



MICH-A-CON

Iron Mountain,
Dickinson County, Mich

July 2019

Meeting Reminder: Second Wednesday of the Month

Which is **July 10, 2019** at 07:00 PM at the Dickinson Library, Iron Mountain.

Please be there and support the cause of Amateur Radio.

Map to Field Day, Gary's House: See Page 4

From The President

Words from the President

Field Day is in the books but maybe not in "QST" magazine! I have spent the last two hours trying to upload our entry with no success. Since I'm leaving Thursday morning for Canada, I wanted to finish the documentation as soon as possible. I emailed the ARRL Contest Committee and informed them of the problem. Logging was an issue this year. WSJTX for FT-8 went into the log as SSB not digital. I finally got that figured out after creating a new log and all was well. My CW contacts on 15 and 20 meters for some reason were not showing up on the final dupe sheet. I have given up and our CW total will only be 72 instead of 114. FD isn't a contest and who cares. Right?

The final tally on contacts was 84 on SSB and 132 on FT-8. Notice that there were no RTTY contacts this year. I never heard any on the bands. Looks like FT-8 has won the digital battle. States missed this year were MN, NM, NE, OK, AK, HI, ID, and WY. Minnesota????

No NFL, BC, PEI, NS, Maritime, and NWT for Canadian contacts. We worked VI and PR for DX. We really have to straighten out the logging issues. We need to network all of the computers as well. I always bring a thumb drive for the logs but that disappeared. It contained all of our FD submissions for the past 6 years. Highlights: Food, food, and more food. The ladies did an excellent job! Also antennas and the club tower went up with only one issue. The winch on the trailer is junk! We had to use a come-along to raise it and Tom Heyboer's truck winch to lower it. The club must get a new winch ASAP! Thanks again to all club members who participated. A big thanks to Gary and Janet for letting us use their farm.

All went well with the Field Day entry upload on Monday morning.

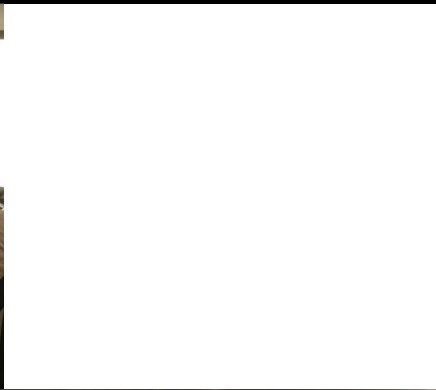
See you all at the meeting Wednesday at 7:00.

73,

Tom W8JWN

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Cameorons & Gramps
& Rebecca

MICH-A-CON AMATEUR RADIO CLUB MINUTES OF June 12, 2019

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

Secretary Report

Minutes of the May 8th, 2019 meeting were read and approved.

Treasurer Report

Balances as of June 12th, 2019:

Checking: \$0.95

Savings: \$3,238.67 (Repeater: \$1,440.16)

Cash: \$48.00

Repeater Report

The repeater was reported to be working fine. The Echolink unit was offline for a while, but is now back in operation. Bob Meyers came down from the Copper Country and got the computer running again.

Tom Martin will contact tower climber Al Augustine to see when he could finish the work begun last fall.

**Old Business**

There was nothing new to report with regard to the IRS.

Field Day discussion determined:

Setup will begin at 1:00 pm at Gary Schafer's farm. Equipment will be picked up at the storage van, at noon.

6 Meters might be worth a try. Perhaps someone could bring an antenna for the band.

Food and drink plans were finalized.

Computer networking is still to be determined.

New Business

Tom Martin reported that the Central U.P. Road Rally is not planning to use our two meter repeater this year.

Adjournment

Meeting adjourned at 7:27. (Bruce LaLiberte/Scott Jarmusch)

For the Good of the Order

Attendees reported on their recent activities.

The 50/50 drawing was won by Terry Moriarity. The club treasury was enriched by \$25.00.

