

# QSA-5

Founded 1933

The Marin Amateur Radio Society Monthly Newsletter

August 2008

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## Greetings from the desk of the Pres.

Boy, we're deep in the middle of 2008 aren't we? High "summer tides", vacations, back to school shopping, enrolling in "continuing adult education" fall semester.

I've finally gotten serious about learning electronics. My private tutor has assigned my homework, and I am currently reading "Electronics for Everyone" by Munroe Upton. Mr. Upton uses humor and analogy to get the point across, and it appears to be working! My instructor also has planned a lab curriculum and, as soon as I am ready, I will be building circuits. I'll gratefully accept any soldering tips you might care to share.

I'm sure you've seen our Field Day score by now. Nice job! Thanks again to everyone who participated. The same venue has been reserved for 2009 for another joint event with REDXA.

The signal reports from KPH's Night of Nights are rolling in. I've received about 50 of them already. Our ARRL section chief Bill Hillendahl KH6GJV was a surprise guest at the event.

The club needs a chairman for the Activities Committee and volunteers for the MARC/MARS 75th anniversary event in Sept. Please contact me or a board member if you have some spare time you can give to the club.

Hope you all enjoyed a month's break from the club house meetings. We're back on schedule now and I hope we'll see many of you at the August 1st. meeting at the clubhouse.

As always, your suggestions and ideas for the club are important to its success. The board of directors needs your input. Do you have an idea for a guest speaker at a monthly meeting? A color scheme for the new kitchen cabinets? Speak up folks, this is your club and I remain your humble servant, 73/88

Denice Stoops, President.

**Website at W6SG.NET**  
**Phone 415.389.6630**  
**For ARRL SF Section news, go to**  
**[www.arrl.org/sections/?sect=SF](http://www.arrl.org/sections/?sect=SF)**

**The matching funds drive total has, so far, reached better than the halfway point to the \$1,000 pledged by an unnamed member. Please send your checks to MARS, POBox 6423, San Rafael, 94903.**

**Check out issue #5 of The Way-back Machine on page 3. The beginning of broadcasting, mostly by amateurs.**

## Board of Directors Meeting 10 July 2008

Call to order: 7:34, with a rap of the Squirt can. Agenda approved. Minutes of June 12 meeting passed w/o objection.

### Committee Reports

#### Communications:

County of Marin wants to use clubhouse for a polling place in 2009: March 3, June 2, and Nov. 3. We get \$75.00 a shot. Passed w/o objection.

**Treasurer's report:** Total income: \$2,250.00; total expenses: \$ 613.38. Dave is transferring bill paying to online—one benefit is that PG&E now gives us a June-June power use chart. Chet Rice sent a \$100 contribution.

**Membership:** We welcome Richard Skaff KI6RIQ as a new member. (Also Mike Sterling KI6OON.ed.)

**Recreation committee:** Needs a chairperson. Will open it up to the general membership.

**Public service:** Marin Century is coming up August 2, Holstein is two weeks later, both need more volunteers. Peak Hike is coming in September, has requested course sweeps. Doug KF6AKU reports that he got invited to the Dipsea Operations meeting with State parks and others to go over pluses and minuses.

Column Three.

**P.O.Box 6423**  
**San Rafael, CA 94903**

From column two.

One thing that will affect us next year is that we'll probably move Net Control into the trailer to control interruptions from the public and divert them to a real information booth. Pan Toll Ranger Station would then not be used. We'll have to set up at the trailer and test it before the race. The designated runner may need to be accompanied by a ham operator.

**Technical committee:** 4-Cs (Contra Costa Communications Club) has been using the Tam repeater happily. (Their repeater was rendered unusable by copper wire-stealing b——ds. ed.)

**Comm truck:** Aux. generator needs work but our stand-alone 5KW gen works fine. We ran it 24 hours during Field Day.

**Education:** Nothing going on. Randy has had some inquiries.

**VE Coordinator:** Saturday 7/12 is the next exam, five people are coming so far. Time is 0900.

**Marin County Liaison for RACES:** Next quarterly meeting: 7/26, room 266 at Marin OES.

**Building managers:** Rich W6UDS will call the plumber Elisabeth's landlord recommended and get an estimate for obtaining a video diagnosis. Rich also has plans to do more electrical work.

