

CQ CHATTER

JUNE 2021

VOLUME B21 • ISSUE 4

WOOD COUNTY AMATEUR RADIO CLUB

President	KG8FH/W8PSK	Jeff Halsey/Loren Phillips
Vice President	KE8CVA	Terry Halliwill
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	WB8NQW	Bob Willman

Field Day Plans

ARRL Field Day will be held on June 26-27 this year. The location for the WCARC is the Wood County Historical Museum on the East side of the facilities. This is a chance for you to meet in person the people you talk to on the air.

Activities will start on Saturday at around noon, with the traditional hoisting of the antennas. The evening meal on Saturday will be ordered out, so no potluck contributions are necessary.

If you have any equipment you want to use, or contribute to the Club's effort, please contact Bob at boughton@bgsu.edu. The ARRL has decided to continue the policy where home stations can contribute to the Club score by sending in an entry. ■

Net Control Volunteers Needed

Do you like to engage in conversation over the air? If so, you might consider helping out the WCARC Net by volunteering your services as Net Control. The Net Control roster is published every month in CQ Chatter, and the typical repeat cycle is about a month or so.

The duties consist of: 1. reading the introduction protocol (provided), 2. taking and recording check-ins in order, 3. cycling through the check-in roster twice by calling on the stations in order, 4. reading the conclusion protocol (provided), and 5. Reporting the check-ins to N1RB by e-mail (if not present on the net). If you are interested, contact N1RB at: boughton@bgsu.edu ■

Net Check Ins

May 4

Traffic: 0

WB8NQW (NCS)
KA8VNG
N8VNT
WE8TOM
KE8CVA
K8BBK
KC8EKT
KG8FH
W4LAT
WD8LEI
KD8RNO
KD8NJW
W8PSK
N1RB
KC8NKC
WD8ICP (16)

May 11

Traffic: 0
(NCS)

N1RB
KE8CVA
KG8FH
KC8EKT
WB8NQW
W8PSK
KB8QEW
N8VNT
KD8RNO
KA8VNG
WE8TOM
WD8PIC
WD8ICP
KE8PJM
KE8CUZ (15)

Brain Teasers

1. Generally, who should respond to a station in the contiguous 48 states who calls "CQ DX"?
 - a.) Any caller is welcome to respond
 - b.) Only stations in Germany
 - c.) Any stations outside the lower 48 states
 - d.) Only contest stations
2. What is the maximum height above ground to which an antenna structure may be erected without requiring notification to the FAA and registration with the FCC, provided it is not at or near a public use airport?
 - a.) 50 feet
 - b.) 100 feet
 - c.) 200 feet
 - d.) 300 feet
3. What portion of the 10-meter band is available for repeater use?
 - a.) The entire band
 - b.) The portion between 28.1 MHz and 28.2 MHz
 - c.) The portion between 28.3 MHz and 28.5 MHz
 - d.) The portion above 29.5 MHz

June Contests

The contest lineup for the month of June is given below. Please note that the WARC bands (60, 30, 17 and 12 m) are never open to contesting.

Jun 5-6	<i>11400 to 0200 Z</i>	160 m to 10 m
Kentucky QSO Party		all modes
Jun 12-13	<i>1200 to 1200 Z</i>	80 m to 10 m
Portugal Day 'test		CW/SSB
Jun 12-14	<i>1800 to 0259 Z</i>	6 m on up
ARRL VHF 'text		all modes
Jun 19-20	<i>0000 to 2359 Z</i>	160 m to 10 m
All-Asian DX 'test		CW
Jun 19-20	<i>1600 to 0400 Z</i>	80 m to 10 m
West Virginia QSO Party		all modes
Jun 19	<i>1800 to 2359 Z</i>	80 m to 2 m
ARRL Kids Day		SSB/FM
Jun 26-27	<i>1800 to 2059 Z</i>	160 m on up
ARRL Field Day		all modes

June Hamfests

Jun 5 - Fulton County ARC SummerFest. Roth Family Woodlot, Tedrow, OH.
web: <http://k8bxq.org/hamfest>

Jun 20 - Monroe County RCA Hamfest. Monroe County Fairgrounds, Monroe, MI.
web: <http://www.mcrca.org>

Net Check Ins

May 18

Traffic: 0

KG8FH
WD8JWJ/M
K8BBK
KE8CUZ
KE8CVA
KC8EKT
KE8PJM
WD8LEI
KD8NJW
WB8NQW
W8PSK
KE8QGV
KD8RNO
N1RB
KA8VNG
N8VNT
KE8PFS
WD8ICP
WD8PIC

