

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.

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



An Introduction to Amateur Radio Satellite Communications

Fred Cunha, K6FVC

Working portable and base station satellite configurations are an interesting aspect of ham radio. The talk covers an introduction to common terminology, basic theory, equipment, and operation. Resources are provided for further research and education.

BIO:

Fred is an Amateur Extra licensee and an Extra Class ARRL Volunteer Examiner. He got into amateur radio to enhance his position as an RN MICN for San Joaquin County in 2017. Fred worked in several Central Valley ER's as an RN and now works in Home Health as a RN Case Manager. Prior to that, he worked for IBM in several roles including a systems engineer and certified project manager. Fred also volunteers with the Parachute Mobile ground crew team.

Fred enjoys HF with a FTDX-3000D and uses an FT-847 for satellite and base station VHF/UHF work. Antennas are CIRO MIDI Loop, simple J-Pole and the M2 – LEO-PAC antenna system. He also does packet and WinLink on both VHF and HF.

This meeting will be conducted with Zoom.

Please see Zoom details later in this issue.

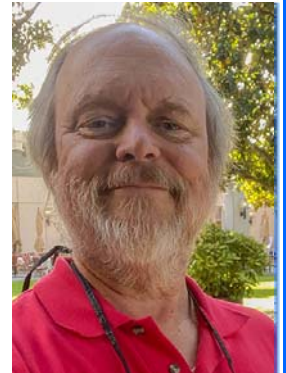
Upcoming Events

Nov 6	PAARA General Meeting, 7:00 PM
Dec 4	Zoom Meeting, see article for details
Jan 8	
Nov 18	Board Meeting, 7:00 PM.
Dec 16	Everyone welcome! Zoom Meeting,
Jan 20	eMail President for details!
Nov	Electronic Flea Market Cancelled

President's Corner

November 2020

I hope many of you worked the California QSO Party. I know those that did work the contest had a fun time being located in the sought after QTH. As I draft this letter, the DX WW contest is in full swing. I notice lots of activity on all bands, maybe the sunspots are starting to work their magic. There even is an opening on 10M to South America that is packed with QSO's. If you enjoy DX this is a great contest to fill your logbook with stations from around the world. Sad to say, I had other obligations that kept me from enjoying the fun, maybe next year.



Elections are right around the corner. As mentioned in the minutes, the board liked a plan suggested by Joel, KD6W. Ric, N6AJS, Shri KA6Q, and the board worked out the logistics and process so Shri could create a program allowing us to vote online. Clark, KK6ISP, the election chair, agreed with the process, which the board, in turn, voted to approve. The

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9-11 Amateur Radio in New York A Private Citizen's Eyewitness Report on Ham Radio's Finest Hour

Bart Lee, KV6LEE

<Continued from Oct Issue>

Editor's Note: This is not sponsored or authorized by the American Red Cross; it is a private report on Amateur Radio. It was written in the days following the 9-11 disaster.

Keeping Track Of Everyone

The dozen or so shelters in Manhattan (and also one each in Staten Island and Brooklyn) kept track of their clients, staff, security, etc. Red Cross polled them regularly by radio for these numbers, in a sub-net to RACES. There were, at first, no operable, reliable telephones or fax lines. Once telephones worked, that traffic came off the RACES net. Throughout the use of shelters, ham radio took whatever shelter traffic was necessary. In the early days, radio was the only link between shelter managers and mass care or logistics at headquarters.

Red Cross sent Multi-Disciplinary Outreach Teams (MDOT) into lower Manhattan around D-day+8. They tried to communicate with cell phones and handheld email, but only amateur radio worked reliably, at least at first. Jay had insisted on a ham radio operator on each team and it paid off. Even donated dedicated Nextel phones and donated Blackberry wireless email terminals did not provide the effective communications hoped for, because of overload on the networks. Trained ham radio operators working in the directed RACES net made the DMOT communications possible for the Red Cross.

What is truly great advanced communications technology in normal times did not match man-managed "legacy" radio messages in a time of crisis. All those photos of people walking with cell phones to their ears on September 11th show men listening to busy signals. Even if the network is not blocked with traffic, a very busy somebody still has to answer the phone, and probably already has, tying up the line. Radio

messages got through, because many people made sure each one got through.