Attendees

Tom Martin	W8JWN
Scott Jarmusch	KA8TFF
Joe Ferris	KC9TQR
Burt Armbrust	WB8EBS
Gary Schafer	K4FMX
Bill Grabowski	KD8VTT
Debbie Grabowski	KD8VTS
Brian Lucas	W9BGL
Bruce LaLiberte	KD9HQD
Terry Moriarity	K9TRY

Jack Hudson	W9MU
Jan Schafer	Visitor
Joyce Williams	Visitor

News

Michigan Amateurs;

I forgot to add one other comment in this month's section news....

GLETN Net Manager

Looking for an experienced Net Manager to take over Jack Wiswasser's place in June for the Great Lakes Emergency and Traffic Net (GLETN). Jack, WA8IAL has been the net manager for the last ten years and desires to be replaced. The net meets nightly at 8:30 PM Eastern time (Pre-net at 8:00 PM) on 3.932 Mhz. If interested, please send an e-mail to Mark Shaw, K8ED at k8ed@arrl.net

73

ARRL Michigan Section
Section Manager: James A Kvochick, K8JK
k8jk@arrl.org

FIELD DAY AT GARY'S FARM





Nothing like a little Pink Floyd in the morning—Terry







From the Copper Country

Hello Everyone:

Starting next Friday, March 15 I, George, (W8FWG) will be 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.

Please let me know if you like the podcasts, downloaded from the ARRL.

I have received permission from both groups to use them with the stipulation that I edit out the music, and the advertisers, in their productions and I have been doing that on a regular basis.

Here now is a summary of what this new service will bring you:

New ARRL Podcast Geared Toward Newcomers to Amateur Radio Debuts Today

A new ARRL podcast aimed newcomers to Amateur Radio will launch on Thursday, March 7. Called, "[So Now What?](#)," the podcast will alternate new-episode weeks with the "[ARRL The Doctor is In](#)" podcast. "So Now What?" will focus on answering questions and providing support and encouragement for new licensees t

George Thurner

o get the most

out of the hobby. Co-hosting "So Now What?" will be ARRL Communications Content Producer Michelle Patnode, W3MVP, and W1AW Station Manager Joe Carcia, NJ1Q. The podcast will explore questions that newer hams may have and the issues that keep newcomers from remaining active.

ARLB032 W1AW 2019 Summer/Spring Operating Schedule

QST de W1AW
ARRL Bulletin 7 ARLB007
From ARRL Headquarters
Newington CT March 11, 2019
To all radio amateurs

ARLB007 W1AW 2019 Spring/Summer Operating Schedule

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.

The complete W1AW Operating Schedule may be found on page 93 in the March 2019 issue of QST or on the web at <http://www.arrl.org/w1aw-operating-schedule>.

NNNN

ARRL MICHIGAN SECTION NEWS

Greetings to all the Amateurs of Michigan,

Field Day! Who doesn't get just a little excited about demonstrating the capabilities we amateurs have in assembling working communications stations almost anywhere? Not to mention the great food and sleep deprived comradery? Read more about Field Day, Generations, and upcoming ARISS contacts in this edition of the Section Newsletter.

Amateur Radio Week

Please note that Governor Gretchen Whitmer has issued a proclamation declaring June 18th through June 24th as Amateur Radio Week here in Michigan. You can view this document and even save a copy for your very own, at the Michigan ARRL Section Website (www.mi-arrl.org). A special thanks to Ed Hude WA8QJE, for driving this to completion.

Section Staff Vacancies

With the passing of our Section PIO, Patrick Mullet, KC8RTW, we are in seeking a replacement for that position. The job responsibilities of a PIO (Public Information Officer) are listed on the ARRL website, simply do a search for PIO.

We'll also be seeking replacements for other positions throughout 2019. Some vacancies will be created as folks who have served retire, and others may need to be filled to improve activity levels within their offices.

I'm always happy to talk about your ideas and potential roles you would like to take on, and since I try and make appearances at several local swaps, it shouldn't be too tough to track me down. Please remember that it's relatively easy to spot issues, but much more challenging to craft workable solutions.

