



# MICH-A-CON

Iron Mountain,  
Dickinson County, Mich

December 2019

## **Meeting Reminder:** Second Wednesday of the Month

Which is **December 11, 2019** at **07:00 PM** at the **Dickinson Library, Iron Mountain.** Please be there and support the cause of Amateur Radio.

## **From The President**

### Words from the President

I hope that you all are enjoying this beautiful winter weather. Snow on top of snow! I'm already anticipating summer. We really don't have spring in the U.P.

The 40 meter beam is finally on the tower! The beam resonates at 6.700 Khz. at 56 feet. I put it together with the same measurements as before but the driven element seems to be too long. It works OK with an external tuner.

Since it was getting dark, we had to rush the installation. Result? The beam is upside down and the driven element is tipped at an angle. I will get another truck here to fix everything around Christmas.

FT8 is the only mode in my log for the past month. I prefer RTTY but there have been few stations on RTTY. I miss the diddles! There's an FT8 and FT4 contest this weekend. I might play around in it.

Well, the club and the IRS have been moving all over the country! Now, I'm, getting replies from Fresno, CA, even though I write to Ogden, UT! Senator Stabenow's office has contacted the Detroit office of the IRS on our behalf. I'll give you all the details at the next meeting.

Our Christmas party has been tentatively set for March 14 at Mikes on Main. Details at the next meeting.

73,

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Tom W8JWN

## ***MICH-A-CON AMATEUR RADIO CLUB MINUTES OF November 6th, 2019***

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

### **Secretary Report**

Minutes of the October 9th, 2019 meeting were read and approved

### **Treasurer Report**

There was no Treasurer's Report.

### **Repeater Report**

The repeater was reported as reaching north as far as Amasa, Crystal Falls, and Sagola, and south as far as Coleman.

Bob Meyers reported that the amp on the two-meter unit has been increased to 80 Watts. He and Gary Shafer are working on a power divider and increasing the RF into the four bay antenna.

### **Old Business**

The Fiftieth Anniversary party for the club was a success. The club Christmas party, to be held in March, will be also held at Mike's On Main, with an earlier start time

A motion to pay \$275 to file the proper non-profit forms (Brian Lucas/Burt Armbrust) was passed unanimously.

**New Business**

A motion to postpone the election of officers until tax issues have been resolved (Bruce LaLiberte/Burt Armbrust) was passed unanimously.

Gary Shafer reported on his attendance at the Appleton hamfest, which was held at the Starlight Supper Club in Kaukauna. There was good attendance and many tables with gear.

**Adjournment**

Meeting adjourned at 7:25. (Terry Moriarity/Scott Jarmusch) .

**For the Good of the Order**

Attendees reported on their recent activities.

The 50/50 drawing was won by Bruce LaLiberte. The club treasury was enriched by \$20.00.

**Attendees**

Tom Martin  
Scott Jarmusch  
Joe Ferris  
Burt Armbrust  
Bruce LaLiberte  
Tim Miller  
Terry Moriarity  
Brian Lucas  
Gary Schafer  
Bob Meyers

W8JWN  
KA8TFF  
KC9TQR  
WB8EBS  
KD9HQD  
N8TUM  
K9TRY  
W9BGL  
K4FMX  
WA8FXQ

Ed Armbrust  
Janet Shafer  
Joyce Williams

W8XBO  
Visitor  
Visitor



News

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## ARRL to Oppose Proposal to Eliminate 3.3 - 3.5 GHz Amateur Allocation

QST de WIAW  
ARRL Bulletin 23 ARLB023  
From ARRL Headquarters  
Newington CT November 26, 2019  
To all radio amateurs

SB QST ARL ARLB023  
ARRL023 ARRL to Oppose Proposal to Eliminate 3.3 - 3.5  
GHz Amateur Allocation

At its December 12 open meeting, the FCC will consider adopting a Notice of Proposed Rulemaking (NPRM) that proposes to remove the amateur radio 9-centimeter allocation at 3.3 - 3.5 GHz. ARRL plans to comment in opposition to the proposed action. According to an FCC "Fact Sheet," the proceeding WT Docket 19-348, "Facilitating Shared Use in the 3.1 - 3.55 GHz Band," is a follow-on from the MOBILE NOW Act, approved by the 115th Congress, which requires the FCC and the US Department of Commerce to make available new spectrum for mobile and fixed wireless broadband use. It also requires the FCC to work with the National Telecommunications and Information Administration (NTIA) to evaluate whether commercial wireless services and federal incumbents could share spectrum between 3.1 and 3.55 GHz. NTIA manages spectrum allocated to federal government users.

The Fact Sheet can be found online in PDF format at, <https://docs.fcc.gov/public/attachments/DOC-360941A1.pdf>.