Ham radio had a client relationship to the Red Cross. The RACES net served the Red Cross as its client, while always available for other functions. One was our notice of need for hams in White Plains on D-day+1, although we did not say over the air that the alarms at the nuclear plant were sounding. This was a new war and we had no way to know what was next.

The hams in the Red Cross shelters served the shelter managers as their clients. Once Charley Hargrove got ARRL message forms off the in-



Fig. 1 — Twin Towers on 9/11/2001

ternet, we used them as much as possible so we could pass traffic that was concise and unambiguous. The internet worked just fine, as it was designed to do in disasters, but connecting to the internet was too often almost impossible for the first few days. This was so because of the loss of telephone line capability and blocking traffic.

In the wee hours I had the privilege of taking the RACES net for a few minutes at a time as required. Radio also helped to deal with a least two "rogue" or "bandit" operations of unauthorized assistance (if it was) while I had the mike for the Red Cross. Red Cross management several times expressed its appreciation to Ra-

(Eyewitness — Continued on page 3)

(Eyewitness — Continued from page 2)

dio for helping to resolve this sort of problem, and for quickly assessing shelter resources as big needs developed. For example, a sudden need for many cots arose as a shift of firemen came into a respite station. (The hot zone respite station was Intermediate School 89 (IS-89) on Canal Street, tactical call OEM-2). I was polling the shelters for their client numbers when we got the word. I went back to each shelter to find out the available cots from each, and quickly passed this information on to Logistics, so they could be picked up and brought to the respite station. Management thanked us in writing for our quick response. This kind of appreciation maintained the high morale of Jay's 24/7 amateur radio operation.

Amazingly, Some Jamming

There was also, amazingly, some jamming, although it did not effectively interfere with operations. We ignored jamming, but the lesson there is find the jammers now with direction finding and transmitter printing, and put them out of business before they interfere with disaster recovery.

A typical early message was:

#4 URGENT Origin: N2XKA Place:
Westchester Time: 00:14 Date: 9/14
To Mass Care [NY HQ]: Received at
KV6LEE [op at NY HQ Radio]
WESTCHESTER HAS A TRACTOR TRAILER WITH 27 PALLETS OF SOFT DRINKS AND SNACKS NEEDS DIRECTIONS FOR DELIVERY IN NEW YORK CITY RESPONSE REQUIRED

Such a message was hand carried through the building to Mass Care, and a written response

put down on the message. This was then carried back to the radio and the response was sent out by the operator. A typical later message was:

R[outine] Origin: OEM-2 Place: IS-89 Time: 02:22 Date: 9/18

To Mass Care [NY HQ]: Received at KV6LEE [op at Brooklyn Radio]

IS-89 REQUESTS 50 BREAKFASTS FOR AGENCIES' PEOPLE ON SITE

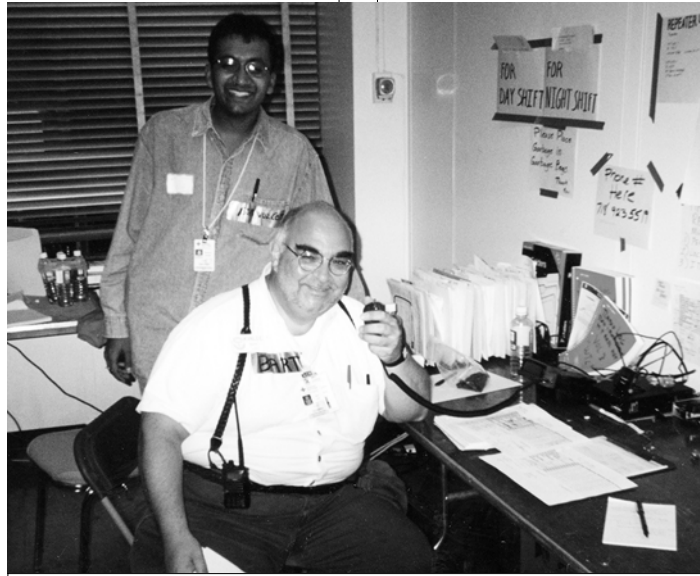
We used tactical calls such as "OEM-2" without disclosing Office of Emergency Management locations. All feared further terrorist attacks, so a wartime security consciousness arose. IS-89, the school used as comfort station for disaster workers, one count was 2,000+, was not identified on the air except by its tactical

