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
Swap Committee	Mark Rodgers KC8GRQ/Ch	(517) 672-1060
	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 March 5, 2015, 6:00 PM
Law Enforcement Center, 2727 Rodd St.
Next CLUB Meeting — Thursday March 5, 2015, 7:30 PM
Salvation Army Building, 330 Waldo.
Talk-in 147.000+

March 2015

Static Discharge

Kevin Martin, KD8QAM

With all this cold weather we are having, hope everyone can stay indoors. There aren't a lot of things going on for our house radio related. I am trying to get a few antennas fixed and am working on a few projects with my daughter. She is becoming very good at all the soldering projects I am setting up for her. Hope everyone is staying warm. See you at the next meeting.

Kevin, KD8QAM

MARC Minutes

Linda Hodges, KC8MUD

Kevin KD8QAM brought the meeting to order at 7:35 P.M. with 30 members and guests present. A sign-in sheet was passed around and introductions were made.

The meeting minutes are published in the newsletter, if any additions or corrections that need to be made please bring that to the attention of the secretary.

• Presentation- Larry N8CGP- Larry's presentation was *An In Depth Intro to Micro Processing*. A lengthy discussion followed.

• Second presentation - Mark KC8GRQ- Mark and his children Theo and Zoey brought in their electronics kits and showed them to the club members. Thank-you Zoey and Theo.

• Earl N8ERO and John WB8RCR were discussing a group monitored build and solder practice coming up. A sign-up sheet was passed around for group build.

• Dave N8LBF- Dave has a two-meter radio for sale.

• Mike KD8MMH- Don't forget the annual Saginaw Club Auction on Friday night.

• Ryan KB8RCR- Ryan needs help finding foster or permanent homes for several cats he currently has in his care. Please give Ryan a call if you can lend a hand.

• Chris KB8UIH- Please put the 2015 MS WALK on your calendar. This year's walk is on April 25th. Time is between 10:00A.M. and 1:00P.M. and starts at the Central Middle School.

• Kevin KD8QAM- Field Day is at Chippawasee Park on June 27th and June 28th. More details to come.

• Dorie N8WTQ- After discussing it with club members at the last meeting Dorie has changed the 2015 Christmas party to January 15th.

Net Controls

Feb 12th	Dave N8LBF
Feb 19th	Lee KC8ITI
Feb 26th	John W8QN

A motion to adjourn made by Larry N8CGP and seconded by Lee KC8ITI.

The meeting ended at 9:30 P.M.

Respectfully submitted,
Linda KC8MUD

MARC MEETINGS

Mark Rodgers KC8GRQ, 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 Mark at (517 672-1060), or via e-mail: kc8grq@yahoo.com

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 (cherryredirocz@sbcglobal.net)

My Two Cents

Pat Mullet, KC8RTW

Last week's Thursday Night Net posed an interesting question: how do you keep up with what's new in amateur radio? Many of us fell back on the tried and true print media, both *QST* and *CQ*. Some mentioned popular websites such as the *ARRL* home page, *eHam* and *QRZ.com*. Only a few of us mentioned the User Groups hosted by Yahoo! and others. The latter can proved to be a very timely source of information; for example:

Just the weekend before, I was reading the digest version of the UI-View users group, which deals with one of the most popular APRS clients available to radio amateurs. One of the users posted a query asking if anyone had tried using the Winbook TW700 tablet for APRS. It turns out that this particular 7 inch tablet, custom manufactured as the house brand for MicroCenter, a small computer chain in the Midwest, runs full-blown Windows 8, and not the cut-down Windows 8 RT used for phones and tablets. It's also equipped with a native soundcard and a USB 2.0 A port. Evidently, they haven't been selling too well—if you read the reviews, most of the complaints are due to the fact that with Windows Update set on automatic, within a day or so the small SSD (Solid State Drive) is clogged with downloads. Whatever the reason, MicroCenter is offering the TW700, new, for $60. If you want to drive down to the Madison Heights store, they have "outbox" (customer returns)

Amateur Radio is a Contact Sport!

available for $47, but they will not ship these.

