

PAARAgraphs



The Official Newsletter of the
Palo Alto Amateur Radio Association, Inc.
 The Friendliest Club Around
 Celebrating 86 years as an *active* amateur radio club—Since 1937
<http://www.paara.org/>



Building and Maintaining a Contest/DXing Station, Updates to the K9CT Contest Station Craig Thompson, K9CT

This talk will address key factors in building a competitive station for contesting and DXing in the Midwest. Updates have been made that you will find interesting as well as thoughts on the constant maintenance required for weather related damage and mechanical upkeep.

Biography

Born 1952 - 71 years old

Licensed since 1967 at age 14....and since 1971 an Extra Class Licensee - licensed 56 years

Graduated from Bradley University 1974 BSEET plus graduate work in business.

Contester and DXer. DXCC Honor Roll Mixed, CW and Phone, DX Challenge 3035, 11 Band DXCC, 5BWAZ, 11 Band WAS, VUCC 6m to 23 cm and FFMA #12 Attended WRTC 2023 as a competitor.

DXpedition Team member of

- T19K - Cocos Island
- K4M - Midway Island²
- PJ7E - Sint Maarten¹
- NH8S - Swains Island^{1, 2}
- 3D2C - Conway Reef
- K9W - Wake Island¹
- FT5ZM - Amsterdam Island²
- K1N - Navassa Island²
- K5P - January 2016 Palmyra Island
- 3Y0Z - Bouvet Island Jan/Feb 2018 Failed
- VP6R - Pitcairn Island October 2019
- CY0S - Sable Island March 2023

I have built a Contest Super Station (www.k9ct.us) with

(Contest Station — Continued on page 4)

This meeting will be a Hybrid Meeting Zoom and In Person

Time: August 4, 2023 07:00 PM Pacific Time

Please check <https://www.paara.org> for
 Zoom Details

Upcoming Events

Aug 4*** Sept 8 Oct 6	PAARA General Meeting, 7:00 PM *** Zoom and In Person Meeting
Aug 16 Sept 20 Oct 18	Board Meeting, 7:00 PM. Everyone welcome! Zoom Meeting, eMail President for details!



President's Corner

August 2023

For those who missed the July meeting, I announced that Bob Korte, KD6KYT, resigned as Treasurer. He served as Treasure for 3 years after Ron Chester, W6AZ, our previous Treasurer, moved to Illinois. Bob also served as Treasure for 3 years before Ron took over as Treasure. Please join me in thanking Bob for his years of service as Treasure and board member.



I'm happy to announce that Margerat Cooper, K6WEK, accepted my appointment to the position of Treasurer. She is a welcome member of the board and will serve out Bob's term. It's encouraging to see a relatively new ham and new member become involved in PAARA. She was an active member of the antenna parties and Field Day. She also enjoyed her experiences at PAARA in the Park.

For those who didn't hear, the International DX

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PAARA DAY AT THE
Hiller Aviation Museum
 August 19th at 10:30 a.m.

Over 40 unique aircraft on display. Hands-on exhibits that provide an interactive experience.

- ◆ Adults \$17
- ◆ Seniors \$10
- ◆ Children 5 to 17 years old \$10
- ◆ Children less than 5 years old are free with paid adult

Stay for lunch at the Sky Kitchen on the other side of the airport. Price not included.

Email Rob at kc6tyd@gmail.com to reserve your spot

Address: 601 Skyway Rd, San Carlos, San Carlos Airport.

A VHF/UHF Antenna covering 2m, MURS, 70m and GMRS Bands Larry Reeves, KØYPC

As a Palo Alto Emergency Service Volunteer (ESV), serving as a Neighborhood Preparedness Coordinator (NPC) in the Barron Park neighborhood, I use both FRS and MURS radios, and occasionally 2 meters in our city ESV drills. My neighborhood is one of the largest of about 40 sub-neighborhoods in Palo Alto ESV program. During our drills, and in a real emergency, Block Preparedness Coordinators (BPCs) covering 10 to 20 neighboring homes check in with their neighbors and report any critical incidents to their local NPC via their FRS walkie-talkies (462/467 MHz). The NPC can use FRS radio to dispatch a neighborhood CERT team for assistance (e.g. light search & rescue, or first aid). The NPC then uses a Dakota Alert MURS radio (Multi-User Radio Service on Ch.5, 154.60 MHz) to report incident status and/or request assistance from the city ESV District Operating Center (DOC) located at the Cubberly Community Center. AIRES members, and those CERT teams who happen to have a licensed

ham, use a 2m/70cm radio to allow for the DOC to directly dispatch the CERT teams to incidents anywhere in the city.