call. The shelter identities (schools mostly) were used over the air because they were publicly announced and the Red Cross wanted people to know where they were. We identified our frequencies only as Tac 1 through Tac 12. The press was known to monitor the net, and may even have come up on frequency as the "bandit" that asked for sensitive location information over the air in the middle of the night. That incident prompted me to alert OEM to the issue.

One of the ops, Robert Gissing, VE3ZLV, and I put together a memo for new ops, based on my orientations for the first several days. A much edited text follows:

Red Cross Radio WTC
Operations Procedures Guidelines
To Radio Operators, From Staff (KV6LEE)
Version History 2.0; version date 18 Sept.

(Eyewitness — Continued on page 4)



Red Cross Radioroom at Brooklyn headquarters in a quiet moment at 0400 on September 18. Bart Lee, KV6LEE, is at the mic. Bob Suresh, VU2COT, is assisting. (Photo by Bobby Rios)

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2001 4:00 AM

Introduction: In responding to disasters there is much general information that can be useful... this document is meant to help the volunteer understand disaster relief work, the radio network, operating procedures, rules of operation [etc.].

THE FIRST RULE OF DISASTER WORK IS DO NOT BECOME A VICTIM OR [OTHERWISE] MAKE THINGS WORSE INSTEAD OF BETTER.

In all things, remember your role within this operation. You are a communicator of information. Do not try to solve problems you are not qualified or empowered to solve. Be careful, DRINK LOTS OF WATER, i.e., stay hydrated, and get your rest. The security on the site is very strict and there is no tolerance for anything less than total commitment.

[Excerpts from Procedure, Rules and Order of the Day:] The helmet is your friend. The [news] camera is your enemy... Be clear, concise and unambiguous. Use standard phonetics and "niner." Remember: Who, what, where, when why and how. The Net Controller is always in control of the NET. Do what he says. ... Communicate with your shift manager when you are off shift and arrange for your next shift. Go home and sleep: "When you leave the firehouse, leave the firehouse at the firehouse."

RED CROSS THANKS YOU FOR YOUR HELP

NEW YORK THANKS YOU FOR YOUR HELP

The work was exhausting. After nine days, I turned my job over to my replacement, Brian, K1BRF. At 17:52 on Sept. 19, Brian had taken this traffic from W2ML:

About 10 minutes ago on the New Jersey Turnpike a New Jersey State Trooper pulled over a ham, showed him a 2-Meter H/T and asked him to relay to the Net that they had been doing a great job and congratulations to all. The Trooper said it was "ham radio's finest hour." [Per K1BRF at 18:30]

I heard no "health and welfare" traffic on the ham bands, but I was directly involved with Red Cross while in New York and not otherwise monitoring. We did poll the shelters on request looking for missing people, and that was very sad traffic to have to handle. My impression is that tactical skills really came to the fore. Traditional amateur radio traffic handling did not much come into play in my experience. The ability to pass tactical and client traffic in a VHF directed net was the skill that mattered. It was no easy task just to get that traffic through reliably. Trying to do anything else but just pass the tactical traffic would be distracting and counter-productive, at least in the nets we worked.

The Salvation Army also effected disaster relief and provided respite and resources for rescuers. I saw how grateful the rescuers were to the Red Cross and the Salvation Army for their help in the hot zone. The Salvation Army SATERN net coordinated its activities also using ham radio. REACT was also involved on GMRS frequencies in support of the Salvation Army.

Ten Days Later

On September 21, D+10 in the hot zone, I identified myself as associated with the San Francisco Office of Emergency Services, and then walked to Ground Zero, the burning rubble. It was as surreal and shocking to be up close as it had been to see it all happen on D-day. I came home to California stunned by the terrorism, but proud of all of the Americans, and all of the New Yorkers, I saw and worked with in New York City, especially the hams. Back in San Francisco, I wrote up some suggestion for OES radio in this new world, and pulled together some cogent comments of others, which follow.

