



# MICH-A-CON

Iron Mountain,  
Dickinson County, Mich

December 2016

## Meeting Reminder: [Second Wednesday of the Month](#)

Which is **December 14, 2016** at 07:00 PM at the Dickinson Library, Iron Mountain.

## From The President

It is COLD! What more can I say? I even gave up on my last week of deer hunting because my old bones weren't able to take the wind and cold. AND, I hunt from a toasty warm blind! So. It's no surprise that I didn't get any venison this year!

Well, I did manage to get the QSL cards and certificates out for K8V. There were 13 cards and 7 certificates to fill out and mail. Two cards requests came with no SASE. Thanks to a Canadian ham, who sent more cash than was needed, I mailed out the two cards. I just don't understand why hams send a card, want one in return and don't send a SASE.

The K8V operation went quite well this year. Band conditions weren't the greatest but Scott's new 40 meter antenna was fantastic. He made 227 contacts on 40 and had a huge signal. I made 48 contacts on 20 meter RTTY with 11 countries including Japan. The multi-band dipole worked well. Our 2017 Veterans Day Event will be on November 10-12.



I spent about 45 minutes last weekend dabbling in the 10 meter RTTY contest. I made a grand total of 7 contacts. Judging from the results that I've seen so far, the contest was a bust. There were zero European stations on but VP8NO, in the Falkland Islands, answered my CQ for the only DX.

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The 10 meter CW and SSB contest is on this weekend (December 10-11) and there are more signals, as I tune the band while typing these words. Most of the signals are from 4-land. Virginia is booming in at 20 over 9. No DX heard yet. Looks like 10 is going south with the geese!

I worked three stations from Brazil on 10 CW. Both were barely S5.

The past week the XYL has been cleaning out her area of the basement. Today was my turn to decide what goes and what stays! I have a box full of old QST and National Contest Journal magazines. I will bring them to the meeting Wednesday. I also have a few ham station accessories to bring.

By the way, the Drake SW-4 receiver given to the club at the last meeting doesn't work. Hopefully, some new member will take a look at it. Hint!



Get your party hats ready for our annual club dinner party. It will be on March 4<sup>th</sup> at Bartoletti's. There will be a select menu like last time.

See you all at the next meeting on Wednesday, December 15, in the library at 7:00 PM.

73,  
Tom W8JWN

## **MICH-A-CON AMATEUR RADIO CLUB MINUTES OF November 9th 2016**

President Tom Martin called the meeting to order at 7:00 pm.

### **Secretary Report**

Minutes of the October 12th meeting were read and approved.

### **Treasurer Report**

Balances as of November 9, 2016:

Checking - \$2.72

Savings - \$1875.41 (Repeater - \$422.60)

Petty Cash - \$22.00

### **Repeater Report**

Bob Meyers reported that both the two-meter and 440 units are working, although the 440 is not connected to the controller, yet. It will get set up following hunting season.

### **Old Business**

Tom Martin reported that we are still waiting for our federal tax number. We also will need to submit an annual financial statement. The cost is \$25.00 and it is due by February 17.

Terry Moriarity reported that all QSL cards from the Lighthouse activation have been sent out. This amounted to about ten cards.

U.P. International Trucks, Inc. has been added to our insurance.

The Veterans Day special event plans were finalized:

Thursday, November 10

Equipment pick-up from the van on at 12:30.

Setup, at the hill, between 1:00 and 3:00.

Friday, November 11

Meet between 8:00 and 8:30

Operate from 9:00 to 5:00

Saturday, November 12

Operate 8:30 to 3:00 or 4:00

Teardown to follow.

Equipment

Antennas: Collinear/dipole (40-meters), Multiband trap antenna, and a spare.

Radios: Kenwood TS-440 (club) and FT-1000MP (Tom Martin)

Laptops: Two, belonging to the club.

### New Business

The club party will be scheduled for the last weekend of February at Bartoletti's.

Bob Meyer noted that he has had inquiries from people interested in getting an amateur radio license. Conducting a class, after Christmas, is a possibility.

The present club officers were re-approved, unanimously.

President: Tom Martin, W8JWN

Vice President: Scott Jarmusch, KA8TFF

Secretary: Joe Ferris, KC9TQR

Treasurer, Debbie Grabowski, KD8VTS

### Adjournment

The meeting was adjourned at 7:22.

### For the Good of the Order

Attendees reported on their recent activities.

The 50/50 drawing was won by Debbie Grabowski. Thirty-two dollars went to the club treasury.

Submitted by Joe Ferris

### Attendees

Tom Martin, W8JWN - President

Scott Jarmusch, KA8TFF - Vice President

Debbie Grabowski, KD8VTS - Treasurer

Joe Ferris, KC9TQR - Secretary

Burt Armbrust, Sr., WB8EBS

Gary Schafer, K4FMX

Terry Moriarity, K9TRY

Sam Holmes, N8ATS

Bill Grabowski, KD8VTT

Bob Meyers, WA8FXQ

Marge Meyers, KC8LRP

Tim Miller, N8TUM

Dave Thomas, KG9Y

Mike Cappelli, Visitor

Joyce Williams, Visitor

Joyce Williams, Visitor

## News

### NCVEC Question Pool Committee Seeks Comments on the Technician Question Pool

ZCZC AG43 QST de W1AW  
ARRL Bulletin 43 ARLB043  
From ARRL Headquarters  
November 18, 2016  
To all radio amateurs

The National Conference of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC) is reviewing the 2014-2018 Technician question pool for revisions and updates. The QPC will accept comments and suggestions from the Amateur Radio community via e-mail through March 31, 2017 at, [gpcinput@ncvec.org](mailto:gpcinput@ncvec.org).

The NCVEC QPC will take all comments and suggestions into consideration as it updates the Technician question pool for 2018-2022. Input from the Amateur Radio community may include suggestions for new questions, changes to the topic areas, or changes to existing questions in any of the current Amateur Radio examination question pools.  
NNNN

### Amateur Radio Parity Act, HR 1301

12/09/2016

The Amateur Radio Parity Act, H.R. 1301, died an unbecoming death as the 114th Congress of the United States drew to a close today. After having passed the House of Representatives on a unanimous vote, the bill stalled in the Senate due to the intervention of only one member, Sen. Bill Nelson (D-FL).

Over the course of the past year, Sen. Nelson has received thousands of e-mails, letters, and phone calls from concerned constituents asking for his support of H.R. 1301. Numerous meetings were held with his senior staff in an effort to move the legislation forward. Negotiations, which led to an agreement with the national association of homeowner's associations and publicly supported by CAI and ARRL, were brushed aside by Sen. Nelson as irrelevant.