"This Notice of Proposed Rulemaking would propose to remove the existing non-federal allocations in the 3.3 - 3.55 GHz band as a step towards potential future shared use between federal incumbents and commercial users," the FCC Fact Sheet explains. "By taking the initial step needed to clear the band of allocations for non-federal incumbents, the Commission furthers its continued efforts to make more mid-band spectrum potentially available to support next generation wireless networks - consistent with the mandate of the MOBILE NOW [Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless] Act."

The NPRM proposes to clear the 3.3 - 3.55 GHz band of existing non-federal users by removing non-federal secondary radiolocation and amateur allocations [emphasis added] in the 3.3 - 3.55 GHz band and to relocate incumbent non-federal users out of the band. The FCC would seek comment on relocation options and "transition mechanisms" for incumbent non-federal users, either to the 3.1 - 3.3 GHz band or to other frequencies, and on how to ensure that non-federal secondary operations in the 3.1 - 3.3 GHz band will continue to protect federal radar systems.

Regarding the Amateur and Amateur-Satellite Service allocations, the FCC NPRM asks whether existing amateur spectrum in other bands might support operations currently conducted in the 3.3 - 3.5 GHz band. The 3.40 - 3.41 GHz segment is designated for amateur satellite communication. "We seek comment on the extent to which the band is used for this purpose, whether existing satellites can operate on other amateur satellite bands, and on an appropriate timeframe for terminating these operations in this band," the FCC NPRM says.

Also at its December 12 meeting, the FCC will consider another NPRM in WT Docket 19-138 that would "take a fresh and comprehensive look" at the rules for the 5.9 GHz band and propose, among other things, to make the lower 45 MHz of the band available for unlicensed operations and to permit "Cellular Vehicle-to-Everything" (C-V2X) operations in the upper 20 MHz of the band. The FCC is not proposing to delete or otherwise amend the amateur allocation, and it would continue as a secondary allocation, but the primary allocation for 5.850 - 5.925 GHz would change.

The amateur radio 5-centimeter allocation is 5650.0 - 5925.0 MHz, and the NPRM, if approved, would address the top 75 MHz of that amateur secondary band. While no changes are proposed to the amateur allocation, anticipated more intensive use by primary users could restrict secondary amateur use.

The band 5.850 - 5.925 GHz has been reserved for use by dedicated short-range communications (DSRC), a service in the intelligent transportation system (ITS) designed to enable vehicle-related communications, the FCC said in a Fact Sheet in WT Docket 19-138.

"The Commission initiates this Notice of Proposed Rulemaking to take a fresh and comprehensive look at the 5.9 GHz band rules and propose appropriate changes to ensure the spectrum supports its highest and best use." ARRL also will file comments opposing any changes affecting the 5-centimeter amateur allocation.

This Fact Sheet can also be found online in PDF format at, <https://docs.fcc.gov/public/attachments/DOC-360940A1.pdf>.

Both draft FCC proposals are subject to change prior to a vote at the December 12 FCC meeting, and there will be opportunity to file comments and reply comments on the final proposals after they are released.

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## ARLB032 W1AW 2019 Winter Operating Schedule

QST de W1AW

ARRL Bulletin 22 ARLB022

From ARRL Headquarters

Newington CT November 5, 2019

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
0400 " (11 PM EST)	CWb	Daily

Frequencies (MHz)

CW: 1.8025 3.5815 7.0475 14.0475 18.0975 21.0675 28.0675  
50.350 147.555

DIGITAL: - 3.5975 7.095 14.095 18.1025 21.095 28.095 50.350  
147.555

VOICE: 1.855 3.990 7.290 14.290 18.160 21.390 28.590 50.350  
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.

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 100 in the November 2019 issue of QST or on the web at, <http://www.arrl.org/w1aw-operating-schedule>.

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# ARRL MICHIGAN SECTION NEWS

Greetings to all the Amateurs of Michigan,

With Thanksgiving just around the corner, the season of holidays (among other seasons) begins. We're hosting family and friends at my house this year, which also means I need to clean up the ham shack and put things away properly. Here's hoping wherever you travel, near or far, that you have a safe and enjoyable time this month.

### Michigan Section Looking for New Affiliated Club Coordinator

It should come as no surprise that we are looking for a volunteer to continue NU3D's excellent work as the Section Affiliated Club Coordinator. The ACC is the primary contact for each amateur radio club in the Section, specializing in motivating, aiding, and coordinating joint activities of amateur radio clubs. The only requirements are spirit and an ARRL membership. Slide over to [ARRL.ORG](http://ARRL.ORG) to read more about this position. Feel free to reach out to me if you're interested and want to discuss how you might fit into this or any other Section role.

### Travel to Local Clubs and Events

I love getting a chance to meet with hams all over Michigan! Amateur Radio has been a part of my life for more than 50 years, and it's great to hear from others about their personal adventures in the hobby. Sadly, timing, distance, and my schedule outside of the world of amateur radio do not always permit me to show up everywhere, especially without planning. Other members of the Section Staff also love to get out and visit. These don't have to be formal events; I was recently invited to a radio club breakfast and had a wonderful morning! Please let us know what we can do to help your local club become even more successful.

