 1 or 2 inquiries a month about training sessions for obtaining amateur radio licenses but by the time I get a class scheduled most of these people have lost interest, have moved on to other things or can't make a commitment for the time it takes to do a full class of instruction. I'm not a fan of "Ham in a Day" classes nor in just "teaching the test". It seems the lack of interested students comes from not being able to get the word out about our class opportunities. So I'm looking for input from the club members on whether we should continue to offer classes, the best format for said classes and any other input you may have.

Lee – KC8ITI Volunteer Instructor

Severe Weather Spotting Class Offered

With visions of Winter snowstorms and knee-deep snow dancing in our heads, many in mid-Michigan have a hard time looking past those grey days to concern themselves with the threat of severe weather in the spring and summer months. Despite our attention rightfully with upcoming frozen precipitation, now's the time to start planning of the inevitable rough weather ahead. To that end, the National Weather Service's Detroit Forecast Office is scheduling Severe Weather Training seminars across the seventeen Michigan counties they serve. This year's Midland County Skywarn® training session will be held Thursday, March 3rd, at the Midland Law Enforcement Center, 2727 Rodd Street. The session will begin at 7:00 pm and run approximately two hours. The session is free and open to the public, and there is no commitment to be a storm spotter involved, nor do you have to be a ham to attend.

Electronics and Wireless Communications Clubs at Northeast Middle School and Midland High

The E&WCC at Northeast Middle School is led by; Dennis, N8ERF; Will K8VFO and Bernadette Wood with assistance from; Jackie, N8NNA; Chuck, WA8LQD; Walt, WB8WNF and Dave, N8LBF. The number of students attending meetings ranges between 30 and 35. We continue with construction projects, this time a remote sensor project that Will, K8VFO devised and turned into kits for the students.

The big doings this month was a trip to the University of Michigan for Aerospace Engineering Day, on December 5th, thanks to a special invitation from Prof. Jamie Cutler. A total of 36 students, seven from the high school club, and 9 adults made the trip to Ann Arbor by school bus. The event, including food, was free except for the cost of transportation. The students raised money by selling sweet bread and collecting donations. The students were exposed to a range of engineering fields and got the chance to remotely operate a hover craft, experience a wind tunnel in action, build and launch a rocket, build and fly paper airplanes, listen to an awesome presentation by a real live rocket scientist who had some great videos to show from recent launches. They also got to build part of a gondola that hung under a blimp that was flown at the end of the day. There were also remote controlled blimp competitions being held by the U of M students that we got to watch. All in all it was a great and fun experience.

This past week the students spent an hour getting, for most of them, their first hands-on opportunity to write computer code. We are looking for a lot more fun after the first of the year as we continue to build skills leading to a balloon launch in the spring. The club also bought 10 hand held radios for the students to use for Fox Hunts and to learn about wireless communications.

At the high school we continue with the program toward a spring launch of another High Altitude Balloon. The students are learning how to program PIC microcomputers with the focus on building the capabilities we need in order to communicate and control the balloon and payload. A humungous thanks to John, WB8RCR for sharing his knowledge and expertise. John has been trying to get folks locally to invest in learning PIC technology. He now has a captive audience and is as close to Hog Heaven as he is going to get!! This is a long term project where skills and technologies will be learned and capabilities will be built up over time. The students recently completed the construction of their development boards on which they can build and test prototypes of various PIC projects.

John, AC8QF recently carried out an experiment with the students attempting to use the existing antenna system at the school to download and decode packets from the International Space Station as it passed overhead. The ISS packets were heard but the signal strength was too weak with our non-tracking antennas feed with 450 ft of LMR600. It was a pretty conclusive demonstration that we will need to develop a

better antenna system to do satellite communications. In our estimation, the experiment was a success and we got the data we needed. Thanks, John!

We did have an antenna party at the High School on December 4th thanks to good weather. Lee and Will spent some time on the roof repairing the G5RV which had taken some damage during a recent wind storm. The feed line had broken and the junction where the ladder line connects to the coax. The connection was repaired and reinforced to try to prevent this from happening again.

The tower was lowered and an SWR problem on the SteppIR DB18E was investigated. Preliminary testing had indicated an open connection on one of the motor windings but when the antenna was lowered the motor connection at first showed intermittent connection and then a good connection. It may have been a bit of corrosion at a connection. Testing was done to show that all of the tapes in the antenna elements were moving as they were designed to, but with the antenna on the ground and parallel to the tower, it was impossible to measure the SWR meaningfully. We put the tower back up and tested the antenna but found that the SWR problem, which is demonstrably not in the coax, was still there. Further evaluation will continue as weather and time permit. Thanks to Max, KD8WMC; Dennis, N8ERF; Dave, N8LBF; Will, K8VFO; Lee, KC8ITI; Chuck, WA8LQD and John, AC8QF for assisting with the antenna party and whoever is controlling the weather!

I wish to recognize the following folks for their continued contributions to the high school E&WCC; Lee, KC8ITI; Will, K8VFO; John, WB8RCR; Art, K0ACP; Kathy, KD0JHX; Andy, KD8ULJ; John, AC8QF and Dennis, WD8BPT.

Best Regards,
Dennis, N8ERF
Advisory Board, Chair.

