

**W0BLK**  
**BLACK HILLS AMATEUR RADIO CLUB, INC**

3288 Sandstone Lane  
Rapid City, SD 57701-5388

**Call to Order:** The BHARC meeting was called to order at 7:00 pm on 15 May 2026 by President Ryan Lindblom. The meeting was held in the EE/Physics Building at the South Dakota School of Mines and Technology, room 251A.

The following attended the meeting in-person:

Andy Pattantyus KF0ARA  
John Murphy AJ0GM  
Joyce Jeffries KB0WCE  
Jim Larkin KF0TSF  
Jeff Larus KF0TSG  
Adam Lalicker KF0YMS  
Daniel Cerman KF0EUG  
Gary Peterson K0CX  
David Jeffries AF0DJ  
Greg Maxwell NT4TN  
Don Jarvinen K0DAJ  
Ryan Lindblom KE0LXT  
Steve Maro K2WRM  
Sid Reade K0WWH  
Dave Minnick N9FI  
Delbert Long KD0AYN  
Marko Kocanda WV9M  
Chris Jaques KD0RAS  
Gene McPherson N0MHJ  
Terry Fuller AD0HL  
Roy Berke WA7TRR  
Betty Rush KA7PJQ

**Introductions:** Each attendee introduces themselves.

**Secretary's Report:**

Sent out minutes for April 2026. Need approval.

John Murphy AJ0GM moved to accept the Apr 2026 club meeting minutes as amended, and Marko Kocanda WV9M 2nds. Vote: none opposed, motion approved.

**Treasurer's Report:** Chris Jaques KD0RAS provided the treasurer's report by email:

**Current Balances at Black Hills Federal Credit Union:**

|                     |                                         |
|---------------------|-----------------------------------------|
| Regular Share:      | \$5.20                                  |
| High yield Savings: | \$4,101.27                              |
| Checking:           | \$1847.60                               |
| 12 month CD:        | \$8,259.94 matures in November 10, 2026 |
| 12 Month CD:        | \$8,269.11 matures in May 12, 2027      |
| Paypal:             | \$440.12                                |

**Disbursements cleared since last meeting:**

None reported

**Dues/Donations/Receipts:**

\$15.00 Copper Scrap

**Pending Disbursements:**

IP Bridge: \$548.73

Betty Rush KA7PJQ moved to approve the Treasurer's report and Jeff Larus KF0TSG seconded, Vote: none opposed, motion approved

**Committee Reports:**

**Engineering/Technical Committee:** Mike Key K0MDK, Chris Jaques KD0RAS report:

Purchased new point-to-point devices, Ubiquiti U7, about \$400

Mike and Chris will install in the near future on a nice day

Chris will donate a POE switch, and Mike will donate a WAP.

Will donate Cat 5e cable

**ARES Committee:** Ryan Lindblom KE0LXT

BH100 on the 26th and 27th of June

**Public Relations and Recruitment Committee:** Don Kendall N1NOX (absent)

No report

**Activities Committee:** Larry Broomfield AC0WT and Delbert Long KD0AYN report

Delbert reports

Thanks to those helping Larry

Need a motion to approve \$150 for the Sheridan Lake Picnic

HF QSO party and picnic anytime after 11am. Site 67, 69 at Sheridan lake campground

May activities - Website and [groups.io](https://groups.io)

Quarterly meeting June 19th for board and activities

Black Hills 100 - June last weekend

June 27 and 28 - summer field day

Mystic will be July 12th

Heart of the Hills July 18th

Call for approvals of the \$150 for the May 16th picnic. Chris Jaques KD0RAS moves, Jeff Larus KF0TSG 2nds, Vote: none opposed, motion approved

### **Summary of Community Service Activities**

No community service activities since the April 2026 club meeting

### **Summary of Education Activities**

The program at the BHARC club meeting each month is education.

### **Old Business:**

New class starting in September. Approved for book purchase.

