



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 July 2, 2015, 6:00 PM
Law Enforcement Center, 2727 Rodd St.
Next CLUB Meeting — Thursday July 2, 2015, 7:30 PM
Salvation Army Building, 330 Waldo.
Talk-in 147.000+

July 2015

Static Discharge

Kevin Martin, KD8QAM

I would like to thank everyone who has volunteered at the various club functions—the Swap, Field Day, or the Thursday night nets. Not to mention the group that mentors and teaches the high school group and the various license classes. Without your tireless efforts, we would be far worse off. So thank you all.

Kevin, KD8QAM

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



Kevin KD8QAM brought the meeting to order at 7:35 P.M. with 27 members in attendance. Introductions were made and a sign-in sheet was passed around.

- Correction- Larry N8CGP will be standing in as an assistant treasurer not a temporary treasurer.

- Any additions or corrections to

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@arrrl.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@arrrl.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.arrrl.org/arrrlvec/exam-search.phtml?State=MI>

SUBMISSIONS FOR NEWSLETTER

Contact Pat Mullet, KC8RTW at kc8rtw@arrrl.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@arrrl.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@arrrl.net) or Kevin (cherryredirocz@sbcglobal.net)

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

- Presentations: Dennis N8ERF-Midland's High School Amateur Radio Club launched a weather balloon on Tuesday, June 9th. Outstanding pictures and data were results of a near perfect event for the students of the Midland high school radio club.

- New Equipment-Mark KC8GRQ- Mark told about Midland County's new radios and tower at the Law Enforcement Center. He also explained how to listen to it and who will be using it.

- ECRO Report-John W8QN- John will be out of commission for two or three months. Dave N8LBF or Chris KB8UIH will answer questions for John for the next few months. Any questions for ARES®/RACES please ask Dave or Chris.

- Dow Run -John W8QN- Thank-you to everybody who helped. This went off without a hitch and was quick and easy. The police on site were very impressed by skill and professionalism of the operators.

- Swap- Mark KC8GRQ- coming along well. Dorie needs money for food. A motion on the floor by John W8RCR to give Dorie \$250.00 to buy food for Swap. Seconded by Larry N8CGP. Passed.

- Field Day- Cindy will be cooking for Field Day. A motion by Kevin KD8QAM on the floor to give Cindy \$75.00 to buy food for Field Day. Seconded by Larry N8CGP.

Passed.

- Name Badges -Mike KD8MMH- Mike brought order forms for Laser Engraved Personalized Name Badges. Badges come with a pin back or magnetic back option. If you are interested in a name badge please contact SVARA's own Mike KD8MMH.

- Lupton -John W8RCR- Lupton Family Section Outing still coming up. If you are looking for a fun and interesting camping experience for your entire family think about taking them to Lupton.

- Midland High School Radio Club-Lee KC8ITI- The last club meeting was held for the school year. The meetings will not start up again until fall.

- Dorie N8WTQ- Dorie is having an antenna party at her house on Saturday afternoon on June 13th. She needs some help with her antenna and has all the parts needed. She just needs some man-power.

Net Control

June 11th John W8QN

June 18th Chris KB8UIH

June 25th Lee KC8ITI

A motion to adjourn made by Larry N8CGP.

Seconded by Dorie N8WTQ

The meeting ended at 8:02 p.m.

Respectfully submitted,
Linda KC8MUD

My Two Cents

As the Public Information Officer for the Midland ARC and the Public Information Coordinator for the ARRL Michigan Section, May and June are always my busiest months, and unfortunately, it doesn't allow me to get on the air much, unless I'm working one of MARC's public service events. Otherwise, I spend the time

Pat Mullet, KC8RTW

shuffling—well, I was going to say *papers*, but in this day and age, I guess I'd better say *electrons*, hadn't I?

This time of year, I spend my time reaching out and touching the media and the local government, in an attempt to generate good will for our activities, and this has turned out

Amateur Radio is a Contact Sport!

to be a successful year.