Tell Me Something Good!

Congratulations to the combined University of Michigan / ARROW clubs for their performance in the 2019 Field Day event. The groups placed 4th in the nation, and 1st in Michigan for class 4A.

Shiawassee Amateur Radio Association [SARA] - 2020 Officers

list

President	Kevin Middleton	K8MID
Vice President	Don Warner	WB8GUS
Secretary	Phillip Bates	AC8FW
Treasurer	Dennis Phillips	KC8ETW
Trustee	Tom Carpenter	K18AS
Trustee	Chuck Dafoe	K8DZH
Trustee	Mike Middleton	KF5MYQ

Manistee County (via EC Rick, WZ8N) Comments:  
I am pleased to report that several years after a 50' tower was erected complete with 2M & 70cm antennas at our EOC (County Sheriff's Offices) the Sheriff finally relented and permitted us to put up a permanent 80/40M dipole. The halyard that had been part of the original installation accommodated the dipole on October 9.

I am sure your organizations are doing new and fun things. Why not drop me a note about what is happening in your area? I'd love to hear from you!

### Michigan ARRL Section Staff Travel Plans

December 1st , L'Anse Creuse Swap (K8JK)

Hospitality Thanks

October 20th , 2019 Kalamazoo Swap (K8JK)  
October 27th , 2019 USECA Swap (K8JK, WA8EFK)

### Michigan Public Service Activities

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 Sun
- MIARPSC – MI Amateur Radio Public Service Corps 3.932 1700 Sun
- 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) 2000 Tu, Th, Sat  
 MIADS – MI ARES D-Star Net Reflector 24A Mon 2000  
 D8EN - District 8 Emergency Net 3.909 Wed 2000  
 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

Michigan Amateur Radio Public Service Corps (ARPS) Activities for October 2019

Station Activity Reports (SAR) for October 2019

WB8WKQ 405, K8BKM 161, K8ED 120, N5MKY 102, K8RDN 93, WB8TQZ 82, WD8MWD 73, KE8BYC 62, WD8USA 34, WB8RCR 23, KD8ZCM 23, KE8CEH 23, W8DW 20, KE8KOC 4, KB8PGW 2

Public Service Honor Roll (PSHR) for October 2019:

KE8BYC 406, WD8MWD 210, WB8RCR 198, WD8USA 119, N5MKY 115, WB8TQZ 110, K8ED 100, KC8YVF 94, KD8ZCM 93, K8RDN 92, WB8WKQ 90, W8DW 81, KB8RCR 80, KE8CEH 51, KE8KOC 26, KB8PGW 22

Brass Pounder's League (BPL): No reports this month

Net traffic for October 2019:

Michigan Amateur Communications System 143  
 Michigan Traffic Net 108  
 The Michigan Net 47  
 Southeastern Michigan Traffic Net 44

Upper Peninsula Net 40  
 Michigan VHF Traffic Net 31  
 Great Lakes Emergency Traffic Net 22  
 Northern Lower Eastern Upper Peninsula Net 19  
 Michigan Digital Traffic Net 16  
 Monroe County ARPS Net 10  
 Saginaw County ARES Net 5  
 Michigan Amateur Radio Public Service Corps 2  
 Red Cross Net of Greater Grand Rapids 1

NTS person-hour Value for October 2019: \$ 43,256  
 (NOTE NTS PERSON VALUE ONLY)  
 More information is available at <http://nts-mi.org/>.

Come join us on our traffic and public service nets. A hearty thanks 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 ARPS and NTS programs are an integral part of AuxComm, which in turn is an integral part of the Michigan State Police Homeland Security Division. Public service is in the DNA of Amateur Radio, one of many reasons we enjoy so many radio frequencies to utilize, experiment with, and enjoy.

### Final Thoughts

On behalf of my XYL, Roberta (K8RJE) and myself, we wish you the best of the holiday season. Consider introducing your friends and family to amateur radio after the obligatory feasting.

Want to be more involved? Consider volunteering for a Section position!

Thanks to all the radio amateurs who continue to make the hobby great! Get Active, Get Involved, and Get On The Air! See you all at a swap or club meeting soon!

73  
 Jim K8JK

## Dales Tales

Greetings, welcome to "Dale's Tales" for December, 2019.

We open this edition of "Dale's Tales" to send very best holiday wishes to everyone from Tom and Helen along with Judy and me as we enter this wonderful season. We all hope it brings joyous get-togethers with your family and friends.

