



The Wave Bender

March 2021



AWARD WINNING NEWSLETTER

WRARC PREZ



Greetings everyone,

I hope everyone has been enjoying your time inside staying warm recently. I know we've been spending an awful lot of time indoor this year and haven't been able to get together like we used to but that might all be about to change. Sort of.

Sunday February 14th, the board held a trial meeting through Zoom. Things seemed to work out fairly well after everyone involved was able to download the program and find their email invite to the meeting. We will have another board meeting with Zoom March 14 and during that Meeting we will be setting up a test meeting with the entire club for March 17, at 7pm. We will see how well it works for us and decide from there if it would be something that we would like to continue.

If anyone has any questions about how Zoom works you can always call or email me. Also we have been noticing some of our members have not been receiving all of or any of our QST emails. If you are someone that feels you have been one of the affected please let me know, as the QST email system is what will be used to send the club their Zoom meeting invites.

73 de WF8U Chris
wf8u@wrarc.net
WRARC/President



IN THIS ISSUE

WRARC Prez Sez	01
From the desk of Our Secretary	03
From Our VP	03
A Word From Our DB Manager	03
What's coming up	04
Could I be looking for You	05
Ham Radio Signals from Mars	06
NASA's Mars 2020 Spacecraft	07
Silent Key - Sale	08
From the National Weather Service	08
Repeater Update	09
Additional Volunteer Examiners Not Needed	10
ARRL to Extend Field Day Rule Waivers	10
In Brief	11
Membership Application	12
Take time to laugh	13
Calendar	14

2021 Officers:

- President:** Chris Monske, WF8U wf8u@wrarc.net
- VP:** Maureen Stein, KD8NXS kd8nxs@wrarc.net
- Secretary:** Mike Cibella, KC8UNR kc8unr@wrarc.net
- Treasurer:** Bob Kramer, KE8HHH ke8hhh@wrarc.net
- Past President:** Bob Mitzel, N8RCM n8rcm@wrarc.net

Trustees:

- Steve Fabry, KC8SOY kc8soy@wrarc.net
- Darrin Cannon, N8DMC n8dmc@wrarc.net
- Rose Marko, KD8TII kd8tii@wrarc.net

Appointed Positions:

- Social: Maureen Stein, KD8NXS
kd8nxs@wrarc.net
- Repeater & Nets: Steve Fabry, KC8SOY
kc8soy@wrarc.net
- Classes: Chris Monske WF8U
kd8ely@gmail.com
- Testing: Darrin Cannon, N8DMC
n8dmc@wrarc.net
- Newsletter/Web: Jane Avnet K8JAA
k8jaa@wrarc.net
- Historian: Rose Marko, KD8TII
kd8tii@wrarc.net
- Badges: Darrin Cannon, N8DMC
n8dmc@wrarc.net

Officer's Meeting: Listen to the Friday night net for Zoom meeting information.

Members Meeting: Listen to the Friday night net for Zoom meeting information.



OTHER IMPORTANT WEB SITES

THE ARRL EXAM SEARCH PAGE
 <[HTTP://WWW.ARRL.ORG/FIND-AN-AMATEUR-RADIO-LICENSE-EXAM-SESSION](http://www.arrl.org/find-an-amateur-radio-license-exam-session)>

OHIO SINGLE SIDEBAND NET
 <[HTTP://WWW.OSSBN.ORG/INDEX.HTML](http://www.ossbn.org/index.html)>

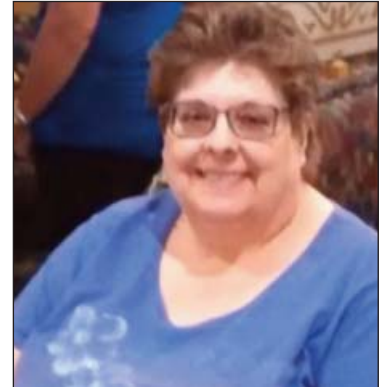
ANTENNA HEIGHT ABOVE AVERAGE TERRAIN (HAAT) CALCULATOR
[HTTPS://WWW.FCC.GOV/MEDIA/RADIO/HAAT-CALCULATOR](https://www.fcc.gov/media/radio/haat-calculator)



<http://www.wrarc.net/>

FROM OUR VP

Hello, Everyone. I hope you are all safe and well. Time still marches on and so does the pandemic. I hope that all of you who want it can get the vaccine when your eligibility comes up. Some of you may have received it already. As time goes by. This will be the key to returning things to normal. In the meantime, we have some good news to report. We are going to be able to hold virtual zoom general meetings, targeting this month to begin. We are planning the first one for March 17, St. Patrick's Day. We realize that this is a Wed. instead of a Tues., but the change in day is just temporary, likely through May.



