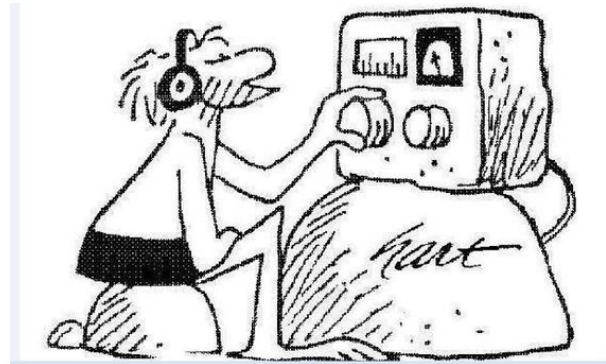


From the NCARC President

Joe Hawley KDØTYU
president@ncarc.net

We have big plans for the Northern Colorado Amateur Radio Club this summer. Our plan is to have two or three Rosin Corps sessions starting with our June 1st radio build. We also have plans for our annual HF in the Park sometime in July and our picnic in September. We're also looking to have a technician's class later on in the early fall. What's going on with you this summer? I hope you make NCARC part of it.



Public Affairs Office

Dave Winnett WØDDZ
pao@ncarc.net

Numbers as of May 14, 2024

YouTube

Views (last 28 days): 1,712
Watch time (hours, last 28 days): 192.9
Subscribers: 2,854
New Subscribers (last 28 days): 18

Top Video Views

Stealth Antennas – 1020
Repeater 101 – 190
GridTracker - 86

Facebook

Members: 584
New Members: 5

NCARC Club Meeting

May 18, 2024

8:30 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:

To Be Announced

Next meeting:

June 15, 2024
Golden Corral
Loveland CO

Treasurer's Report

Darren Kalmbach KCØZIE

treasurer@ncarc.net

April 2024

Account	Checking	Raffle	Savings	PayPal	Total
Beginning Balance	\$7,184	\$2,768	\$10,001	\$8,444	\$28,397
Deposits	\$466	\$0	\$0	\$348	\$814
Transfers	\$0	\$0	\$0	\$0	\$0
Withdrawals	\$663	\$100	\$0	\$40	\$803
Ending Balance	\$6,987	\$2,668	\$10,001	\$8,752	\$28,408
Outstanding Items	\$0	\$0	\$0	\$0	\$0
Net Balance	\$6,987	\$2,668	\$10,001	\$8,752	\$28,408
Net Change	(\$197)	(\$100)	\$0	\$308	\$11

Expenses: Storage, Class

Revenue: Memberships, Donation

Membership Activity:

April 2024:: 137 (12 new)

April 2023: 216

MFJ Ceasing On-Site Production

From the ARRL Newsletter May 2, 2024

MFJ Enterprises, Inc. founder Martin F. Jue, K5FLU, announced that as of May 17, 2024, the company will cease on-site production at their Starkville, Mississippi, facility.

Ameritron, Hy-Gain, Cushcraft, Mirage, and Vectronics brand products will be affected by the shutdown.

In a letter posted to social media, Jue said he is looking forward to retiring:

Times have changed since I started this business 52 years ago. Our product line grew and grew and prospered. Covid changed everything [for] businesses, including ours. It was the hardest hit that we have ever had, and we never fully recovered.

I turned 80 this year. I had never really considered retirement, but life is so short, and my time with my family is so precious.

Jue founded MFJ Enterprises in 1972, after building a CW filter kit that sold for less than \$10. Since 1990, the company has acquired several other legacy brands within the amateur radio market. Jue shared that the company will remain open to sell existing inventory because they have "a lot of stock on hand." They will also continue to offer repair services for the foreseeable future.

Jue expressed gratitude to the many longtime employees of MFJ, some of whom have been with the company for 40 years.

He also thanked MFJ dealers and radio amateurs for their patronage over the decades.

He also sent a special message to ARRL Members and loyal QST readers:

"I give my deepest heartfelt thank you to my fellow hams all over the world, and especially to ARRL members and QST readers. In my youth, I was given a second-hand set of 1958 QSTs. I read them over and over until I practically memorized every word. This gave seed to MFJ.

MFJ became a worldwide ham radio leader only because of you. As I turned 80, I cannot thank you all enough for 52 wonderful ham radio years. Thank you, 73s . . . Martin F. Jue, k5flu"

