



W8KEA



MARCA

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

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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 Feb. 6, 2014, 6:00 PM
Law Enforcement Center, 2727 Rodd St.

Next CLUB Meeting — Thursday Feb. 6, 2014, 7:30 PM
Salvation Army Building, 330 Waldo, Midland
Talk-in 147.000+

February 2014

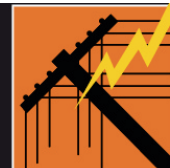
Static Discharge

Kevin Martin, KD8QAM

Well, it's been a cold month, great for staying in and getting on the air. I haven't been hearing a lot of traffic on the repeater lately. I hope everyone is out on HF trying to make a contact. There hasn't been a lot going on this month. Congratulations John, WB8RCR, on your life membership.

Stay warm,
Kevin KD8QAM

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



MARC Minutes

Dorie French, N8WTQ

The meeting was called to order at 7:34 p.m. by Art, KOACP with 16 members and guests present.

• A motion was made by Dennis, N8ERF and seconded by Pat, KD8IVZ to approve the minutes as published in the newsletter. Motion passed. There was no treasurer or EC/RO report.

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 (cherryrediroc@sbcglobal.net)

• Dorie, N8WTQ reported that the Christmas Party was a success and the 2014 party will be the first Friday of December 2014 at the same place with Carousel Catering doing the meal.

• The ARRL will be having a year-long QSO party this year. They will be operating from every one of the 50 states. Michigan is scheduled for the week of February 19 and again in October.

• The Saginaw club is having an auction on Feb. 7 at 8 p.m. at the Red Cross building in Saginaw. We are invited.

• John, WB8RCR was awarded life membership to the club in recognition of his many years of

service to not only the Midland Club but also to amateur radio at the State level. Congratulations John!

• John, WB8RCR gave a presentation on ARES®/RACES and Dennis, N8ERF gave a presentation on multiband trap vertical antennas.

Net Controls:

Jan 9 Art, KOACP

Jan 16 Kevin, KD8QAM

Jan 23 Del, WB8FYR

Jan 30 Kevin, KD8QAM

• A motion to adjourn was made by Dennis, N8ERF and seconded by Art, KOACP. Meeting adjourned at 9 p.m.

Respectfully submitted,

Dorie N8WTQ

Secretary

My Two Cents

Pat Mullet, KC8RTW

Where'd the month of December go? Between the holidays and personal matters and trying to get my shack computer back up and running, I barely had any time to get on the air. It feels like I'm going into radio withdrawal.

If you'll remember, last month I discussed the *QST* article *Virtual Radar from a Digital TV Dongle*. Since I learned about the RTL-SDR dongles, I'd been kicking around the idea of using one as a panadapter. Thanks to *Google*, I turned up a web page titled [RTL-SDR as a Cheap Panadapter](#). The video embedded in the page shows the process of setting up a panadapter on a Yaesu FT-857 using the *HSDR* software, but the process should be similar on any radio. The video doesn't show how to tap the signal from the first IF section, but you can look into the manuals for any of the old-school panadapters, such as the Kenwood SM-220, to find the simple capacitor-

resistor tap cable. If everyone keeps coming up with all these neat apps I'm going to have to start buying the RTL-SDR dongles in job lots.

As I write this, it's the day after the North American QSO Party. My QSO count was nowhere near where I expected it to be, but that's because I spent 40 some odd minutes trying to break through the pile-up surrounding KC4AAA, Joe operating from the Amundsen-Scott South Pole Station in Antarctica. Joe was booming into Michigan on 20 meters, but between my 100 watts and the orientation of my G5RV, I figured I didn't stand much chance of breaking thorough, but I kept trying, hoping I could log him for the NAQP! Better luck next time, I guess. Still, it was fun.

Right now, I think I'll finish this up and go play on HF some more. Wonder if KC4AAA's back on the air?

73, Pat, KC8RTW

Amateur Radio is a Contact Sport!

ARES® / RACES John Wolters, W8QN

There will be an ARES® / RACES Meeting at the Law Enforcement Center at 6 pm on Thursday February 6th. We will discuss plans for 2014.