In a final meeting with the Senator's staff earlier this week, it became clear that no matter what was said or done, the Senator opposed the bill and refused to allow it to move forward. Unfortunately, as the bill did not receive floor time, the only manner in which it could get passed in the Senate would be through a process that required unanimous consent, which means no one opposes the bill.

The legislation will be reintroduced in both houses of Congress after the 115th Session begins in January. We have already been in contact with the sponsors of the bill to allow for an early introduction, which will give us more time to obtain success. We believe that we can get his bill adopted given the fact that we were inches away from



crossing the goal line. We will continue to need the support of the membership, particularly in Florida, as we go forward through the next year.

## ARLB032 W1AW 2016/2017 Winter Operating Schedule

ZCZC AG40 QST de W1AW  
ARRL Bulletin 40 ARLB040  
From ARRL Headquarters  
November 7, 2016  
To all radio amateurs

### Morning Schedule:

Time	Mode	Days
1400 UTC (9 AM EST)	CWs	Wed, Fri
1400 UTC (9 AM EST)	CWf	Tue, Thu

### Daily Visitor Operating Hours:

1500 UTC to 1700 UTC - (10 AM to 12 PM EST)  
1800 UTC to 2045 UTC - (1 PM to 3:45 PM EST)  
(Station closed 1700 to 1800 UTC (12 PM to 1 PM EST))

### Afternoon/Evening Schedule:

2100 UTC (4 PM EST)	CWf	Mon, Wed, Fri
2100 " "	CWs	Tue, Thu
2200 " (5 PM EST)	CWb	Daily
2300 " (6 PM EST)	DIGITAL	Daily
0000 " (7 PM EST)	CWs	Mon, Wed, Fri
0000 " "	CWf	Tue, Thu
0100 " (8 PM EST)	CWb	Daily
0200 " (9 PM EST)	DIGITAL	Daily
0245 " (9:45 PM EST)	VOICE	Daily
0300 " (10 PM EST)	CWf	Mon, Wed, Fri
0300 " "	CWs	Tue, Thu
400 " (11 PM EST)	CWb	Daily
401		

### Frequencies (MHz)

CW: 1.8025 3.5815 7.0475 14.0475 18.0975 21.0675  
28.0675 147.555  
DIGITAL: - 3.5975 7.095 14.095 18.1025 21.095  
28.095 147.555  
VOICE: 1.855 3.990 7.290 14.290 18.160 21.390  
28.590 147.555

### Notes:

CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15 WPM  
CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 and 10 WPM  
CWb = Morse Code Bulletins = 18 WPM  
CW frequencies include code practices, Qualifying Runs and CW bulletins.

DIGITAL = BAUDOT (45.45 baud), BPSK31 and MFSK16 in a revolving schedule.

**Beginning in January 2017**, the voice mode used for W1AW's 40 meter voice bulletins will be full-carrier, double-sideband AM.

Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds.

On Tuesdays and Fridays at 2330 UTC (6:30 PM EST), Keplerian Elements for active amateur satellites are sent on the regular digital frequencies.

A DX bulletin replaces or is added to the regular bulletins between 0100 UTC (8 PM EST) Thursdays and 0100 UTC (8 PM EST) Fridays.

Audio from W1AW's CW code practices, CW/digital bulletins and phone bulletin is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The monthly W1AW Qualifying Runs are presented here as well. The audio is sent in real-time and runs concurrently with W1AW's regular transmission schedule.

All users who connect to the conference server are muted. Please note that any questions or comments about this server should not be sent via the "Text" window in EchoLink. Please direct any questions or comments to [w1aw@arrl.org](mailto:w1aw@arrl.org).

**In a communications emergency**, monitor W1AW for special bulletins as follows: Voice on the hour, Digital at 15 minutes past the hour, and CW on the half hour.

All licensed amateurs may operate the station from 1500 UTC to 1700 UTC (10 AM to 12 PM EST), and then from 1800 UTC to 2045 UTC (1 PM to 3:45 PM EST) Monday through Friday. Be sure to bring your current FCC amateur radio license or a photocopy.

The W1AW Operating Schedule may also be found on page 83 in the November 2016 issue of QST or on the web at, <http://www.arrl.org/w1aw-operating-schedule>.  
NNNN

# ARRL MICHIGAN SECTION NEWS

Greetings to the Hams of Michigan:

We are just days away from our annual Thanksgiving Holiday. This is the time that we gather with members of our family and with friends to share a meal (or more) and most importantly to be thankful together for the bounty that is ours in this wonderful country.

**Both Diane and I send Thanksgiving holiday greetings to you and your families.**

## **Irish Hills Hamfest at Michigan International Speedway**

We are still hard at work laying the groundwork for the upcoming Irish Hills Hamfest at Michigan International Speedway (MIS) on October 7-8, 2017. I have been criss-crossing the Southeastern Michigan area meeting with clubs to build interest in the event, and thus far, I am extremely gratified at the positive response. More details soon....

## **HB 6857 Update**

The Michigan Distracted Driving bill known as HB6857 will most likely time out in the current Legislative session in Lansing and will be reintroduced in the new session with a different bill number. The Michigan ARRL team will work with the author of the bill (Rep. Howyrlak) to ensure that ham radio mobile operations are not compromised. You will be hearing more about this bill in 2017. As a point of clarification, our purpose here is to do our best to ensure that our ability to pursue our ability to use our radios while driving our vehicles is not infringed upon. We take no position on the purpose of the bill.

## **Amateur Radio Parity Act**

Urge the U.S. Senate to Pass the Amateur Radio Parity Act Ask your Senator to support the Amateur Radio Parity Act when it comes to the Senate floor during the lame duck session.

Time is of the essence! The Amateur Radio Parity Act, having successfully cleared the US House, now awaits action in the US Senate.

If the bill is not passed before the Senate adjourns for the year in December, it will "die" and we have to begin the entire process in both houses of Congress when the 115th Congress is sworn in come January 2017.

Please use the links below to contact your US Senators and request they support the bill when it comes to the Senate floor during the "lame duck" session, between now and mid-December's adjournment.

The link to the website is:

<https://arrl.rallycongress.net/ctas/urge-us-senate-to-pass-amateur-radio-parity-act>

Please note the 'Remember Me' box near the bottom of the form. If you have other hams besides yourself who wish to send letters, simply uncheck the 'Remember Me' box so that you can process multiple letters from the same computer.

