

# The SkyWave Vilas County Amateur Radio Club



## KC9RF TAKES 1<sup>st</sup> Place ARRL 10 METER TEST

VCARC Member Bob KC9RF took First Place in the recent ARRL 10 Meter Contest for the Wisconsin Single Operator, Phone, High Power category.

Bob had a total score of 188,668. In comparison the next score in the Wisconsin SO-P-HP category was 98,784 by N9NUN. Nationally Bob finished in 23<sup>rd</sup> place overall (Continued on page 2)

Congratulations to Bob KC9RF and his excellent operating skills!

### VCARC MONDAY NIGHT 2 METER NET

The VCARC 2 Meter Net meets every Monday night starting at 7:30 PM local time. Net Control is via the W9VRC Eagle River repeater on 145.150/ PL 114.8.

### VCARC FEBRUARY MEETING

The next VCARC meeting will be held on Wednesday February 12 starting at 6:00 pm at God's Gathering Place at 1695 Hwy. 45N Eagle River, WI.

The Tech Talk this month will be a Member Roundtable discussing recent projects and operating. Please join us for this informative meeting.

### VCARC JANUARY MEETING HIGHLIGHTS

January 8, 2025, 6:00 PM – Meeting called to order by Kyle AB9AX, all rose for the Pledge of Allegiance.

#### Treasurers Report

Beginning Balance November	\$5945.41
Expenses: PO Box	0.00
Membership Dues	0.00
Ending Balance for November	\$5945.41

The December Treasurers Report and Meeting Minutes were moved, seconded, and accepted by all.

#### Old Business

Ray Bob KD9DDE will have continuing conversations with the hospital regarding internet connectivity. Ray Bob will also discuss if the VCARC repeater can be connected to their emergency generator.



Bob KC9RF researched the capacity of the donated UPS batteries. It appears that the use of a 100 AH AGM battery will provide repeater power for 3 to 4 days. The UPS will be repurposed for another activity.

#### New Business

Kyle AB9AX reminded the group of the upcoming Winter Field Day in January and the Wisconsin QSO Party in March. He also mentioned that a reminder E mail of upcoming events will be sent out.

Bob KC9RF will write an article for the Vilas County Newspaper to get more people interested in Ham Radio. He was also interested in becoming a ham radio license technical resource.

#### Discussions

There were thoughts regarding sponsoring a summer ham radio license class and volunteers needed.

#### Announcements

VCARC 2025 Membership Renewals are now due. The cost is \$20 per Individual Membership and \$25 for a Family Membership. Renewals can be sent to the VCARC P.O. Box 1141, Eagle River 54521 or submitted at the meeting.

#### Tech Talk

Mike K9BBN gave an excellent hands-on presentation on LiFePo4 battery technology.

The motion to adjourn was made at 7:00 PM

February 2025

## **KC9RF 10 METER CONTEST (Continued)**

The 10 Meter contest was held over the weekend of December 14-15. The rules stated that a station could operate for up to 36 hours out of a total of 48. Bob operated for about 15 hours and made 934 contacts in total, including 59 countries. The contest class was Single Operator, Phone, and High Power only.

Operating started on Friday Night at 00:00 UTC which is Saturday UTC. Bob operated for about an hour at 6pm local time and only made 2 contacts that evening. Saturday morning Ten meters was open to Europe and the States when Bob finished around 6pm. Bob had 539 contacts. Breaks were taken during the day.

The propagation was interesting as around 3pm Hawaii started to come in. After about an hour New Zealand and Australia stations were calling Bob. They weren't very strong, but he was able to get them in the log along with the Philippines, Japan and other DX stations. Very similar conditions happened on Sunday.

His Station utilizes two towers, one at 52 feet with a DB-11 STEEPIR Antenna which has a short 11-foot boom. The other tower is about 44ft with a 2 element 5 band Quad. Both antennas were bought for parts and were rebuilt. During the contest the antennas were switched back and forth depending on where the replying signals were at.

