

# PAARAgraphs



The Official Newsletter of the

**Palo Alto Amateur Radio Association, Inc.**  
Celebrating 85 years as an *active* amateur radio club—*Since 1937*

## Home Brew Night

### Featuring

#### The Tin-Can Tower Portable Antenna Hiroki Kato, AH6CY

It's Home Brew Night! Come see some creative DIY creations a few hams have brewed up recently. And talk about home brew, our special guest, Hiroki Kato, will talk about his 15 meter portable antenna made out of coffee cans as featured in the August 2021 QST.

Hiroki was born in Hiroshima in 1942. He got his first call in 1957 as JA4AAO.

His first station consisted of a 5 watt 40m transmitter with a 6V6 final tube and a 5-tube superhet receiver, all home-brewed. His first antenna was a dipole suspended between two 30 feet tall bamboo poles which he secured from a hill near his house. He came to the US after college to do graduate study in political science and linguistics. Dr. Kato taught in a number of universities, including Northwestern and Harvard, for twenty years. He left academia in 1989 to come to California to work for several early Silicon Valley startups.

*(Speaker — Continued on page 2)*

**This meeting will be held at  
Cubberly Community Center and Zoom  
(See Ad Section for Location)  
Masks Are Required at Cubberly**

Time: Jan 7, 2022 07:00 PM Pacific Time  
<https://us02web.zoom.us/j/88408702008>

Login ID: First name and Call Sign

Meeting ID: 884 0870 2008

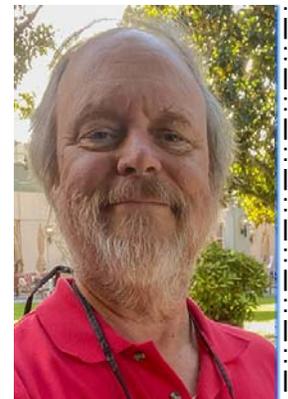
## Upcoming Events

Jan 7***	PAARA General Meeting, 7:00 PM
Feb 4	In-Person and Zoom Meeting
Mar 4	*** Jan IRL Meeting 
Jan 19	Board Meeting, 7:00 PM.
Feb 16	Everyone welcome! Zoom Meeting,
Mar 16	eMail President for details!
Jan	Electronic Flea Market Cancelled

## President's Corner

January 2022

I hope everyone had a wonderful Holiday season to close out 2021, though it will not quite be over when you receive this issue. Happy New Year and welcome to 2022! I don't know about you but I'm hopeful we'll be able to resume some of the "old" (pre-Covid19) PAARA activities. Closing out last year saw some of the activates resume. With two successful eyeball QSO meetings, a November raffle, and our December Dream to Reality raffle rounding out the year. To start the New Year off right, our January 7th meeting is Home Brew night. Don't forget to bring that project you've been working on for the last couple of years but couldn't show due to Covid.



Thanks go to Joel, KD6W, for providing and op-

*(President — Continued on page 6)*

(Speaker — Continued from page 1)

Hiroki enjoys home-brewing, boat-anchor restoration, collecting spy radios and outdoor QRP operations. He is QRV from home on all HF bands with CW, SSB and digital modes with a stealth balcony railing antenna. He has written over 30 articles for ham radio magazines, including QST, CQ and Electric Radio. His book, "The Paraset Radio," was published in 2020 by the RSGB.

He obtained his current call when he lived in Honolulu and taught at the University of Hawaii. Katashi Nose, KH6IJ (SK), the legendary DXer was his faculty colleague.

### **Vic Black, AB6SO, Awarded PAARA Life Membership**

At PAARA, members who have a long history of club support and leadership are named Life Members. This award is determined by the Officers and Directors, and presented at a club meeting.

This year, we have decided to honor Vic Black, AB6SO. Vic's membership in the club dates back to his early days as a ham, in the dim recesses of time.

Vic is an active supporter of PAARA: He served as a prolific PAARA-graphs columnist (Web Wanderings, PAARA Ponderings), PAARA Secretary, then Vice President and Program Director, and then PAARA President.

Vic has always been a strong independent ham. He always believed in the important work PAARA was doing and he developed and executed his plan for inviting new hams to club meetings completely on his own. He didn't have to be asked to help out on a club project. He created his own projects that benefitted ham radio and made PAARA grow.

In recent years, Vic has kept busy activating mountaintop locations for Summits on the Air (SOTA).

At the December PAARA meeting, the club awarded him Life Membership. Congratulations, Vic!