I have to admit, my curiosity was piqued, as I could see where this could be quite useful, so the following Monday morning, I ordered one. The site accepted my order, but warned me that since there was limited availability of the product, my account wouldn't be charged until the tablet shipped. I received an email that afternoon that my tablet had shipped, and Tuesday afternoon, it arrived.

Stephen Smith, WA8LMF, is one of the leading lights of APRS, (and a member of the Michigan Section Digital Team), and has been driving the investigation of the TW700 on the UI-View group. You can see what he has to say about the tablet and how he's set it up on his website.

I did much the same, customizing my setup to my taste, adding a couple of applications and such, and now, once I've wired up Skip Teller, KH6TY's soundcard interface, I'll have dedicated digimode computer for field use in a inexpensive, lightweight package.

If you're interested, I encourage you to check out the links above. If you're interested in other aspects of amateur radio, well, let's just say that Google is your friend. Use the internet, and keep up-to-date on whatever aspect of our hobby interests you. Most of all, be sure to get on the air and have some fun.

73, Pat, KC8RTW

2015 MS Walk

Chris Rose, KB8UIH

Hello all,

The annual MS Walk will be Saturday April 25, 2015. As in years past, the event will be at the Central Middle School, 305 E Reardon St., running from 11:00 am through roughly 1:00 pm. MARC will once again be serving a worthy cause. This is a low-impact event and a great opportunity to get your feet wet in public service operations and to get used to working on a directed net.

When you get to the school, please check in and sign-in with the MS official(s). Let them know you are there and then check in with me on site.

I would like 15 operators. Midland club repeater will be used (147.00+).

I will pass along more info as I get it.

Thank you,

Chris Rose
989-832-7179
989-948-9153 cell

Terrain Analysis for HFTA Available Online

(ARRL Contest Update — Jan. 28, 2015) Stu K6TU has automated the process of generating terrain profiles for use with N6BV's *HF Terrain Analysis (HFTA)* program. To support *HFTA's* modeling, a user must first obtain a terrain profile which describes the height of terrain around the antenna location. This process is cumbersome and time consuming as the source of the data must be located, downloaded, then processed with *MicroDEM*. Terrain Profile Requests are available to any user with a registered account on K6TU.NET at no charge and no subscription to Stu's propagation prediction service is necessary. Stu's site maintains copies of both the USGS National Elevation Dataset (for the United States) and the NASA Shuttle Radar Topography Mission dataset enabling fast turnaround of requests.

Upcoming Events

4/18	Mi QSO Party
4/25	MS Walk
5/16	Dow Run
5/17	GLB Marathon
6/27-28	Field Day

Michigan Hamfests

3/14	Kalamazoo
5/2	Cadillac
5/9	Chassell
6/7	Chelsea
6/20	Midland*
6/21	Monroe
8/1	Escanaba
10/17	Muskegon
10/18	Kalamazoo

* Denotes date based on 2014 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.

Club Build Project

The build project is coming along. A prototype has been prepared and an updated circuit board sent out for manufacture. The firmware continues to be fine tuned, but it is pretty well complete. A working prototype was shown at the February meeting.

Also at the February meeting, Larry, N8CGP gave us an introduction to microprocessors. In March, I will review the circuit we will be building and Lee, KC8ITI will be giving a beginner's soldering lesson. In April, I will present the firmware, and then on some Saturday in April we will get together for the build session.

We passed around a sign-up sheet for those interested. If you weren't at the meeting email me so I can include you when I order parts. If you would like to build the project, but don't feel the need for help when you are building, I can provide parts. The cost will be under $25.

More details and pictures on the "Friends of W8KEA" Facebook page.

No, we aren't becoming a computer club. In the fall, Dennis, N8ERF will be organizing a similar group build of a direct conversion 40 meter receiver. I don't have the details, but I suspect Dennis will have a session or two on that circuit prior to the build.

If you haven't been coming to the meetings you have been missing a lot lately. There is so much going on.

