

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.

Celebrating 83 years as an *active* amateur radio club—*Since 1937*



22 Years of Elecraft!

A short history of Elecraft, including lots of products, behind the scenes pictures, crazy customers, DXpeditions and a lot of fun!

Followed by a Q&A session to answer your questions.

Bio for Eric:


Eric Swartz, WA6HHQ, is Elecraft's Chief Operating Officer, a co-designer of Elecraft's K4, K3S, K2, and other transceivers, and co-founder of Elecraft in 1998 with Wayne Burdick, N6KR. Licensed 49 years, he credits his early interest in Amateur Radio with leading him to a career in electronic design and management. He received his B.S. in Engineering and Applied Science from Yale University and has been involved in a number of successful Silicon Valley startups. Prior to Elecraft, Eric was co-founder and President of Verisys, a test equipment manufacturer of high-performance protocol analyzers for the mass storage market.

Wayne and Eric have both been inducted into the QRP Hall of Fame, and also jointly received the ARRL's Technical Excellence Award in 2001 for their Elecraft designs.

This meeting will be conducted with Zoom.

**Please see Zoom
details later in this issue.**

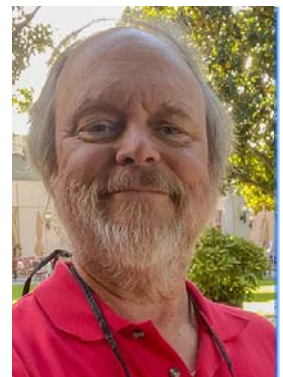
Upcoming Events

Dec 4	PAARA General Meeting, 7:00 PM
Jan 8 Feb 5	Zoom Meeting, see article for details
Dec	Board meeting cancelled 
Jan 20 Feb 17	Board Meeting, 7:00 PM. Everyone welcome! Zoom Meeting, eMail President for details!
Nov	Electronic Flea Market Cancelled

President's Corner

December 2020

As strange as it seems, here we are at the end of a very strange year. By the time you read this issue, everyone will have enjoyed Thanksgiving, or at least I hope they did. It might have been a smaller "event" than normal, I know mine was, but hopefully, there was something in this past year to give thanks for. With Christmas looming over the horizon, one can only assume it will also be different than in past years. I'm sure many of you will join me in the gratification turning the page on 2020 will bring and hope not much of what happened this year carries over into 2021!



In past years, this issue would be full of images of PAARA activities from the year past. Sad to say, as there were no real activities except

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PAARA On-Line Election Instructions

During the December PAARA Member meeting via zoom a website link will be provided. Use this link in your browser of choice (a modern, relatively recent web browser is recommended). You will be presented with a page where you will enter your Name and Call sign and a Hash Code.

Your unique Hash Code is to authenticate you as a PAARA member. It is sent to you either as part of your PAARAgaphs December mailing, on the outside of the newsletter, just below the return address. or for members who receive PAARAgaphs electronically it will be sent on a post card.

Enter the Hash Code, your Name and Call sign in the spaces provided. Make sure to enter the Hash Code exactly as provided. Each Hash Code can only be used once. Once your membership is authenticated, your vote as canvassed is anonymous. After entering your hash code, you may cast your ballot.

Make your selections for each position. You do not have to vote for a candidate if you so choose. When you are sure of your vote click on the Submit Button at the bottom.

That's it you're done.

REPAIRING AN OLD AIR MOVER FAN

Andy Korsak KR6DD

About 50 years ago I bought two large diameter 3-speed powerful fans as we didn't have air conditioning at the house. We would open up all the windows at night after a hot day and blast air up the 8-step stairway of our split level house and we placed the other large fan at full blast on the "landing: of the middle floor pointing the air flow up to the bedrooms floor. That really cooled down the house by morning when we would close all windows I brought only the newer looking of those two fans to our one bedroom Mountain View apartment in August 2016 and it began showing signs of wear. First, the aging plastic case of the rotary switch cracked to a point where the high speed wire connection broke off inside it. Next, the switch wouldn't turn

anymore and got stuck in the slow position. Finally, the fan died altogether, so I took it all apart, removed the broken switch, drilled a larger hole for a 6-position rotary wafer switch I had found at HSC before they sold all inventory to Excess Solutions, and wired up connections to the various wires sticking out of the motor cage and the incoming 120V AC power.

