



From the NCARC President

Joe Hawley KDØTYU
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Over the next few months, we have quite a few things happening, but let me talk about some things that are already going on that you may not be aware of. The [Resources](#) tab on the NCARC website has loads of information. There are our Hamlet Presentations, NCARC Book Library, and many interesting documents of interest to Hams.

You may be aware of our TechNet on Monday night, you can bring any problem or issue and with the experts on this net, nine times out of ten they will solve any problem for you. These TechNets are all recorded. We put them on our YouTube channel, and all are linked to our website. Head to the Resources tab to find. You do not have to have a YouTube account. Just go through our website.

Our website also has most of the presentations from our club meetings. We omit the business meeting, it's just the presentation. There are also some links to unique items or research for the presentation.

Hope to see you at the May NCARC Club meeting. Doug Sharp will give a presentation on the RMHAM, Colorado Connection, and NCARC linking system and what it can do for you. Well, that's all for now, please check out our website.

Public Affairs Office

Dave Winnett WØDDZ
pao@ncarc.net

Numbers as of April 14, 2023

YouTube

Views (last 28 days): 3,142
Watch time (hours, last 28 days): 470.2
Subscribers: 2,572
New Subscribers (last 28 days): 34

Facebook

Members: 546
New Members: 1

LIFE IS SIMPLE



Club Meeting

Saturday, May 20, 2023

Note new time! Starting 30 minutes earlier.

8:00 am Golden Corral opens- breakfast and socialize, **9:00 am** club meeting

LIVE and IN PERSON at
The Golden Corral
1360 Sculptor Dr, Loveland CO 80537

PLUS

Zoom streaming - All members will receive a link to the online broadcast
If you don't receive a link by Friday before the meeting, please email treasurer@ncarc.net
You choose what you feel comfortable doing: attend in person or online.

Topic:

**Rocky Mountain Ham Radio (www.rmham.org),
Colorado Connection (colcon.org) and the
NCARC Linking System**

Doug Strong K2AD

Next meeting:

June 17, 2023

Tech Report

James Cizek, KIØKN
techchair@ncarc.net

May 2023

Horsetooth

I am ready to make the first trip of the season there to repair the Winlink node and check on everything else. Just need to time the trip in between rain/mud! We are still working with the Colorado Repeater Association on a collaboration to place a 220 MHz repeater here. I don't have more info yet, but will announce more as it becomes available.

Buckhorn

All the new parts to repair Buckhorn are in hand. This will get the 146.625 back on the air and should fix the GPS issues that cause the "OFLN" and "OK" CW messages that come out rather regularly (and knock the repeater offline temporarily). With some cooperation of the weather, we hope to have everything repaired by the end of the weekend. A larger power supply is also being placed there as the current one is marginal to slightly undersized at best, and a new backup battery will be installed also. You may have heard the 447.700 or 146.625!

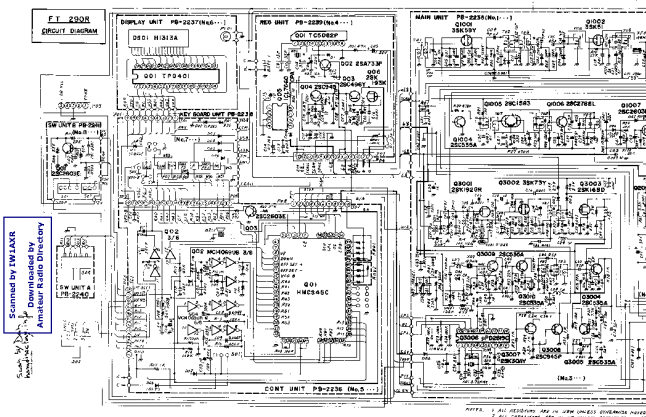
CSU-VARA

The VARA FM node we placed there has gone down. Due to a circumstance with the Windows version running there, I cannot remotely troubleshoot it. We expected to replace the PC from the onset, and I have it configured and ready to go. I will replace the PC ASAP (Buckhorn repairs first as they are needed for Skywarn, then this station). Once the new PC is deployed, that node will operate both VARA FM and stand AX.25 packet Winlink on the same frequency. I expect to have this working this coming week!

Rattlesnake

We have the new battery bank ready to go. I actually finished it up in the fall but didn't have time to get all the little things together to deploy it before the snow. We'll be supplementing the battery bank there soon which will enable more equipment to run at that site.

We are gearing up to assist RMHAM with the microwave/repeater expansion to the east/northeast. We'll be looking for some help as sites go up. The big one for us will be Sterling as that will heavily enhance our typical Skywarn area coverage. Stay tuned for more if you'd like to come out and help!