73 de WB8RCR

Midland High School Amateur Radio Club News

First off I want to thank Wil Halphen, K8VFO, for joining the MHS ARC team. Wil is a relatively new ham, but brings a wealth of knowledge and experience from his career as an electrical engineer at Dow Chemical, from which he recently retired. Welcome aboard, Wil!

The absence of a newsletter article for the last couple of months has been due to my absence from the country while visiting New Zealand. The club activities continued in my absence thanks to Lee, Art, John Henley (too many Johns) and Dennis Caney (not too many Dennis's). The students are currently working on a 4-bit computer made pretty much from scratch. The idea for that project came about when the students, who are skilled programmers, said they wanted to learn how computers worked electronically. Lee created the project and recently did the not inconsiderable design work for the printed circuit board, which should be sent off to the board maker today.

We started a discussion with the students about recruiting for the fall and ended up doing a mid-course correction on the club's activities. The students shared with us that it was difficult to get their friends to join because there is an impression that all we do is talk on the radio. What the students are really interested in is electronics. They want to build stuff especially if it is functional, they want to understand how it works and if it is related to computers it is a bonus. Based on our club experience and the feedback from the students, the Advisory Board agreed unanimously that we needed to change our approach. So, in the past you could characterize our philosophical approach as doing Amateur Radio and sneaking in electronics. Our new focus might better be described as doing electronics and sneaking in Amateur Radio. Sneaking in Amateur Radio is going to be pretty easy.

In that light, the 4-bit computer project that Lee is leading is a perfect match. One of the best ways to learn electronics is to do trouble shooting of circuits and to do that you need to be able to read schematics. So we have started an ongoing training exercise in reading schematics and troubleshooting circuits. We have two other construction projects slated for the club. The first is a 40 m receiver kit, developed by Craig, AA0ZZ. The second is a PIC microprocessor thermometer, developed by John, WB8RCR. Both of these projects will also be done by MARC, one this spring and one in the fall.

We will continue to pursue the satellite communication project started by John, AC8QF, but instead of focusing on voice, station to station, contacts, we will put more emphasis on data and telemetry communications. We will,

It's Not Your Grandfather's Amateur Radio!

however, continue to pursue a contact with the International Space Station via ARISS. Art Peters, K0ACP and Wil Halphen, K8VFO, will be working with John to develop this program.

Another project that is being developed is a High Altitude Balloon, HAB, program involving remote sensing, wireless communications and APRS. Dennis, N8ERF, and Wil, K8VFO will be leading this project. We have also been approached by the Dow High physics teacher to help track their IB Physics HAB which will launch some student designed payloads. We have also been approached by the Raspberry Pi Club to help track their HAB, later this spring. We assisted them a couple of years ago with their first balloon launch. The radio direction finding capability that we have developed in the club may also be a useful skill to have.

We have also begun exploring the re-establishment of a middle school amateur radio club next fall. We have spoken with Penny Miller-Nelson, the Coordinator of Secondary Instruction, and Jeff Jaster, the principle at Northeast Middle School. Both of them were very supportive of the idea. A potential faculty sponsor for the club has been identified and we will be meeting with her this week to explore how this club might work out. A key for its success is to find a faculty sponsor who will be fully engaged in the project. Stay tuned for more information on this as it develops.

My thanks to KC8ITI, WD8BPT, KD8ULJ, W8QN, K0ACP, K8VFO and AC8QF for their continued involvement in MHS ARC.

Best Regards,
Dennis, N8ERF

Michigan Section News

Greetings to the Hams of Michigan:

Help Wanted

I am looking for a very creative person or persons to assemble and maintain a website for the Michigan Section of the ARRL. Ideally, that person would be a Michigan ARRL member who is knowledgeable in the activities of the ARRL and the Michigan Section and ham radio in general. This would be in addition to a successful track record in web design and maintenance thereof.

The individual(s) would provide services per an established schedule which would include publication deadlines in addition to adding information to the website on an as-needed basis.

This website would have a number of purposes:

Provide a go-to place for information about the ARRL in Michigan for the hams of Michigan, the nation, and the world.

