W8KEA MARC

SPECIAL SERVICES CLUB

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

President	Kevin Martin KD8QAM	(989) 513-0100
Vice President	Art Peters, K0ACP	(989) 400-3745
Secretary	Dorie French N8WTQ	(989) 835-5562
Treasurer	John Wolters W8QN	(989) 832-9122
W8KEA Station Trustee	Larry Macklin N8CGP	(989) 631-7748
Midland County EC/RO	John Wolters W8QN	(989) 832-9122
Midland County AEC	Chris Rose KB8UIH	(989) 832-7179
Newsletter Editor	Pat Mullet KC8RTW	(989) 828-6657
Newsletter Publisher	Art Peters K0ACP	(989) 400-3745
ARRL Liaison	John Tallman KB8PGW	(989) 859-0364
Web Page Chairman	John McDonough WB8RCR	(989) 631-0178
Club Historian	Stan Rowe K6VWE	(989) 837-7252
Quartermaster	Lee Hodges KC8ITI	(989) 374-0032
Public Information Officer	Pat Mullet KC8RTW	(989) 828-6657
Field Day Committee	Kevin Martin KD8QAM/ch	(989) 513-0100
	Pat Mullet KC8RTW	(989) 828-6657
Swap Committee	Mark Rodgers, KC8GRQ/Ch	(517) 672-1060
	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 — No January Meeting
Law Enforcement Center, 2727 Rodd St.
Next CLUB Meeting — Thursday Jan. 2, 2014, 7:30 PM
Salvation Army Building, 330 Waldo, Midland
Talk-in 147.000+

January 2014

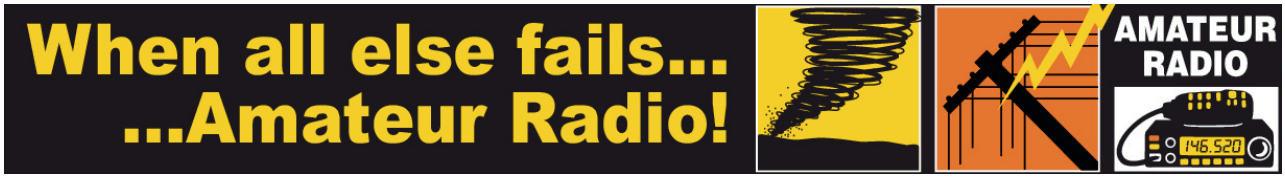
Static Discharge

Kevin Martin, KD8QAM

Well another year has passed, and looking back at all the great memories we have shared is a nice treat. Thank you to everyone who helped out on set up and working the different events through the year. Without our volunteers we would have a tough time making things happen. It's nice to share some laughs and good memories that we have gathered over the year at different events. It really makes the event. Getting to sit and talk with everyone outside of the club meetings, at the swap, Field Day, parades and Christmas party really helps us keep in touch and let's us see things other than just radio.

Everyone had a good time at the Christmas party and it was good to see everyone. Del's (WB8FYR) playing of his accordion was the talk of the party. Thank you Del. There seemed to be quite a few white elephant gifts which were rather interesting. Dorie, N8WTQ did a fantastic job putting this on for us once again this year. Thank you, Dorie.

It is a lot easier to get on the air when there are two hams in the household. Now that Tina, KD8VZN received her ticket, she



has been helping me make time to use the radio. Thank you to everyone that has made the effort to really make her feel welcome on the repeater and taken the time to rag chew.

This year it sounds as if we really have some really interesting presentations at the upcoming meetings. See you there.

73, Kevin, KD8QAM

MARC Minutes

Dorie French, N8WTQ

The meeting was called to order at 7:45 with 27 members and guests present. *(Meeting was held at the Midland High School Little Auditorium-Ed.)*

• The Treasurers report was given by W8QN. John also gave the EC/RO report.

The Skywarn® training will be held at the April meeting *(at the Law Enforcement Center)*.

On 12/7 the National Weather Service will be having a contest from 0001 to 2400 hours.

W1AW will have a special events call sign WA100AW for the contest. *(Actually, it has been secured for the 2014 Centennial Celebration of the ARRL and will be used all year long)*

ARES®/RACES was quiet this month. There was one strait-line wind damage area in Midland with Sturgeon, N. Saginaw, Wackerly and Jefferson as the boundaries for the most damage.

• The phone line at the repeater was discussed. The committee will be looking into alternatives for the telephone service. Larry N8CGP has one idea but it requires internet access.