So, instead of going out to a St. Patrick's Day gathering on the 17th that could turn out to be a superspreader event for the virus, stay in the safety of home and join us for the meeting on your own computer or smart phone. We are planning a 7PM meeting time. An e-mail with all of the details will be coming out in advance of the meeting date. We will start out with a group meeting first and as we get better at doing this, we will add in presentations virtually until we can have in person meetings again

If you are in touch with any club members who are not now regularly receiving qst e-mails and/or the newsletter, please tell them to get in touch with Bob Mitzel N8RCM at 575-910-1456 as soon as possible to verify that we have your correct, current e-mail address. This is vital to being included in the zoom general meetings. Also, everyone please download a membership form as per Rose KD8TII's recent qst. This is to be refilled out and mailed to the PO Box address at the top of the page. This is necessary to keep the club membership roster correct and up to date. That is a great opportunity to send in your 2021 dues if you have not already done so. That's all I have for you this month. Until next time, stay safe and warm too!

73, Maureen, KD8NXS

FROM THE DESK OF OUR SECRETARY



Hello ! Hope everyone is doing well and feeling good. Just a short note of things received in our P.O. Box as the mail is overloaded and behind for obvious reasons. We have received several renewals, and a new membership. Hopefully everyone was prepared for the weather we had and the weather we didn't get also. We had our first board meeting using zoom meeting the other day. Hopefully we can implement this with the membership since we have no idea when we can have regular meetings again.

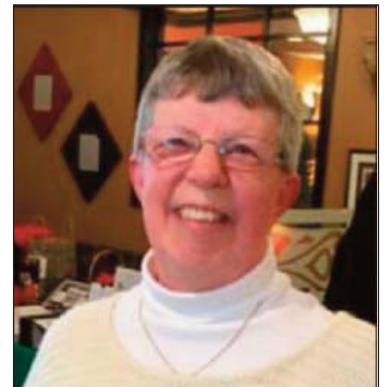
73 Mike, KC8UNR
WRARC/Secretary

A WORD FROM OUR DB MANAGER

To all WRARC members:

This is the Data Base Manager for WRARC. I collect all the applications and send all the pertinent information to Jane to update the membership list on the web page, like, names, call sigs, home phone numbers, cell phone numbers, class (Tech, General, Extra) and email addresses.

Recently I scanned the applications and found some discrepancies between the applications and what is listed on the posted membership list. They include call sigs, phone numbers, and email addresses. What I am asking of you, our members, is to please download the membership application listed under the title Membership Information on the web page with your correct info to make it easier for me to send Jane the correct information so she can update the web page and make it easier for any other member needing someone's information. The application has the club's address as the heading where to send it along with your dues.



73 Rose, KD8TII
WRARC/DBMgr

I have put a copy if the membership application on page 12, ye ed

WHAT'S COMING UP?

CQ CQ CQ - CALLING ALL THOSE READING THIS ARTICLE! START STUDYING!

We are going to attempt a TEST SESSION! Use these cold nights to get yourself prepared. You should be ready to go when you do some online practice tests with a score of 85% or better. YOU GOT THIS!

Testing will be held at Bob's House on Sunday, March 28 at 3:00 P.M.

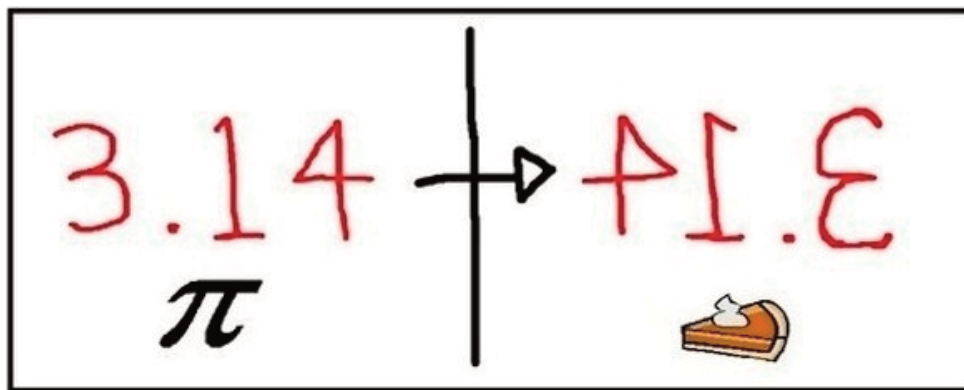
Bob Mitzel, N8RCM
15054 Stoltz Rd
Diamond, Ohio 44412
575-910-1456

Please contact Darrin, N8DMC, if you plan on attending or to find out more info, by email N8DMC@wrarc.net - we will practice social distancing during testing, masks will be required. Please check into our Friday night nets at 9:00 P.M. on the WRARC repeater, 145.270 (PL 110.9) for more details.