2019 TAPR Digital Conference in MICHIGAN!

Mark your calendars now for the 2019 ARRL/TAPR Digital Communications Conference, September 20th through September 22nd being held at the

Marriott Detroit Metro Airport Hotel. The conference schedule includes technical and introductory forums, demonstrations, a Saturday evening banquet and an in-depth Sunday seminar. This conference is for everyone with an interest in digital communications – beginner to expert! Call 972-671-8277 or online at www.tapr.org/dcc

Send a positive message to the organizers that Michigan is the place to hold these conferences!

Cherryland ARC Assists in Upcoming ARISS Contact

The Traverse Area District Library in Traverse City, MI, has been scheduled for its ARISS contact. The schedule is: 2019-06-28 at 14:02 UTC.

The Cherryland ARC is assisting with this ARISS contact. The ARISS Mentor guiding the library is Gordon Scanell, KD8COJ -- his email address is: kd8coj@gmail.com

The club let Gordon know the following:

On April 25, a news story aired on the WWTV-Channel 9 & 10 and was posted online regarding the Traverse Area District Library's staff sponsoring an upcoming ARISS contact in Traverse City, MI. The library staff is working on hands-on activities and their summer reading club has the theme, "A Universe of Stories." Area ham radio operators from the Cherryland Amateur Radio Club were building the antennas to be used for the ARISS contact.

Generations, Clubs, & ARRL Members

To help set the stage, it's a good idea to understand a little about generational boundaries. Then I would like to share a bit about what I think this might mean to attracting ARRL and Club members to our ranks.

Baby Boomers

The Boomers generation was born between 1946 and 1964, and currently make up 22.9% of the US population. Significant events in the world for them was the escalation of the Cold War, and the First Manned Lunar landing.

Generation X

Gen X folks were born between 1965 and 1980 and represent 19% of the US population. This generation witnessed the end of the Cold War and saw the revolution of the first personal computers blossom.

Millennials

Individuals born between 1981 and 1995 representing 22.1% of the US population are considered to be Millennials. They were thrust into the world that witnessed the 9/11 terrorist attacks, along with the growing tidal wave of social media.

Generation Z

Births between 1996 and 2014 are Generation Z, and at 24.3% of the US population represent the largest single group. Gen Z folks saw the end of the Great Recession, and the rise of AI (Artificial Intelligence) hit mainstream.

The oldest Boomer is around 73, Gen X around 54, oldest Millennial is around 38, and oldest Gen Z population is around 23.

Age is not the only separator of the generations – their respective views on brand loyalty, money, social needs, and fun are often quite different.

Which brings me to my point – in many cases the amateur radio community is attempting to reach out to these four generations using one common set of guiding principles and tools. In the words often wrongly attributed to Albert Einstein, “The definition of insanity is doing the same thing over and over, expecting a different result”.

Not all amateur radio clubs are sitting there waiting for someone else to discover things, for example the YACHT (Youth Amateur Communications Ham Team) and many others. Our challenge is emphasizing the FUN of amateur radio, especially to Gen Z populations who have always grown up with active global technology in the hands.

There is also a huge need for mentoring the younger generation. This can be accomplished by gathering more members, to both local clubs and the ARRL, from the ranks of amateurs that are often not a part of either. Failing to support local groups, along with the only lobbying organization for amateur radio, is not a contribution on the positive

side of the ledger.

Sadly, I don't have any magic answers, and I'm looking to all of you for great ideas. I would love to hear our thoughts on the subject. It's all about TEAM (Together Each Achieves More).