Technical Topics and Information

(ARRL Contest Update—Nov 18, 2015) When I was getting some equipment ready for Sweepstakes, I needed to use the handshaking lines on nine-pin serial connector. Web sites like www.hardwarebook.info, pinouts.ru , allpinouts.org, and others provide a ready reference for all sorts of connectors and signals that you might encounter.

♦ Steve, N2IC submits: "I noticed your link to a DIY TDR article. One thing not included in the article is how to make your own pulse generator. I have been using the circuit from this article for many years. (It's) simple and inexpensive to build. It doesn't generate the most perfect square pulse, but it lets me quickly look for faults, such as coax cable damage. Sadly, I have learned how easy it is to damage 1/2" Heliax!"

♦ "This *Instructables* includes a very useful collection of Color Codes for Resistors, Capacitors, ... ICs . Handy reference. " - Frank K5HS

♦ A troubleshooting tip from Doug, K1DG: "Since we are entering low-band season in the Northern Hemisphere, lots of new boxes are being installed for specialized receiving antennas.

I was trying to find the break in the coax to the feedpoint box for my two-wire reversible Beverage system using some resistors and an antenna analyzer in the "Distance to Fault" mode. After a few connector replacements, I found that the system worked in one direction but would not switch directions (the relay voltage is sent down the same feedline). It turned out that the braid on the RG6 had corroded at the point where I had installed a new connector and the resulting voltage drop was sufficient to prevent the relay from switching. Cutting off a foot or so of coax and installing another new connector fixed that problem. The system switched direction as expected. It was possible on the AM broadcast band to switch between two stations on the same frequency and copy either one.

However, when I tested the feedline from the shack end to make future troubleshooting easier, the resistance read open-circuit. How could that be? The system was working perfectly! It turned out that there is apparently a diode in series with the relay coil in the box, and reversing the ohmmeter leads produced the expected reading.

Lesson: when measuring resistance of cables to remote boxes, try swapping the meter leads in case there is a diode in the box!"

♦ Researchers find that an electrically driven shock wave can be used to desalinate water. A gradient of salinity can be induced across a cross-section of flowing water, and then a simple mechanical divider can be used to separate the streams.

♦ "Using FM to Improve WiFi Networks:" Researchers demonstrated the use of non-WiFi frequencies to coordinate between geographically adjacent access points to maximize throughput .

♦ Check that connector before forcing it in! Learn from my recent experience that if a connector isn't connecting easily, make sure that the male and female are of the same type. While building a cable to interface a bandpass filter to a Yaesu rig, I encountered an 8-pin socket connector that didn't match the 8-pin plug, despite being visually similar. Too much enthusiasm on my part could have damaged a very expensive radio.

Technical Web Site of the Week - http://amasci.com/amateur/tran-

sis.html

This article explains P-N transistor operation by focusing on depletion regions. If you'd like to do a little experimenting with constructing your own transistors, towards the end of this article on how transistors work, suggestions are made on possible fabrication methods using a galena crystal and "cat whiskers", germanium diodes, or the (larger) dies of older audio power transistors.

More Technical Topics and Information

(ARRL Contest Update—Dec 2, 2015) When we "let the smoke out" of equipment, it's usually not on purpose, but the US Military has built a chip to do this on command . Heck, anyone who has ever seen a gassy 3-500z "run away" in a Heathkit SB-220 knows all about electronics and self-destruction.

♦ Troubleshooting SMDs in modern gear could be easier with these "smart tweezers" which don't require unsoldering of parts to make measurements. I think your SO needs one. Then you can borrow it when you need it.

♦ Dennis, N6KI, points out an interesting PortableSDR Kickstarter project combining GPS, Vector Network Analyzer, and QRP SDR Transceiver . Having already exceeded the kickstarter funding goal, the hardware may be ready in Q1/Q2 2016.

♦ Which under-$10 ARM-based computer do you need for your next project? Here's a comparison between the Raspberry Pi Zero and the Chip. It's great we have such power building blocks to use.

Technical Web Site of the Week - sizes.com

This week, sizes do matter. Modern or ancient, here are units of measure. Standard sizes for resistors. Concrete rebar. Aluminum alloy designators. Now that you have all the sizes you need, you'll have to figure out how to use them.

(Thanks K3HX)

MARC Vital Statistics

Memberships Expiring in December

None

Memberships Expiring in January

AC8QF
KD8RMG

Memberships Expiring in February

K0ACP
KD0JHX
KB8TBI
KD8IWB
W8PMR

Current Active Club Membership 38

Birthdays Celebrated in December/January

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
WD8KTB12/28
K8SRH 1/1
WA8KJR 1/2
KD8HIF 1/6
K7GTK 1/8
KB8VNX 1/11
KD8FRH 1/12
WZ8Z 1/12
KA8HQW 1/13
N8NNA 1/14
KD8GRQ 1/19
W8PMR 1/20
N8KRL 1/24
AB8TJ 1/26
W8ZSX 1/28
KD8HID 1/29
KB8QWQ 1/29

Anniversaries Celebrated in December/January

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
KC8ZMQ and Karen 1/1
KA8EZT and Linda 1/2
KD8COB and Bernadette 1/25

Information is from data received 10/13/2015
Any corrections or questions contact Larry, N8CGP

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