



CLUB STATION  
K6SON

# Short Skip

The Newsletter of

Sonoma County Radio Amateurs, Inc.

P.O. Box 116, Santa Rosa, CA 95402-0116 707-538-2931

<http://www.sonomacountyradioamateurs.com>

Repeaters:

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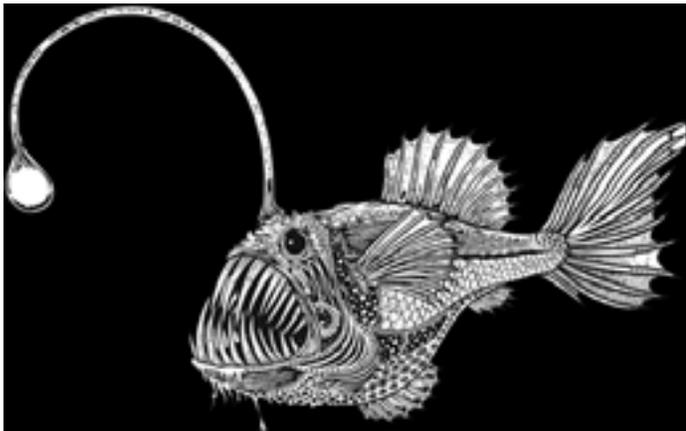
REPEATER STATION  
W6SON

Volume 44, Number 5

May 2019

## My First Public Service Event: I was as Wet as a Fish, but it Rocked

By Ibrahim Sial K2IBE



The rain was pounding when the first distressed rider entered our tent, violently shaking, and clearly in trouble. It was then that I realized with a sinking feeling that these riders were putting their safety in my hands. I was not expecting to come face to face with how important a Ham radio operator is in a critical, life threatening situation like the one I found myself presented with my first time ever volunteering at a public service event. That didn't stop me from doing my best to provide the communication link needed to get them to a safe, warm place. The riders wanted an adventure race when they signed up for the March 14th Fish Rock bicycle race out of Boonville, CA and let me tell you they found one. I, however, signed up for the banal sounding position as a "shadow" to Aid Station 2 for my first taste volunteering. I thought this simple role would be a low energy, minimally exciting position where I could take my time practicing simple procedure and good communication technique in a low risk, laid back environment. Nothing could have

been further from the reality I found myself in when we were dealing with rider after rider needing my help to vacate because they were in hypothermic distress.

I had planned on a slow, wet day with riders slogging through our simple aid station on a plodding march toward a hopelessly distant finish line. What I found was a driven group of hard eyed competitors every bit as rugged and relentless as the course they rode on. Before we get to that, however, I think it is worth mentioning a little bit of the long road that led me to that aid station in the middle of a storm on the wet and wild Northern California Coast.

### My road to becoming a ham:

Everyone has a story, I will begin mine in a little house on the rainy coastline of the Puget Sound, that snaking waterway that splits the western half of Washington State like a maniacal grin. In this house I met my first Ham. His name was Bruce. I thought he didn't like me, but that did not stop me from liking him. As a child, I loved things that I didn't understating, and his Ham Shack that took up the whole basement of that little house was one such place full of mystery and wonder. I was strictly forbidden from going down there unsupervised. Once, however, Bruce gave me a tour of his Shack and my young mind was blown away by all the things I did not understand.

*[Continued on page 12...](#)*



**PAST PRESIDENT'S MESSAGE MAY, 2019**

"I don't know about you, but all that rain we had this past winter made it a hard winter for me. So happy to see the sunshine!

Public Service events are going along nicely after a rocky start.

Many thanks to those who weathered the storms for Fish Rock! Hope that doesn't happen again. We are closing up on the Terrible Two which had to have a new face lift but I think that with Fred ae6sf doing the preliminaries we will pull it off in SCRA style. Lots of fun ahead and I hope you all will take some small part of all the activities this year. We are 80 years old and going strong with over 200 members!

Field Day is coming up with all its fun activities. The BBQ will be a little different with the ladies taking charge this year. Chicken K-Bobs, hamburgers, hot dogs, corn on the cob, baked beans, and more. What a menu. Only \$8 per person and eat like a king or queen. Hope to see you there.

We are planning a picnic on August 11th at Howarth Park, Cypress I & II. Mark your calendars and hope to see you all there, as well. If nothing else, we will eat good this year!

Merchandise has some special anniversary items for us. Check in at the merchandise table at the meeting. Darryl has us in the community with several Outreach events. This is a good way for you to share your passion for our hobby with others. Contact Darryl to see where you can be of service.

Our Programs have been great this year. Please join us. And stay for the meeting. It is sad to see only a small number of members stay until the end. These are the few members who are making all the decisions for the entire club. You need to be there to speak up for the direction you want your club to take. Okay. I'll get off the soap box.

Enjoy your summer and all the fun that goes with the season.

Iola K6HRE  
Immediate Past President  
Treasurer  
Public Service Coordinator "

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## MAY PROGRAM

### Calling all potential HF Ham Operators!

Why "Potential"? More than a few SCRA Hams have general class licenses, but aren't yet enjoying the thrill of High Frequency long distance communications.

Come early to the SCRA May 1st meeting and see how easy it can be to set up your very own HF station in the comfort of your home. We will be setting up a very capable antenna system and HF rig as a working demonstration. Come join Joe K6AWA, Jeff KI6PBF, and Jim WA6QBU and put out a few CQ call into the radio ether and let's see who answers. After the Demo from 6 to 7 PM, WA6QBU will be giving a presentation on HF operation.

Joe K6AWA

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### JOIN ARRL, THE AMERICAN RADIO RELAY LEAGUE

The ARRL is the national organization of Amateur Radio. It represents Amateur Radio at International Conferences and before the FCC. Get the monthly QST magazine, insurance for your equipment and too many other benefits to mention here. Click <http://www.arrl.org/membership/>



If you are not getting the ARRL San Francisco Section news by e-mail and you are an ARRL member, be sure to subscribe under your Members Only information or go to this Web site:

<http://www.arrl.org/Groups/view/san-francisco>

## 2019 Club Officers

President	<a href="#">John Felton</a>	KE5RI
Vice President	<a href="#">Fred Seitel</a>	AE6SF
Secretary	<a href="#">Bill Dornbush</a>	KM6BYD
Treasurer	<a href="#">Iola Beckley</a>	KK6HRE
Director	<a href="#">Randy Hall</a>	AA6RH
	<a href="#">Doug Payne</a>	KF6LMB
Past President	<a href="#">Iola Beckley</a>	KK6HRE

## Committee Lineup/Contacts

Activities Programs	Jeff Tonelli, KI6PBF Randy Hall AA6RH	jeff.tonelli@gmx.com aa6rh@socorad.io
Community Outreach	Darryl Paule, KI6MSP	ki6msp@arrl.net
DX/Contesting	Doug Payne, KF6LMB	dougpayne1@earthlink.net
Education	Cornell Chesnik, W6HMN	w6hmn@sonic.net
Emergency Services Liason	Pat Coyle, KG6JSL	coylaw@sonic.net
Field Day	Brian Torr, N6IYY	n6iyy@arrl.net
License Trustee	John Felton, KE5RI	jrfke5ri@aol.com
Loaner Program	Joe Fortuna, K6AWA	k6awa@yahoo.com
Website Manager	David Kraybill, KI6UGB	shortskipeditor@gmail.com
Membership	Dan Drummond, KK6VIQ	<a href="mailto:danjdrummond@hotmail.com">danjdrummond@hotmail.com</a>
Merchandise	Dan Drummond, KK6VIQ	<a href="mailto:danjdrummond@hotmail.com">danjdrummond@hotmail.com</a>
Public Service Coordinator	Iola Beckley KK6HRE	iolabeckley104@gmail.com
Refreshments	Open	
Repeater	Jack Christensen, K6ROW	K6ROW@sonic.net
Roster Editor	Bill Dornbush, KM6BYD	bill@dornbush.net
Volunteer Examiners	Brian Torr, N6IYY	n6iyy@arrl.net
Weekly Email Blog	Pat Coyle KG6JSL	coylaw@sonic.net

## Short Skip & Web Staff

Short Skip Editor	David Kraybill, KI6UGB	shortskipeditor@gmail.com
Website Manager	David Kraybill, KI6UGB	shortskipeditor@gmail.com
Web Staff	David Pearson, K6DBP	grecojava@gmail.com

SCRA E-Mail	K6SON@arrl.com
SCRA Web site	<a href="http://www.sonomacountyradioamateurs.com">http://www.sonomacountyradioamateurs.com</a>

## Short Skip Advertising Rates

Business Cards	\$12 per month
1st Quarter Column	\$13 per month
Each Additional Quarter Column	\$4 per month
Full page (one side)	\$35 per month
Pre-printed inserts (each)	\$35 per month

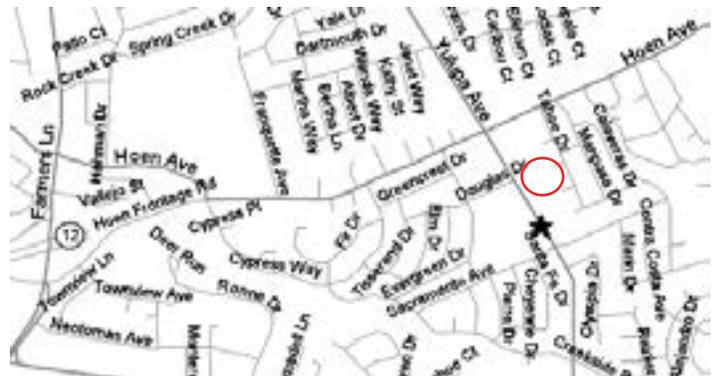
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## SCRA Club Meetings

The club normally meets the first Wednesday of each month, socially at 6:30 pm, program starting at 7:00 pm. Exceptions are holidays or other big events.

