



The Pasadena Radio Club

February 2011

Bulletin

HABEX

Ara will speak on the HABEX project, High Altitude Balloon Experiment, a balloon capable of reaching altitudes of 100,000 feet. The project goal was to build a high altitude balloon, reach 100,000 feet, take a photo and return safely to earth, all while being tracked on the ground. Ara will discuss the process of designing and building the payload, the day of launch and recovery, and the many lessons learned.

Ara is an undergraduate student at Cal Poly Pomona working on his degree in Electrical Engineering in Control Systems. He is a contractor to the Jet Propulsion Laboratory developing software systems for part reliability and testing. His work experience ranges from self-balancing robots, omni-directional drive systems for robotics to plasma lighting and harsh environment sensors. He is currently developing a quadrotor Unmanned Air Vehicle (UAV) capable of accomplishing given tasks autonomously at the Null Space Labs hackerspace.

Ara has been an Amateur Radio operator for over four years and holds a technician license.

February 22nd Speaker



Ara Kourchians
N6ARA



President's Message

Mark Seigel, W6MES

Hi All! Things are working out with our Program for the 2011 Southwestern Convention. I'm thinking about how we can improve the future of Ham Radio for generations. The way to do this is to help kids understand the different wonderful modes of communication available to hams, and the endless opportunities to experiment with electronics, so they can have the same love for radio that we do. Transmitters, receivers, antennas, software defined radio, APRS, IRLP, ATV, PSK31, etc. Lets find ways to bring these exciting things to our kids, grandkids, and school kids. Let's grow our hobby.

Dick Sale, N6QFD, SK

Alfred R. "Dick" Sale, of Eagle Rock, a long time mountain rescue volunteer, died February 14 at Huntington Memorial Hospital, several days after suffering a stroke. He was 80. Memorial services will be held in the local mountains in the late spring.



PRC members will remember Dick as the founder and mentor of the AC100 Ham Radio Group.

Sale was born on September 15, 1930 in Altadena and spent part of his boyhood at Switzer's Camp in the San Gabriel Mountains, where his mother was the camp cook. He worked at Rockwell Aviation as an instrumentation photographer. A specialist in high speed photography, he took great pride in having "helped put man on the moon" as part of the NASA space program in the 1960s and '70s.

Sale served as volunteer group leader for the Sierra Club Angeles Chapter's Basic Mountain Travel Course (BMTTC) from 1971 to 1976. He joined the oldest California mountain rescue team --Sierra Madre Search and Rescue Team (SMSR) -- at the age of 46. He also served at a national level in various board capacities of the Mountain Rescue Association (MRA). He took great joy in teaching children and adults about wilderness safety and was scout master of Temple City Boy Scout troop 157 from 1962 to 1971.

Two days after 9/11, Sale made the first of more than a dozen trips to Taiwan. As the result of an e-mail inquiry, he eventually helped establish and train Taiwan Mountain Rescue teams versed in the latest SAR techniques. He is regarded by the Taiwanese as the "Father of Taiwan Mountain Rescue".

Sale, an electronics hobbyist and HAM radio operator (N6QFD), was easily recognized by his full beard, huge Australian hat and red suspenders. In recent years he developed enhanced mapping techniques, often printing updated maps on-site during searches. Sale continued as a Sierra Madre operations leader, organizing wilderness searches and rescues locally and regionally, until his death. His motto was "Mountains and wilderness don't care, you take care, be safe".