Note: See proclamation on Page 5.

## **Flag Antenna for HF DF'ing** **Andy Korsak KR6DD**

### **Background**

The May 2021 QST front cover article by Don Kirk, WD8DSB, caught my attention because I've been involved in Radio Direction Finding (RDF) for many decades but only on VHF/UHF. About 7 years or so I designed and built a Doppler DF (DDF) array for HF using four Ham Sticks, one set for 75 m and another for 40 m, securely mounted to a steel 6X6 ft frame that sat on top of my Honda Civic Hybrid 4D sedan and was bolted to a pair of Yakima car top carrying bars. For that DDF array I built an antenna switching box using the same circuit as in my Ramsey Electronics DDF-1 for VHF/UHF mobile DF'ing but with all R's, C's and L's (chokes) scaled by a factor of about 35-40:1 – the ratio of 2 m to 80 m wavelength. That DDF array kind of worked, but the whole idea flopped when I discovered that mobile DF'ing was impossible: (a) the hybrid car made enormous RF noise, so I could get bearings only when stopped and engine turned completely off (even in "accessory" mode there was significant noise), (b) Ham Sticks are extremely narrow band on 75 m and 40 m, so I had to lower them one at a time at their swivel mounts to re-tune each one using my Rig Expert AA-54, and (c) it was dangerous driving with such tall antennas so I had to bungee chord them down to the steel frame for driving.

Later, after I downsized and moved to Mountain View in 2016, I gave up on the Ham Sticks idea and built a smaller Doppler DF (DDF) array using 4 horizontal untuned loops on top of 1 ft PVC pipes attached to an array of wooden sticks bolted to a 20X20 inch H-shaped four-magnet aluminum mount which I had used in the past to support my 3.5 to 30 MHz Webster Band Spanner tunable mobile antenna. I wrote an article about the Ham Stick and 4-loop projects for the PAAR-

(Flag Antenna — Continued on page 3)

(Flag Antenna — Continued from page 2)

AGRAPHS Jan 2019 issue <http://paara.org/newsletter/2019/graph0119.pdf>. The 4-loop array again kind of worked, but it was much too inefficient, the 1 ft diameter loops being not resonated. Only very strong signals at any distance beyond 100 ft could be DF'ed. I mounted transistor amplifiers at the loop terminals and later a 5<sup>th</sup> one inside a box containing a pi-tank matching circuit between the antenna switching box and my FT-857D, but the whole package was still too insensitive. I set the project aside while developing SW on a Raspberry Pi (Rpi2B) for capturing bearings from a Ramsey Electronics DDF-1 unit in which I tapped into the circuit with a ribbon cable to read antenna switching signals and a strobe line that defines when a bearing turns on one of 16 LED's on the display.

Just before the Covid pandemic I won a prize after submitting the horizontal loops DDF array version to the Foothills Amateur Radio Society (FARS) annual home brew contest every September. I used my vanilla DDF-1 to switch antennas and my FT-857D in NFM mode to feed Doppler tone audio to the DDF-1. This HF DDF system pointed to a small 7 MHz QRP TX held by another contestant (who also won a prize for submitting that TX to the contest) as he walked around the periphery of the FARS meeting room.

### Flag antenna inspiration

When I saw the Mar '21 QST cover I excitedly read the article and decided to make a flag



Fig. 1 — My Flag Antenna

antenna because it's main advantages are (a) it is broad band – no tuning required, (b) it has a very high front to back ratio – as high as 21 dB claimed by Don WD8DSB in his Mar '21 QST article. Don used 4NEC2 antenna design and modeling software (SW) to optimize his flag antenna for locating distant power line noise sources.

BTW a flag antenna could have helped Darryl KI6LDM to locate his power line QRM source (see his Nov '21 PAARAGRAPHS article Part 1). Recently I located the source of a strong birdie on 20 m at the QTH of Christopher AI6KG using my GP5 hand held HF RX immersed in a wave-guide-below-cutoff attenuator tube, dipping the GP5 up and down as I walked around his neighborhood. My flag antenna would have located the source “lickety split”, no hassles! <https://www.phrases.org.uk/meanings/lickety-split.html> Same goes for the case of the horrible 75 m QRM near the QTH of a ham in Saratoga, where I walked around finally pinning it down to a house near him probably growing weeds inside. Also a few years ago Colin KM6NTW and I wasted much time and effort walking around his QTH in Redwood City trying to locate the source of his horrible hash on 40m by using only signal strength and no directivity device. We never did find that hash source, but I just drove over there with my flag antenna on Dec 19 afternoon, just in time for updating this article for the PAARAGraph editors as they are putting together the bulletin.

