W6OTX W6ARA PAARA NEWSLETTER K6OTA K6YQT
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PAARAgraphs

The Official Newsletter of the
Palo Alto Amateur Radio Association, Inc.
The Friendliest Club Around
Celebrating 88 years as an *active* amateur radio club—*Since 1937*
http://www.paara.org/

Instant Tuning for a Manual Tuner
Connie Stillinger, W6EFI

A random wire with a small manual tuner can be an effective antenna setup for portable operations. Add a portable network analyzer or small VNA to your kit and tuning can be made more precise, but is still a matter of trial and error, albeit guided. In this presentation we describe a method for going straight to the optimum tuner settings, giving a previously-gathered one-time characterization of the tuner and a one-time sweep of the antenna. This method is an adaptation of Melville and Hamilton, "Silent Tuning: Matching a transmitter to an antenna without emitting a signal" (MILCOM 2021).

Dr. Stillinger was originally licensed in the 1970's as WN2EFI -- passed the 5 wpm code test -- but it lapsed before even making it into the callbook. About two years ago she rediscovered ham radio as a great way to make friends, hike around parks, and have fun tinkering together. She enjoys operating all modes on HF ranging from CW through Hellschreiber to SSTV.

This meeting will be a Hybrid Meeting Zoom and In Person

Time: Jan 3, 2025 07:00 PM Pacific Time
Please check https://www.paara.org for Zoom Details

Upcoming Events

Jan 3 Feb 7 Mar 7	PAARA General Meeting, 7:00 PM Zoom and In Person Meeting
Jan 15 Feb 19 Mar 19	Board Meeting, 7:00 PM. Everyone welcome! Zoom Meeting, eMail President for details.

President's Corner

January 2025

My first "callsign" started with November. According to my logbook from 1988, my first radio transmissions were from N23185, a little Piper Tomahawk. At the time, I was a college student and didn't know anything about amateur radio (although I did have some Midland walkie talkies when I was a kid – I still recognize the smell of those old electronics). But my dad had been a U.S. Marine Corps pilot and I thought flying would be fun. It turned out it was also expensive and time consuming, so while I ultimately finished my pilot license in the mid 1990s, I haven't been current now for years.

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Questions of the Month

1 What is the difference between a "random wire" and an End Fed Halfwave antenna?

2 When would you use a 9:1 vs a 49:1 UNUN and how are these values derived?

December 2024 Election Results

2025 PAARA Officers:

President	Bob Ridenour KN6YGN
VP	Rob Fenn KC6TYD
Secretary	Ric Hulett N6AJS
Treasurer	Margaret Cooper K6WEK
Director (‘24-’25)	Pending appointment
Director (’25-’26)	Walt Gyger K6WGY
Director (’25)	Doug Teter KG6LWE
Director (’25)	Darryl Presley KI6LDM

On Second Thought, I'll Take the Stairs

Wayne Burdick, N6KR

2020

I have a friend about my age who got into amateur radio only a few years ago. Like many of us, he was enthusiastic about the technology. Intrigued with DX.

I showed him my station; we talked endlessly about gear. Later, I helped him put up a simple wire antenna.

Then, when his license arrived, he dove straight into FT8 and didn't look back. Within days, he'd worked all states, then DXCC. He'd bag a few rare ones over a light lunch, then pat his laptop on the back and congratulate his software app for its near-mythical ability to extract weak signals out of noise.

Within weeks, he'd mastered everything there was to know about this glorious new hobby.

Point. Click.

In this new world order, those of us who took the longer, slower path to ionospheric enlightenment -- and who still occasionally enjoy making waves by hand -- often fail to explain why.

I had failed to explain it to my friend. Even as hints of his boredom crept in, creating an opening, the best argument I'd made for trying CW was that he could do it without a computer. Coming in a weak second was the notion that CW was the original digital mode. For obvious reasons, I didn't bother with the classic argument about CW's signal-to-noise advantage over SSB.

I had all but given up.

Then, in a moment of delayed clarity, I decided on a different approach. I invited him to a weekday brunch. A bit of an escape. He willingly took the bait.

Arriving at his workplace on the appointed day, I bypassed the lobby's glistening elevators and climbed the four flights of stairs to his office. I insisted we take the stairs down, too.

"Why?" he asked. "And how'd you get up here so fast?"

I pointed out that I always chose stairs, when possible. That's why I wasn't out of breath. We hustled down, jockeying for position, and emerged on the ground floor invigorated by the effort.

"So, where are we going?" he asked. We'd been to every overrated twenty-dollar burger venue at least twice.

I replied that we'd be going someplace we'd never tried. My kitchen.