Meeting location:  
Luther Burbank Art & Garden Center  
2050 Yulupa Avenue  
Santa Rosa, CA



### All are welcome!

Please join us at our next meeting. Anyone interested in Amateur Radio is eligible for membership. A membership application is included in this newsletter. For more information, contact any SCRA officer, director or member. Hungry before the meeting? Join us for dinner! We Meet at IHOP restaurant, 4th and Farmers Lane, Santa Rosa. People start showing up at 5:15 PM. No RSVP is required.

## Board of Directors Meeting

The SCRA Board of Directors will meet monthly on the Second Wednesday at the IHOP Restaurant, Fourth Street, Santa Rosa (in the Safeway/CVS Pharmacy center). All members are welcome to attend, no reservations necessary. Arrive around 5:15- 5:30pm for dinner. Meeting starts at 6:00pm.

## LOANER RADIOS AVAILABLE

The Club has a variety of radios available to members to try out and improve their skills. We have a Kenwood T590 SG HF radio; Yeasu FT 2900 2 meter mobile; Yeasu FT1D, an analog/digital 2 meter and 440mhz HT; Yeasu FT 60, a 2 meter and 440 mhz HT; and a TYT TH-F5 VHF 2 meter HT. Trying these out is an excellent way to learn some radio and test before you buy. Contact Joe, K6AWA, at [k6awa@yahoo.com](mailto:k6awa@yahoo.com) with your request. Joe will forward an information form to you by return email.

## UPGRADE TO GENERAL OR AMATEUR EXTRA CLASS

Get more privileges and enjoyment from your Ham Radio Hobby. [Mentoring assistance](#) is available. Contact Cornell Chesnik, W6HMN, SCRA Education Chair, at [w6hmn@sonic.net](mailto:w6hmn@sonic.net).

### Tuesday Night Net

The Sonoma County Radio Amateurs' net meets Tuesday at 7:00 PM on the SCRA repeater, 147.315, positive offset, PL 88.5.

All members and guests are invited to check in. The Net includes updates on SCRA activities, and News-line, the amateur radio community news service.

Anyone wishing to work as net control should contact lola kk6hre, at K6SON@ARRL.NET for assignment. Script and logs are available on the Website at <http://sonomacountyradioamateurs.com/wp/resources/net-script/>



## The Weekly 160 Meter Net

Announcing the new 160 meter net which runs from 8:45pm to 9:30pm Tuesday nights, immediately following the 10 meter net hosted by Joe K6AWA. Tune your radio frequency to 1.900 Mhz. LSB. 160 meters requires a General or above license to transmit.

## Your Tuesday Night Net Line-up

7:00pm Membership Net on the SCRA repeater, 147.315, positive offset, PL 88.5

**10 Meter Net** - starts at 8:00pm (new time) following the regular SCRA net Tuesday nights and ends at 8:45pm. Set your dial to 28,403.00 SSB, USB. Please note that all license classes (including technician) are welcome.

**160 Meter Net** - runs from 8:45pm to 9:30pm. Tune your radio frequency to 1.900 Mhz. LSB. 160 meters requires a General or above license to transmit.

## Digital Mobile Radio Sonoma County Talk Group 31707!

The club's DMR footprint continues to expand! We established a beachhead on DMR and the BrandMeister network of repeaters and hotspots by adding a talk group for Sonoma County! We are using talk group number 31707 to keep in touch on DMR and be able to discuss local news and topics of interest. The use of a talk group like 31707 allows a wider variety of Sonoma County DMR hams to be able to consistently reach each other on the air. Best of all, the 31707 talk group can be reached on hotspots as well as repeaters, meaning you can tie into your local community wherever you are!

### Sonoma County DMR Net, Mondays at 6PM PT!

We also started a DMR net for Sonoma County (using talk group 31707) that lets us practice a little bit of traffic handling, while also allowing us to get together and talk about ways we can integrate DMR into our normal operating habits! Currently Randy AA6RH runs net control, and it's scheduled ahead of the "Sonoma County EmComm Net Crawl" on Monday evenings. If you have a DMR radio, make sure to program it (or ask Randy to help you program it) to include talk group 31707 on any of the area DMR repeaters (there are at least four in Sonoma County!) and join us on Monday evenings!

## 2019 SCHEDULE OF EVENTS

Check the [Club website](#) for details

### Community outreach:

5/4 Human Race  
6/9 Monte Rio Vineman Triathlon  
6/15 Kids Day  
6/21-23 Field Day  
8/4 Space Festival  
8/3, 8/10 County Fair  
9/28-29 PCAM  
10/26 Science Festival

### Public Service:

5/4 Wine Country Century  
6/9 Monte Rio Vineman Triathlon  
6/15 Terrible Two  
6/30 Wine Country Tour de Cure  
8/24 Tour de Fox  
9/21-22 Waves to Wine  
10/5 Gran Fondo  
11/2? SoNoMas  
11/9-10 Santa Rosa bike trione

### 80th Anniversary

? Skunk train  
6/22 Field Day  
8/25 or 8/11 Picnic  
10/? Hamfest or swapmeet  
12/4 Holiday dinner

### OTHER:

8/15-18 Mini DX  
10/19 JOTA  
10/18-20 Pacificon  
4/27 VOARC hamfest

### VE Sessions

5/11  
7/20  
9/14  
11/16

## CONTEST CORNER

Welcome to May and this month's edition of Contest Corner.

Looking ahead to the first weekend in June you can try digital with the 10-10 Int. Open Season PSK Contest or work the Kentucky QSO Party.

Although contesting activity is greatest during the Fall and Winter months Spring and Summer at least allow most of us to get outside and enjoy ham radio in the open air. You can learn a lot about operating outdoors especially when it comes to antenna selection and deployment. Another good lesson is the challenge of how do you power your radio and other equipment. You become good problem solvers and realize a simple system will give you the best overall experience in a less than optimal environment. Throughout the year there are also contests requiring that your log shows contacts made somewhere other than your main shack. Take a leap and head for the field, set up, operate, and work some stations. Portable operation and contesting make for a fun filled experience. Field Day comes to mind when a ham thinks portable operation and fun.

As mentioned in April's Contest Corner the first weekend in May has a number of opportunities (contests) to get your interest up. Check out the newsletter or any contest calendar for details. The state QSO parties may be the best bet for phone or digital contacts in May. The rate of participation is generally high and the operators are experienced and want your contact. The cw ops will find a number of contests this month to keep them busy. FISTS and SKCC have their monthly challenges that will help you build on your skills and fist. The CQ WW WPX Contest, CW is a popular one that can get you some good DX. Hope for good propagation!

Do not forget to check out <http://www.contestcalendar.com>

Contact [nq6e@arrl.net](mailto:nq6e@arrl.net) for questions/comments/suggestions regarding Contest Corner.

72/73,  
NQ6E



Bruce Draper, AA5B, aa5b.corral@gmail.com

# Contest Corral

# May 2019

 Check for updates and a downloadable PDF version online at [www.arrl.org/contests](http://www.arrl.org/contests).