I've been wondering if our current and new members with an email address, if are you receiving our communications, newsletters etc.? If not, let me, N8DMC@wrarc.net, and Rose, KD8TII@wrarc.net, know so we can both update our email and membership rosters.

If you have any questions or suggestions for your Club Officers, do not hesitate and send us a line. Use that officers call sign in front of wrarc.net for example: WF8U@wrarc.net (our president) and we can bring up your idea or suggestion at a board meeting.

The president has been tinkering with the repeater with some extra things that are programmed into the repeaters controller, such as the courtesy tone, and advising when our next net is, weather updates, etc. Let him know what your thoughts are on them. Recently there was a change to the courtesy tone and others brought it up to him to advise they didn't care for it - and guess what - it changed! A little friendly criticism is all that it takes from you, our members, to get things done!



CONTACT WRARC ELMERS WITH YOUR QUESTIONS - QUESTIONS@WRARC.NET

Fabry, Steve KC8SOY
Haren, Roy KD8IJF

Yaesu FT8900, FT8800, Mobile
???

kc8soy@yahoo.com
harens@juno.com

He who is afraid of asking, is afraid of learning

Used with permission

Articles from members for the Wave Bender are encouraged. They must be received by the editor by the 20th each month. Please send your articles to: k8jaa@arrrl.net, and put WRARC on the subject line of your email.

Join us for the WRARC Friday night Net 9:00 P.M.
KD8DWV - 145.270, PL -110.9

WRARC Simplex Frequency 146.565

Mahoning County ARES® Nets
1st Monday 8.40 PM ET W8QLY Repeater - 146.745 (PL 110.9)
&
3rd Monday 8.40 PM ET W8QLY Repeater - 146.745 (PL 110.9)
ARES thanks MVARA for the use of their repeater

W8SGT is facilitating The Ohio HF net every Tuesday - 7:00 PM
The net is run from the State of Ohio EOC on the
Ohio ARES Admin frequency 3875 kHz LSB
moves to 7240 Khz after 20-min.
All are welcome to check in.

The Ohio ARES/OES Digital Emergency Net held every Tuesday at 8:00PM.
held on 3585 kHz USB.

Please note all digital communications are Upper Side Band.
<http://www.http://ohden.org/> for net details. Net Manager Gary NJ8BB

COULD I BE LOOKING FOR YOU?

Could I be looking for YOU? This is the Wave Bender YOUR Newsletter. We have plenty of room for YOUR article(s)! If something is of interest to you, odds are that we all will enjoy your thoughts and activities! Have a favorite radio? Have some reminiscing to do? maybe you have a question for one of our Elmers. OR, a Tip or Trick you learned that would help one of YOUR WRARC friends. You are warmly invited to contribute! Don't worry about writing or formality - we can help you with that. Your article could go in this spot next month!!



Devon Wilms, KD8SNV
Mike Malarky, W8IWD
Tom Sly, WB8LCD
Carol Gottesman, KD8NFD



Amateur Radio Operator "Amateur means we're simply professional volunteers" ARRL reflector

HAM RADIO SIGNALS FROM MARS

Ham radio operators are doing something that until recently only big Deep Space Networks could do. "We're monitoring spacecraft around Mars," says Scott Tilley of Roberts Creek, British Columbia, who listened to China's Tianwen-1 probe go into orbit on Feb. 10th. The signal, which Tilley picked up in his own backyard, was "loud and audible."

The signal Tilley received from Tianwen-1 is dominated by a strong X-band carrier wave with weaker side bands containing the spacecraft's state vector (position and velocity). Finding this narrow spike of information among all the possible frequencies of deep space communication was no easy task.

"It was a treasure hunt," Tilley says. "Normally a mission like this would have its frequency published by the ITU (International Telecommunications Union). China did make a posting, but it was too vague for precise tuning. After Tianwen-1 was launched, observers scanned through 50MHz of spectrum and found the signal. Amateurs have tracked the mission ever since with great accuracy thanks to the decoded state vector from the probe itself."

So far, Tilley has picked up signals from China's Tianwen-1 spacecraft, NASA's Mars Reconnaissance Orbiter, and the United Arab Emirates' Hope probe--all orbiting Mars approximately 200 million kilometers away. How is such extreme DX'ing possible?