The flag antenna clearly pointed to a house one closer to Colin's QTH than the house we first suspected. Both of those houses have solar panels on their roofs.

Don WD6DSB uses a broad band preamp from DX Engineering



Fig. 2 — Mop and

(Flag Antenna — Continued on page 4)

(Flag Antenna — Continued from page 3)

but, to my surprise, my flag antenna works great for my purposes even without a preamp. I made my flag antenna somewhat bigger by using 3 ft sticks attached to a mop handle by bolts with wing nuts. It forms a roughly 1 m by 2 m rectangle that can be easily collapsed by simply removing the top 80 lb test fishing line, so when it is folded up it fits in my car trunk. Don uses a 680 to 820 Ohm terminating resistor, which BTW needs to be non-inductive. I found empirically that 750 Ohms (two 1.5K in parallel) works best for my selection of flag antenna and wire size (TEF 22 AWG).

### HF DF'ing tests

The first thing I tried was to get bearings on 5 and 10 MHz to WWV in Hawaii and Colorado. At qrz.com I looked up a ham in Hawaii and one in Colorado Springs, and using my precise Brunton compass my bearings were within 1 to 2 degrees! Next, Bill AI6LL 3.5 mi ESE of me sent some CW just above 3.5 MHz and the deep null pointed precisely to his QTH. Later Bill sent some LSB voice on 7.2 MHz, then Andy WB6CLS chimed in on 75 m LSB from Los Altos Hills and the flag antenna nicely pointed to where they live. Another day I was asking on the N6NFI repeater for someone to key up on various HF bands for me to try getting a bearing. Robert KR6TFU sent me a test signal but it was too weak. Then he reminded me about a 10 m beacon operated by Henry W6REK out of San Jose, so I heard it, twirled the flag antenna, and there it was —

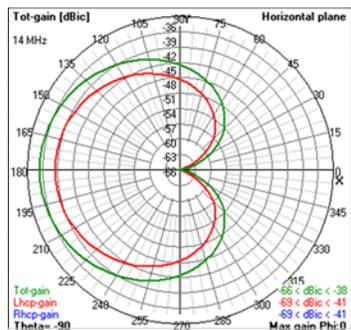


Fig. 3 — 4NEC2 Horizontal Plot for 144 MHz

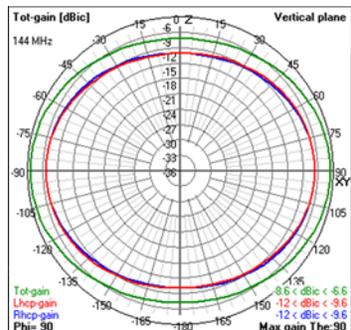


Fig. 4 — 4NEC2 Vertical Plot for 144 MHz

clean bearing to where I know he lives. Then Robert said there is a strong beacon at 28.2 MHz every 3 minutes on Mt Umunum, so I got a correct bearing on that one too. Earlier one day I heard a ham on 20 m saying he is in Louisiana, so I twirled the flag and got a roughly eastward bearing. I also jiggled the flag support to and fro and got a rough elevation angle of 10 to 15 degrees. The flag also got correct bearings on a 15 m

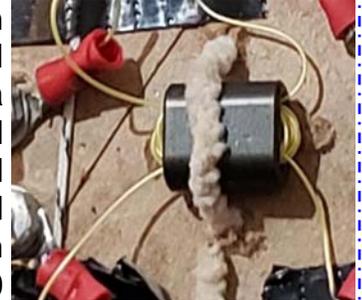


Fig. 5 — HF Binocular Toroid

signal once. I have yet to try it on 6 m. Just for kicks, I tried it on 2 m and got an S6 report from the N6NFI repeater, about the same as with my rubber duck. However, on 2 m 4NEC2 did not produce a cardioid plot with a deep null as it did for HF, and my VHF/UHF SWR meter showed and almost infinite SWR whereas the theoretical SWR at 144 MHz is nearly 1:1 in the plot shown in a 4NEC2 plot. I suspect that the binocular toroid recommended by WD8DSB for HF doesn't work on 2 m and my signal was being radiated by the RG58 coax from the SWR meter to the toroid!.

