



MICH-A-CON

Iron Mountain,
Dickinson County, Mich

December 2018

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

Which is **December 12, 2018** 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

Hope that this newsletter finds you all well and prepared for winter. What happened to fall? Have you been caught with an antenna project in limbo because of the cold and snow?

I thought that when I returned from Las Vegas that I would have a week to get another bucket truck to at least get party of my antenna/tower project completed. Wrong! Snow and cold greeted me and brought me back to reality. We live in the U.P. !

Weather really didn't matter though because the owner of the 90' bucket truck had it in the shop to be painted. When the paint job was completed, it went to Florida to assist in hurricane cleanup. So, no changes here at this QTH.

In February 2019, it will have been two years without my main antenna. It has been 18 months since I've been able to use my 40 meter rotatable dipole.

My contesting hasn't suffered too much. It seems that propagation took a dive about the same time that I lost the 4 element SteppIR. My low Mosley beam has worked well and my 40 vee has been exceptional. Also, I don't go "full bore" anymore on contest weekends. If I want to quit and watch the Lions lose, I just leave the shack. My "finish" isn't important anymore.

Although I don't like FT-8 that much, It is a decent mode to "kill" some time. You can catch up on your email, clean out your drawers, make a pot of coffee, and set your clock to WWV, while at the same time making a dozen contacts on 40 meter FT-8. You just let the program do all of the work!

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FT-8 is the perfect mode to use when you are moved into one of the local assisted living facilities. Low power, low antennas, and low maintenance. Can't wait, HI!

CUL
73, Tom W8JWN

MICH-A-CON AMATEUR RADIO CLUB MINUTES OF November 7th, 2018

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

Secretary Report

Minutes of the October 10th, 2018 meeting were read and approved.

Treasurer Report

Balances as of November 7th, 2018:
Checking: \$80.95
Savings: \$2725.16 (Repeater: \$1019.22)
Cash: \$33.00

Repeater Report

Bob Meyers reported that the repeater has been working well and distance is improved. He will be working on the link to Marquette in the near future. He noted that we might want to use the 440 machine for the link full-time.

Old Business



The Echolink equipment will remain at Gary Schafer's house, for now. It is thought that previous problems might have been due to the old antenna.

Pete Schlitt was contacted regarding antennas at Pine Mountain. According to Pete, all the antennas there are being used.

The attempt to invite local amateur licensees to a meetings has not met with much success. The main problem is that a lot of people no longer have landlines.

New Business

Bob Meyers suggested that we should again have occasional presentations at meetings. He felt that something on digital modes would be appreciated. Dave Thomas will try to bring in his FT-817 and demonstrate some digital at the December meeting and Bob might give a presentation on working satellites in January.

A motion (Skip Caswell/Terry Moriarity) to reimburse Sam Holmes for buying dinner for the climbers was passed unanimously.

A motion (Bruce LaLiberte/Bob Meyers) to retain the current club officers for 2019 was passed unanimously.

Adjournment

Meeting adjourned at 7:45.

Attendees

Tom Martin	W8JWN
Scott Jarmusch	KA8TFF
Joe Ferris	KC9TQR
Debbie Grabowski	KD8VTS
Bill Grabowski	KD8VTT
Terry Moriarity	K9TRY
Bob Meyers	WA8FXQ
Brian Lucas	W9BGL
Bruce LaLiberte	KD9HQD

Burt Armbrust	WB8EBS
Skip Caswell	KE9L
Tim Miller	N8TUM
David Thomas	KG9Y
Duane Lundamo	KE8GHE
Pat Servia	KC8EMF
Gary Dodd	Visitor
Joyce Williams	Visitor

News

ARRL Executive Committee Updated on Regulatory, Governance Issues

QST de W1AW
ARRL Bulletin 16 ARLB016
From ARRL Headquarters
Newington CT November 1, 2018
To all radio amateurs

ARRL President Rick Roderick, K5UR, chaired the ARRL Executive Committee (EC) meeting on October 20 in Bloomington, Minnesota.

During his opening comments, President Roderick said his membership contacts have indicated that strong support exists for the Entry-Level License Enhancement petition to the FCC as well as for the Volunteer Monitor Program that would supplant the current Official Observers.

General Counsel Chris Imlay, W3KD, told the EC that the Amateur Radio Parity Act remains alive in Congress as part of the House-passed version of the Financial Services and General Government authorization Act (FSGG). The measure now is before a House-Senate conference committee to resolve differences between the versions passed by each house. Imlay indicated that administrative implementation of the bill's provisions remains on the table should the act not be included in the FSGG authorization bill.

Imlay said that ARRL is awaiting final approval from the FCC of a new Memorandum of Understanding for the Amateur Auxiliary. Discussions are under way with key players planning the rollout and implementation of the Volunteer Monitor program.

