



W8KEA

MARC



MIDLAND AMATEUR RADIO CLUB
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www.w8kea.org

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	Pat Mullet KC8RTW	(989) 828-6657

LIFE MEMBERS

Larry K8SQB (SK), Don W8WOJ, Lee KC8ITI, Dennis N8ERF, Larry N8CGP, Denny WD8BPT

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 — **Meeting Cancelled**

Next CLUB Meeting — Thursday Dec. 5, 2013, 7:30 PM

Midland High School

Talk-in 147.000+

December 2013

Static Discharge

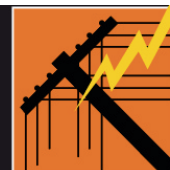
Kevin Martin, KD8QAM

Wrapping up a few fall projects this month has left me with little time to play with the radio gear. My girlfriend Tina and my daughter Keegan have both been taking Lee's (KC8ITI) technician class at the Midland Law Enforcement Center on Tuesdays and Thursdays. Thank you to all who have taken the time to rag chew with them. You really make their day when you return the call. Keegan and I will be starting on a new antenna soon. We are going to try a 2 meter tape measure Yagi. I hope it turns out as nice as the 2 meter copper cactus that we just finished.

Don't forget the December meeting has been moved to Midland High School, in the Little Theater. I hope to see you all at the Christmas party.

Kevin, KD8QAM

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



MARC Minutes

Dorie French, N8WTQ

The Midland Amateur Radio Club meeting was called to order on Nov. 7, 2013 at 7:35 p.m. by Kevin, KD8QAM with 28 members and guests present.

- The Treasurer's report was given by John, W8QN.

- EC/RO-there will not be an ARES®/RACES meeting in December

MARC MEETINGS

Art Peters, KOACP, 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 Art at (989) 400-3745, or via e-mail: k0acp@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 Keith, KB8SOE, at kb8soe@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)

or January.

- MHS ARC-they are planning to install the coax on the 16th in the morning. The antenna is up. They are going to add more antennas to the tower. The club has 18 core members at this time and they are having fun and learning. The by-laws were adopted and officers were elected. Digital equipment will be added. Those students who can't make the exam session on the 23rd will have a test session on the 20th at 6 p.m.

- Lee, KC8ITI said there are 4 people in the tech class and have a couple meetings left before the testing session. He believes all 4 will get their licenses.

- The Santa Parade will be Nov. 23rd. Line up by 9 a.m. and the parade starts at 10 a.m. The theme is Santa's Workshop. We have registered 2 vehicles and a trailer plus as many people as we want.

- The Christmas Party will be held

on Dec. 6th at the Lee Township hall. We are gathering at 5:30 p.m. and eating at 6 p.m. Carousel Catering will be catering the party and the price is still \$10 a person. Let Dorie, N8WTQ know if you plan to attend. Her number is 989-835-5562. She has to let the caterers know by Nov. 30th how many will be attending.

- A presentation about simple antennas was given by Kevin, KD8QAM with pictures of his daughter making the antennas.

- Net Control:

Nov 14 John, W8QN

Nov 21 Kevin, KD8QAM

Nov 28 Keith, KB8SOE with an informal net

- A motion to adjourn was made by Larry, N8CGP and seconded by Bill, AB8JF.

Meeting adjourned at 8:22 p.m.

Respectfully submitted,

Dorie, N8WTQ

Secretary

My Two Cents

I'd been planning on playing in the CQ World Wide DX SSB contest the weekend of October 26-27, not only for the possibility of working some new DX but also increasing my DXCC entity count. As the date approached, I was getting a little nervous about conditions. Even though the propagation prediction sidebars on several websites indicated that both the 10 and 15 meter bands should be open, there'd been several large flares, including a CME event. I've got an application called *Ionoprobe* installed on my computer that continually monitors space weather and displays alerts on my system tray—the day before the contest, the icons were showing a number of alerts, including radio blackouts—just my luck.

My fears proved to be unfounded. The bands were busy, and even though I wasn't doing serious 24-hour-straight type contesting, the time I did spend on

the air proved profitable, as I increased my entity count to 90, and most importantly, I had fun.

A day or two later, 10 and 15 were still open, so I started tuning the bands and encountered a strong signal from Japan, which while busy, wasn't the subject of a massive pile-up. I spent twenty minutes attempting to work him. Suddenly, to my joy and surprise, he came back with my call, loud and clear. I responded, confident that I'd finally managed to fulfill one of the goals I'd set myself when I entered Amateur Radio. I let up on the PTT switch, ready to confirm his report, only to find that conditions had changed and the band had faded out. Oh well, next time.