When we arrived, I put him to work chopping onions and broccoli and squeezing oranges while I whipped eggs into a froth and grated Swiss cheese. We ate our omelettes outside, in full sun and a cool breeze.

"What's for dessert?" he asked. "Isn't there a frozen yogurt place a two-minute drive from here?"

I had something else in mind. Back in the kitchen, I handed him a water bottle, then slipped on a small pack I'd prepared earlier.

We walked a mile or so through my neighborhood, admiring the houses' varied architecture, ending up (as planned) at a local park festooned with blackberry bushes. The most accessible branches had been picked clean, but with teamwork and persistence we were able to gather several large handfuls of fat, ripe berries, which we devoured on the spot.

We'd been poked and scratched but didn't care.

"Doesn't brunch usually end with champagne?" he wondered aloud, admiring his wounds.

Not this time. I pulled out two bottles of craft beer that I'd obtained from a neighbor, Carlos, in trade for repairing his ancient home stereo. He'd spent years crafting an American pilsner to die for, sweating every detail, including iconic, hand-painted labels.

(Second Thought — Continued on page 3)

(Second Thought — Continued from page 2)

My friend accepted the bottle, then tried in vain to remove the cap. Not a twist-off.

"Opener?" he said.

I handed him a small pocket knife, an antique without extra blades. He soon discovered it could not be used to remove the cap directly. He looked at me with a bemused expression, no doubt wondering what I had up my sleeve this time.

I pointed out that we were surrounded by white oaks, a species known for its hard wood. He got the message, smiled, and began hunting. Within seconds he'd collected a small fallen branch. I watched as he used the knife to fashion a few inches of it into a passable bottle opener. We popped the caps, toasted his new-found skill, and traded stories of misspent youth.

"Oh, one more thing," I said.

I pulled a KX2 HF transceiver out of my pack, along with two lengths of wire. Of course he knew everything there was to know about Elecraft, and me, so he wasn't surprised when I also pulled out the rig's attachable keyer paddle. We threw one wire in the closest tree and laid the other on the ground.

He didn't have to ask whether I'd brought a laptop. Not.

We listened to CW signals up and down 20 meters, open to Europe at the time. As he tuned in each station, I copied for him using pencil and paper. He'd learned Morse code, but only at very slow speeds.

After making a contact, I set the internal keyer speed to 10 words per minute and dialed power output to zero, for practice purposes, then showed him how to use the paddle. He smiled as he got the hang of it. Sending the full alphabet was a challenge, but he got there. The KX2 decoded and displayed his letters, providing confirmation.

We'd blown through his allotted lunch break by a factor of three, so it was time to go. We coiled up the antenna wires, packed up, and walked back. As I drove him back to his employer, we made plans to get together again for a weekend hike.

I could have just dropped him off, but we went back into the lobby together. Out of habit, he stopped in front of the elevator. We watched the illuminated floor numbers flash: digital and predictable eye-candy.

"OK," he said. "I get it. This CW thing. It's slow, doesn't always work, and takes years of practice."

"Like hunting for your own food, or carving your own tools," I added.

"Or cooking from scratch. Or brewing your own beer. Or building your own radio. But you use more of your senses. Not just your eyes, but your ears. Your sense of touch."

I nodded. Listening; feeling. That was the radio I'd grown up with.

"Of course it's harder to work DX with CW than with FT8," I reminded him, playing devil's advocate.

"Is that what matters, though?" he asked, with a sideways glance.

A longer discussion for another day.

"Your call," I said.

He gripped my shoulder and smiled, then aimed a forefinger toward the elevator's glowing, ivory colored UP button, gilded in polished brass.

The path most taken. The easy way. Point. Click.

"On second thought," he said, withdrawing his finger, "I'll take the stairs."

A New Take on the Classic Tape Measure Yagi

Justin Giorgi (Al6YM)

The tape measure yagi is a rite of passage for a new technician; it's a versatile tool that's easy to build and reasonably inexpensive. All you need is a bit of PVC pipe, an old tape measure, a few fittings, and a free afternoon. The result is a handheld directional antenna for making distant contacts, fox hunting, jet bounce, or even satellite work.

A quick online search will reveal hundreds of designs and how-to articles for different versions of the antenna. Hams are a creative and inventive bunch but the designs you find are all very similar. Usually a few lengths of measuring tape and PVC pipe are cut, a boom is built out of the cut pipe and a few fittings, and then the tape is secured with hose clamps. Solder on a

(New Take — Continued on page 4)

(New Take — Continued from page 3)

coax connector of some sort and a matching element to complete the antenna.