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish		Bands	Contest Name	Mode	Exchange	Sponsor's Website	
Date-Time	Date-Time						
1	1300	1 1900	3.5-28	AGCW QRP/QRP Party	CW	RST, serial, class ID	<a href="http://agcw.org/index.php/en">agcw.org/index.php/en</a>
2	1700	2 2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	<a href="http://nrau.net/activity-contests">nrau.net/activity-contests</a>
2	1900	2 2100	1.8-28	SKCC Sprint Europe	CW	RST, SPC, name, mbr or power	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
3	2300	4 0300	All	MIE 33 Contest	CW Ph	RS(T), age, "ME" or "MEJ" (if either)	<a href="http://www.ztv.ne.jp/isoda/33/annual/41/41rule-e.html">www.ztv.ne.jp/isoda/33/annual/41/41rule-e.html</a>
4	0000	5 1600	50, 144	Araucaria World Wide VHF Contest	CW Ph	RS(T), 6-char grid square	<a href="http://www.avhfc.com/rules/en.pdf">www.avhfc.com/rules/en.pdf</a>
4	0001	5 2359	28	10-10 International Spring Contest, CW	CW	Name, mbr or "0," SPC	<a href="http://www.ten-ten.org">www.ten-ten.org</a>
4	0600	5 2359	2.3 GHz and up	SBMS 2.3 GHz and Up Contest	CW Ph Dig	6-char grid square	<a href="http://n6nb.com/sbmsrules.htm">n6nb.com/sbmsrules.htm</a>
4	0800	4 1400	All above 902	Microwave Spring Sprint	CW Ph Dig	6-char grid square	<a href="http://sites.google.com/site/springvhfupsprints">sites.google.com/site/springvhfupsprints</a>
4	1200	5 1159	3.5-28	ARI International DX Contest	CW Ph Dig	RS(T), 2-letter province or serial	<a href="http://www.ari.it">www.ari.it</a>
4	1300	5 0700	1.8-28	7th Call Area QSO Party	CW Ph Dig	RS(T), 5-letter state/county code or SPC	<a href="http://ws7n.net/7QP">ws7n.net/7QP</a>
4	1500	5 0300	1.8-28	Indiana QSO Party	CW Ph	RS(T), county or SPC	<a href="http://www.hdxcc.org/inqp">www.hdxcc.org/inqp</a>
4	1700	4 2100	3.5-28	FISTS Spring Slow Speed Sprint	CW	RST, SPC, name, mbr or power	<a href="http://fistsna.org">fistsna.org</a>
4	1700	5 2359	1.8-VHF	Delaware QSO Party	CW Ph	RS(T), county or SPC	<a href="http://www.fsarc.org/qsoparty">www.fsarc.org/qsoparty</a>
4	2000	5 2359	3.5-28	New England QSO Party	CW Ph Dig	RS(T), county+state or SPC	<a href="http://www.neqp.org">www.neqp.org</a>
7	0100	7 0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	<a href="http://arsqrp.blogspot.com">arsqrp.blogspot.com</a>
11	1200	12 1159	1.8-28	CQ-M International DX Contest	CW Ph	RS(T), serial	<a href="http://cqm.srr.ru/en-rules">cqm.srr.ru/en-rules</a>
11	1200	12 1200	3.5-28	VOLTA WW RTTY Contest	Dig	RST, serial, CQ zone	<a href="http://www.contestvolta.com">www.contestvolta.com</a>
11	1200	12 2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
11	1400	12 0200	3.5-28, 144	Arkansas QSO Party	CW Ph Dig	RS(T), county or SPC	<a href="http://www.arkqp.com">www.arkqp.com</a>
11	1700	11 2100	3.5-28	FISTS Spring Unlimited Sprint	CW	RST, SPC, name, mbr or power	<a href="http://fistsna.org/operating.html#sprints">fistsna.org/operating.html#sprints</a>
11	2300	12 0300	50	50 MHz Spring Sprint	CW Ph Dig	4-char grid square	<a href="http://sites.google.com/site/springvhfupsprints">sites.google.com/site/springvhfupsprints</a>
12	1000	12 1400	7	WAB 7 MHz Phone/CW	CW Ph	RS, serial, WAB square or country	<a href="http://wab.internip.net">wab.internip.net</a>
13	0000	13 0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	<a href="http://www.4sqrp.com">www.4sqrp.com</a>
13	1900	13 2030	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
16	0030	16 0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	<a href="http://naqcc.info">naqcc.info</a>
17	0900	19 1700	3.5-28	Portuguese Navy Day Contest	CW Ph Dig	RS(T), mbr or serial	<a href="http://www.nra.pt">www.nra.pt</a>
18	0600	18 2100	3.5-28	UN DX Contest	CW Ph	RS(T), district code or serial	<a href="http://undxc.kz/bez-rubriki/2015-2">undxc.kz/bez-rubriki/2015-2</a>
18	0800	19 1100	3.5	NZART Sangster Shield Contest	CW	RST, serial, branch number (if ZL)	<a href="http://nzart.org.nz/activities">nzart.org.nz/activities</a>
18	1200	19 1200	1.8-28	His Majesty King of Spain Contest, CW	CW	RST, province or serial	<a href="http://concursos.ure.es/en">concursos.ure.es/en</a>
18	1200	19 1200	3.5-28	EU PSK DX Contest	Dig	RST, EU area code or serial	<a href="http://www.eupsk.com">www.eupsk.com</a>
18	1200	19 1200	3.5-28	Aegean RTTY Contest	Dig	RST, serial	<a href="http://www.aegeandxgroup.gr">www.aegeandxgroup.gr</a>
18	1600	18 2159	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	<a href="http://sites.google.com/site/feldhellclub">sites.google.com/site/feldhellclub</a>
18	2100	19 0200	3.5	Baltic Contest	CW Ph	RS(T), serial	<a href="http://lrsf.lt/en/balticcontestrules">lrsf.lt/en/balticcontestrules</a>
20	0100	20 0300	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	<a href="http://qrptest.com/pigrun">qrptest.com/pigrun</a>
22	0000	22 0200	1.8-28	SKCC Sprint	CW	RST, SPC, name, mbr or power	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
22	1900	22 2030	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
25	0000	26 2359	1.8-28	CQ WW WPX Contest, CW	CW	RST, serial	<a href="http://www.cqwp.com">www.cqwp.com</a>
30	1900	30 2030	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>

All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands. Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or NCJ. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at [www.contestcalendar.com](http://www.contestcalendar.com) and is extracted for publication in QST 2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*



## SCRA Merchandise QST

The new limited edition SCRA 80th Anniversary Lapel Pin is now available at the price of \$5 each.

These classy 1.25" lapel pins feature our full color 80th Anniversary logo with an epoxy dome finish and a military/butterfly clutch back to secure the pin in place.

They not only look good on a lapel, but they also give hats, sweaters, jackets and tote bags a good look. Please stop by the merchandise table and check them out.



For those members who participated in the SCRA 80th Anniversary Apparel Event, when the shirts come out of production and are ready to be distributed, you will receive an email with options for picking up your order by attending a membership meeting, attending Field Day, or making a trip to Rincon Valley in Santa Rosa to the home of the Merchandise Chairperson.

If you have questions or comments, please email [merchandise@sonomacountyradioamateurs.com](mailto:merchandise@sonomacountyradioamateurs.com).

## SCRA Membership QST

The SCRA membership stands at 198.



Welcome new and returning members:

- Jay Swetech W6LZJ (G) Forestville
- Carlos Gudino KN6AWG (T) Santa Rosa
- Ron Bracklow W6BR (E) Windsor
- Michael Dodge Associate Windsor
- Kathy Littman KI6ZMJ (T) Santa Rosa
- Chris Littman KM6PXC (T) Santa Rosa



New call signs:

- Sean Butler KT6WT
- Charles Tillman KC6CTT



License Class Upgrades:

- Nick Beloberk KJ6LDN – General
- Sean Butler KT6WT – Amateur Extra

If you have recently achieved a new license class, obtained a new call sign, or changed your address, email or phone, please email [membership@sonomacountyradioamateurs.com](mailto:membership@sonomacountyradioamateurs.com) with your update. And don't forget to report your address change to the FCC!



### Ooh, ooh, I have a Question!

From the General Class Question Pool:

Complex digital circuitry can often be replaced by what type of integrated circuit?

- A. Microcontroller
- B. Charge-coupled device
- C. Phase detector
- D. Window comparator

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### And What About This?

From the Extra Class Question Pool:

What type of digital signal processing filter is used to generate an SSB signal?

- A. An adaptive filter
- B. A notch filter
- C. A Hilbert-transform filter
- D. An elliptical filter

### VE Testing Announcement

Next Exam Session:

Saturday, May 11, 9:00 am

Our next exam session is scheduled for Saturday, May 11, from 9:00 am until noon. The location will be the Bennett Valley Guild Hall, 4145 Grange Road, Santa Rosa. Walk-ins will be accepted and all test elements will be administered.

([http://www.sonomacountyradioamateurs.com/ve\\_testing.html](http://www.sonomacountyradioamateurs.com/ve_testing.html)) .

Please arrive by 8:45am to be signed in. Testing will begin shortly thereafter.

Directions: From Hwy 101, take Highway 12 East to Farmers Lane. Turn right onto Farmers Lane and then left onto Bennett Valley Road. Stay on Bennett Valley Road approximately 4.1 miles and turn right onto Grange Road. Bennett Valley Guild Hall is 0.5 miles from Bennett Valley Road on the right

Candidates should bring the following:

- One (1) photo ID or two (2) non-photo ID
- FCC Registration Number (FRN, if you have one) or Social Security Number (if you do not have an FRN)
- If you have had any FCC license assigned to you, amateur or otherwise, or had any prior business with the FCC, you probably have an FRN.
- Original and photocopy of your current amateur radio license (if licensed)
- Original and photocopy of any valid CSEs (if applicable)
- #2 Pencil and eraser
- \$15.00 exam fee. Checks may be made payable to "ARRL-VEC"

Calculators may be used, but it must be demonstrated that all memories and programs have been erased. The calculator function in a cell phone or PDA may not be used! If you have any special needs, please contact Brian Torr, N6IIY in advance.

Good Luck!

Brian Torr, N6IIY  
n6iiy@arrl.net  
(707) 575-5871

## Sonoma County Radio Amateurs Membership Meeting Minutes Date: April 3, 2019 Call to order: 7:03 pm

The president, John KE5RI, determined that a quorum of members is present.

Board members present: John KE5RI, Fred AE6SF, Iola KK6HRE, Randy AA6RH, Bill KM6BYD, Doug KF6LMB

The president notified the club that Matias KM6GWK has resigned as Director. The President appointed Doug Payne KF6LMB as an interim Director. The president opened the floor for nominations to replace Matias, and there were no nominations other than Doug. Kenn N4NTJ moved that we elect by acclamation, and Cornell W6HMN seconded. The motion was approved unanimously.

The president asked how many have become a member in the past year, 6 raised their hands. He asked of those six, how many had radios, and three indicated they did. He announced that we have a radio, Baofeng BF-F8HP, that was donated and will be given to the person without a radio, one of three, that wins the drawing. Karyn Green KN6AWF won.

**New members:** Jay W6LZJ, Jim KK6HZS

**Guests:** Michael, W6BR Ron

**Radio loaner:** Joe K6AWA was not present. John KE5RI said that we have loaners available, so contact Joe if you want to borrow one.

**Merchandise:** Dan KK6VIQ reviewed the Hall's shirt sale at [scra.hallsapparel.com](http://scra.hallsapparel.com)  
Dan presented the revised net control tool, based in Excel. He tied it to the membership database. You can get the tool by asking Dan for it. Randy imported it into Google Sheets and offered to help simplify the tool.

**NET CONTROL:** The following members are the net control stations for:

Apr 9 – Dan KK6VIQ

Apr 16 – Charlie KZ6T

Apr 23 – Darryl KI6MSP

Apr 30 – Charles KG6CTT

May 7 – Iola KK6HRE

### Announcements etc:

Erin has a new call sign K6ERI

Ibrahim has a new call sign K2IBE

Ed W1EJ showed a Morse code key he got at the Loomis hamfest, and announced there is another hamfest, VOMARC, coming up in Sonoma on April 27. See the Short Skip for details.