This last weekend was the ARRL November Sweepstakes. Again, I wasn't planning on doing serious contesting, but the higher frequencies were again in good shape, so I planned on working on my 5 Band WAS. After a

Amateur Radio is a Contact Sport!

slow start on 10 and 15 meters, I worked 40 for a while and then tried 80, which showed no contest activity at all. The next morning, I was back at it, running 15 again. Again, I had fun and achieved my primary goal of working towards an award, and I also had a chance to experiment with the settings on my rig and wring the most out of my radio.

The point of all this is that you don't have to be a serious contender to have fun during the major contests. Just get on the air, play around and have some fun. Hmm, the ARRL 10 meter contest is coming up soon....

See you on the air!

73, Pat, KC8RTW

ARES®/RACES John Wolters, W8QN

As we move toward the end of the year our ARES®/RACES meetings will stop to allow for the December meeting at Midland High and the January new year. Meetings will again start back on Thursday, February 6th. I hope to see you again in February.

With the writing of this article the city of Midland has just been hit with extreme straight line winds that took down trees in a line from Sturgeon to Jefferson between Saginaw Rd. and West Wackerly. Power was lost in a much larger area due to power lines down, Power poles leaning, and other problems. I was without power from the storm until late Tuesday night. There were no reports of this kind of severe weather from Skywarn® observers prior to it reaching the City although Roger, K8RI did give indications of heavy, heavy rain and some wind. Luckily there was no damage to the communications infrastructure so there was no need to deploy amateurs to supply communications. Thanks to all that checked into the Skywarn® net and

Ryan, KB8RCR and Jack, NX8A for their willingness to go mobile and check conditions.

On Saturday Nov. 16th the people listed at the end of this article met at Midland High to run 500 ft of 8 types of cable from the operating position of the radio club to the new antenna tower. Work started at 9:00 am and with a lot of tugging and groaning we were finished shortly after 11:00 am. There is still work to be done but one major hurdle has been completed.

I want to personally thank those listed below for their help, without such, we would have not completed this phase. John Wolters, W8QN; Lee Hodges, KC8ITI; Dennis Caney, WD8BPT; Dennis Klipa, N8ERF; Chuck Cribley, WA8LQD; Jack Hutcheson, NX8A; Bill Albe, N8FUZ; Walt Kline, WB8WNF; Steve Linley, WA8Y; Nolan Welsner, student; John Hall, W8ZSX and Cindy Hall, WD8BDM.

Again, thanks tremendously.

John Wolters
W8QN

VP Database

Well, I'm back from my honeymoon and what does a newlywed do? Why setup ham shack of course! With the help of my bride, and some expert woodworking assistance from N8ERF, I've got K0ACP/8 KD0JHX/8 up and running, just in time for November SSB Sweeps! While the contest is still going on, I've got 77 sections covered with 6 outstanding, my guess is that if I'm really lucky, I can get 5, but that darn Newfoundland will evade me yet again! Oh well, there is next year....

Last meeting Kevin, KD8QAM did a great presentation on building some VHF antennas and along the way demonstrated that ham radio can be a

family affair! Thanks to Kevin! December will feature a tour of the MHSARC club. We will meet at Midland High in the auditorium; listen to the Thursday evening net for more details.

Looking forward, Lee, KC8ITI will model Kevin's antennas in January; John, W8QN will review his new FLEX radio in February; Larry, N8CGP will present IP over Ham Radio in March and Pat, KC8RTW will do a presentation on computer logging and rig control in April. There are still three slots to go so anyone who has a passion or hankerin' please let me know!

Till next month, 73 de K0ACP/8

Upcoming Events

11/23	Midland Santa Parade
12/5	MARC meeting @ MHS
12/6	MARC Christmas Party
12/6	SkyWarn Recognition Day
12/14-15	ARRL 10 Mtr Cntst
12/31-1/1	Silent Key Night

Michigan Hamfests

12/8	Harrison Township
1/12	Hazel Park
2/1	Negaunee
2/8	Traverse City
2/16	Livonia
10/18	Muskegon

* Denotes date based on 2013 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

Art, KOACP

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.

October 23rd VE Session Results

We had two candidates take exams and both earned their Tech tickets: Brian Atherton, KD8VUA, from Bay City and Allen Burford,

KD8VUB from Interlochen.

The VEs were Dennis, N8ERF; Lee, KC8ITI, Michael, KD8MMH; Jim, KB8TBI, Pat,

KD8IVZ, and Allen, K8BHU.