Wolters at w8qn@aol.com.

February Club Meeting Presentation

I will be presenting a review of the FLEX 6500 transceiver at the February meeting. If you have any interest in high quality SDR (Software Defined Radio) please plan to attend.

John Wolters - W8QN

Dow Run

The Dow Run will occur on Saturday May 17th. A signup sheet will be passed around at the February club meeting. If you are unable to attend and are able to help with communications at the run please contact John

Lace Up Your Running Shoes

Though it's the middle of the winter, it's the time to start making your plans to participate in the Midland ARC's public service season.

Chris Rose, KB8UIH, has passed along the following information. The 2014 edition of the MS Walk will be held on the fourth weekend in April as in prior years, this year it will fall on Saturday, April 26th. However, due to a scheduling conflict with an event scheduled by the Great Lakes Loon, the Walk is being pushed back to later in the morning. Volunteers should arrive at the event site, Central Middle School, 305 East Reardon Street, by 11:00 am. Current plans are for the activity to run until 3:00 pm.

Planning is also underway for the 2014 Great Lakes Bay Marathon, which will be run Sunday, May 18th. While details aren't as firm as those

for the MS Walk, Chris expects the operators will need to be in place by 6:30 am and the event to run until roughly 3:00 pm. More as things develop. The GL Marathon website (www.greatlakesbaymarathons.com) has the course maps and some general info.

John Wolters, W8QN, notes that the Dow Run will be the day before the GLB Marathon on Saturday, May 17th. If past years are any indication, volunteers will need to block out a 7:30 am – 11:00 am time slot for the event. Again, more information as it becomes available.

Start planning for these events now, and let Chris know if you plan to help out.

Notes from the SEC John McDonough, WB8RCR

2014 started off with a bang. We had ice, causing many power outages, then snow, causing significant problems in a number of places, and then "historic cold". That "Historic Cold" forecast caused the Michigan State Emergency Operations Center (SEOC) to partially activate. The SEOC stayed active from January 4th through the 10th.

The ARRL Michigan Section has a process where we monitor the emergency frequencies on a schedule when we anticipate trouble: 3.563 MHz (CW) at the top of the hour, 3.583

MHz (Olivia) quarter past, and 3.932 MHz (SSB) at half-past. When the flux is high, basically daytime at this point in the cycle, we move to 40 meters, 7.068/7.043/7.232 MHz. At the MIARPSC (Michigan Amateur Radio Public Service Corps) net on the 5th we set up a schedule of stations to ensure around the clock monitoring.

During the course of the event, the activities of all the state agencies, including amateur radio, are recorded on the Michigan Critical Incident Management System (MI-CIMS).

Upcoming Events

4/3	Skywarn Training
4/19	Mi QSO Party
4/26	MS Walk
5/15-18	Dayton Hamvention
5/17	Dow Run
5/18	GLB Marathon
6/28-29	Field Day

Michigan Hamfests

2/1	Negaunee
2/8	Traverse City
2/16	Livonia
3/15	Marshall
4/12	Highland
5/3	Cadillac
6/15	Monroe
7/26	Lansing
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

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.

Once per operational period there is a phone conference with all the agencies, and in this case, we also had reports from each of the Michigan State Police District Coordinators.

During the incident Shiawassee County and the City of Lansing seemed to have a lot of trouble getting roads cleared. Shiawassee actually stopped plowing for a while because so many roads were blocked by downed power lines. I-75 in Monroe County was closed twice due to accidents, and once because it was just impassable. I-94 in Jackson was also closed a couple of times. The roof of the Saginaw K-Mart collapsed, and there was a school roof collapse in the southern part of the

state. Many water mains broke, including over 99 in Detroit. Ultimately there were over 678 thousand power outages, the most on record.

Going forward, the ground is solidly frozen, the snowpack is well saturated, and the river levels are fairly high, so there is a concern that a warm up could lead to some flooding.