The design is so functional and adaptable that I hadn't even considered improving it. How could you make a directional antenna easier or cheaper to build? In retrospect, I was suffering from a severe deficit of creativity.

At Pacificon this year Brian Zoraster (KA6ZED) revealed an ingenious improvement to the classic tape measure yagi design. He designed 3D printable fittings that replace the traditional pipe fittings and hose clamps. Brian's design requires only a bit of measuring tape, a single length of PVC pipe, the printed fittings, and a few set screws. It's cheaper and faster to build but more importantly it makes a better antenna.

The classic method creates an antenna that is difficult to tune. Lengths of pipe are fixed, if you make a bad cut you get to start again. For a three-element design it's not so bad but it gets to be a real chore once you start adding elements, especially if you're trying to build a multiband system.

A small difference in the positioning of elements can make a big difference in the performance of the antenna but are you really going to cut another piece of pipe and take your antenna apart? Again? If you're anything like me you'll likely accept sub-optimal performance if it means not having to cut another piece of pipe and take your antenna apart for the seventeenth time.

That's what makes Brian's design so great, since the fittings slip over the pipe the antenna is infinitely adjustable and expandable. You tune your antenna just by loosening a set screw and sliding the fitting up or down a bit. Elements can be added just by printing a couple of fittings and slipping them on. Saving a few bucks on PVC fittings and hose clamps is a nice bonus too, the printable fittings cost pennies to make.

I took the liberty of adapting Brian's design for a variety of pipe and tape widths. You can find printable files, detailed build instructions, and links to Brian's original design at Github.com/ai6ym/yagi-printables.

73, AI6YM

An Industrial Archeologist

Jeff Reagan, AJ6WX

Working at SLAC is fun. They want me to go out looking around, figuring stuff out. Everything is at my disposal. Pay is low, but it's a real university of high power electronics. Every chassis I troubleshoot has embedded intelligence, from engineers of far-flung fields. It's like an abandoned empire. Authors are long gone. I'm an industrial archeologist.

Occasionally I go into the "electrical alcoves" along the Klystron Gallery. There is one for each of 30 sectors. Every other sector has a bathroom. Operators ran the machine from these areas, back in the beginning. I always look at two banks of relays, and reminisce fondly about my dad, and his involvement designing the old Central Control system. The same relay banks and indicators appear in each sector. I imagine Dad's team calling out those relays from some catalog, ordering them in bulk, then drawing the wiring diagrams. It all looks abandoned now. . . relics of a bygone era. . . . Whole panels full of indicators are dark. Labels in strips under the indicators have faded into oblivion, now hanging by failing glue, sagging oddly. Modulator # XX available, blue ones read. Modulator # XX Unavailable, Amber ones read. A few bays down, a couple unlabeled indicators still glow, though it's not clear why.

Two of ten "Sectors" died in the Klystron Gallery the other night, sectors 25 and 27. I was there alone. Two big breaker panels should have been providing 600 volts, 150 amps, to each of eight modulators. Two big contactors weren't pulling. 16 Klystrons fell silent.

Central control sent me to check the fuses in Sector 26. They sent some kid out there to meet me. He was told to check Fuse 43, in a specific bank of fuses. We looked, but none were blown. (These fuses give a visual indication when they blow.) It was coolant related. Someone told us by phone to look at the flow meter/switches in the mechanical alcove, across the Klystron Gallery, near the pumps. Those showed plenty of flow.

(Industrial Archeologist — Continued on page 5)

(Industrial Archeologist — Continued from page 4)

That was intimidating. Two miles of wiring. Thousands of wires. No schematic. I could never figure that out.

Our department head dispatched an old Asian guy, Sony Nguyen, who brought his schematic. I met him in the dark of night, out at the front guard shack.

Thousands of wires drop into those cabinets, from cable-trays above. These terminate into square terminal boards, each with about 72 terminals. Two "bays" are filled with them, floor to ceiling, located at the end of a 40'-foot-long rack of equipment. Each bay is four terminal-boards deep, 15 terminal-boards high, packed tightly with wires and terminals. It somewhat resembles a telephone-distribution-center.

Sony went to those terminal blocks, armed with his schematic. He asked me to measure the voltage on a specific terminal. No voltage was there. He checked another terminal. Again nothing. Then he checked the voltage at fuse 43. It was bad. He knew where there was a spare in the fuse-bank, so he replaced it.

Sony had me pop the plastic cover off one of those old relays, K10. He pushed the armature to verify it was already pulled. It was. I replaced the cover.

He had me call Central Control, to see if it was fixed.

An announcement came over the PA system, warning people the system was coming on.