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 May 2019

Station Activity Reports (SAR) for May 2019

WB8WKQ 429, K8ED 143, K8BKM 115, N5MKY 101, WD8MWD 75, K8RDN 69, KB8RCR 50, WD8USA 37, KD8ZCM 36, KE8CEH 35, WB8TQZ 29, WB8RCR 12, KE8CYC 11, W8DW 10, KB8PGW 10

Public Service Honor Roll (PSHR) for May 2019:

WD8WMD 280, KE8BYC 267, KC8YVF 247, WB8RCR 232, WD8USA 232, K8RDN 145, KE8CYC 136, KD8ZCM 131, KB8RCR 118, N5MKY 115, K8ED 100, WB8WKQ 90, KB8PGW 80, W8DW 79, WB8TQZ 72, KE8CEH 71, N8OSL 67

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



Net traffic for May 2019:

Michigan Amateur Communications System 110
 The Michigan Net 61
 Michigan Traffic Net 60
 Southeastern Michigan Traffic Net 34
 Michigan VHF Traffic Net 29
 Michigan Digital Traffic Net 12
 Northern Lower Eastern Upper Peninsula Net 11
 Upper Peninsula Net 7
 Saginaw County ARES Net 3

NTS person-hour Value for April 2019: \$ 31,861
 (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 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. I deeply appreciate the countless hours folks spend in volunteering their energy to make the hobby even better.

Thanks to all the radio amateurs who continue to make the hobby great!

Get Active, Get Involved, and Get On The Air! It's Field Day, even if you just operate from outside the back door, get on the air!

73
 Jim K8JK

Dales Tales

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

ARISS Adventure. Dale's Tales extends congratulations to the Cherryland ARC of Traverse City, MI on their cooperative effort with the Traverse Area District Library as they hosted a radio contact with the International Space Station on July 28. Eight youngsters were selected from the library's Summer Reading Program to ask questions of Astronaut Nick Hague aboard the station.

Conditions were perfect for the effort, which included club-provided computer controlled Az-El antennas on the library roof, plus rack mounted primary and back up radios and controls. Former astronaut Col. Greg Johnson was also present as a guest speaker.

Considerable emphasis was placed upon STEM, Science, Technology, Engineering and Math, and the youngsters in attendance saw first-hand what the results of a STEM aligned education can mean to their futures.

This all points out the strong need for radio amateurs to develop closer ties with the educational facilities in our communities. Clearly, the enthusiasm shown by the attendees is a good indication of excellent opportunities for all of us. We watched

these selected eight youngsters communicate with the ISS and saw the excitement on their faces and the faces of their brothers, sisters, friends and families.

Supporting STEM projects and applicable school programs can offer entry into amateur radio, and we know the opportunities that amateur radio has opened for many of us in our careers. Perhaps a discussion with some of your local school administrators could open an opportunity to introduce amateur radio into your local school system.

TOM'S TOME Comments from your ARRL Vice Director. (Yes of course, we just had to introduce this new column name!!)

Repeaters –what they were, what they are, what they never were, and what they might become.

OK. We all know that repeater activity is not what it was twenty or thirty years ago. I had occasion to remember that a few weeks ago when it would have been nice to have someone to talk to. I was in an area with several road closures that popped up. The first one, okay, just take another route. After the second one, I started wondering what else would be closed, and could I get where I wanted to go. The repeater for there is usu-

ally quiet (like most) and, no one on to talk to. Maybe someone could have helped, maybe not. Of course I have GPS in the car as well as on my phone. I just noticed that there was no friendly voice to either guide, or even to commiserate.

By the way, for those few people reading this who think they know the repeater and the situation, don't worry. I'm not pointing fingers. It happens everywhere. No one is to blame.

Back to the friendly voice. I certainly remember earlier times when any call on a repeater would get an answer, and sometimes even helpful comments. (And some unhelpful, even if genuinely meant, suggestions.)

Automated traffic reporting such as GPS signals are a better way to go. Generally, that stuff keeps better track of traffic and situations than any of us could. But it's the idea of a response from someone who knows the area, the back routes, and maybe even the situations.

What ever happened to people who monitored their repeaters while they did other tasks? Have other things so taken over our attention that it's no longer important to listen? Of course, if no one talks, there's no one to listen to. Where does it start to get better?

And finally, this. ARRL ran a news story that the WRC has an agenda item asking for the study of the 144-146 MHz portion of the band globally for potential reassignment to Aeronautical Mobile Service. Do we care? That full band is where most of our repeaters are located.

Time to start communicating again?