• The MHS ARC has a call sign, KD8VWR. They have applied for a vanity sign W8MHS and will find out by 12/10 if they can get it. The class is attended mostly by MHS students but has students from another school attending also.

• The Christmas Party was held on 12/6 with 27 attendees. Carousel Catering did a fine job of making delicious food and drinks for us. Those present voted to have the party at the same place with Carousel Catering doing the food again. It was suggested we start later so those who have to work till 5 can arrive with enough time to visit before eating. The white elephant gifts were great fun also.

• The Santa Parade was a success. We had walkers who braved the bitter cold to pass out candy to the people watching. We had the Salvation Army SATERN vehicle and N8WTW's vehicle decorated. The walkers stopped at several places that were passing out hot chocolate. Everyone had fun. A big thank you goes out to all who took part in the parade.

• Keith KB8S0E asked for volunteers to ring the bells for the Salvation Army. Anyone who wishes to volunteer should contact him.

• Net Control:

Dec 12	John, W8QN
Dec 19	Lee, KC8ITI
Dec 26	Keith, KB8S0E

• There was a presentation by Dennis N8ERF showing what has been accomplished so far for the MHS ARC. After the meeting we had a tour of the facility. It is a very nice setup with places for operation and learning.

• A motion was made and seconded to adjourn at 8:45 p.m.

Respectfully submitted,
Dorie N8WTQ
Secretary

MARC MEETINGS

Art Peters, K0ACP, 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/examsearch.phtml?State=MI

SUBMISSIONS FOR NEWSLETTER

Contact Pat Mullet, KC8RTW at kc8rtw@arrl.net if you want to submit anything for the newsletter.

I need your items by the 15th of the month. Anything received after that may not make it into the newsletter for that month.

If you prefer to download the MARC newsletter from our web site, or have trouble with delivery via USPS, contact 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)

My Two Cents

Pat Mullet, KC8RTW

I found my interest piqued by an article in the January 2014 edition of QST. Entitled *Virtual Radar from a Digital TV Dongle*, author Robert Nickles W9RAN explains how to utilize a DVB-T usb stick— also known as a "dongle"— to access ADS-B signals from aircraft and display them on your computer screen.

If you'll remember, some time back Keith, KB8SOE gave a presentation on the inexpensive DVB-T dongles. Used

Amateur Radio is a Contact Sport!

throughout Europe for receiving their version of digital television on computers, hams world-wide are using the inexpensive receivers as the basis of sophisticated SDR receivers. Now this highly adaptive device is being put to new uses.

As author Nickles explains, ADS-B or "Automatic Dependent Surveillance – Broadcast," is part of the FAA's next generation aircraft tracking system, and appears to be similar to the APRS system used by hams all over the world. The aircraft determines its position via GPS, and then radios the packets to ground stations linked to a network that displays it to various airports and control centers.

I was already familiar with the nautical version of this system, AIS or "Automatic Identification System," which is used to track large boats and ships at sea and on navigable waterways such as the Great Lakes, and a quick Google search found page after page of websites illustrating how to use the DVB-T dongle to set up a receiving station for them. This info is being injected into several of the servers on the APRS internet backbone, and if you access them and set the filters correctly, you can monitor the ship traffic around the state.

Out of curiosity, I then Googled aircraft tracking with the RTL-SDR (RTL refers to the Realtek RTL2832U chipset that allows the DVB-T dongle to be used as an SDR) and again, found a wealth of information ranging from a number of homebrew antennas such as the one described in Nickels' article to a dazzling array of display programs running the gamut from self-contained mapping programs, programs that use Google Maps for display to programs that have the look and feel of air traffic control screens complete with routing information, airport control zones and small aircraft icons moving across the screen.

Obviously, this is only a cursory look at what's available, and as time goes on, it's only going to get more involved, which means, of course, that it's going to be more fun. Now, I think I saw a reference to building a monitoring set up based on an RTL-SDR module and a Raspberry Pi . . . .

Hope to catch you on the air.

73, Pat, KC8RTW

ARES® / RACES — John Wolters, W8QN

Well, let me get the business part of this article over, - There will not be an ARES®/RACES meeting in January.

Now for my ramblings. It has been a busy year for a number of us in the club. Public service activities with MS Walks both here and with Saginaw, the Dow Run and Marathon, the Dirty Dog Run, Safety Days, Boy Scout Jamboree on the Air, Field Day, Michigan QSO Party, MARC Swap, several license training sessions and testing, completion of the second remote repeater receiver, County Disaster exercise here in Midland and with Saginaw, training on State incident command software, several Skywarn® activations with flooding and severe weather, two parades, club picnic and Christmas party, and the little project called the Midland High School Amateur Radio Club. I know I have missed a few other activities but my memory fails me, please forgive me.