This is what I think it looks like inside James' brain....KOARD

Treasurer's Report

Darren Kalmbach KCØZIE

treasurer@ncarc.net

April 2023

Account	Checking	Raffle	Savings	PayPal	Total
Beginning Balance	\$5,618	\$2,783	\$1,110	\$7,152	\$16,662
Deposits	\$466	\$0	\$0	\$270	\$736
Transfers	\$0	\$0	\$0	\$0	\$0
Withdrawals	\$272	\$0	\$0	\$11	\$282
Ending Balance	\$5,812	\$2,783	\$1,110	\$7,411	\$17,115
Outstanding Items	\$0	\$0	\$0	\$0	\$0
Net Balance	\$5,812	\$2,783	\$1,110	\$7,411	\$17,115
Net Change	\$194	\$0	\$0	\$259	\$453

Expenses: Storage

Revenue: Memberships, Rosin Corps

Membership Activity:

April 2023: 216 (9 new)

April 2022: 207

Did You Know?

A new, regular contribution from Bob Schmid WA9FBO

Units and Symbols

So, which is correct, ma or mA? How about kw, kW or KW? Is it db, dB, or DB? Should you capitalize “volts”? Who decides? And who cares?

Last question first: There *are* standards, so whether you’re writing for publication or simply corresponding with colleagues (or your boss), you’ll want to get it right.

Who decides? The U.S., Canada, U.K., and nearly every other country follow the International System of Units, also known as SI, in addition to their own customary systems. SI was established in 1960 and is a decimal and metric system.

Here are some of the SI rules we’re likely to encounter in hamming.

The volt, ampere, ohm, watt, hertz, farad, henry, meter, second, gram, and more are called SI *units*. They are not capitalized when spelled out. So, the answer is no, we don’t capitalize the word “volt” or “ampere” or any other unit – unless it’s the first word in a sentence!

(Of course, countries have “customary units” that are not SI units. Apologies to the acre, AWG, barrel, bushel, fluid ounce, peck, shotgun gauge, tablespoon, and many more.)

Abbreviations such as V, A, Ω , W, Hz, F, H, m, s, g, etc., are SI *symbols*. A symbol is upper case if the unit is named after a person.

So, we have the symbol V for Alessandro Volta, A for André-Marie Ampère, Ω (upper case Greek omega) for Georg Ohm, W for James Watt, Hz for Heinrich Hertz (two letters to avoid confusion with the Henry), F for Michael Faraday, H for Joseph Henry. Units such as the meter, second, and gram weren’t named for people, so their symbols (m, s, and g) are lower case.

Metric prefixes are just as you learned them in ham class. The symbol for milliampere, then, is mA, and for kilowatt is kW. One-tenth of a bel is a decibel, or dB.

Are there more rules? Sure.

Substituting a hyphen for “to” is frowned on because it can be interpreted as a minus sign. For example, “20 °C to 30 °C” is not confusing, but “20 °C-30 °C” could be.

Oh, and while lots of folks place the numeric value up against the symbol (“3mA”), the rule is to use a space (“3 mA”). Check your QST magazine – they get it right!

Keep up to date with new RF Exposure Rules:

Have you updated your station records to comply with the new RF exposure rules? ARRL The National Association for Amateur Radio® provides free, comprehensive resources to help. For more information: <https://www.arrl.org/news/arrl-helps-radio-amateurs-comply-with-new-rf-exposure-evaluation-rules>

Rosin Corps is back!

Our next event will be Saturday, May 27th, with two shifts: 9:00 am to 12:00 pm and 1:00 pm to 4:00 pm in Fort Collins. There are slots for 12 students in each shift. The project is a portable, dual band 20/40 m dipole HF antenna from Pacific Antennas. This antenna project is simple to build, very functional, and lightweight. We'll help you build and tune it. You'll leave with a fully functional antenna for your use. We'll provide the kit and all tools necessary (but you're welcome to bring yours if you prefer). The cost of the class will be \$25. [Click here](#) to reserve your slot and pay the fee.

Get the Goods!

The [NCARC Store](#) is open for business! We have stickers, t-shirts, patches, water bottles and keychains. We still have monogrammed clothing too. <http://www.ncarc.net/?q=node/424>

It's Never Too Late to Renew!

Renew your NCARC membership.

It's quick and easy.

[Click here!](#)

Update on Field Day June 24-24, 2023

Greg Ella NØEMP

During the past three years that I have been managing the NCARC Field Day, I've taken an approach to Frequency Management that might best be described as "Benevolent Anarchism". Under this system, anyone wishing to operate would first run around asking everyone else that appeared to be operating what band and mode they were on. Then, if a band and mode they were interested in working was available, they would set up there. This sort of worked the first couple of years when we had good band openings, given that the NCARC Field Day atmosphere is more of a social gathering involving some radio operating.

During Field Day last year (2022), propagation was not terrific, and we were limited to 20 meters during large parts of the day. This exacerbated some conflict between CW operations and FT8, partly because the CW and Digital portions of the band are so close together, and partly because we did not physically spread out nearly as much as we could have.