K6HCU Mike has an ARRL manual on Antennas 2015 that is available to someone under 16.

John KE5RI started his 61st year as a ham.

### Program:

Randy AA6RH presented "DMR is (still) easy." DMR has greater range, better voice quality, and supports two simultaneous conversations on one repeater. The Club DMR Repeater is on English Hill, and we have adopted talk group 31707. We have a DMR net Monday at 6 PM. Randy presented hotspots for DMR. He demonstrated MMDVM with Raspberry Pi and Pi-star, Openspot, and Openspot 2 cross band with System Fusion by Warren K6WRP. 438.220 is Randy's hotspot frequency and this will be included in the club code plugs.

BREAK

**Ham of the month:** Erin K6ERI presented the ham of the month award to John Breckinridge WB6FRZ.

**Approval of minutes:** Acceptance of the minutes of the membership meeting for February was moved by Jeff KI6PBF and seconded by Kenn N4NTJ. Fred AE6SF noted that there was a spelling correction in the February minutes. Iola KK6HRE moved and Cornell W6HMN seconded to accept minutes from the March meeting.

### REPORTS

**Treasurer Report:** Iola KK6HRE reported on our bank accounts.

**Activities:** Jeff KI6PBF would like to schedule a tour of the Press Democrat printing facilities. Iola KK6HRE has scheduled Howarth Park for August, 2nd Sunday for the 80th anniversary picnic.

*Continued on page 10...*



...Minutes continued from page 9

**Community outreach:** Darryl KI6MSP: On April 12, 5-8 PM, in Coddington, the annual family life and camping expo will happen, and SCRA has been invited to participate. He needs more signups on the club website.

**Education:** Cornell W6HMN: We had the first class with 7 who all passed the Tech exam. One person also passed the General exam. They are: Peter Murphy KN6AWA Tech, Darren Patterson KN6AWB Tech, Lois Lebovitch KN6AWC Tech, Stan Edwards KN6AWD Tech, Melinda Rivera KN6AWE Tech, Karyn Greene KN6AWF Tech, Carlos Gudino KN6AWG Tech, and also Nicolas Beloberk, KJ6LDN who got his general. He thanked the instructors, and Brian and his VE team for testing. On Friday, there will be the second session on getting started and all are welcome. July 12-14 is the next class.

**Merchandise:** Dan KK6VIQ: The 80th anniversary lapel pin will be available at the May meeting.

**Membership:** Dan KK6VIQ stated that we have 3 new members tonight.

**Repeater:** Jack K6ROW was not present. John KE5RI reported that there was a recent committee meeting with lots of participation.

**DX Team:** Doug KF6LMB: August 15-18 is the mini-DX in Humboldt County.

**VE testing:** Brian N6IIY: The next session will be on May 11 at Bennett Valley Guild Hall. More details on the website. There will also be a session on Field Day.

**Field Day:** Brian N6IIY: we had the first planning meeting. The next planning meeting is April 20 at Youth Community Park. Educational activity is the Ground Plane antenna. Carol Lucic KK6OLL is planning the barbeque and looking for helpers.

**Emergency Service:** Pat KG6JSL was not present.

**OLD BUSINESS:** None.

**NEW BUSINESS:** none.

The meeting adjourned at 8:50 PM.

Respectfully Submitted,  
Bill Dornbush KM6BYD, Secretary



Ham of the Month  
John WB6FRZ

SCRA HAM OF THE MONTH RECIPIENTS			
Year	Month	Name	Call Sign
2019	Apr	John	WB6FRZ
2019	Mar	Erin	K6ERI
2019	Feb	Fred	AE6SF
2019	Jan	Dave	KI6UGB
2018	Dec	-	-
2018	Nov	Iola	KK6HRE
2018	Oct	Dan	KK6VIQ



**SCRA BOARD OF DIRECTORS MEETING  
MINUTES****Date: April 10, 2019**

The meeting was called to order by John Felton KE5RI at 6 pm. A quorum of officers was present.

Board members present: John Felton KE5RI, Fred Seitel AE6SF, Bill Dornbush KM6BYD, Iola Beckley KK6HRE, Doug Payne KF6LMB

Absent: Randy Hall AA6RH

Others: Dan Drummond KK6VIQ, Brian Torr N6IY, Darryl Paule KI6MSP, Charlie Sikes KZ6T, Jeff Tonelli KI6PBF

Approval of previous meeting minutes: Iola KK6HRE moved that the March BOD meeting minutes be approved, Fred AE6SF seconded. and minutes were approved by voice vote.

**OFFICER AND DIRECTOR REPORTS**

**Treasurer report:** Iola KK6HRE reported on our finances.

**COMMITTEE REPORTS**

**Activities** – Iola KK6HRE noted for the field day barbeque, she would like to make available 2 chicken kabobs at a cost of \$6 from Safeway, in addition to hamburgers, hotdogs, etc. She asked for the board to allocate \$250. Brian said the rental fee will be less so there is extra money in the field day budget. We agreed to not allocate more unless needed.

**Community Outreach** – Darryl KI6MSP said the Coddington Family Life Magazine Camping Expo is on Friday from 4-7. He will be there with 4 others to demonstrate HF and more. Dan will hand out temporary tattoos. On May 4, the Human Race occurs, and all positions are filled.

**Membership** – Dan KK6VIQ said we have 197 members. He showed a new application form mainly to remove t-shirts from the form. Bill KM6BYD moved, and Fred AE6SF seconded that we standardize on the new form on the website and ask Dave KI6UGB

to see what can be implemented.

**Merchandise** – Dan KK6VIQ presented a report of the status of apparel order showing we are \$33 under cost for two years. At Halls, we hit the order point today for 80th anniversary shirts, and we sold 42 anniversary shirts. Dan will buy 24 new shirts to bolster stock. Dan wants to simplify our process so that we purchase only short sleeve t-shirts for stock. Polo shirts and long sleeve shirts can be produced by Halls one at a time for slightly more expense. Darryl KI6MSP suggested a group buy for field day. Dan felt he could not take this on at this time.

**Public Service** – Iola KK6HRE said we have an event this weekend, the Lake Sonoma 50 foot race. The Wine Country Century is May 4 with Fred AE6SF as comm boss. Staffing is looking good, and need more radio SAGs. We need a comm boss for Terrible Two.

**Education** – no report

**Em Comm** – no report

**Field Day** – Brian N6IY noted we made good progress at the last planning meeting, and will move stations for least audio interference. Only the GOTA station will be solar powered. Brian will need about \$250 to pay city for rental fee. Iola is helping Carol Lucic with the dinner.

**Programs** – Bill KM6BYD read the note from Randy: "Randy AA6RH's report for programs is unchanged at the moment, we have the HF demo planned (involving Joe K6AWA and a couple others, check last months minutes to be sure as Joe had given the specifics), and the June program will be led by Brian N6IY talking about Field Day plans in detail. I am working on the rest of the year, and will benefit from finishing the school year in order to have the spare time needed to drum up some talks. Any suggestions are welcome." On May 11, Jeff KI6PBF has an OK to tour the Press Democrat printing plant in Rohnert Park starting at 8 am. We need a way to get signups.

**Website** – Iola KK6HRE said there will be a signup for the field day barbeque.

*Continued on page 12...*



...BoD Minutes continued from page 11

**Refreshments** – no report

**Repeater** – no report

**Radio Loanout program** – no report

**UNFINISHED BUSINESS** – none

**NEW BUSINESS** – Charlie KZ6T commented that Short Skip is appearing too close to the meeting. Iola KK6HRE noted that the deadline is the 25th but people have not been submitting articles in a timely manner. John KE5RI said we should set the deadline and enforce it. John suggested minutes be sent out separately. Iola suggested they also be in the Short Skip for archive. John will talk to Dave KI6UGB for his feedback for the next meeting. Dan KK6VIQ noted that there was a problem with the last email string he sent with a non-ASCII character and welcomes help to resolve this issue.

Iola noted Craig K6XLT has done public service events for 13 years or more and would like to recognize him with a gift. We agreed to confirm at a future meeting. Charlie KZ6T suggested that if someone asks for more information on the membership application form, we should respond. Dan KK6VIQ will start sending information requests to the appropriate committee person.

Dan KK6VIQ did his first net control. He asked for feedback and there were no comments for improvements.

The meeting ended at 7:00 pm.

Respectfully Submitted,  
Bill Dornbush KM6BYD

...First Public Service Event continued from page 1

He described talking on ham radio as kind of like a chat room on the Internet but for radio enthusiasts from all over the world. How was he able to use these things to talk to people on the other side of the planet? I wondered. This simple question stuck with me for all the years of my life.

Fast forward to my early college years. I took Physics 202, covering electrical theory. Despite my passing grade, I felt I knew less than the day I walked into the class. If I was the kind of person who could be happy with a grade and not actually knowing things, I could have left it alone. But I was working nights and paying my own way through junior college, so I expected to learn things. Frankly, I felt like I had wasted my time and money, and I was more lost about what made electronics work than when I began.

Unlike physics, there are no straight lines in life. So I will not be telling you a story about how I went back to school and turned my academic life around, working through my frustration and confusion to become a brilliant Electrical Engineer. What happened to me over the next years was a hard lesson in loss. That same year I ran my first marathon, climbed rock faces, and scaled mountains for fun. I wanted so badly to savor challenging life experiences that make you scared for your life because I knew how fleeting the healthy years of youthful life can be.

When I was 21, I was diagnosed with cancer for the third time. The first two fights came when I was 12 and 15. Facing cancer for round three, I truly thought that my time enjoying the hard yet beautiful things that life has to offer had come to an end. Somehow, I stumbled across the one thing in this world that is stronger than the fear of death--love. I vowed that I would not marry the girl who stole my heart until I was cancer free. Ten years later we had our wedding in Hopland, California. It was the best day of my life. Over those ten years fighting to stay alive, the good things that I was so afraid of losing were never in short supply.

