



RADIO AMATEUR NEWS & VIEWS

The Official Journal of the Radio Amateurs of Northern Vermont

September • 2020

An ARRL Special Service Club

Vol. 30 No. 9

NEXT MEETING: Mitch **W1SJ**

THREE SPEAKER NIGHT!

The September 8th RANV Meeting, We have a tremendous show set up for you this coming month! We have collected some of the forums presented at the QSO Today Ham Expo held in August. The topics comprise a variety of talks which interested our selection panel. The forums run under 30 minutes each. Since we cannot have the speakers present a Question & Answer session, we have brought in some of our club's expertise to help with that task.

1. **Grounding And Bonding: The Essentials** – Ward Silver, N0AX

Ward gives us an overview of grounding and bonding in the ham station. The presentation will cover AC safety, lightning protection, and RF management with an emphasis on HF.

2. **Cycle 24, Solar Minimum and Cycle 25** – Carl Luetzelschwab K9LA

Carl reviews solar Cycle 24 progress, discusses propagation at the solar minimum, and shows the predictions of Cycle 25 which has just started. Yes, the bands will get better!

3. **VP6R 160 Meters: Mutiny on the Bands!** – Glenn Johnson, W0GJ

Glenn was part of the ill-fated January, 2018 3Y0Z DXpedition where bad weather and a damaged engine scrubbed the operation. How does a group deal with this ultimate depression? Why, they go on a different DXpedition, this time to the warm climate of Pitcairn Island where they put VP6R on the air. Be sure to join us at the RANV meeting on September 8. The meeting will be on Zoom, with the session opening up at 6:30 and the meeting starting at 7:00.

If you do not know how to attend a zoom meeting, contact W1SJ or any RANV officer.

CONTACTS

Bob **KB1FRW**, President
mcamp@gmavt.net

Jim **KE1AZ**, VP/Treasurer
jhefferon@smcvt.edu

Duane **WL7CVD**, Secretary
dsalaskasep@ak.net

George **KC1JGM**, Editor
gmavt1@gmail.com

Newsletter submissions to gmavt1@gmail.com

US Mail: PO Box 9392
South Burlington, VT 05407

Web: www.RANV.org

Reflector: RANV@groups.io

Meetings: 2nd Tuesday • 7:00 PM
Wheeler House
1100 Dorset Street
South Burlington

Repeater: 145.150, PL 100; WB1GQR

New Hams, Mentoring:
RANVMentor@gmail.com

VT State Parks On The Air:
<https://www.facebook.com/groups/292829457810746/>

Online Dues Payment:
www.ranv.org/ranvpay.html

VHF QSO PARTY SATURDAY

Mitch **W1SJ**

The VHF QSO Party will take place Saturday, September 12th starting at 2PM and running until 11PM Sunday. There are 3 ways to find activity. First, monitor 146.52 MHz simplex. Contest stations frequently call there. You may not here anyone right away, so listen for a long while. Second, if you have an HF transceiver, listen on 6 meters and tune between 50.125 and 50.150 MHz. You should hear some activity. No antenna? Build a dipole – it is only 9' 4" long. Or else a 40 meter dipole will work. Third, if you have 2 meter SSB, listen around 144.200 MHz. I will be operating from Mt. Equinox and you should hear me on the SSB frequencies. If you cannot get back to me, wait for the top of the hour when I turn the beam north. There is a good amount of activity on the VHF bands. You just have to listen and you'll hear stations, sometimes from far away!

RANV Summer Picnic

Mitch **W1SJ**

The RANV Picnic and Kamp Kill Kare State Park activation was a tremendous success. The picnic was small, as we knew it would be, allowing a lot of room for everyone to space out safely. We quickly built a single station using a multiband dipole up 40 feet and we were on the air a bit after 12. Bob and I did all the operating.

Conditions on 20 meters appeared dead, but we had no trouble running a good rate for the first 2 hours. We knew that the NA QSO Party would start at 2:00 and we'd get blown out by the QRM. However, the opposite happened – we found a clear frequency and ran great rates, working mostly people in the contest. I tried to go to 40 meters to work the close-in guys, but the high noise level made things very difficult. Then I noticed a bunch of spots of east coast stations on 15 meters, so I gave a quick listen and found a lot of activity. We moved up there and maintained a tremendous rate for over 90 minutes. There was a good deal of short skip out to MD and VA, but nothing closer in. For a single radio operation, where I didn't expect much more than 200 QSO's, we worked 521 stations in 44 states and 3 countries in 5 hours (wow, a sustained 100 rate!) We worked Alaska twice, but no one in NY. Hmmm.

K1BIF gets the gold star for working us on all 3 bands - impressive because we weren't on 40 meters for very long. KK1L got us on 2 bands.