Vice Director Tom W8WTD and I had the rare opportunity to recognize the outstanding service of one of our own Great

Lakes Division amateurs and thereby present Ohio Section Manager Scott Yonally N8SY with a prestigious award conferred by the ARRL Board of Directors. The honor is called the Knight Distinguished Service Award and is presented to Section Managers who have exhibited outstanding dedication to Amateur Radio. The Board commented that "Scott is tireless in his efforts to be present and visible all over the state, representing the ARRL and Amateur Radio with a positive and forward-thinking attitude." The official plaque was





presented to Scott at the November meeting of the Portage County Amateur Radio Society.

We have some rather unhappy news, the Livonia Amateur Radio Club reports that a venue conflict has caused the cancellation of the Livonia Swap planned for Feb. 23, 2020. The LARC Swap and Shop has traditionally been one of the well attended swaps in SE Michigan and we hope that 2021 will bring even a bigger and better LARC swap to that region.

**OUR GREAT LAKES DIVISION** web page does carry news from some of the recent events in the Division, useful links and information as well as some neat photos supplied from around the Division. Check it out: <http://arri-greatlakes.org/>

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

**TOM'S TOME** Comments from your ARRL Vice Director Tom W8WTD. Holiday greetings to all! With the Thanksgiving holiday just passed, the tendency is to look ahead to the Christmas holiday season, and save the "look back" at 2019 and the "look ahead" to 2020 until after the rest of the holidays. Here, though, I'd like to call attention to some things coming up in 2020 to get your attention early on, so you can plan for some good events.

First, I'd like to remind everyone that our Great Lakes Division convention is coming up in March, the weekend of the 14th and 15th, to be specific. It's being held in Toledo, Ohio, in conjunction with the Toledo Mobile Radio Association's annual hamfest. The folks up there have been planning for this event since early summer. They've pulled together a great line-up of speakers and topics and activities. It's all indoors, as is appropriate for that time of year, at a nice facility. More details will be available soon, but it's time to start planning for March. It may be a bit of a drive for some folks in the Division, but probably well worth the effort to see and hear about projects and techniques that you need more help with.

This next one is a bit farther out, but of special note anyway. All of us old-timers know how important it is to interest younger people in ham radio. So it's a step in that direction that the Youth on the Air camp will be held in West Chester, Ohio in June. The week-long camp will be held at the National Voice of America Museum of Broadcasting. It's in the Cincinnati area, just north of the I-275 circle route. According to the press release, "the camp will focus on building peer and mentor relationships and taking amateur radio 'to the next level.'" There will be workshops in all sort of STEM-related subjects. A high-altitude balloon launch is being planned, and they will operate with the special-event call sign of W8Y.

The camp director, Neil, WB9VPG, tells me that there are

several ways for amateurs to help. One will be to take part in the on-air activities during the week, by providing contacts for the young people. I'll be sure to let you know more about that as it gets closer. For those of you who have the means, donations are another good way to help. And finally, for local hams or those who might be a reasonably short drive away, some hands-on help with set-up and clean-up might also be a way to participate in June. No matter where you live in the Division, please try to help in some way make this event a success.

Best wishes for a good holiday season.

--73, Tom W8WTD Vice Director, Great Lakes Division

ARRL Hamfest Sanctioning offers hamfest sponsors the opportunity to take advantage of some offerings from ARRL. Your Division Director is pleased to make this Sanctioning available to ARRL Affiliated Clubs who have a history of holding regular swaps. One successful swap normally qualifies! ARRL will provide prize certificates, QST will publish the announcement for the swap, post it on-line at the ARRL web site and supply requested hamfest handout material. The club, in exchange, shall provide ARRL a table for "meet and greet" at the hamfest. Consult the hamfest pages on the ARRL web site for the application form.

If you plan to request ARRL Hamfest Sanctioning, please do so well in advance of your Hamfest date, as this allows adequate time for QST Listings. QST requires a 3 month lead time. It should be noted that there has been a change in the way ARRL contributes to your hamfest efforts. Please carefully read the e-mail from ARRL Headquarters confirming your sanctioning as IT CONTAINS IMPORTANT DETAILS REGARDING PRIZES. Be sure to invite your ARRL Officials as soon as your date is set. With 52 weeks and 70+ hamfests in the Great Lakes Division, things do requires some advanced planning.

**HAMFESTING:** Here is the current Great Lakes Division ARRL Sanctioned Hamfest Schedule covering the next few months. These swaps have received their sanctioning approval from ARRL HQ at the time of this publication.

12/1/19	Lanse Creuse	Madison Hgts, MI
12/7/19	Fulton County	Delta, OH
1/19/20	SCARF Hamfest	Nelsonville, OH
1/19-20	Hazel Park	Madison Hgts, MI
1/26/20	Tusco	Strasburg, OH
<b>2/1/20</b>	<b>HARA</b>	<b>Negaunee, MI</b>
2/16/20	Mansfield	Mansfield, OH
2/23/20	Livonia	CANCELLED for 2020
3/7/20	Cave City	Cave City, KY
3/21/20	Gallipolis	Gallipolis, OH

73, Were you on the air today??? Ham it up!

