

CQ CHATTER

JANUARY 2023

VOLUME B22 • ISSUE 11

WOOD COUNTY AMATEUR RADIO CLUB

President	KG8FH/W8PSK	Jeff Halsey/Loren Phillips
Vice President	WE8TOM	Tom Leingang
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	WB8NQW	Bob Willman

Minutes *WCARC Meeting* October 10, 2022

Jeff-KG8FH presiding

Present: Bob-N1RB, Jeff-KG8FH, Jim-KD8NJW, *Eugene-KE8WBK, Tom-WE8TOM, Roger-KE8QGV, Bob-WB8NQW, Terry, KE8CVA, *Joe-WW8MLL, *Scott-KE8OZE, Wil-KC8IFW
* = *new member*

Meeting called to order: by KG8FH at 7:30 with Pledge of Allegiance

Minutes: of the October meeting as published in the November issue of CQ

Chatter were approved unanimously (NJW/CVA).

Treasurer's Report: was presented by KD8NJW. Motion to approve (NQW/CVA) was passed unanimously.

Old Business:

- In lieu of a report on AREDN by the ARES EC, Eric-WD8LEI, Bob-WB8NQW made some brief remarks. He recounted the increase in the number of nodes that LEI has installed, and also commented on the amazing increase in the number he observed when Eric activated the AREDN tunnel to Oak Harbor. Bob related that he was picking up nodes in Toledo, Rising Sun, and so many others that he had to scroll

continued on p. 6

Net Check Ins-I

Dec 6

Traffic: 0

KD8NJW (NCS)

KE8CVA

KC8EKT

KG8FH

WD8LEI

KE8WBK

WB8NQW

KA8VNG

N1RB

KE8QGV

WE8TOM (12)

Dec 13

Traffic: 0

WB8NQW (NCS)

KD8NJW

WD8LIC

KD8RNO

N1RB

KE8CVA/P

KA8VNG

WD8LEI

KE8OZE (9)

Brain Teasers

1. In an FM-phone signal having a maximum frequency deviation of 3000 Hz either side of the carrier frequency, what is the modulation index when the modulating frequency is 1000 Hz ?
 - a.) 3
 - b.) 0.3
 - c.) 3000
 - d.) 1000
2. What usually occurs if a Yagi antenna is designed solely for maximum forward gain?
 - a.) the front-to-back ratio increases
 - b.) the feedpoint impedance becomes very low
 - c.) the frequency response is widened over the whole frequency band
 - d.) the SWR is reduced
3. What is the term for the time it takes for a charged capacitor in an RC circuit to discharge to 36.8% of its initial value of stored charge?
 - a.) one discharge period
 - b.) an exponential discharge rate of one
 - c.) a discharge factor of one
 - d.) one time constant

January Contests

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

Jan 7	0000 to 2359 Z	80 m to 10 m
PODXS 070 PSKFest		PSK
Jan 7	1800 to 2359 Z	80 m to 10 m
ARRL Kids Day		SSB
Jan 7-8	1800 to 2359 Z	80 m to 10 m
ARRL RTTY Roundup		RTTY
Jan 14-15	1800 to 0559 Z	160 m to 10 m
North American QSO Party-CW		CW
Jan 21-22	1200 to 1159 Z	160 m to 10 m
Hungarian DX 'test		CW/SSB
Jan 21-22	1800 to 0559 Z	160 m to 10 m
North American QSO Party-SSB		SSB
Jan 21-23	1900 to 0359 Z	VHF
ARRL January VHF 'test		all modes
Jan 28-29	0600 to 1800 Z	80 m to 10 m
REF (France) 'test-CW		CW
Jan 28-29	1300 to 1300 Z	80 m to 10 m
UBA (Belgium) 'test-SSB		SSB
Jan 28-29	1900 to 1900 Z	80 m on up
Winter Field Day		all modes