Red lights illuminated all along the Klystron Gallery. Then with a clunk, very stern buzzing filled the place. It went back off again briefly. Then it went on and stayed on.

That's the way it sounds when it's running. That buzz is the pulse repetition rate, 120 pulses per second.

The operator called to thank us. Sony went home.

Grasshopper type fuses were chosen for this design. These come mounted in odd black plastic frames, about the size of memory cards for cameras. Each has three terminals, with each sporting a spring loaded lever and relay contacts. The spring tugs the fuse-link taught. When a fuse-link blows, it releases the lever, which pops into view. The relay contacts close, hopefully lighting an indicator at the end of the fuse bank. But 60 years of corrosion only broke the fuse element. The lever never changed positions, so we couldn't see it. Contacts never closed. The indicator didn't glow.

. . . those relays weren't abandoned after all.

I remember seeing a plexiglass cabinet full of relays, all different brands, endlessly clicking away near Dad's office. A mechanical counter tallied the operations. Life testing was underway. A nearby Geiger Counter clicked semi-randomly too.

Recently I went into the building where Dad's office once was. I almost expected to see that plexiglass box, full of relays, clicking away, still undergoing an eternal life test, with the Geiger Counter still randomly ticking. They're gone.

The real life-test is still running, 60 years and counting now, out there in the Klystron Gallery.

I pulled up Sony's schematic on my computer, and started looking at it. As with any old hand drawn schematic, I'm pretty sure a couple of mistakes are making it hard to understand. I'll print it and go to Sony for clarification. I love the feeling of a two-mile-long machine, with 100 relays in each of 30 electrical alcoves, all shown on a three-foot-long schematic (well enough for Sony to troubleshoot it). The plot thickens. . . .

73, AJ6WX

(President — Continued from page 1)

By the time I found radio again, I'd gotten a degree in electrical engineering (which turned out to be handy studying for the Amateur Extra), and had been working for several years before my son thought it would be cool to be one of the people at local disaster preparedness events who got to use a radio. We got delayed a bit by the pandemic, but by early 2023, my kids and I had gotten Technician licenses, and didn't really know how to use them or get further into HAM radio. Our first PAARA meeting was at the beginning of February 2023, the COVID pandemic was winding down and it was nice to have a place to interact with people in person, but it was also great to see how the club had embraced Zoom to allow as many people to attend

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(President — Continued from page 5)

meetings as possible.

It's been a whirlwind couple of years. Almost right away my son and I got involved in preparations for Field Day, which unbeknownst to us was particularly involved as the antennas hadn't been used for a few years. For a while we just thought antennas must be really difficult to maintain. But it was a lot of fun, and we met a lot of good friends. We had a great time setting up and tearing down at Field Day as well as making contacts and meeting many more HAMs. I would recommend the experience to anyone, even if you don't think you know much about radio – you'll be able to help, you'll learn new things about radio and about the club, and you'll have a great time doing it!

Since then, we've attended Field Day again, Pacificon twice, and at least three PAARA in the Park events, as well as field trips and helping at the Electronics Flea Market. As we start 2025, I look forward to continuing all these events and striving to make them even better. I hope everyone enjoyed the December meeting which featured the return of the Dream to Reality Raffle! Many thanks to Wayne Burdick, N6KR, of Elecraft for a wonderful presentation about the KX3 and other radios, as well as an interesting theory about world events and solar cycles. We will continue to hold smaller raffles at meetings throughout the year, so stay in touch on Zoom, but do drop by in person if you can. And when you do, plan to have a slice of pizza at the "meeting after the meeting". I'll look forward to seeing you there!

I'd like to thank Jim Thielemann, K6SV, for his outstanding leadership serving PAARA as President from 2020-2024, and as Secretary from 2013-2019. I think we can all agree that this was a particularly challenging time, and the club has been enormously fortunate to have Jim's enthusiasm, experience, and leadership to get through the COVID pandemic and come out stronger on the other side. Personally, I'd like to thank Jim for his encouragement and guidance in understanding the President's role as I was trying to decide whether to run myself. I'd also like to thank all our other outstanding board members who have been enthusiastic and supportive, both of me and the club. I'm excited to continue to work with them over the coming years to ensure that PAARA remains the friendliest (and most active) HAM radio club around!

Jim and the other board members have done such a great job, that I don't anticipate making any significant changes to the meetings or club activities, although I think we will take a run at refreshing the web site a bit. However, I'm always open to suggestions or new ideas, so please feel free to let me know if you have any thoughts or ideas about anything related to the club.

Lastly, because it's the holiday season, I thought I'd share a picture of the gingerbread house/shack that my son and I made this year.