A few years ago I constructed a vertical off-center fed sleeve dipole using PVC pipe and aluminum foil tape to replace the twin-lead roll-up J-Pole that was provided by the city for NPCs to use with the city-provided MURS radio. I constructed it using the article by KV5R at this link: <https://kv5r.com/ham-radio/2-meter-sleeve-dipole/>. I trimmed it to center it on the 151-154 MHz MURS frequency band. [Ref: Photo 1].



The basic construction consists of a 6 or 7 ft length of $\frac{3}{4}$ " Schedule 40 PVC pipe, some RG8X coax and a roll of 2" wide aluminum foil tape (typically used to seal the joints in heating

(Antenna — Continued on page 3)

(Antenna — Continued from page 2)

air ducts). Check the KV5R article for more detailed construction tips that I won't cover here. Drill a 3/8" hole for the RG8X feedline 2 ft from the top end of the PVC pipe. Feed the RG8X through the pipe from the bottom and out at the feedline hole. I used a PVC Tee fitting for the cable exit near the bottom of the pipe mast. Strip and separate about 4 inches of the coax (bare center conductor and shield). Create the upper part of the dipole by completely wrapping the circumference of the pipe with aluminum foil tape from the upper side of the drilled hole toward the top of the pipe. In a similar manner create a bottom element, starting at the bottom edge of the feedline hole. (This leaves a 3/8" gap between elements at the feedpoint). Connect the center wire of the coax to the upper element, and the shield to the lower element, and then waterproof the connections with electrical tape. Cap the top of the pipe to keep rain out. For a 2 meter antenna, KV5R used a 22 1/8 inch upper element and because of the interaction of the feedline inside the lower element, the lower element is shorter at 15 5/8 inches.

I slightly shortened the elements in order to reduce the SWR at 154.6 MHz and mounted it on the roof of my single story house. It worked well, with strong signals at the DOC. I also found that it was broad banded enough to cover the upper half of the 2 meter band.

For my communications with my BPCs using FRS walkie-talkies I found that I found that the large trees in our neighborhood attenuated the FRS signals and I was unable to reach the BPCs furthest from my home. Some of them are as far as 1/2 mile away, and the FRS range was only 3 or 4 blocks. My previous approach for drills was to contact the ones near my house first, then go 6 blocks away to reach the rest of them. I decided that if I got a GMRS license, I could install a rooftop antenna and use one of the shared FRS/GMRS channels to greatly extend my range. I tested the concept using a 1/2 watt FRS handheld to contact a fellow NPC who was using a 5 watt GMRS radio and rooftop antenna across the diagonally opposite corners of our Barron Park neighborhood (about 3/4 of a mile). Success! — Very strong and clear signals both ways! So I applied and received my GMRS license and now needed an external an-

tenna for GMRS. Could I modify the MURS antenna to get under 2:1 SWR on both MURS and GMRS frequencies? And as long as I was going to modify it, could I also include the 2 meter and 70 cm bands on the same antenna?

I began by modeling the existing antenna using EZNEC. I modeled both elements as a cage of wires, with the feedline centered inside the bottom cage element. I added 5 closely-spaced turns of coax around the PVC pipe to the model as choke balun to suppress RF on the coax shield. After several trial designs I was able to get SWR < 2 from 144 to 156 MHz with the upper element at 20 5/8" and the lower element at 15 5/8", but SWR was poor in the 70 cm — GMRS band. I added a parasitic element to the model and after several tries found that a 3/4" diameter element, 10 5/8" long, centered on the feedpoint and spaced 1 1/4" away (surface-to-surface) calculated an SWR of <2 from 436 to 464 MHz. So, the idea looked feasible.