Net Check Ins-II

Dec 20 **Traffic: 0**

N1RB **(NCS)**

KE8CVA

KG8FH

WD8ICP

WD8LEI

WB8NQW

KA8VNG

KD8RNO

KE8QGV **(9)**

Dec 27 **Traffic: 0**

KD8NJW **(NCS)**

KE8CVA

WB8NQW

KA8VNG

N1RB

WE8TOM

KD8RNO

WD8ICP

K8WTW

N8VNT

WD8LEI

KC8EKT **(12)**

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

All About USB-C: Cable Types- I

[Arya Voronova](#) , [Hackaday](#)

USB-C cables and connectors: these are controversial topics, and rightfully so – I don't want to pull any punches. I will also show you that things don't have to be that bad for you, as long as you're willing to apply a few tricks and adjust your expectations.

Wild West of Wiring

You might have a bunch of USB-C cables, and they all might look exactly the same, but you've likely experienced that they're not the same internally, and often there's not a label in sight. Yes, it's pretty bad, and one could argue it's getting worse.

I'd like to clarify that I'm only talking about USB C male to USB C male cables here. While cables like USB-A to USB-C are popular, they are quite simple; you get USB 2.0 or USB 3.0 data and 2 A of current at most, and the USB-C plug is usually hardwired as "host, will supply five volts", which is defined by a pullup resistor. Also, while cables like "Type-C to DisplayPort" might look like simple cables at a glance, they are adapters with [a meaningful amount of active circuitry in them](#).

Strictly following the specification, there [used to be six types of USB-C to USB-C cables](#) out there. Then, [it became eight](#). Now, I'm afraid, there's twelve of them, purely following the specs, and there's way more when counting all the out-of-spec cables. Good news is – for most of the time, a majority of these cables will be suitable for simple tasks like charging and data transfer, and situations where you need a very specific cable are going to be rare enough. Still,

continued on p. 6

WCARC Weekly Net

Tuesdays at 2100 all year

147.18 MHz 67 Hz PL

Net Control Roster

<i>Jan</i>	<i>3</i>	<i>KD8NJW</i>
<i>Jan</i>	<i>10</i>	<i>WB8NQW</i>
<i>Jan</i>	<i>17</i>	<i>N1RB</i>
<i>Jan</i>	<i>24</i>	<i>KG8FH</i>
<i>Jan</i>	<i>31</i>	<i>KD8NJW</i>
<i>Feb</i>	<i>7</i>	<i>WB8NQW</i>

NEXT MEETING

Kick-off Banquet

Monday

January 9

TIME: 6:00 PM

PLACE:

Country Farmhouse

Restaurant

117 E. Main St.

Wayne, OH

10 meter Nets

Informal SSB group meets

Sunday @ 20:30 local on

28.335 MHz

Informal CW group meets

Tuesday @ 20:00 local on

28.050 MHz

Fusion Net

Thursday

@ 19:30 local

on 442.125 MHz

Wires-X Operators

welcome

Informal net

minutes from p. 1

the screen. He mentioned that the Linwood node is temporarily out of action because of a problem with the feedline. A brief discussion followed about the future plans for the AREDN mesh network. Perhaps at the next business meeting, Eric will be able to give a more detailed picture of what's what with the network.

Old Business:

- Jeff reminded everybody about the kick-off banquet which will be held at the Country Farmhouse restaurant in Wayne, OH, on January 9th at 6:00 PM. Please let Bob-WB8NQQW know if you plan to attend at least two weeks ahead of time at: blcksmth@reagan.com. Family and friends are invited.
- Jeff next announced members of the Officer Slate for 2023. They are:
President: Jeff-KG8FH
Vice President: Tom-WE8TOM
Secretary: Bob-N1RB
Treasurer: Jim-KD8NJW
Advisory Board: Bob-WB8NQQW
Roger-KE8QGV
(No arms were bent in this operation) A motion was made and seconded (CVA/IFW) to approve the slate, and it passed unanimously.

Adjournment:

motion to adjourn made by (TOM/RB)@8:10 PM.

The after-meeting activity consisted of Bob-WB8NQQW presenting and auctioning off the Club Equipment inventory. ■

USB -C from p. 4

let's go through it, and you'll see that they're easier to tell apart than it might look.