Dale Williams WA8EFK

## ARRL PROPAGATION BULLETIN

QST de WIAW  
 Propagation Forecast Bulletin 48 ARLP048  
 From Tad Cook, K7RA  
 Seattle, WA December 2, 2019  
 To all radio amateurs

Another week went by with no sunspots. Average daily sunspot number this week rose from 69.9 to 70.4. Average planetary A index rose from 3.6 to 8.3.

Predicted solar flux is 70 on November 29 through December 6, 69 on December 7-8, 70 on December 9-22, 69 on December 23 through January 4, and 70 on January 5-12.

Planetary A index is predicted at 5 on November 29 through December 2, 8 on December 3-4, 5 on December 5-7, 8 on December 8, 5 on December 9-12, 6 on December 13, 5 on December 14-17, then 12 and 10 on December 18-19, 8 on December 20-25, 5 on December 26 through January 8, 6 on January 9, and 5 on January 10-12.

OK IHH sent this:

"Geomagnetic activity forecast for the period November 29-December 24, 2019.

"Geomagnetic field will be,  
 Quiet on: November 29-30, December 1, 10-16.  
 Quiet to unsettled on: December 2, 7-9, 17, 20-14.  
 Quiet to active on: December 3-6.  
 Unsettled to active on: December 18-19.  
 Active to disturbed: none.

"Solar wind will intensify on: December (3-9, 13-14,) 16-17, (18-24).

"Parenthesis means lower probability of activity enhancement."

Mike Schaffer, KA3JAW of Easton, Pennsylvania observed effects from this meteor event: <https://bit.ly/2XUaYe6>.

Mike wrote:

"I had two low, one medium, and one high quality pings on FM broadcast (89.1 MHz) during the peak which lasted for sixteen minutes from 11:52 pm - 12:08 am.

"A dual purpose home/auto Visteon HD Jump Radio with an auto monopole antenna in the horizontal plane poking out the second story radio room north window that is physically ori-

entated to the north/south, giving a RF beam direction from the west-east.

"Nothing was seen on the AirSpy HF+ SDR Console spectrum analyzer, waterfall displays with an Antennacraft TV VHF-Lo band (channels 2-6), five element Yagi, model Y526, laying on the top of the backyard shed with a 30 degree pitch angle aimed westerly on analog TV channel 2 (video 55.250, -/+), for detection of active Canadian stations.

"In my opinion the RF meteor scatter propagation outburst activity was fairly good within a short matter of time."

A new video from Dr. Tamitha Skov, WX6SWW: <https://youtu.be/jrxSkVT55aI>.

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrl.net](mailto:k7ra@arrl.net).

For more information concerning radio propagation, see the ARRL Technical Information Service web page 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 November 21 through 27, 2019 were 0, 0, 0, 0, 0, and 0, with a mean of 0. 10.7 cm flux was 70.8, 69.6, 70.2, 70.6, 69.5, 70.4, and 71.5, with a mean of 70.4. Estimated planetary A indices were 12, 13, 10, 11, 5, 3, and 4, with a mean of 8.3. Middle latitude A index was 7, 8, 7, 8, 5, 3, and 2, with a mean of 5.7.

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## ARRL DX NEWS

QST de WIAW  
DX Bulletin 48 ARLD048  
From ARRL Headquarters  
Newington CT December 5, 2019  
To all radio amateurs

This week's bulletin was made possible with information provided by F6AJA, ON4JM, The Daily DX, the OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

**CYPRUS, 5B.** Alex, 5B4ALX is QRV as C4XMAS during December. Activity is mainly on 20 meters. QSL via IZ4AMS.

**UNITED ARAB EMIRATES, A6.** Members of the Emirates Amateur Radio Society are QRV with special event station A60BHR until December 17 to celebrate the 48th Bahrain National Day. QSL via A62A.

**THE GAMBIA, C5.** Carlo, ON4BR is QRV as C56BR until December 14. Activity is on the HF bands using CW, SSB and FT8. QSL direct to home call.

**NEW CALEDONIA, FK.** Rudi, DBIRUL is QRV as FK/DBIRUL from Grand Terre, Poingam, Ile de Ouvea, and finally Ile de Pine until the end of December. Activity is on the HF bands using mostly FT8. QSL to home call.

**SAINT MARTIN, FS.** A group of operators are QRV as TO9W from Orient Bay, IOTA NA-105, until December 13. Activity is on the HF bands with a focus on 160, 80 and 40 meters using CW and FT8. QSL via LoTW.

**HONDURAS, HR.** Gerard, F2JD will be QRV as HR5/F2JD from Copan-Ruinas from December 12 to April 4, 2020. Activity will be on 160 to 6 meters using CW, SSB and various digital modes. QSL via F6AJA.