I built the antenna to this design and tested it with a nanoVNA. I adjusted the main (low band foil tape) element lengths to observe the changes in center frequency and SWR. I found that

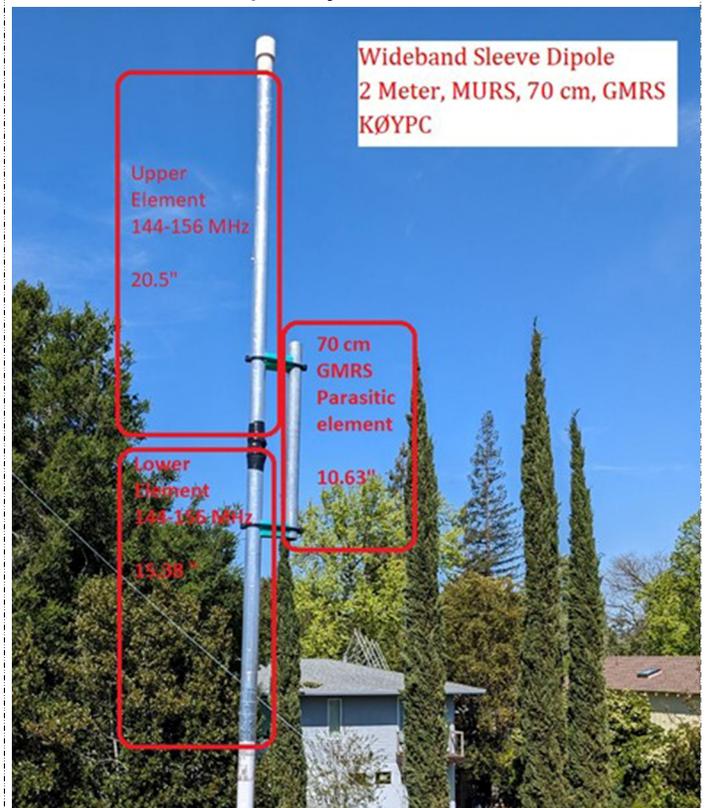


Photo 2: Final 4 band Sleeve Dipole, covering 2meters, MURS, 70 cm and GMRS bands.

(Antenna — Continued on page 4)

(Antenna — Continued from page 3)

the best way to optimize the antenna was to first adjust the upper element length for best SWR dip at the desired center frequency, then adjust the length of the lower element to bring the overall SWR to its lowest point. My final design ended up with the aluminum foil upper element at 20 1/2" and the lower element at 15 3/8". The parasitic element is of 3/4" diameter aluminum tube was spaced 1.25" from the main element. Final SWR was less than 2 from 144 to 156 MHz and also from 417-473 MHz which covers the 70 cm band and the 462.xx/467.xx MHz GMRS channels. I mounted the antenna to a cast iron plumbing vent pipe using large stainless steel hose clamps. [Ref: Photo 2.]

The antenna has performed well. I swap the antenna lead-in between my GMRS handheld, Dakota Alert MURS transceiver, and FT-818 as needed. The enhancements that I'm considering is upgrading my existing 40 ft of RG-58 lead-in to RG8X for lower loss at UHF, and adding a 3 way antenna switch to swap the antennas between radios.

(Contest Station — Continued from page 1)

16 Towers from 160 to 1296 plus EME.

The team enjoys working in M/S and M/2 contests. We have won US in CQ WW, WPX and ARRL DX in all modes and set new records for W9 and broke the US record for a couple of contests.

Currently adding a LUSO tower for an 80m 3 el Yagi, 10 and 15 OWA and 12/17 JK Yagi and a 6m EME 4 X 7 element yagi tower.

I am the owner and president of Thompson Electronics Company (www.thompsonet.com), an electronics systems integrator company serving Illinois since 1980.

Also, I am an active runner and have run 7 marathons.

I am married and have one daughter. We live in the country about 20 miles west of Peoria, IL. My contest station is on a small farm about 4 miles from my home where my daughter resides.

Life member of the ARRL and a member of the Maxim Society, CWops, NIDXA and A1 Operator Club. I am Vice President of the NCDXF and treasurer of CWops. I was the President of the Society of Midwest Contesters, SMC 2014 to 2019. I am the chairman of the ARRL Contest Advisory Committee and manage the Pacific Island DXpedition Group, a 501 (c)(3) tax exempt private foundation. I was recently elected as a director of the ARRL Foundation.