The City and County of Midland have both passed proclamations designating the week prior to Field Day Amateur Radio Week. My attempt to reach out to Governor Synder's office has once again met a stone wall (we're not significant enough, or our message not important enough to educate the public about, so we can, and should be ignored). My appeal to Sen. Rick Jones, who sponsored and introduced our successful PRB-1 bill, bore fruit, however, and we secured a proclamation in the Senate.

The *Midland Daily News* printed articles spotlighting both Field Day

and the Hamfest. On follow-up on Field Day, I invited the reporter to come down to Chippewassee Park to look over the operation and possibly get in some time on the air. If we can get her past her mike-fright, we may be able get her interested in earning her ticket.

Well, that's enough for this month. Time to but the newsletter to bed, see if I can arrange a ride to the Hamfest, and finish up my plans for operating "one-delta" on Field Day. See you on the air!

73, Pat, KC8RTW

ARES®/RACES John Wolters, W8QN

I am glad to announce that Dave Wallick has agreed to take on a temporary assignment as an assistant EC while I am out of pocket. If you have any questions about ARES / RACES please do not hesitate to contact Chris Rose (KB8UIH) or Dave Wallick

(N8LBF).

I think Dave and Chris are working on some training activities for July and August so stay tuned.

John Wolters – W8QN

Midland High School ARC Report

Wow, what a year! The Midland High School Amateur Radio Club has just completed its second year and it was a boatload of fun and discovery.

In the last few months the students have built a PIC microprocessor based thermometer and a 4-bit computer. They also spent a fair amount of time preparing for the High Altitude Balloon (HAB) flight which happened on June 2, 2015. What a great time that was. You can see a full description of that in a separate article in this newsletter.

The microprocessor project, led by John, WB8RCR, was a big hit with the students and the advisors alike. The 4-bit computer, which was re-designed by Lee, KC8ITI, was a bit more challenging for the students and it gave them a much better insight into the inner workings of their computers. Lee did a yeoman's job of converting a schematic into a printed circuit board for this project, not to mention leading the entire project. Kudos to Lee for a big job well done!

John, AC8QF, Will, K8VFO and

Art, K0ACP, have put a lot of work into a plan to implement a satellite communications program for the club. We have made an additional grant request for this project. You will be hearing more about this project next year.

This year two-thirds of the club membership is graduating. We are going to miss them, especially Zach, KD8ULE, who has been with us from the planning stages. He will be attending Michigan State this fall. Good Luck Zach and all of the graduates! But that means we are going to have to do some serious recruiting for next year. As a result of some excellent feedback from the students, we have decided to change the name of the club as we represent it to the students. In order to better communicate what we do and to attract new students, we are changing the name to the "Electronics and Wireless Communications Club" but we are not altering our focus on Amateur Radio. We have also removed the MHS portion of the name to minimize any pa-

Upcoming Events

6/27-28	Field Day
7/10-11	Lupton

Michigan Hamfests

6/20	Midland
6/21	Monroe
7/18	Shelby Township
7/25	Lansing
8/1	Escanaba
8/16	Port Huron
9/19	Shelby Township
9/20	Adrian
10/3	Wyoming
10/10	Alpena
10/17	Muskegon
10/18	Kalamazoo
10/25	Madison Heights
12/6	Mount Clemens

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.

rochialism that might influence students from other schools. We are also reaching out to the home school community. If you have any contacts with that community, please let them now about the club. We have also changed the meeting day of the club from Wednesday to Tuesday evenings from 7:00 – 9:00 pm, in Room 321, Mr. Fawcett's Physics Classroom at Midland High School. We have started developing a new plan for recruiting and how we will operate the club next year. I am ex-

cited about the new opportunities.

We have also decided to start up a club at Northeast Middle School. This has been a part of our long term goals from the beginning. Ms Bernadette Wood, a teacher at Northeast Middle School, has agreed to partner with us for this project. This should be a lot of fun as well.