Then I noticed that there was no conductivity at all at the AC plug for any switch position. I took apart the motor case and noticed a strange looking protrusion of two wires wrapped tightly

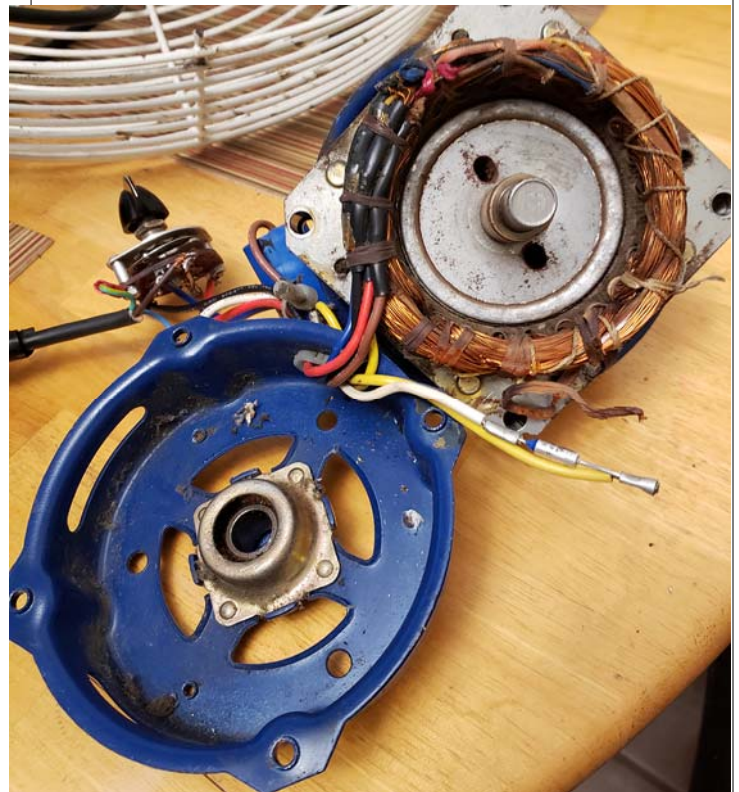


Fig. 1 - Fan Motor, switch and diode-looking device

by shrink tubing lying close to the stator windings. I carefully snipped with a sharp wire cutter starting at the shrunk tubing end, and those wires were crimped to what looked like a diode. The device had numbers and letters printed which I copied down while examining the device using an 8X magnifier, so I found out via web search that it is a thermal cutoff switch. I ordered an equivalently rated replacement device on line and it just arrived at my apartment mailbox while we are here in Las Vegas for

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(Repairing — Continued from page 2)

about a week to get away from the horribly dense smoke all over California.

I wonder if there is a more up to date modernized replacement for the thermal fuse. I really don't want to have to dig into motor case again to replace it were it to blow again.

I planned to finish the repair and write this article, but last Wednesday we quickly packed up and fled town when the smoke became unbearable. Fortunately I had taken pictures of the disassembled fan a few days earlier, so I am submitting this from our Orleans casino hotel before the deadline soon next week.

RE-PAIRING AN UPDATED AIR MOVER FAN

Rube Goldberg, KA6Q

Ask and ye shall receive. Andy KR6DD asked if there is a more modern replacement for the thermal cutoff fuse in his Air Mover fan. Yes, there is. We are in the era of the “Internet of Things” or “IoT”; we would be remiss if, in this Rome of today, we do not do as the new generation of Romans do.

The below is a sure-fire way (ie. of absolute pyroclastic certainty) to do this in a most modern fashion.

1. Install a Dallas DS18B20 One-Wire I2C temperature sensor inside the original location of the thermal fuse. Connect two-wires to it, because of course, that's what One-Wire needs.
2. Wire the DS18B20 to an One-Wire-to-i2c protocol convertor chip.
3. Connect this i2c port to an Arduino Nano-Micro board, using a ATtiny816 microcontroller and the ATtinyCore Arduino Operating System.