MFJ

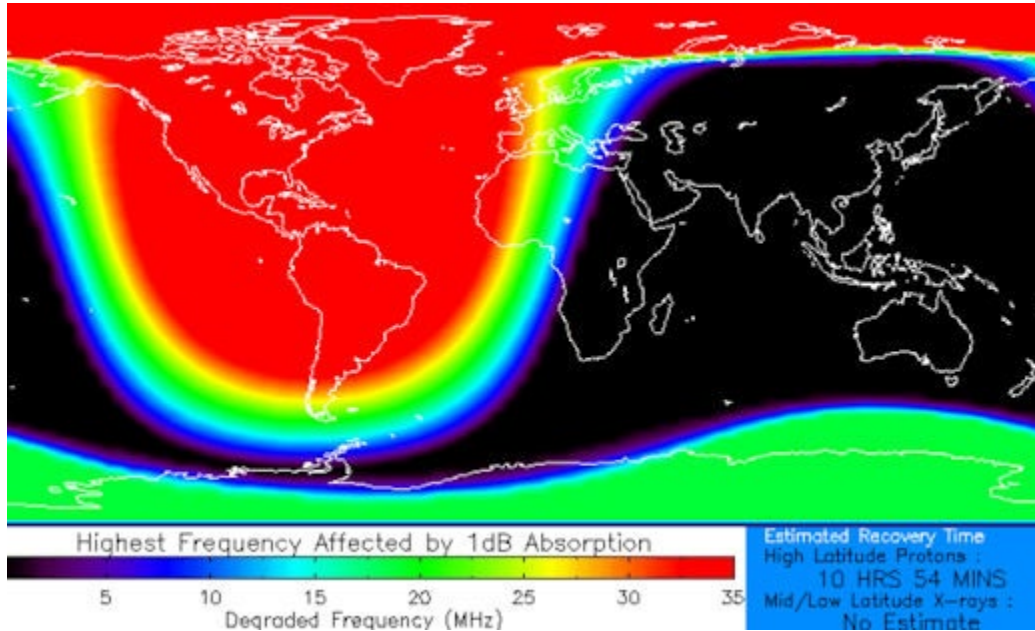


Martin F. Jue, K5FLU, founder of MFJ.

Earth is Connected to Sunspot AR3664

Used with permission from Spaceweather.com May 14, 2024 by Dr. Tony Phillips

Giant sunspot AR3664 is no longer facing Earth. That makes it extra dangerous. The Carrington-class sunspot is passing over the sun's western limb--a region of the sun that is magnetically connected to our planet. Indeed, we are feeling the effects of that connection right now; take a look at this map of ongoing radio blackouts:



Red zones in the map show where shortwave radio signals are being absorbed. Inside the Arctic Circle, frequencies below 30 MHz are almost completely blacked out, a nuisance for polar aviators and ham radio operators.

What's causing this? Protons accelerated by solar flares in the magnetic canopy of AR3664 are following [the Parker Spiral](#) back to Earth. Think of it as a magnetic superhighway. The arriving particles are funneled by our planet's magnetic field toward the poles where they ionize the atmosphere and interfere with the normal transmission of shortwave radio.

This [polar cap absorption event](#) could last for days, especially if it is boosted by more flares from AR3664. You can monitor its progress [here](#).

Did You Know?

A regular contribution from Bob Schmid,
WA9FBO

What is “Q”?



Isn't he a Star Trek alien? Yes, but Q means something else in electronics. What makes a component “high Q”? Is more Q better than less? Let's check it out.

When you buy an inductor, you're buying the ability to store power in a magnetic field. You want minimum power loss.



And when you buy a capacitor, you're buying the ability to store power in an electric field. Again, you want minimum power loss.

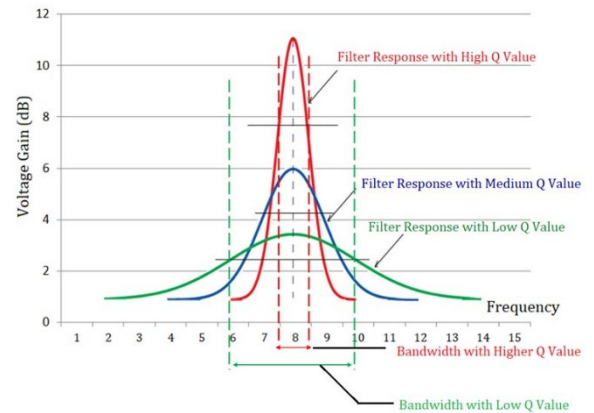
Q, or *quality factor*, is a figure of merit for an energy-storing device or circuit. Q compares the energy stored to the energy lost, per cycle. It's dimensionless because it's a ratio: $Q = P_{\text{STORED}}/P_{\text{DISSIPATED}}$. Since $P_{\text{STORED}} = I^2Z$ and $P_{\text{DISSIPATED}} = I^2R$, Q is also Z/R . In other words, a high-Q component has high reactance and low resistance. Because reactance is frequency dependent, Q tells us how well an inductor or capacitor does its job *at a certain frequency*.

Inductors typically have lower Q than capacitors because they have more resistance. If we want to increase the Q of an inductor, we could use larger diameter wire. Skin effect (the tendency of AC to flow in the outer portion of the wire) adds loss; we can reduce it by silver coating the wire so that more current is carried by the better conductor. And since inductor core material acts like additional resistance (some of the energy stored in the core is turned into heat), we should choose the material most appropriate for the frequency. For instance, we don't use iron-core audio transformers at radio frequencies.