Best Regards,
Dennis, N8ERF

JOTA -2013 Recap

In conjunction with the Boy Scout Fall Camporee which is being held at the Midland County Fairgrounds, the Midland Amateur Radio Club participated in Jamboree on the Air. I would like to thank the following operators that helped with this event: John, W8QN; Pat, KD8IVZ; Glen, WK8P; Linda, KC8MUD; Jack, NX8A; Gail, NO8U; Dennis, N8ERF; Dennis, WD8BPT.

We set up antennas and radios Friday night with 4 operational stations ready to go Saturday morning. Through the course of the day we made 91 contacts

with around 70 scouts and leaders making these contacts all over the world. The bands cooperated with contacts on 40 through 10 meters most of the day. The total attendance for the Camporee was somewhere around 2500 so we had a lot of people stop by even if they didn't want to try their hand at making a contact. The weather was chilly and windy most of the day Saturday but it didn't stop us from having a great time.

Lee - KC8ITI

Midland High School Amateur Radio Club News

The Midland High School Amateur Radio Club continues to be well attended with 16 to 18 students in regular attendance. Soccer, band and other sports have given us some competition but the kids keep coming. We were going to cancel a meeting due to a pep rally a couple days before the homecoming game, but we put it to the kids for a vote and they voted overwhelmingly to have the club meeting, so we did. We won't have one for Thanksgiving Eve, however.

The kids continue to have fun in the lab learning more about electronics and ham radio. Several students have earned their first contact awards and the temporary G5RV that John, W8QN and Lee, KC8ITI installed continues to perform well.

The students have spent the last couple of weeks building Bill, N8FUZ's crystal radio set. When they finally got it together, they are very excited when they hear the radio station in their earphones. It should be a memento they keep for

some time to come. Thanks, Bill!

After a couple of lectures introducing them to alternating current, reactance and impedance we presented them with an antenna design challenge. Since we have two HF operating stations and a SteppIR beam and a temporary G5RV, we need a second "permanent" HF antenna. The club was divided into four teams and challenged to come up with a design for a second HF antenna. They were given a set of criteria they had to meet. A member of each team was trained on using *4nec2* to model their antennas, and John, W8QN, will act as their coach regarding installation options. Thanks to the books that were donated to our new MHS ARC library there was one antenna book for each team and several ARRL handbooks from which to choose. The deadline for submitting their designs is the December 4th meeting where a team representative will have to give a presentation on their team's choice.

The design by the winning team will be built and installed. We do have an extra feed line, so we might just have two winners. We will have to wait and see.

We will be having a VE session on November 23rd, however, several of the students could not make the Saturday session so we agreed to have a testing session on Wednesday, November 20th before the regular club meeting. We should have several new hams as a result. The club has purchased a number of HT's for the club's use so there should be some new voices on the air, at least during the club meetings, until they can get their own radios.

On the mechanical side of things the station is looking up. We ran the cables this weekend and installed VHF and UHF antennas. We still have to put in the grounding system and install the bulkhead grounding panel and run the coax up the tower. We hope we can get that in before the ground freezes too hard and too deep.

I think the entire Advisory

It's Not Your Grandfather's Amateur Radio!

4

Board would agree that while it has been a lot of work, it has been great fun tremendously rewarding

for us to see the kids get involved, learn some science and have fun.

Best Regards,

Dennis, N8ERF
Chair, MHS ARC Advis. Bd.

Midland High School Antenna/Tower Work Party

Morning Work; The purpose of the morning work was to pull all of the cables from the classroom up to the roof. The volunteers who showed up to work were: John Wolters, W8QN; Lee Hodges, KC8ITI; Dennis Caney, WD8BPT; Dennis Klipa, N8ERF; Chuck Cribley, WA8LQD; Jack Hutcheson, NX8A; Bill Albe, N8FUZ; Walt Kline, WB8WNF; Steve Linley, WA8Y; Nolan Welser, Student; John Hall, W8ZSX; Cindy Hall, WD8BDM.

John, W8QN, was in charge of the wire pulling project and had all of the keys to the building. We started assembling at the school shortly before 9:00 am. For the most part, the cable had been previously collected in the prep room, Room 323, adjacent to Andy Fawcett's physics classroom. The cables were all unwound and stretched out along the floor covering more than three-quarters of the square hallway system on the third floor of Midland High School. There were eight cables, each 500 feet long which were laid out on the floor. The cables included two runs of LMR-600, three runs of LMR-400, a CAT5 cable for the remote SteppIR controller, a rotor control cable and a fiber optic cable. The cables were bundled together at one end and then attached to a pull rope that had previously been installed by an employee of Essexville Electric. Several people fed the cable down the hallway and around the corners. Jack, NX8A, may have had the hardest job of lifting the cable, along with Lee, and then pushing it up into the narrow space between the suspended

ceiling and the hard ceiling in the hallway of the high school. Four more folks fed it down the long hallway ceiling space and through a wall penetration into a mechanical room and more folks pulled it back out into the same hallway.