**Field Day debriefing:** **We accrued about 3,500 contacts, for about 8,000 points.** The Rod and Gun Club was pleased with our comportment and welcomes us back, so we already have an "in" for next year. RedX also wants to continue the association. Marilyn may be willing to present a video she compiled of Field Day, maybe for the next general meeting on August 1.

### Old Business

**Fundraising for building maintenance:** Not much response. Also see under "new business." However our matching funds program has exceeded the halfway point.

**Prescriptive easement:** Doug will get to it.  
**75<sup>th</sup> anniversary event:** Still needs a chair. That's a Recreation Committee chair responsibility.

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**K6GWE Repeaters**  
**Big Rock Ridge 147.330 +**  
**2 meters INPUTS**  
 pl 203.5 Big Rock  
 pl 179.9 Mt. Tam west  
 pl 167.9 Mt. Barnabe  
 pl 192.8 Tiburon  
**Mt. Tamalpais 146.700 -**  
 pl 179.9 Mt. Tam input  
**San Pedro Ridge 147.330 +**  
 pl 173.8 off-line - reserve status.  
**440**  
**San Pedro Ridge**  
 443.525 + pl 82.5  
**Mt. Tamalpais**  
 443.250 + pl 179.9

**Here's the MARS Calendar of Public Service Events for 2008**  
 What's left:  
**Saturday, August 02 - Marin Century / Mt. Tam Double Century** 4AM - Midnight 20+ Volunteers  
**Saturday, August 16 - Holstein Hundred** 6AM-7PM 15+ Volunteers  
 Randy Jenkins, KA6BQF,  
 ka6bqf@arrl.net  
 Vice Pres. & Public Service  
 Coordinator 510-526-4089

**Historybit.**  
 FYI: Arc transmitter efficiency was limited by electron recombination time in the arc, which is why they favored a hydrogen atmosphere. Arc transmitters worked fine at low frequencies, and struggled at 500 kc, which was about the high frequency limit. Once struck, the arc was maintained, so they commonly used a shorted turn to shift frequency for keying, thus originating "mark" and "space" frequencies. As Sandy noted some used a chopper across the shorted turn to give MCW. Some late transmitters used a keep-alive electrode and could be keyed somewhat conventionally, but I believe they were rare. Dumping to a dummy load key-up was also an option, but I believe seldom used.  
 Large arc transmitters approached 50% conversion efficiency, which is pretty good. They made 'em up to a megawatt.  
 It's a pity they had significant salvage value with lots of copper and iron, or more would have survived.  
**Richard, AA1P**

An Amish farmer walking through his field, notices a man drinking from his pond. The Amish farmer shouts:  
 "Trink das wasser nicht. Die kuhen haben dahin gesheissen."  
 (This means: Don't drink the water; the cows have sh\*t in it.)  
 The man shouts back: 'I'm a \_\_\_\_\_, (fill in the blank.) I don't understand. Please speak in English.'  
 The Amish farmer says: 'Use two hands, you'll get more.'

From the 'net.  
 Greetings,  
 This mornings newspaper the Halifax Chronicle Herald, has an article stating that today the 1st of July 2008, is the 100th anniversary of the international community's acceptance of the Morse SOS symbol replacing CQD.  
 Martin/VE1AUA  
 7/1/08  
 To me it looks like Halifax Chronicle Herald is trying to rewrite history. In front of me I have a reprint copy of CONVENTION RADIOTELEGRAPHIQUE INTERNATIONAL from the International Radio Conference in Berlin November 3rd 1906. This document shows that the international distress signal ..... ( generally, but not correctly referred to as SOS) was approved upon at this conference. Perhaps someone should advise the Halifax Chronicle Herald about this fact.  
 Regards Hans Chr./LA2EG  
 ed. note: The international CW distress signal is not really SOS because there are no normal character gaps between any of the dits and dahs. It could just as incorrectly be called V7 or IAMS or 3B or whatever you can make out of that string of .....  
 It was sent as one continuous character. Also, 'SOS' never stood for anything other than itself.

**Anger management?**  
 Husband: 'When I get mad at you, you never fight back. How do you control your anger?'  
 Wife: 'I clean the toilet.'  
 Husband: 'How does that help?'  
 Wife: 'I use your toothbrush.'