WX was perfect - nice temp, reasonable humidity and no wind. And few people in the park.

No video, but here are a couple of pix.



Grand Isle STATE PARK ACTIVATION

Bob **K1BIF**

AB1DD, W1SJ and K1BIF activated Grand Isle SP today.

<https://www.youtube.com/watch?v=rPLcy36grY>

Kingsland Bay STATE PARK ACTIVATION

Bob **K1BIF**

W1SJ, AB1DD, KB1FRW, and K1BIF. Lots of fun and 825 QSOs.

<https://www.youtube.com/watch?v=VUYCDhkOD4c>

Fox hunt coming up! --Cathy, **NQ1B**

CVARC is hosting a radio fox hunt on Saturday, September 19th starting at 9am.

All are welcome to participate!
Please see our webpage for details –
<https://w1bd.net/foxhunt/>

-Patrick, KC1DPM
CVARC President

Duane Sherwood, [Secretary](#)

Why Would Anybody Do This?

Put your name forward as a candidate to be a club officer, that is simple. I offered to serve as club secretary because it gave me a chance to get better acquainted with people who know tons of stuff about amateur radio and who support our club in a big way. Of the three positions, secretary is no doubt the easiest. Take minutes and write an article for the newsletter. Oh, and show up.

In addition, being a club officer is a way to support and shape our exceptionally active club, to support amateur radio in general, and to acknowledge the contributions of those who have gone before. For the past two years I've put together our little election ballots. Every year, our president, Bob KB1FRW, mentions that it has been many years since we've had a contested election. So I'm putting it out there: if you think you would like to be more involved in the support of our club, feel free to throw your hat in the ring for the position of club secretary. I will be on the ballot and hope to win. But if someone else gets elected, no worries: I will continue to attend the Steering Wheel meetings and, of course, support club activities whenever possible.

Duane Sherwood [WL7CVD](#)



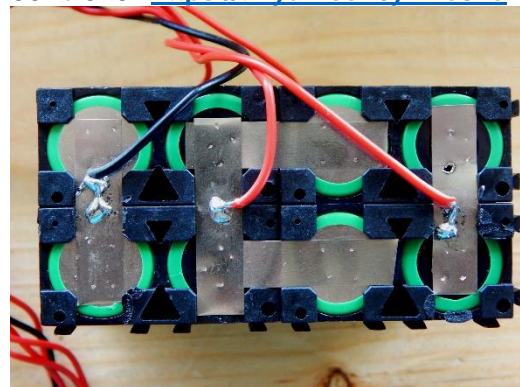
To firmly hold all eight batteries

<https://tinyurl.com/yalh4yvs>



I spot welded nickel strips

<https://tinyurl.com/yb687nk5>, connecting four in series, and both sets of 4 in parallel. Each positive (at 3.7v, 7.4v, 11.1v and the full 14.8v) are welded together for the battery charge controller <https://tinyurl.com/y7f2o9vo>

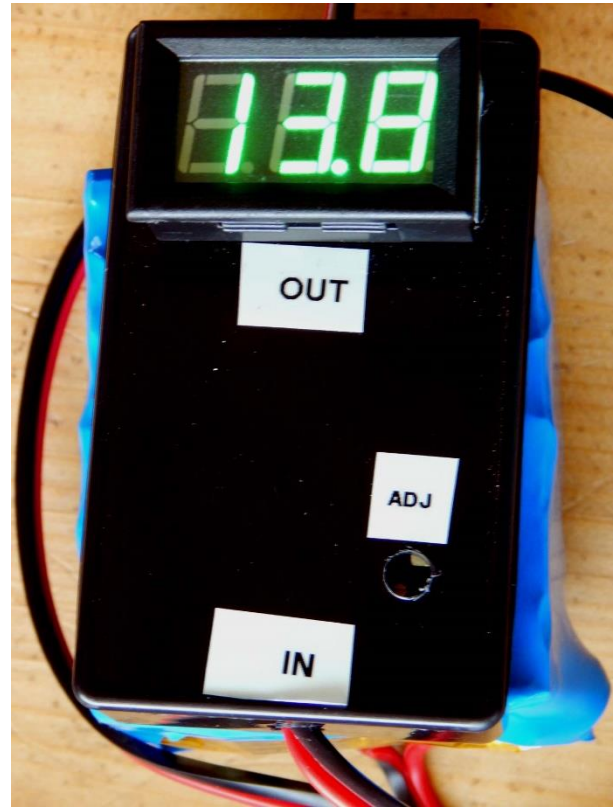
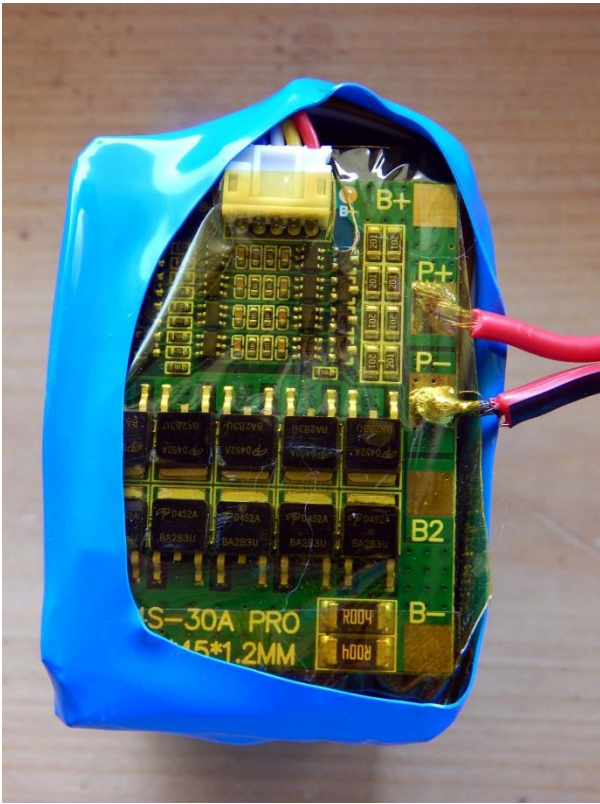