Provide a place to go to get ham radio news from around the state.

Provide space for the amateur radio clubs to post their club newsletters in PDF format for all to review.

Provide a place for the Section Staff to opine and to provide information for the membership and hams in general. This could be simple informative notices or training issues or more complex items such as how-tos and projects.

The monthly Section News Column that the Section Manager is obligated to write each month is currently published on the ARRL website. The ARRL portal is very limited, and it is difficult to upload anything from a Word environment and has less than desirable formatting characteristics.

I would add a link to the ARRL Michigan Section Page that would direct readers to the Section website where my column would appear each month along with other timely information.

I would still need to use the ARRL portal to send the monthly column via email to Michigan ARRL members and I will just have to deal with it.

The website would allow us to use photographs, and other graphical items to tell our story.

The webmaster would get the same great pay as the rest of the section volunteers as well as the same sense of satisfaction that we get when we do good things for ham radio in Michigan.

You can reach me at wb8r@arrl.org or by phone as listed on page 16 of QST magazine.

News From Around the Section

Michigan QSO Party

The 2015 version of the Michigan QSO Party is scheduled for Saturday, April 18, 2015 from noon to midnight local time on 80 through 10 Meters (no WARC Bands) SSB and CW.

This is a great, reasonably short competition that is ideal for clubs and individuals alike. Set aside time to participate in this great event and be sure to take the information to your club meetings to encourage participation. Full information is available online at: http://www.miqp.org/.

Severe Weather Training

Springtime will soon be on us

and with that comes the convective weather season. Now is the time to make your plans to attend the annual severe weather spotter training classes that are often offered by the NWS offices around the state. In addition to the spotter training, it is time to have your local ARES/RACES meetings to get the proverbial "ducks in a row" for the upcoming severe weather season.

Until next time,
73,
Larry Camp,
ARRL Michigan Section Manager
wb8r@arrl.org

ARRL Field Day 2015 Field Day Packet Now Online

(ARRLWeb—02/10/2015) The complete 2015 ARRL Field Day packet is now online. There are no rule changes for 2015. Field Day 2015 takes place June 27-28.

"Following a successful Centennial QSO Party with on-the-air activity at an all-time high, we are very excited for this year's event and hope that individuals and clubs will carry their enthusiasm over to Field Day," said ARRL Contest Branch Manager Matt Wilhelm, W1MSW.

ARRL Field Day is the most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June, more than 35,000 radio amateurs gather with their clubs, groups or simply with friends to operate from remote locations.

Participants are encouraged to register their Field Day operations using the FD Site Locator. Field Day gear will be available by March 1.

If you have questions about Field Day, e-mail, or call 860-594-0232.

Technical Topics and Information

(ARRL Contest Update—Jan. 28, 2015) Rather than learn about receiver front-end protection the hard way, Pete N4ZR developed his front-end protector with the help of George W2VJN. It costs less than $5 and is easy to build, too!

♦ The article "Satellite Anatomy 101" in *EDN* magazine is a great overview of commercial satellite technology. Amateur satellite users will also find a lot of useful information there.

♦ Frank KR1ZAN relays word of an *Instructables* project with some ideas on "dead bug prototyping" and creating some electronic conversation pieces. He also provides the hot tip that Dremel has released a new line of VersaFlame™ and VersaTip™ butane torches.

♦ Here are a couple bargain-hunter tips from Evan K9SQG: Full-circumference fuel line clamps from an auto parts store can be used to hold shield braid on the connections of a vacuum relay. For restoring bases of microphones and other appliances, you'll find adhesive-backed felt in fabric stores. (Thanks, Evan K9SQG)

♦ Two recent articles in the January 2015 issue of *High Frequency Electronics* are of interest to amateurs: "Changing the Operating Frequency of an RF Power Amplifier" by Donna Vigneri KF7SJF and "Achieving First-Pass Success in PCB-Based Filter and Matching Circuit Designs" by Muir, Dunleavy, and Weller. The issue is available in the online archives.

