

CQ Chatter

MARCH 2020

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WOOD COUNTY AMATEUR RADIO CLUB

President	WB8NQW	Bob Willman
Vice President	KD8VWU	Doug Perez
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	KE8CVA	Terry Halliwill

Minutes **WCARC Meeting** February 10, 2020

Bob-WB8NQW, presiding

Present: WE8TOM-Tom, KG8FH-Jeff, KE8CUZ-Jim, KE8CVA-Terry, KC8NKC-Orville, Bill-WD8JWJ, WD8ICP-Chuck, KC8IFW-Wil, WB8NQW-Bob, N1RB-Bob

Meeting called to order: at 7:30 with Pledge of Allegiance. Introductions were made by each person in attendance.

Minutes of December business meeting as published in November CQ Chatter were approved (CVA/FH).

Treasurer's Report: Treasurer was not present.

Old Business:

- Bob (NQW) remarked that the "popcorn" noise on the main repeaters was still present, and though it seems to affect weak signals the most, is still a puzzle. He stated that a group will try to diagnose and repair it soon.
- He then reviewed his efforts at obtaining feedback from the County on what sort of bicentennial celebration(s) is being planned. He has contacted the County Commissioners and the EMA Office. He will report when he gets a response from them so that planning for

continued on p. 4

Net Check Ins

Feb 4 **Traffic: 0**

N1RB (NCS)
KC8EKT
KE8CVA
WD8ICP
WB8NQW
KG8FH
N8VNT
KD8RNO
WE8TOM
WD8JWJ (10)

Feb 11 (ARES) **Traffic: 0**

KD8NJW (NCS)
KE8CVA
KG8FH
WD8JWJ
WD8LEI
WB8NQW
KD8RNO
N1RB
WE8TOM
WD8ICP (10)

Feb 18 **Traffic: 0**

K8OVO (NCS)
KA8VNG
KD8RNO
WB8NQW
KD8NJW
KE8CVA
N1RB
KG8FH (8)

BRAIN TEASERS

1. The design of a preselector involves a trade-off between bandwidth and what other factor?
 - a.) amount of ringing
 - b.) insertion loss
 - c.) number of parts
 - d.) choice of capacitors or inductors
2. What is the ratio between the peak-to-peak voltage and the peak voltage amplitude in a symmetrical waveform?
 - a.) 1:1
 - b.) 2:1
 - c.) 3:1
 - d.) 4:1
3. If an RMS reading AC voltmeter reads 65 V rms on a sinusoidal waveform, what is the peak-to-peak voltage?
 - a.) 46 V
 - b.) 92 V
 - c.) 130 V
 - d.) 184 V

March Contests

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

Mar 1-2	<i>1500 to 0059 Z</i>	80 m to 10 m
North Carolina QSO Party		all modes
Mar 7-8	<i>0000 to 2359 Z</i>	160 m to 10 m
ARRL Int'l DX 'test		SSB
Mar 14-15	<i>1500 to 2100 Z</i>	80 m to 10 m
Oklahoma QSO Party		all modes
Mar 14-15	<i>1900 to 1900 Z</i>	160 m to 10 m
Idaho QSO Party		all modes
Mar 15-16	<i>1800 to 0100 Z</i>	160 m to 10 m
Wisconsin QSO Party		all modes
Mar 21-22	<i>1200 to 1200 Z</i>	160 m to 10 m
Russian DX 'test		CW/SSB
Mar 21-22	<i>1400 to 2359 Z</i>	160 m to 10 m
Virginia QSO Party		all modes
Mar 28-29	<i>0000 to 2359 Z</i>	160 m to 10 m
CQ WW WPX 'test		SSB

Slow Code Net Started

An informal CW net for new and old code enthusiasts has been started in order to help members who may be interested in the Morse mode hone their skills. The net is held on Tuesdays right before the normal voice VHF/UHF net.

If you want to participate, get your straight key dusted off and be ready at 8:00 pm on 28.335 MHz. The net is totally informal and will be opened up by either Bob-N1RB or Jeff-KG8FH. An effort will be made to hold code speed to between 5 and 10 WPM. Listen for a series of "V"s at 8 pm on Tuesdays. ■

minutes – from

special event operation can go forward. The question of QSLs was brought up by Chuck (ICP) and besides paper cards, options such as e-mail cards or certificates were discussed.