The battery charge controller regulates the charge/discharge cycles to assure all 8 batteries remain at the same voltage, + or - a small amount at up to 20 amp hours. It also provides overcharge, overcurrent and short circuit protection; all for under \$10. I use Kapton tape for electrical protection of the charge controller and anywhere the battery cells are vulnerable.

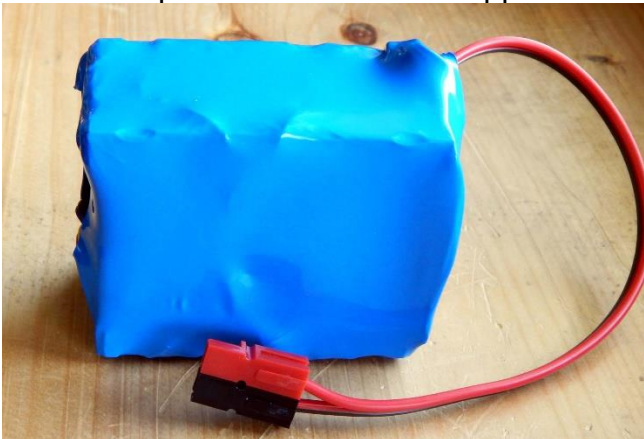
Building a portable power supply for a KX3

Bob, K1BIF

My main goal was to build a power supply (13.8v) with enough energy to last for a day of radio fun on my Elecraft KX3. I decided to use high drain 18650 lithium power cells. To get to the desired nominal voltage, I need 4 cells (3.7v X 4 = 14.8v). The nominal voltage is not the fully charged voltage, that is 4.2v, and 16.8v for 4 cells. The current for each cell is 2600 MAhr, or 2.6Ahr. If I make 2, 4-cell series in parallel, that would double the current to just under 5Ahr. I used easily attainable (Amazon) battery holders,



The whole pack is then shrink wrapped



Remember, the fully charged battery pack puts out 16.8v at about 5 amps. To get it down to 13.8v, I use a buck converter rated at 20 amps. <https://tinyurl.com/ycdm4lx8> They are small, and Almost fit into the cases handed out at the last few Hamfests. The input voltage can be up to 36v, and can be regulated down to 1.25v (it's adjustable). So, I have a battery pack for my QRP station that will last all day. Yes, I have operated for 7 hours with it, up to the full 15w KX3 output. The battery pack and buck converter weigh 1 pound.