Now that I have a working tool for HF DF'ing I plan to try getting bearings from home on some of those bad guys jamming and playing music, re-broadcasting recordings of other hams they hate, e.g. during the Tuesdays, Thursdays and Sundays 8 PM WARFA net on 3908 kHz and also other evenings on various frequencies — recently they've been on 3840 to 3845 kHz. I do not intend to go hunting them down, however, as I was originally planning to do using a mobile HF Doppler DF, not only because I never could get my Doppler HF arrays to work adequately, but also because I have been warned about some of those guys being very dangerous criminals.



In recognition of his unwavering support of all PAARA activities for more than Thirty years, during which time Vic always believed in the important work PAARA was doing, developed and executed his plan for inviting new hams to the club, served as a prolific PAARA-graphs columnist (Web Wanderings, PAARA Ponderings), PAARA Secretary, then Vice President and Program Director, and then PAARA President. . .

**The Officers and Directors of the  
Palo Alto Amateur Radio Association  
do hereby award and bestow upon**

**Vic Black, AB6SO**  
**a Lifetime Membership**  
on this date of 3 December 2021



*(President — Continued from page 1)*

erating the solution to add Zoom attendees to an IRL (In Real Life) meeting. We've been tweaking it at each meeting to refine our approach. We're getting closer to a final configuration but have a big test during January's meeting. We have one Home Brew project presentation, though there may be more that haven't stepped up yet. We also have a presentation by Hiroki Kato, AH6CY, who will also be using Zoom. Joel and I got together to test the audio connection to the sound system. It worked great but we all know how Murphy loves to stick his fingers in things at the last minute. Hopefully, he'll leave well enough alone.

What we need are a couple of members to step up to learn and assist Joel in setting up the video equipment to interface Zoom into the IRL meeting. It took Joel about an hour last time to get things going. Part of that time was spent figuring a couple of things out but much of it was running cables, mounting cameras, and connecting the head end. The setup time needs to be shortened to less than 30 minutes as that's about how much time we have in the room before the meeting starts. Please talk to Joel or me at the January meeting to offer your assistance.

We should also thank Doug, KG6LWE, for managing the Zoom part of the meeting. When we were all on Zoom, Doug assisted me in managing the attendees. Now that I'm not on Zoom but in the IRL meeting, Doug is overseeing all Zoom attendees. Thanks, Doug, for making my job easier!

As long as we're recognizing members, please join me in thanking Clark, KK6ISP, for conducting another successful Election. He's conducted quite a few over the last few years and is to be commended for his efforts. We also need to thank Shri, KA6Q, for his voting program that made it possible for members to vote IRL and via Zoom. Great job to the Election committee! Should you not know the results, all officers and directors were re-elected.

Please join me in congratulating Rob Fenn, KC6TYD. If you weren't at the December meeting, Rob was the winner of the Dream to Reality

KX3! Rob was in the process of testing out, and learning, the K3 the club acquired from an SK. "I have a head start on understanding how to use this radio", he proclaimed. We expect a full report at the January meeting.

Outside of the January Home Brew meeting, what's on your calendar for the start of the year? Maybe it will be Straight Key Night on January 1st that will start your year. More info is found at: <http://www.arrl.org/straight-key-night>. What about Winter Field Day? Starting on January 29, it runs for 24 hours to Sunday the 30th. More information can be found at: <https://www.winterfieldday.com/>. There's a rumor that several PAARA members may make the trip to Quartzfest in Quartzsite, AZ, this year. This ham/camping event runs from January 23rd to the 29th. As they say, the more the merrier. Remember Rob (KC6TYD), Rachial (KK6DAC), and Frank & Karen's (AF6XX & KK6NGA) fun presentation a couple of years ago about the event? More information can be found at: <https://quartzfest.org/>.

If none of those activities line up with your interests, there is always the Parks on the Air (POTA) to participate in. Countless parks in the US can be activated as you travel around. It's a fun way to mix ham radio with seeing lots of different parks around the country and for that matter the world. More info is at: <https://parksontheair.com/>. Or, if hiking to high places is more your thing, Summits on the Air (SOTA) is the activity for you. You can take that mobile rig you got for Christmas to the top of a mountain and test your skills as you take in the breath-taking view, just ask Vick, AB6SO, who's an active participant. More info can be found at: <https://www.sota.org.uk/>.

Now's the time to start blocking out your 2022 calendar for some ham-related event that is of interest to you. There are lots of things to get involved with throughout the year. There's a better than 50% chance we'll even be able to have Field Day on June 25th-26th this year. Now's the time to block those dates out and stay tuned for more info as the year moves

*(President — Continued on page 7)*

(President — Continued from page 6)

along.