"It helps to have a big antenna," says Tilley, who uses a 60 cm dish, pictured above. "But the real key," he says, "is the advent of Software Defined Radios (SDRs), which have become the norm for hams in the past decade or so."



In a Software Defined Radio, computers digitally perform the signal mixing and amplification functions of circuits that used to be analog; software has replaced hardware. SDRs are cheap, sensitive, and they give hams the kind of exquisite control over frequency required to tune into distant spacecraft.

"Amateurs began listening to deep space probes in the late 1990s and early 2000s," says Tilley. "This sparked an awareness that it was possible. The combination of improving technology and growing awareness has resulted in more and more interplanetary detections."



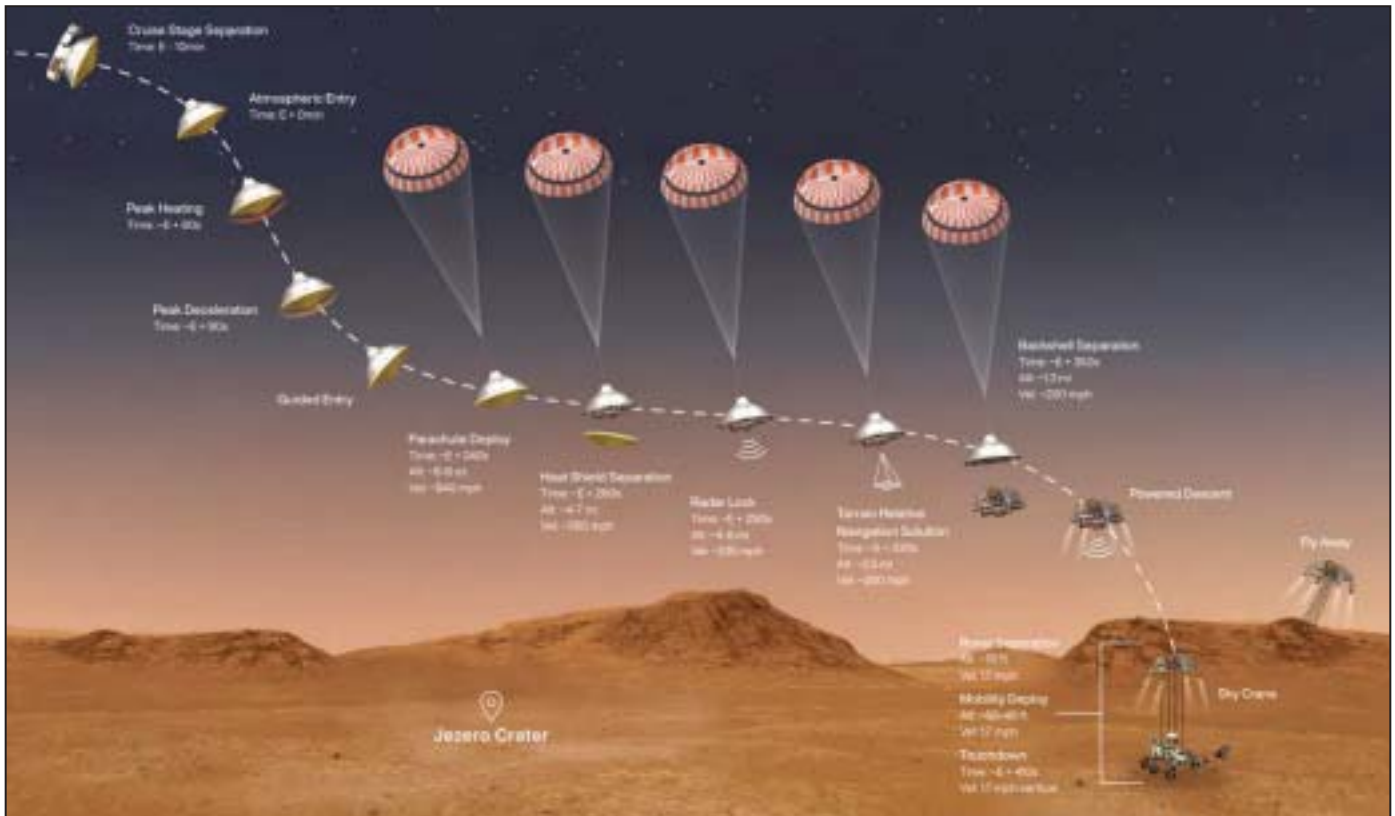
NASA'S MARS 2020 SPACECRAFT

NASA's Mars 2020 spacecraft carrying the Perseverance rover, due to land in Jezero crater on Feb. 18th:

Tilley plans to listen but he doesn't expect a strong signal. "Perseverance does not have a very large antenna," says Tilley. "It doesn't need one because it can relay data through other NASA spacecraft in Mars orbit. The signal will therefore be weak and I doubt many amateurs will record the landing."