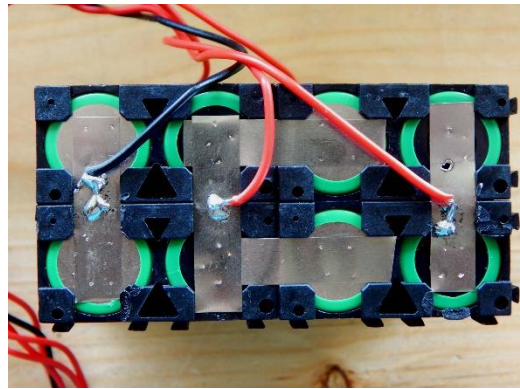
Spot welding 18650 batteries

Bob, K1BIF

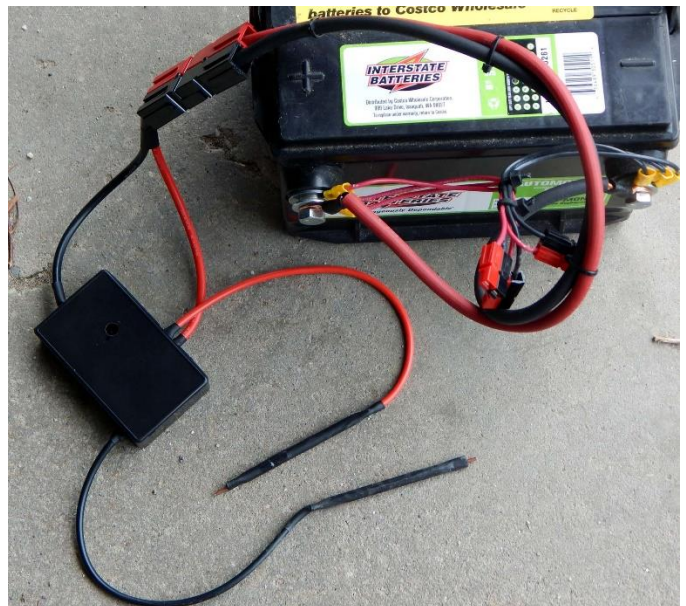
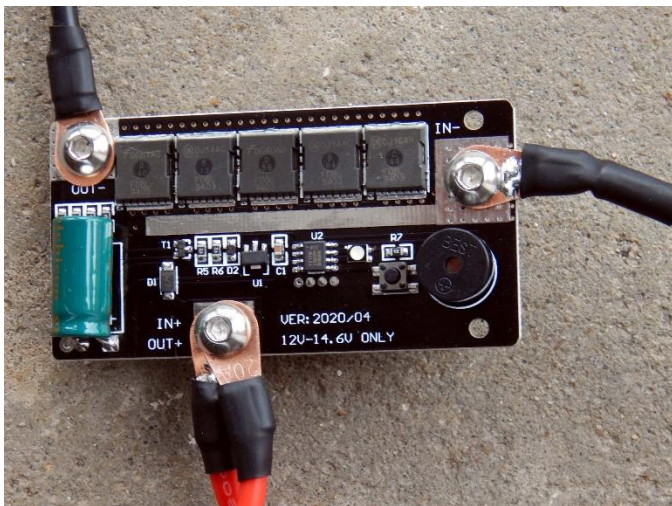
As a follow up to the article about building a lithium battery pack for QRP operating, I will now provide a brief article describing how to spot weld batteries in series, or parallel.

Searching the net for a spot welder, I discovered lots of devices that would work well for \$200 to \$600. That will never do. Then I refined my search for spot welding 18650 batteries. Now, that's more in line with my budget. On Amazon and EBay there are many choices, most look the same and all are made in China; probably at the same factory. I bought one from Amazon (at the time it was cheaper than those on EBay)

<https://tinyurl.com/y8j6k68d>. I mounted it in one of those cases given away at the last Hamfest in Clochester.



The spot welder board ultimately relies on a 2.2 Farad capacitor. The charge builds up in a few seconds, then discharges through the two probes, melting the nickel strip and the battery terminal together in a small spot weld. I soon discovered that it takes the amperage of a car battery to produce enough of a charge to weld anything of substance, and it takes a heavy duty (6 ga wire) to carry that current efficiently. Once all the details were figured out, it works quite well. There are absolutely no instructions for the spot welding board, and little help from the reviews.



I bought a pack of nickel strips (<https://tinyurl.com/yb687nk5>) to bond the positive to negative battery terminals together to make 16.8V from 4 4.2V batteries, then put 2 16.8V packs together in parallel.



NEWS & VIEWS

INSIDE

- **NEXT MEETING** – September 8th
3 Forums presented at the QSO Today Ham Expo
- **VHF QSO PARTY** Sept 12th
- **RANV Summer Picnic Summary**
- **Grand Isle State Park Activation**
- **Kingsland Bay State Park Activation**
- **Fox hunt coming up!** --Cathy, [NQ1B](#)
- **“Why Would Anybody Do This”** Duane
- **Building a portable power supply for a KX3**
- **Spot Welding 18650 Batteries**

NEXT MEETING

Tuesday • September 8TH • 7:00pm

Meeting Topic
Grounding And Bonding
Cycle 24, Solar Minimum and Cycle 25
VP6R 160 Meters: Mutiny on the Bands!

Upcoming, Notices, & Misc

- **Steering Wheel:** 3rd Tues 6:30; Ninety-Nine Restaurant, Taft Corners, Williston
- **VE Exams** every 2nd Friday; Red Cross Building 29 Mansfield Ave, Burlington
- **Dues due?** Pay online at www.ranv.org/ranvpay.html