Chris report that we are waiting for ARRL to publish the books so we can order

### **New Business:**

Delbert Long KD0AYN requests up to \$175 to reimburse Larry Broomfield AC0WT. for supplies for the May 16th picnic. Jeff Larus KF0TSG moves Andy Pattantyus KF0ARA 2nds. Vote: none opposed, motion approved

Chris Jaques KD0RAS suggests an exam session on June 20th, pending sufficient availability of VEs. Have to print our own booklets

### **New Member Applications:**

Adam Lalicker KF0YMS out of Sturgis. Work full time for a small ISP with 3,000 subscribers. Laying 800 miles of fiber in the next 4 to 5 years. Ran the IT for Meade County schools. Was a reserve officer for Sturgis. Did not want to learn Morse Code. Passed Technician's class last

Dave Minnick N9FI moved, Marko Kocanda WV9M 2nd. Vote: none opposed, motion approved

Jon Lambert KE9CAW is interested in membership. Vote on him next time.

### **Announcements:**

John Murphy AJ0GM. Summer field day. FT8 is crowded. Avoid JS8. Deal with QRM, stay in the lane. Location for summer field day to be determined.

Feelers to go out via [groups.io](https://groups.io)

Gene McPherson N0MHJ suggests the snake infested HAM Hill.

Marko Kocanda WV9M is moving out of state, having purchased a 14 acre farm in Nebraska, with goats, sheep and antennas. A real antenna farm!

**Adjourn:**

Andy Pattantyus KF0ARA moved to adjourn the meeting and Gary Petron K0CX 2nds. Vote: none opposed, motion approved

The meeting was adjourned at 7:25 pm.

**Andy Pattantyus, KF0ARA**

BHARC, President and Acting Secretary

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**Program - Jeff Larus**

Electrical inspector for Rapid City for 35 years.

Teaching for 30 years.

NEC Ground rod, ohms to ground. 25 ohms or lower.

How to measure. Put 120 vac to rod, and measure current, calculate resistance.

120 vac to 25 ohms is 4.8 amps.

Cannot use the ground rod for safety protection. Need to have a return path.

Ground rod is voltages above normal (lightning)

Jeff describes the typical home breaker panel configuration.

Lately, outside disconnect required for house. Service to house is 3 wires. Connection to house is 4 wires.

Ranges and dryers had only 3 prongs, but now 4. A, B, N and G.

Need to bond your enclosure.

Jeff describes GFCI, 5mA +/- 1 mA. GFCI protectors have a test button. Trip in 1/100s of a second.

Arc fault has GFI in it.

Nancy and George Dunham, and Kip Larson sold out to Littlefuse. Developed GFCI for fast food without nuisance tripping. Start at \$2,000. Heat trace equipment needs

Arc fault trips for series arc and parallel arcs. Several trip modes.

- Thermal overload for long slow
- Magnetic for short circuits.

1/200 th of a second trip for 500% to 600% overload.

At 150% overload, need 30 seconds to trip.

Breakers are a bi-metallic strip.

Quick acting breakers are magnetic.

5A of current to open the gas valves

Specialty breakers available for different trip modes.

Thermal

Magnetic

Ground Fault

Series Arc

Parallel ARV

GE, Eaton, and Siemens have a flash code.

Starting a plant, a lot of inertial load.

Jeff discusses the hazards of common DVM, and arc flash.

Good meters have fuses rated for 10,000 amp and 600 Vdc.

Solid copper to vapor is 67,000 to 1

Multiple grounds needed

Nec article 810 on antennas.

New houses should have a bus bar with 3 open holes. At least one #6 wire, and for the antenna #10, and no sharp bends and curly cues. Lightning Protection System is a loose copper braid with no core. A stranded wire will carry more current than a solid wire.

Gage numbering system. 16 gage is pulled thru 16 dies. Circular mils for bigger wires.

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