Tianwen-1, on the other hand, has a relatively large antenna with a booming signal. "China probably plans to use it as a relay for future Chinese Mars missions," Tilley speculates. "This makes it a good target for hams hoping to bag their first Martian spacecraft."

Update: Joe at USA Satcom (Twitter handle @usa_satcom) has picked up a weak signal from Mars 2020. So it is possible.



SOLAR MINIMUM CONDITIONS ARE IN EFFECT: Solar Minimum, how can we miss you if you won't go away? So far this year, the sun has been blank (without sunspots) 63% of the time-- including the last 13 days in a row. Solar flare activity is nil, and the sun's X-ray output has flatlined. Only a few months ago, new Solar Cycle 25 seemed to be off to a roaring start. This unexpected quiet spell has interrupted its progress.



FROM THE NATIONAL WEATHER SERVICE

Special Notification - As previously mentioned, we will not be able to conduct in person spotter training classes this winter and spring due to restrictions associated with COVID. Therefore, we will hold several virtual spotter training classes. These classes will be open to the public and free of charge. Please feel free to promote to your staff, spotters, amateur radio operators and to publicize to the citizens in your community.



All of our classes will be conducted as live webinars with live Q&A. We will use the GoTo Webinar software, which can host up to 1000 people for each session. These webinars will not be recorded. 6 webinars are currently planned in February and March, with different days of the week and diverse times represented.

If the demand is high enough, we may consider a 7th webinar in April. All those who attend will need to register in advance. Below are the links to the 6 scheduled classes:

- Spotter Webinar 3: Thursday, March 4, 2021 (7 PM -9 PM):
<https://register.gotowebinar.com/register/8790359481726954766>
- Spotter Webinar 4: Monday, March 8, 2021 (6 PM -8 PM):
<https://register.gotowebinar.com/register/5017422714408992270>
- Spotter Webinar 5: Tuesday, March 23, 2021 (6 PM -8 PM):
<https://register.gotowebinar.com/register/8257513057162542350>
- Spotter Webinar 6: Saturday, March 27, 2021 (12 PM -2 PM):
<https://register.gotowebinar.com/register/5687758669980329230>



SILENT KEY - SALE

Good morning,

My name is Mike Fronczek. My Father-In-Law was a long time HAM operator in Poland, OH, and recently passed away suddenly. I am reaching out to amateur radio clubs in the Pittsburgh area to see if there is any interest in any of his myriad of equipment. He has a higher end Yaesu home base station, several handhelds and mobile radios, a tower and quite a collection of electrodiagnostic gear and spools of cables. We are in the process of settling his estate and will be liquidating his radio gear. I am happy to pass along pictures and model information to interested parties and open to suggestion for pricing. His tower would be free to a good home if someone wanted to come and remove it and the equipment on it.

Please feel free to pass this along to your members and they may contact me by email if there is any interest.

Best Regards,
Mike Fronczek
michael.fronczek@gmail.com

Tim Allen has a tv show called "Last Man Standing". In the show, Tim plays a character named Mike Baxter who is a Ham Operator.

Amateur Radio plays a significant role in the show. The character and the show have a call sign, KA6LMS, Tim Allen's personal call sign is KK6OTD.

The show has reached it's final season, and they are planning lots of events, all ham radio oriented, multiple modes. You can find more information at www.gsbarc.org/lms.

REPEATER UPDATE

It's exciting that this month I've been able to write 2 articles for you all to enjoy. I know everyone enjoys reading my rambling, HI HI - Anyway this is another installment about the W8WRC repeaters, a story about the progress being made to rebuild the 145.270 and 442.750 repeater system.

Like I had said last month Bob, N8RCM, and myself wouldn't be near as far as we are if it hadn't been for the help from some local long time repeater owners. One of the first issues we were noticing was on the 145.270 repeater, the RX signals that were coming in would intermittently be noisy, fade and get stronger. We found this to be odd only since for mobile stations that would be normal, however this was a problem for base stations as well. Using some of the most scientific methods and sophisticated tools we began testing. Upon completion of our super scientific testing methods by means of a "hand jiggle test" of coax and connectors, we discovered that the coax we had received the repeater with was to blame. We were able to confirm this by also removing the coax from the system and hooking it to a coax analyzer.