Once, during the countless times I lay alone in my hospital bed, a nurse told me to "never stop going places and never stop exploring new things even if it is inside your own mind." Taking this to heart, I began to ask myself that same question I had all those years ago. What were all those things Bruce had in his ham shack and how did they work? Why did he need a 50-foot antenna strung between two broom sticks to listen to the radio when he was a kid when today I can use my cellphone to talk around the world? What's the difference?

*Continued on page 13...*



*...First Public Service continued from page 12*

Those questions led me to look up the local ham radio club and I found myself on the website for the Sonoma County Radio Amateurs. With my head full of even more questions, I sent an email asking how to start learning about becoming a ham radio operator. Iola KK6HRE wrote me back and invited me to come to a club meeting to see what they were all about. I was nervous at first, mainly because fighting cancer and defeating cancer for the third time had changed my body so much in recent years. Walking, hearing, and multitasking have become so difficult it drove me into a life of solitude where I only felt confident exploring things from the safety of my couch, using my computer or smartphone.

Going to that first meeting, I hoped becoming a ham would be a way for me to meet people who I could learn from and who were also interested in answering the questions about what made worldwide wireless communication possible. I thought I would learn at a slow and easy pace. I thought this hobby would be something I could find myself doing from the safety and comfort of my own home. What I did not expect was the sheer volume of people who devote so much time and effort to the many facets of the ham radio world. I was not ready for how much encouragement and motivation these people are ready and willing to dish out the moment you ask for it.

My body is still healing from the last ten years of fighting to stay alive, but when the call came out for volunteers for this year's Public Service events, I could not get the idea out of my head. I used to train for and compete in events like these. My brother and his wife have so many medals from marathons, triathlons and ultra-marathons that you could melt them down and build a 120-meter vertical antenna tower. Every chance I got I was running alongside him during the hardest parts of those races. With my body ravaged by cancer and the countless complications that have plagued me over recent years, I thought that being part of these races was a thing of the past. What I was not ready for was finding a new chance to be part of the powerful exhilaration and excitement that comes on the day of a big race. I also did not imagine finding myself in the middle of a storm struggling to hear over the rattle of rain and the scream from the rest stop sound system as riders shaking with cold whose hands were so frozen they could no longer use their brakes came to me asking for help.

But there I was, and I was able to do what needed to be done because I had been shown how to by the wonderful people who make up the Sonoma County Radio Amateurs. For months I had been going to physical therapy, retraining

my new titanium hip joint to carry my weight so I could walk again without blinding pain. That first day as a public service volunteer was possible because of the countless little steps toward healing I had worked at for years. Yes, my body was different from most other 32-year-olds. Yes, I am on dialysis because my kidneys failed after years of infections, radiation and chemo treatment. Did it stop me from stepping up and trying something new? Absolutely not. That was what 2019 Fish Rock was for me, it was a chance for me to test myself, to see if I was strong enough to spend a day helping others and having a good time doing it. However, this year was not your typical race day. The hail, rain, and snow saw to that. I am glad it was as exciting and challenging as it was because I learned a lot and was tested in situations that I didn't see coming. Like life, this event was full of surprises, excitement, and not a few hard turns. We took them as they came.

#### **Race Day:**

The morning of the race dawned wet and windy as two of my friends and I left Santa Rosa bound for Aid Station 2. We set off to meet up with my lead Cornell W6HMN. That morning as we began our drive, the rain was pounding so hard that you might have needed gills to be out in it. As we hit the coast and drove north, the rain let up for a time. We proceeded north up the windswept coast of the Pacific and drove through the groves of towering Redwoods and twisted Cypress trees. I switched on my HT to see if I could get any signal from the CARLA repeater that Net Control was using during this event. When I was unable to hear anything, I took this to mean I was simply not yet close enough to make contact.

We arrived early on location at Aid Station Two to find my lead for the day, Cornell W6HMN, the only person in sight. We set up our station at the place where the gravel Timberwood Way meets Iverson Road and affords a 100 meter patch of gravel alongside the racecourse where we, the Aid Station staff and support vehicles could assemble.

From the start of the day we ran into radio issues. The fancy UHF log-periodic antenna system we had setup was blown over in the wind gusts, but before that happened Cornell W6HMN showed me how to use an antenna analyzer to assess how well our antenna was working prior to hooking a radio up to it. The next problem was waiting for us the moment we connected the brand new 25-watt Yaesu mobile rig he brought. Despite having set it up and confirming that everything was working the day before, the new radio failed to make a sound even though it showed a strong signal.

*Continued on page 14...*

*...First Public Service continued from page 13*

With no more time to troubleshoot the issue we switched to using a smaller Yaesu handheld transmitter (HT). Cornell W6HMN had me make contact with Net Control to let them know we were on station and transmitting. In anticipation of this race, I had constructed a small J-Pole made of an 8 gauge wire soldered to a section of 50 ohm feed line that had an SMA adaptor to plug into my Baofeng UV-5R. I built it to match the 450 MHz frequency of the UHF CARLA repeater. When I got things up and running, I could not make contact with the CARLA repeater we were using to connect to Net Control back in Boonville. I could still receive signals fairly well, so I used my UV-5R connected to this homebrewed J-Pole to listen to the majority of the radio traffic.

The Aid Station crew arrived shortly after we got our radio tent up. This first wave was from the production crew that would be providing hot quesadillas, mini pizza pockets water and other food to riders. They went to work setting up a grill and speakers that began blasting music. We were later joined by another van with two bike mechanics. They set up a repair station under their own tent and the van was stocked with parts and tools so that that they could fix just about any mechanical issue a rider might have during the race. Now the rain smacking on the tent was not the only loud background noise that made hearing radio communication difficult. The blasting music combined with the sound of yelling and cooking made it impossible for me to hear anything out of my radio clearly. I had a pair of earmuffs that blocked out 31 dB of the noise so that I could hear the radio contacts coming from my ear bud connected to my Baofeng. This was tricky because I could only hear properly from one radio and only transmit from another. All the issues and problems that I ran into during this wet, cold, and stressful event were great learning experiences. Now I know many things I may need to deal with in this kind of situation.

When I volunteered for Fish Rock, I knew I would need to have help my first time out in the world after being convalescent for almost ten years. I reached out to some close friends who have known me since my junior high school years and have watched me battle cancer again and again all my life. Two of them came to visit me from Washington State that weekend and were more than willing to spend the day with me while I was working my volunteer shift. The two of them were an indispensable help for me. They carried and set up my 10x10 canopy that sheltered us from the rain storm that began the moment we set up. When the race got going, they did not hesitate to pitch in and help out around the aid station. They both became fast

friends with the aid station staff and helped out wherever they were needed. One made coffee for the workers at the aid station and encouraged the bedraggled riders as they passed through. The other helped out by lending his sleeping bag and chair to a shivering rider forced to wait for a seat in a SAG vehicle.

Before the riders were even there, I went on the air a few times and reported on the arrival of the different support vehicles as they arrived at our aid station. As soon as riders started arriving, I knew they were in trouble. The rain never let up and many of the riders were in very poor shape when they stopped for food and a break from the slog they had been through. Looking at them, I became worried. From reviewing the course maps, I knew that the hardest part of the race was still ahead of them.

It wasn't long before riders were lining up in need of help and some were in no shape to continue the race. The most severe cases were suffering from the symptoms of the first stage of hypothermia and needed to be put in cars to get warm before they were removed from the race. Soon I was reporting rider after rider that needed to be transported back to the start of the race in a SAG vehicle.

### **The Wrap Up:**

After the final racers had passed our Aid Station and the crew of race workers had moved on, we packed up and headed out of the area. Before we went home, we drove back over the first part of the course. This section of road, mile after mile of steep grades, hair pin turns and half washed out roads falling off into deep ravines, was what the riders of Fish Rock race faced in torrential downpours, hail, blasting wind, and snow at the highest ridgelines. I could not have been more impressed with how composed they were after navigating the course under such wet, cold, and potentially dangerous conditions.

We entered Boonville as the sun was leaving the sky and darkness began to creep out from the shadows of the mountains. Arriving at the subdued after-party of racers, I stopped by Net Control to see what kind of situation and setup they had. It was a log-periodic antenna similar to what we had used, but they had a higher-power mobile radio with a much longer feed line. The longer feed line gave them the ability to move their station indoors when the weather got bad. This turned out to be the best location because as twilight faded and night set in, maintaining communication was even more critical.

*Continued on page 15...*

*...First Public Service continued from page 14*

Much had happened while I was in transit, but getting all the riders off of the dangerous Fish Rock Road was not one of them. This became the priority the moment I began to listen to the news coming into Net Control. By the time Net Control finally shut down, it was later than anyone thought it would be. The cold and the course was not kind to the riders that day. Along Fish Rock Road more than a few riders were pulled from the course to protect them from their worsening symptoms of hypothermia. Many more had to be taken out of the race because they simply could not complete the last sections of a race that is grueling under perfect conditions. During my time at Fish Rock, I saw just how important the communication plan is to the function of the emergency and support staff in an event such as this. However, I also saw how even the best plans cannot predict the weather or change the fact that due to topography, some places are just impossible to communicate from.