The EC also was told that the FCC has yet to reply to ARRL's concerns regarding a recent FCC Enforcement Advisory that addressed the importation and use of non-certified radios, which have been marketed to the general public. ARRL officials recently conferred with FCC officials about the Advisory, expressing concerns about a portion of the notice that called on radio amateurs possessing such radios not to use them. ARRL officials believe there was no valid legal basis for that assertion in the notice. The EC directed Imlay to prepare a "white paper" explaining ARRL's position on the issue to inform members in response to inquiries.

The FCC Enforcement Advisory can be found in PDF format at, <https://docs.fcc.gov/public/attachments/DA-18-980A1.pdf> .

In another FCC matter, ARRL officials met with the chief and staff members of the FCC Wireless Telecommunications Bureau to urge more rapid FCC resolution of a series of long-pending rulemaking proceedings now before the Bureau. Most urgent are the long-delayed "symbol rate" petition (WT Docket 16-239) and the ARRL's Entry-Level License Enhancement petition. The FCC has not yet put the latter petition on public notice for comment.

In other action, the Committee directed the Board's National Broadband Plan Committee to continue monitoring potential threats to the 5.850 - 5.925 GHz, 10 GHz, and 24 GHz bands. Amateur allocations within the so-called "mid-band" spectrum (3.7 - 7.125 GHz) now are under consideration for fixed and mobile broadband allocation.



On the subject of the ARRL Policy on Board Governance and Conduct of Members of the Board of Directors and Vice Directors, the EC considered and extensively discussed two proposed restatements of that policy. The EC adopted a motion to recommend a draft proposal prepared by the committee appointed by the President to the full Board, with a draft prepared by Imlay also presented as an alternative. The Board holds its next regular meeting in January.

The EC also received a status report on the review of Ethics and Elections Guidelines to be presented to the Board in January. The ad hoc committee formed for the purpose will circulate its proposal 60 days in advance of the January Board meeting.

Minutes of the October 20 EC meeting, in PDF format, have been posted at, <http://www.arrl.org/files/file/2018%20Board%20of%20Directors/ECMinutesOct2018FinalV2.pdf>

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Great Lakes Division Registered Hamfests to End of Year (Corrected)

There were several glitches in this morning's hamfest posting for upcoming ARRL Sanctions hamfests. Some hamfests were missing from the list and several dates were corrupted. Here is an updated listing, re-verified from the ARRL HQ record of approvals.

11/3/18	Grant ARC Hamfest	Georgetown, OH
12/1/18	Fulton Co. Winterfest	Delta, Oh
12/2/18	Lanse Creuse Hamfest	Madison Hts, MI
1/20/19	S.C.A.R.F. Hamfest	Nelsonville, OH
1/27/19	Hazel Park Hamfest	Hazel Park, MI
1/27/19	Tusco ARS Hamfest	Strasburg, OH
2/17/19	Livonia Hamfest	Livonia, MI
2/17/19	Mansfield Hamfest	Mansfield, OH

ARRL Great Lakes Division
Director: Dale R Williams, WA8EFK
wa8efk@arrl.org

ARLB032 W1AW 2018 Spring Operating Schedule

QST de W1AW
ARRL Bulletin 8 ARLB008
From ARRL Headquarters
Newington CT March 12, 2018
To all radio amateurs

Morning Schedule:

Time	Mode	Days
1300 UTC (9 AM ET)	CWs	Wed, Fri
1300 UTC (9 AM ET)	CWf	Tue, Thu

Daily Visitor Operating Hours:

1400 UTC to 1600 UTC - (10 AM to 12 PM ET)
1700 UTC to 1945 UTC - (1 PM to 3:45 PM ET)

(Station closed 1600 to 1700 UTC (12 PM to 1 PM ET))

Afternoon/Evening Schedule:

2000 UTC (4 PM ET)	CWf	Mon, Wed, Fri
2000 " "	CWs	Tue, Thu
2100 " (5 PM ET)	CWb	Daily
2200 " (6 PM ET)	DIGITAL	Daily
2300 " (7 PM ET)	CWs	Mon, Wed, Fri
2300 " "	CWf	Tue, Thu
0000 " (8 PM ET)	CWb	Daily
0100 " (9 PM ET)	DIGITAL	Daily
0145 " (9:45 PM ET)	VOICE	Daily
0200 " (10 PM ET)	CWf	Mon, Wed, Fri
0200 " "	CWs	Tue, Thu
0300 " (11 PM ET)	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 2230 UTC (6:30 PM ET), 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 0000 UTC (8 PM ET) Thursdays and 0000 UTC (8 PM ET) Fridays.

Audio from W1AW's CW code practices, and CW/digital/phone bulletins is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The monthly W1AW Qualifying Runs are presented here as well. The CW/digital/phone 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.

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.

FCC licensed amateurs may operate the station from 1400 UTC to 1600 UTC (10 AM to 12 PM ET), and then from 1700 UTC to 1945 UTC (1 PM to

3:45 PM ET) Monday through Friday. Be sure to bring your current FCC amateur license or a photocopy.

on page 90 in the March 2018 issue of QST or on the web at, <http://www.arrl.org/w1aw-operating-schedule> .