Sale married his first wife Barbara in 1950 and raised three sons after her death in 1973. He is survived by

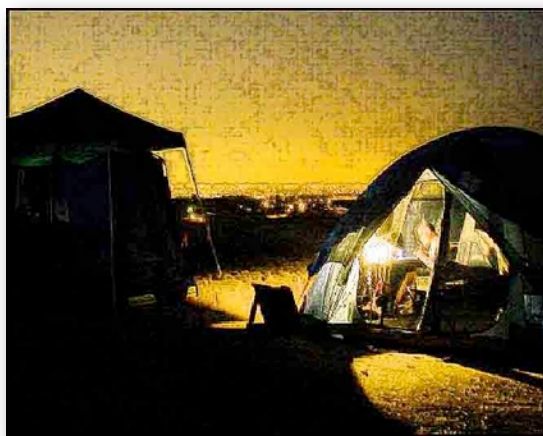
his wife of 28 years, Melody Peterson of Eagle Rock, his two surviving sons, Terry Sale of Denver, and Jeffrey Sale of Orange County, and six grandchildren. He is pre-deceased by his son Donald. The flag is flying at half-staff at Sierra Madre Search and Rescue Team headquarters.

Those wishing to make donations to the "Dick Sale Navigation and Tracking Fund" may make checks payable to SMSR with the "Dick Sale Fund" designation. [P.O. Box 24, Sierra Madre, CA 91025]

Our Field Day Intent

Paul Gordon, N6LL

Our Field Day operation will be just like last year, only different. We will be a little more goal oriented, a little more intense, and a little more fun. The goals are set by the ARRL. The rules are published. Bonus points are assigned. With your help, we will strive to meet more of those goals.



It's time for the high-level coordinators to step forward. I'll call them Tent Captains. Each one will be responsible for a station and its supplies. Not just the rig, but the pencils and chairs too. We'll make a list of the things each station needs, and we'll ask everyone to help out with what they can bring. The Tent Captain will make sure it all comes together with a minimum of duplication. They know who's bringing the rig, who's bringing the tent, where the antenna goes, etc. The Tent Captain is also in charge of the radio operators of their station, and will keep our goals in mind. I guess that also makes them "Intent Captains." We need six Tent Captains, more or less. Already K6HTN, KJ6NO, and W6TAG have volunteered. Who will join them to lead our Field Day with intent and in tents?

Sub-audible Tomes

Bruce Nolte, N1BN

Is Ham Radio Old Fashioned?

It might be an article in the newspaper or a new piece on TV, "Ham Radio is an oldie but a goodie" - is sometimes a catch phrase used as a "hook" by a reporter. Or you might be someone out in public and they ask about your HT or the antennas on your car and say "I did not know that anyone did that anymore." These are statements I have heard many times in my years as an Amateur Radio operator.

Strangely a couple of the most used modern technologies began long before Ham Radio existed and they don't seem to get the same criticisms, the telephone and the automobile. Maybe they don't relate to the point of discussion but maybe they do. Why is Ham Radio perceived to be "older" when in fact the auto and telephone are in fact older - but do you ever hear classify them as old?

Ham Radio could be considered a subculture and because of that the average man on the street may not stay in touch with members and advancements of this subculture and therefore falsely assumes that Ham Radio has not kept in step with modern times.

Is there a fix for this? I know there is no simple answer to this difficult problem of public relations. I often explain to the unlicensed that many NASA astronauts are Hams when this comes up, knowing that most people respect NASA for leading edge science. Is this issue important? When we view the composite public relations negatives we face they must at times impact discussions about antenna ordinances and protecting our radio bands. It seems to me that our radio service needs to appear to be modern and vital to validate our use of tall antennas and radio bands. What do you say?

73 Bruce N1BN



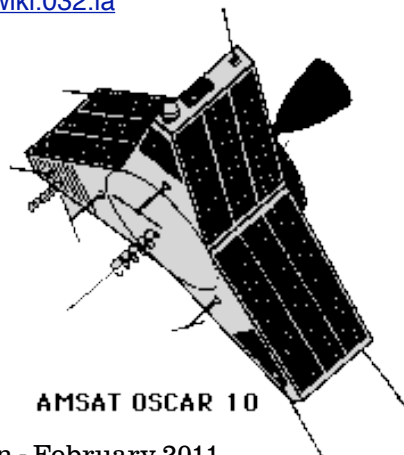
What is a Hackerspace?