Sorting Cables Into (Mental) Boxes

For a start, there are two variations of current capability – 3 A and 5 A, with 3 A being the bare minimum for any cable out there, and 5 A support being optional. Of course, as you would guess, the bargain bin cables might be undersized for even 3 A, but most cables will pass 3 A no problem. Last year, the USB-C group introduced EPR, raising the maximum voltage from 20 V to 48 V, and requiring changes to cables and connectors to increase isolation between power and data pins. That's two more categories, SPR (20 V max) and EPR (48 V max). However, there are no 3 A EPR cables, so it's a tiny bit less confusing than it sounds.

Then, there are at least four variations of data transfer speeds. It used to be that you'd have USB 2-only and USB 3-only Type C cables, as well as Thunderbolt-certified cables. Now, there's a new USB 3 standard which wants higher speeds, and needs higher-specced cables. Plus, there's active USB-C cables that put the signal through redrivers or fiber optics for achieving long-distance operation. If you thought there might just be some cabling

continued on p. 7

USB-C from p. 6

variability that introduces additional small permutations inside and outside the specification, you are, unfortunately, correct.

This gives us a three-by-four matrix of “which cable you might have on hand”. Three for 3 A, 5 A, or EPR 5 A, and four for cable speeds. There’s also plenty of blatantly out-of-spec cables out there – like charging-only cables without 2.0 pins, which is blasphemous as per USB specification. Of course, you can indeed buy these by accident, or intentionally. How do you figure out which ones you have? Let’s simplify the situation to the three-by-four case and mostly dismiss the exceptions – over time, the weird cables will become less and less prominent, as even bargain bin manufacturers will learn to keep it together.

The undeniable benefit of having so many cable variations is that you can actually buy a \$5 USB-C cable when you only need \$5 worth of capabilities, and a \$40 cable when you need \$40 worth. 2.0-cables are also thinner, lighter and more flexible – you really don’t want to use a Thunderbolt cable when you want to charge your laptop on the go. Plus USB-C has facilities to distinguish between different cables! Let me show you.

Your Cable Has A Computer In It... Almost

When a power supply is capable of providing more than 3 A over a cable, it won’t do that instantly – first, it will check

that the cable can handle such a current, and that the device connected is able to accept it.

How does it check cable capability, exactly? By reading the cable’s “emarker”. An emarker is a memory chip inside the cable plug that encodes the cable capabilities and parameters, and taps into the CC channel in order to transmit them. It’s required for anything more than USB 3 speeds or 3A current, and there’s a myriad of parameters that could be encoded into an emarker, including even [country codes](#). Would you like to learn more? Here’s a [programmable emarker \(VL151\) datasheet](#), it lists a ton of fun info you will be able to get out of an average emarker!



If you ever feel like it, you can just buy emarkers online and put them inside your cables – here’s [a WLCSP VL151 in stock](#), and there’s also currently [out-of-stock UDFN versions](#) of the same; you can reflash it over I2C, sadly, only three times. If you want to build your own USB-C cables with 5A support, you can also buy cable plugs with emarkers soldered onto them. One can only hope that we see Doom on USB-C emarkers soon.

**A second installment of this article will appear in the February issue of CQ Chatter—
ed** ■

**FOR SALE:
Xiegu G90 HF Radio.**

Includes the cooling fan-stand. 20 watts.
Great for portable operation. \$300 for club members. Will be listing publicly at a higher price soon.

Contact: WE8TOM@we8tom.com

**FOR SALE:
MFJ-998 Legal Limit Autotuner**

NEVER Used (Hooked up once)

Asking: \$500.00

Contact: jhalsey@woh.rr.com



**FOR SALE:
Yaesu FTDX1200 HF/6m
Tranceiver**

Has FFT Board installed which basically brings functionality up to the FTDX 3000 (Scope/Spotting/CW Decode). Includes original mic and power cable.

Used TWICE!

Asking: \$800.00

Contact: jhalsey@woh.rr.com



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