We managed to get both a J Pole and a 4 element Yagi on the roof! I hope everyone has a wonderful holiday season, and I look forward to seeing you at the January 3rd meeting!

73, Bob KN6YGN
Let's have a great year on the air in 2025!

Editor's note: A picture of the raffle winners appears on page 8 in the upper left hand corner.

There will be a Raffle in January too!

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

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Directors

Director ('24-'25)	To be appointed	
Director ('25-'26)	Walt Gyger, K6WGY wgyger@ix.netcom.com	408-921-5901
Director ('25)	Doug Teter, KG6LWE dteter@wcwi.com	650-743-7892
Director ('25)	Darryl Presley, KI6LDM ki6ldm@arrl.net	650 255-2454

Appointed Positions

Membership	Ric Hulett, N6AJS N6AJS@arrl.net	408-332-4593
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Station Trustee	K6OTA Ron Chester, W6AZ	
Property Manager	Doug Teter, KG6LWE	
Badge Coordinator	Doug Teter, KG6LWE dteter@wcwi.com	650-743-7892
Historian Position	*Position Vacant*	
Raffle Coordinators	Rob Fenn, KC6TYD, kc6tyd@gmail.com Shrikumar, KA6Q shri.paara@enablery.org	
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QSL Manager	Ric Hulett, N6AJS	408-332-4593
Speaker Coordinator	Rob Fenn, kc6tyd	650-888-9060

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Bob Ridenour KN6YGN — Doug Teter KG6LWE

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Technical Tips	Ric Hulett, N6AJS	
Photographer	*Position Vacant*	

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 (EFM)

Sponsorship: **A**ssociation of **S**ilicon **V**alley **A**mateur **R**adio **O**rganizations (ASVARO). The Electronics Flea Market is held at West Valley College, 14000 Fruitvale Ave, Saratoga.
Website: http://www.electronicsfleamarket.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.k6ya.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:			UHF:		
52.58	(-500)	151.4 ctcss			
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.
Website: http://wvara.org, Contact: info@wvara.org

(**Please** send changes to PAARA*graphs* editor)

December Raffle Winners

Left to Right

Wayne Burdick, N6KR (Elecraft)

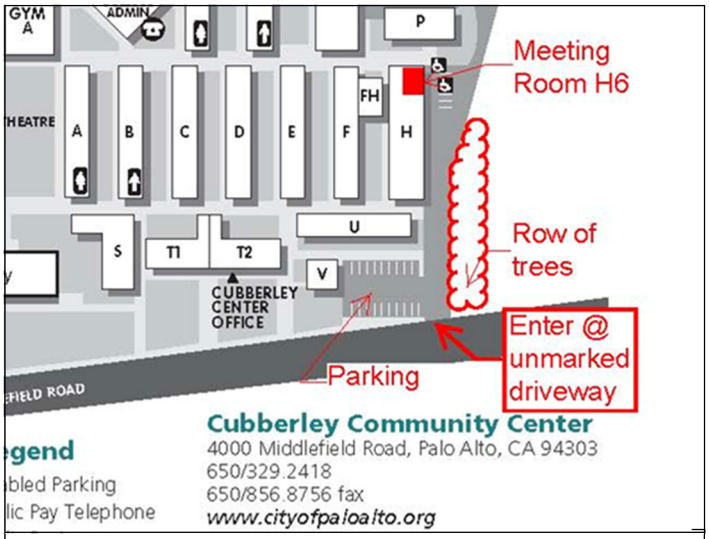
1st Kieth, K1OKS — Winner of the KX3
2nd Oliver, KB6PA
3rd Leigh Ann, K6WXO
4th John, KO6BVO
5th Frank, AF0XX (not shown)

PAARA Weekly Radio Net

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

Week	Control Operator
1st	Doug - KG6LWE
2nd	Doug - KG6LWE
3rd	Ric - N6AJS
4th	Rob - KC6TYD
5th	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

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 PAARAgraphs
$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

ARV'S, WA6UUT (SK)
WEDNESDAY
HAM RADIO LUNCHEON
Our 18th 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

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!
Call in on the N6NFI Repeater, 145.230 MHz, PL® 100Hz

Submit items to **PAARA*graphs*** by the 3rd Wed to:
rrvt@swde.com
Text: .doc, .rtf, or .txt
Photos: jpg, png or tiff

Subscription Problems?
Contact Database Manager:
Ric Hulett, N6AJS
408-332-4593
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Anchor Electronics 2040 Walsh Ave, Santa Clara
Download our Inventory PDF
www.anchor-electronics.com

PowerFlare®
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www.powerflare.com

PAARA W6OTX Repeaters
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