**ARGENTINA, LU.** Special event station L50JT is QRV until December 14 to commemorate the 50 years of the underwater tunnel under the Parana River that connects Entre Rios and Santa Fe provinces. Activity is on 80, 40 and 20 meters using CW, SSB and various digital modes. QSL via LoTW.

**FINLAND, OH.** Members of the Santas Radio Club are QRV as special event station OH9SCL from Rovaniemi during December. QSL direct to OH9AB.

**BELGIUM, ON.** Members of the Radio Club des Ardennes will be QRV with special event station OP75USA from December 7 to January 7, 2020 to commemorate the 75th anniversary of the Battle of the Bulge of World War II, as well as to commemorate the siege of Bastogne. QSL via operators' instructions.

**BRAZIL, PY.** Members of the Guara DX Group are QRV with special event station ZW132GBA until December 15 to celebrate the 132nd anniversary of the city of Guarabira. QSL via bureau.

**SLOVENIA, S5.** Members of the Radio Club Slovenj Gradec are QRV with special event call sign S589PMC until January 5, 2020. QSL via bureau.

**SOMALIA, T5.** Ali, EP3CQ is QRV as 6O100 until December 19. QSL direct to home call.

**ST. KITTS AND NEVIS, V4.** John, W5JON will be QRV as V47JA from St. Kitts, IOTA NA-104, from December 10 to 19. Activity will be on 160 to 6 meters using SSB and FT8. QSL direct to home call.

**MICRONESIA, V6.** Haru, JA1XGI is QRV as V6K from Kosrae, IOTA OC-059, until December 9. This includes being an entry in the ARRL 160 Meter contest. QSL to home call.

**INDIA, VU.** Members of the Repeater Society of Calicut and the Malabar Amateur Radio Society will be QRV with special event call sign AT1RS from Kappad Beach from December 8 to February 22, 2020 in celebration of the 250th session of Rajya Sabha, the Upper House of the Indian Parliament, and the 70th Constitution Day. QSL via operators' instructions.

**VIET NAM, XV.** Keith, G4FUF is QRV as XV9F from Tra Vinh Province in the Mekong Delta. Activity is holiday style on the HF bands, with most of his activity being on 6 and 2 meters, and 70 centimeters, including EME. QSL direct to home call.

**LAOS, XW.** Bruce, 3W3B is QRV as XW4XR until December 16. Activity is on 60 to 6 meters using CW, FT8 and FT4. QSL via E21EIC.

**MYANMAR, XZ.** Martti, OH2BH is QRV as XZ2D until April 17, 2020. Activity is generally on 15 and 10 meters. QSL to home call.

**ROMANIA, YO.** Special event station YR2019REV is QRV during Decemberto celebrate the 30th anniversary of the Romanian revolution. Activity is on the HF bands. QSL via operators' instructions.

**THIS WEEKEND ON THE RADIO.** The ARRL 160-Meter Contest, NCCC RTTY

Sprint, QRP 80-Meter CW Fox Hunt, NCCC CW Sprint, UFT CW Meeting, Wake-Up. QRP CW Sprint, SKCC Weekend CW Sprint-athon, International Naval Contest, PRO CW Contest, FT Roundup, EPC Ukraine DX Contest and the QRP ARCI Holiday Spirits Homebrew CW Sprint will certainly keep contesters busy this upcoming weekend.

The 4 States QRP Group Second Sunday Sprint is scheduled for December 9.

The CWops Mini-CWT Test, Phone Fray, QRP 40-Meter CW Fox Hunt and NAQCC CW Sprint are scheduled for December 11.

The Canadian National Parks on the Air, CNPOTA, operating event runs for the entire year of 2019, with special stations

active from Canada's parks and historic sites.

During December look for a number of stations active with the YOTA suffix for Youngsters On The Air. QSL via LoTW or direct to MOSDV.

Please see December QST, page 63, and the ARRL and WA7BNM Contest Web Sites for details.

NNNN



## *Review*

This section is dedicated to refreshing what qualified our Licensing. Something different will appear each month. Enjoy....

- T1B06 On which HF bands does a Technician class operator have phone privileges?
- A. None
  - B. 10 meter band only
  - C. 80 meter, 40 meter, 15 meter, and 10 meter bands
  - D. 30 meter band only
- T2B05 What might be the problem if a repeater user says your transmissions are breaking up on voice peaks?
- A. You have the incorrect offset
  - B. You need to talk louder
  - C. You are talking too loudly
  - D. Your transmitted power is too high
- T3B04 How fast does a radio wave travel through free space?
- A. At the speed of light
  - B. At the speed of sound
  - C. Its speed is inversely proportional to its wavelength
  - D. Its speed increases as the frequency increases
- G1B03 Which of the following is a purpose of a beacon station as identified in the FCC rules?
- A. Observation of and reception
  - B. Automatic identification of repeaters
  - C. Transmission of bulletins of general interest to Amateur Radio licenses
  - D. Identifying net frequencies
- G2B06 What is a practical way to avoid harmful interference on an apparently clear frequency before calling CQ on CW or phone?
- A. Send 'QRL' on CW, followed by your call sign; or, if using phone ask if the frequency is in use, followed by your call sign
  - B. Listen for 2 minutes before call CQ