This year, we are going to do things a little differently. First off, thanks to an excellent suggestion from Darren (KC0ZIE), we are going to maintain a whiteboard or an easel with paper. This will probably be located under a pop-up shelter. This will be a living document showing who is operating on each portion of each band (CW, SSB, Digital) this will allow an operator to tell at a glance if there is an open spot to operate. It will be the responsibility of each operator to mark themselves down on the board, and to erase or cross off their name / call sign when they are done on a particular band / mode.

Because the typical Digital Mode and CW portions of each band are so close together, we are asking Digital Mode operators not to use a band that a CW operator is currently using. Aside from some solar storms, we've had very good propagation so far this year, and we should hopefully have a number of bands to play on.

If we do end up needing to run CW and Digital on the same band, there are several things that we will try to deconflict the two modes.

1. Spreading the involved stations out away from each other. There was a lot of available space that we did not use last year.
2. Cross polarization. Having one station run a vertical antenna while the other runs a horizontal. If you plan to operate either CW or Digital, please bring both types of antennas so we can implement this.
3. As a last resort, if all else fails, we may need to implement a schedule along the lines of "CW during even hours, Digital during odd hours".

Digital Mode Operators: Beginning this year, we are asking that you stay with your radio while it is transmitting. Some modes, such as FT8, allow an operator to start a program and then go wandering off. The voice and CW operators need to stay at their stations to operate, and we are asking the same for Digital Ops.

Also, please be aware that over driving a transmitter, especially on a digital mode, can cause splatter and a much wider transmit bandwidth than normal. Please be familiar with the proper adjustment and use of your particular combination of radio, sound card and computer. We will be able to "look" at transmitted signals during field day and see if someone appears to be having an issue.

CW Operators: Please be aware that not all receivers are created equal. Field Day is a challenging environment to operate in, with multiple transmitters nearby both in distance and in frequency. Some receivers are better than others at handling this environment. Here is a good resource for further information on this:

<http://www.sherweng.com/table.html>. If you plan to operate primarily CW, and you have a capable CW rig, please bring it.

The Radio Frequency Spectrum

A handy reference from Mike Hickerson WBØMH

Terminology	Abbreviation	Frequency	Wavelength
Audio Frequency	AF	20 Hz to 20 kHz	
Very Low Frequency	VLF	3 kHz to 30 kHz	10 to 100 km
Low Frequency 30 kHz to 300 kHz	LF	135 kHz 472 kHz	2200 m 630 m
Medium Frequency 300 kHz to 3 MHz	MF	1.8 MHz	160 m
High Frequency 3 MHz to 30 MHz	HF	3.5 MHz 5.3 MHz 7 MHz 10.1 MHz 14 MHz 18 MHz 21 MHz 24 MHz 28 MHz	80/75 m 60 m 40 m 30 m 20 m 17 m 15 m 12 m 10 m
Very High Frequency 30 MHz to 300 MHz	VHF	50 MHz 144 MHz 222 MHz	6 m 2 m 1.25 m
Ultra High Frequency 300 MHz to 3000 MHz	UHF	420 MHz 902 MHz 1240 MHz	70 cm 33 cm 23 cm
Super High Frequency	SHF	3 to 30 GHz	10 to 100 mm
Extremely High Frequency	EHF	> 30 GHz	1 to 10 mm

Did you remember all those units?

Hz = hertz = one cycle per second = 1/sec

kHz = kilohertz = one thousand cycles per second = 1,000/sec

MHz = megahertz = one million cycles per second = 1,000,000/sec

GHz = gigahertz = one billion cycles per second = 1,000,000,000/sec

m = meter; cm = centimeter = 100/meter; mm = millimeter 1,000/meter

Upcoming Ham Radio Events

Rosin Corps: May 27, Build a Pacific Antennae, 20/40 dipole, [Sign up here](#).

C.A.S.T. For Kids: Jun 3, Horsetooth Reservoir, Fort Collins. [More info here](#). Contact Marty KØMLG

Ride to End ALZ: Jun 11, 2023, Fort Collins, CO. [More info here](#). Contact Darren KCØZIE

Courage Classic: Jul 15-16, 2023, Copper Mountain, CO. [More info here](#). Contact [Christian Norris](#) WØCDN

Never Summer Race Event: Jul 28-30, 2023, Gould, CO. [More info here](#). Contact Wayne ADØKE

Equinox Marathon, ½ Marathon, 5 Mile: Sep 17, Poudre Canyon, Fort Collins, CO. [More info here](#). Contact Marty KØMLG

Red Feather Jamboree: Sep 22-24, 2023. Red Feather, CO. [More info here](#). Contact Brian NØBCB

Blue Sky Marathon: Oct 21, 2023, Fort Collins, CO. [More info here](#). Contact Darren KCØZIE

From the Editor

Ann Donoghue KØARD

newsletter@ncarc.net

I'm very happy to include a new, regular column. Bob Schmid has offered to do a short informative article each month. The first one addresses one of my pet peeves – correct use of units and symbols!

Please send your articles, ideas for articles and announcements for inclusion in the newsletter.