- 1 Co - leader of PJ7E, NH8S, K9W and K5P
- 2 DXpedition of the Year awards

(Pres — Continued from page 1)

Convention (IDXC) will be held April 12 ~ 14th, 2024! It will be held at the Visalia Convention Center. I received an email that Hotel reservations open on July, 31st. For more information go to their website at: <http://www.dxconvention.org/>.

As reported during the July meeting, our preliminary Field Day score is 3,110. The score consists of 1,580 bonus points and 1,530 points from contacts. We had 5 youths who participated at the GOTA station making a total of 46 contacts. 301 contacts were made by CW along with 882 SSB contacts. All told we had 64 participants & visitors. Everyone that attended the event had a great time. A big thanks goes to Doug, KG6LWE, who lead the event. Thanks also go to everyone that participated in whatever capacity they chose. Without everyone's help, the event would not have been possible.

Don't miss this month's speaker. In his presentation, you'll learn what a BIG contesting station looks like and what it takes to keep it current. Darryl, KI6LDM, and I were very impressed by his station when we listened to his talk at the IDXC earlier this year. I'm sure we've all seen pictures of the massive towers and antennas these stations usually have. Join us in peering under the covers of one at our August meeting.

I hope everyone will be joining us for the PAARA tour of Hiller Air Museum on August 19th. This is our first field trip in many years. If you haven't been, it's a very interesting aviation museum that's right in our neck of the woods. The nominal entrance fee will be the best money you could spend learning about the Bay Area's history of helicopters and other aircraft. Our website has a bit of additional info. You can learn about the museum at: <https://www.hiller.org/>. We also have the opportunity to have lunch at the Sky Kitchen Restaurant at the San Carlos Airport. The lunch is optional and not covered by the entrance fee to the museum. Make sure to email Rob, KC6TYD, at rtyd@aol.com stating your desire to attend the event and if you want to join us for lunch. You can also let him know at the August meeting. After the August meeting, he will be advising the Museum on how many attendees they need to

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anticipate.

Next up will be another PAARA in the Park. Darryl, KI6LDM, obtained the permit to use Memorial Park in Cupertino on September 30. That said, please mark your calendars for another great day of socializing, BBQ food, getting on the air, and learning about ham radio. Darryl is putting together a Fox hunt with a 2M Yagi tape measure antenna build project for hunting the fox. We'll have an extra HT or 2 there along with an antenna for anyone wishing to participate who doesn't have the equipment to hunt for the fox wherever it is hidden in the park.

Please remember that the September meeting is on the 8th due to the first Friday of the month is Labor Day weekend. Make sure to mark your calendars accordingly.

Let us not forget that October 20 ~ 22, a short 2.5 months away, is Pacificon and the PAARA special event station. You can register for the event at <https://www.pacificon.org/>. Mikko, AB6RF, really needs help putting the station together, assisting operators with the operation of the radios, watching the station overnight, and decommissioning the station on Saturday/Sunday. Please reach out to Mikko to lend your hand in setting up or operating the station. Setting up and staffing the station is a very important addition to Pacificon and is greatly appreciated by MDARC, the sponsoring club of Pacificon.

I look forward to seeing a room full of smiling faces at the August 4th meeting. It will be an IRL and Zoom meeting.

73, Jim K6SV

Get on the air to keep the airwaves alive!

July 2023 Board Meeting Minutes

Present were President Jim Thielemann K6SV, Vice President Rob Fenn KC6TYD, Secretary Ric Hulett N6AJS, and Directors Darryl Presley KI6LDM, Walt Gyger K6WGY. Margaret Cooper K6WEK was also in attendance. A quorum was present.

The meeting was called to order at 7:10 pm.

First Board actions:

The board moved to accept the resignation of our treasurer Bob Korte KD6KYT. We greatly appreciate Bob's service, and heartily thank him for being our Treasurer.

The board moved to appoint Margaret Cooper K6WEK as our new PAARA treasurer.

The board also moved to remove Bob Korte and Ron Chester as signatories to the PAARA bank account at Wells Fargo, and to add Margaret Cooper as a signatory.

These motions were seconded, and were approved by unanimous vote.