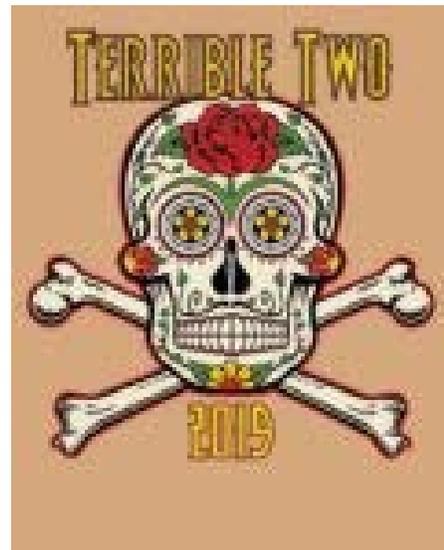
When finally we wrapped up for the night, I along with everyone else had more than enough excitement for one day.

#### **The Takeaway:**

If I could sum up my first public service event in one word it would have to be “inspirational”. It has inspired me to plan on signing up for many more of these events in the future. It has made me interested in learning the complexities that are needed to be a Comm Boss. It helped prepare me for my first attempt at Net Control for the Sonoma County Radio Amateurs Weekly Net. It showed me just how much I have to learn and that there are so many people to learn from. I learned I have some of my own technical details to work out when it comes to being able to hear effectively in noisy environments and transmit from areas of rough terrain. Everyone who worked that event was just one piece in a bigger system that was able to provide an extremely valuable and needed service. Above all, I felt the weight of that responsibility and was able to see it in dramatic action. The day was incredibly valuable, and I am lucky to have been there to learn so much so fast.

I want to thank everyone who helped out that day, it was a great group of people working with under wet and cold conditions and we performed our job admirably. As the rain beat down on us while we all drove home, I am sure everyone was glad to have helped those cold, shivering riders who needed us. It will be us who are ready to volunteer for the next event when the time comes.

This is Ibrahim K2IBE saying 73.



### **Santa Rosa Cycling Club Sponsors the 2019 Terrible Two Bicycle Event.**

On June 15th, riders will pedal 200 miles over the span of 17 hours in Sonoma County while SCRA provides amateur radio communications.

We have many openings for SAGs, Net Control, shadows, and new this year for the day of the event, three comm boss positions. These positions are a go-between Net Control and the event sponsor and may help with SAG management, net control activities. Visit SCRA's sign-up page to find your preferred spot. Want to learn? Sign up as a shadow and have fun! The sign-up sheet has changed, so look closely.

Thanks for your continued support of SCRA Public Service Events!

Fred AE6SF

Pre-Event Comm Boss for the Terrible Two 2019

## Field Day – Let's Show the Public What Amateur Radio is All About

When the ARRL proclaimed the first "International Field Day" in 1933, the purpose given was: "Besides offering an opportunity to get out in the open in this fine spring weather, the real object of this contest is to test "portables" wherever they may be available. If successful we want to make it an annual affair."

Nowadays, Field Day is on the fourth full weekend in June. So this year it will be June 22 and June 23.

But it is still a means of testing our ability to operate at sites away from our normal stations and working "off the grid".

Perhaps most importantly, however, it gives us a chance to demonstrate these capabilities to the general public.

On top of all that, it gives us a chance to socialize. We can even camp out on Saturday night.

Which brings us to Field Day 2019. Although June 22/23 is just under 2 months away, we've already had our first two planning meetings with one more scheduled. Our next Field Day Planning Meeting will be Saturday, May 18, from 10:00am to 11:30am, at the Field Day site, Youth Community Park, 1725 Fulton Road, Santa Rosa (across the road from Piner High School). If you are interested in any aspect of Field Day, please join us. Bring your own chair.

I want to thank all those of you who have already volunteered for various Field Day positions. There are still a few more positions that need to be filled, however. Check out the Field Day website for the complete list (<http://sonomacountyradioamateurs.com/wp/events/field-day/>). You don't have to be a seasoned ham to be eligible. This is an event for all hams, regardless of skill level, to learn how to setup and operate HF and VHF stations in the field.

There will also be an Educational Activity on Saturday, June 22, at 3pm. We will be building 2m groundplane antennas. The antenna design is the same basic one

as we did a few years ago, but this version includes a storage tube. To take one of these antennas home, we will be asking for a donation of \$30 each.

We plan on having four HF stations: SSB, CW, Digital, and GOTA

What's "GOTA"? GOTA stands for "Get On The Air". It is an opportunity to introduce new hams, or even non-hams, to operating on the HF bands. Hams that have been licensed for several years, but have been generally inactive on HF are also eligible to participate.

The GOTA station will be operating from solar power exclusively.

We also plan on making a satellite contact.

There will also be a barbeque dinner Saturday evening, starting around 5:30pm.

We also plan on holding an Exam Session on Saturday, June 22, starting about noon or 12:30 pm and being done by 2:30pm.

This year we are planning to have a "Tech Bench" where hams can come and get some help on things such as how to install Anderson Power Poles, simple radio checks, and mobile antenna installation checks. Ibrahim Sial, K2IBE will be heading this effort and if you have any equipment or expertise to offer, please contact him.

As you can see, Field Day is an event-packed weekend. If you are looking to learn something, anything, about amateur radio, this will be the weekend to do it.

If you can make it to our next planning meeting on Saturday, May 18 at 10am, wonderful. If you can't make it, please send me an e-mail with any suggestions you may have or how you think you can help.

Let's make Field Day 2019 even better than last year!

Brian Torr, N6IY  
Tel: (707) 575-5871 (home)  
(707) 953-0377 (cell)  
[n6iy@arrl.net](mailto:n6iy@arrl.net)





Lake Sonoma 50  
Radio Support  
Crew



## Solar Float Charger

### Temperature-Compensated for SLA Battery

By Fred Seitel AE6SF

It may not be well known that constant maintenance charging (called float charging) of a sealed lead acid (SLA) battery requires a voltage that varies with battery temperature. For an outdoor battery, that means mounting a remote sensor (such as a thermistor) on the battery to sense its temperature.

This article describes my design of a solar charge controller with remote temperature sensing (aka Solar Float Charger) for maintaining the 12V 5AH SLA battery on the SCRA trailer, powered by a 220mA solar panel. The charger is an RF-quiet analog design using through-hole components. Unlike a smart digital charger that quickly recharges using three stages (bulk, absorption, and float), this charger implements only the float stage. The table in Figure 1 shows the optimum float voltage versus battery temperature as well as resistance versus temperature for a thermistor of interest. The allowable tolerance on charging voltage is  $\pm 100\text{mV}$ . An SLA battery is also known as an absorbed glass mat (AGM) battery. Expected float current is on the order of 5mA or less for the 5AH battery:

Adapted from Concorde Chairman Technical Manual			
Temp. [°F]	Absorption [V]	Float [V]	Thermistor [kΩ]
30	15.10	14.08	28.596
40	14.90	13.88	22.574
50	14.72	13.70	17.949
60	14.56	13.54	14.371
70	14.41	13.39	11.583
77	14.30	13.30	10.000
80	14.27	13.25	9.396
90	14.15	13.13	7.669
100	14.04	13.02	6.296

Float at 13.00V above 102°F

Figure 1. AGM float voltage and thermistor resistance versus temperature.

The basic design concept uses a 3-terminal adjustable positive voltage regulator (LM317) with output voltage adjusted by a thermistor mounted on the battery. (All parts except enclosure came from my junk box which influenced component selection.) Figure 2, taken from a National Semiconductor datasheet, shows the standard minimum circuit for setting the regulator voltage. The regulator maintains 1.25V ( $\pm 0.05\text{V}$ ) across resistor R1, the ADJ (adjust) terminal outputs 50-100uA, and the combined current flows through resistor R2. Apply Ohm's law to determine the output voltage  $V_{out}$ .

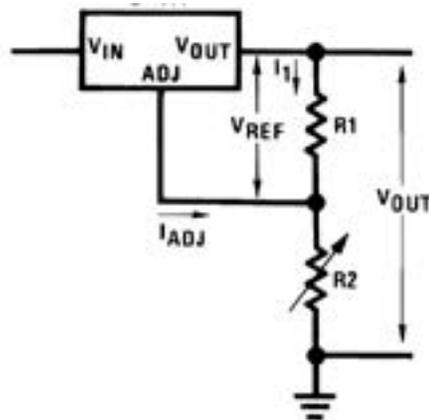


Figure 2. Resistors R1 and R2 set the LM317 output voltage.

The tricky part of the design process was incorporating the thermistor to vary the output voltage. Combining it with R2 seemed promising. I used the following design steps, resulting in the final circuit shown in Figure 3:

1. Selected resistor R1 as  $255\Omega$  (i.e., two  $510\Omega$  resistors in parallel because I had that value).
2. Selected a temperature range of  $30^\circ\text{F}$ ,  $77^\circ\text{F}$ ,  $100^\circ\text{F}$ , corresponding to battery float voltages of  $14.08\text{V}$ ,  $13.30\text{V}$ ,  $13.02\text{V}$  respectively.
3. Calculated values of resistor R2 for  $14.08\text{V}$  and  $13.02\text{V}$ , noting that the difference was  $214\Omega$ .
4. Fit a 4th-order polynomial curve to the log of the resistance of thermistor RT1 to generate a formula relating temperature to resistance. Calculated thermistor values of  $28,596\Omega$  and  $6296\Omega$  at  $30^\circ\text{F}$  and  $100^\circ\text{F}$  respectively, with a difference (or span) of  $22,300\Omega$ .
5. Tried paralleling resistor R3 across the thermistor to drop the span to  $214\Omega$  with the intent of reducing R2 by  $214\Omega$  and adding the thermistor-resistor combination in series with R2 to compensate. Calculated the output voltages at  $30^\circ\text{F}$ ,  $77^\circ\text{F}$  and  $100^\circ\text{F}$  resulting in a maximum deviation of  $\pm 90\text{mV}$  from ideal. This deviation was deemed too large.
6. Tried inserting fixed resistor R4 in series with the thermistor and paralleling that combination with resistor R3. Used Excel to model it and tried several values, zeroing in on values that theoretically produce a maximum deviation of  $\pm 37\text{mV}$ . Deemed acceptable.
7. Added more circuit features.
8. Breadboarded the circuit and calibrated it against a glass thermometer using a water and ice bath. Output voltage was low (due to the nominal  $1.25\text{V}$  being low), so resistor R2 was increased in value. The measured deviation was  $\pm 51\text{mV}$  maximum. Deemed acceptable.