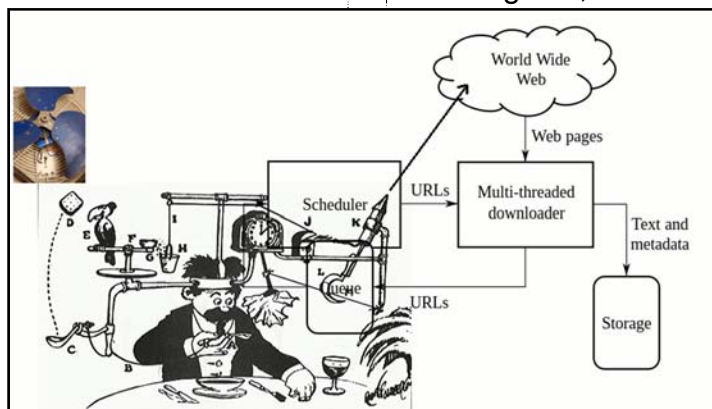


Fig. 1 - Block Diagram of Fan Alert System

4. Connect an Xbee wireless shield to the Arduino using the i2c protocol.
5. Install a Raspberry-Pi next to your air mover fan. (for why, see below).
6. Wire a CC2531 Zigbee-to-USB adapter to a RaspberryPi using one USB port, through a USB hub.
7. Install a ESP8266 based Wifi Shield to the RaspberryPi. The ESP8266 has its own full powered (32-bit Tensilica Xtensa CPU at 80MHz), so it can fully offload the RaspberryPi so that the Pi is left doing nothing. This is important to avoid overheating your RaspberryPi (but this is optional, because if that happens you can just point the air mover fan away from yourself, and towards the RaspberryPi.)
8. Register the ESP8266 Wifi to your home Wifi Network. Since the Wifi range to your Internet router is limited from the location of your Air-Mover fan, order a Wifi Extender and figure out how to configure it (good luck!)
9. Sign up for an EC2 server instance on AWS, and virtualize it one more time by installing a Docker container in it. Inside that Docker container, install a Java Virtual Machine, within which you can install a Jython interpreter for running your python code. When doing this, make sure to require a very specific version of a Java Virtual Machine that is incompatible with your every other need for Java. (Otherwise there is a risk your project may deliver on time, and your investors will be happy.)
10. Hire an outsourced boutique consulting shop to develop a custom Android App which will connect to your EC2 server. They will select a Publish-Subscribe Internet event-bus for IoT devices without consulting you.
11. For no cost, they will bundle your app with

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(Re-Pairing — Continued from page 3)

any one of the aggregation frameworks which will send your location, current activity, ambient sounds picked up by the microphone including private conversations, your screen touches, phone calls and instant messages sent and received by you to an unspecified entity. Remember the check the box next to it, where it has some words like “Opt-In” or something, doesn’t matter. Remember that this step is critical. Without this step, nothing will work.

12. Permanently connect your phone to a power adapter, because your app now drains the phone battery.

That’s it. You can now re-pair all those several protocol links to your hearts content.

If you did this right, the next time your air-mover fan overheats. Then the Arduino Sketch will read the overtemp indication over the i2c protocol, and send a Zigbee message over to the ESP8266. This message will be received by the Raspberry-Pi over the MQTT protocol. The PI will then translate this into a REST-ful operation over SSLv3/TLS1.3 and transmit this to the AWS service. Through the event notification service, using a proprietary Publish-Subscribe protocol, a message will be sent (in clear-text for performance reasons) to your Android App.

The App will now beep, as long as you have not set your phone to silent mode, and you will know you have to switch off your fan because it is overheating.

The Dallas temperature sensor will detect the over-temperature within milliseconds, an order of magnitude faster than a thermal fuse. That’s great, because it doesn’t matter.

You will have to hurry to switch off your fan though!

PAARA Club Meeting Zoom Details

Time: Dec 4, 2020 07:00 PM Pacific Time

Join Zoom Meeting

<https://us02web.zoom.us/j/86284896522>

Please use: Your 1st name and call

Meeting ID: 862 8489 6522

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Zoom meetings, there aren’t pictures to remember the year by. I suppose that’s fitting in its own right. You will find one picture of a Zoom meeting just to mark the main activity of this year. One can only hope there will be IRL activities at some point in 2021 to fill next year’s issue.

I wish to thank Marty, W6NEV, for his outstanding service as Vice President for many years. He successfully found and coordinated many wonderful speakers over the years. Though the speakers haven’t always talked about amateur radio topics, they have always been of interest to the membership and drawing many new people to our meetings and club. I also want to recognize that he stayed on an additional year beyond what he wanted to help me with my 1st year as president. Worth noting, in addition to the many great presenters, Marty also orchestrated many great field trips, took care of the PAARA T-shirts as well as the Field Day shirts, and is now selling, on eBay, some of the various radios we’ve collected over the years. He intends on continuing with the T-shirts and selling radios for now. Please join me in congratulating him for his service and dedication to PAARA!

Speaking of Field Day, how many noticed the ARRL has listed the scores for FD? If you recall, just before FD we announced a club contest to stir interest in working the event even though we, as a club, weren’t able to conduct our usual spectacular event. Though fewer people participated than I’d hoped, I’m thankful for the 14 of us that did participate and listed PAARA as our club. The list of participants and scores are elsewhere in this issue. I’m happy to announce that Randy Silverman, using the call N6A took 3rd place; John Miller, K6MM took 2nd place; and Richard Karlquist, K6RK took 1st place! Each will be receiving an HRO gift certificate of \$100, \$200, \$350 respectively, in the mail in the next few weeks. Congratulations to the three of you!