As the poet A. E. Houseman has written:

Therefore, since the world is still
 Much good, but much less good than ill,
 And while the sun and moon endure
 Luck's a chance, but trouble's sure,
 I'd face it as a wise man would,
 and train for ill and not for good.

From *A Shropshire Lad*, by A. E. Houseman, U.S. edition of 1957, at p.109.

73 de Bart Lee KV6LEE, xWPE2DLT.

Communications Suggestions for OES Sept, 2001 per KV6LEE based on WTC 9/11

- Plan on losing the command center: have a back-up location in place and operating; expect to lose both landline and cell phone service for several days.
- AVOID THE TWO BIGGEST BOTTLENECKS:
1) CREDENTIALS; AND
2) TRANSPORTATION, TO GET INTO THE SECURED GEOGRAPHICAL AREA. — Use preexisting badge-like emblems for persons and vehicles.
- Use Incident Command System at OES and at each other site; have a commander, a safety officer, public information officer, liaison, a logistics man, an operations chief, a planning and intelligence desk, etc. and manage access to each site.
- Duct-tape ID works and builds morale (see photo).
- Disperse "capital goods" such as working radio systems and maintain them.
- Obtain and disperse manuals and cheat-sheets for radios.
- Anticipate and use emergent volunteers (Red Cross calls them Local Disaster Volunteers).
- Work out client relationships in advance with radio organizations, and anticipate types of messages.
- Alert volunteers in advance what equipment is required: mobile 2 band transceiver, power supply and battery, gain antenna, and all the fixings.
- Be prepared to orient volunteers to disaster work (see memo).
- Cache and stock on sites everything needed for effective operation, e.g., message pads, log books, minor medicines, water for 3 days, dust masks, "shelter kits" for personal hygiene, etc. but ...
- Beware unreliable computers and high tech systems.
- Plan on many days, so have a night shift ready to go from day one.
- Have preset bandplans for radios, refer to tactical identifiers for sites and frequencies.
- Expect jamming unless jammers are eliminated in advance; ignore jamming.

- Have at least one repeater or input-frequency monitor without a PL filter. Insure repeater coverage and backup repeaters for both 2 meters and for 70 cms. (Maybe two for 2 m and two for 70 cms.).
- Organize priority frequencies in advance.
- Establish a high frequency station (e.g., W6PW) linked to systems for out of area traffic.

Practice Helps!

There's a rule in public safety about emergency and disaster operations: You do in a disaster what you do every other day.

I've been in enough emergencies and disasters to vouch for this rule. During a disaster, you don't have time to pull out the disaster plan. You don't even have time to sit back and try to remember what the disaster plan is supposed to be. You simply do whatever you do every day, only a lot quicker and with fewer rest breaks.

I believe this applies to amateur radio as well. If you don't use proper radio procedure when you're talking on the repeater, you're not likely to use it when you're in an emergency response. If you don't handle radiograms now and then, you'll have trouble doing it when "The Big One" hits. If you're not used to running (or even checking into) a directed net, you're much more likely to cause disruptions to a directed net during an emergency. If you want to be ready for emergencies:

1. Always use good radio procedure, even during drive-home QSOs on the local repeater.
2. Hop onto a traffic net now and then and handle some traffic. This means sending traffic now and again. The traffic pads from the ARRL are helpful, but they're even better if you've had practice using them!
3. Check into nets - informal and directed. Act as NCS on a directed net when you get the chance (but let others have a shot, too!).
4. Help out with the non-emergency amateur radio events. Pittsburgh EMS regularly uses the Pittsburgh Marathon as "practice" for a disaster, and I believe that the amateur radio operators who work that (and other events)

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- are much better prepared for a disaster as well.
5. Field Day and contests can be used as a way to "shake down" your system. I hilltop during a lot of VHF contests so that my equipment will work if I have to "hilltop" during a disaster.

The raffle is a bust....for now.