One little project, planning, agreement with Midland Public Schools, funding – which went well beyond what we thought we needed or could raise, working to install an excellent station setup for the students to use, gathering of test gear for training, and then the first meeting. As Dennis Klipa can also tell you, it's hard to hold your first meeting with no idea if anyone will show up. At 15 minutes to the appointed time there were a few students but being a high school, I knew we would not know the answer until 10 minutes after start time. And we were pleasantly surprised with an excellent turnout and the continued number at current meetings. So, a student radio club at the High School level is up and running with hopefully a bright future.

So what does 2014 look like? As we have been accused of before, we are creatures of habit and most of the 2013 activities will happen again in 2014. With that being said, here are a few more things that I know about that will be worked on.

1. The long planned expansion of the packet link at the hospital should start moving. We will be adding a 220 MHz link to the Saginaw Hospital System.

2. National Weather Service Skywarn® training will occur here in

Upcoming Events

12/31-1/1	Straight Key Night
4/3	SkyWarn® Training
4/19	Mi QSO Party
6/28-29	ARRL Field Day

Michigan Hamfests

1/12	Hazel Park
2/1	Negaunee
2/8	Traverse City
2/16	Livonia
3/15	Marshall
4/12	Highland
5/3	Cadillac
6/14*	Midland
6/15	Monroe
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.

Midland in April.

3. Some much needed maintenance work on the W8KEA Repeater will be discussed and planned. This should get rid of some of the noise on windy days and correction of the voice dropouts with the remote receivers, and reduction or total elimination of the repeater control costs.

4. More training in the use of digital modes (*FLDigi*) for routine and emergency communications.

5. Upgrade of equipment in the Coleman Fire Station. This may include the setup of an APRS site.

6. Addition of internet at the W8QN repeater which will open up a whole host of future possibilities.

7. And continued growth at Midland High.

So, I hope you have had a good 2013 and will stay with us in 2014. If you have anything you would like to see included in 2014, please do not hesitate to bring them up, but also be prepared to help with the work.

A Merry Christmas and Happy New Year to you and your family.

John Wolters
W8QN

VE Sessions Results

We had two VE sessions the week before Thanksgiving. In total there were five folks who earned new licenses and no upgrades.

The successful candidates were: Mitchell Ensz, KD8VZT; Tammy Royce, KD8VZP; Paul Royce, KD8VZO; Tina Austin, KD8VZN and Brad Keskey, KD8VZM.

Serving as VEs were: Dennis Klipa, N8ERF; Lee Hodges, KC8ITI; Del Lefevor, WB8FYR; Pat Russell, KD8IVZ; Art Peters, K0ACP; Larry Macklin, N8CGP; Mike Dougherty, KD8HMM and Jim Curtis, KB8TBI.

Best Regards,
Dennis, N8ERF
Lead VE

Midland High School Amateur Radio Club News

The club continues to be well attended. We have established a set of by-laws which got converted to a constitution to align the club with the rest of the school's organizations. We have elected 8 officers, including five vice presidents. The on the air activities continue. We have received two QSL cards; one a VHF contact with N8LBF and an HF contact from the Willamette University school club round up station, W7U. We received our club call sign, KD8VWR and immediately applied for the vanity call sign, W8MHS, which was approved on December 12th!

The kids continue to have fun in the lab learning more about electronics and ham radio. The students have completed their crystal radio set projects and have gotten introduced to the oscilloscope and rectifier circuits. The VE session netted one new student ham, Mitchell Ensz, KD8VZT. Congratulations Mitchell. We should be getting him on the air soon. Mitchell and a couple of other students have started learning CW. We also have two new students from the Calvary Baptist Academy joining the club, one of whom is Will, KD8RDJ.

The students continue to work on their antenna challenge. One of the teams has chosen a trap vertical. The problem is, none of us know how to model a trap vertical using *4nec2*. We need to work on that. We have extended to the deadline to January 15th for the design challenge. The best part is that the students are learning!