When we had about 60 feet left on the floor we feed the trailing end of the cable into the classroom, again above the ceiling tiles to the chase-way leading from the ceiling down into the operating station.

Back at the other end of the cable, the cable bundle was snaked through the mechanical room, up through a roof opening into a penthouse and out onto the roof. The cable was left stretched out on the roof until we can get the bulkhead termination box mounted at the base of the wall about 25 feet from the tower. Back inside the all the ceiling tiles were replaced, the cable chase was closed up and the area was cleaned up so you would not have know we had been there. It was time for a lunch break before continuing the tower work.

At 1:30 we met back at the tower site on the north side of Midland High, to install some antennas and do some tower work. Klipa was the foreman for the second part of the day's work. The motorized system made tilting the tower over a breeze. Someone timed it at 9.5 minutes. It was a warmish November day at around 54° with a stiff breeze out of the south. Fortunately, the three story school building blocked the wind and we had it pretty good. For the tower work, we had John, Dennis C., Dennis K., Lee, Chuck, Walt, and Steve.

As the tower approached horizontal we noticed that the SteppIR was not staying horizontal like it should as it was being lowered. We heard a small creak and stopped lowering the tower. Someone noticed that the Tilt Plate was out of alignment with the mast. On further inspection we noticed that the set screws on the bearings that hold the tilt plate axle in place were loose and the tilt plate had shifted. After the tilt plate was shifted back to its proper position and the set screws tightened, the tower was lowered the remaining few feet. We also found that the U-bolt of the KarLock was loose. The KarLock keeps the beam from tilting too much in the wind. That U-bolt was tightened and all nuts and bolts were checked. The work on the tower included; aligning the rotor and the SteppIR beam to a 270° heading, installing the 2m/440 vertical, installing the 2 meter beam, installing the coax terminal plate which Klipa built at the top of the tower, and installing the 6 meter passive element on the SteppIR that had been overlooked during the original installation. We also removed the original anti-climbing panels that had been damaged in shipment and replaced them with more substantial anti-climbing panels that Klipa had had fabricated.

It was an extremely productive day. We got a lot done and everybody went home safe!

Thanks to all who participated.

Best Regards,
Dennis, N8ERF

Explore the World with Amateur Radio!

PRB-1 Update

Here is an update from WA8QJE, our MI State Government Liaison:

State Government Activity for Michigan

As many of you know, Senator Rick Jones has re-introduced the Michigan version of PRB-1 now known as Senate Bill 0493. The bill is currently in the Senate Committee on Energy & Technology. We are working on adding additional verbiage to this bill.

It has come to my attention that some amateurs are not aware of what PRB-1 is. I would like to direct you to the ARRL website. Click on the Regulatory & Advocacy Link and then select the Antenna Regulation and Zoning link and select PRB-1.

It is important that all of us are

aware of and understand the importance of PRB legislation for the future of current amateur radio operators as well as future generations of amateur radio operators.

I continue to work on this legislation almost on a daily basis. I am asking that you please continue to send emails to the Energy & Technology Committee members. It does matter and the Senators staff members do record the messages and some even reply.

Stay in touch with what is going on by monitoring the Michigan PRB-1 website located at: www.miarrlprb1.org for further information. You can also contact me by email at wa8qje@arrl.net or our Section Manager at wb8r@arrl.org.

73, and thank you for your continuing assistance.

Ed Hude, WA8QJE, State Government Liaison, Michigan

Many thanks go to Ed for his relentless work. He has been working tirelessly for years and he continues to work towards a better antenna environment in Michigan. If you run into Ed, be sure to tell him that you appreciate his efforts. We are anticipating that our Committee Hearing will most likely happen after the first of the year, but we still want to keep the pressure on. A second note to the Committee members urging them to schedule a hearing for our bill as soon as possible would be in order. Remember to be polite and respectful. The old story of honey and vinegar applies here.

Larry Camp, WB8R
ARRL Michigan Section
Section Manager

Technical Topics and Information

(ARRL Contest Update—Oct. 23, 2013) From the "Get A Bigger Hammer" Department comes this tip from Nick WB7PEK on freeing up large-size rusted or corroded hardware. "Round up two heavy sledge hammers (6 pounds or more) and hold one of them on the flat against one side of the nut and smack the opposing flat half a dozen times. Move to the next opposing flats and repeat. Try your wrench after all six flats have been struck. This displaces the rust and the nut will move. If the nut stops moving repeat process till free.