Rob Fenn, KC6TYD

All good intentions are sometime squelched by rules. We were just about there and then new information was brought to our attention that has the raffle on hold. California Penal Code 320.5 clearly outlines rules for charitable raffles, and for the most part we were good. Unfortunately, as much as we tried to find alternatives, there was no way around the fact that we'd be conducting a raffle over the internet, and that would be in violation of the law. I'll keep the prizes all safe and secure until we all meet again in person.

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board is currently testing the process to confirm its operation. Club members will receive a unique code added to their PAARAgaphs label. Codes will be mailed to those who receive electronic copies of PAARAgaphs. This code is required to vote.

In December, we will provide a link for voting. Following the link, the member will enter their code and be granted access to the ballot one time. Any subsequent use of your unique code will be discarded. Remember, nominations for any member to run for one of the open positions closes at the end of the November meeting.

As the story elsewhere in PAARAgaphs states, the December Dream to Reality raffle will not be held due to legal issues. Originally, I remember finding something that allowed us to hold a raffle which is why we proceeded to work out a plan. However, after consulting a lawyer on the topic, I learned that I was mistaken. Clearly, the existing laws were not written for the current conditions. Not only are there issues with the method of payment for tickets but also with the ticket disbursement process that we'd planned. Thus, the board voted to postpone the Dream to Reality raffle for now.

I stumbled on an interesting story regarding the World Heritage Site, Swedish Grimeton SAQ Trans-

mitter. The transmitter was established in 1924 for the sole purpose of sending telegrams across the Atlantic to the USA. It operates at 17.2 kHz. It's the only surviving transmitter that generates a radio signal by mechanical means. Amazingly, after 96 years it still works! The Zoom presentation on 10/20/20 includes a guided virtual tour and description of its operation and creation. The presentation can be viewed on the South Dublin Radio Club site; <https://ei7ql.blogspot.com/2020/10/virtual-tour-of-historic-swedish-saq.html>. The station's website also has its own self conducted tour; <https://alexander.n.se/virtual-visit-to-saq-grimeton/?lang=en>. Should you ever be in Sweden, it's open for visitation on most days.

Rebar, N6DB, was contacted by the Woodside Zombie, Mike, W6WZ requesting his tower and antenna be removed. Rebar rounded up Doug, KG6LWE, Gerry, N6NV, and Joel KD6W to assist in removing the tower and antenna. Thanks go to Rebar and assistants for successfully and safely completing the requested work. Tower or antenna work is an important service PAARA members provide to ham's needing assistance. Reach out to Rebar if you wish to assist in any future endeavors.

Once again, the November 6th club meeting will be conducted using Zoom. The login information is located in this issue or on our website; www.PAARA.org. If you ever wondered how to make contacts using amateur satellites, don't miss this meeting.

73, Jim K6SV

Keep the airwaves alive by getting on the air!

Oct 14, 2020 Board Meeting Minutes

The October Board meeting was a virtual meeting, conducted over Zoom.

Key Item:

The annual PAARA board elections will be held electronically during the December club meeting. Each club member will receive a unique voting code: For most members this will be included in the PAARAgaphs mailing. Club members who don't receive the newsletter will receive their code on a postcard. This code number is required to vote.

During the December meeting, members will visit a website and use their code to vote. Note

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that multiple votes with a single code are not allowed: Only the first vote will be counted.

Attending:

Jim Thielemann K6SV, President; Marty Wayne W6NEV, Vice President; Ric Hulett N6AJS, Secretary; Walt Gyger K6WGY, Joel Wilhite KD6W, Doug Teter KG6LWE, and Darryl Presley KI6LDM, Directors. Also present were Shri Hariharasubrahmanian KA6Q, Mikko Sannala AB6RF, and Clark Martin KK6ISP. A quorum was present. The meeting was called to order at 7:05 pm.

President's Report:

We wish to recognize 'Rebar', Larry Rebarchik N6DB and other PAARA members who put together a work party to remove a tower and antenna for a ham in Woodside. This is one of the important services that our club can perform.

Secretary's Report:

We have received two renewals and two new memberships in the last month. Our club membership is now 181. Of our membership, 48% hold an Amateur Extra class license, 28% have a General ticket, and 17% hold the Technician class. (We apparently don't have any Advanced or Novice class members!)