The complete W1AW Operating Schedule may be found NNNN

ARRL MICHIGAN SECTION NEWS

Greetings to all the Amateurs of Michigan (from November),

Happening in the words below are Homage, Holidays, and Hope. This and more awaits you in the November 2018 Michigan Section Newsletter. Grab a glass or mug of your favorite beverage (can't single out just one kind, because that wouldn't be "equal and fair") and read the mostly politically free sentences.

Veterans Day

I'm one of that weird folk who think that Veteran's Day should be a daily event. Remember that those who have served or are serving in the Armed Forces protect and preserve our rights to do just about anything we've come to take for granted. My dad would often comment that "free just means that you might not have paid for it directly". I am grateful to all those who have and are serving our country.

Affiliated Clubs

Bill Loeber, NU3D, has hit the ground running in the role of our new Section Affiliated Club Coordinator, and if you haven't heard from him, you soon will.

Bill will be trying to clean up the club database. There are a great majority of our clubs with records that are way out of date. Having current contact information lets prospective member contact the club and lets ARRL HQ know the club is active. Please update the records with current information to avoid being moved to inactive status.

To remain listed as an active ARRL affiliated club the club record must be updated at least once per year. If an update is not made in two years, the club will be moved to the inactive roster. Updating your club record is easy and is done on line.

It is a good idea to print this e-mail and include the information with other important documents given to incoming club officers. If you're impatient, you can reach out to Bill before he finds you!

Holidays

I often used to joke about the greeting card companies and their desire to create more new holidays, would come up with "HannaHallowThanksMus", to be able to market more of their products.

It does appear that retailers have adopted this approach, and so everyone is preparing to celebrate with family and friends. Be ready to talk about your hobby, what got you (and keeps you) interested and engaged and encourage others to join our ranks. All too often, we put a huge level of confidence in existing infrastructure to satisfy our need to communicate, and it isn't until those services are readily available that we see one of the many values of Amateur Radio. You only have to travel outside our section to understand how Amateur Radio stepped up their game to assist those in need. As my good friend Joni Mitchell crooned, "Don't it always seem to go, that you don't know what you got 'til it's gone"

100 New Michigan Section Members by January 2019

We are sneaking up on this goal, but just in case you missed it the first time - Ok, here's the ask. To prove a

point, we need to add 100 new ARRL members to the Michigan Section roster by the end of the year. To encourage all of you to recruit, drop me a note after someone you've influenced has joined (with your callsigns). I will enter you into a small raffle (funded by me). These should be new members, not renewals. I've been told that this is impossible, but I think it's easy goal.

Hospitality Acknowledgements

October 16th Cascades Amateur Radio Society
October 21st Kalamazoo Swap
October 28th USECA Swap

Michigan ARRL Section Staff Travel Plans

December 2nd L'Anse Creuse Swap (K8JK)
January 27th, 2019 Hazel Park Swap (K8JK)
February 17th, 2019 Livonia Swap (WA8EFK)
March 16th, 2019 Crossroads Swap (K8JK)

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 (ARPSC) Activities for October 2018

Station Activity Reports (SAR) for October 2018

WB8WKQ 362, K8ED 160, WB8TQZ 146, WD8MWD 106, KB8KM 64, K8RDN 48, WD8USA 47, KE8CEH 39, N5MKY 36, KE8BYC 26, KE8CYC 21, KC8NFN 7, WB8RCR 5, KD8ZCM 4

Public Service Honor Roll (PSHR) for October 2018:

WB8RCR 335, KE8BYC 239, WD8USA 155, K8RDN 153, WD8MWD 145, KE8CYC 121, KE8CEH 116, KC8YVF 114, KD8ZCM 114, WB8TQZ 110, K8ED 110, N5MKY 91, WB8WKQ 90

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

Net traffic for October 2018:

Michigan Amateur Communications System 111
The Michigan Net 81
Michigan Traffic Net 64
Southeastern Michigan Traffic Net 46
Upper Peninsula Net 31
Great Lakes Emergency and Traffic Net 31
Monroe Co ARPSC Net 28
Michigan Digital Traffic Net 27
Northern Lower Eastern Upper Peninsula Net 9
Saginaw County ARES Net 4

Total Volunteer Dollar Value for October 2018: \$ 50,623

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 ARPSC 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

I'm looking forward to hearing from all of you, and to visit your local club or group. Thanks to all of the radio amateurs who continue to make the hobby great! Get Active, Get Involved, and Get On The Air!

73

Jim K8JK

Dales Tales

Greetings, welcome to "Dale's Tales" for December 2018.

David AD8Y, the Faculty Advisor of The Case Amateur Radio Club, reports that CARC will be sponsoring the 2019 HamSCI conference in March. It will be on the campus of Case Western Reserve University and will include tours of the CARC station, W8EDU, and the CWRU ThinkBox public-access shop. There will also be an exam session. More material will be available as the date approaches. This fits well with the ARRL's new incentive for Lifelong Learning and you will hear more about that over the next few months.