Elections are upon us. The board spent considerable time coming up with a method for every-

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one to vote. We tested and polished it during the last board meeting. Please exercise your right as a member to vote at the December club meeting, it's not very hard. You'll find the instructions for voting elsewhere in this issue. PLEASE note the code attached to the left of the mailing label on this issue of PAARAgaphs. You need the code to vote. The voting link will be provided in the chat window during the December club Zoom meeting, as you must be present to vote. I also want to recognize Shri's, KA6Q, commitment, and programming skills to come up with a way for us to have the election. Thank you for the considerable effort he and others put into this challenge.

In closing, I was saddened to read that after 57 years of important scientific research, the Arecibo Observatory in Puerto Rico will be demolished. I guess deferred maintenance and mother nature's desire to return structures to the earth won out. It seems like an unfitting end to a monumental scientific instrument. I remember sitting in on a wonderful presentation several years back at Pacificon by a ham that toured the facility. The lucky ham had a complete tour of the site bringing back many wonderful pictures and stories to share. I guess we'll all have to strike it off our bucket list.

73 and Happy Holidays, Jim K6SV
Keep the airwaves alive by getting on the air!

Nov 18, 2020 Board Meeting Minutes

The November meeting was a virtual meeting, conducted over Zoom.

Attending: Jim Thielemann K6SV, President; Marty Wayne W6NEV, Vice President; Ric Hulett N6AJS, Secretary; Bob Korte KD6KYT, Treasurer; Joel Wilhite KD6W, Doug Teter KG6LWE, and Darryl Presley KI6LDM, Directors. Also present were Rob Fenn KC6TYD; Shri Hariharasubrahmanian KA6Q, and Clark Martin KK6ISP. A quorum was present. The meeting was called to order at 7:09 pm.

President's Report: Field Day results have been published by ARRL. PAARA had a total

of fourteen entries listing the club affiliation, with a combined score of 12,726.

The PAARA members with the top 3 scores will receive awards. The full FD results are in this month's QST magazine, and on the ARRL website <http://field-day.arrl.org/fdresults.php>

The overall top FD score was 17,330 points. Several clubs had a large number of participants. We're not sure how they accomplished that with the Covid19 restrictions. Maybe they have club stations and didn't have to set any antennas or radios up.

Secretary's Report: We welcome three new club members this month: Blake Koelmel KN6KYZ, Ken Kightly KJ6GVC and Greg Manseau, KK6STT have joined.

This brings our total club membership to 184.

VP / Program Chair Report: This month's presenter will be Eric Swartz, WA6HHQ. He will speak to us on "Twenty Two Years With Elecraft".

Marty said that he has very much enjoyed his time as PAARA Vice President, and he congratulates Rob Fenn who has agreed to run for the position in 2021. The board of directors joined in a unanimous word of thanks to Marty for his outstanding service as club VP.

Treasurer's Report: Our only expenses for this month were for PAARAgaphs printing and mailing. Other expenses have not occurred.

Old Business:

PAARA club members are encouraged to write an article for PAARAgaphs. We have received a couple of submissions, so will have articles for next issues. We need to keep the production of new articles up, to sustain the quality of PAARAgaphs.

Elections: Clark Martin, KK6ISP, our elections chair has finalized the list of candidates for the election. All candidates are running unopposed.

Shri KA6Q, demonstrated his latest version of

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the vote-by-internet application. The board made a few suggestions, which Shri implemented before the end of the meeting. The board unanimously reaffirmed the decision to use Shri's program for this year's election.

Shri, Ric and Clark will compose the voting instructions for inclusion in this newsletter.

Next club meeting December 4 will be on Zoom. Check the PAARA website PAARA.org for meeting details and signup information.

Old Business:

Joel KD6W reports that the new power supply is ready for installation at the 900MHz repeater site. Awaiting time to install.

Joel also has four 3D printing models ready to post on the PAARA website and will work with our webmaster on how to implement adding the files to our site.

New Business:

We had a discussion about the future possibilities for the Electronic Flea Market, which has been a significant source of money for the club. Our conclusion is that we just don't know when the EFM may come back: Partly this is the responsibility of the parent organization, ASVARO.

Marty received a phone call from a ham who would like to donate some towers and dishes to the club. We will wait for an inventory report to decide whether we can take them.

Note that our printer will be closed on 11/26 and 27, and from 12/24 through 1/3/21, so we need to accelerate our newsletter for this month and next.

The board voted to cancel the December Board meeting.

The meeting was adjourned at 9:10 pm.