Fred Lopez, KG6GTL

What comes to mind when you think about a Ham Shack? Did you learn something; maybe even solder a few things together while in your shack? How about having friends over to help put up your antenna and asking questions of those more knowledgeable about your various questions. What has happened to that as people are turning to the internet and YouTube for answers? There is a lost community and comradery, but there are places in Los Angeles, around the country, and around the world that are bringing the technology and learning back to a home base they're calling a hackerspace. I think this might be the ham shack for the next generation.

The definition given to us in Wikipedia is pretty good "A hackerspace or hackspace (also referred to as a hacklab, makerspace or creative space) is a location where people with common interests, usually in computers, technology, science or digital or electronic art can meet, socialize and/or collaborate. A hackerspace can be viewed as an open community of labs incorporating elements of machine shops, workshops and/or studios where hackers can come together to share resources and knowledge to build and make things. "

Our closest hackerspaces are in Van Nuys and downtown Los Angeles. I have been to the one downtown hackerspace called Null Space Labs. It's a great space that has a lot of great people, not to mention the well equipped solder stations and microscopes. They have a number of group meetings that happen throughout the month. I highly recommend giving it a visit. Check the spaces wiki for more information and upcoming events at <http://wiki.032.la>



AMSAT OSCAR 10

Crown City HF

Tom Berne, W6TAG



Antenna Tuners (2)

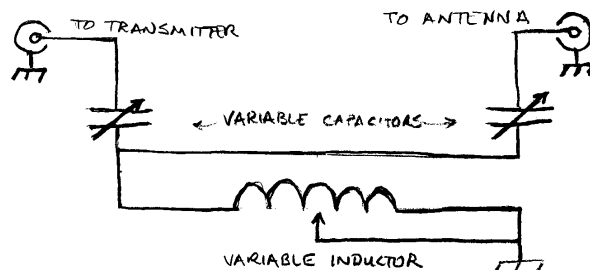
Last month we had decided that we will need a manual antenna tuner and I promised to tell you a little about how they work. I have chosen to go into the electronics a bit deeper than I usually do because I have been helping my grandson (KE5VYT) learn the material covered by his amateur radio exams. Because I can see that some of the concepts that govern AC currents are exemplified nicely in antenna tuners, I thought that my “target audience” (see last month’s footnote) might benefit by some greater familiarity with them. So here goes!

In a nutshell the antenna tuner is a matching transformer between the antenna with its connected coax and a transmitter. What do I mean... “a matching transformer”? Well, most commercially available ham radio antenna tuners (MFJ, Dentron, Ameritron, etc) are of the CLC type which means that there are three knobs to tune: two connected to variable capacitors (usually marked “Transmitter” and “Antenna”, and one to a variable inductor (marked “Inductance”). OK, so how does that actually “transform”?

When you took your Technician class you heard about resistance, voltage and current in direct current circuits. Remember... the more the voltage and the less the resistance the more current flowed. Well, with alternating currents (AC is what comes out of a radio transmitter), the force opposing the flow of an AC current is called “impedance” (its symbol is “Z”). Impedance is word we have been using a lot without explanation, but now it is time to change that. It turns out that Z in an AC circuit is determined by resistance (as with DC) plus two new phenomena: capacitive reactance and inductive reactance. We will focus on the fact that both capacitors (which have capacitance that causes the reactance) and inductors (which have reactance that causes a very different form of reactance) are very frequency sensitive.

Capacitors are generally made of plates or sheets of a conductor separated by a non-conductor (air, plastic, etc.) and inductors are coils of made of a conductor. Each has several amazing characteristics. Capacitors offer very little obstruction to the flow with high frequency currents but increasingly block the passage of lower frequency AC and they completely stop DC. Guess what, inductors do almost exactly the opposite! So, by adjusting the amount of capacitance and

inductance in a circuit you can “transform” the Z seen by an antenna tuner at the transmitter end of the coax, either up or down, to “match” the always fixed 50 ohm output Z from a transmitter. The actual circuit used is called a CLC because the Cs are symbols for capacitance and the L is for inductance, so there are two variable capacitors and one variable inductor (see diagram below).