DXCC Field Card Checkers. As you recall a few months ago I successfully lobbied for several revision to the DXCC Field Card Checker rules. Among the changes is the provision for adding more checkers, especially in areas where there are none. In the Great lakes Division, we have card checker in the following areas: Paducah, KY; Louisville, KY; Russell, KY; Gregory, MI; Marysville, MI; Bath, MI; Waterford, MI; Kalamazoo, MI; Goshen, OH; Hamilton, OH; Wooster, OH; and Hiram, OH. A quick look at the map will clearly show that the urban areas of our three Sections are well covered, but there are regions where added Card Checkers would really benefit the DXers in those areas. We need checkers in Southern Kentucky, SE Ohio, the northern Lower Peninsula and the Upper Peninsula in Michigan. If you live in any of these areas and hold DXCC, please consider becoming a card checker. Of course, we would like you to be available at regional hamfests to do some field checking just like our present Field Checkers. If you have an interest in helping out, please let me know at wa8efk@arrl.org.

ARRL Board Meeting. Your Board of Directors will hold its annual meeting January 18 and 19. Vice Director Delaney and I will be in attendance. If there are items of concern to you that you feel deserve Board action, please

send them to me before mid December. That will allow adequate time for me to discuss those concerns with my fellow Directors, and offer ample opportunity to place any specific subjects on the meeting agenda. The meeting agendas are quite full, as they include reports and discussion relating to the League's various standing Committees, such as Administration and Finance (A&F), Programs and Services (PSC) or the Executive Committee. Often consideration for suggested changes to field programs, like contests or DXCC are first reviewed by one or more of the standing committees and presented to the full Board with recommendations.

IN OTHER NEWS: My personal quest for making connections with inactive local hams continues, but I am thinking I might find that contacting one per month is bound to be the going rate. The initial effort with phone and e-mail has run its course and I now need to turn to letter writing due to the inaccessibility of e-mail addresses and phone numbers. We'll see how that works out over the next few weeks. More next month.

TOM'S COMMENTS: I like the changing seasons. But I think all of us in the three states in our Division were surprised by how quickly fall turned to winter. Hope this doesn't mean a long, snowy winter. What does this have to do with ham radio? If there are "seasons" for ham radio, it's a bit like gardening. There's always something to do, but the activities vary according to the seasons. I got most of my antenna work out of the way, so unless something falls, I don't have to worry about putting up antennas in the cold. The upcoming month of December brings lots of club parties. Nice to be able to enjoy some moments of friendship with those we share the hobby with.

For those of us a little more involved in disaster response, batteries always need to be charged, and the gear always

ready. Any season can bring emergencies. Even though we tend to focus on spring storms, October's SET in Ohio featured a winter storm scenario. Just a few years ago, hams in Central Kentucky had the real thing, and they did a great job responding.

With some exceptions, hamfests tend to happen in the spring through the fall. I usually have a list of small items, parts, etc., that I'll look for at hamfests. Hope I don't need anything too quickly. The next hamfest I plan on attending is still a few months away.

Two other things in ham radio are really without seasons. Mentoring is key to keeping the hobby going. Any time a new ham, or an old ham with a new challenge, needs help, we should all be ready to offer advice or help. How's your club doing with mentoring as a club project?

The other thing is dealing with the public. Whether you're at a winter parade or a summer bike ride, we can all promote ham radio's public service aspect. And it's a great feeling to be of help in your community. Enjoy the holiday parties coming up!

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

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. If you plan to request ARRL Sanctioning, please be sure to do it well in advance of your Hamfest date, as this allows adequate time for QST Listings. Be sure to invite your ARRL Officials as soon as your date is set. With 52 weeks and 65+ hamfests, things do double up a little. Plan ahead for requesting your ARRL Officials to attend.

12/1/18	Fulton Co. Winterfest Delta, OH
12/2/18	Lanse Creuse Hamfest Madison Hts, MI
1/20/19	S.C.A.R.F. Hamfest Nelsonville, OH
1/27/19	Hazel Park Hamfest Madison Hts, MI
1/27/19	Tusco ARS Hamfest Strasburg, OH
2/2/19	HARA Swap Negaunee, MI
2/8/19	Cherryland Swap Traverse City, MI
2/17/19	Livonia Hamfest Livonia, MI
2/17/19	Mansfield Hamfest Mansfield, OH

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

As we enter this year's Holiday season, let's all be thankful for family and friends and the wonderful blessings they have brought us during the year. Season's Greetings from Tom and Helen, Judy and me and all the best wishes for a joyous New Year.

73, Let's go light up the bands, 'tis the season!!