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

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://arrl-greatlakes.org/>

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

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 Hamfest 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. Plan ahead to request your ARRL

Officials to attend. With 52 weeks and 70+ hamfests in the Great Lakes Division, things do double up a little and we need to share duties.

7/7/19	20/9 RC Tailgate Swap	Austinville, OH
7/20/19	Big Sandy Hamfest	Louisa, KY
7/20/19	NOARS Fest	Elyria, OH
7/20/19	Gladwin Swap	Gladwin, MI
7/21/19	Van Wert	Van Wert, OH
7/28/19	Portage Hamfair	Ravenna, OH
8/3/19	Columbus Hamfest	Columbus, OH
8/4/19	U. P. Hamfest	Escanaba, MI
8/10/19	DX Engineering Hamfest	Tallmadge, OH
8/10/19	Central Kentucky	Lexington, KY
8/17/19	GARS Germantown	Germantown, OH

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

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

ARRL PROPAGATION BULLETIN

ZCZC AP26
 QST de W1AW
 Propagation Forecast Bulletin 26 ARLP026
 From Tad Cook, K7RA
 Seattle, WA June 28, 2019
 To all radio amateurs

A new sunspot group emerged on June 24, but don't count on it persisting much longer. It emerged already far along the western limb, and is about to rotate off the visible solar disc. Sunspot numbers on June 24-27 were 24, 12, 11 and 11.

Average daily sunspot number increased from 0 to 6.7 over the week of June 20-26, while average daily solar flux increased from 67.1 to 67.4.

Average daily planetary A index decreased from 5.3 to 5, and average daily middle latitude A index decreased from 7 to 5.7.

Predicted solar flux is 67 on June 28 through July 5, 68 on July 6, 69 on July 7-9, 68 on July 10-11, 67 on July 12-27, 68 on July 28, 69 on July 29-31, 68 on August 1-2, 69 on August 3-5, 68 on August 6-7, and 67 on August 8-11.

Predicted planetary A index is 5 on June 28-30, 8 on July 1, 5 on July 2-5, 8 on July 6, 5 on July 7-9, 8 on July 10-11, 5 on July 12-20, then 8, 12 and 10 on July 21-23, 5 on July 24 through August 1, 8 on August 2, 5 on August 3-5, 8 on August 6-7, and 5 on August 8-11.

You can see daily updates of these predictions, usually sometime after 2100 UTC at, <ftp://ftp.swpc.noaa.gov/pub/forecasts/45DF/>.

Geomagnetic activity forecast for June 28 until July 24, 2019 from F.K. Janda, OK1HH, who has been compiling this weekly geomagnetic forecast since January 1978.

"Geomagnetic field will be:

"Quiet on June 28, 30, July 9, 14-16, 21
 Quiet to unsettled on June 29, July 3, 8, 10-11, 13, 17, 20
 Quiet to active on June July 1 (- 2), 4-6, 12, 18, 24
 Unsettled to active on July 7, 19, 22-23
 No disturbed conditions predicted.

"Solar wind will intensify on June (28,) July 5-7, (8-9,) 10-11, (17-19, 22-24)

"Parenthesis means lower probability of activity enhancement."

On Tuesday, June 25, NN4X reported from Florida:

"Amazing over-the-pole conditions on 17M this morning (6/25/2019).

"Decoded dozens of JAs on FT8 between 1200Z and 1245Z and worked a few. UA0BA (NP49) was logged at 1512Z, worked HSOZIV at 1519Z, and was called by BH4QYX immediately afterwards, but did not complete that QSO."

The latest video from Dr. Tamitha Skov, WX6SWW:

<https://youtu.be/XzX1Ea7pqz4>

If you would like to make a comment or have a tip for our readers, email the author at, 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 June 20 through 26, 2019 were 0, 0, 0, 0, 24, 12, and 11, with a mean of 6.7. 10.7 cm flux was 67.7, 66.5, 66.4, 67.2, 67.9, 67.9, and 68, with a mean of 67.4. Estimated planetary A indices were 7, 6, 4, 3, 5, 4, and 6, with a mean of 5. Middle latitude A index was 8, 8, 5, 4, 5, 5, and 5, with a mean of 5.7.