Although we still need to have more stations with MI-CIMS access so they can maintain their station status for all to see, we did have quite a few stations reporting in MI-CIMS. Each operational period (twice a day in this case) I update the AuxComm (Auxiliary Communications) Situation Report (SitRep), portions of

which are included in the SEOC SitRep, which in turn gets provided to the Governor and the legislature, so even though our activity was pretty low level, amateur radio got pretty good exposure.

All in all it was a very full week for me, it was good to see so many amateurs around the state stand up to be ready to serve, and also good to see us get that exposure. We in Michigan are very fortunate to have so many people, both professionals and volunteers, ready to work to keep Michigan safe.

Solar Flux Record High Could Herald Better Conditions

(The ARRL Letter—January 9, 2014) The 10.7 centimeter solar flux index (SFI) jumped to a Cycle 24 record of 262 on January 4, suggesting that Cycle 24 has not yet begun drawing to a close and may be approaching or at a "second peak." The previous peak for the current cycle was 190 on September 24, 2011. As NASA's Marshall Space Flight Center (MSFC) explains, the flux of the sun's radio emissions at 10.7 centimeter (2.8 GHz) is another indicator of solar activity levels, since it tends to follow changes in the solar ultraviolet that influence Earth's upper atmosphere and ionosphere.

"Many models of the upper atmosphere use the 10.7 centimeter flux (F10.7) as input to determine atmospheric densities and satellite drag," NASA/MSFC noted, adding that SFI

"has been shown to follow the sunspot number quite closely." The January 6 sunspot count was 225. The Cycle 24 sunspot count peaked at 282 on November 17, 2013, according to WM7D.net.

Canada's Dominion Radio Astrophysical Observatory (DRAO) indicated an "official" flux of 262 at 2000 UTC on Saturday, January 3. The official figure for Sunday, January 5, was 217.5. ARRL solar observer Tad Cook, K7RA, who reports 10.7 centimeter flux numbers in his weekly "Solar Update" bulletins, suggests that they are not as valuable as sunspot numbers in predicting radio propagation. The solar flux was over the January 4-5 weekend was far higher what was anticipated, judging by predictions Cook reported in his January 3 "Solar Update" for this past weekend and the week ahead. NASA/MSFC indicates

a 95 percent predicted flux for the month of January at 146.5, continuing at about the same level through the first half of the year.

The Daily DX said the SFI was expected to remain above 200 for this week. As Ian Poole, G3YWX, explained solar flux in his article, "Understanding Solar Indices" in the September 2002 edition of QST, "[H]igh values generally indicate there is sufficient ionization to support long-distance communication at higher-than-normal frequencies." He pointed out, though, that it can take a few days of high values for conditions to show improvement. "Typically values in excess of 200 will be measured during the peak of a sunspot cycle, with high values of up to 300 being experienced for shorter periods," Poole wrote. [Read more.](#)

Tokyo Hy-Power Files for Bankruptcy

(ARRL Letter—Jan 9, 2014) Tokyo Hy-Power, a manufacturer of Amateur Radio amplifiers, antenna tuners, and other equipment, is in bankruptcy, and its plant, in Saitama Prefecture near Tokyo, has been shuttered. Telephones at the company no longer are being answered, and its Japanese website has been taken down, although the company's US website remains working. Company CEO/President Nobuki Wakabayashi,

JA1DJW, founded Tokyo Hy-Power Labs in 1975. He blamed "the recent depression in the industrial RF power products area [which] has led to the very difficult financial position."

Tokyo Hy-Power's early products were HF antenna couplers, although within a couple of years it began manufacturing amplifiers for the Amateur Radio market, including solid-state mobile amplifiers. Among its early products was the HL-4000

linear amplifier, which the company claimed was "the first real HF band high-power linear of its kind in Japan." It has been manufacturing RF products for the industrial market since 1984.

The company also once marketed the HT-750, a portable, low-power SSB/CW transceiver for 40, 15, and 6 meters in a hand-held transceiver form factor. At Dayton Hamvention® 2013, the company displayed a

prototype of the XT-751, an advanced model it hoped to develop, covering 40 through 6 meters and with an internal antenna tuner. Among its latest products were solid-state HF amplifiers, as well as amplifiers for 6 and 2 meters.