♦ The day of not having to etch away copper to create a printed-circuit board seems to be here. Finally, the name "printed-circuit" is accurate! The new Voxel8 3D printer uses a new silver-based highly conductive ink instead of the carbon-based inks in previous printers. (Thanks, Dennis N6KI)

♦ Field emission devices are starting to get some attention again as described in the *IEEE Spectrum* article, "Introducing the Vacuum Transistor: A Device Made of Nothing". (Thanks, Bill W8LV)

Technical Web Site of the Week - Eric NO3M has developed quite a system for distributing the signals of receive antennas to a variety of receivers. He wrote it up as an article published in the May/June 2012 issue of the *National Contest Journal*. It can handle up to 128 physical antennas and four receivers, controlled via an RS-485 serial interface.

More Technical Topics and Information

(ARRL Contest Update—Feb 11, 2015) Kirk K4RO has learned some rope tricks when it comes to keeping his 40 meter wire Yagi in the air. "Several years ago I started using the rope anchoring method pictured in these photos. There is a continuous loop to a pulley at the top of each tree. The antenna rope is attached to the loop via a third pulley, which provides even more flexibility.

The springs are strong enough to hold the antenna in shape, but have enough stretch to survive wind storms. The ropes ride effortlessly along the pulleys. No repairs have been necessary since using this system. The expense was well worth it to me, as it's has eliminated many hours of frustrating repair work every season."

♦ Why is it always the one-of-a-kind mechanical component which breaks? Plastic gears can be quite a problem to repair but this *Instructables* project shows how to replace the missing section with a little epoxy and the mating gear. As long as you're on the site, check out how to salvage electronic components from a CFL light bulb!

♦ An effective mobile station can't afford to waste a single volt of battery power so as this *EDN Magazine* blog entry points out, don't neglect the humble battery connector! Also on the *EDN* website, this article mulls the effects of laundry detergent and cat litter on the propagation of WiFi signals.

♦ If you want some serious reading on the Beverage low-band receiving antenna, there is a great list of references at the bottom of the antenna's Wikipedia page. This reference has also provided a number of measurements. (Thanks, David K1TTT)

♦ Manfred XQ6FOD takes some of the bright edge off the LED replacements for his pilot lights with a little sandpaper. "I sand (the LED lenses) using coarse sandpaper, creating a surface that scatters the light broadly in the desired direction. If I want omnidirectional radiation, I sand the LED body into a conical shape. If I want the light mostly coming out one side of the LED, I sand a flat 45-degree surface onto it. Leaving the surface very rough...helps in obtaining excellent light distribution.

♦ Super low-power sensors are now available which can glean their power from ambient RF energy. No word about whether they can handle be supplied by the near field of a big multi-multi station!

♦ Myron WVØH found a concentrated tutorial on impedance matching showing that you can reduce your antenna system to an impedance which can then be matched using basic design tools.

♦ Self-repairing, reconfigurable electronic circuits take a step closer to reality as described in this *Gizmag* article. But what will we do on our workbenches? (Thanks, Dennis N6KI)

Technical Web Site of the Week - If you want to make precise and accurate measurements of resistance, inductance, and capacitance, you'll want to read this *Impedance Measurement Handbook* from Agilent. (Thanks, Clemens DL4RAJ)

MARC Vital Statistics

Memberships Expiring in February

W8PMR
KD8IWB
W8QN

Memberships Expiring in March

K8VB
W8NON

Memberships Expiring in April

K6VWE
KB8PGW
KD8WZG
N8WTQ

Current Active Club Membership 42

Birthdays Celebrated in February/March

KC8ITI 2/2
AA8EJ 2/3
K0ACP 2/7
W8NON 2/14
KC8RTW 3/17
KD8QXL 3/18
K8VB 3/19
W8QN 3/31

Anniversaries Celebrated in February/March

KD8ZKG and Belinda 2/12
KC8TQS and Julia 2/14
KC8ITI and KC8MUD 3/6
WD8BPT and Melody 3/13

Information is from data received 1/15/2015
Any corrections or questions contact John, W8QN

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