I'm sure most people know for VHF and UHF you need fairly decent coax, a low cost effective type being LMR400 or DX Engineering's version of DXE-400MAX. The pieces we had were not good for the VHF frequencies the repeater operates on, RG8U and RG214 were the types we found came with the repeater. Both of which have about twice the losses of the later mentioned coax types. These caused 2 combined issues. The first being the loss of the cable, too much of the signals were being lost before they ever even made it to the receiver. The 2nd problem was where our highly technical hand jiggle test comes in, the stiffness and diameter of the larger coax was causing a bind on the connectors and not making good connections. We can see where this was a problem, bad or no connection is almost like not having an antenna hooked up at all.

Now that we discovered what our problems were we needed to find a solution. At first we thought that we'll make new jumpers with good coax, the DXE-400MAX. But that only solved half the problem, the 400 would be a lower loss cable, but it's still a very stiff coax and would bind the connectors again making for bad connections.



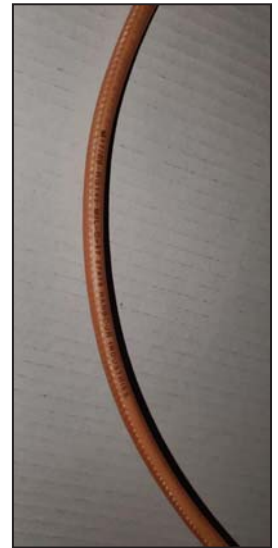
We knew we needed good low loss cable but it also needed to be flexible. This is where some much appreciated assistance from a much more knowledgeable person comes in.

As Bob and I talked about what we were going to do, N8DOD Jim, another local repeater owner had overheard us talking. It turns out he had already discovered a solution to our problems that he had found years prior, RG142. Not a coax type i was familiar with, Jim assured us this is what we were looking for. I got on the interwebs and did some reading.....

This stuff is incredible! Superflexible, double shielded, super low loss, such good coax it's used for microwave applications in the Ghz frequency ranges. But where was I going to find this stuff? Obviously the interwebs was an option, but as it turned out I was able to get some locally. Jim N8DOD being incredibly generous just happened to have the lengths of pieces with the proper RF connectors on the

ends that we needed. After picking up and installing the new coax jumpers, the intermittently noisy signals were all but eliminated.

It's amazing how such a large complex problem can be solved with one of the simplest solutions. I've included a picture comparing the sizes of the old coax on the left next to the new coax on the right.



When you get a chance please be sure to thank, N8DOD Jim, for helping to make this repeater better for you. Stay subscribed for next months installment of the W8WRC repeater system.

73 de WF8U Chris
WRARC/President

ARRL TO EXTEND FIELD DAY RULE WAIVERS

ARRL TO EXTEND FIELD DAY RULE WAIVERS FROM 2020, ADD CLASS D AND E POWER LIMIT

The COVID-19 pandemic-modified ARRL Field Day rules from 2020 will continue this June with the addition of a power limit imposed on Class D (Home Stations) and Class E (Home Stations-Emergency Power) participants. The news from the ARRL Board's Programs and Services Committee comes as many clubs and groups are starting preparations for Field Day in earnest. Field Day 2021 will take place June 26 –27.



“This early decision should alleviate any hesitancy that radio clubs and individual Field Day participants may have with their planning for the event,” said ARRL Contest Program Manager Paul Bourque, N1SFE. For Field Day 2021:

- Class D stations may work all other Field Day stations, including other Class D stations, for points. This year, however, Class D and Class E stations will be limited to 150 W PEP output.
- An aggregate club score will be published —just as it was done last year. The aggregate score will be a sum of all individual entries that attributed their score to that of a specific club.

ARRL Field Day is one of the biggest events on the amateur radio calendar. Last summer, a record 10,213 entries were received.

“With the greater flexibility afforded by the rules waivers, individuals and groups will still be able to participate in Field Day, while still staying within any public health recommendations and/or requirements,” Bourque said. The preferred method of submitting entries after Field Day is via the web applet. The ARRL Field Day rules include instructions on how to submit entries, which must be submitted or postmarked by Tuesday, July 27, 2021.

The ARRL Field Day web page contains for complete rules and entry forms, as well as any updated information as it becomes available. Join the ARRL Field Day < <https://www.facebook.com/groups/arrlfd> > .

ADDITIONAL VOLUNTEER EXAMINER COORDINATORS NOT NEEDED

ARRL to FCC: Additional Volunteer Examiner Coordinators Not Needed -

ARRL has told the FCC that no additional Volunteer Examiner Coordinators (VEC) are needed to oversee the administration of amateur radio exams by Volunteer Examiners (VEs). Examination opportunities have continued to be widely available throughout the US —except for a couple of months during the onset of the COVID-19 pandemic —and adding VECs to the 14 now in place would “have no effect” on the number of available exams, ARRL said. ARRL’s comments on February 4 were in response to a January 5 FCC Public Notice in WT Docket 21-2 seeking input on possible expansion of the VEC pool.