Chairman for Recreation Committee: Still need one.

**New Business**  
 Dave KG6TCJ has volunteered to go to Home Depot and get some estimates for new cabinets for the kitchen. Phil will send Dave some measurements.

**Discussion of possible presentations**—  
 Several ideas, nothing definite. John suggests one of our public service recipients give a presentation that might encourage more members to participate.

**Jamming of repeaters:** Intentional jamming of the 147.330 repeater on June 21 repeatedly interfered with radio communications for the Double Dipsea. The jammer played commercial radio advertisements for prolonged periods and impeded health & welfare traffic. There is radio "fingerprinting" equipment available, but using it is labor intensive, and identifying anyone depends partly on luck. We need to remind people at the general meeting not to answer or acknowledge anyone who jams our equipment, no matter how frustrated we may feel, because causing frustration is how these people get their jollies. Just pretend you haven't noticed.

**Fundraising:** Elisabeth and new member Richard KI6RIQ are available, now, to work up a fundraising backgrounder document and start targeting potential large donors. Our wish list for grant proposals and fundraising: Mountaintop equipment to support RACES, public service; building upgrade to address seismic safety; bunk room and shower for overnight emergency radio operators; replace communications truck. Randy and Doug will come up with details.  
 Adjourned: 2038.

Respectfully submitted by  
 Elisabeth Thomas-Matej KI6IMV,  
 Secretary

**Another Historybit**  
 In 1943 work had begun on 'Harry', the tunnel that allowed over 70 men to escape from the German POW camp, 'Stalag III', during World War II. This was the same tunnel made famous by the movie 'The Great Escape'. The URL below takes you to a site where one of the men, after the War, drew a diagram with explanations of each of the sections. It's amazing how accurate the movie was, even though it couldn't possibly include all the information involved in this great engineering feat.  
[www.kerman94.com/tunnelharry.html](http://www.kerman94.com/tunnelharry.html)

**THE WAYBACK MACHINE -- ISSUE #5**  
by Bill Continelli, W2XOY  
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On November 2, 1920, Warren G. Harding was elected President of the United States. Millions read the election results in the newspapers the next day. In the Pittsburgh area, however, hundreds heard the election returns the moment they were wired in, thanks to Dr. Frank Conrad, a Westinghouse employee, who broadcast the results over 8XK, his amateur station. This station would evolve into KDKA, and the night of November 2, 1920 has been called the start of the multi-billion dollar broadcast industry. But was it? This month "The Wayback Machine" looks at the evolution of broadcasting, and the amateur's role in it.

The idea of broadcasting was first considered by Lee deForest in May, 1902, when he wrote that "Ultimately, wireless telephony will be possible". He urged the financial backers of the deForest Wireless Telegraph Company to develop and patent the concept. The stockholders, however, were more interested in immediate profits (through massive stock sales) rather than genuine development, and refused to finance the necessary research. Undaunted, deForest in 1907 formed the deForest Radio Telephone Company. In a statement that for 1907 must have appeared radical and even bizarre, but was amazingly prophetic, he wrote, "I look forward to the day when opera may be brought into every home. Some day the news and even advertising will be sent out over the wireless telephone".

Despite deForest's intense interest in this area, he was not the first to broadcast the human voice and music over the airwaves. That honor belongs to Reginald Aubrey Fessenden, a Canadian Professor. He was the first to recognize the inherent flaw in the concept of spark transmissions, and set out to find an alternative. His quest led him to Schenectady, NY, and the services of General Electric's most brilliant scientist, Charles Steinmetz. Fessenden explained his idea: an alternator capable of generating waves of 100,000 cycles per second (3000 meters). Steinmetz and his assistant, Ernst Alexanderson, worked for almost two years, and finally produced an alternator that met Fessenden's requirements. The Alexanderson Alternator, as it was now known, was delivered to Fessenden's station in the Fall of 1906. On the evening of December 24, 1906, Column two.

ship and amateur operators heard something in their headphones they had never heard before: someone speaking! A woman singing! Someone reading a poem! Fessenden himself played the violin. (The Alexanderson Alternator would play a prominent role in early high power stations and will be fully covered in a column exploring Schenectady's contribution to the development of radio and television).