Dale Williams WA8EFK
 Director
 Great Lakes Division
wa8efk@arrl.org



ARRL PROPAGATION BULLETIN

ZCZC AP49
QST de W1AW
Propagation Forecast Bulletin 49 ARLP049 From Tad
Cook, K7RA Seattle, WA December 7, 2018 To all radio
amateurs

After nine days with no sunspots, sunspot group 2729
emerged on December 5. The sunspot number on that
date was 16. Average daily solar flux for the week was
68.9, unchanged from last week. On Thursday, Decem-

ber 6 the appearance of 2729 continued, with a sunspot
number of 17 and the sunspot area increasing from 30 to
50 millionths of a solar hemisphere.

Average daily planetary A index rose from 3.3 to 7, while
average mid-latitude A index went from 2.1 to 4.9.

Predicted solar flux for the next 45 days is 70 on Decem-
ber 7 and 8, 69 on December 9, and 68 on December 10
through January 20.

Predicted planetary A index is 10 on December 7, 8 on December 8 and 9, 5 on December 10 to 16, 8 on December 17 and 18, 5 on December 19 to 27, 8 on December 28, 12 on December 29 and 30, 10 on December 31, 12 on January 1, 8 on January 2 to 5, 5 on January 6 to 12, 8 on January 13 and 14, and 5 on January 15 to 20.

Geomagnetic activity forecast for the period December 7, 2018 to January 2, 2019 from F. K. Janda, OK1HH.

"Geomagnetic field will be:

Quiet on December 10, 12 to 15, 19 to 21, 23 Quiet to unsettled on December 18, 22, 25 to 27, January 1 Quiet to active on December 9, 11, 16, 24, January 2 Unsettled to active on December 7 and 8, 17, 30 and 31 Active to disturbed on December (28 and 29)

Solar wind will intensify on November 30 and on December 7 to 9, (10 to 12, 15 to 18, 24 to 27) 28 to 31, January 1, (2).

Parenthesis means lower probability of activity enhancement."

The current Space Weather Highlights

(<ftp://ftp.swpc.noaa.gov/pub/warehouse/2018/WeeklyPDF/prf2257.pdf>) from NOAA shows updated predictions for smoothed sunspot numbers and solar flux through the end of 2022. As of last month, the predictions ended in 2019.

I've been curious to see their prediction for the upcoming solar minimum. If you look on pages 10 and 11 (somewhat obscured by a formatting error) you can see the predicted numbers. The prediction for this month shows a smoothed sunspot number of 10 for December 2018, then declining to 2 in July 2020 through January 2021, then 1 during February 2021 through January 2022, and 0 after that through the end of 2022.

I thought this cycle was supposed to bottom out in 2019 or 2020, but this seems to suggest a disappearance of sunspots in 2022. I wouldn't bet on it, even though there has been some scary conjecture about a future grand minimum. I am checking some sources, and hope to see NOAA clarify this.

Here is an article about observing plasma activity around sunspots to predict space weather:

<https://bit.ly/2zLmcH4>

David Moore sent this article about a view of the solar North Pole:

<https://bit.ly/2EhQx3K>

Mike Schaffer, KA3JAW observes propagation on the FM broadcast band, and says the winter FM DX season is underway.

"On December 2, an FM-DXer near Hamilton, Ontario, Canada reported on the Tv/Fm Skip Log under the Dxworld website of the reception of five FM stations via Es propagation towards his southwest sector for twenty-one minutes."

The list includes stations in Texas, Louisiana and Kansas, from 1551 to 1612 UTC.

For now at least, you can see the entries here:

<http://dxworld.com/tvfmlookback.php>

Tamitha Skov posted this long video on indices:

<https://www.youtube.com/watch?v=zVgZQqUYemc>

Here is her latest video:

<https://www.youtube.com/watch?v=Lb6k3dLzPPM>

This weekend is the ARRL 10 meter Contest. While solar activity is low enough that it doesn't support 10 meter propagation very well, there is always the winter sporadic E activity. See <http://www.arrl.org/10-meter> for more info.

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 November 29 through December 5, 2018 were 0, 0, 0, 0, 0, 0, and 16, with a mean of 2.3. 10.7 cm flux was 67.8, 67.9, 69.4, 69, 68.4, 68.7, and 70.9, with a mean of 68.9.

Estimated planetary A indices were 3, 3, 8, 12, 10, 8, and 5, with a mean of 7. Estimated mid-latitude A indices were 2, 2, 4, 9, 9, 5, and 3, with a mean of 4.9.

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ARRL DX NEWS

ZCZC AE50
QST de W1AW
DX Bulletin 50 ARLD050
From ARRL Headquarters
Newington CT December 6, 2018
To all radio amateurs

This week's bulletin was made possible with information provided by W9JJ, 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.

MONTENEGRO, 40. Station 4O18YOTA is QRV during December as part of YOTA, or Youth On The Air. The idea behind YOTA is to showcase amateur radio to the youth and to encourage them to be active on the air. QSL via OQRS.