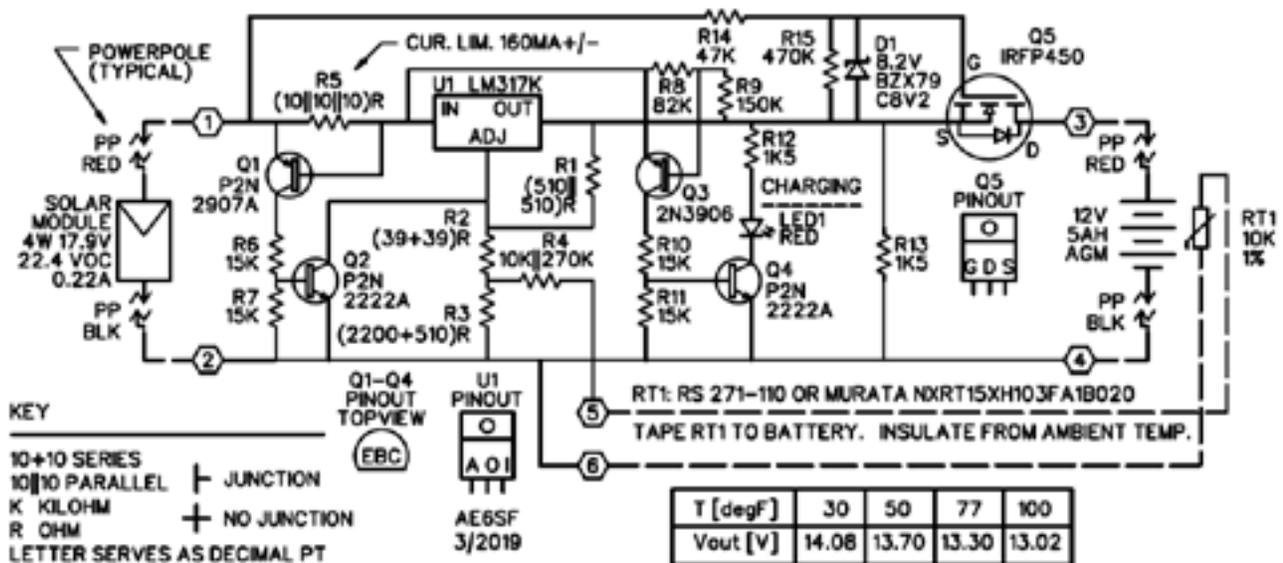


Figure 3. Solar float charger schematic diagram.

### Other Features

The LM317 (U1) is an old-school (circa 1970) regulator that requires about 3 volts across it and a minimum load to regulate properly. Resistor R13 and the LED circuit add approximately 16mA load, thereby improving line regulation during the condition of zero current drawn by the battery and high solar input voltage (up to 30V). Without the added load, the output voltage climbs by several millivolts.

A blocking diode or equal is needed to prevent battery discharge through the charger at night. But a diode is unsuitable due to its variable forward voltage drop precluding precise regulation. Instead an N-channel enhancement mode MOSFET (Q5) with a low-threshold gate voltage was used as an output switch to utilize its very-low on-state resistance. Note that Q5 is used “backwards” to normal orientation so that its internal body diode is reverse-biased at night.

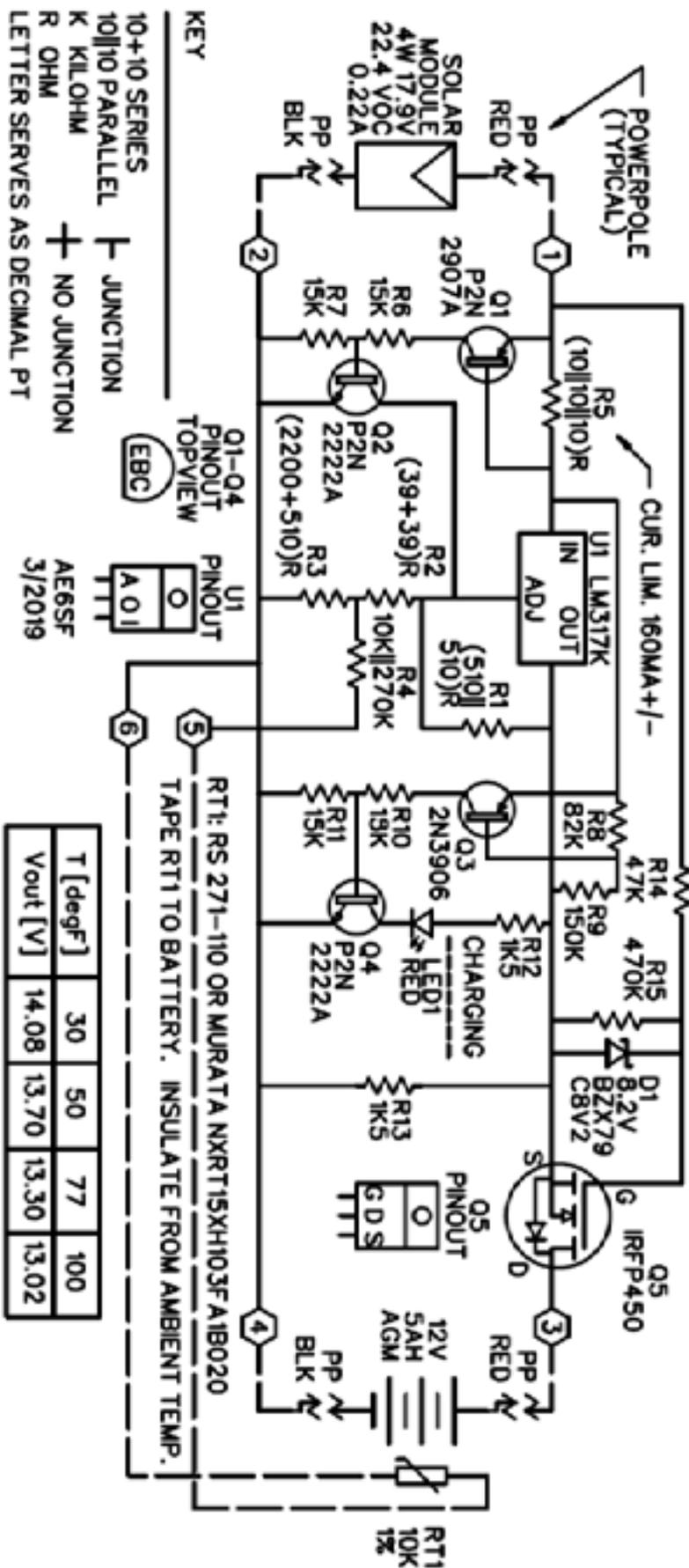
Transistors Q1, Q2 and related resistors establish a current limit of approximately 160 mA to preclude needing a large heat sink for the LM317 regulator. Q1 conducts when the limit is reached, turning on Q2 which lowers the voltage at the ADJ terminal and correspondingly lowers the output voltage to reduce battery current.

Transistors Q3, Q4, LED1 and related resistors form a charging indicator. Q3 turns on when the voltage across the regulator rises signifying conduction. Q3 turns on Q4 and the LED. The value for resistor R8 was determined experimentally. This circuit is optional, but who doesn't like a charging indicator?

Thermistor RT1 is rated 10K 1% at 77°F (25°C), NTC, with a beta B25/85 = 3434, also known as Radio Shack 271-110 (no longer sold). Substitute Murata NXRT15XH103FA1B020 or equal.

In retrospect, I would incorporate a variable resistor into R1 for calibration purposes rather than alter the fixed resistor R2. I'd also consider adding convenient test points for checking battery voltage.

A charger fuse may be added, but don't alter existing circuits that serve the electric brakes.



### Construction

A printed circuit board (PCB) with a copper pattern that mimics a standard proto board was trimmed to fit a plastic project enclosure. Components were soldered to the PCB, and the PCB then sealed with Krylon Crystal Clear Acrylic spray. A window for LED viewing was fabricated from a red translucent acrylic sheet and fastened into a cut opening in the cover using cyanoacrylate glue. The enclosure was mounted using a modified Simpson framing angle and pop rivets. Figures 4 through 9 show various stages of construction.