The Radio used was a SDR (software defined radio), Apache Labs ANAN G2 using adaptive predistortion on transmit. Which means it's a very clean signal. The Amp is a Flex PGXL. Most of the time the power was set between 700-800 watts out as full power at 1500 watts was not needed.

During the contest Bob did what he called "Running". The idea is to call CQ and have stations contact you. There were many times that anywhere from 3-15 contacts were calling at the same time which is called a pile up. The last 4 years Dave N9DBS and Bob have been doing POTA (parks on the air) which gave excellent training to handle the pile ups.

When the contacts slowed down the pan adaptor screen came in handy to look around the band for other stations doing the same, so a multiplier contact of USA or Mexico State, providence in Canada or a DX station. "Hunt" and "Pounce" works, but it is much slower making contacts typically than Running.

Operating was a lot of fun, and Bob took some time to talk to other stations to see what their working conditions were and how they were doing.

## **ARRL NEWS**

To help promote amateur radio science and technology, and to honor the 100th anniversary of the International Amateur Radio Union (IARU), ARRL is inviting radio clubs and schools to organize a Ham Radio Open House in April, built around World Amateur Radio Day (WARD) on Friday April 18, 2025.

The event is intended to highlight the Amateur Radio Service for its development and practice of the latest radio communications and technology, and as a hands-on pathway into science, technology, engineering, and mathematics (STEM) fields for the next generation.

Clubs are encouraged to showcase the latest weak-signal modes, such as FT8 using WSJT-X, or other digital modes.

This could be a great opportunity to explore new areas of amateur radio and demonstrate how the service is at the cutting edge of electrical engineering.

## **ARRL CONTESTS AND SPECIAL EVENTS**

The following are upcoming ARRL Contests and Special Events.

### **International DX- CW**

Contest Objective: To encourage W/VE stations to expand knowledge of DX propagation on the HF and MF bands, improve operating skills, and improve station capability by creating a competition in which DX stations may only contact W/VE stations. One contest period is CW-only and one is Phone-only. Use only the 160, 80, 40, 20, 15, and 10 meter bands.

W/VE amateurs: Work as many DX stations in as many DXCC entities as possible.

CW: Third full weekend in February (February 15-16, 2025).

Phone: First full weekend in March (March 1-2, 2025).

Contest Period: Begins 0000 UTC Saturday and runs through 2359 UTC Sunday.

### **Upcoming:**

Wisconsin QSO Party March 9-10, 2025

## TECH TALK

### The Ever-Evolving Energy Storage (Part 1)

Mike K9BBN gave an excellent technical presentation on LiFePo4 battery technology during the January VCARC meeting. His presentation also included a hands-on assembly of a 4 cell LiFePo4 battery pack.

Included is a summary of his presentation. A full copy of Mike's presentation can be found on the VCARC website.

Lead Acid Batteries have been around for 166 years. Invented in 1859, the charge cycles are around 200 to 1000 times before they're useless. The Lithium Iron Phosphate battery was invented at the University of Texas in 1996 with charge-cycles around 2000 to 6000 times. Research continues with newer Sodium-ion batteries.



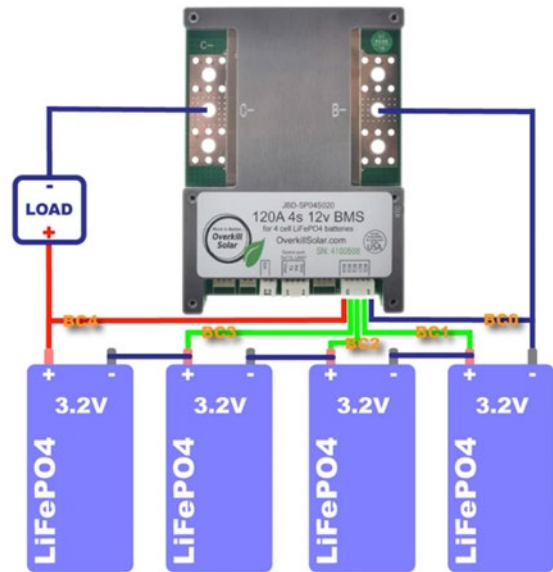
The battery pictured above was built by the Vilas County Amateur Radio Club at the meeting on Jan. 8th, 2025. It consists of 4 Lithium Iron Phosphate Prismatic cells "LiFePo4" (3.2 vdc each) connected in series to produce a 12-volt battery.