President's Report: If you did not attend the June meeting, we announced that Bob Korte has resigned as treasurer. We thank Bob for his years of service to the club. The president has appointed Margaret Cooper K6WEK as the club secretary.

Secretary's Report: Ric will not be present in person at the August meeting. Christopher AI6KG has generously agreed to handle PAAR-Agraphs mailing. PAARA website roster update has been sent to the Webmaster.

Treasurer's Report: Margaret Cooper is our new treasurer. Treasurer's report will be provided when she has more complete information.

VP / Program Chair Report: Our next speaker will be Craig Thompson, K9CT. He will present on Building and Maintaining a Contest/DXing Station.

We are seeking speakers for future PAARA meetings.

Hiller aviation museum, August 19th: We have a few signups. Members who wish to attend this PAARA meet should e-mail Rob ASAP at KC6TYD@gmail.com. The cost for the museum visit will be \$10.00 per person. After the tour, we will move to the Sky Kitchen Café for lunch, at an additional cost.

We will place a flyer in the next issue of PAAR-Agraphs.

Old Business

PAARAgaphs: Once again, the hopper for

(Minutes — Continued on page 6)

(Minutes — Continued from page 5)

PAARAgaphs articles is about empty. Members! We REALLY NEED your stories; they are the savory flavoring for our newsletter. Please put pen to paper, and send your article (even a short one!) to K6SV, Thielem@pacbell.net.

Education Committee:

We are planning some activities for the September 30 PAARA in the Park: We will work with interested hams to build a "Tape Measure Yagi" for 2m, and then use the antennas on a Fox Hunt, finding hidden transmitters in the area. We will charge a nominal fee for the antenna kits. Visitors who don't have a radio will be able to borrow an antenna and handheld for the fox hunt.

Possible topics for education:

- How do I program my radio? In the Field?
- For seasoned hams, What do I wish that an old ham had told me when I was starting out?
- What kinds of antennas should I consider? We can provide a laminated repeater list and list of HF frequencies. HF bands list.

Sheila Foley, our accountant: She is getting the books up to date so that taxes can be taken care of by the end of July.

Radio and Silent Key sales: The sales of miscellaneous electronics have tapered off after a few months. Much of the remaining stock was sent to e-waste.

Members, note that we still have a Yaesu FT-991 with accessories for sale, check this one out!

PAARAgaphs advertising: Walt's report will be complete by the end of July.

900 MHz repeater status:

Christopher AI6KG has custodianship of all W6OTX machines and has updated all the info (1.2GHz machines off the air, added 900 MHz machine). Awaiting web page update.

AI6KG has a club owned replacement switch that we need to install; Christopher's temporary switch is working FB for now.

Mikko has new fans ready to install for the DMR VHF repeater, will install on the next site visit.

We need to organize a work party to clear a path and fallen debris.

AI6KG still needs to get Motorola software for VHF and UHF DMR machines; Joel KD6W will assist.

PAARAgaphs links to other clubs and references: N6AJS to update references and links to other clubs: Still in progress, will report at the August board meeting.

Members: Please remember to wear your PAARA badge to the meetings! Secretary will provide temp badges when he is present.

Past meeting presentation videos: We have not identified online storage space for club meeting videos.

Idea fostering with Oklahoma Club, to share ideas on membership, club activities, etc. There is interest, we have not yet identified a date for this. This will be a small video conference.

Pacificon: This event is 3 months away on October 20th ~22nd, Mikko, will we have the W1AW/6 call sign? We need more club members to run the station during the event. Members, please contact Mikko AB6RF, mikkops@yahoo.com to sign up.

Raffle status: We are still in contact with state Department of Justice, working to provide required documentation. Margaret K6WEK will take over some of the legwork. We hope to have this resolved in time for the December "Dream to Reality" raffle.

New Business

We have been invited by the QSO Today Academy to prepare a 15-minute video promoting PAARA, and publish on their site. The cost is \$120. Board consensus was to not participate at this time.

We want to promote the Fox Hunt at PAARA in the Park (PitP). Rob KC6TYD proposed that PAARA should cover the cost of the Yagi kits as a member benefit. Ric N6AJS will cost out a tape-measure dipole and report to the board.

The meeting was adjourned at 8:42 pm.

