

## From the NCARC President

Joe Hawley KDØTYU  
president@ncarc.net

Well, it looks like summer's gone, and I believe there's snow on the mountains right now; but that won't stop us with some of the things we plan on doing.

We're looking at doing a Rosin Corp event sometime early next year, and I'd like you to give me some ideas on what you think we should build. Look at some of the builds they have on Amazon or the ARRL site and let us know if there's anything there you think would be a good project.

Hamfest is right around the corner! Vendor tables are going fast. Volunteer sign-up is open.

That's it for now. I hope to see you on November 18<sup>th</sup> at the Golden Corral and do remember that the Golden Corral will not be open until 8:30 AM this coming

## Public Affairs Office

Dave Winnett WØDDZ  
pao@ncarc.net

Numbers as of November 14, 2023

### YouTube

Views (last 28 days): 2,626  
Watch time (hours, last 28 days): 350.7  
Subscribers: 2,721  
New Subscribers (last 56 days): 56

### Facebook

Members: 573  
New Members: 3



# Club Meeting

Saturday, November 18, 2023

**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](mailto:treasurer@ncarc.net)  
You choose what you feel comfortable doing: attend in person or online.

**Topic:**

**An Expert High Frequency Set-up**

**Bob Schmid WA9FBO**

Next meeting:

**Christmas Get Together  
December 6<sup>th</sup>  
Bruce's Bar, Severance**

# Treasurer's Report

Darren Kalmbach KCØZIE

[treasurer@ncarc.net](mailto:treasurer@ncarc.net)

October 2023

Account	Checking	Raffle	Savings	PayPal	Total
Beginning Balance	\$10,873	\$2,783	\$1,110	\$7,581	\$22,346
Deposits	\$0	\$0	\$0	\$589	\$589
Transfers	\$0	\$0	\$0	\$0	\$0
Withdrawals	\$190	\$0	\$0	\$20	\$210
Ending Balance	\$10,683	\$2,783	\$1,110	\$8,150	\$22,726
Outstanding Items	-\$576	\$0	\$0	\$0	-\$576
Net Balance	\$10,107	\$2,783	\$1,110	\$8,150	\$22,149
Net Change	-\$190	\$0	\$0	\$569	\$379

**Expenses:** Storage

**Revenue:** Memberships, Hamfest

## Membership Activity:

October 2023: 255 (9 new)

October 2022: 230

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

Renew your NCARC membership.

It's quick and easy.

[Click here!](#)

# Did You Know?

A regular contribution from Bob Schmid, WA9FBO

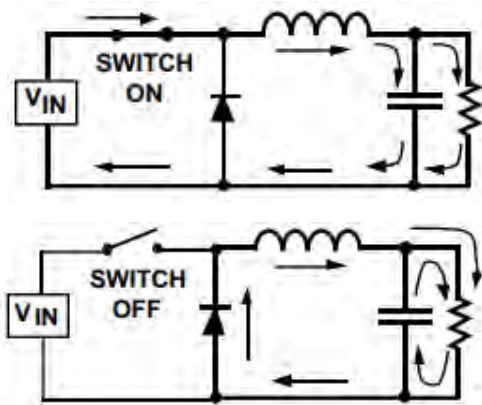
## The Buck Regulator

Let's say you've built a project that requires +5 V at 1 A and want to power it from a +13.8 V supply. What kind of regulator would you use?

One choice is the common 7805 linear regulator, but it's not very efficient because it operates like a variable resistor. The +13.8 V supply would need to provide  $13.8 \text{ V} \cdot 1 \text{ A} = 13.8 \text{ W}$  with 36% of the power going to the load ( $5 \text{ V} \cdot 1 \text{ A} = 5 \text{ W}$ ) and 64% being wasted by the regulator ( $8.8 \text{ V} \cdot 1 \text{ A} = 8.8 \text{ W}$ ). That regulator will need a good heat sink! (Sometimes designers put a fixed resistor in series with the regulator to offload some of the power dissipation.)

A better choice might be one of the popular buck regulators, such as the LM2575. It's offered by several manufacturers and is 80% efficient. And unlike a linear regulator, its efficiency doesn't decrease much as the input-to-output voltage ratio increases. A heat sink may not even be needed. Your design becomes more reliable because less heat is generated, and if less heat means omitting ventilation holes, the product can be better sealed against dirt.

The LM2575 can operate from as little as +8 V while supplying +5 V, so in a pinch your project could operate from a 12 V battery long after the battery is considered depleted. The regulator's maximum input is +40 V.



A basic buck regulator consists of a switch (a power MOSFET), a diode, an inductor, and a filter capacitor.

When the switch closes, current starts to flow from  $V_{IN}$ , through the inductor, and into the filter capacitor and load. The inductor's magnetic field increases, storing energy; this process creates a voltage that opposes ("bucks") the input voltage, causing the output voltage to be lower than the input voltage. During this time the diode doesn't conduct because it is reverse-biased.

When the switch opens, the inductor opposes the change in current by reversing the polarity of its voltage drop. It releases energy by supplying current to the filter capacitor. The current path is through the diode, which is now forward biased.

The switch opens and closes at a constant frequency. The duty cycle, which is the ratio of ON time to OFF time, sets the ratio of output voltage to input voltage. A control circuit varies the duty cycle to accommodate varying input and load conditions.

For best performance, use the suggested components and layout published in the regulator IC datasheet.



## It's also never too late to start planning for Christmas: Santa on the Air

The Longmont Amateur Radio Club and the Northern Colorado Amateur Radio Club will again participate in the Santa On The Air program, and we need your help. We're looking for individuals who want to play Santa, Mrs. Claus and the Elves. Training provided!