CYPRUS, 5B. Special event station C4XMAS is QRV during the festive season throughout the month of December. Activity will be on 160 to 6 meters using CW, SSB and various digital modes. QSL via IZ4AMS.

SENEGAL, 6W. A group of operators are QRV as 6V1A from Goree Island, IOTA AF-045, until December 9. Activity is on various HF bands using CW and SSB with two stations. QSL via 6W1QL.

THE GAMBIA, C5. Andre, ON7YK is QRV as C5YK until March 9, 2019.

Activity is on 60 to 10 meters using FT8, with some CW and SSB. QSL to home call after March 15, 2019.

BOSNIA-HERZEGOVINA, E7. Station E71YOTA is QRV during December as part of YOTA. QSL via OQRS.

SPAIN, EA. Members of the Amateur Radio Union Malaga are QRV with special event call EH40CE until December 12 to commemorate the enactment of the Constitution of Spain 40 years ago. QSL via EA7URM.

ESTONIA, ES. Station ES9YOTA is QRV during December as part of YOTA. QSL via OQRS.

ETHIOPIA, ET. Members of the Ethiopian Amateur Radio Society are QRV as ET3YOTA during December as part of YOTA. QSL via N200.

FRENCH POLYNESIA, FO. Operators Cezar, VE3LYC and Adrian, KO8SCA are QRV as TX0A from Maria Est Atoll, IOTA OC-113, and as TX0M from Morane Atoll, IOTA OC-297P, until December 18. Activity is on 40 to 10 meters using CW and SSB. QSL via VE3LYC.

DOMINICAN REPUBLIC, HI. Peter, DD1GG is QRV as DD1GG/HI until December 14. Activity is holiday style on various HF bands. QSL to home call.

HONDURAS, HR. Tom, N9EAW is QRV as HQ9T from Roatan Island, IOTA NA-057, until December 18. Activity is holiday style on the HF bands using slow CW and SSB. QSL direct to home call.

AUSTRIA, OE. Members of the United Nations Amateur Radio DX Contest Club are QRV as 4Y1A until December 11 for International Civil Aviation Day. QSL via UA3DX.

DENMARK, OZ. Volker, DJ8VW will be QRV as 5P8VW/p from Aabenraa from December 8 to 19. Activity will be on 160 to 6 meters using CW, SSB and FT8. QSL to home call.

ARUBA, P4. Ben, DL6RAI is QRV as P4/DL6RAI until December 27. Activity is holiday style on the low bands, with some activity in various contests. QSL via LoTW.

CURACAO, PJ2. Anders, SM4KYN will be QRV as PJ2/SM4KYN from December 10 to January 14. Activity is on the HF bands. This includes being active as PJ2T in the ARRL 10-Meter contest. QSL direct to home call, and PJ2T via W3HMK.

EAST KIRIBATI, T32. Nobu, JA0JHQ is QRV as T32NH until December 11.

Activity is on 160 to 6 meters using CW and FT8. This includes being active in the ARRL 10-Meter contest. QSL direct to home call.

MACEDONIA, Z3. Look for stations Z30YOTA and Z39YOTA to be QRV during December as part of YOTA. QSL via OQRS.

KOSOVO, Z6. Look for Z60YOTA to be QRV during December as part of YOTA. QSL via OQRS.

THIS WEEKEND ON THE RADIO. The ARRL 10-Meter Contest, NCCC RTTY Sprint, QRP 80-Meter CW Fox Hunt, NCCC CW Sprint, PODXS 070 Club Triple Play Low Band Sprint, TRC Digi Contest, SKCC Weekend CW Sprintathon, International Naval Contest, QRP ARCI Holiday Spirits Homebrew Sprint and the CQC Great Colorado Snowshoe Run are all on tap for this upcoming weekend.

The 4 States QRP Group Second Sunday Sprint is scheduled for December 10.

The CWops Mini-CWT Test, QRP 40-Meter CW Fox Hunt, Phone Fray and NAQCC CW Sprint are scheduled for December 12.

Youth On The Air runs during all of December.

The ARRL International Grid Chase runs during all of 2018.

Please see December QST, page 70, 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....

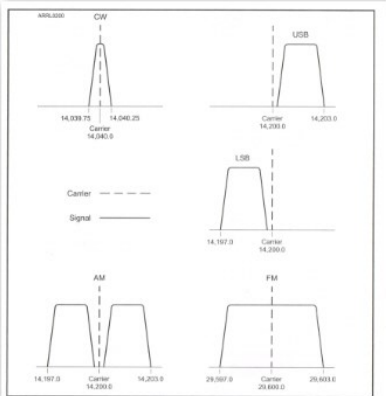


Figure E1A01 — An illustration of the relationship between carrier frequency and the actual signal sidebands. Most transceivers are configured to display the carrier frequency and not the frequency of the sidebands so the amateur needs to take care to keep all of the signal in the band.