“In response to the Commission’s Notice, ARRL reviewed the amateur examination numbers for the past 5 years, including the COVID-19 pandemic period,” ARRL said in its comments. “We found that even though 10 of the 12 months for calendar year 2020 were times of severe disruption throughout the nation, including for FCC and ARRL headquarters staff, amateur examination opportunities and numbers were strong.”

Multiple web-based exam opportunities are available across the US, even on short notice, and in-person examinations are available in many areas where local regulation and special safety requirements allow.

“It has never been easier,” ARRL asserted, noting that exam sessions often are available within 2 days but rarely more than 7, if taking advantage of a remote, web-based exam opportunity.

“Instead of increasing the number of VECs, we would encourage volunteers to become accredited as VEs and to volunteer to help the current VECs wherever possible,” ARRL said. “Many of the VECs would welcome help.” ARRL said VEs, not VECs, are responsible for administering amateur radio exams.

Continued page 11

VOLUNTEER EXAMINERS - CONTINUED FROM PAGE 10

ARRL VEC —the nation's largest —has 30,000 accredited VEs, with 11,000 of them regularly participating in exam activities on a weekly or monthly basis.

The number of new and upgraded licenses has been in line with earlier years, "with noticeable increases in the 4 months following the lockdown that occurred in many areas in the early spring," ARRL pointed out. New FCC licenses issued in January 2021 numbered 2,838, compared with 2,058 for a year earlier. Upgrades were also up significantly —920 in January 2021 to 554 for the same month last year.

"The 14 separate and independent FCC-approved VECs readily accredit additional VEs whenever and wherever needed," ARRL concluded. "Increasing the number of individual VECs would have no discernible benefit." Instead, ARRL said, increasing the number of VECs would expand the complexity of VEC coordination and management, increase demand on FCC resources to interface with additional organizations, and raise the potential for abuse and fraud.

ARRL Ohio Section PostScript – President's Day Edition

IN BRIEF

ARRL Member Sean Donelan, KM6NGN, of Concord, California, is the winner of the 2020 Congressional App Challenge (CAC) for California's 11th District, according to an announcement from US Representative Mark



DeSaulnier (CA-11). Donelan, a 9th grader at Northgate High School, designed and created NetHam: The Public Service Event Coordinator's Third Hand. "My app is a radio that partially automates the more arduous and monotonous tasks of being the main operator of an amateur radio voice net. These tasks include automated sign-in of operators, easy tracking of participants without lengthy radio conversations, and an operator attention-keeper/attention-caller," Donelan told ARRL. "The point of these features is to allow a radio net control station to focus on the more important task of re-

laying pertinent information around a radio network, rather than focusing on constantly reciting and editing operator and event participant rosters."

A scientific paper has linked Jupiter with solar cycles. The paper, published in *Solar Physics*, predicts that the Solar Cycle 25 maximum will take place in 2026 and reach an amplitude similar to that of Solar Cycle 24. "This article deals with the prediction of the upcoming solar activity cycle, Solar Cycle 25. We propose that astronomical ephemeris, specifically taken from the catalogs of aphelia of the four Jovian planets, could be drivers of variations in solar activity, represented by the series of sunspot numbers (SSN) from 1749 to 2020," the abstract reads. "We conclude with a prediction of Solar Cycle 25 that can be compared to a dozen predictions by other authors: The maximum would occur in 2026.2 (± 1 year) and reach an amplitude of 97.6 (± 7.8), similar to that of Solar Cycle 24."



An expanded, downloadable version of QST's Contest Corral is available as a PDF. Check the sponsors' website for information on operating time restrictions and other instructions.
<http://www.arrl.org/contest-calendar>

WESTERN RESERVE AMATEUR RADIO CLUB

MEMBERSHIP APPLICATION

MAIL TO: WESTERN RESERVE AMATEUR RADIO CLUB

P.O. BOX 4271, AUSTINTOWN, OHIO 44515

PLEASE PRINT LEGIBLY

Check one: New Membership Membership Renewal Today's Date ___/___/20___

Applicant Name 1: _____ Birth Date: m ___/d ___ M F

Call: _____ Class: _____ Expires: ___/___/___ Member # _____

Address: _____

City: _____ State: _____ ZIP: _____

Home Phone: (____) _____ Cell: (____) _____ Work: (____) _____

E-Mail Address: _____ ARRL Member: Y N Date Expires _____

Recomended by: _____ How Did You Hear About Us? _____

Applicant Name 2: _____ Birth Date: ___/___ M F

Call: _____ Class: _____ Expires: ___/___/___ Member # _____

Home Phone: (____) _____ Cell: (____) _____ Work: (____) _____

E-Mail Address: _____ ARRL Member: Y N Date Expires _____

Publish phone numbers in membership roster? Email?