And I want to thank Mrs. Janet Greif, the principal at Midland High, for her enthusiastic support of our efforts in her school. Janet has been a strong supporter of the club from the

first time Denny, WD9BPT, and I presented our ideas to her. Janet will be moving to Bay City to become the superintendent over there.

And finally, my heartfelt thanks to the hams who have contributed their time and energy to making this program a success; Lee, KC8ITI, Denny, WD8BPT, John, W8QN, Andy, KD8ULJ, Art, K0ACP, John, AC8QF and Will, K8VFO.

Best Regards,
Dennis, N8ERF

Midland High School ARC Near Space Adventure

On June 2nd, students from the MHS Amateur Radio Club launched a STEM (Science, Technology, Engineering, and Mathematics) payload into near space using a helium-filled, high altitude balloon (HAB). It was a perfect day for the launch with a beautiful sunny sky, cool temperatures and light winds. After reaching the predicted elevation of approximately 100,000 feet the HAB burst on schedule and the payload parachuted back to earth. This project exposed the students to a variety of new technologies. In preparation for the first ever launch for the club, Ethan Brown learned how to predict where the balloon would fly and eventually land, using the HABHUB.org Predictor. Once the balloon is launched we are at the mercy of the winds aloft. We would have preferred to launch from Midland High but the flight predictions had the HAB payload landing in difficult to access terrain, so we opted to launch the balloon from the Beaverton High School football field. Our thanks go to Susan Wooden, Superintendent, for her gracious permission to use their facilities.

Max Dykhuizen, KD8WMC, learned how to program the Byonics MT-RTG, APRS (Automatic Packet Reporting System) electronic tracker, which transmitted GPS, altitude and

telemetry data, during the flight. He also learned how to use the web based internet application, www.APRS.fi, which allowed him to track the HAB during the flight on his smart phone. In case we didn't have access to the internet, Zach Purtill, KD8ULE, and Ethan Brown learned how to use a program called *APRSISCE/32*, written by (Mr.) Lynn Deffenbaugh, KJ4ERJ, that captured the radio signals directly from the transmitter, via a Yaesu FTM-350, APRS enabled transceiver, and plotted the actual flight data on a portable computer. Just in case the primary tracker failed, all of the students had learned how to use radio direction finding (RDF) equipment, which they had built, in order to track and locate the backup transmitter—a Byonics MicroFox—in the payload during the flight and after it landed. About 30 minutes into the flight, the APRS transponder went silent and all of the Fox Hunting (RDF) training was put to good use. It was no longer a game, it was for real. We had practiced finding the Fox transmitter by hiding it around the grounds at Midland High and then having a Fox Hunt, using the radio direction finding equipment, in order to find it. In case the payload had landed in a tree in a wooded area, Zach Purtill, KD8ULE, de-

signed and built an audio beacon, based on a 555 timer, which would provide an audible beep every four seconds and allow us to locate the payload by ear. Zach's system worked perfectly. Mitchell Ens, KD8VZT, and Ahbi Kumar were responsible for the construction and assembly of the payload, radar reflector and parachute system. Bryce Gandy assisted with the payload construction and provided the labelling on the payload in case someone else located the payload after landing.

After losing the APRS signal and verifying that we could locate the balloon by RDF, we decided to head to the predicted landing site and wait to see what happened. Just before the predicted time for the balloon to burst, we took a bearing on the balloon and determined that it was almost right above us. At that point, Katherine, our official photographer, exclaimed, pointing skyward, "there it is". None of us expected to see it but there it was—a tiny white speck up in the sky, much like the way Jupiter looks in the night sky. About 10 minutes later while watching the balloon while lying on their backs in the grass, Katherine again exclaimed, "It just vanished". That was at 12:20, just 5 minutes past the predicted burst time. Had they actually seen the balloon burst at 100,000 ft?

It's Not Your Grandfather's Amateur Radio!

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A photograph taken by the onboard GoPro Hero 3+ camera verified that indeed the balloon had burst at 12:20.