One other note, as some members have noted, PAARA acquired equipment from two different recent SK's. We also have some vintage equipment that has been collected over the years. A few members are interested in the more recent acquisitions. The board has discussed this equipment over the last couple of meetings. I intend to have a final resolution as to the disposition of the equipment during the January 19th board meeting. The decision of the board will be published in the February issue of PAARAgaphs and announced at the February meeting.

One last item, during the December meeting, Vick, AB6SO, was awarded PAARA Life Membership for all his efforts over the last 30 years or so! He's been an inspiration to so many over the years and more than deserves the honor. Please congratulate him in person should your paths cross at some point.

73, Jim K6SV

Get on the air to keep the airwaves alive!

# PAARA



4<sup>th</sup> Countcomm EDC Items



3<sup>rd</sup> Powerwerx TRICRIMP



2<sup>nd</sup> \$60 Gift Card



1<sup>st</sup> Countycomm GP-5B/SSB



**December Raffle Winners and Eric**  
 Left to Right

- |                  |                          |
|------------------|--------------------------|
| Mikko            | 3rd Reteless Radio       |
|                  | 4th Anderson Power Poles |
| Charles, KK6IPR  | 2nd Rotary Ratchet Drive |
| Rob              | KX3                      |
| Eric of Elecraft |                          |

## 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 .....	Rob Fenn, kc6tyd	650-888-9060
	kc6tyd@gmail.com	
Secretary .....	Ric Hulett, N6AJS	408-332-4593
	energyconserved@sbcglobal.net	
Treasurer .....	Bob Korte, KD6KYT	408 396 4745
	bob@rgktechsales.com	

### Directors

Director ('21-'22) .....	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	
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 .....	Rob Fenn, kc6tyd	650-888-9060

### PAARAgaphs Staff

Editorial Board		
	Bob Van Tuyl K6RWY	Kristen McIntyre K6WX
	Ron Chester W6AZ	Vic Black AB6SO
	Joel Wilhite, KD6W	Jim Thielemann K6SV
Editor .....	Bob Van Tuyl, K6RWY	408 799-6463
	rrvt@swde.com	
Back Up Editor .....	Jim Thielemann, K6SV	408-839-6815
	thielem@pacbell.net	
Advertising .....	Walt Gyger, K6WGY	408-921-5901
	walt@tradewindsaviation.com	
Member Profiles .....	<i>Position Vacant</i>	
Technical Tips .....	Vic Black, AB6SO	650-366 0636
	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](mailto: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 1<sup>st</sup> 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](mailto:KD6W@ARRL.NET), 650-325-8239

## FARS — Foothills Amateur Radio Society

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

## NCDXC — Northern California DX Club

Meets 3<sup>rd</sup> Thursday 7:30pm each month,  
 Repeater for member info 147.360, Thursday 8:00PM  
 Contact: <http://ncdxc.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>

## San Mateo Radio Club W6UQ.ORG

Meets, 3<sup>rd</sup> Friday, January through November  
 Tuesdays, [Directed] Net, 7pm, N6ZX 145.370Hz -600KHz PL107.2Hz  
 Contact: <http://W6UQ.org/calendar>

## 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 3<sup>rd</sup> 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](mailto: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 2<sup>nd</sup> 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](mailto: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](mailto: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](mailto:shensley@Novell.com)

(Please send changes to [PAARAgaphs editor](mailto:PAARAgaphs editor))

# EXCESS SOLUTIONS

## ELECTRONIC SURPLUS MEGA-STORE!

**We have completed our move, you should visit to see the new store!**

- ✦ That's right...Excess Solutions in San Jose recently lost the lease on their old site as the property was sold. We have moved to new premises very nearby at the far end of S. Seventh St., just before Tully Rd. It's easy to find!
- ✦ Techs, Developers, Experimenters, Hobbyists and Creators will once again have access to the basic electronic parts, hardware and infrastructure that Silicon Valley was built upon!
- ✦ Support your local surplus store...there are few left, and you know how much this vital Silicon Valley resource is needed!