E1A03

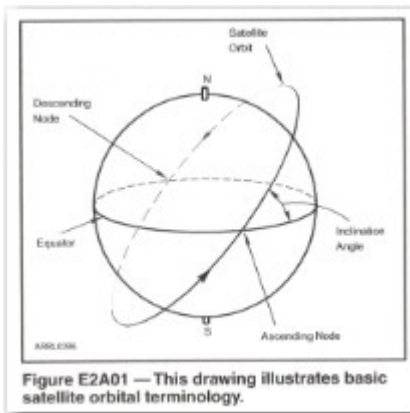


Figure E2A01 — This drawing illustrates basic satellite orbital terminology.

E2A03

T1A05 What is proof of possession of an FCC-issued operator/primary license grant?

- A. A printed operator/primary station license issued by the FCC must be displayed at the transmitter site
- B. The control operator must have an operator/primary station license in his or her possession when in control of a transmitter
- C. The control operator's operator/primary station license must appear in the FCC ULS consolidated licensee database
- D. All of these choices are correct

T2A05 How should you respond to a station calling CQ?

- A. Transmit CQ followed by the other station's call sign
- B. Transmit your call sign followed by the other station's call sign
- C. Transmit the other station's call sign followed by your call sign
- D. Transmit a signal report followed by your call sign

T3A05 When using a directional antenna, how might your station be able to access a distant repeater if buildings or obstructions are blocking the direct line of sight path?

- A. Change from vertical to horizontal polarization
- B. Try to find a path that reflects signals to the repeater
- C. Try the long path
- D. Increase the antenna SWR

G1A05 Which of the following frequencies is in the General Class portion of the 40 meter band?

- A. 7.250 MHz
- B. 7.500 MHz
- C. 40.200 MHz
- D. 40.500 MHz

G2A05 Which mode of voice communication is most commonly used on the HF amateur bands?

- A. Frequency modulation
- B. Double sideband
- C. Single sideband
- D. Phase modulation

G3A05 What is the solar flux index?

- A. A measure of the highest frequency that is useful for ionospheric propagation between two points on Earth
- B. A count of sunspots which is adjust for solar emissions
- C. Another name for the American sunspot number
- D. A measure of solar radiation at 10.7 centimeters wavelength

E1A05 What is the maximum power output permitted on the 60 meter band?

- A. 50 watts PEP effective radiated power relative to an isotropic radiator
- B. 50 watts PEP effective radiated power relative to a dipole
- C. 100 watts PEP effective radiated power relative to the gain of a half- wave dipole
- D. 100 watts PEP effective radiated power relative to an isotropic radiator

E2A05 What do the letters in a satellite's mode designator specify?

- A. Power limits for uplink and downlink transmissions
- B. The location of the ground control station
- C. The polarization of uplink and downlink signals
- D. The uplink and downlink frequency ranges

E3A05 Tropospheric propagation of microwave signals often occurs along what weather related structure?

- A. Gray-line
- B. Lightning discharges
- C. Warm and cold fronts
- D. Sprites and jets



ANSWERS

- 1T1A05: C. [97.7] Once your information appears in the FCC ULS consolidated database, that's proof you have been granted an operator/station license and are fully authorized to go on the air. The FCC no longer routinely issues printed licenses, although they are available upon request.
- 1T2A05: C. If you hear a station calling CQ, send the CQing station's call sign once then yours once or twice. Send your call clearly and distinctly so that it can be understood if there is noise or interference.
- 1T3A05: B. On VHF and UHF, if a direct signal path is blocked by building or other obstruction, a beam antenna can be used to air the signal at a reflecting surface to bypass the obstruction.
- G1A05: A. [97.301(d)] General Class licensees have access to the following portions of the 40 meter band ($f=300/40=7.5$ MHz): 7.025 – 7.125 MHz on CW/RTTY/Data and from 7.175 – 7.300 MHz on CW/Phone/Image
- G2A05: C. Most amateurs who use voice communications on the high frequency (HF) bands use single sideband (SSB) voice. There are some operators who prefer the high-fidelity sound of double-sideband amplitude modulation (AM). AM requires more than twice the bandwidth of an SSB signal, however. There is also some frequency modulated (FM) and phase modulated (PM) voice operation on the 10 meter band, but that mode also requires a much wider bandwidth than USB. Some amateurs are beginning to experiment with digitally encoded voice communications, but SSB is the most common HF voice mode.
- G3A05: D. [97.313(i)] Solar flux is radio energy coming from the Sun. High levels of solar energy produce greater ionization in the ionosphere. The solar flux measurement is taken daily by measuring radio energy from the Sun at 2800 MHz which is a wavelength of 10.7 cm. The measurement is then converted into solar flux index. Higher values of the solar flux index correspond to the higher values of the solar flux. The solar flux measurement may be taken under any weather conditions – the Sun does not have to be visible, as it does for determining the sunspot number. The radio energy measurement is converted to an open-ended numeric index with a minimum value of 65 (for the minimum amount of energy). Higher values of the solar flux index indicated higher levels of solar activity.
- E1A05: C. If an antenna other than a half-wave length dipole is used, the transmitter output power must be adjusted to account for the gain of the antenna. For example, if the antenna has a gain of 3 Db (twice the gain of a dipole), the minimum transmitter output power is 50 watts. If an antenna with less gain than a dipole is used, more than 100 watts can be used.
- E2A05: D. When referring to the satellite itself and not the type of signals it relays, mode refers to how the satellite's uplink and downlink frequencies are configured. Each frequency band is abbreviated by a single letter: VHF by V, UHF by U, L band by L, and so forth. The first letter specifies the uplink and the second letter specifies the downlink.