Not to be outdone, deForest continued his radio telephone experiments in the period 1907-1910, broadcasting from the Eiffel Tower and live from the stage of the Metropolitan Opera, where Enrico Caruso was singing. However, all of these transmissions had a major problem: without a pure, stable, direct current CW carrier to modulate, all the signals had a background whine and distortion. Real development in the area of modulated carriers would have to wait until Armstrong discovered the oscillating properties of a regenerative circuit.

By 1916, both Armstrong's circuit and the Audion were widely circulating in the radio world, and broadcasting surfaced again. Lee deForest resumed his transmissions, with programs of "good music, culture, and lectures". deForest can be credited with two "firsts" in 1916; the first advertisements (for his Audion and other products), and the broadcast of the Presidential election between Woodrow Wilson and Charles Evans Hughes. (Unfortunately, deForest signed off before the California results were in, so he declared Hughes the winner over Wilson).

Also, in 1916, amateur station 2ZK broadcast one hour of music each night. David Sarnoff, who had manned his station during the Titanic disaster, also got into the act. He wrote a memo to his employers at American Marconi suggesting a "Radio Music Box", which would become a "household utility". He went on to describe his vision of radio broadcasting, and then turned to finances. He predicted an income of \$75,000,000 or more each year from the sale of receivers. Marconi, still focusing on ship to shore telegraphy, took no action on the memo. After amateurs had returned to the air in November 1919, hundreds of them began to explore the area of broadcasting. In May, 1920, amateur station 8XK joined many other hams in the transmission of music. Incidentally, it WAS LEGAL for amateurs to broadcast music, news, sports, lectures, Column Three

advertisements, or indeed just about anything else they wanted. The Radio Act of 1912, still in effect, did not mention "amateurs", rather, one paragraph made a general reference to individual private or commercial stations. The only real restriction was the 1 kw power limit and the 200 meter wavelength. After that, the government didn't care. Thus, those amateurs who had built equipment to modulate their CW transmitters eventually played a phonograph record or two, sang (or tried to sing), or broadcast some form of entertainment.

With all of the above documented evidence, why is November 2, 1920 considered the start of broadcasting? The answer lies not at the transmitter, but at the receiver. Prior to that night, all broadcasts had, in effect, been from one amateur to another, or to a commercial station. The November broadcast, though, was designed and promoted by Westinghouse as a transmission to the general public. Starting in September, stores were selling basic receivers for \$10.00 to receive 8XK. Westinghouse, in effect, had seized deForest's and Sarnoff's idea, and was marketing it to the general public. Thus, it was the makeup of the listening audience that defined the start of broadcasting.

When the word of this successful transmission got out, more amateurs got into the act and set up their own little broadcast stations. By the end of 1921, it was estimated that about 1200 amateurs had made at least one broadcast. Some had a regular schedule of programs and would evolve into commercial stations, others did it just out of curiosity. But there were listeners. Over 400,000 people heard the Dempsey-Carpentier fight on July 2, 1921. Radio sales were approaching 100,000 per year, not counting crystal sets which were selling at the rate of 20,000 per month. However, with this explosive growth came two problems for the amateur.

The first was an identity crisis; what should the role of the amateur be in broadcasting? Some thought we should stay out of it and just stick to traffic handling on CW. Others envisioned the amateur as a jack of all trades, expert CW operator and relay station, as well as community broadcaster. In fact, a new name evolved to describe this amateur/broadcast hybrid, "Citizen" radio or wireless. Even QST was confused; for a period of time in 1921, the word "Citizen"

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replaced 'Amateur' on the front cover.

The other problem was frequencies. Everyone - amateur, broadcaster and hybrid - was on 200 meters. Tuning across the dial in 1921, one would mostly hear CW, a few spark holdouts and the new broadcasters. While the amateurs were used to the interference, the general listening public was not. They had purchased their radios to hear music, not CW. Complaints started to pour into the Secretary of Commerce. Legally he was powerless, as the Radio Act of 1912 offered no solutions. A conference was called for all interested parties, held in Washington in February 1922 to try to resolve the impending crisis.