Respectfully submitted,

Ric Hulett N6AJS

Secretary / Membership Chair

Field Day 2020 results

CALL	Name	SCORE	Category
N6A	Bob Wolbert, (Randy Silverman)	1,558	1B1
W6APZ	Rich Stiebel	190	1C
N6RK	Richard Karlquist	4,646	1D
K6MM	John Miller	1,658	1D
N6AJS	Fred Hulett	692	1D
W6NEV	Marty Waye	550	1D
KG6YUN	Doyle Kisler	90	1D
KM6SKA	John Adam	76	1D
K6SV	Jim Thielemann	994	1E
KM6CPF	David Conroy	800	1E
N6DB	Larry (Rebar) Rebarchik	724	1E
KK6HWP	Mathew Vandercook	298	1E
KG6LWE	Doug Teter	246	1E
KC6TYD	Rob Fenn	204	1E

PAARA membership renewal

December is upon us: Please renew your PAARA membership for next year, and continue supporting our club.

Find details on the PAARA web site:

paara.org/pages/members-current.html

Use PayPal, or send a check for \$25.00 to

PAARA Membership

P.O. Box 911

Menlo Park, CA 94026

PAARA 2020 Election Slate

President

Jim Thielemann K6SV

Vice President

Rob Fenn KC6TYD

Secretary

Ric Hulett N6AJS

Treasurer

Bob Korte KD6KYT

Director (2 Year)

Joel Wilhite KD6W

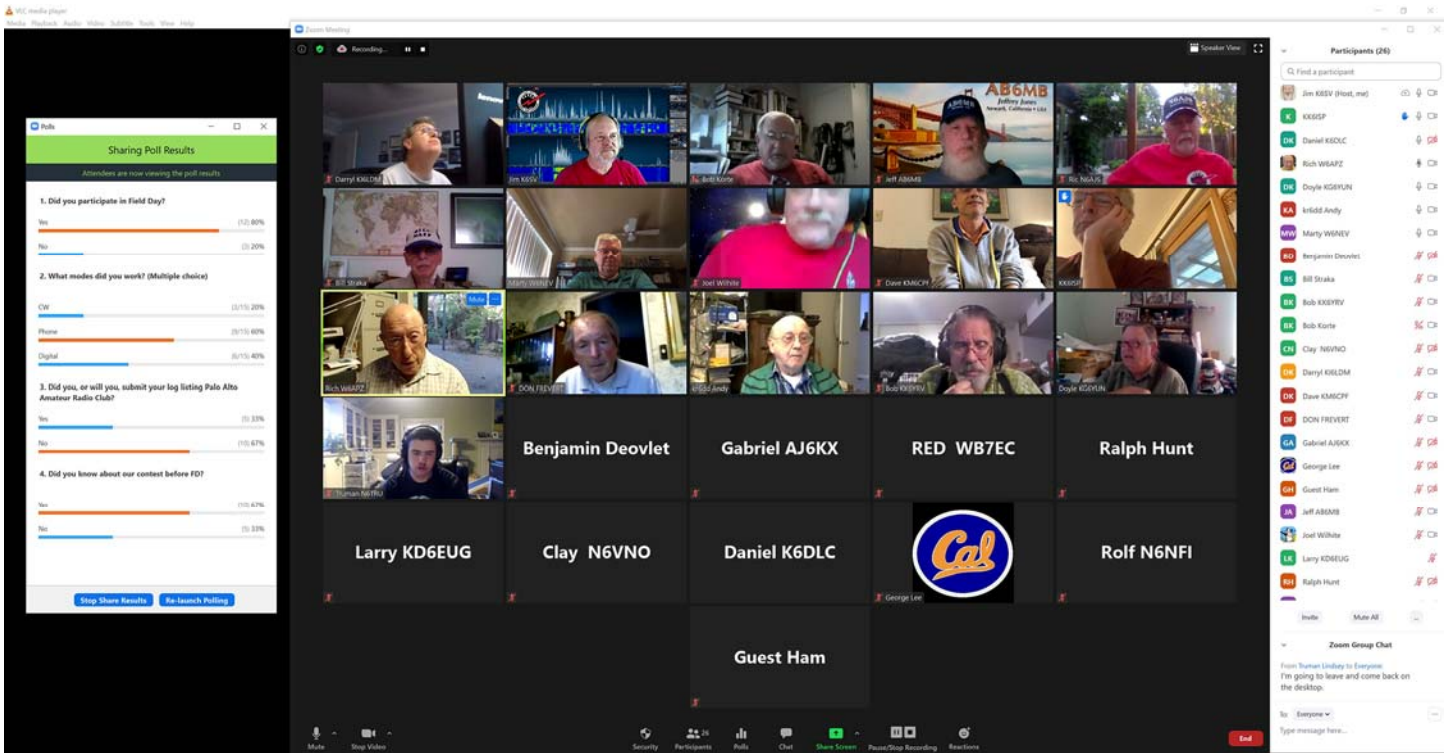
Director (1 Year)