NNNN





ARRL DX NEWS

ZCZC AE26
QST de W1AW
DX Bulletin 26 ARLD026
From ARRL Headquarters
Newington CT June 27, 2019
To all radio amateurs

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

ITU HQ, 4U_ITU. Brennan, N4QX is in Geneva and QRV as both HB9/N4QX and 4U1ITU until July 4. QSL via operator's instructions.

UGANDA, 5X. Anders, SM0HPL is QRV as 5X7W from Kampala until July 6 while on work assignment. Activity is in his spare time on the HF bands using QRP power and CW, JT65, FT8 and FT4. QSL direct to home call.

TRINIDAD AND TOBAGO, 9Y. Karel, OK2ZI is QRV as 9Y4/OK2ZI from Trinidad, IOTA SA-011, until July 6. Activity is on 40 to 10 meters using CW, SSB and various digital modes. QSL to home call.

TAIWAN, BV. Special event station BV0ME is QRV until 0359z on December 13. Activity is on the HF bands using FT8 during the weekdays and SSB during the weekends. QSL via BU2EQ.

CHILE, CE. Members of the Grupo YL Zona Norte will be QRV with special event stations CB1SOL in Iquique and CB2SOL in Coquimbo from July 1 to 7 for the Solar Eclipse that occurs on July 2. Activity will be on the HF bands. QSL via CA2MEM.

FEDERAL REPUBLIC OF GERMANY, DA. Special event station DLOSOP will be QRV during July to support the annual Sea of Peace award. QSL via bureau.

SPAIN, EA. Members of the Asociacion de Radioaficionados de Padron are QRV with special event call AO50MOON during July to commemorate the first manned landing on the Moon. QSL via EA1RCI.

REPUBLIC OF KOREA, HL. Special event station HL18FINA will be QRV from July 1 to August 18 to celebrate the Federation Internationale de Natation's 18th World Championships and World Masters Championships. QSL via HL4CCM.

SVALBARD, JW. Peter, LA7QIA will be QRV as JW7QIA from Spitsbergen, IOTA EU-026, from June 29 to July 6. Activity will be on 6 meters from Grid Square JQ68. QSL to home call.

WA7BNM Contest Web Sites for details.
NNNN

AUSTRIA, OE. Special event stations OE2XXM and OE5XXM will be QRV during July to celebrate the 35th international Ham Radio meeting in Gosau. Activity will be mostly on 80 and 40 meters using SSB, as well as 2 meters and 70 centimeters. QSL via bureau.

CRETE, SV9. Paul, SA6PIS will be QRV as SV9/SA6PIS/p from Chania from June 30 to July 7. Activity will be holiday style on 40, 20, 15 and 10 meters using SSB. QSL to home call.

TUVALU, T2. Tony, 3D2AG and John, KK7L are QRV as T2AR and T2R, respectively, until July 5. Activity is on 160 to 10 meters, including 6 and 2 meters, using CW, SSB, RTTY, JT65 and FT8. QSL T2AR direct via 3D2AG and T2R direct via N7SMI.

UKRAINE, UR. Special event station EM2019ARDF is QRV until July 4 to mark the 3rd IARU World Youth ARDF Championship being held here. QSL via bureau.

SOUTH SUDAN, Z8. Diya, YI1DZ is QRV as Z81D from Juba until October 10. Activity is in his spare time on 80 to 10 meters using SSB and FT8. QSL via OM3JW.

GIBRALTAR, ZB. Members of the Gibraltar Amateur Radio Society will be QRV as ZB2IG19 from July 5 to 31 for the XVIII Nat-West International Island Games. QSL via bureau.

THIS WEEKEND ON THE RADIO. The RAC Canada Day Contest, QRP 20-Meter CW Fox Hunt, NCCC RTTY Sprint, NCCC CW Sprint, Feld Hell Sprint, Battle of Carabobo International Phone Contest, UFT QRP Contest, 10-10 International Spirit of 76 QSO Party and IQRQ Quarterly Marathon are on tap for this weekend.