This is important! Please make sure that your local clubs make a computer available for your members to send their letters. This is incredibly easy to do. So easy that there is no good excuse for not doing it.

## **Club Officers Elected**

The Blossomland ARC has just elected the following hams to the term that runs from October 2016 to September 2017:

President: Tim Richards, KD8NOH

1st Vice President: Dan Utroske, KF8Z

2nd Vice President: Ken Jewell, N8OL

3rd Vice President: Matt Adrian, KD8ZB

Secretary: Annie Kaeding, W8ALK

Treasurer: Gary Wallis, KB8VIM

Trustee: Ron Ackerman, N8KBG

Public Information Officer: Justin Edenfield, K8JDEWW

Thanks to Randy, K8TMK for providing the information and thank you to all who volunteered to serve and to lead. Clubs are the true lifeblood of amateur radio and accepting the leadership challenge is a noble offering of your valuable skills and time.

### Michigan State Parks on the Air

Work continues on the 2017 – 2019 Michigan State Parks on the Air event to make this the best state parks event ever!

### Section Staff Travel Plans

Nov 17 SMARS Club Meeting, Battle Creek, MI – WB8R

Dec 4 L'Anse Creuse Swap, Madison Heights, MI – WB8R

Dec 9 Central MI ARC, Lansing, MI - WB8R

Dec 20 CARS Club Meeting, Jackson, MI – WB8R  
2017

Jan 29 Hazel Park Swap & Shop, Madison Hgts, MI – WB8R

**Feb 4 Hiawatha Amateur Radio Assn Swap – Negaunee, MI – WB8R**

Feb 7 – 10 MPSCS Interop Conf., Traverse City, MI – WB8R, et al

Feb 11 Traverse City Hamfest –WB8R

Feb 19 Livonia ARC Swap & Shop – WB8R

Mar 4 MI Section Staff Meeting – Lansing, MI WB8R & Section Staff

Mar 11 Lowell Amateur Radio Youth Club Hamfest – WB8R

Mar 18 Crossroads Hamfest, Kalamazoo, MI – WB8R

**Apr 22 Chassell Hamfest, Chassell, MI**

May 6 Cadillac Hamfest, Cadillac, MI – WB8R

### Hospitality Acknowledgements

Thanks to the following groups for their fine hospitality on recent visits:

Oct 15, 2016 Muskegon Swap, Muskegon, MI

Oct 16, 2016 Kalamazoo Hamfest, Kalamazoo, MI

Oct 20, 2016 Monroe County Radio Comm. Assn Mtg  
75th Anniversary

Oct 25, 2016 Cherryland ARC Meeting, Traverse City, MI

Oct 30, 2016 USECA Swap & Shop, Madison Heights, MI

Nov 1, 2016 OCARS Meeting, Waterford, MI

Nov 9, 2016 Arrow Club Meeting, Ann Arbor, MI

### Michigan Section Traffic/ARPSC Nets (all times local)

Please note that time adjustments may be necessary due to propagation changes. Contact your net manager for alternate frequencies and/or times.

MACS - MI Amateur Communications System 3.952 1000  
Daily

UPN – Upper Peninsula Net 3.921 1700 Daily;  
Noon Sunday

MIARPSC – MI Amateur Radio Public Service Corps 3.932  
1700 Sunday

QMN – The Michigan Net 3.563 1830 and 2200 Daily

MITN – MI Traffic Net 3.952 1900 Daily

MIDTN – MI Digital Traffic Net 3.583 (Olivia 8/500) in  
waterfall 2000 Tues, Thurs, Sat

MIADS – MI ARES D-Star Net Reflector 24A Mon 2000

D8EN - District 8 Emergency Net 3.909 Wed 2100

GLETN – Great Lakes Emergency and Traffic Net 3.932  
2000 Daily

MVTN – MI VHF Traffic Net IRA Link System 2100 Mon,  
Wed, Fri, Sun

NLEUP - Northern Lower Eastern UP Net 146.64- 18:30  
Daily

SEMTN – SE MI Traffic Net 146.76- 2215 Daily

TMMTN – Thumb Mid-Michigan Traffic Net 147.30+  
2130 Mon - Sat

More information is available at <http://nts-mi.org/>.  
Come join us on our traffic and public service nets.

### Michigan ARPSC Activities September 2016

While the following paragraphs are from WB8RCR, I add my hearty thanks to those who, on their own, decided to be prepared just in case their fellow citizens needed them. These gentlemen are part of a great Michigan Ham Radio Tradition!

Because several counties asked their ARES programs to be prepared in case of issues on election day, we decided to activate the station at the SEOC to support them. It promised to be a long, boring day since we expected little activity. We did contact quite a number of counties, fortunately nobody reported any problems.





The SEOC Station Manager, K8RDN, was doing his civic duty as a poll worker, so I was very pleased when five operators stood up to help. I would like to publicly thank KE8ACA, WD8BCS, N8ERF, K8JJU and W8TCC. With all those folks there we got a lot done around the station, and it wasn't boring at all! We closed the station at 9 PM.

Station Activity Reports (SAR): October, 2016: WB8WKQ 406, K8ED 245, WB8TQZ 144, WD8MWD 119, K8RDN 62, WD8USA 46, N8OSL 17, WB8RCR 15, KC8NFN 12, N8UN 8.  
Total SAR reported: 1077

Brass Pounder's League (BPL): None

Public Service Honor Roll (PSHR): WB8RCR 350, WB8R 206, K8RDN 198, KC8YVF 198, WD8MWD 150, WD8USA 130, N8OSL 112, WB8TQZ 110, WB8WKQ 110, K8ED 100, KC8NFN 52, KD8LSM 28, KE8BYC 23.

**Michigan Net Activity:**

Michigan Amateur Communications System 118, The Michigan Net 108, Michigan Traffic Net 106, Great Lakes Emergency and Traffic Net 44, Upper Peninsula Net 40, Southeastern Michigan Traffic Net 32, Michigan Digital Traffic Net 12, District 3 ARPSC Net 6, Bay Area Regional

Traffic System 1, Michigan VHF Traffic Net 1, District 8 Emergency Net , Michigan Amateur Radio Public Service Corps , Red Cross Net of Greater Grand Rapids , District 5 Hospital Net , Branch County Emergency Net , Michigan ARES D-Star net , Luce County ARES Net , District 8 Digital Emergency Net , Chelsea ARC Net .Total net traffic reported: 468

Volunteer Hours Dollar Value:

ARPSC: \$ 191,771

NTS: \$31,352

Total Dollar Value October, 2016: \$223,123

A hearty thank you goes to the hundreds of volunteers across the State of Michigan who work hard as volunteers to hone their skills month after month to make sure they are ready for any situation that may arise. Our ARPSC and NTS programs are an integral part of AuxComm, which in turn is an integral part of the Michigan Homeland Security Division.