Was the balloon actually at 100,000 feet? Unfortunately, we cannot verify with a high degree of certainty that we were at that predicted burst height without some serious analysis of the photographic images, since we had lost our APRS data link. However, based on the closeness of the actual vs predicted time of balloon burst and the fact that the actual landing site was within 10% of the predicted landing zone, it is fair to conclude that the balloon was pretty close to that altitude when it burst. Seeing the balloon at alti-

tude and then seeing it burst was a truly amazing and unexpected bonus to the experience.

After a 3 hour flight the payload landed in a cornfield four miles south of Merrill, having travelled almost 40 miles from the launch site in Beaverton. We were able to recover the payload using the radio direction finding equipment. After landing in the field, the APRS transmitter reactivated. Upon inspection we found a loose antenna connection that was probably the cause of the failure.

The GoPro camera on board gave us some amazing images of our great state of Michigan. We are still analyzing the data from our cosmic

radiation experiment. It was an incredible amount of fun and excitement for all involved. For helping to make this a wonderful success I want to thank, Lee, KC8ITI, Dennis, WD8BPT, Andy, KD8ULJ, Art, K0ACP, Chris, KB8UIH, Will, K8VFO, and Will's daughter, Katherine, who was our official photographer.

Submitted by Dennis Klipa,
N8ERF

June 8, 2015

June 2015 Michigan Section News

(ARRLWeb—6/15/2015) Greetings to the Hams of Michigan:

Amateur Radio Parity Act of 2015: 75 Co-sponsors — and Climbing

The Amateur Radio Parity Act of 2015 — H.R.1301 — has been introduced in the US House of Representatives. The measure would direct the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land use restrictions. US Rep Adam Kinzinger (R-IL) introduced the bill on March 4 with 12 original co-sponsors from both sides of the aisle—seven Republicans and five Democrats.

HR 1301 would require the FCC to amend its Part 97 Amateur Service rules to apply the three-part test of the PRB-1 federal pre-emption policy to include homeowners' association regulations and deed restrictions, often referred to as "covenants, conditions, and restrictions" (CC&Rs). At present, PRB-1 only applies to state and local zoning laws and ordinances. The FCC has been reluctant to extend the same legal protections to include such private

land-use agreements without direction from Congress.

H.R. 1301 has been referred to the House Energy and Commerce Committee. Rep Greg Walden, W7EQI (R-OR), chairs that panel's Communications and Technology Subcommittee, which will consider the measure.

Michigan is fortunate to have 3 Congressmen who have signed on as co-sponsors: Representatives Benishke (1st District), Bishop (8th District) and Walburg (7th District). If one of these three are your representative, please go to their respective websites and send them a message thanking them for their co-sponsorship if you have not already done so.

If your representative has not yet signed on, please go to the ARRL website here: <http://www.arrl.org/hr-1301> and follow the instructions at the bottom of the page to send your letter via the ARRL.

Michigan Senate Recognizes and Designates June 22-28 as Amateur Radio Week

Michigan Senate Resolution 49 (2015) recognizes and designates June 22-28 as Amateur Radio week.

The full text of the resolution is available here: <http://www.legislature.mi.gov/documents/2015-2016/resolutionadopted/Senate/pdf/2015-SAR-0049.pdf>

The resolution was introduced by primary sponsor Senator Rick Jones and co-sponsors Steven Bieda, Darwin Booher, Jack Brandenburg, Judy Emmons, Geoff Hansen, Jim Marleau, Mike Nofs, John Proos, Jim Stamas, Rebekah Warren, and Dale Zorn.

A hearty thank you to the Senators. Please take a moment to call their office to thank them.

*K2BSA coming to East Lansing
August 3-7, 2015*

K2BSA/8 will be operating from the campus of Michigan State University during the Boy Scout's National Order of the Arrow Conference (NOAC) to be held August 3-7, 2015. Be looking for the station on 20 and 40 meters – General portions of the phone band. QSL via KA7MMM. Attendance at this 100th Anniversary of the NOAC is expected to top 15,000 – youth and adults.

Volunteers will be demonstrating ham radio and operating as station

Explore the World with Amateur Radio!

control operators for K2BSA/8 throughout the week so that scouts can actually have an opportunity to go on the air.