There are multiple sources of loss in **capacitors** as well. One is the resistance of the leads and plates. Another is heating of the dielectric material; we should choose the right material for the job. For example, we can get away with tantalum pentoxide or aluminum oxide as a dielectric at low frequencies, but plastic films are better for audio, and ceramic and porcelain for RF.

So let's say we have a high-Q inductor and a high-Q capacitor. What can we build with them? One item is a high-Q **tuned circuit**.

In an LC tuned circuit, we can define Q as the ratio of frequency to bandwidth. For example, if a tuned circuit has a resonant frequency of 1 MHz and a bandwidth of 10 kHz, it has a Q of 100. High Q components let us build highly selective narrow-bandwidth circuits for oscillators and filters (see example below). High power LC “tank” circuits, which get the name from their storage ability, need high Q components because the heat from losses can be significant.



Do other parts have Q factors?

Yes. A quartz crystal, for example, has a very small bandwidth compared to its operating frequency and may have a Q of >10,000.

Does an antenna have Q? Yes, and it's defined as the energy stored in the fields around the antenna divided by the power it radiates. The higher an antenna's Q, the narrower its SWR bandwidth will be – just as a tuned circuit's bandwidth gets narrower as Q increases. To widen the bandwidth of an 80M antenna, we may lower its Q by making the elements thicker or by using a bowtie, fan, or cage configuration.

Is there such a thing as too much Q? Yes, sometimes. The higher the Q, the less willing the circuit is to “give back” energy, resulting in ringing. The inductance of traces on a PC board can combine with bypass capacitors to inadvertently make resonant circuits that affect circuit performance. We “de-Q” these circuits by adding loss, often in the form of low-value resistors.

In power supply and signal processing filtering, we might purposely lower the Q to flatten the frequency response.

Tech Report

James Cizek, KIØKN

techchair@ncarc.net

May 2024

In final stages of testing gear, building the microwave gear support stands, and finalizing wiring for the Nunn repeater move. Please watch out for a work party invite soon!

Silent Key: Mike Ring KEØLCK

Mike Ring (KEØLCK- The Other Mike from Windsor) passed away Thursday April 25th, 2024, with no warning signs leading up. The family is having a memorial service followed by a reception on June 9, 2:00 pm, at the Lincoln Center, Fort Collins, CO

Rosin Corps

Our next Rosin Corps class will be Saturday, June 1. We plan to have one class at 10 AM; however, if we exceed our numbers, we will have an afternoon class. In this session, we'll build a Vogurtime AM FM Radio Kit. This is a superb kit and easy to make for beginners or experienced.

The class cost will be \$20 to cover the cost of the kits. NCARC will provide solder and irons for the class, but you can always bring your own. Due to the obtaining kits in time, we have a signup deadline of May 24th. [Please click here to sign up.](#)

It's Never Too Late (or Too Early) to Renew!

Renew your NCARC membership.

It's quick and easy.

[Click here!](#)

Get the Goods!

The [NCARC Store](#) is always open for business! We have stickers, T-shirts, patches, water bottles and keychains. We have monogrammed clothing too.

Upcoming Ham Radio Events

AARL National Convention: May 17-19, 2024, Xenia, OH. [More info here.](#)

Ride to End ALZ: Jun 9, 2024, Fort Collins to Berthoud, CO. [More info here.](#)
Contact Ron KØAZA

Rosin Corps: Jun 1, 2024. Deadline to sign up May 24. [Sign-up here.](#)

Never Summer Race Event: Jul 26-28, 2024, Gould, CO. [More info here.](#)
Contact Wayne ADØKE

Megafest: Jul 27, 2024, Monument, CO. [More info here.](#)

Red Feather Trail Jamboree: Sep 20-22, 2024, Red Feather, CO. [More info here.](#) Contact Brian NØBCB

Equinox Marathon: Sep 22, 2024, Fort Collins, CO. [More info here.](#) Contact Marty KCØQLK@gmail.com

Blue Sky Marathon: Oct 19, 2024, Fort Collins, CO. [More info here.](#) Contact Ron KØAZA

Weekly On Air Events

FoCo CW Round Table, Tuesdays, 8:00 pm MT, 7.118 +/- for QRM. [More info here.](#)

NCARC Tech Net, Mondays, 6:00 pm MT, 447.275 (100 Hz tone)

NCARC Club Net, Wednesdays, 6:30 pm MT, 447.275 (100 Hz tone)

Biweekly Get Together

Martinez-Clarke Luncheon: every other Wednesday, 11:30 am, Perkins Restaurant, 2222 W Eisenhower Blvd, Loveland,

From the Editor

Ann Donoghue KØARD
newsletter@ncarc.net

Summer events that ham radio operators help at are happening all over! I've helped at a few, and it really is fun! And good practice. I'm always seeking contributions to the Newsletter! Please send your news and bits of info!