



## From the NCARC President

*Joe Hawley KDØTYU*

As we work our way towards summer, NCARC is hoping to have some hands-on events by midsummer. We hope to reestablish our club meetings very soon and get Rosin Corps (hands-on training) back up and running. As you well know we need to follow directions from our local governments as per COVID-19

We are starting to do our test sessions again with our next session on April 24<sup>th</sup>. If interested go to the website, or see later in this newsletter and sign up. We will be following COVID-19 protocol, allowing only four people per 90-minute session. So, if you are interested in upgrading or know someone that wants to get a brand-new technician's license sign up. It is free and I hope to see you there.

I have had some requests to do an HF seminar and the minute our COVID-19 restrictions are relaxed enough that we feel comfortable in doing this we will have one. Our plan is to set up a few HF stations with operators to explain some of the functions of the radios. Who knows, maybe you will be able to talk to someone in another county? So cool! This is an event I am looking forward to.

Well, that is it for now. Please stay safe and thank you for supporting the Northern Colorado Amateur Radio Club.

## Public Affairs Office

*Dave Winnett WØDDZ*

Numbers as of April 13, 2021

### YouTube

Views (last 28 days): 4,931

Watch time (hours, last 28 days): 993.6

Subscribers: 1,864

New Subscribers (last 28 days): 62

### Facebook

Members: 465

New Members: 23

## From the Editor

*Ann Donoghue KØARD*

Welcome to Spring (mostly). I hope you enjoy Jeremy Turner's article on POTA, as well as the links to information on wire antennas from Greg Ella. Please let me know what else you might enjoy!

## Club Meeting and Speaker

Next Meeting

Saturday, April 17, 2021

8:30 am socialize, 9 am club meeting, followed by our speaker:

**Greg Ella NØEMP**

### Wire Antennas

There are some Internet links I will be referring to during my presentation. They are listed below and will also be in the chat window of the presentation during the presentation.

Ferrite cores: <http://www.kitsandparts.com/>

Ferrite cores and wire antenna stuff: <https://www.kf7p.com/KF7P/Welcome.html>

What BALUNs do and how to make them: YouTube TRX Lab Channel, Episodes 100, 101, 105 and 131

Good lengths and bad lengths for "Random Wire" end fed antennas:  
<https://www.hamuniverse.com/randomwireantennalengths.html>

## Volunteers needed!!

We are looking for a handful of hams to help out with a local trail running event coming up on Saturday May 8th at Lory State Park. We will have operators at each of the 4 aid stations providing communications. No special equipment or experience is required; just the desire to help. If you'd like to volunteer or want more information, send an email to Darren at [kc0zie@ncarc.net](mailto:kc0zie@ncarc.net)

# Treasurer's Report

*Darren Kalmbach KCØZIE*

## March 2021 Account Balances

Account	Checking	Raffle	Savings	PayPal	Total
<b>Beginning Balance</b>	\$1,953	\$2,081	\$2,099	\$11,342	\$17,476
<b>Deposits</b>	\$0	\$0	\$0	\$390	\$390
<b>Transfers</b>	\$0	\$0	\$0	\$0	\$0
<b>Withdrawals</b>	\$175	\$0	\$0	\$13	\$188
<b>Ending Balance</b>	\$1,778	\$2,081	\$2,099	\$11,719	\$17,678
<b>Outstanding Items</b>	\$0	\$0	\$0	\$0	\$0
<b>Net Balance</b>	\$1,778	\$2,081	\$2,099	\$11,719	\$17,678
<b>Net Change</b>	-\$175	\$0	\$0	\$377	\$202