In a December 26 news release, Ham Radio Outlet (HRO) reacted with "disappointment" and said it was "deeply saddened" to learn that

Tokyo Hy-Power had gone into bankruptcy.

"This action in Japan appears to be similar to a Chapter 7 action here within the United States, as the process in this case appears to be the liquidation of organizational assets in order to attempt to fund some portion of its debt obligation(s)," the HRO release said. "This appears to indicate that a court has deemed the

organization unable to be effectively reorganized under Japan's Civil Reconstruction Code."

HRO said it was working with AVSL, the current US service provider for Tokyo Hy-Power products "to discuss the opportunity of continued maintenance at the component level of the US-sold Tokyo Hy-Power line of amplifiers." [Read more.](#)

InnovAntennas Acquires Force 12

(ARRL Letter—Jan 9, 2014) InnovAntennas has acquired the legendary Force 12 antenna company and product line and has moved the Force 12 factory from Bridgeport, Texas, to Grand Junction, Colorado, into a facility shared with InnovAntennas America. InnovAntennas Ltd

in England is now manufacturing Force 12 products for the European market at its Canvey Island plant.

The Grand Junction facility is up and running, manufacturing and shipping antennas. InnovAntennas says it plans to produce updated versions of classic Force 12 antennas as

well as all-new models. InnovAntennas Founder Justin Johnson, G0KSC, was at the Colorado facility in late 2013 to assist in setting up and laying out the factory, and the company was expected to be at full production this month. — *Thanks to The ARRL Contest Update*

W100AW Hits the Airwaves!

(The ARRL Letter—Jan 9, 2014) At the stroke of midnight Eastern Time on January 1, Hiram Percy Maxim Memorial station W1AW at ARRL Headquarters in Newington took to the air to debut its special ARRL Centennial call sign, W100AW. ARRL Chief Executive Officer Dave Sumner, K1ZZ and Membership and Volunteer Programs Manager Dave Patton, NN1N, and ARRL Station Manager Joe Carcia, NJ1Q, were at the helm into the wee hours of New Year's Day.

Daylight hours saw ARRL Chief Operating Officer Harold Kramer, WJ1B; Membership and Volunteer Programs Assistant Manager Norm Fusaro, W3IZ; Public Relations Manager Sean Kutzko; KX9X and QST Editor in Chief Steve Ford, WB8IMY, taking their turns at the operating positions. By mid-afternoon, several thousand contacts were in the log on SSB, CW and RTTY.

"This is just the beginning," said Kutzko. "Hams will hear W100AW throughout 2014 on every mode possible. When you hear us, spot us on the cluster!"

Not surprising, 20 meter SSB yielded the most contacts -- 1121 of the

3700 logged -- during the 19 hours of New Year's Day operation from W100AW. Ten meter phone was in second place with 639 contacts.

W100AW contacts will be uploaded to Logbook of The World (LoTW). QSL cards sent by mail will be acknowledged as well.

W1AW Portable Operations, ARRL Centennial QSO Party

The ARRL Centennial "W1AW WAS" operations are taking place throughout 2014 from each of the 50 states, relocating each Wednesday (UTC) to a new pair of states (this week, South Carolina and Utah. Listen for W1AW/4 and W1AW/7). During 2014 W1AW will be on the air from every state at least twice and from most US territories, and it will be easy to work all states solely by contacting W1AW portable operations.

In conjunction with the 100th anniversary of the ARRL, the ARRL Centennial QSO Party also kicked off January 1 for a year-long operating event in which participants can accumulate points and win awards. The event is open to all, although only ARRL members and appointees, elected officials, HQ staff

and W1AW are worth ARRL Centennial QSO Party points. Working W1AW/x from each state is worth 5 points per contact.

To earn the "Worked all States with W1AW Award," work W1AW operating portable from all 50 states. (Working W1AW or W100AW in Connecticut does not count for Connecticut, however. For award credit, participants must work W1AW/1 in Connecticut.) A W1AW WAS certificate and plaque will be available (pricing not yet available).