We had a brief discussion about the relatively low numbers of Tech licenses. We should discuss how to encourage the membership of the newer members of the Ham community.

VP / Program Chair Report:

Last month's presentation an interactive discussion with James Armstrong NV6W, the new ARRL Santa Clara Valley Section Manager. For November, Fred Cunha K6FVC will present an Introduction to Satellite Communications. No PAARA field trips are planned at this time.

Old Business:

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

Agraphs.

Elections:

Clark KK6ISP, elections chair, has confirmation from all incumbents as to their willingness to stand for election for next year. At this time, no club member has stepped forward to run for the Vice President position. Club members who would like to actively support PAARA should consider this position. Our current VP, Marty Wayne W6NEV would be happy to discuss the position with you.

After discussion, the board voted unanimously to proceed with the online elections at the December virtual meeting. Shri KA6Q has demonstrated the online voting and verification process for us.

After considering the complexities of an online raffle, and reviewing the legal requirements, the board voted unanimously that PAARA will not have the traditional "Dream to Reality" raffle until we are able to meet in person.

Next club meeting November 6 will be on Zoom. Check the PAARA website PAARA.org for meeting details and signup information.

New Business:

No new business items were raised.

The meeting was adjourned at 8:32 pm.

Respectfully submitted,

Ric Hulett N6AJS

Secretary / Membership Chair

PAARA club meeting

Join Zoom Meeting

<https://us02web.zoom.us/j/83071914806>

Your Name, use: First name and Call Sign

Meeting ID: 830 7191 4806

One tap mobile:

+16699006833,,83071914806# US (San Jose)

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	dteter@wawi.com	
Director ('21)	Darryl Presley, K16LDM	650 255-2454
	ki6ldm@arrl.net	

Appointed Positions

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

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Photographer	<i>Position Vacant</i>	

VE Exams

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

Electronics Flea Market

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

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

PAARA — Palo Alto Amateur Radio Association

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

FARS — Foothills Amateur Radio Society

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

NCDXC — Northern California DX Club

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

50 MHz & Up Group

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

SPECS

Southern Peninsula Emergency Communication System

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

SCARES

South County Amateur Radio Emergency Service

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

SCCARA

Santa Clara County Amateur Radio Association

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

SVECS — Silicon Valley Emergency Communications

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

TEARS — The Elmer Amateur Radio Society

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

Contact: AA6T@ARRL.NET

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

WVARA — West Valley Amateur Radio Association

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

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

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

American Red Cross, Santa Clara Valley Chapter

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

(Please send changes to PAARAgaphs editor)

WE ARE PLEASED TO ANNOUNCE
THE NEXT CHAPTER FOR US:

HSC HAS SOLD TO

EXCESS SOLUTIONS!



That's right!

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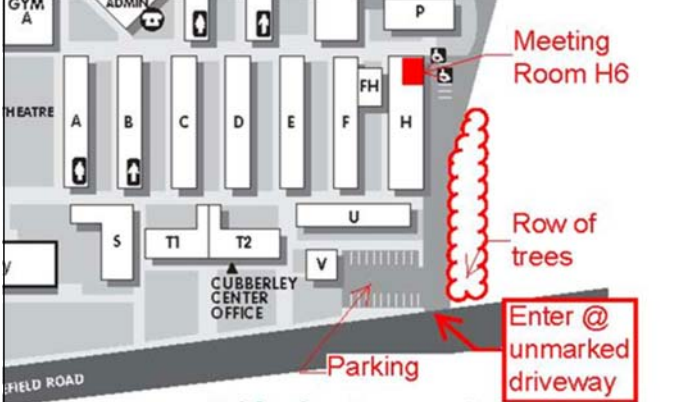
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PAARA Weekly Radio Net

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

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

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



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 650/856.8756 fax
 www.cityofpaloalto.org

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Palo Alto Amateur Radio Association

P.O. Box 911, Menlo Park
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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).

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PAARAgaphs Ad Rates

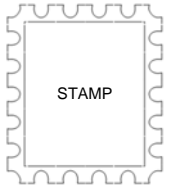
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PAARAgaphs — November 2020

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