(NCS)

(19)

May 25

Traffic: 0

N1RB
K8BBK
KE8CVA
KG8FH
KE8PJM
WD8LEI
KD8NJW
WB8NQW
W8PSK
KD8RNO
WE8TOM
KA8VNG
WD8ICP
KE8RSH/M

(NCS)

(14)

Brain Teaser answers: (G) 1-c, 2-c, 3-d

FAQ about RF Exposure Rules Changes

from ARRL

ARRL has received a number of questions related to the changes that the FCC has made to the ways that all radio services determine whether they need to do a station evaluation as required by the RF-exposure rules. The most common questions ARRL is receiving are answered below.

Q: Are these new rules?

A: Amateur radio has been subject to a requirement to meet the RF-exposure limits that apply to virtually all radio transmitters for over 25 years. Older rules had different evaluation requirements and different exemptions from the need to do evaluations for each separate radio service. The new rules change this and set a single, formula-based criterion for all radio services to determine whether an evaluation is required. This criterion is a formula in the rules that take into account transmit power, antenna gain and frequency. While application of the rules has changed, the underlying substance has not. Knowledge of the FCC's RF-exposure rules has long been required of examinees for all class levels of amateur license, and amateurs continue to be required to certify on their FCC Form 605 applications that they comply and will comply with the requirements of the FCC RF-exposure rules.

Q: I was categorically exempt under the old rules. Do I now need to do an evaluation?

A: The rules change allows stations that complied with the old rules to continue to be operated under the old rules until *May 3, 2023*. If you were exempt from

continued on p. 6

WCARC Weekly Net

Tuesdays at 2100 all year
147.18 MHz 67 Hz PL

Net Control Roster

<i>Jun</i>	<i>1</i>	<i>KD8NJW</i>
<i>Jun</i>	<i>8</i>	<i>WB8NQW</i>
<i>Jun</i>	<i>15</i>	<i>N1RB</i>
<i>Jun</i>	<i>22</i>	<i>KG8FH</i>
<i>Jun</i>	<i>29</i>	<i>KD8NJW</i>
<i>Jul</i>	<i>6</i>	<i>WB8NQW</i>

NEXT MEETING

Business Meeting

Monday

June 14

TIME: 7:30 PM/7:00 EB

PLACE:

Woodland Mall Food Ct.

1234 N. Main St.

Bowling Green, OH

10 meter Net

***informal group
meets***

Sunday

@ 20:30

on 28.335 MHz

Fusion Net

Thursday

@ 19:30

on 442.125 MHz

67 Hz PL on analog

Informal net

FAQ—from p. 4

the requirement to evaluate your station under the old rules, by *May 3, 2023*, you will need to determine that you are still exempt using the new criteria for exemption described in the new rules, or perform an evaluation. If you have previously evaluated your station, the evaluation is still valid, so you will not need to do the same evaluation again in two years unless you make RF-safety related changes to your station. If you make a change to your station after *May 3, 2021* that could affect RF exposure, such as increasing your transmitter power, putting up a new antenna or moving an existing antenna, you need to calculate whether you are exempt from the requirement or do an evaluation before you put your changed station into operation. In many cases, using one of the on-line web pages to do a calculation is just as easy as doing the calculation to see if you are exempt.

Q: How do the new rules affect the exemptions for amateur radio?

A: Under the old rules, many amateurs were categorically exempt from the need to do an evaluation, based on transmitter power on each band, for example. Under the new rules, there are no longer any service-specific exemptions. These have been replaced with formulas that can be used to determine whether a specific installation needs to be evaluated. The formulas can be used for exposure that is beyond the near-field/far-field boundary of

your antenna, defined as wavelength/ 2π , or 0.16 wavelength. Most stations that were exempt under the old rules will still be exempt from the need to perform a more complete evaluation under the new rules.

Q: Have the exposure limits changed?

A: No. The limits have not changed. The new rules changed the way that operators of radio transmitters can determine if they need to do an evaluation but did not change the exposure limits. Even if a station was exempt under old rules, the operator has always been required to comply with the exposure limits.

Q: How complicated is it to do this evaluation?