Some Statistics

As of today (January 9), more than 6700 stations have earned points in the Centennial QSO Party by uploading qualifying QSOs to Logbook of The World (LoTW). Operating from North Carolina and West Virginia during the first week of the W1AW portable operations, W1AW/4 and W1AW/8 logged approximately 33,000 contacts.

"The second week is off to a roaring start from South Carolina and Utah," reported ARRL Membership and Volunteer Programs Manager Dave Patton, NN1N.

Explore the World with Amateur Radio!

Amateur Radio Showing Steady Growth in the US

(ARRLWeb—01/08/2014) The Amateur Radio population in the US has continued to show steady growth. As of the end of 2013, the FCC database showed 717,201 licenses in its Universal Licensing System (ULS). That's the greatest number of US hams ever and up from 709,575 in December 2012. The volume of Amateur Radio applications slowed somewhat to 141,943 from its zenith of 176,826 in 2007, the year the FCC dropped the Morse code requirement.

"The three current license classes also peaked at the end of 2013," notes ARRL VEC Manager Maria Somma, AB1FM. "FCC-issued club station licenses are also at an all-time high in the FCC database at 11,363. The number of new licensees has increased by 7 percent over last year (28,886 in 2013 and 27,082 in 2012)." Somma said that a significant number of Technician licensees were earned through large emergency communication and Community Emergency Response Team (CERT) classes.

The breakdown by license class shows Technicians as the largest group, at 349,163 licensees, followed by General licensees at 167, 257, Amateur Extra licensees at 133,391, and Advanced licensees at 54,293. There are still slightly more than 13,000 Novice licensees on record too. The FCC no longer issues the Novice or Advanced class license. Technician numbers have grown by 8.2 percent over the past decade, with

an impressive comeback since 2007 after the population had plummeted from a peak of 338,334 in March 2000. The General class population has risen by slightly more than 18 percent over the past 10 years. But the Amateur Extra class has shown the most remarkable growth over the past decade, climbing by slightly more than 27 percent, with no dramatic spike after the Morse requirement went away.

While Amateur Radio application volume slipped somewhat overall, that was not the case at the ARRL VEC. "ARRL VEC served 34,896 exam applicants in 2013, up slightly from 32,866 in 2012," Somma said. "July will mark 30 years that ARRL VEC has been certified by the FCC to administer Amateur Radio exams. We're delighted to celebrate our important milestone in the same year as the ARRL's Centennial celebration and look forward to the promise of another record year."

It's a mixed picture in the other countries, according to statistics compiled by Joe Speroni, AH0A. In Australia, there were 15,626 Amateur Radio licensees in 2010, the last year for which he has numbers from the Australian Communications and Media Authority (ACMA). That was up by 1.3 percent over the previous year. Overall, Australia's ham population has showed steady but slow growth.

In Japan, the statistics are a little stale, but in 2009, the last year for

which numbers are available on Speroni's website, the number of ham radio operators of all license classes stood at just under 3.3 million, with growth of approximately 1 percent over each of the previous three years. But there's an important caveat here. The figures from the Ministry of Post and Telecommunications (MPT) are cumulative — ie, they indicate the total number of licenses ever issued. Also, as Speroni points out, the MPT "double counts" operator numbers.

"Operators upgrading to higher class licenses retain all previous licenses, so the statistics 'double count' amateurs, overstating the total number of licensees." Operator licenses in Japan are good for life.

Japan also issues a station license with a 5 year term. The number of station licenses in Japan declined from its high of approximately 1.4 million during the heyday of the late 1980s and early 1990s to approximately 489,250 as of March 2009, the last month and year for which statistics are available. Perhaps more telling, the net number of new operator license applications was largely down in the period from 1999 to 2009, with occasional growth spurts.

In the United Kingdom, 76,362 licensees were on record as of March 2012 — up by 3.9 percent over 2011 — and growth was consistent. Spain had 30,468 ham radio licensees in 2012, up by nearly 1.4 percent over 2011, when the population dipped by 3.3 percent over the previous year.