- In response to Bob's request for items to discuss about goals for the Club this year, Chuck (ICP) presented an eleven item list which covered suggestions for: field day, nets, newsletter, fox hunts, Facebook, photos of members, a mini-hamfest, buying publications for a WCARC library, purchase of test equipment for use by members, a portable generator for use at "field" events, and continuing the Pledge of Allegiance. All of these items were discussed in some detail (several are already implemented, such a Club Facebook page) and other members' comments heard. In summary, a good discussion was held and some of the suggestions will be investigated for feasibility.
- Bob mentioned that, in an effort to attract more members, he had queried a couple of data bases, both of which reveal that there are over 400 hams in Wood County. He mentioned however, that many of those listed are Silent Keys. We could probably expect about to reach about 200 hams in central and southern areas of the County.

Discussion followed as to how best to "let them know we're here".

New Business:

- Jeff (FH) announced that the slo-code net will be held on Tuesdays right before the regular VHF/UHF net. It will start at 8:00 pm and the speed used will be between 5 and 10 WPM. Bob (RB) will begin the very first session one February 11th. All who are interested in honing their CW skills are encouraged to participate.

Meeting Adjourned: at 8:35 (FH/JWJ) ■

Repeater Problems

The 147.18+/444.475+ MHz repeater system has recently been experiencing occasional noise that can best be described as "popcorn popping". It seems to be especially serious when the input signal is relatively weak such as from a mobile or HT rig. The Technical Committee has been scratching their collective heads about what the cause could be. It is clear that the noise occurs in the receiver chain and does not originate in the controller because all relevant controller announcements are perfectly clear. In case the Tuesday night net cannot be conducted on this repeater system, the protocol will be to switch to the Wood County ARES system, KD8BTI, on 146.79-/ 443.5125+ MHz (103.5 Hz PL). ■

WCARC Weekly Net

**Tuesdays at 2100 all year
147.18 MHz 67 Hz PL**

Net Control Roster

Mar 3	N1RB
Mar 10	KD8VWU
Mar 17	KD8NJW
Mar 24	K8OVO
Mar 31	WB8NQW
Apr 7	N1RB

NEXT MEETING

Breakfast Meeting

Saturday

March 7

TIME: 9:00 AM

PLACE

**Frisch's Big Boy
N. Main St. & E. Poe Rd.
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 FM

Informal net

Net Check Ins

Feb 25 (ARES) Traffic: 0

WB8NQW (NCS)
KC8EKT
KE8CVA
KG8FH
WD8LEI
KD8RNO
K8BBK
N1RB
N8VNT
WE8TOM (10)

Mar 3 (ARES) Traffic: 0

N1RB (NCS)
K8BBK
KE8CVA
WB8NQW
KD8NJW
WD8LEI
KD8RNO
KA8VNG
WE8TOM (9)

Brain Teaser answers: (E) 1-b, 2-b, 3-d

President Signs PIRATE Act to Combat Illegal Broadcasting

From ARRL Letter

On January 24, President Donald Trump signed into law the “Preventing Illegal Radio Abuse Through Enforcement Act” or the “PIRATE Act.” The measure, which amends the Communications Act of 1934, authorizes enhanced penalties for violators. Under the new law, pirate radio broadcasters would be subject to a fine of not more than \$2 million, and violators could be fined up to \$100,000 for each day during which an offense occurs. The new law stipulates that the FCC “shall not decrease or diminish the regular enforcement efforts targeted to pirate radio broadcast stations for other times of the year.”

The FCC is to submit to the House Committee on Energy and Commerce and the Senate Committee on Commerce, Science, and Transportation a report summarizing the implementation of this section and associated enforcement activities for the previous fiscal year.

The new law also requires “annual sweeps,” during which FCC personnel will be assigned to “focus specific and sustained attention on the elimination of pirate radio broadcasting within the top five radio markets identified as prevalent for such broadcasts.”

The Commission also “shall conduct monitoring sweeps to ascertain whether the pirate radio broadcasting identified by enforcement sweeps is continuing and whether additional pirate radio broadcasting is occurring.”

Under the new law, the FCC, in pirate broadcasting cases, will change its rules so that it proceeds directly to issuance of a *Notice of Apparent Liability*

continued on p. 7

The Sun and Radio-II

by Paul Harden, NA5N

Ionization

The daytime ionizing radiation from the Sun strips electrons away from their host molecules in our upper atmosphere. These free electrons increase the electron density of the ionosphere, and stratify it into layers, called the D, E and F layers. The E/F layers are reflective to HF signals below the MUF (*maximum usable frequency*), reflecting them back to Earth for long distance communications.

This is generally called skip propagation. The HF signals must also pass through the D-layer, the closest to the Earth's surface. This is called the absorption layer, since some of your HF signal will be absorbed by the D-layer – in fact, twice – going to, and coming back from the E/F layers for 2-6 dB total path loss.