LINKS AND STUFF

Under re-construction. Watch for the orange barrels

*Delta County Amateur Radio
Escanaba, MI
www.dcars.org*

*Copper Country Radio Amateur
Dollar Bay, MI
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
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**
146.850
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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Scott Jarmusch, KA8TFF

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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	<u>KD8VTT</u> 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	wb8ebs@yahoo.com
W8XBO	ARMBRUST	ED	IRON MOUNTAIN	906-779-5593	w8xbo@sbcglobal.net
KC9KVP	BAKER	BETH	NIAGARA		
KB9AVX	BAKER	SCOTT	NIAGARA	715-251-1944	kb9avx@yahoo.com
KB8SBP	BERTOLDI	BILL	KINGSFORD		
W8BEY	BEY	DANA L.	KINGSFORD	906-774-7937	lst797@charter.net
K8DDA	BRAY	MIKE	VULCAN	906-201-1550	mikebray@chartermi.net
KE9L	CASWELL	SKIP	IRON MOUNTAIN	906-774-3371	acaswell4238@charter.net
KC8QZG	DAKE	DAVE	NEWBERRY		
KC9ZBC	DOLATOWSKI	SCOTT	GOODMAN	715-633-1006	kc9zbc@live.com
KC9TQR	FERRIS	JOE	FLORENCE	517-589-4386	jrferris@borderlandnet.net
N9MBG	FRY	ED	PEMBINE	906-221-7307	efry7849@gmail.com
KG8NK	GEMBOLIS	LOUIS	ISHPEMING	906-485-5442	lgembolis@chartermi.net
KE8FWN	GRABOWSKI	BILLY	CRYSTAL FALLS	?	
KD8VTS	GRABOWSKI	DEBRA	CRYSTAL FALLS	906-284-2450	kd8vts@gmail.com
KD8VTT	GRABOWSKI	WILLIAM	CRYSTAL FALLS		
KC8TH	HEYBOER	TOM	IRON MOUNTAIN	906-779-0481	heyboer.tom@gmail.com
N8ATS	HOLMES	SAM	PEMBINE	906-322-8507	chopsam@centrylink.com
KA8TFF	JARMUSCH	SCOTT	IRON MOUNTAIN		
KB9EMU	KNUTSON	WILLIAM	FENCE	715-336-2250	dknutson54@gmail.com
KB8ETK	KOMBLEVICZ	JOSEPH	IRON MOUNTAIN	906-774-4094	kombleviczj@charter.net
KD9HQD	LaLIBERTE	BRUCE	NIAGRA, WI	?	liberte@borderlandnet.net
	LUCAS	BRIAN			bag99@gmail.com
KE8GHE	LUNDAMO	DUANE	?	?	?
W8JWN	MARTIN	THOMAS	IRON MOUNTAIN	906-774-5463	tmartin@chartermi.net
WA8FXQ	MEYERS	BOB	VULCAN	906-396-0119	meyersb@uplogon.com
KC8LRP	MEYERS	MARGE	VULCAN	906-396-8913	mgmeyer@uplogon.com
N8TUM	MILLER	TIMOTHY	FLORENCE	715-696-6517	timmiller.up@gmail.com
K9TRY	MORIARITY	TERRY	NIAGARA	715-251-1670	kb9zer@yahoo.com
ND8M	PAUL	JARED	NORWAY	989-660-9535	jaredpaul@me.com
KD8SZA	PAUL	MICHELLE	NORWAY		
KC9NFT	PERRON	BARRY	FLORENCE	715-696-6175	bperron2@netzero.com
KC8JRI	REED	GORDY	IRON MOUNTAIN	906-779-1254	gordyreed@charter.net
KE8GHH	RITTENHOUSE	DAVE	IRON MOUNTAIN	?	?
K8ABS	RIVERSIDE	JIM	IRON MOUNTAIN	906-458-0773	jriverside@charter.net
W8IFI	RYE	JIM	CRYSTAL FALLS	906-875-3582	jjimrye@up.net
K4FMX	SCHAFFER	GARY	NIAGRA, WI	?	GARYSCHAFFER@LARGERIVER.NET
KG9Y	THOMAS	DAVE	NIAGARA	715-251-1393	kg9y@arrl.net

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.