What are your interests? _____

Bands Worked? _____

____ SkyWarn (____) Years? _____ RACES (____) Years? _____ ARES (____) Years? _____ EMA (____) Years? _____ CPR (____) Years?

A \$5.00 initiation fee will be assessed in the first year of membership for all new members. Membership year is Jan 1 - Dec 31. Dues are due no later than Jan 31 for the following year. Dues are as follows: Example - Regular Member Pays on Jan 1 \$20 for entire year. If paid on July 1 or after, \$10 for remaining portion of the year.

\$ _____ Initiation Fee \$5.00 (Payable first year)

\$ _____ Full Membership (\$20.00 full year, \$10.00 half year)

\$ _____ Additional Family Members, same address (\$5.00 ea).

\$ _____ Associate Membership (\$20.00 full year, \$10.00 half year)

\$ _____ Senior Membership 65+ (\$16.00 full year, \$8.00 half year)

\$ _____ Total Enclosed.



Please do not write below this line. Date Voted ___/___/20___ Approved by: _____ Date: ___/___/20___

Database updated ___/___/20___ By _____ MA 08/2020

TAKE TIME TO LAUGH FOR IT'S THE MUSIC OF THE SOUL -- FROM AN OLD ENGLISH PRAYER

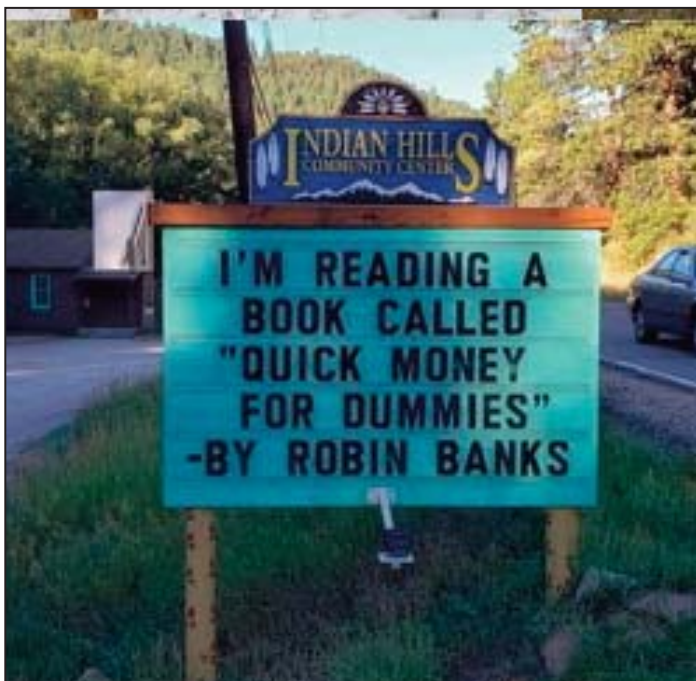
LITTLE KNOWN CAR FACTS

Many of the newer cars have 'Sensors' that warns the driver before the bumpers actually comes in contact with something. Who invented the sensors?

I'll bet you think it was Ford, maybe GM; how about Chrysler? No.

Then how about Mercedes Benz, or possibly the French or Italian car manufacturers?

No, it was a Chinese farmer named Wang.....his invention was simple and effective. It emitted a high-pitch squeal just before the vehicle itself backed into something.



"Focus on what you're adding to your life. Sometimes it can be more successful to focus on what you need to do, rather than what you're trying not to do." — Matthew M. Clark, Ph.D., L.P.

March 2021

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 ARES Net 8:30 PM 146.745 PL 110.9	2	3 Caregiver Appreciation Day	4 Hug a GI Day	5 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	6
7	8 Be Nasty Day	9 Eat'n Park Austintown 8:30 A.M. Ham Community Breakfast	10	11	12 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	13
14 Spring Forward 	15 ARES Net 8:30 PM 146.745 PL 110.9	16	17 	18	19 WRARC Net 9:00PM 145.270 	20  Last Day WaveBender Articles Due
21	22	23 Eat'n Park Austintown 8:30 A.M. Ham Community Breakfast	24	25	26 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	27
28 	29	30	31		WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	