We continue to work on the cables and grounding system. On December 6th, Lee, KC8ITI and Dennis, N8ERF, working with Mike Arnold and Art Bessonette of Essexville Electric, installed the grounding system. The ground was frozen but N8ERF had laid out some insulation where we were going to have to hand-dig right around the tower and near the building where the enclosure was to be installed. That helped a lot. We had tried it the week before but had to quit because we could not break through the ground. Mike came back prepared with a small back hoe this time. Mike also installed the enclosure and Dennis installed the copper grounding panel and the copper straps connecting the grounding panel to the building ground and the tower ground system. There were a total of 9 ground rods installed. John, W8QN, has been putting Type N connectors on all of the coax we are installing. With some luck we will be operating the beam during the first meeting in January.

On December 13th, N8ERF, KC8ITI and Denny, WD8BPT stood around and watched Mike Arnold push the cable down the conduit to the box and install the electrical outlet we needed in the panel. Now all we need to do is run the cables out to the tower and antennas and hook up the lightning protectors. The rest of the cable install is scheduled for Tuesday afternoon, December 17th.

On December 16th, N8ERF is scheduled to give a presentation to the Midland Kiwanis group on the MHS ARC. Also, N8ERF has completed the required follow up report for the Dow Corning Foundation Grant. We are having a Christmas party at the December 18th meeting and there will be no meeting between Christmas and New Years.

Best Regards,

Dennis, N8ERF, Chair, MHS ARC Advisory Board.

On behalf of the Advisory Board: W8QN, KC8ITI, WD8BPT and KD8ULJ

It's Not Your Grandfather's Amateur Radio!

Michigan Section News — Larry Camp, WB8R

Greetings to the Hams of Michigan:

Here we are at the end of another year and the end of my first term as your Section Manager. I look forward to the next 2 years as your SM working with the hams of this great state to enjoy this hobby and to accomplish various goals for amateur radio.

At the Holiday Season, our thoughts turn to our families, friends and neighbors and focus on the good things in life and our individual and collective wishes for the coming year to be better for everyone than the previous year. We also think of those less fortunate than we are and do what we can to help provide for them. Our thoughts also turn to those brave men and women who risk their lives to protect our country in the military forces and the police and fire departments in our communities.

I would like to pass along best wishes for the holiday season from Diane and me to you and your families. My thanks go to the Michigan family of volunteers who work so hard for amateur radio in Michigan. A special thanks to the Section Staff for their tireless efforts as well. I look forward to 2014.

PRB-1 Update

As you know, our PRB-1 Bill (SB 0493) is currently in the Senate Energy and Technology Committee. At some point in the near future, we will be called upon to testify before this committee in an effort to convince the committee members to favor our bill and pass it on to the Senate for their consideration.

At this stage of the game, our hearing will not happen until after the Senate resumes session in January after the holidays. We ask that you stay tuned and be prepared to write letters (we will provide those letters for you) of support when the time comes.

It is recommended that you opt to receive Section Bulletins via email. You can do this on the ARRL web page (www.arrl.org) when you log in and edit your profile to receive said bulletins. This is where the call to action will appear when the time comes.

Thank you for your continuing interest. I wish I could say that it was 'one and done', but that is not how the system works.

Digital HF Help Wanted

Last month I published a request for volunteers with HF digital knowledge and experience to assist other hams with getting started using the digital modes.

I am happy to report that two very qualified hams have volunteered to assist us in this project. Stephen, WA8LMF from the Lansing area and John, KC9ON from the Gaylord area have stepped forward. I would like to have another individual or two to help cover the Detroit metro area and the SW Michigan area. If you are interested, email me at wb8r@arrl.org.

The first pass at a presentation has already been developed and we are working on adjustments and enhancements and hope to have things ready for a spring roll out.

Once again, here is what we are looking for:

We are looking for hams in various parts of MI with digital HF knowledge and experience to help other hams learn how to get started using various digital modes on HF. These individuals should have hands on experience with a variety of digital modes and be capable of teaching others to be capable of setting up their own stations and get on the air. These individuals should be willing to travel reasonable distances at times that fit their schedules to attend club meetings near their home areas to present instructional programs.

Michigan Amateur Radio License Plates

The State of Michigan has recently updated the selection of Amateur Radio Operator (ARO) License Plates. The new plates feature a radio tower on the left side with red 'lightning bolts' emanating from the top of the tower. You can see pictures of the new plates here: http://www.michigan.gov/sos/0,4670,7-127-1585_1595_21641-55680--,00.html

Keep in mind that the page you are looking at with the pictures is not an application for license plates. It is an application for collector plates which cannot be used as a vehicle plate. It is the only place we could find a likeness of the new plates.