This method will not work without a backing hammer opposing the striking hammer."

If you are trying to drive a ground rod with a demolition hammer (and who doesn't?) use a hollow bit for driving rods. Do not try to drive a ground rod by inserting the end of the rod into the hammer. The rod's material is not tool steel and may mushroom from the impact, becoming locked inside the hammer permanently! As in, "What is that demo hammer doing out there in the grass?" (Thanks, Patrick AF5CK)

For those of you interested in state of the art solid-state amplifier design, EDN magazine recently ran an interesting article about the techniques used to linearize UHF amps. Lest we consider these too advanced for amateur use, listen to some of the signals on the bands. A little built-in help to clean up a signal would definitely be a boon to ham radio. We have fantastic receivers, now let's clean up the garbage our transmitters are putting out.

More Technical Topics and Information

(ARRL Contest Update—Nov 6, 2013) The fuller-than-full phone bands during the CQ World Wide SSB Contest certainly pointed out the need amateurs have in general for cleaner transmit signals. Part of the problem is the use of low-voltage 12 V power supplies for

most transceivers which exacerbate intermodulation distortion and all the resulting output "stuff" which is then faithfully amplified by external linears, assuming that those are, in fact, linear and don't generate even more "stuff." But how is IMD

really measured? Leigh VK5KLT suggests, "A good informative site for practical two-tone based IMD measurement on ham amplifiers is that of Larry WØQE. Other than that technique, modern SDR-based transceivers with a panadapter spectrum bandscope allows one to

directly observe the occupied spectrum of an on-air signal and confirm how narrow or otherwise the transmit frequency occupancy is and deduce the signal's IMD characteristics." Jeff ACØC points out that a Softrock receiver and free PowerSDR software will do the job nicely for under \$20. Jim N7CXI also generated a 30-second two-tone test WAV file and posted it online to use during testing. Numerous sound-card spectrum analysis software is available to help with testing if you want to go that route. So there's really no serious barrier to performing these tests. It's good to see the CQ World Wide Contest Committee starting to pay attention to some of the signals on the bands that are far wider than they need to be and are considered unsportsmanlike conduct.

It may not be common knowledge that running your "12-volt" radio at 12 volts is really too

low for it! If you look at the specification for nearly all commercial radios, they really are designed to be operated at the typical voltage of an automotive power system while the engine is running - 13.8 volts. The lower voltage often results in poor transmitted signals with chirp, clicks, and distortion. Note, too, that a loose power supply connection can also cause problems as voltage at the radio input drops under load. Steve N2IC notes that it only take 0.06 ohms of "extra" resistance to cause 1 volt of drop at 17 amps. Make sure your power supply connections are tight before the contest and be a good neighbor.

Greg ZL3IX was trying to measure his Beverage antenna system resistance with a DMM and found that "along with RF pickup from nearby BC stations...one other effect that fools sensitive DMM's on their resistance scale, is

the electrochemical voltage...developed between the ground rods used for Beverage antennas. I also experienced gross inconsistencies when trying to check for breaks using DC resistance checks." His solution? "For the past few years I have been using a little op-amp oscillator, running at about 100 Hz. I put 100 ohms in series with the op-amp output and apply the signal across the terminated Bev(erage). I then measure the AC mV across the Bev(erage) and across the 100-ohm resistor, and calculate the AC resistance from that. This method has proved to be ultra reliable for detecting breaks in the wire."

If you are trying to corral unruly cables, try enclosing them in "Split Loom" flexible tubing such as is used in automobile engine compartments. The material is tough, stands up to the weather and sunlight, yet is easy to work with. (Thanks, Ivan WK1W)

MARC Vital Statistics

Memberships Expiring in November

KB8TBI
WA8LQD

KD8ULA
Bruce Temple

Memberships Expiring in December

K0ACP

W8AWS

Memberships Expiring in January

KA8EZT
KC8GRQ
KD8HIH

KD8IVZ
KD8IWB
KD8RMG

WB8WNF

Current Active Club Membership 47

Birthdays Celebrated in November/December

K6VWE 11/13
KB8UIH 11/27
WB8WNF 12/7
N8ERF 12/10

N8CGP 12/21
AB8JF 12/21
NX8A 12/22

Anniversaries Celebrated in November/December

KB8UIH and Shelley 12/8
W8WOJ and KD8HIF 12/12
KD8IVZ and KD8IWB 12/16

AB8JF and N8WTQ 12/18
W8ZSX and WD8BDM 12/23
N8ERF and N8NNA 12/23

Information is from data received 10/10/2013

Any corrections or questions contact John, W8QN

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