**Hardware - Nuts - Bolts Screws**  
 Spacers - Standoffs Keyways -  
 Dowel Pins - Fans  
 Springs - Feet - Clips - Motors

**Computers - Monitors**  
 Modems - Cases  
 Power Supplies  
 Keyboards - Mice

**Electronic Components - IC's**  
 Semiconductors - Wire  
 Switches - Relays - Cables  
 Capacitors - Shrink Tubing  
 Fiber Optics - Connectors

**Tech Benches - Work Stations**  
 Conference Tables - Desks  
 Chairs - Kiosks - Lunchroom  
 Furniture - Other Office Items

**Tools - Wrenches - Sockets - Pliers**  
 Screw & Nut Drivers - Allen Wrenches  
 Impact Guns - Arbor Presses - Solder &  
 Desolder Equipment - Test Equipment

**Security Cameras - Shelving**  
 Lighting Systems  
 Entertainment Systems  
 Process Equipment

### Excess Solutions

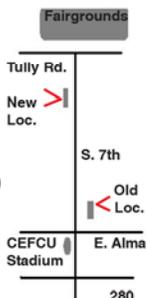
2070 S. Seventh St., Unit C  
 San Jose, CA 95112

(Approx. 5 blocks down Seventh St. from old site!)

1-408-262-3900 --or-- visit us online!

Web: [www.excesssolutions.com](http://www.excesssolutions.com)

eBay Stores: "excess-solutions"



### Store Hours

Mon. - Thur. 8:00 - 6:00, Fri. 8:00 - 5:00, Sat. 10:00 - 3:00





**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

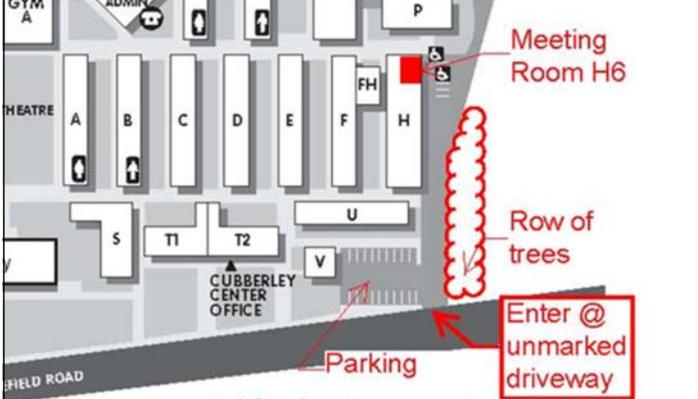
www.jameco.com

### 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 <sup>st</sup>	Joel - KD6W
2 <sup>nd</sup>	John - W6JMK
3 <sup>rd</sup>	Ric - N6AJS
4 <sup>th</sup>	Rob - KC6TYD
5 <sup>th</sup>	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.



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

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

### Tribulations about moving?

**We Have Seen It All And I Can Help You**

Experienced in Residential and Commercial Property, Full time REALTOR since 1975

Call me at Terrace Associates, Inc.  
 MOBILE 650-274-8155, OFFICE 650-369-7331

**KARL DRESDEN**, R.E.# DRE 00525686  
 KJ6GUK General License, PAARA member  
 777 Woodside Rd., Suite B, Redwood City, CA 94061  
 Email: KARLDRESDEN@juno.com

### 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.

Membership in PAARA is \$25.00 per calendar year, which includes one subscription to PAARAgaphs \$6 for each additional family member (no newsletter).

Make payment to the  
 Palo Alto Amateur Radio Association,  
 P.O. Box 911, Menlo Park, CA 94026-0911

Permission is granted to reprint from this publication with appropriate source credit.




**THE SKY IS NO LIMIT!**

**SCHEDULE YOUR INTRODUCTORY FLIGHT LESSON TODAY**

AT



**Your One Stop Shop For Aviation Services**

- > Flight Training
- > Aircraft Rental
- > Pilot Supplies
- > Maintenance
- > Aircraft Sales

**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



ARV'S, WA6UUT (SK)  
**WEDNESDAY  
 HAM RADIO  
 LUNCHEON**  
 Our 11<sup>th</sup> year!  
 - Since May 2, 2007 -  
**BLACK BEAR DINER**  
**Sunnyvale, California**  
 415 East El Camino Real  
 (Just "North" of South Fair Oaks  
 Avenue on El Camino Real)  
**11:30 AM ~ 3:00 PM**  
 Website: [www.blackbeardiner.com](http://www.blackbeardiner.com)

Many food choices available from the breakfast, lunch or dinner menus. Ample parking is available. Walk in & "bear" left for our location in the restaurant!

NOT A CLUB, CLOSED GROUP OR CLIQUE; AMATEUR RADIO OPERATORS AND FRIENDLY PEOPLE ARE ENCOURAGED TO ATTEND!