The RSGB 80-Meter Club CW Championship is scheduled for July 1.

The Fireflies QRP 72 Sprint and ARS Spartan CW Sprint are scheduled for July 2.

The CWops Mini-CWT Test and Phone Fray are scheduled for July 3.

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.

Please see June QST, page 86, July QST, page 85, and the ARRL and

Review

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

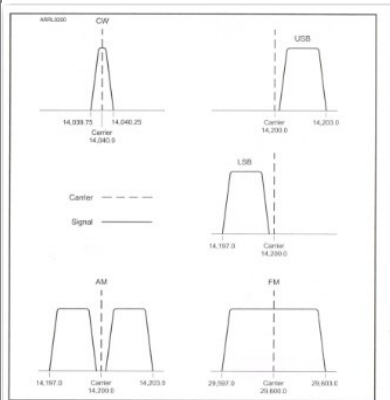


Figure E1A01 — An illustration of the relationship between carrier frequency and the actual signal sidebands. Most transceivers are configured to display the carrier frequency and not the frequency of the sidebands so the amateur needs to take care to keep all of the signal in the band.

E1A03

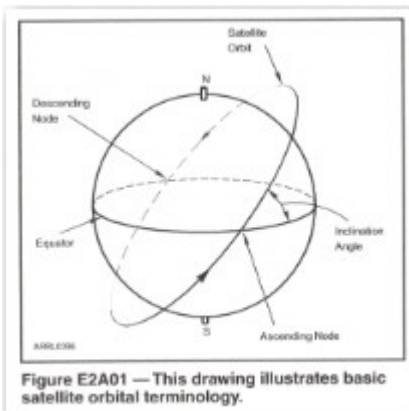


Figure E2A01 — This drawing illustrates basic satellite orbital terminology.

E2A09

Table E2-1

Satellite Operating Modes

Mode	Satellite Receive (Uplink)	Satellite Transmit (Downlink)
V/H	VHF (144 – 146 MHz)	HF (21 – 30 MHz)
U/V	UHF (435 – 438 MHz)	VHF (144 – 146 MHz)
V/U	VHF (144 – 146 MHz)	UHF (435 – 438 MHz)
L/U	L-Band (1.26 – 1.27 GHz)	UHF (435 – 438 MHz)

T1B01 What is the International Telecommunications Union (ITU)?

- A. An agency of the United States Department of Telecommunications Management
- B. A United Nations agency for information and communication technology issues
- C. An independent frequency coordination agency
- D. A department of the FCC

T2A12 Which of the following is a guideline when choosing an operating frequency for calling CQ?

- A. Listen first to be sure that no one else is using the frequency
- B. Ask if the frequency is in use
- C. Make sure you are in your assigned band
- D. All of these choices are correct

T3A12 How might fog and light rain affect radio range on the 10 meter and 6 meter bands?

- A. Fog and rain absorb these wavelength bands
- B. Fog and light rain will have little effect on these bands
- C. Fog and rain will deflect these signals
- D. Fog and rain will increase radio range