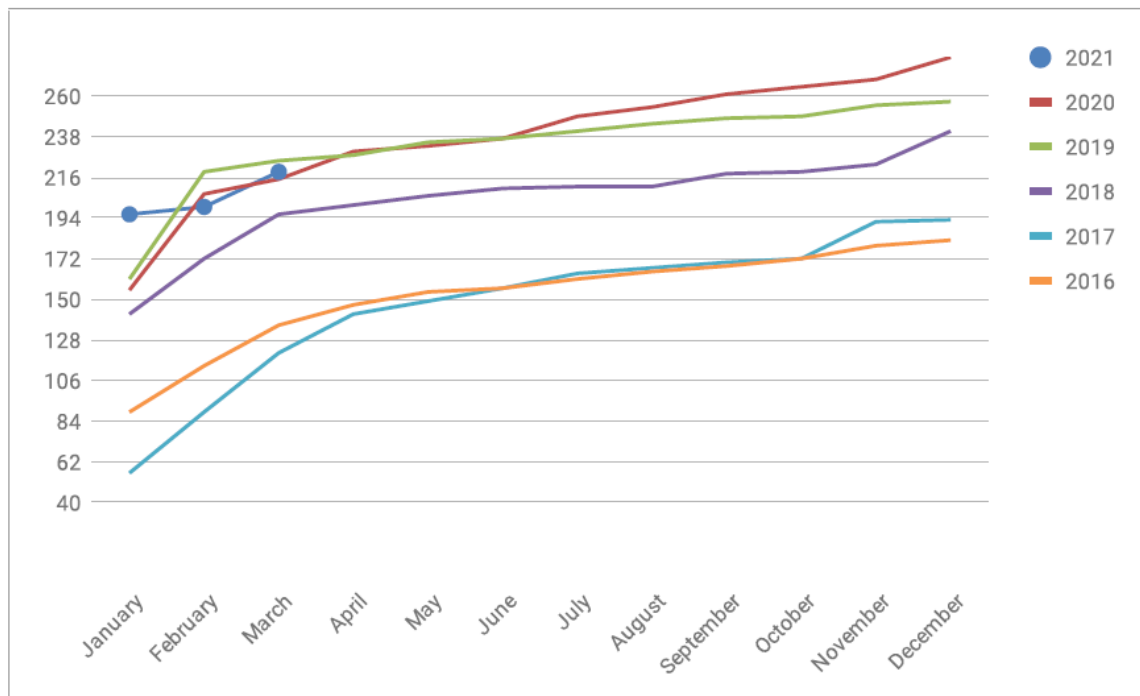
Expenses: Storage

Revenue: Memberships

Membership Activity:

March 2021: 219 Members (19 new)

March 2020: 215 Members



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## Tech Report April 2021

James Cizek, KIØKN

### Buckhorn

The big news here is that the excavation and drilling has begun for the new tower! Unless major snow happens, the new tower is expected to be ready at the end of April. We'll move everything to the new infrastructure shortly thereafter, likely the first or second week of May.

Also, the 224.840 repeater is back on the air. It's still not operating great, but it is usable. After a deep dissection, it was found that the Bridgecomm repeater itself is basically of a very poor design and it "leaks" RF into itself causing desense. I've replaced all the internal RG58 jumpers with RG400 coax and replaced all the sub-par connectors with true silver-plated RF connectors. I've placed a large amount of Mix 61 ferrites on every cable/coax inside the repeater than I could. It reduced the desense from 7 db to 1 db.

I still have more work to do, but I wanted to measure the performance of the repeater on the actual mountain top for a while and make sure no other parts of the system were adding to the problem. The Bridgecomm design is just 2 mobile radios in a box. I plan on attempting to isolate them better from each other with some sheet metal containerization and bypassing as many of the leads in/out of each section with feedthrough capacitors as a next step.

The network router at Buckhorn east has been replaced with a new 24 port version that will also handle the fiber optic cables we'll move to on the new tower (the copper Ethernet cables are being saturated and interfered with by the large FM broadcast signals).

### Rattlesnake

We learned during the big snowstorm that we really don't have enough battery at the site to survive 4 days without sun. Although that's not a regular occurrence in Colorado, it did happen during the storm and we ran out of battery at the site. Special thanks to Greg Ella, NOEMP for snowshoeing into the site to reset everything and get everything charging again! We'll start addressing the battery issue as spring rolls around.

### Microwave Backbone to Sterling Project-

We received final approval on this project from Weld county and have ordered much of the parts needed to complete our link into Sterling. We are working out the final details for the Sterling repeater coverage and hope to have this project rolling forward soon!

### Coming soon

I am working on a VARA modem node to add this protocol to our Winlink system on Horsetooth. I have also put into place a PBX phone system that allows phone calls to be made between our repeater sites and to anyone helping support us from the "flat lands". Cell signals are often spotty to non-existent on our sites due to the large RF fields. Having a phone system will greatly enhance our ability to troubleshoot between sites and support folks. As an added benefit to this, as soon as I debug the integration between this VOIP phone system and the repeater controller, we'll be able to activate a phone patch on any of our repeaters as necessary.

### Red Feather Coverage

We are still hunting for a suitable location for a repeater. There are limited options, and we've run into brick walls at every one of them so far, but the search continues!

### Interference

None reported, beyond the 145.115 intermod problems. As the snow melts away, our access will improve and we'll attack this problem next!

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## Upcoming Testing Session

**April 24** – Three sessions: 11:00 am, 12:30 am and 2:00 pm. Four people per time period, and sign-up on Signup Genius: <https://www.signupgenius.com/go/30E0B4AA8A62FA75-hamlicense7>  
Once you sign-up you'll receive info on the address and what to bring. If you have any questions, please email [treasurer@ncarc.net](mailto:treasurer@ncarc.net).

## Previous Test Takers

And bravo to our most recent successful test takers, 4 new Techs and 4 new Generals. Congrats!