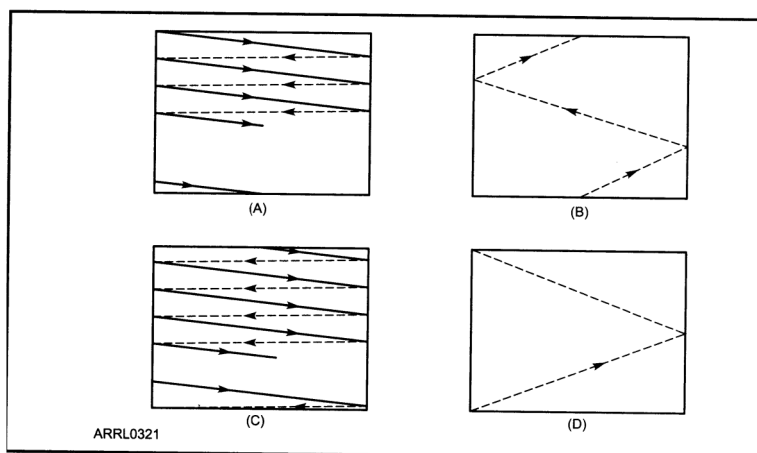
- C. Send the letter 'V' in Morse code several times and listen for a response or say 'test' several times and listen for a response
- D. Send 'QSY' on CW or if using phone, announce 'the frequency is in use' then give you call and listen for a response

G3B01 How might a sky-wave signal sound if it arrives at your receiver by both short path and long path propagation?

- A. Periodic fading approximately every 10 seconds
- B. Signal strength increased by 3 dB
- C. The signal might be cancelled causing severe attenuation
- D. A well-defined echo might be heard

E1B03 Within what distance must an amateur station protect an FCC monitoring facility from harmful interference?

- A. 1 mile
- B. 3 miles
- C. 10 miles
- D. 30 miles



**Figure E2B03 — This diagram shows the interlaced scanning used in analog TV. In field one, 262½ lines are scanned (A). At the end of field one, the electron scanning beam is returned to the top of the picture area (B). Scanning lines in field two (C) fall between the lines of field one. At the end of field two, the scanning beam is again returned to the top, where scanning continues with field one (D).**

E2B03 How is an interlaced scanning pattern generated in a fast-scan (NTSC) television system?

- A. By scanning two fields simultaneously
- B. By scanning each field from bottom to top
- C. By scanning lines from left to right in one field and right to left in the next
- D. By scanning odd numbered lines in one field and even numbered ones in the next

E3A17 What is meant by circularly polarized electromagnetic waves?

- A. Waves with an electric field bent into a circular shape
- B. Waves with a rotating electric field
- C. Waves that circle the Earth
- D. Waves produced by a loop antenna



# ANSWERS

- T1B06: B: [97.301(e), 97.305]
- T2B05: C: An overmodulated FM signal has excessive deviation and is said to be overdeviating. Overdeviation is usually caused by speaking too loudly into the microphone and may cause interference on adjacent channels. If often generates noise or distortion on voice peaks, called 'breaking up.' To reduce overdeviation, speak more softly or move the microphone farther from your mouth.
- T3B04: A: All radio waves travel at the speed of light in whatever medium they are traveling such as air.
- G1B03: A: [97.39a(9)] A beacon station normally transmits a signal for operators to observe propagation and reception characteristics. For this purpose, FCC rules specifically allow an amateur beacon to transmit one-way communications.
- G2B06: A: After listening for a short period of time, if you do not hear another station transmitting on the frequency, it is good practice to make a short transmission asking if the frequency is in use. It may be that due to propagation you are unable to hear the transmitting station, but the listening station can hear you. On CW, the Q signal 'QRL' and on the phone 'Is the frequency in use?' followed by your call sign, gives the opportunity for another station to respond.
- G3B01: D: Normally you will expect radio signals to arrive at your station by following the shortest path between you and the transmitting station. If you are listening to signals on your receiver and you hear a well-defined echo, even if it is a weak echo, the chances are you are hearing signals arrive at your station over a long path. The slightly longer time it takes the signals to travel the longer distance around the Earth results in a slight delay when compared to the direct short path.
- E1B03: A: [97.13(b)] A 1600 meter ( 1 mile) protection zone is required to limit the effect of noise and other spurious emissions on sensitive facilities
- E2B03: D: A picture is divided sequentially into pieces for transmission or viewing; this process is called scanning. A total of 525 scan lines comprise a frame in the US television system. Thirty frames are generated each second. The fast-scan TV frame consists of two fields of 262-1/2 lines each. The odd numbered lines are scanned in one field and the even numbered ones are scanned in the next. The half line is the secret to the interlaced scan pattern.
- E3A17: B: It is possible to generate waves in which the electric and magnetic fields rotate as they travel while maintaining their right-angle orientation. This condition is called circular polarization. It is particularly helpful to use circular polarization in satellite communication, where polarization tends to shift as the signal traverses the ionosphere or the satellite moves.