On the front is the BMS or Battery Monitor/Management System. This BMS is a Smart BMS due to the optional Bluetooth device for connectivity through a phone app.

The cells are held together with Polystyrene plastic and compressed using threaded metal rods (covered in yellow heat shrink).

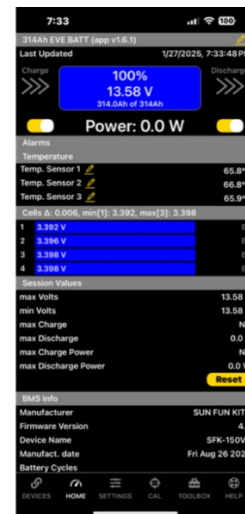
As LiFePo4 cells are charged they expand and contract during discharge. Some say compression will extend the life of the cells, but considering that LiFePo4 cells last so long, by the time you hit that high recharge cycle there will be newer and better cell technology out.

## WIRING DIAGRAM 12 VOLT 4 CELL BMS



So, what's a BMS for... simply put it maintains the cell voltages by keeping them top balanced or close the exact same voltage and protects them from over and under charge which would damage the cells

The phone app is to monitor battery levels and set parameters.



Starting at the top of the image above:

- You can Name the Battery
- Allow it to Charge/Not Charge, Discharge/Not Discharge
- Monitor 3 temperatures, one on the BMS's circuit board and two for monitoring the individual cell high and low temperature

Part 2 of Mike's presentation will be continued in the VCARC March 2025 Newsletter...Don't miss it!

February 2025

# Vilas County Amateur Radio Club

An ARRL Affiliated Organization

## VCARC OFFICERS and COMMITTEES

President	Kyle Ruesch, AB9AX
Vice President	Bob Barnum, KC9RF
Secretary	Marie Beckholt, KD9VUB
Treasurer	RayBob Heuer, KD9DDE
Board Member	Kirby Giampa W8DCD
Newsletter	Bob Barnum, KC9RF, Ray Protich WB9OCO



## CONTACT INFORMATION

Mailing Address:

W9VRC

Vilas County Amateur Radio Club

P.O. Box 1141

Eagle River, WI 54521

Website: <https://vcarc.net/>

## MONTHLY MEETINGS

VCARC Meetings are held the 2<sup>nd</sup> Wednesday of each month. The meetings can be attended in person or via Zoom. The Zoom meeting information is:

Log in to Zoom at [www.zoom.us](http://www.zoom.us)

Join the meeting with meeting # 881 9483 6234.

Password is 328355

Quick Link <https://us02web.zoom.us/j/88194836234>

## MONDAY NIGHT 2 METER NET INFORMATION

The VCARC operates a weekly Net every Monday night starting at 7:30 PM local time. Net Control is via the VCARC Eagle River repeater on 145.150/ PL 114.8.

## VCARC REPEATER INFORMATION

The VCARC operates amateur radio repeaters in Eagle River and Land O' Lakes Wisconsin.

Eagle River Repeater  
145.150 PL 114.8  
Echolink Node 691369

Land O' Lakes Repeater  
145.390 PL 114.8  
Wires-X Room 80110 Linked to Yooper net Room  
65384

## THE SKYWAVE NEWSLETTER

The SkyWave is the Official publication of the Vilas County Amateur Radio Club. If you wish contribute articles or other newsworthy items regarding Amateur Radio for publication, please contact Bob KC9RF at [rbw1636@gmail.com](mailto:rbw1636@gmail.com) or Ray WB9OCO at [WB9OCO@gmail.com](mailto:WB9OCO@gmail.com).