### New General Licensees:

Angie Robbins, Chris Brooks, Nathaniel Ley, Pete Robbins

### New Technician Licensees:

Richard Robbins, Matt Schneider, David Neckels, Eric Dobbs



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## # Parks on the Air

**Jeremy Turner, N0AW (POTA Admin and Developer)**

Email: [jeremy@jeremyturner.com](mailto:jeremy@jeremyturner.com) / Twitter: @linuxwebguy

In 2016, the ARRL introduced a one year only program called National Parks on the Air to celebrate the 100<sup>th</sup> anniversary of the National Park System. There were approximately 490 NPS-governed parks, sites, trails, and affiliated areas across the United States, and amateur radio operators were welcomed (to most of them at least) to operate within the boundaries of the park and make 10 simplex contacts with others around the world.

In 2017, a new program was launched to operate from our parks in a similar and flexible manner, with the desire to expand beyond NPS to other federally governed locations (such as national grasslands and forests), to include state-level parks and recreation areas, and to grow beyond the borders of the United States. A core group formed, created an official 501(c)(3) with the name of simply "Parks on the Air".

Today, in 2021, Parks on the Air continues to grow exponentially, doubling the number of activations and contacts of the previous calendar year. Over 10,000 radio amateurs across the world have registered with the program, which now includes over 27,000 parks from 99 DXCC entities, and over 2.5 million QSOs. Some incredibly busy weekends have peaked at 1000 concurrent web viewers on our spotting application!

POTA remains a very flexible program. There is no required exchange for a valid contact, although signal report and location are commonly exchanged. This lack of a requirement allows you to operate from a park during ARRL Field Day, the Colorado QSO Party, or any other contest or event. There are no required, permitted, or restricted modes or frequencies, and we encourage fans of CW, digital modes, SSB, or even satellites to use their favorite simplex mode. POTA enables folks to operate fully contained in your vehicle (which has been my preference) or from a picnic table, or wherever is appropriate and unobtrusive to your environment. Additionally, logs are very much welcomed from previous years, even before the official start of the program. If you operated during National Parks on the Air, you can submit logs for POTA credit as well!

You can find your local park by using the Map feature at <https://pota.us>. For those of us in Northern Colorado, Boyd Lake State Park is popular, and very close! Those further south might enjoy St. Vrain State Park in Longmont, or one of the many locations available in the Denver area. To the west, Rocky Mountain National Park is popular, of course, and you might also enjoy Lory State Park, or the expansive Roosevelt National Forest.

To the east, check out Pawnee National Grasslands. Excellent takeoff angles out there on the plains! If you are more adventurous, a short 2.5 hour drive north will land you at Fort Laramie National Historic Site, which is also at the intersection of 4 historic trails. What a cool place to visit, to see and learn the history of those traveling west, and people working you get credit for five different parks!

People enjoy operating with Parks on the Air for many different reasons. Some enjoy just getting outside. For me personally, NPOTA sparked my interest in getting back into amateur radio after a 15-year hiatus. In an apartment at the time, I had very little room to put up even a compromised HF antenna, so operating outdoors provided me with the best opportunity to get on HF. Others like to test out their equipment for emergency preparedness. It's always a good thing to make sure your portable gear is in order! For others, a chance to operate away from home results in an incredibly low noise floor. Others enjoy trying out different antennas from the field. They might be simple wire antennas, or short verticals. Any day is a good day, when you can get outside, enjoy your local park, and make a few contacts on the radio.

Another flexibility within POTA is operating how you want. Some people enjoy a leisurely approach to making those 10 contacts, being able to have longer conversations with folks. Others enjoy being on the other side of the pileup and being "the DX" station. This provides a good opportunity to practice your contest-style operating, traffic handling, logging, and more. To help with this, POTA provides a web application, <https://pota.us>, which facilitates spots and schedules. An updated version is just about ready to launch, and is available at <https://pota.app>.



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## # Parks on the Air

(continued)

The updated version of the web application is part of a growing segment of next-generation web technologies. While in the past we would run a server that would generate pages for you to display, this new model is purely driven by API calls. The API abstraction allows us to provide alternative methods of user interaction, such as our Amazon Alexa skill, which will read off the current list of spotted stations at parks. If you have an Alexa device, you can ask, "Alexa, ask Parks on the Air, what are the current spots?" APIs allow logging applications to query park names, and so much more.

How can you get started? Keep tabs on <https://pota.us> (or <https://pota.app>) to hear what stations are on right now. Work them! When you're ready, you can register for free at <https://pota.app>. You might already have contacts with stations at parks waiting for you! When the time is right, check out the longer list of frequently asked questions and rules at <https://www.parksontheair.com>.

We have a very active Facebook group, as well as a purely POTA Slack Workspace with discussion rooms, for sale items, activation tips, and much more. Get out and enjoy your local park, and don't forget your radio!



Jeremy Turner, enjoying some radio time!