Doug Teter KG6LWE

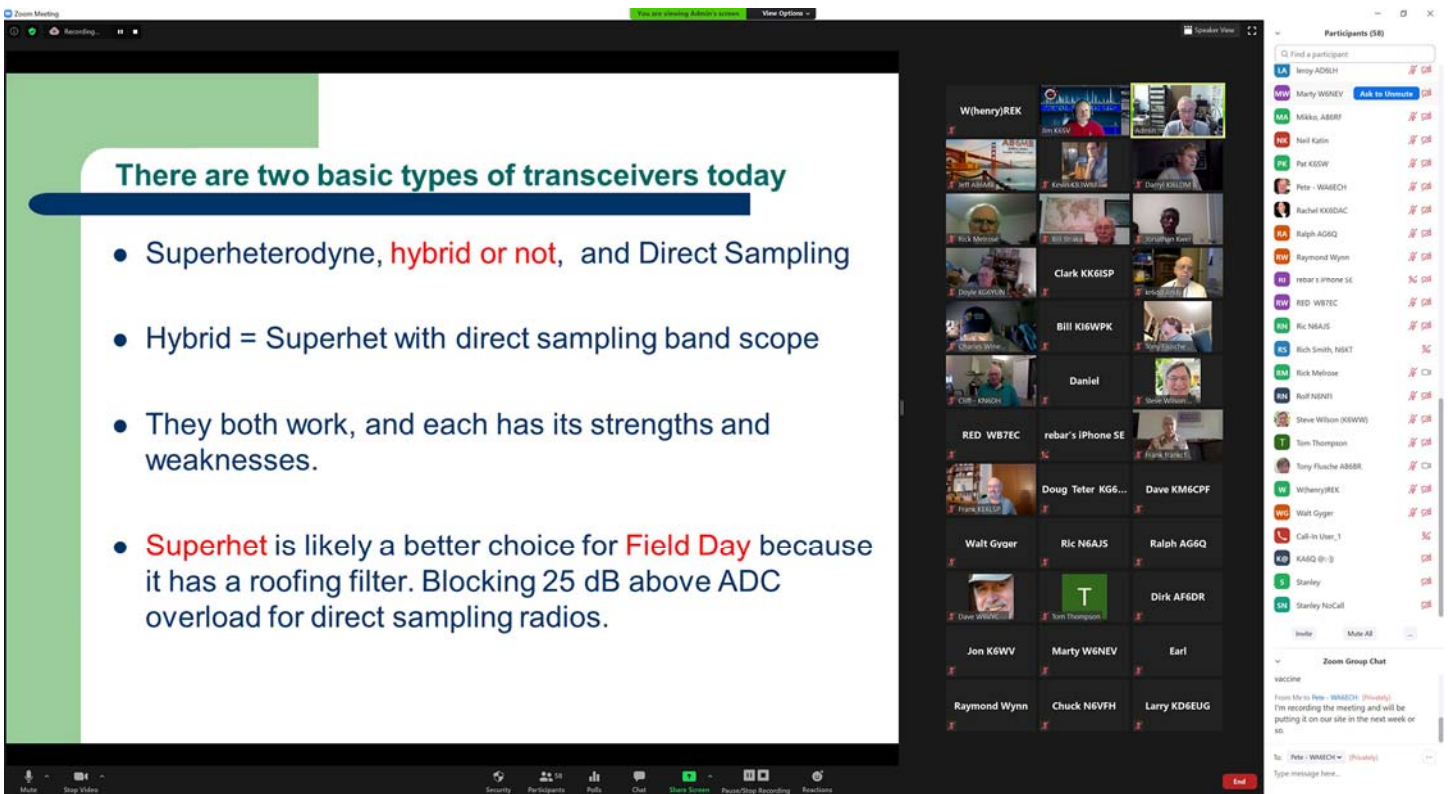
Director (1 Year)

Darryl Presley KI6LDM

2020 — The year of the Pandemic. Gatherings are not recommended. Therefore Zoom Meetings:



July 3rd, 2020 Meeting



August 7, 2020 Meeting

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

President	Jim Thielemann, K6SV	408-839-6815
	thielem@pacbell.net	
Vice President	Marty Wayne, W6NEV	408-234-8023
	w6nev@arrl.net	
Secretary	Ric Hulett, N6AJS	408-332-4593
	energyconserved@sbcglobal.net	
Treasurer	Bob Korte, KD6KYT	408 396 4745
	bob@rgktechsales.com	