**Table 7.3**  
**Technician HF Privileges**  
200 watts PEP maximum output

Band (Wavelength)	Frequency (MHz)
80 meters	3.525 – 3.600 (CW only)
40 meters	7.025 – 7.125 (CW only)
15 meters	21.025 – 21.200 (CW only)
10 meters	28.000 – 28.300 (CW, RTTY and data)
	28.300 – 28.500 (CW and SSB)

## LINKS AND STUFF

*Under re-construction. Watch for*

### Copper Country Podcast

George, (W8FWG) is offering this new service from the ARRL. It is entitled "**So Now What?**" and is geared to the NEW HAM. We will continue with the original podcast of ("**The Doctor Is In**") too, and the two will alternate from week to week, each Friday night at 9 pm Eastern time over the Calumet Repeater 147.315 MHz PL-100.0 Hz.

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

*Copper 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 — 100.0 444.85 — 100.0
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
South Republic	146.82 + 100.0
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

**Copper County ARES**  
146.88  
Wednesday 9pm EST

**Mich-A-Con Social and  
ARES**  
146.85  
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://kcra-mi.net/skywarn/>  
Band Conditons: <http://bandconditions.com/>



**ABOUT OUR CLUB....****Club Officers****President:**

**Tom Martin, W8JWN**  
**(906) 774-5463**  
[tmartin@chartermi.net](mailto:tmartin@chartermi.net)

**Vice President**

**Scott Jarmusch, KA8TFF**

**Secretary:**

**Joe Ferris, KC9TQR**  
[irferris@borderlandnet.net](mailto:irferris@borderlandnet.net)

**Treasurer:**

**Debbie Garbowski, KD8VTS**  
**(906) 284-2450**  
[kd8vts@gmail.com](mailto:kd8vts@gmail.com)

**Editor:**

**Tom Heyboer, KC8TH**  
**(906) 779-0481**  
[Heyboer.tom@gmail.com](mailto:Heyboer.tom@gmail.com)

**Web Editor:**

**Tom Heyboer, KC8TH**  
**(906) 779-0481**  
[Heyboer.tom@gmail.com](mailto:Heyboer.tom@gmail.com)

**Radio License Exam Contact Persons:**

Mike Boileau: 906 563 1350  
 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.

### SkyWarn Spotters (2018)

Steve Johnson	K8CRY	Millie Hill
Tom Martin	W8JWN	Millie Hill Overlook
Burt Armbrust	WB8EBS	Hill above Wells Fargo, along US-2
Skip Caswell	KE9L	Merriman/Granite Bluff area
Barry Perron	KC9NFT	Keyes Peak
Bob Meyers	WA8FXQ	Faithhorn area (if not in Copper Country)
Terry Moriarity	K9TRY	Niagara
Dave Thomas	KG9Y	Niagara
Bill Grabowski Debbie Grabowski	<del>KD8VTT</del> KD8VTS	Mansfield Township/Johnson Potato Farm area
Sam Holmes	N8ATS	Pike Plains, Dunbar
Joe Ferris	KC9TQR	Vicinity of CR-N, U, & C in Florence County
Scott Dolatowski	KC9ZBC	Goodman

**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>
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		
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:efry7849@gmail.com">efry7849@gmail.com</a>
KG8NK	GEMBOLIS	LOUIS	ISHPEMING	906-485-5442	<a href="mailto:lgembolis@chartermi.net">lgembolis@chartermi.net</a>
KE8FWN	GRABOWSKI	BILLY	CRYSTAL FALLS	?	
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>
KD9HQD	LaLIBERTE	BRUCE	NIAGRA, WI	?	<a href="mailto:liberte@borderlandnet.net">liberte@borderlandnet.net</a>
W9BGL	LUCAS	BRIAN			<a href="mailto:bagel99@gmail.com">bagel99@gmail.com</a>
KE8GHE	LUNDAMO	DUANE	?	?	?
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	MORIRITY	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>
KE8GHH	RITTENHOUSE	DAVE	IRON MOUNTAIN	?	?
K4FMX	SCHAFFER	GARY	NIAGRA, WI	?	<a href="mailto:GARYSCHAFFER@LARGERIVER.NET">GARYSCHAFFER@LARGERIVER.NET</a>
KG9Y	THOMAS	DAVE	NIAGARA	715-251-1393	<a href="mailto:kg9y@arrl.net">kg9y@arrl.net</a>

BLACK: Paid Members

BROWN: Past or Unpaid Members



**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.