A: For most stations, it is not complicated at all. Most station operators can use the RF-exposure calculator page that is linked on the ARRL RF-exposure web page and use either their transmitter peak-envelope power (PEP) and antenna gain as "worst case." They can also do some easy calculations using mode duty factor and on/off duty factor times if needed to find their average transmit power to demonstrate compliance at closer distances. Real antennas generally do not radiate as much energy towards people as these theoretical maximums, so some amateurs may want to use other methods. Many calculations using these methods are available for free from ARRL's information pages.

continued on p. 7

FAQ—from p. 6

Q: I read that now we have to measure the field strength from our stations. What equipment do I need to buy to do this?

A: Although amateurs could measure the field strength from their stations, measurements are not required. As was true under the old rules, amateurs may use any valid method they feel appropriate to evaluate their stations. For most amateurs, this will involve calculations, either using simple formulas or antenna modeling, although some amateurs may elect to make measurements. To accurately measure field strength, expensive and calibrated instrumentation is required, so calculation methods are more practical for most amateurs.

Q: How do I report my results to the FCC?

A: You do not report results to the FCC. If not exempted due to power, frequency and antenna gain, you are required to do an evaluation and make any changes necessary to your station to ensure compliance. Although it would be a good idea to keep information about performing the needed evaluation of a station, the FCC rules do not mandate that amateurs keep records of their evaluations. The FCC could inquire of you about the results of your evaluation, but they generally do so only in response to a complaint or in relation to some other issue.

More Information

Q: Where can I learn more about this?

A: The following resources are available from ARRL, or linked from ARRL's information page about RF Exposure.

- <http://arrl.org/rf-exposure> All ARRL information about RF exposure. Some of the information still points to the old rules.
- RF Exposure calculator: <http://www.lakewashingtonhamclub.org/resources/rf-exposure-calculator/>
- *RF Exposure and You* book free download. Material about the old rules will be updated.
<http://www.arrl.org/files/file/Technology/RFSafetyCommittee/RF%20Exposure%20and%20You.pdf>

Q: I still would like some help. What can I do?

A: The ARRL can help if you run into difficulty. Contact ARRL by email at tis@arrl.org and one of our engineers will get back to you. If you need to talk, provide your name, phone number and time to call between 9AM and 4PM eastern time. Reviews the following pages for information about doing an evaluation of your station and download the book, *RF Exposure and You*, referenced above, for more detailed information. ■

The Russian Woodpecker: Official Bird Of The Cold War

Kristina Panos-Hackaday

On July 4th, 1976, as Americans celebrated the country's bicentennial with beer and bottle rockets, a strong signal began disrupting shortwave, maritime, aeronautical, and telecommunications signals all over the world. The signal was a rapid 10 Hz tapping that sounded like a woodpecker or a helicopter thup-thupping on the roof. It had a wide bandwidth of 40 kHz and sometimes exceeded 10 MW.



Russian "woodpecker" antenna array

This was during the Cold War, and plenty of people rushed to the conclusion that it was some sort of Soviet mind control scheme or weather control experiment. But amateur radio operators traced the mysterious signal to an over-the-horizon radar antenna near Chernobyl, Ukraine (then part of the

USSR) and they named it the Russian Woodpecker. [Here's a clip of the sound](#)

The frequency-hopping Woodpecker signal was so strong that it made communication impossible on certain channels and could even be heard across telephone lines when conditions were right. Several countries filed official complaints with the USSR through the UN, but there was no stopping the Russian Woodpecker. Russia wouldn't even own up to the signal's existence, which has since been traced to [an immense antenna structure](#) that is nearly half a mile long and at 490 feet, stands slightly taller than the Great Pyramid at Giza.

This imposing steel structure stands within the irradiated forest near Pripyat, an idyllic town founded in 1970 to house the Chernobyl nuclear plant workers. Pictured above is the transmitter, also known as Duga-1, Chernobyl-2, or Duga-3, depending on who you ask. Located 30 miles northeast of Chernobyl, on old Soviet maps the area is simply labeled Boy Scout Camp. Today, it's all within [the Chernobyl Exclusion Zone](#).

It was such a secret that the government denied its existence, yet was being heard all over the world. What was this mammoth installation used for?