Directors

Director ('19-'20)	Joel Wilhite. KD6W	408-839-5948
	kd6w@arrl.net	
Director ('20-'21)	Walt Gyger, K6WGY	408-921-5901
	walt@tradewindsaviation.com	
Director ('21)	Doug Teter, KG6LWE	650-367-6200
	dteter@wawi.com	
Director ('21)	Darryl Presley, K16LDM	650 255-2454
	ki6ldm@arrl.net	

Appointed Positions

Membership	Vic Black, AB6SO	650-366 0636
	ab6so@smrn.com	
Database	Ric Hulett, N6AJS	408-332-4593
	energyconserved@sbcglobal.net	
Chaplain	Rick Melrose K6RDM	408-341-9070
	K6RDM@yahoo.com	
Public Affairs	<i>Position Vacant</i>	
Station Trustee W6OTX, W6ARA....	Gerry Tucker, N6NV	
Station Trustee K6YQT...	Doug Teter, KG6LWE	650-367-6200
Station Trustee K6OTA...	Ron Chester, W6AZ	
Property Manager	Gerry Tucker, N6NV	
Asst. to the Treasurer....	Ron Chester, W6AZ	
Badge Coordinator	Doug Teter, KG6LWE	650-367-6200
	dteter@wawi.com	
Historian Position	<i>Position Vacant</i>	
Raffle Coordinators	Rob Fenn, KC6TYD,	rtyd@aol.com
	Shrikumar, KA6Q	
	shri.paara@enablery.org	
Field Day Coordinator ...	Doug Teter, KG6LWE	650-367-6200
ASVARO Rep.....	Clark Martin, KK6ISP	
	kk6isp@comcast.net	
Webmaster	John Miller K6MM	
	webaron@gmail.com	
Technical Coordinator ...	Joel Wilhite. KD6W	408-839-5948
	kd6w@arrl.net	
QSL Manager	Marty Wayne, W6NEV	408-234-8023
Speaker Coordinator	Marty Wayne, W6NEV	408-234-8023

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	ab6so@smrn.com	
Photographer	<i>Position Vacant</i>	

VE Exams

Redwood City Main Library, Community Conference Room, 4th Saturday 10:30 am each month and De Anza Park, Sunnyvale, 2nd Saturday 10:30 am each month except November and December. See website for details and exceptions: <http://amateur-radio.org> or Contact Al, WB6IMX@att.net

Electronics Flea Market

Sponsorship by A.S.V.A.R.O. — Association of Silicon Valley Amateur Radio Organizations

Second Saturday of month, March-September, 6am–12 noon
 Contact: <http://www.electronicfleamarket.com/>

PAARA — Palo Alto Amateur Radio Association

Meets 1st Friday 7:00pm each month at Room H-6, Cubberley Community Center; Net 145.230 - PL 100Hz Mondays at 8:30. See our website at <http://www.paara.org> for more information or contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:30pm
 Contact: <http://www.fars.k6ya.org>

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:30pm each month,
 Repeater for member info 147.360, Thursday 8:00PM
 Contact: <http://nodxc.org> or Mike Gavin W6WZ, (650) 851 8699

50 MHz & Up Group

Meets 1st Thursday each month at 7pm in the Summit Room at the Sunnyvale Sports Basement, 1177 Kern Ave, Sunnyvale
 Contact: <http://50MhzandUp.org>

SPECS

Southern Peninsula Emergency Communication System

Meets each Monday 8:00pm on Net 145.27, 440.80 MHz
 Contact: <http://specsnet.org> or Tom Cascone, KF6LWZ, 650-688-0441

SCARES

South County Amateur Radio Emergency Service

Meets 3rd Thursday 7:30pm each month, Belmont EOC, Belmont City Hall, One Twin Pines Lane, Belmont CA 94002. Net is on 146.445 [PL 114.8] & 444.50 (PL-100) 7:30 Monday evenings. Contact: President Gary D. Aden, K6GDA 650-743-1265 (D), 650- 595-5590 (N)
 Web: <http://k6mpn.org> E-mail: pres@k6mpn.org

SCCARA

Santa Clara County Amateur Radio Association

Operates W6UU & W6UU/R, repeater 146.985-pl
 Nets: 2m, 7:30pm Mon; 70cm, 10M (28.385) 8PM Thur.
 Meets 2nd Mon each month @ 7:30 PM.
 ARRL/VEC license testing contact 408-507-4698

SVECS — Silicon Valley Emergency Communications

Operates AA6BT repeater (146.115 MHz+)
 contact: <http://www.svecs.net> or Lou Stierer WA6QYS 408 241 7999

TEARS — The Elmer Amateur Radio Society

Dedicated to operational training, knowledge building & FCC exam testing.
 KV6R repeater under construction.