- G1A12 Which of the following applies when the FCC rules designate the Amateur Service as a secondary user on a band?
- A. Amateur stations must record the call sign of the primary service station before operating on a frequency assigned to that station
 - B. Amateur stations are allowed to use the band only during emergencies
 - C. Amateur stations are allowed to use the band only if they do not cause harmful interference to primary users
 - D. Amateur stations may only operate during specific hours of the day while primary users are permitted 24 hour use of the band
- G2B01 Which of the following is true concerning access to frequencies in the non-emergency bands?
- A. Nets always have priority
 - B. QSOs in progress always have priority
 - C. Except during FCC declared emergencies, no one has priority access to frequencies
 - D. Contest operations must always yield to non-contest use of frequencies
- G3A12 What does the K-index indicate?
- A. The relative position of sunspots on the surface of the Sun
 - B. The short term stability of the Earth's magnetic field
 - C. The stability of the Sun's magnetic field
 - D. The solar radio flux at Boulder, Colorado
- E1A12 With your transceiver displaying the carrier frequency of CW signals, you hear a DX station's CQ on 3.500 MHz. Is it legal to return the call using CQ on the same frequency?
- A. Yes, the DX station initiated the contact
 - B. Yes, the displayed frequency is within the 80 meter CQ band segment
 - C. No, one of sidebands from the CW signal will be out of the band
 - D. No, U.S. stations are not permitted to use CW emissions below 3.525 MHz
- E2A12 What is one way to predict the location of a satellite at a given time?
- A. By means of the Doppler data for the specified satellite
 - B. By subtracting the mean anomaly from the orbital inclination
 - C. By adding the mean anomaly to the orbital inclination
 - D. By calculations using the Keplerian elements for the specified satellite.
- E3A12 What is the cause of the auroral activity?
- A. The interaction in the F2 layer between the solar wind and the Van Allen belt
 - B. A low sunspot level combined with tropospheric ducting
 - C. The interaction in the E layer of charged particles from the Sun with the Earth's magnetic field
 - D. Meteor shower concentrated in the extreme northern and southern latitudes.



ANSWERS

T1B01: B: The International Telecommunication Union (ITU) was formed as an agency of the United Nations (UN) in 1949. The ITU is an administrative forum for working out international telecommunications treaties and laws, including frequency allocations. The ITU also maintains international radio laws that all UN countries agree to abide by.

T2A12: D: Before you call CQ you should do three things: 1) Be sure the frequency is one your license privileges authorize you to use. 2) Listen to be sure the frequency is not already in use. If you don't hear any signals in five to ten seconds the frequency may be available. 3) Make a short transmission asking if the frequency is in use.

T3A12: B: Precipitation such as fog and rain can absorb microwave and UHF radio waves although it has little effect at HF and on the lower VHF bands.

G1A12: C: {97.303} You should always listen before you transmit. This is especially important on bands where Amateur Radio is a secondary service, such as the 30 or 60 meter band. Amateurs are only permitted to use these frequencies if they do not cause harmful interference to the primary users. If you hear a station in the primary service or receive interference from such a station you should immediately change frequencies.

G2B01: C: Except when the FCC has declared a communications emergency and designated specific frequencies for emergency communications, no single or group of amateurs has priority on any amateur frequency. Good operating practice is to use the flexibility of the amateur service to avoid and minimize interference.

G3A12: B: The K-index represents readings of the Earth's geomagnetic field, updated every three hours at Boulder, Colorado. K-index values indicate the stability of the Earth's geomagnetic field. Steady values indicated a stable geomagnetic field, while rising values indicated an active geomagnetic field. K-index trends are important indicators of changing propagation conditions. Rising K-index values are generally bad news for HF propagation, especially for propagation paths involving latitudes above 30° north. Values of 4 and rising warn of conditions associated with auroras and degraded HF propagation.

E1A12: C: The sidebands of a CW signal extend above and below the frequency of the signal.

E2A12: D: Johannes Kepler described the planetary orbits of our solar system. The laws and mathematical formulas that he developed may be used to calculate the location of a satellite at a given time. By using as input the values of a set of measurements describing the satellite orbit, called Keplerian elements, computer software can determine the location of the satellite.

E3A12: C: Captured by the Earth's magnetic field, charged particles from the Sun travel along the field to the magnetic poles. Near the poles, the particles are traveling nearly vertically and as they collide with molecules in the E layer of the atmosphere, create ions that can reflect radio waves..

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

Copper Country Radio Amateur

Dollar Bay, MI

www.ccrac.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/>

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Scott Jarmusch, KA8TFF

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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	<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
KC9KVP	BAKER	BETH	NIAGARA		
KB9AVX	BAKER	SCOTT	NIAGARA	715-251-1944	kb9avx@yahoo.com
KB8SBP	BERTOLDI	BILL	KINGSFORD		
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
KD9HQD	LaLIBERTE	BRUCE	NIAGRA, WI	?	liberte@borderlandnet.net
W9BGL	LUCAS	BRIAN			bagel99@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	?	?
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.