To purchase an Amateur Radio License plate, go here: http://www.michigan.gov/sos/1,1607,7-127-1585_11459---,00.html Look near the bottom for 'Other Plates' for the Amateur Radio Operator PDF order form MV-74. Fill out the form accordingly and you will have a new fancy plate with your call on it in about 2 weeks or so. The cost for the basic plate is $2 plus registration fee and the fancy plate is $7 over the registration fee. You will have to send a copy of your ticket with the application.

Thanks to Dave, N7DAM for bringing this to my attention.

73 until next month,
Larry, WB8R
Section Manager
ARRL Michigan Section

Technical Topics and Information

(ARRL Contest Update—Nov 20, 2013) Following some recent discussion about the performance of UHF-series connectors at VHF and UHF, Larry WØQE made some VNA measurements and has published them online. He went further to determine how to compensate the observed impedance mismatches in the 500 MHz region verified them using the *SimSmith* software by AE6TY.

John N2NC reminds us of the nice weekly report available from NOAA's

Space Weather Prediction Center, "The Preliminary Report and Forecast of Solar Geophysical Data, called "*The Weekly*", summarizes a week of space weather activity and provides outlooks for solar and geophysical activity for the next solar rotation -- 27 days." And the price is certainly right!

Over the summer, Jim K9YC did extensive modeling (NEC) of vertical quarter-wave and vertical dipole antennas, comparing performance on the ground and at typical roof heights. A report on that work is available online in the form of PDF slides from the PowerPoint presentation Jim gave at the Pacificon convention in October. He notes in summary, "for all vertical antenna types and almost all soil quality, roof mounting outperforms ground mounting. The advantage of roof mounting is greatest for the poorest soil, varying from as much as 8 dB for very poor soil to a dB or so for extremely good soil."

The return of the vacuum tube is making some news lately. While your stock of 807s and UV-201 is unlikely to suddenly fund your retirement, "field-emission devices" have their strong points and a hybrid of semiconductor and tube technology is attractive in certain applications. (Thanks, Art WØKG)

Roger K8RI notes, "when you see a white insulator in connectors, it is often High Density Polyethylene (HDPE) and not Teflon. HDPE has very poor thermal characteristics and has a hot oil-like smell when heated." To test for HDPE, "Put the tip of a small, hot, soldering iron on Teflon and nothing happens, but on HDPE it quickly leaves a dent. Held side by side the Teflon is a whiter white while the HDPE is slightly darker and very smooth, almost slippery, to the touch."

Larry WØQE takes a really close look at our favorite connectors in his online article.

Dan AC6LA has released *TLDetails* to plot Velocity Factor (VF) vs frequency for any of about a hundred different types of feed lines, including Bury-Flex. Sample plots show that the higher the loss, the more the VF drops off at lower frequencies. Jim K9YC notes that before cutting stubs for filters or matching, "determine VF for the coax you're using and don't count on the published value being right. Most solid dielectric coax is close to 0.66 and most foam is in the range of 0.75 - 0.85."

Solid-state amp builders may be interested in the microprocessor-based amplifercontroller from VK4DD Software is available for modification, too. The controller uses a PIC microprocessor and has a serial-interface LCD display. There are several other great projects on the site, as well. (Thanks Don K9AQ)

VK4DD has created this amplifier control module display, showing it off along with several other interesting designs on his website.

This "*Rarely Asked Questions*" article from *Analog Devices* lists quite a number of online design tools and their associated support communities. These are useful to amateurs and professionals alike!

Matt KM5VI relays the important point about taking time to confirm the polarity of baluns in arrays. It is not unknown for two baluns from the same manufacturer with identical part numbers wired with the load side connections internally reversed with respect to the casing of the unit. A reversed connection would greatly alter the antenna's performance.

Technical Web Site of the Week - Andrè DF9OX reports that "I am using the spitfire array now for 10 years on 80 meters, with a single center tower and 4 directional wires, switched as director/reflector. The array is ok, giving some dB gain, f/s and f/b mostly OK" He notes that the performance is a bit below a 4-square, but likes the performance of this wire array. Peter DF3KV has provided an online description of the array, which will be updated as the array is used this winter.