73 until next time,

Larry, WB8R

***Dales Tales***

Greetings everyone, welcome to "Dale's Tales" for December 2016.

"**THANK YOU FOR ACTIVATING**" are the words I have heard so very frequently during all of 2016. Our National Parks on the Air operating event has been a wonderful activity throughout this year and operators have displayed more courtesy than I can ever recall in the 54 years that I have been a ham. One of our local hams called it to my attention and it certainly is true. While most hams are normally quite courteous, often in contesting and challenging events, those courtesies get set aside. I know I have done that. This event, is different. Folks wait their turn, are complimentary and express their thanks.

NEAT! At last count, with still a month remaining, there are more than 926,803 National Park QSOs entered in Logbook of the World. This leaves little doubt we are going to hit a million! What a great event. Thank you for operating! (What's next?)

**YOUR ARRL BOARD** worked diligently this year to make some significant improvements within our organization, some you may have seen directly, some you may have seen the side effects, while others remain works in progress. We have a new CEO, we have some realignment of Headquarters job duties to spread the workload more evenly, and we have made some technical improvements to Logbook of the World, just to name a few. A couple of wanted and fairly significant changes for the Field Organi-

zation are currently being vetted in committee. We hope those will be approved and authorized at the January Board meeting. In addition, and of real import, the ARRL Foundation granted many scholarship awards this year and accepted more scholarship endowments to its list of available programs.

**SPEAKING OF AWARDS**, now we begin our search for outstanding individual hams who whose talents and/or service to our hobby and the community may qualify them for the unique awards that ARRL has to offer. Awards for your consideration include The Hiram Percy Maxim Award, The ARRL Herb S. Brier Instructor of the Year Award, The ARRL Microwave Development Award, The ARRL Technical Service Award, The ARRL Technical Innovation Award, and The Knight Distinguished Service Award.

Opportunities are now open for members to nominate candidates for these awards. Look around; one of your local club members may be well qualified to be so honored. For further information or questions, you may check the ARRL Web pages for award criteria, or contact Sean Kutzko at Headquarters, (860) 594-0328.

**IT HAS BEEN A MAD SCRAMBLE** as our Washington lobbyists and the ARRL Legislative Action Team get down to the final stretch for the Amateur Radio Parity Act. We await approval by the Senate. The Congressional Session ends on December 31. At the time I am composing this newsletter, we have no way to predict the results of this effort.

Regardless of the outcome, on behalf of the L.A. Team and the ARRL Board of Directors, I want to thank each of you in the Division for your personal efforts to request our elected officials to support the proposed legislation to allow hams living in deed-restricted communities to install effective antennas.

**TOM'S COMMENTS:** Comments from our Vice Director Tom Delany W8WTD

I can't help it. Sometimes I find very interesting connections in the most wildly different situations in ham radio.

Let's start with youth. Early in November, we had a great celebration in West Chester, Ohio, for Chris, KD8YVJ, the winner of the

2015 Maxim Award. It was wonderful to have Dale present him with that national award, with so many family members, club members and other hams around. And it was quite special to see what a great operator this young man has become. I'm sure he was pleased to make so many contacts and hear from so many in the division. But for us who were there in the room with him, it was a treat to see him operate.

And another youth story. An eleven-year-old from Ohio just got his license. While not his Elmer by any means, I was pleased to have some small part in coaching him for the test. He's now on the air, and very excited about being a ham.

What motivates these young people to be hams? Having a parent as a ham is a big help, of course. But that's not all there is, or we'd have far more young people clamoring for licenses. What is that unknown factor or factors?

For that matter, what is it about ham radio that motivates those of us who should know better than to stand around in the cold November weather, operating? Recently, I was part of a group that helped coordinate a local parade. There's something about public service that calls us out to help. That same weekend, somewhat on the spur of the moment, I joined some hams I know who were activating one of the National Parks in our area. Why do grown men sit around in a field with a radio and an antenna, trying to do our part to make the NPOTA a one-million-contact event, contributing our measly 120 or so contacts?

It was cold and damp, for goodness' sake! (And fun!)

There are many reasons to become a ham, and many more reasons to be an active ham. We older folks know what motivated us, and those aren't the same reasons that motivate the new hams of today. We have to keep finding out what the motivations can be, the new ones and the old ones, so we can tap into that and help keep amateur radio going in its second century.

What thoughts do you have about licensing, education and youth? I'd love to hear from you.

73, Tom W8WTD Vice Director, Great Lakes Division



Here is the current Great Lakes Division ARRL Sanctioned Hamfest Schedule covering the next few weeks. These swaps have received their sanctioning approval from ARRL HQ at the time of this publication. We have approximately 65 ARRL hamfests each year in the Division. I do encourage each Hamfest Chair to register early for ARRL Sanctioning.

Be sure to invite your ARRL Officials as soon as your date is set. Tom and I are already committed for several dates in 2017 as are our Section Managers Scott N8SY, Alan KY1O and Larry WB8R.

- Dec 3 - Fulton County Winterfest - Delta, OH
- Dec 4 - Lanse Creuse Hamfest - Madison Hgts, MI --  
NEW LOCATION
- Jan 15 - SCARF Hamfest - Nelsonville, OH
- Jan 29 - TUSCO Hamfest - Strausburg, OH

**Feb 4 - HARA Swap - Negaunee, MI**

- Feb 11 - Cherryland - Traverse City, MI
- Feb 19 - Mansfield - Mansfield, OH
- Feb 19 - Livonia - Livonia, MI

Be sure to check your Section's news pages for the latest local happenings, club and net information.

73, and from Judy and me, the very best wishes throughout this Holiday Season.

Dale Williams WA8EFK  
Director  
Great Lakes Division

**ARRL PROPAGATION BULLETIN**

QST de W1AW  
Propagation Forecast Bulletin 50 ARLP050 From Tad Cook, K7RA Seattle, WA  
December 9, 2016 To all radio amateurs

12, 10 and 8 on December 22 to 25, 5 on December 26 to 31, then 8, 5, 12 and 15 on January 1 to 4, 20, 18 and 12 on January 5 to 7, 5 on January 8 to 13 and 8, 12, 16, 22 and 30 on January 14 to 18.