If you are interested in helping, please send Joe Hawley an email: [president@ncarc.net](mailto:president@ncarc.net). (*Editorial note: I was an "Elf" last year and it was great fun!*)

Do you have any kids or grandkids who would like to talk directly to Santa NØP? This is their chance! Santa will send a QSL card (postmarked from the North Pole!) to each child.

Santa, Mrs. Claus and the Elves will be available to chat about naughty and nice lists between Nov 24 and Dec 8.

## Amateur radio operators are needed for a real-world science experiment during upcoming solar eclipse event

*From The ARRL Letter July 20, 2023*

Members of the Ham Radio Science Citizen Investigation (HamSCI) will be making radio contacts during the 2023 and 2024 North American eclipses and probing the Earth's ionosphere. The Solar Eclipse QSO Parties (SEQPs) are set to be fun and friendly with a competitive element, and all amateur radio operators and shortwave listeners are invited to participate.

The upcoming eclipse (April 8, 2024) provides unique opportunities to study interactions between the sun and the ionosphere. As participants and HamSCI members transmit, receive, and record signals across the radio spectrum during both eclipse events, valuable data will be created to test computer models of the ionosphere. Learn more at <https://hamsci.org/projects>. ARRL is a partner with HamSCI for the SEQP.

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# September Club Picnic

Beautiful weather, lots of good food, and many smiling Hams. It was a lovely picnic!









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# NCARC Hamfest 2024

Only 2 months away: January 20, 2024! Vendor tables are available for rent; 24 have already been taken so don't dilly-dally about [signing up](#) or you might miss out.

As in previous years, volunteers are critical to our success. We have lots of ways you can help. Each of these positions are for 90 minutes or less: You'll help the club and still be able to visit vendors and talks.

- Admission Doors – taking admission payments, rechecking admission, and handing out door prize tickets.
- Club Table – help with door prizes, membership renewals and applications.
- Raffle Tickets – selling raffle tickets (In 2023 our volunteers sold 3000 raffle tickets)
- Vendor Check In – Working with vendors, accepting payments and last-minute table sales.
- Session Moderators – working with presenters
- Technician – Audio/Visual and collaboration tools for the presenters

Two ways to sign up:

1. Fill out the [SignUpGenius](#) form with your information
2. Send an email to Pete Borley, the Volunteer Coordinator [kfObtb@gmail.com](mailto:kfObtb@gmail.com).
  - Provide name, email address, phone number, preferred positions, and times.

If you are hesitant to commit right now, send Pete a note and we'll put you on the 'standby' list and when your schedule firms up, let us know. We will reach out to you as we get closer to the event.

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## Get the Goods (start your Christmas shopping now)!

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

**NCARC 2023 Christmas Party!:** Dec 7, 6 pm, Bruce's Bar, 123 1<sup>st</sup> St, Severance, CO

**NCARC Hamfest:** Jan 20, 2024, McKee 4-H, Youth and Community Building, 5280 Arena Circle, Loveland, CO

### From the Editor

*Ann Donoghue KØARD*  
[newsletter@ncarc.net](mailto:newsletter@ncarc.net)

I apologize for no October Newsletter. Hopefully we can catch up on all the news in this one!

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

# Northern Colorado Amateur Radio Club (NCARC) Presents:

Larimer County Fairgrounds—Thomas McKee 4H Building

Saturday, January 21, 2023

## Winter 2023 Hamfest

Open To Public 8:00 AM To 1:00 PM!

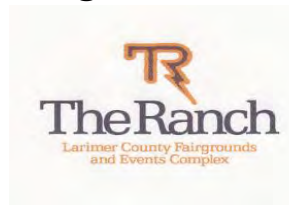
Admission \$7.00

[www.ncarc.net](http://www.ncarc.net)

Colorado's First Hamfest of the Year  
Bigger And Better Than Ever Before!



**ARRL**  
The national association for  
AMATEUR RADIO



**Great Door Prizes Given Out During Event**

**Must Be Present To Win**

**Radio Talk In:**

**448.025 (-) 100Hz tone**



For Advance Table Reservations:

Visit: [WWW.NCARC.NET](http://WWW.NCARC.NET)

Or Contact Joe Hawley KDØTYU

970-689-0828 [president@ncarc.net](mailto:president@ncarc.net)

Admission: \$7.00

8 Ft. Tables: Pre-Registration: \$13 to \$17

**A special thanks to our sponsors**



**This Year Featuring:**

- Fantastic prizes for drawings and door prizes
- Guided tours of the event for folks new to Hamfest
- Exhibits and Demonstrations
- New and used amateur radio, computer related equipment for sale

### Amateur Related Presentations

**Free License Exams - 9:30AM**

Admission Fee not required

Licensing Opportunity!

If Upgrading—Be Sure To Bring A Copy Of  
Your Current License!

**For our vendors**

Visit Our Web Page—Just For You!

Online Pre-Registration For Your Tables!

View The Table Layouts—Pick Your Spots!

Signup Right On The Webpage!

Vendor Setup Begins at 7:00AM—Event Day

Two Large Overhead Doors For

Quick & Easy Setup!

5280 Arena Circle, Loveland, Colorado

Take Exit 259 off 1-25

East on Crossroads Blvd 0.35 Miles

North on Fairgrounds Ave. 0.25 Miles

To Main Entrance to The Ranch

GPS COORDINATES: 40.44286, -104.9863



Your Touchstone Energy® Cooperative