Contact: AA6T@ARRL.NET

Most members are Extra Class or VE's. See QRZ dot com/kv6r for class info

WVARA — West Valley Amateur Radio Association

W6PIY six-meter repeater on 52.58MHz. Normally, six-meters is linked with 147 and 223, while 441 and 1286 repeaters are linked.

VHF: 52.58 (-500) 151.4 ctcss UHF:
 147.39 (+600) 151.4 ctcss 441.35 (+5.0) 88.5 ctcss
 223.96 (+1.6) 156.7 ctcss 1286.20 (-12m) 100.0 ctcss

Meetings are 2nd Wednesday of every month except July, August and December.
 Contact: <http://wvara.org>, Bill Ashby N6FFC, 408-267-3118, president@wvara.org

American Red Cross, Santa Clara Valley Chapter

Contact: <http://santaclaravalley.redcross.org> or Scott Hensley KB6UOO, (408) 967 7924 shensley@Novell.com

(Please send changes to PAARAgaphs editor)

WE ARE PLEASED TO ANNOUNCE
THE NEXT CHAPTER FOR US:

HSC HAS SOLD TO

EXCESS SOLUTIONS!



That's right!

- ✦ Halted Specialties Co., Inc. has sold HSC Electronic Supply to Excess Solutions of San Jose...making the biggest surplus electronics store in the Bay Area!
- ✦ Much of the millions of parts seen on HSC's shelves will be showing up soon on Excess Solutions' shelves...for your electronic needs.
- ✦ Techs, Developers, Experimenters, Hobbyists and Creators will once again have access to the basic parts that Silicon Valley was built upon!
- ✦ Support your local surplus store...there are few left, and you know how much this Silicon Valley resource is needed!

Excess Solutions and HSC Electronic Supply

Now under one roof!

1555 S. Seventh St.


San Jose, CA 95112

(Diagonally across intersection from Spartan Stadium)

1-408-262-3900 www.excesssolutions.com

ES Excess
Solutions

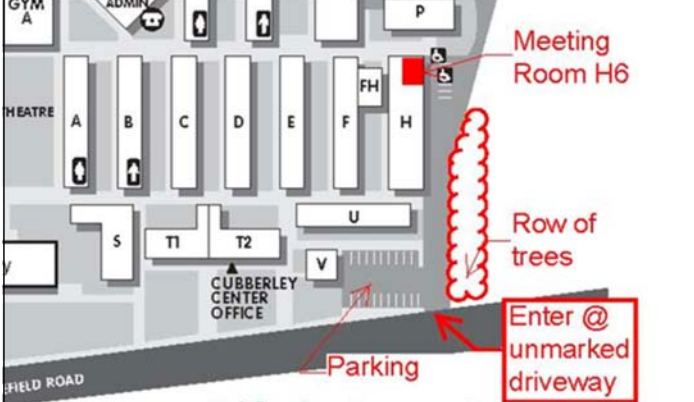
HSC Electronic
Supply



James Farrey
 Sales Manager

James Electronics Ltd
 1355 Shoreway Road, Belmont, CA 94002
 Tel: 650•592•6718 x 350 Fax: 650•802•1520
 Direct: 650•802•1511 jfarrey@jameco.com

www.jameco.com



Cubberley Community Center
 4000 Middlefield Road, Palo Alto, CA 94303
 650/329.2418
 650/856.8756 fax
 www.cityofpaloalto.org

PAARA Weekly Radio Net

Info and Swap Session
 every Monday evening at 8:30pm
 on the N6NFI 145.230 MHz repeater

Week	Control Operator
1 st	Joel - KD6W
2 nd	John - W6JMK
3 rd	Ric - N6AJS
4 th	Rob - KC6TYD
5 th	Rob - KC6TYD

If you're interested in trying out at Net Control, Contact Doug, KG6LWE. It's good practice, and lots o' fun! Give it a try.

Meeting Location — Middlefield Road between San Antonio and Charleston in Palo Alto. 4000 Middlefield Road




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Contact
 Maya and Walter Gyger
 1-408-729-5100
 mail@tradewindsaviation.com

Address
 2505 Cunningham Ave, San Jose, CA 95148

Information
 www.tradewindsaviation.com

Opening hours
 Monday-Friday: 8 AM – 7 PM; Saturday-Sunday: 8 AM – 6 PM



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Palo Alto Amateur Radio Association
 P.O. Box 911, Menlo Park
 California 94026-0911

Club meetings are on the first Friday of each month, 7:00pm at the Room H-6, Cubberley Community Center.

Radio NET & Swap Session every Monday evening, at 8:30pm, on the 145.230 –600 MHz repeater, PL 100Hz.

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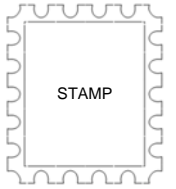
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PAARAgaphs — December 2020

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