Average daily sunspot number for the past week (December 1 to 7) was 40.9, up 10 points from the previous seven days at the end of November.

Here is a summary of our recent 3-month moving average of observed daily sunspot numbers, beginning in January 2016 through the end of November 2016. The averages were 55.4, 53.5, 49, 45.3, 43.1, 35.4, 33, 33.5, 40, 39 and 29.6.

Average solar flux changed hardly at all, moving from 82.6 to 82.2.

Monthly average daily sunspot numbers for November were 22.4. This is down from 50.4, 37.4, and 29.1 for August through October.

Average daily planetary A index dropped from 13.6 to 4.9, and average mid-latitude A index from 10.3 to 3.4

No matter if we observe smoothed 3-month moving average sunspot numbers or monthly averages the downward trend in activity is obvious and undeniable.

The latest prediction from NOAA and the US Air Force shows solar flux at 75 on December 9 and 10, 70 on December 11 to 15, 78 on December 16 to 18, 82 on December 19 and 20, 86 on December 21 to 27, 84 on December 28 to 31, 82 on January 1, 80 on January 2 and 3, 78 on January 4 to 8, 80 on January 9, 82 on January 10 to 15 and 84 on January 16 and 17.

F.K. Janda, OK1HH sent us the weekly geomagnetic forecast from the Czech Propagation Interest Group.

Their latest projection for Planetary A Index predicts 20, 18, 12 and 8 on December 9 to 12, 5 on December 13 to 17, then 8, 12, 16 and 22 on December 18 to 21, then 30,

"Geomagnetic activity forecast for the period December 9, 2016 to January 7, 2017

Geomagnetic field will be:

Quiet on December 14 to 17, 29 to 31, January 1 Mostly quiet on December 13, 18, 27 and 28, January 2 Quiet to unsettled on December 11 and 12, 26 Quiet to active on December 9 and 10, 19, 23 to 25, January 3 Active to disturbed on December 8, 20 to 22, January 4

Amplifications of the solar wind from coronal holes are expected on December 9 and 10 (11, 14 and 15, 18 to 20), January 2 and 3

Remark: - Parenthesis means lower probability of activity enhancement. -- F.K. Janda, OK1HH"

And now, this news from Jeff, N8II of West Virginia:

"It has been an interesting couple of weeks on the bands. The CQWW CW contest was tough on the low bands and the high bands, leaving only 20 meters daytime and early evening as a good option. At first, a disturbance caused all bands to be poor to EU. It was not until Sunday AM on 20 that things really got rolling into northern Europe and Russia. My first QSO's with Norway, Sweden, Denmark, Estonia, and Latvia took place then along with a good number of Russians. I could hear several Zone 33 west Africans on 160 well Saturday night, but they were still working one EU station after another. 10 was barely open working only Morocco (barely), Brazil, Argentina, Uruguay, Chile, Venezuela, and Costa Rica and all 3 continental USA zones.

A week later, the ARRL 160 meter test featured good to excellent propagation. With low power and limited time I worked all of the lower 48 states except WY and MT, and 12 DXCC countries including Ecuador, Costa Rica, EU Russia, Ukraine, Wales, Portugal, Sweden, and Germany.

Another disturbance started Wednesday with 15 meters being almost completely closed after good signals the 2-3 days before from the UK, Germany, Greece, and countries southwest of there along with a S9 signal from Per, LA8LLA at 1551Z on December 6.

The low bands are finally opening well with some outstanding signals! On December 7, starting 0320Z, I worked S9+ 40/KCOW in Montenegro, then stations in Lithuania, Latvia, and Slovenia.

But the big excitement was tonight (December 8). For most of the last week 3B9HA on Rodrigues Island at a heading of 71 degrees and a distance of 9770 miles from here has been spotted on 160, but nothing heard here. Tonight they were Q5 copy peaking around S9 and working quite a few USA stations on 160 meters, but I could not break the pile up. Right after giving up on 160, I found them on 80 meter CW peaking S9+ 20 dB! I made an easy QSO at 0110Z. In all of years on the bands, I have never heard an Indian Ocean station so loud on 80 meters. SFI is 79 and K has been running at 4 since about noon. 73, Jeff N8II"

This weekend, don't miss the ARRL Ten Meter Contest. Predicted solar flux is 70 to 75, and planetary A index is projected to be 18 and 12 for both days. Last year, the contest was on December 12 and 13, and the solar flux was 116.7 and 122.5, while planetary A index was 12 and 8. On December 13 and 14, 2014 solar flux was 159.8 and 166.34, while planetary A index was 9 and 11. During the 2013 contest (December 14 and 15) solar flux was 164.2 and 156.2, while planetary A index was 16 and 7.

See contest details at <http://www.arrl.org/10-meter> .

The ARRL encourages participants to try a new Web Log Upload app for this contest. See details at <http://bit.ly/2gjBDhL> .

Solar activity is lower this year, but ten meters still offers many opportunities, and is especially attractive to the "Little Pistols"

(as opposed to Big Guns) contest operators. For casual operators, ten meters is especially attractive because of the short wavelengths (and antenna lengths) involved.

For a half wave antenna cut to 28.3 MHz, that's only 16 feet, 6 and 7/16 inches. 1/4 wave is only 8 feet, 3 inches. Thus a modest portable or temporary 10-meter installation can be used.

Here are some simple 10 meter antenna suggestions, some from an ARRL Facebook post of several years ago.

<http://www.arrl.org/files/file/Technology/tis/info/pdf/5002016.pdf>

<http://www.arrl.org/files/file/Technology/tis/info/pdf/9106023.pdf>  
<http://www.arrl.org/files/file/Technology/tis/info/pdf/9904067.pdf>  
<http://bit.ly/2grljZv>  
<http://www.arrl.org/files/file/Technology/tis/info/pdf/7806016.pdf>  
<http://www.amwindow.org/tech/htm/tenmant/tenmant.htm#3>  
<http://www.davegardner.org/Ham/TenMeter.html>  
<http://www.eham.net/articles/31424>  
<http://bit.ly/2hsEy3Z>

Take a look at GREGOR, all about a European space weather observatory.  
[goo.gl/9ekORN](http://goo.gl/9ekORN)

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://arrl.org/propagation-of-rf-signals>. For an explanation of numbers used in this bulletin, see <http://arrl.org/the-sun-the-earth-the-ionosphere>. An

archive of past propagation bulletins is at <http://arrl.org/w1aw-bulletins-archive-propagation>. More good information and tutorials on propagation are at <http://k9la.us/>.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://arrl.org/propagation>.