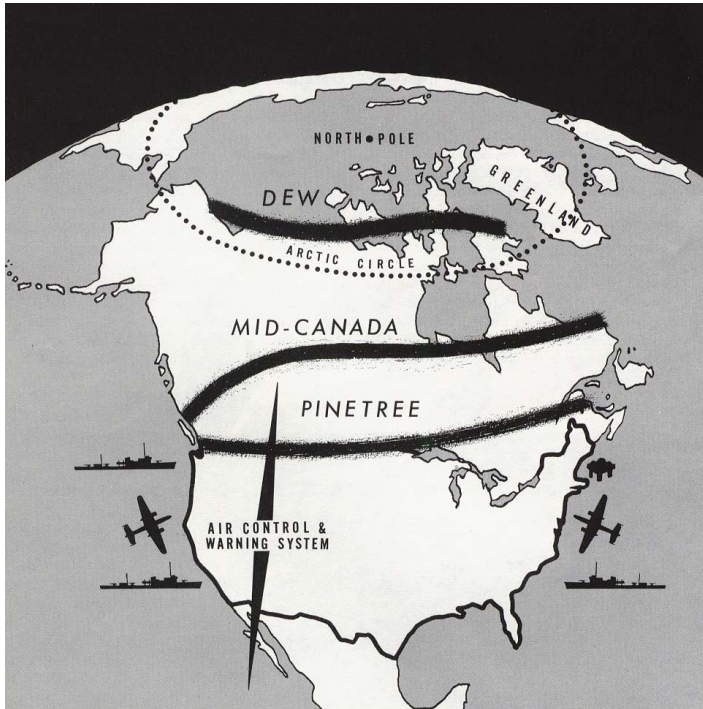
Distant Early Warning

[The Duga radar was one of two transmitter/receiver pairs built](#) in

continued on p. 9

Woodpecker—from p. 8

response to the Distant Early Warning Line (DEW Line), a smattering of antennas that were built above the Arctic Circle in a joint effort between the US and Canada. Like any [over-the-horizon radar](#), the theory behind Russia's system was that Moscow would have about 25 minutes to respond to ICBMs in kind, rather than having a mere 10 minutes or so in which to duck and cover and kiss the world goodbye.



The DEW, Mid-Canada, and Pinetree radar lines. Image via [Wikipedia](#)

Over-the-horizon radar relies on a similar phenomenon that delivers such great range for amateur radio — the signals bounce off the ionosphere and are thus able to overcome the curvature of the

Earth, which allows it to detect launches much earlier than standard ground radar can.

In the 2015 documentary [The Russian Woodpecker](#), a film crew led by an artist from Kiev attempts to uncover the mysteries of the antenna. He believes that the nuclear incident at Chernobyl was orchestrated to divert attention away from the structure, which was due for an upcoming inspection that it was never going to pass.

According to the documentary, the Duga antenna cost twice as much as the Chernobyl plant itself — around 7 billion Rubles. Putting this cost in historical context is tricky.

Using the *Treasury Reporting Rates of Exchange as of June 30, 1976* we find the exchange rate at the time was 0.7550 Rubles to Dollars. That places the 1976 cost at about \$9.27 billion. Inflation adjusted, that's \$43.16 billion in 2021 value — a mind-boggling sum that makes us question the documentary's cost assessment (and the accuracy of our own conversion process).

Some sources say the radar system never worked. Other sources claim that it did, and that they were able to detect every single Shuttle launch with it. And when the Woodpecker was reported to be interfering with Russian SOS signals, they altered the frequency. But after they did that, it stopped working because of interference from Aurora borealis. ■

MONROE HAMFEST

and Computer Show

Only 4-1/2 weeks to go

Father's Day - June 20, 2021

7:30 am to 1 pm

Presented by:

The Monroe County Radio Comm. Assoc.

Monroe County Fairgrounds

M-50 at Raisinville Rd (2 miles west of Monroe)

Free Parking

Indoor Facilities / Trunk Sales

Computers and Equipment

Distributors / Hot Food

Overnight Camping available

Talk-in 146.72

For more information and

Table, Trunk and Ticket orders

Go to: <http://www.mcrca.org>

Click on Hamfest in the top ribbon

or email Fred KA8EBI at ka8ebi@yahoo.com

This is an ARRL approved Hamfest.

Please do not reply to this email instead,

FOR SALE

Alinco DR-735

dual band VHF/UHF radio

INCLUDES: RT Systems
programming cable/CD.

PRICE for Club members: \$200

FOR MORE INFO:

E-MAIL: WE8TOM@WE8TOM.com

WOOD COUNTY ARC
P.O.BOX 534
BOWLING GREEN, OH
43402