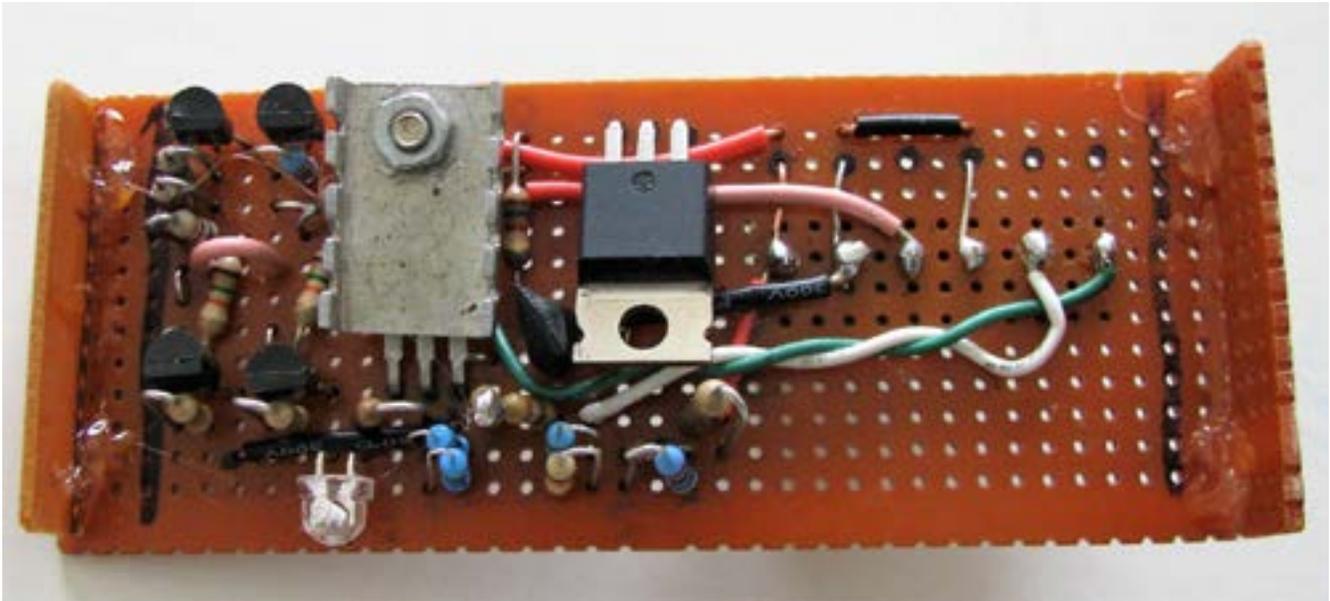


Figure 4. Circuit board, component side.

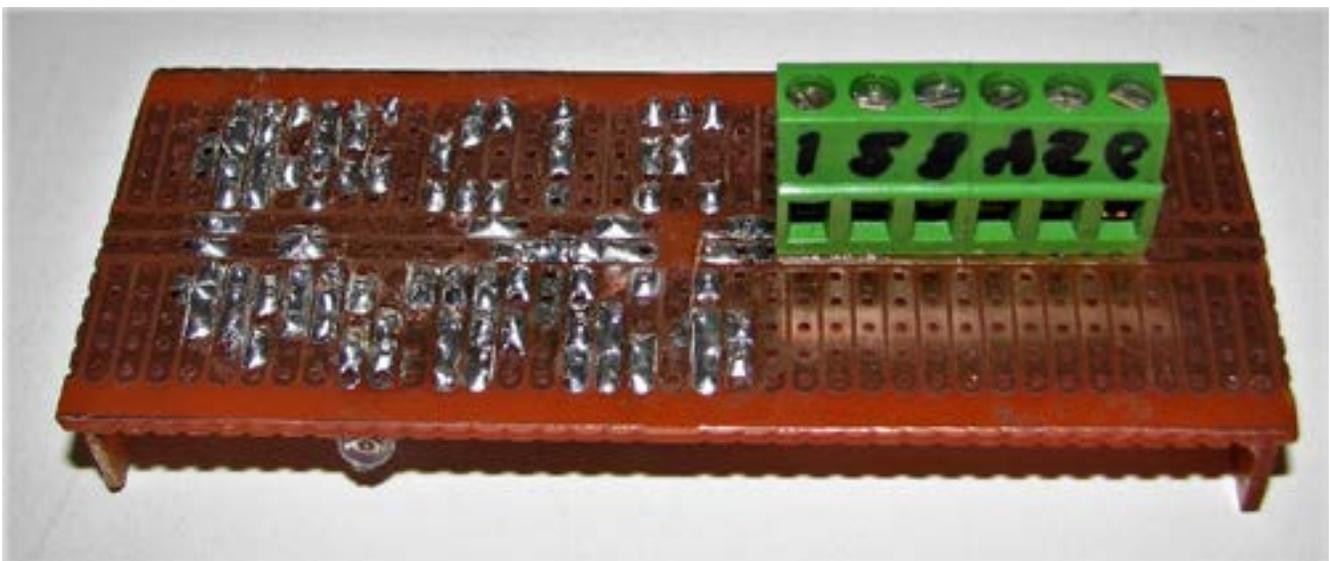


Figure 5. Circuit board, solder side, mirror image.

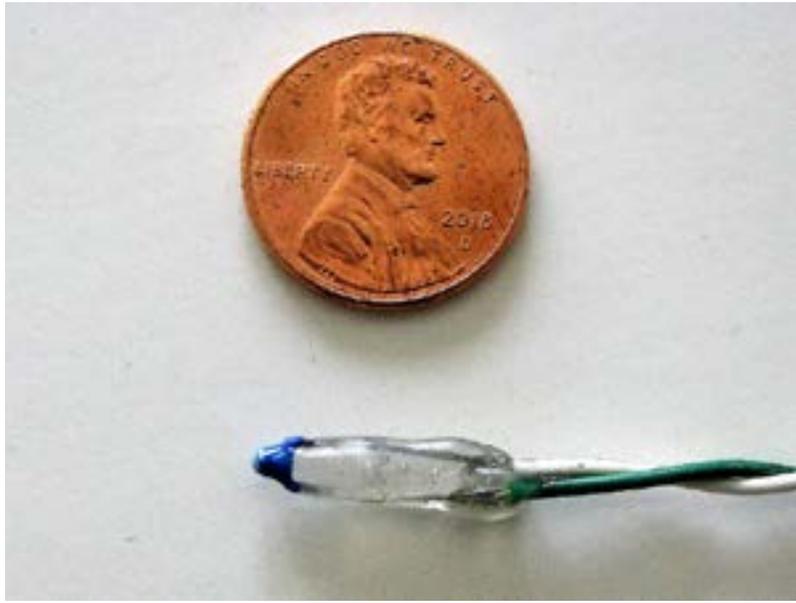


Figure 6. Thermistor insulated with hot glue.

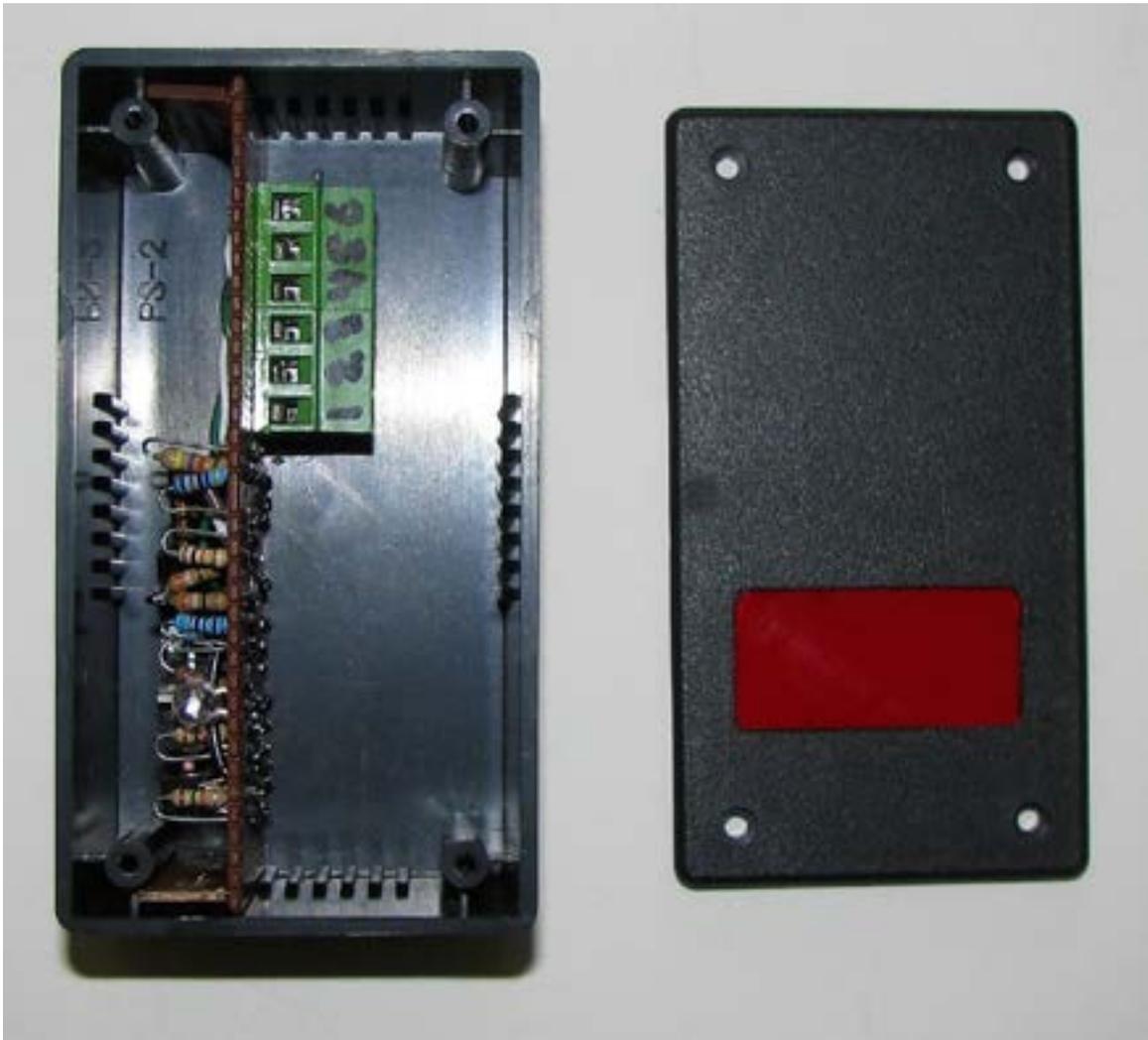


Figure 7. Enclosure, circuit board, cover with red window.



Figure 8. Battery box on left, Solar Float Charger attached on right.



Figure 9: Charger installation showing solar panel.



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