Respectfully submitted

Ric Hulett N6AJS
 PAARA Secretary

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
 n6ajs@arrl.net
 Treasurer Margaret Cooper, K6WEK
 k6wek@arrl.net

Directors

Director ('23-'24) Joel Wilhite, KD6W 408-839-5948
 kd6w@arrl.net
 Director ('22-'23) Walt Gyger, K6WGY 408-921-5901
 walt@tradewindsaviation.com
 Director ('23) Doug Teter, KG6LWE 650-743-7892
 dteter@wcwi.com
 Director ('23) Darryl Presley, KI6LDM 650 255-2454
 ki6ldm@arrl.net

Appointed Positions

Membership Ric Hulett, N6AJS 408-332-4593
 N6AJS@arrl.net
 Database..... Ric Hulett, N6AJS 408-332-4593
 N6AJS@arrl.net
 Station Trustee W6OTX, W6ARA....Gerry Tucker, N6NV
 Station Trustee K6YQT Doug Teter, KG6LWE 650-743-7892
 Station Trustee K6OTA Ron Chester, W6AZ
 Property Manager Doug Teter, KG6LWE
 Badge Coordinator..... Doug Teter, KG6LWE 650-743-7892
 dteter@wcwi.com
 Historian Position *Position Vacant*
 Raffle Coordinators Rob Fenn, KC6TYD, rtyd@aol.com
 Shrikumar, KA6Q
 shri.paara@enablers.org
 Field Day Coordinator. Doug Teter, KG6LWE 650-743-7892
 ASVARO Rep Clark Martin, KK6ISP
 kk6isp@sonic.net
 Webmaster..... Shrikumar, KA6Q
 webaron@gmail.com
 Technical Coordinator. Christopher, AI6KG 408-348-0304
 ch@murgatroid.com
 QSL Manager..... Marty Wayne, W6NEV 408-234-8023
 Speaker Coordinator... Rob Fenn, kc6tyd 650-888-9060

PAARagraphs Staff

Editorial Board
 Bob Van Tuyl K6RWY Kristen McIntyre K6WX
 Ron Chester W6AZ 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 *Position Vacant*
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VE Exams

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>

Electronics Flea Market (ESM)

Sponsorship: Association of Silicon Valley Amateur Radio Organizations (ASVARO)
 The Electronics Flea Market is seeking a new location. Until that is resolved, the EFM is on hold. Website: <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 website at <http://www.paara.org>. For more information. contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:00pm at Covington School, Los Altos. Website: <http://www.fars.k6va.org>

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:00pm each month, Repeater for member info 147.360. Contact president@ncdxc.org. Website: <http://ncdxc.org>. YouTube content: "The Northern California DX Club Official Channel". Cohost of the International DX Convention.

The 50MHz & Up Group of Northern California

This organization specializes in vhf + wak signal and microwave activities. Meetings are held on the first Tuesday of each month. Time is usually 5pm for in person meetings, and 7pm for Zoom only meetings. In person meetings are held Sports Basement, 1177 Kern Ave, Sunnyvale. Always check the website, <http://50MhzandUp.org>, for correct information. Zoom information is also there.

San Mateo Radio Club W6UQ.ORG

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

SPECS

Southern Peninsula Emergency Communication System users Group

Meets each Monday 7:30pm and 8:00pm.
 See: <https://specsnet.org/monday-night-net> for more info.
 Contact: <https://www.specsnet.org/contact> or board@specsnet.org

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+)
 Website: <http://www.svecs.net> or contact: Lou Stierer WA6QYS 408 241 7999

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: 441.35 (+5.0) 88.5 ctcss
 147.39 (+600) 151.4 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.

Website: <http://wvara.org>. Contact: info@wvara.org

(Please send changes to PAARagraphs editor)



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	Doug - KG6LWE
2 nd	Doug - KG6LWE
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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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
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NOT A CLUB, CLOSED GROUP OR CLIQUE; AMATEUR RADIO OPERATORS AND FRIENDLY PEOPLE ARE ENCOURAGED TO ATTEND!
 Call in on the N6NFI Repeater, 145.230 MHz, PL® 100Hz

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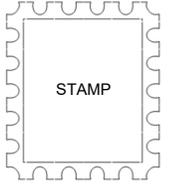
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