More Technical Topics and Information

(The ARRL Contest Update—Dec 4, 2013) The following is a discussion from the RFI reflector on finding RFI from street lights by Frank Haas KB4T, a utility RFI investigator in Florida. With these RFI sources being a common irritant to the active contester, Frank's explanations and suggestions are good information:

"As a Utility Interference Investigator, I run into bad street lights all the time. The most common failures are cycling and constant "invisible" RFI. Listening with a radio tuned to a quiet spot (or 1710) on the broadcast band, you can usually hear the repetitive street light symphony. Sometimes the RFI produced by these failed cycling lights can be heard as high as 325 MHz.

"In my region, the cycling street lights can produce the following sounds in a receiver. As the bulb first dimly lights, the RFI begins. In the receiver a broadband buzzing modulation can be heard that seems to have a low pitch. As the street light bulb increases in brightness, the pitch of the modulated RFI increases in lock step with the bulb's brightness. At full brightness the RFI's modulation reaches its highest pitch and greatest loudness. When the bulb goes out about 10 seconds later, the RFI stops. In 30 seconds to a minute, the process repeats.

"When a street light produces constant, unchanging RFI, it can be heard strongest at low frequencies. Only 50% of the time have I been able to detect a street light producing constant RFI at frequencies above 50 MHz. The light DOES NOT need to be illuminated to produce this constant RFI. However, it's usually very easy to pinpoint the offending light...either the photocell or ballast are bad.

"Like any other RFI source, finding a bad street light requires a portable/mobile receiver with RF Gain control, signal level indicator and directional antenna (or sensible technique based on signal strength). Not all street light RFI manifests itself as visible light. However, it can always be heard. Good DFingtools and technique will get the

Straight Key Night 19:00 Dec 31 through 18:59 Jan 1 EST

problem located promptly so repairs can be ordered."

Fellow investigator, Mike Martin K3RFI, notes "The cycling lights are High Pressure Sodium (HPS) type and if cycling only at night the photocell is functioning properly. If the light cycles 24/7 the photocell is also bad. It's more common to be 24/7. The defective photocell causes the lights to fail earlier than normal. HPS bulbs are a common source of RFI on 40 and 80 meters and is (observed as) a single spike when using a scope. The cycling is caused by the element in the bulb opening when it gets hot. During the noise cycle the bulbs usually illuminate. This makes them easier to locate in the dark."

Technical Web Site of the Week - As the designated electronic repair person in most households, you will enjoy this collection of helpful test hints for debugging that holiday hoo-doo, the bad light string. May this help you complete the job and get back to operating, watching football, raiding the fridge, or whatever you'd rather be doing!

Swap and Shop

The family of silent key Larry Davison, WD8RIK is offering the following items from his estate for sale:

• Kenwood TS-530 HF Transceiver with Electro-Voice 727 mic and two serviceable 6146 B tubes $350.00

• ~~MFJ-962-D tuner - $175.00 sold~~

• Amertron AL-811 amplifier - $475.00

• RadioShack PRO-2040 - -$25.00

• Kenwood TM-261 2 meter mobile - $85.00

• Icom IC-2100 2 meter mobile - $85.00

• MFJ-4035 power supply - $35.00

• Radio Shack HTX-202 - $25.00

Knight KN-2557 receiver - $50.00

• ~~Johnson Viking Matchbox tuner $50.00 sold~~

• Knight T150A Transmitter - $75.00

• ~~Radio Shack HTX-10 - $100.00 sold~~

• Larry also had a very nice Universal 40 foot self-standing tower on a tilt mount and miscellaneous antennas (Cushcraft MA-5B, G5RV, 10 meter Ringo, 2 meter J-pole, etc) still standing. Make offer.

If interested call Jennifer (Larry's daughter) at (989) 791-1237

All of these items other are being sold as is.

Thanks,

Dave Schneider, N8ERL

MARC Vital Statistics

Memberships Expiring in December

K0ACP W8AWS

Memberships Expiring in January

KA8EZT KD8IVZ WB8WNF
KC8GRQ KD8IWB
KD8HIH KD8RMG

Memberships Expiring in February

AA8EJ W8NON WB8RCR
N8STF WA8Y

Current Active Club Membership 43

Birthdays Celebrated in December/January

WB8WNF 12/7 NX8A 12/22 N8KRL 1/24
N8ERF 12/10 WA8KJR 1/2 W8ZSX 1/28
N8CGP 12/21 KA8HQW 1/13 KD8HID 1/29
AB8JF 12/21 KD8IVZ 1/20 KB8QWQ 1/29

Anniversaries Celebrated in December/January

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
N8ERFand N8NNA 12/23
KA8EZT and Linda 1/2

Information is from data received 10/10/2013
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