If you would be interested in volunteering to assist with the operation of K2BSA/8 please contact Joe (W8JRK) at W8JRK@arrl.net. The plan is to have 2-3 volunteers available for each half day of the event. Some morning and afternoon slots are still available.

Michigan Section Outing Format Changes

The 17th annual Michigan Section Outing will undergo some changes in 2015. The event will still be held at the Woodlands Conference Center and Campground near Hale, MI.

What had been a 4 day event (Thurs – Sun) in previous years will now be a Friday and Saturday (July 10-11) event going forward. For those that have enjoyed tent camping or spending time in their RV's, keep in mind that you can still arrive before Friday and stay past Saturday if you wish. That portion of the event has not changed.

On Friday there will be a Fox-hunt and other interesting activities in the afternoon and evening and on Saturday we will play host to the Michigan's annual Emergency Coordinator's meeting.

At the Saturday EC meeting we are planning to provide pizza and soft drinks for all that would like to participate. Please keep in mind that this entire event is funded by donations. Our financial obligation is reduced by having fewer days, but we still have

obligations that need to be met in order for the outing to be viable and to continue going forward. There will be plenty of opportunities to "feed the donation can."

Keep in mind that this event is open to all who wish to attend. Saturday's EC meeting will be filled with good information and good speakers. There are hotels located in nearby West Branch (20 miles) along with many restaurants.

This is a great opportunity to get out into the great outdoors and enjoy the Michigan woodlands.

More information available at: www.sectionouting.info. See you there!

Until next time,
73, Larry Camp, WB8R
ARRL Michigan Section Manager
wb8r@arrl.org

Technical Topics and Information

(ARRL Contest Update—May 20, 2015) In a presentation at the International DX Convention in Visalia, California, NX1P suggested using inexpensive Wi-Fi Routers with Gargoyle firmware to address multi-station networking scenarios typically occurring on DXpeditions. Some of the problems solved are the same as those one would encounter networking contest stations in a temporary multi-op or field-day situation.

<http://www.nx1p.net/files/20150327VisaliaNX1PYear2-1.pptx>

♦ Too many low-band receive antennas and no way to switch them? Used or surplus 75 ohm video switches can be had inexpensively on eBay and other sources, and many models work all the way to DC. (Tom W8JI, Herb KV4FZ via the [Topband email](#)

[list](#))

♦ [Version 6.0 of EZNEC](#) has been released by W7EL. He was on hand at Dayton to explain some of the new capabilities, including faster calculations, graphical wire modification, split wires, enhanced scaling, correction for loaded and trapped Yagis. Capacities have been increased - version 6.0 can handle 2000 segments, automatic catenary generation for wire antennas, and can output Touchstone files.

♦ [SDR on a \\$35 computer?](#) Here's an article on using a Raspberry Pi B with GNU Radio as an SDR to receive and decode digital information using a DVB USB dongle: <http://www.rs-online.com/designspark/electronics/eng/blog/taking-the-raspberry-pi-2-for-a-test-drive-with-gnu-radio-2>

♦ Rick, KUØW, found the [web-](#)

[site and book "Cool Tools"](#) at his library. It is a curated list of a variety of very specialized tools of all sorts, and could make great coffee table reading. In the book, a QRC code is provided for each tool, for quick and easy web lookup. (Thanks Rick)

Technical Web Site of the Week - Here's how you can use an SDR receiver, and open source software to do some RF sleuthing of a 433 MHz wireless doorbell - the techniques described, based on open source software, are applicable to all sorts of wireless devices: <https://goo.gl/MCmwZW> (link points to a PDF file). The author designs and constructs a receiver by arranging and connecting functional blocks which comprise the various functions for amplifying, mixing, demodulating, etc.