The one confusing thing may be the little symbols that look like pitchforks sticking down from the two coax connectors and the variable inductor. Those are ground points which all connect together and represent a continuous path between the antenna coax and the transmitter’s chassis ground.

In reality, in order to see what the effect of turning the knobs on our tuner, we need to put a SWR meter between the tuner circuit and the antenna coax termination. But more on that and how to actually adjust the tuner will come next month.

Mixed Decision in Palmdale Appellate Case

The California Court of Appeals handed down its ruling last week in the case of Alec Zubarau v City of Palmdale. The court made three decisions that affect Amateurs in California. First the court found that part of the Palmdale ordinance was unconstitutional because it was vague and could not be understood by a reasonable person. That part of the ordinance allowed an Amateur to have a vertical antenna up to 75 feet high when measured from the ground but limited the “active element of the antenna array” to 30 feet in height. The court found that the ordinance did not define “array” or “active element” and did not say where the height of such array was measured from. After a number of questions were submitted regarding this ordinance, the court determined that no one could really understand what it meant and declared it unconstitutional. This part of the decision, said ARRL Volunteer Counsel Len Shaffer WA6QHD, will affect only hams living in Palmdale.

The next issue decided by the court had to do with radio frequency interference. They said that only the Federal government could regulate RFI and any state or municipal law that tried to address it was preempted. That means it is not enforceable. That part of the decision affects hams throughout the state, according to Shaffer. He asks any California amateur whose municipality or county has an ordinance that limits Amateur Radio antennas or operations based on whether there is interference to consumer or other devices to contact Southwestern Division Vice-Director Marty Woll N6VI: [n6vi at arrl dot org](mailto:n6vi@arrl.org).

The final part of the decision had to do with whether Palmdale followed the law when they made Alec Zubarau take down his permitted tower but allowed him to keep a VHF/UHF vertical on his roof. The court said they thought this was a reasonable accommodation because it allowed him to be active in some part of amateur radio. "This decision is troubling," said Shaffer, "and we are considering what options we may have regarding any further review of the issue. We will be conferring with various legal sources before any final determination is made."



Dick Sale, N6QFD, with young students

Some Renewals are Past Due

Club membership dues were due in January and the response has been good. As of the date of the board meeting, 62 members had renewed. Thank You! to all those who renewed promptly.

If you have not yet renewed, please take a minute to do so now and mail your renewal form to the club post office box. The address is listed on page 8 of this newsletter. Last month we posted specifics for downloading and filling out the membership form on the club website. Here they are again:

Go to www.qsl.net/w6ka, click on the "Membership" button at the top of the page, then download the file. For best results, use the Word document. Open the document in your MS Word program and fill in the blanks, using the tab key to advance through the fields. Then print out the single page, saving the file for your records. This will make it easy for your new club treasurer to read, saving him lots of time spent in past years trying to decipher handwritten information.

Thank you for supporting your Pasadena Radio Club!

President Mark Seigel	W6MES w6mes at arrl dot net
Vice President Fred Lopez	KG6GTL fred at fredlopez dot com
Secretary Jutti Marsh	KJ6HWL kj6hwl dot arrl dot net
Treasurer Richard Parker	K7RWP rwp42 at me dot com
Members At Large Chris Galante Alan Denney Danny Schurr	K6YZH KI6ZYW W6XXB
Past Officers Fred Lopez Phil Barnes-Roberts Mary Bothwell Tom Mikkelsen	KG6GTL WA6DZS AG6MB WA0POD
Education Chair Mark Seigel	W6MES w6mes at arrl dot net 818-430-5244
VE Team Liaison Merrie Suydam	AB6LR ab6lr at arrl dot net 626-969-4409
Club Net Mike Dinko	KF6FEM 626-797-8082
Bulletin Editor John Minger	AC6VV ac6vv at arrl dot net 323-256-0046

Pasadena Radio Club ~ Minutes for Board Meeting ~ January 8, 2011

Meeting called to order at 1918 hours.