Submit items to  
**PAARAgaphs**  
 by the 3rd Wed to:  
[rvt@swde.com](mailto:rvt@swde.com)  
 Text: .doc, .rtf,  
 or .txt  
 Photos:  
 jpg, png or tiff

Subscription  
 Problems?  
 Contact Database  
 Manager:  
 Ric Hulett, N6AJS  
 408-332-4593  
[energyconserved@sbcglobal.net](mailto:energyconserved@sbcglobal.net)



**Have you discovered us?**  
 Silicon Valley's favorite brick'n'mortar for components and supplies for prototyping  
 (408) 727-3693

**Anchor Electronics** 2040 Walsh Ave, Santa Clara  
 Download our Price List PDF  
[www.anchor-electronics.com](http://www.anchor-electronics.com)



PowerFlare® safety lights:  
 Ultra-rugged 360 degree LED beacon for your emergency kit, car, home ...  
[www.powerflare.com](http://www.powerflare.com)

PAARA W6OTX DMR Repeater Frequencies	
144 – 144.9625 up 2.5 MHz	DMR—NOR CAL Brandmeister Network
440 – 444.475 up 5 MHz	DMR
900 – 927.225 down 25 Mhz PL: 100Hz	On Line

*Silicone*  
**RESCUE TAPE**  
**NO ADHESIVE! NO STICKY RESIDUE!**  
**8,000 V 500° F**  
 ELEC. INSULATION HEAT RESISTANCE

**The highest quality coax sealing tape on the market!**

**ENTER YOUR SPECIAL COUPON CODE TO GET THE PAARA DISCOUNT**  
 Order online at [www.rescuetape.com](http://www.rescuetape.com) - (702) 953-0968

## PAARA Badges

In the absence of in person meetings, you can still order a badge from the Club's website, [PAARA.org](http://PAARA.org). Go to the bottom of the membership page to order. Badges will be mailed to purchasers, at an additional cost of \$4.95 until we can meet face to face again.

### PAARAgaphs Ad Rates

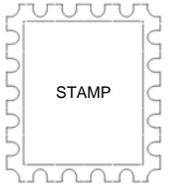
PAARAgaphs accepts paid advertisements from non-members. (short personal ads remain free for members in good standing). **All ad rates listed are per issue.**

- Not-for-profit ads by association members for ham-related items and wants. No cost for business card-size ads (additional space at \$2.50 per business card size per issue).
- For Profit organizations and/or individuals: \$5-business card size, \$14.00-quarter page, \$25-half page, \$50 full page or back cover per issue. These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association. The PAARAgaphs editors reserve the right to reject any ad deemed to be not in the best interest of the Association.

All fees payable in advance by the year with "scanner-ready" copy or text-only ads. **Give payment and copy to Walt Gyger, K6WGY.**

# PAARAgaphs — January 2022

Accept no substitutes. Produced and printed in California USA



Palo Alto Amateur Radio Association, Inc.  
 PAARAgaphs Newsletter  
 P.O. Box 911  
 Menlo Park, California 94026

**FIRST CLASS MAIL**

Address Service Requested

**HAM RADIO OUTLET**  
 50th ANNIVERSARY  
 Special HRO Holiday Pricing!  
 WWW.HAMRADIO.COM



**FDX101MP | 200W HF/50MHz Transceiver**  
 • Hybrid SDR Configuration • Unparalleled 70dB Max. Attenuation VC-Tune • New Generation Scope Display 3QSS • A81 (Active Band Indicator) & MPRVD (Multi-Purpose YFO Outer Dial) • PC Remote Control Software to Expand the Operating Range • Includes External Power With Matching Front Speaker



**FDX10 | HF/50MHz 100W SDR Transceiver**  
 • Narrow Band and Direct Sampling SDR • Down Conversion, 9MHz IF Roofing Filters Produce Excellent Shape Factor • 5" Full-Color Touch Panel w/3D Spectrum Stream • High Speed Auto Antenna Tuner • Microphone Amplifier w/3-Stage Parametric Equalizer • Remote Operation w/optional LAN Unit (SCU-LAN10)



**FT-991A | HF/VHF/UHF All Mode Transceiver**  
 Real-time Spectrum Scope with Automatic Scope Control • Multi-color waterfall display • State of the art 32-bit Digital Signal Processing System • 3MHz Bandpass Filter for enhanced performance • 3.5 inch Full Color TFT USB Cable • Internal Automatic Antenna Tuner • High Accuracy TCXO