More Technical Topics and Information

(ARRL Contest Update—June 3, 2015) A new type of Cloud propagation? Every summer, radar reflections from altitudes between 80 and

90km are detected. These reflections seem to be coincident with the altitude and occasional observations of "[Noctilucent Clouds](#)." Recently,

these were observed (and photographed) over Scotland (See: "[Radar Echoes from the Noctilucent Zone](#)"). One theory is that the clouds consist

of charged ice particles, which are good reflectors of VHF and above. (W7WKR through PNWVHFS)

♦ There's still time to put up a VHF antenna before the June VHF Contest - but which one? [VE7BQH has a done a comparison](#) of some commercial antennas. Build your own? Check out a [list of ARRL Articles on making your own VHF Beams](#).

♦ Some of the best-attended presentations at ham gatherings are those about radio performance testing. VA7OJ recently talked about [considerations necessary when testing modern receiver architectures](#), and performing [Noise Power Ratio testing of receivers](#). (Thanks W7LFA)

♦ Have some ferrite binocular cores you'd like to use for a beverage transformer? Need to "guesstimate" the material they're made out of?

[Tom W8JI suggests using an antenna analyzer](#) (in impedance mode) with a single loop through the core to determine the frequency where $R=X$; If that occurs at around 2 MHz, it's type 73 material. "The $Q=1$ frequency, where $R=X$ or where loss tangent crosses reactance, tells you the material better than anything else you can do." (Tom W8JI via Topband List)

♦ National Instruments and Mouser have teamed up to provide [MultiSIM BLUE](#), a tool in which you can draw your schematic, simulate its behavior, lay out a PC board, built the BOM, and order parts (from Mouser, of course). (Thanks Doug W5DET)

♦ W6PQL and others have designed high-power amplifiers based on LDMOS transistors like the NXP BLF578XR and BLF188XR. These devices are appealing as they can handle high power levels, and are ro-

bust in the face of adverse operating conditions. Now, [NXP will sell its RF Power business to JAC Holdings](#). The sale is being made in part to raise cash to help NXP to acquire Freescale semiconductor, and to appease potential regulator objections in regards to that purchase. (EETimes)

♦ Also in transition - Traffic Technology, maker of Hex Beams, [announces plans to discontinue making Hex Beams](#). (via [QRZ.com](#))

Will your heirs know what your treasures are worth? Someone [donated a rare Apple I computer last week](#), likely not knowing its value, historical or otherwise. The search is on for the donor, who is entitled to half of the estimated \$200,000 value.

Technical Web Site of the Week - Moore's Law at 50 - Intel has provided an interview with Gordon Moore: <http://newsroom.intel.com/docs/DOC-6429#videos>

MARC Vital Statistics

Memberships Expiring in June

KD8HID
KD8MMH
KD8QXL
KD8ULA

WA8KJR
WA8Y
WB8FYR
WD8ODG

KA8HQW
WD8SDX

Memberships Expiring in July

None

Memberships Expiring in August

None

Current Active Club Membership 46

Birthdays Celebrated in June/July

W8LSS 6/2
K8RI 6/16
KB8VSS 6/21
KD8IWG 6/23
K8HP 6/24

N8POX 6/25
KC8URV 6/28
WD8ODG 6/30
KD8MMH 6/30
KB8RCR 7/2

KG8YG 7/6
K8RRB 7/8
KA8ORL 7/11
N8NGT 7/14
WB8RCR 7/21

KD8DWX 7/21
N8LMS 7/27
WA8JGQ 7/28
W8OKN 7/30

Anniversaries Celebrated in June/July

N8CGP and N8KRL 6/5
N8KFE and Cheryl 6/12
KB8VSU and Barbara 6/13
WA8LQD and Kathy 6/16
N8STF and Mary 6/16
N8POX and Kris 6/17

W8LSS and WD8AXR 6/19
N8UPP and KC8AVI 6/21
NX8A and Kristina 6/24
K8VFO and Mayumi 6/27
KB8PGV and Connie 6/27
K8CCE and Clarice 6/28

KD8HID and ??? 6/28
AA8EJ and Beverly 6/28
KC8RTU and Brenda 7/20
KD8MQX and Emily 7/20

Information is from data received 6/12/2015

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