Present:	
Tom Berne W6TAG	Bruce Nolte N1BN
Peter Fogg KA6RJF	Jutti Marsh KJ6HWL
Fred Lopez KG6GTL	Christopher Galante K6YZH
John Minger AC6VV	Phillip Barnes-Roberts
Tom Mikkelsen WA0POD	WA6DZS
Richard Parker K7RWP	Mark Seigel W6MES

1. Treasurer's Report

- a. Sec of state S-100: filed
- b. Insurance policy paid and received
- c. 62 members have renewed
- d. 110 total members
- e. Six month Certificate matures – Renew it: motion/voted/passed
- f. Newsletters: eliminate duplicate mailings when there are multiple members living at the same address.
- g. Database is up to date
- h. Look into database software to manage membership database
- i. Vote to reimburse Bruce for badge laminating expenses: motion/voted/passed
- j. Working to get members to renew in January rather than April: Send reminder emails/put in newsletter/remind people at meetings
- k. Insurance for field day - still pending

2. Contest update:

- a. 18 people have filled out preferences get more signups
- b. Contest dates 1700 hours March 25 – 1700 hours March 27
- c. Note we need more KPARN members to help cover shifts. Recruit more KPARN members.

3. Kaiser room reservation process

- a. We need to file papers with Kaiser
- b. Review of "memorandum of understanding" with Kaiser

4. Field Day Report

- a. Attempts to contact events coordinator, Ms.Tarantino, have been unsuccessful
- b. Bruce will attempt to contact her
- c. Begin to consider alternative locations:
 - i. Elks lodge in Pasadena
 - ii. Debs Park in Montecito Heights, Los Angeles
 - iii. Cerro Negro

5. Hamcon Convention Report

- a. Dates: September 9-11
- b. We are in charge of doing the program
- c. Joy Matlack also working on this
- d. We have sponsors
- e. Next Hamcon meeting Feb 23
- f. Speakers: Al Wolff, Marty Woll, Kate Hutton
- g. Idea: child speaker on ham/ have her come out early to present to schools, club could sponsor this
- h. Two quarter page Hamcon placed ads in QST and CQ
- i. Question: Do sponsoring clubs get an ad in program – buy one if not offered
- j. Club table at Hamcon or display with banner and newsletters

6. Meeting presentation suggestions:

- a. Parking lot show and tell
- b. Antenna show and tell
- c. Remote control of radio via Internet
- d. Ham radio Internet night – members share their favorite ham radio website, ask people at the next meeting

7. Mentoring program:

- a. New hams need mentors
 - i. Advice on radio purchases
 - ii. Opportunities to get on the air and talk
- b. Create a form for people to fill out
 - i. Experienced hams: What could you help people with?
 - ii. For new hams: What do you need help with?
- c. Mini field days
- d. Publish list of elmers in the bulletin

8. Miscellaneous

- a. Get weekly net more active
 - i. Update the net script
 - ii. Regular club announcements – have someone assigned to do it each week (this can be rotated)
 - iii. Encourage more members to participate
- b. Send \$100 to donation to Newline: moved/voted/passed
- c. New QSL Card design: have contest, kids design it?
- d. Sunland/Tujunga/neighborhood council neighborhood needs operators to respond
 - i. 145.480 SCDX Club's repeater pl 100
 - ii. HF vertical 28.400

Adjourned at 2043 hours

**The Miles Family
will Host February 22nd
Refreshments**

Download the Bulletin:

<http://www.qsl.net/w6ka/>

**Coming in March:
Microwaves with
Chuck Swedblom,
WA6EXV**

The Pasadena Radio Club meets the fourth Tuesday of each month at 7:00 p.m. in the Kaiser Permanente Walnut Center, located at 393 East Walnut Street, at the corner of Los Robles Avenue in Pasadena. Enter the parking structure at the Los Robles Avenue entrance and mention "Pasadena Radio Club". Everyone is welcome to attend. Please sign in at the front desk and security will direct you to the meeting room.