**FDX101D | HF + 6M Transceiver**  
 • Narrow Band SDR & Direct Sampling SDR • Crystal Roofing Filters Phenomenal Multi-Signal Receiving Characteristics • Unparalleled -70dB Maximum Attenuation VC-Tune • 15 Separate (HAM 10 + GEN 5) Powerful Band Pass Filters • New Generation Scope Displays 3-dimensional Spectrum Stream



**FT-891 | HF+50 MHz All Mode Mobile Transceiver**  
 Rugged Construction in an Ultra Compact Body • Stable 100 Watt Output with Efficient Dual Internal Fans • 32.8ft. IF DSP Provides Effective and Optimized QRM Rejection • Large Dot Matrix LCD Display with Quick Spectrum Scope • USB Port Allows Connection to a PC with a Single Cable • CAT Control, PTT/RTTY Control



**FTM-3000DR | CFM/FM 144/430MHz Dual Band**  
 • 50W Reliable Output Power • Real Dual Band Operation (V-A, U-L, U-V, U-W) • 2-inch High-Res Full Color TFT Display • Band Scope • Built-in Bluetooth • WIRELESS X-Portable Digital Mode/Rixed Mode with HX-200



**FT-2968OR | Heavy-Duty 80W 2M FM Transceiver**  
 • Massive heatsink guarantees 80 watts of solid RF power • Load 3 watts of audio output for noisy environments • Large 6 digit backlit LCD display for excellent visibility • 200 memory channels for serious users



**FT-818ND | HF/6M/2M/440 All Mode Portable Xciv**  
 • Ultra-Compact/Portable • Multi-Color Easy to See LCD • 208 Memory Channels/10 Memory Groups • Built-in Electronic Keyer • Internal Battery Operation Capability • Two Antenna Connectors • Built-in High Stability Oscillator ±0.5 ppm



**FTM-400XD | 2M/440 Mobile**  
 • Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bps ready • spectrum scope • Bluetooth • MicroSD slot • 500 memory per band



**FT-70DR CFM/FM 144/430MHz Xciv**  
 • System Fuse on Compatible • Large Front Speaker delivers 700mW of Loud Audio Output • Automatic Mode Select detects CFM or FM Analog and Switches Accordingly • Huge 1.105 Channel Memory Capacity • External DC Jack for DC Supply and Battery Charging



**FT-5DR CFM/FM 144/430 MHz Dual Band**  
 • High-Res Full-Color Touch Screen TFT LCD Display • Easy Hands-Free Operation w/Built-in Bluetooth® Unit • Built-in High Precision GPS Antenna • 1200/9600bps APRS Data Communications • Supports Simultaneous CFM Digital • Micro SD Card Slot



**FT-65R | 144/430 MHz Transceiver**  
 Compact Commercial Grade Rugged Design • Large Front Speaker Delivers 1W of Powerful Clear Audio • 5 Watts of Reliable RF Power Within a Compact Body • 3.5-Hour Band Charger Included • Large White LED Flash-light, Alarm and Quick Home Channel Access



**FTM-6000R | 50W VHF/UHF Mobile Transceiver**  
 • All New User Operating Interface-E00-III (Easy to Operate-III) • Robust Speaker Delivers 3W of Clear, Crisp Receive Audio • Detachable Front Panel Can be Mounted in Multiple Positions • Supports Optional Bluetooth® Wireless Operation Using the SSN-BT10 or a Commercially Available Bluetooth® Headset



- RETAIL LOCATIONS - Store hours 10:00AM - 5:30PM - Closed Sunday
- PHONE - Toll-free phone hours 9:30AM - 5:30PM
- ONLINE - WWW.HAMRADIO.COM
- FAX - All store locations
- MAIL - All store locations



AMAHEM, CA (800) 894-8046	SACRAMENTO, CA (877) 882-1745	PORTLAND, OR (800) 785-4287	PHOENIX, AZ (800) 559-7388	MILWAUKEE, WI (800) 558-0411	WOODBRIDGE, VA (800) 444-4799	WINTER SPRINGS, FL (800) 321-1917
PLANO, TX (877) 455-8790	SAN DIEGO, CA (877) 520-9823	DENVER, CO (800) 444-9476	ATLANTA, GA (800) 444-7927	NEW CASTLE, DE (800) 644-4476	SALEM, NH (800) 444-0047	

WWW.HAMRADIO.COM