Instructions for starting or ending email distribution of ARRL bulletins are at <http://arrl.org/bulletins>.

Sunspot numbers for December 1 through 7 were 49, 59, 62, 37, 37, 24, and 18, with a mean of 40.9. 10.7 cm flux was 84.5, 84.4, 84.7, 82.4, 82.7, 79.8, and 77.2, with a mean of 82.2. Estimated planetary A indices were 3, 4, 3, 2, 4, 7, and 11, with a mean of 4.9. Estimated mid-latitude A indices were 3, 2, 1, 1, 2, 6, and 9, with a mean of 3.4.  
 NNNN

## ARRL DX NEWS

QST de W1AW  
 DX Bulletin 50 ARLD050 From ARRL Headquarters  
 December 8, 2016  
 To all radio amateurs

This week's bulletin was made possible with information provided by QRZ DX, the OPDX Bulletin, 425 DX News, The Daily DX, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites.  
 Thanks to all.

**PALESTINE, E4.** Watch for Bodo, DF8DX and Hermann, DL2NUD to be active from Jericho until December 18 with the calls E44QX and E44HP. They will be QRV on the HF bands using CW and via EME. QSL E44QX via DF8DX (d/B), ClubLog OQRS, LoTW and E44HP via DL2NUD.

**ST. LUCIA, J6.** Budd, W3FF, Paul, W6PNG, Thomas, W6LDX, Michael, KI8R, Matthew, K0BBC, Harold, WJ1B, Chris, W6HFP, and Jeffrey, KO7M will be active until December 12. They are QRV as J68FF, J6/W6PNG, J6/W6LDX, J6/KI8R, J6/K0BBC, J6/WJ1B, J68HF and J6/KO7M on 160 to 6 meters. QSL via home calls or LoTW.

**UNITED STATES OF AMERICA, K.** WX3MAS will be active from Nazareth and Bethlehem in Pennsylvania this weekend on HF using SSB, CW and PSK31. QSL via WX3MAS, direct.

**PALAU, T8.** Akira, JH0CKF will be QRV on Koror Island (OC-009, WW Loc. PJ77fi) from December 13 to 16 as T88MZ on the HF bands. QSL via JH0CKF (d/B), LoTW, ClubLog OQRS.

**KAZAKHSTAN, UN.** The following special event stations are going to celebrate Kazakhstan's 25th anniversary of independence during December: UP25CWA, UP25ECA, UP25FW, UP25G, UP25I, UP25J, UP25KZ, UP25L, UP25LL, UP25LW, UP25M, UP25N, UP25NFD, UP25NR, UP25NWA, UP25O, UP25OGA, UP25P, UP25PA, UP25TX, UP25Z, UP25ZA, UP25ZAF, UP25ZF, UP25ZWW. An award will be available for 25 QSOs. QSL via RW6HS (d).

**TURKS AND CAICOS ISLANDS, VP5.** Mikhail, VE7ACN will sign VP5/VE7ACN from Grand Turk Island (NA-003) from

December 10 to 19 on the HF bands using CW and SSB. QSL via VE7ACN, LoTW.

**YOTA.** The YOUNGSTERS ON THE AIR group is active with the following calls during December from all over the world: 3V8YOTA, 4O1YOTA, 4O2YOTA, 7X2YOTA, 9A0YOTA, 9A16YOTA, A2YOTA, A60YOTA, A91YOTA, DA0YOTA, E71YOTA, ES9YOTA, ET3AA/YOTA, GB16YOTA, HA6YOTA, HB9YOTA, II2YOTA, II5YOTA, J62YOTA, LX4YOTA, LY5YOTA, LZ16YOTA, OD5RI/YOTA, OE16YOTA, OE2YOTA, OH2YOTA, OL16YOTA, OM16YOTA, OM9YOTA, ON4YOTA, PA6YOTA, PD6YOTA, R16YOTA, SH9YOTA, TM0YOTA, YO0YOTA, YT16YOTA, and ZS9YOTA. QSL only via ClubLog OQRS.

**SENEGAL, 6W.** Peter, HA3AUI plans to operate as 6W2SC and J5UAP from January 20 to March 5, 2017. He will be QRV on 20 to 10 meters using CW. QSL via HA3AUI (d), LoTW.

**HAWAIIAN ISLANDS, KH6.** Eric, KH6EB works on the uninhabited island Kaho'olawe for 10 days each month. During December he will be on the island from the 12th to the 21st. He will be QRV during his spare time, local morning and evening hours, on 20 meters using SSB, PSK31 and JT65. QSL via KH6EB (d), LoTW, eQSL.

**EAST TIMOR, 4W.** Tack, JE1CKA is planning to celebrate the 15th anniversary of East Timor's Independence with an operation in the May-June 2017 time frame.

**MARITIME MOBILE, /MM.** Frank, F5MYK/MM is operating shipboard in the Indian Ocean, aboard the R/V Marion Dufresnes 2, until January 2. His itinerary, leaving Reunion, takes him near Crozet, Kerguelen, Amsterdam, Tromelin, Mauritius and back to Reunion on December 30. He will check 40, 12 and 6 meters. He also often checks 6 meters during his lunch break from noon to 2 PM local.

**SRI LANKA, 4S.** The Radio Society of Sri Lanka's annual DXpedition to Hiyare Galle as 4S7RS will take place December 10 to 13 on 160 to 10 meters using CW, SSB and digital modes.

**THE GAMBIA, C5.** C5FUD and C5GCJ, with ops SP2FUD and SP2GCJ are active on 80 to 10 meters using CW, SSB and RTTY, until December 16. QSL C5FUD via SP2FUD and C5GCJ via SP2GCJ.

**ZIMBABWE, Z2.** Z21LS is active on 40 to 10 meters using SSB, PSK and RTTY. QSL via DE1ZHB direct or use Germany's DARC bureau.

**ANTARCTICA, CE9/KC4.** 8J1RL and 8J60JARE (op Yath, JG2MLI), will be QRV until January 20, 2018. He will be on CW, SSB and digital modes on 40 to 10 meters. QSL direct to JG2MLI or through Japan's JARL bureau.

**MAURITIUS, 3B8.** Johnny, SM6JBC is now active as 3B8JB. His length of stay is unknown. Activity is on 40 to 10 meters using RTTY, PSK and some SSB. QSL via his home call sign, direct or by the Bureau.