Membership in the Pasadena Radio Club is open to anyone interested in Amateur Radio. Dues are \$20 per year, \$10 for students. Request a membership application at the club's mailing address, on the club website, www.qsl.net/w6ka, or in person at the monthly meeting.

The Pasadena Radio Club, W6KA, conducts a weekly net every Tuesday night, except on meeting nights, at 7:00 p.m. The frequency is 145.180 MHz (-) PL 156.7. All licensed amateurs are invited to participate.

The club has a packet station on 145.630 and on 223.600 (cross-band capable) with a PBBS of W6KA-10 and a node name of MIRDOR.

There is also a Yahoo Group for club members at <http://groups.yahoo.com/group/PRC-Club/>. All members are invited to join as this allows for rapid dissemination of information to members via e-mail.

Bulletin Submissions: please submit any articles, photos, or ideas for future articles via e-mail to AC6VV at [arrl dot net](mailto:arrl_dot_net), please include "PRC" in the Subject line. Other modes of submission may be arranged in advance on an individual basis. Submissions are due by the Friday after the board meeting.

Permission is granted to use articles in this issue as long as "Pasadena Radio Club Bulletin" is credited.

Please submit any address or e-mail changes to the Treasurer.


We can take your files on disk or via e-mail



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Pasadena Radio Club, W6KA

P.O. Box 282, Altadena, CA 91003-0282

<http://www.qsl.net/w6ka/>

**This Month: N6ARA on
HABEX, the High Altitude
Balloon Experiment**

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CQ WPX SSB Contest Signups are Due

Notice: This year the CQ WPX SSB Contest (www.cqwp.com/rules.htm) will begin at 5 PM PDT on Friday, March 25th and run until 5 PM PDT on Sunday March 27th. If you would like to join the W6KA contesting team for this event and have not yet signed up (or are just not sure that you have) please let Tom, W6TAG, know of your interest by sending an E-mail to him at cberne@juno.com.



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Feb 20	Feb 21	Feb 22	Feb 23	Feb 24	Feb 25	Feb 26
Slow Speed CW Net 28130 KHz 8:00 pm	Presidents' Day	PRC Club Meeting 7:00 PM	KPARN Nets 12:15 pm 448.280 Mhz, 52.700 Mhz, 7.228 Mhz			TRW Swap Meet
Feb 27	Feb 28	Mar 1	Mar 2	Mar 3	Mar 4	Mar 5
Slow Speed CW Net 28130 KHz 8:00 pm		PRC Net 7:00 pm 145.180 - PL 156.7				ARRL Int'l DX/SSB
Mar 6	Mar 7	Mar 8	Mar 9	Mar 10	Mar 11	Mar 12
Slow Speed CW Net 28130 KHz 8:00 pm		PRC BOARD 7:10 pm PRC Net 7:00 pm				NE ARES Meeting
Mar 13	Mar 14	Mar 15	Mar 16	Mar 17	Mar 18	Mar 19
Slow Speed CW Net 28130 KHz 8:00 pm		PRC Net 7:00 pm 145.180 - PL 156.7				Chino Swap Meet
Mar 20	Mar 21	Mar 22	Mar 23	Mar 24	Mar 25	Mar 26
Slow Speed CW Net 28130 KHz 8:00 pm		PRC Club Meeting 7:00 PM	KPARN Nets 12:15 pm 448.280 Mhz, 52.700 Mhz, 7.228 Mhz		CQ WPX SSB Contest	TRW Swap Meet CQ WPX SSB
Mar 27	Mar 28	Mar 29	Mar 30	Mar 31	Apr 1	Apr 2
Slow Speed CW Net CQ WPX SSB		PRC Net 7:00 pm 145.180 - PL 156.7				