At night, solar radiation ceases and the free electrons recombine with their host molecules. The D-layer completely

pirate—from p. 6

(NAL) without first issuing a *Notice of Unlicensed Operation (NOUO)*.

The FCC will develop and publish a database of all licensed AM and FM broadcasters, accessible directly from the FCC home page. The FCC is also required to publish a list of “all entities that have received a *Notice of Unlicensed Operation, Notice of Apparent Liability, or forfeiture order,*” as well as “each entity... operating without a Commission license or authorization.” The law defines pirate radio broadcasting as transmitting within the AM and FM bands without an FCC license, but excluding unlicensed operations in compliance with Part 15. ■

disappears and offers no signal loss. The E/F layers merge into a single layer, but remain reflective to HF signals. However, this combined layer has a lower electron density than daytime levels, lowering the MUF.

Astronomers call these ionization layers plasma layers and the lowest frequency that escapes into space the plasma

continued on p. 8

March Hamfests

Mar 1 Northern Ohio ARS Hamfest. Lorain County Community College, Elyria, OH.

web: <http://noars.net>

Mar 15 Toledo MRA Hamfest and Computer Fair. Owens Community College, Perrysburg, OH.

web: <http://tmrahamradio.org>

sun—from p. 7

frequency, f_p . QRPers look at it just the opposite way – what is the highest frequency that does not escape into space? We call this the MUF. In reality, the MUF and plasma frequency are exactly the same.

During the active Sun, Earth’s plasma frequency is about 18 MHz (nighttime) to 30+ MHz (daytime), and during the quiet Sun, varies from about 10MHz (nighttime) to around 20 MHz (daytime). Interestingly, the Sun’s plasma frequency varies between 300–1000 MHz. The only time strong HF radiation escapes the Sun is during a solar flare, and when it does, it is called a solar storm.

Sunspots and the Solar Cycle

The solar cycle was first recognized by noting that sunspots change over a 7–11 year cycle. Sunspots are cooler areas on the the solar surface. More recently, sunspots have been identified as regions with strong magnetic fields called Alpha, Beta and Delta groups, as defined in Fig. 2 and illustrated in Fig. 3. These active regions are carefully watched for possible flare activity.

An Alpha group are sunspots with no bipolar magnetic fields, and seldom produce a flare. When bipolar magnetic fields (with N-S, or +/- polarization) develop between sunspots, it is called a Beta group. When a Beta group becomes particularly intense, with strong, bipolar magnetic fields between sunspots, it is called a Delta group. A major flare

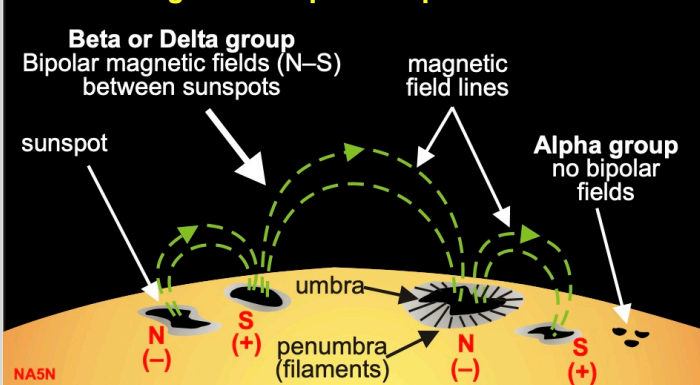
Fig. 2 – Classifications of Sunspots/Active Regions

Sunspot Class	Description of the Active Region	Potential for Solar Flare Activity
ALPHA	Unorganized, unipolar magnetic fields	Little threat, but watched for further growth
BETA	Bipolar magnetic fields between sunspots	C class flares and possible M class flares
DELTA	Strong, compact bipolar fields between sunspots	High potential for large M or X class flares

alert is issued by NOAA when a Delta configuration develops. A major solar flare will always occur from a Beta or Delta group, but, not all Beta or Delta groups will produce a flare.

Terminology seen in the NOAA reports will be the umbra, the central core area of the sunspot, surrounded by an outer

Fig. 3 – Sunspot Groups Illustrated



area with a filament structure called the penumbra. It is believed the filamentary structure of the penumbra is “painting” a picture of the magnetic field lines emanating from the sunspot. Often NOAA will report that a Beta group shows rapid growth in the penumbra. This means the magnetic field lines of the sunspot disturbance are rapidly growing, likely into a Delta group, becoming a likely candidate for a major flare. ■

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