**FIJI, 3D3.** Chris, VK3FY will be active as 3D3FY from Fiji Island (OC-016) until December 14. Activity will be holiday style on 80 to 10 meters using CW and SSB. QSL via M00XO or OQRS.

**NIGERIA, 5N/5N40.** Look for Tom, PA3TG (5N/PA3TG), to be active using the special call sign 5N40TG from Lagos starting January 1, 2017. Activity will be on 20 meters using CW and SSB. QSL via home call.

**CHINA, BG2.** Miao, BG2AUE from Harbin, has been very active on 80 meters around 1200z on 3521.5 kHz. QSL via LoTW or direct.

**THIS WEEKEND ON THE RADIO.** The ARRL 10-Meter Contest, SKCC Weekend Sprintathon, International Naval Contest, AWA Bruce Kelley 1929 QSO Party and the CQC Great Colorado Snowshoe Run will keep contesters busy this weekend. The NAQCC CW Sprint is December 14. Please see December QST, page 73 and the ARRL and WA7BNM contest web sites for details.



***CLASSIFIED***

Space Available to push your stuff

***UP AREA HAM FEST INFORMATION***

**THIS  
Space  
Reserved  
For  
You**

## LINKS AND STUFF

*Under re-construction. Watch for the orange barrels*

*Delta County Amateur Radio  
Escanaba, MI  
[www.dcars.org](http://www.dcars.org)*

*Cooper Country Radio Amateur  
Dollar Bay, MI  
[www.ccras.net](http://www.ccras.net)*

### Area Repeaters

Escanaba 147.15+	100.0
	145.13- No PL
Wells 444.30+	No PL
Gladstone	
IRLP 4013 147.55 Smpx	100.0
Champion 146.82-	100.0
Cooks 146.70 -	110.9
GrdMarais 147.195+	No PL
Gwinn 146.64	100.0
Iron Mtn 146.85 -	No PL
Iron River 145.17-	107.2
Ishpeming 146.91-	No PL
IRLP 8993 443.50+	100.0
Manistique 146.79 -	No PL
Marquette 146.97 -	No PL
	147.27+ 100.0
	444.80+
	No PL
Menominee 147.00+	107.2
Newberry 146.61 +	No PL
	147.09+ 114.8
Republic 147.09+	No PL
Trenary 147.03 +	100.0
Wetmore 145.41-	100.0

### ARRL Affiliated Club Area Nets

**UP Net** 3921khz  
Daily 5pm EST  
Sunday Noon EST

**UP CW NET** 3590khz  
Sunday 7pm EST

**160 Net** 1895khz  
Everynight 0100UTC  
Dailey 0600UTC

**Midcars** 7258khz  
Daily 0730am EST  
0200pm EST

**Outhcars** Node 9614  
Saturday 0900am EST

**UP Echolink** Node 9617  
Sunday 8pm EST

**Delta County ARES**  
147.150  
Sunday 7pm EST

**Mich-A-Con Social**  
146.850  
Thursday 0630pm CST  
ARES follows

ARRL WEB PAGE: <http://www.arrl.org>

ARRLMICHIGAN: <http://www.arrl-mi.org/>

US REPEATERS: <http://www.usrepeaters.com>

Tropospheric Ducting Forecasts:  
<http://www.d/infocentre.com/tropo.html>

MICH-A-CON : <http://www.qsl.net/ka1ddb>

FCC Universal Licensing System: <http://wireless.fcc.gov/uls/>

QTH Com: <http://www.qth.com/>

QRZ <http://www.qrz.com/>

E Ham Net <http://www.eham.net/>

UP Skywarn: <http://kera-mi.net/skywarn/>

Band Conditons: <http://bandconditions.com/>



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Terry Moriarity: 715 251 1670

**Activities:**

**Second Wednesday** of the month the Mich-A-Con Amateur Radio Club meets in the Dickinson Country Library at 7:00 P.M. Winter or 6:30 PM Summer

**Visitors and prospective members are always welcome!**

**Club Repeater:**

The Club maintains two repeaters which are located on Pine Mountain (Elevation 1650 ft) in Iron Mountain with tower and facilities provided by the Wisconsin Electric Power Co. The range of the 2 meter repeater is about 40 miles. The range of the 440 MHZ repeater is about 25 miles. Both are under normal conditions, depending upon terrain.

**The Repeater Specifications:**

The 146.85 repeater is a Yaesu DR 1 digital and Analog repeater Frequency. 146.85 minus offset, 100 hz PL tone encode and decode Power 50 watts. The Controller is an Arcom RC 210 . It is also System Fusion capable.

. The 440 MHZ repeater is a GE Master II 444.85, plus offset, 100 hz pl tone. 35 watts output. The Controller is a Arcom 210.

The 2 meter and the 440 can be linked. The repeaters share a Diamond dual band antenna at a tower height of 125 ft.

**We're on the Web!**

<http://www.qsl.net/ka1ddb/>

Previous editions of the Newsletter can be accessed by a link on the **news** page

**From Your Newsletter Editor**

Thank you to those contributors and critiques.  
Welcome your articles - They make the Newsletter.

*For those not getting the Newsletter, it is because I have an incorrect email address. Please give me the correct address.*

The following is referenced from <http://www.dx-code.org>

### DX Code Of Conduct

I will listen, and listen, and then listen again before calling.

I will only call if I can copy the DX station properly.

I will not trust the DX cluster and will be sure of the DX station's call sign before calling.

I will not interfere with the DX station nor anyone calling and will never tune up on the DX frequency or in the QSX slot.

I will wait for the DX station to end a contact before I call.

I will always send my full call sign.

I will call and then listen for a reasonable interval. I will not call continuously.

I will not transmit when the DX operator calls another call sign, not mine.

I will not transmit when the DX operator queries a call sign not like mine.

I will not transmit when the DX station requests geographic areas other than mine.

When the DX operator calls me, I will not repeat my call sign unless I think he has copied it incorrectly.