Technical Topics and Information

(ARRL Contest Update—Jan 15, 2014) The new Fair-Rite clamp-on cores discussed in the 18 December issue turned out to be something other than advertised, according to Jim K9YC. The part number 2631181381 is only one-half of a split core and there is no plastic snap-together assembly. Without the other half of the core and without a secure positioning method, the cost and performance advantage evaporates. Thus the re-

commendation of this part is withdrawn. If a full core with plastic housing becomes available, we'll report it here.

- Rudy N6LF has been doing a lot of research on ground radials over the past few years with some papers online, some in the *ARRL Antenna Book*, and some in *QEX*. Rudy has compiled a series of articles on his experiments that are downloadable for reading as a set. Good stuff!

(Thanks, Eddy VE3CUI)

- If you need a light-gauge burial control cable, the boys on Guam (KH2L and NH2T) have discovered sprinkler control cable. Available with various numbers of #18 AWG solid conductors, it's rated for direct-bury, cheap, and is available at local hardware stores or online.

- John WV8H recommends an iOS application called *Electronic Toolbox Pro* that only costs \$5.99. It

has 57 applications that are very handy for all kinds of electronic calculations and design tasks. No Android version yet, but we can hope!

- Another useful article from *Electronic Design* gets into the details of understanding the IF bandwidth of RF signal analyzers. In fact, that's the title! There are a lot of quality lab instruments finding their way into the amateur's workshop these days and this is an important performance characteristic. Elsewhere on the web is an article about the latest in miniature USB spectrum analyzers from *EDN* magazine - this one goes to 35 GHz!

- Metalworking always seems to be the hardest part of project construction for your editor - I'm a spark-maker, not a tin-bender! So I like articles that show me how to get good results without having to buy a garage full of machinery. This *Instruct-*

ables how-to shows one way to [bend metal](#) easily and cleanly. If that metal gets rusty, another how-to shows you the way to [remove it](#) with a mild acid.

- The GØMRF 144 MHz filtered pre-amp kit from AMSAT-UK contains all the parts and hardware necessary to build a complete preamp. The connectors supplied are a high quality PTFE-insulated reduced-flange N-type for the connection to the antenna and a chassis-mounted female BNC for the RF output to the receiver. Operating power (dc) is provided by an external bias tee or radio through the receiver connection. Performance information and construction notes are available on the AMSAT-UK website. (From AMSAT bulletin ANS-363)

- Al KØAD has written an article in the Twin Cities DX Association newsletter about using a triplexer and switchable filters to support his

SO2R (single-op, two-radio) setup. How happy is he? "As a low power contester with a single 4-band Yagi, it's almost like adding two additional Yagis to my station."

- Paul N4LCD has published a web page showing just how to use a rotary hammer to put in a ground rod. This method is lots easier than pounding 'em in with a sledgehammer! (Thanks, Tom N4NW)

- While the surplus market for analog meters has been dried up for some time, Paul WD7S recommends Instrument Meter Specialties for their fair pricing of new meters and the largest selection he has seen. Don't forget Tonne Software's *Meter* and *Meter Basic* software for creating professional-quality meter scales, too!

MARC Vital Statistics			
Memberships Expiring in January			
KA8EZT	KD8HIH	KD8IWB	WB8WNF
KC8GRQ	KD8IVZ	KD8RMG	
Memberships Expiring in February			
	AA8EJ		W8NON
	N8STF		WA8Y
Memberships Expiring in March			
	AB8JF		K8VB
	N8WTQ		
Current Active Club Membership 40			
Birthdays Celebrated in January/February			
WA8KJR 1/2		KB8QWQ 1/29	
KA8HQW 1/13		KC8ITI 2/2	
KD8IVZ 1/20		AA8EJ 2/3	
N8KRL 1/24		K0ACP 2/7	
W8ZSX 1/28		W8NON 2/14	
KD8HID 1/29			
Anniversaries Celebrated in January/February			
	KA8EZT and Linda 1/2		
	KC8TQS and Julia 02/14		
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