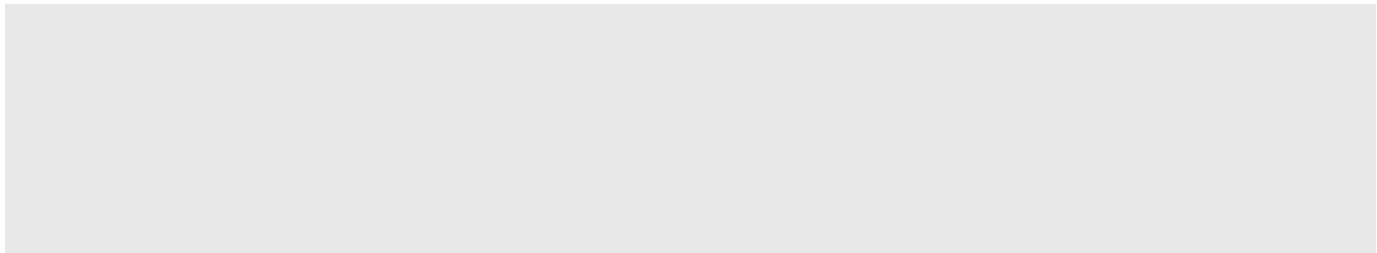
I will be thankful if and when I do make a contact.

I will respect my fellow hams and conduct myself so as to earn their respect.



***MEMBERSHIP***

Call Sign	Last Name	First Name	City	Phone	Email
WB8EBS	ARMBRUST	BURT	QUINNESEC	906-774-8383	<a href="mailto:wb8ebs@yahoo.com">wb8ebs@yahoo.com</a>
W8XBO	ARMBRUST	ED	IRON MOUNTAIN	906-779-5593	<a href="mailto:w8xbo@sbcglobal.net">w8xbo@sbcglobal.net</a>
KC9KVP	BAKER	BETH	NIAGARA		
KB9AVX	BAKER	SCOTT	NIAGARA	715-251-1944	<a href="mailto:kb9avx@yahoo.com">kb9avx@yahoo.com</a>
KB8SBP	BERTOLDI	BILL	KINGSFORD		
W8BEY	BEY	DANA L.	KINGSFORD	906-774-7937	<a href="mailto:lst797@charter.net">lst797@charter.net</a>
K8DDA	BRAY	MIKE	VULCAN	906-201-1550	<a href="mailto:mikebray@chartermi.net">mikebray@chartermi.net</a>
KE9L	CASWELL	SKIP	IRON MOUNTAIN	906-774-3371	<a href="mailto:acaswell4238@charter.net">acaswell4238@charter.net</a>
KC8QZG	DAKE	DAVE	NEWBERRY		
KC9ZBC	DOLATOWSKI	SCOTT	GOODMAN	715-633-1006	<a href="mailto:kc9zbc@live.com">kc9zbc@live.com</a>
KC9TQR	FERRIS	JOE	FLORENCE	517-589-4386	<a href="mailto:jrferris@borderlandnet.net">jrferris@borderlandnet.net</a>
N9MBG	FRY	ED	PEMBINE	906-221-7307	<a href="mailto:efry@centrylink.net">efry@centrylink.net</a>
KG8NK	GEMBOLIS	LOUIS	ISHPEMING	906-485-5442	<a href="mailto:lgembolis@chartermi.net">lgembolis@chartermi.net</a>
KD8VTS	GRABOWSKI	DEBRA	CRYSTAL FALLS	906-284-2450	<a href="mailto:kd8vts@gmail.com">kd8vts@gmail.com</a>
KD8VTT	GRABOWSKI	WILLIAM	CRYSTAL FALLS		
KC8TH	HEYBOER	TOM	IRON MOUNTAIN	906-779-0481	<a href="mailto:heyboer.tom@gmail.com">heyboer.tom@gmail.com</a>
N8ATS	HOLMES	SAM	PEMBINE	906-322-8507	<a href="mailto:chopsam@centrylink.com">chopsam@centrylink.com</a>
KA8TFF	JARMUSCH	SCOTT	IRON MOUNTAIN		
KB9EMU	KNUTSON	WILLIAM	FENCE	715-336-2250	<a href="mailto:dknutson54@gmail.com">dknutson54@gmail.com</a>
KB8ETK	KOMBLEVICZ	JOSEPH	IRON MOUNTAIN	906-774-4094	<a href="mailto:kombleviczj@charter.net">kombleviczj@charter.net</a>
W8JWN	MARTIN	THOMAS	IRON MOUNTAIN	906-774-5463	<a href="mailto:tmartin@chartermi.net">tmartin@chartermi.net</a>
WA8FXQ	MEYERS	BOB	VULCAN	906-396-0119	<a href="mailto:meyersb@uplogon.com">meyersb@uplogon.com</a>
KC8LRP	MEYERS	MARGE	VULCAN	906-396-8913	<a href="mailto:mgmeyer@uplogon.com">mgmeyer@uplogon.com</a>
N8TUM	MILLER	TIMOTHY	FLORENCE	715-696-6517	<a href="mailto:timmiller.up@gmail.com">timmiller.up@gmail.com</a>
K9TRY	MORIARITY	TERRY	NIAGARA	715-251-1670	<a href="mailto:kb9zer@yahoo.com">kb9zer@yahoo.com</a>
ND8M	PAUL	JARED	NORWAY	989-660-9535	<a href="mailto:jaredpaul@me.com">jaredpaul@me.com</a>
KD8SZA	PAUL	MICHELLE	NORWAY		
KC9NFT	PERRON	BARRY	FLORENCE	715-696-6175	<a href="mailto:bperron2@netzero.com">bperron2@netzero.com</a>
KC8JRI	REED	GORDY	IRON MOUNTAIN	906-779-1254	<a href="mailto:gordyreed@charter.net">gordyreed@charter.net</a>
K8ABS	RIVERSIDE	JIM	IRON MOUNTAIN	906-458-0773	<a href="mailto:jriverside@charter.net">jriverside@charter.net</a>
W8IFI	RYE	JIM	CRYSTAL FALLS	906-875-3582	<a href="mailto:jimrye@up.net">jimrye@up.net</a>
KG9Y	THOMAS	DAVE	NIAGARA	715-251-1393	<a href="mailto:ke9y@arrl.net">ke9y@arrl.net</a>





**MICH - A - CON**

**Please remit dues to:**

**Debbie Garbowski, KD8VTS  
203 Camp 5 Road  
Crystal Falls, MI 49920**

Name: \_\_\_\_\_

Call Sign: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

ARRL Member? Yes \_\_\_\_\_ No \_\_\_\_\_

Please make check payable to: **Mich-A-Con ARC**

Annual dues for Full Membership -

Single \$20 \_\_ Family \$30 \_\_ Repeater Only \$10 \_\_

If family membership, please list additional:

Names: \_\_\_\_\_

Call signs: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Annual dues are Payable January 1st.

Dues for New Members are Pro-rated. Please remit \$1.67 per month for a Single membership or \$ .50 per month for a Family membership.