Even though he was exceeding his authority under the Radio Act, Secretary Hoover was able to get the following proposals accepted at the conference: 1) Henceforth, special broadcast licenses would be issued. Two frequencies would be available for broadcasters immediately, 360 meters (833 kHz) for regular transmissions, and 485 meters (619 kHz) for crop reports and weather forecasts. 2) After the marine interests had abandoned the 220 to 545 meter range (1363 to 550 kHz), it would be turned over to broadcasting. 3) Broadcasting was forbidden by amateurs, who were defined for the first time by name as stations operating "without pay or commercial gain, merely for personal interest". 4) "Quiet Hours" were imposed on all amateur stations effective from 8:00 to 10:30 PM daily, and on Sunday morning.

The fact that the number of broadcast stations dropped from 1200 to 30 immediately after these regulations went into effect shows just how many amateurs were, in fact, pioneer broadcasters. This agreement, however, was a house of cards. Secretary Hoover had stretched his authority under the Radio Act of 1912 well past the breaking point. In 1926, the cards came tumbling down, and the "Summer of Anarchy" was ushered in. How would amateurs fare with no enforceable regulations in place? Join us next time as "The Wayback Machine" explores the events leading up to the creation of the Federal Radio Commission.

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## Interesting (maybe) Stuff Just Barely Connected to Ham Radio.

We got a call from MARC/MARS member Bill Provines W6JBZ, one of only two charter members of the club left from that time in 1933. The other is Ken Bowman, W6IBQ, of Terra Linda. Bill Provines (accent the second syllable = Provines) had positive things to say about the "Wayback Machine" series written by William Continelli, W2XOY, running currently in QSA-5. Bill lived through most of the changes covered in the series. We have enough installments to keep it going for another two years so if you enjoy the history, be sure to renew your MARS membership in 2009!

Bill Provines just turned 100 years on 4 July and would still be on the air if his hearing hadn't pretty much gone belly up. Marin IJ readers saw Bill's picture on the front page of the July 4th issue. He says that there are four errors in the IJ account. We recycled our copy too soon so can't hunt them down. We do remember that he graduated from Cal Berkeley in 1932. The IJ had the incorrect year. It was on 12 July 82 years ago that he went to work firing the two-truck Shay locomotives on the Mt. Tam & Muir Woods RR. That job could have accounted for part of his hearing loss. Having ridden in a former Westside Lumber Co. three-truck Shay's cab several years ago, we found it about impossible to hold a conversation therein while under way. You have to yell. Forget about tapping any audio worthy of playing back later. If you want to verify this for yourself, that Shay is still operating on a short re-laid stretch of the Sugar Pine Railway a bit east of Oakhurst, CA, at Fish Camp. After riding the train, you could continue on east a few miles to the southern entrance of Yosemite. There are good places to stay in Oakhurst.

Here's a picture of that Shay loco. It's considerably longer and heavier than the ones that ran on Mt. Tam but it hauled much heavier loads of newly felled logs out of the woods to the mill site in the town of Tuolumne, a few miles east of Sonora off hwy 49. The actual engine of three vertical cylinders, valve gear and crankshaft hangs on the right side of the locomotive frame and powers every wheel through a driveline consisting of well lubricated U-joints, sliding square couplings, and bevel gears mating with gears on the right side wheels. To balance the extra weight on the right, the boiler is mounted left of center. This also improves the engineer's view forward. The locos at Fish Camp are narrow gauge, 36 inches between the rails. Mt. Tam RR ran standard gauge engines which



used a rail spacing of 4ft + 8½ inches as do most railroads in the US.

Most pictures of Shays are shot of the right side; not much action on the left unless you like looking at and listening to steam-powered air compressors, or in the case of the Mt. Tam RR, you could have seen Bill in the left seat making sure that there was water over the crown sheet and the boiler operating pressure was within prescribed limits.

Because they are geared engines, Shays sound like they're really moving when the usual speed is under fifteen mph. But they've been known to climb a fourteen percent grade which is not possible with a standard rod locomotive. The old railroad grade on Mt. Tam is seven percent, good for hikers and mountain bikers. We hiked it on the 100th anniversary of the railroad in 1996, starting in downtown Mill Valley and making it to the parking lot at the East Peak. There was food and drink at stops along the way so we survived with only shin splints. We were a young and tender 60 yrs. ed. Go to <http://www.ymspr.com/>



# A Visitor From Spain

## By Marilyn, N6VAW

During the second week of July, Phil, K6PHD and Rich, W6UDS, were contacted via email by Luis Miguel Marin Manso, EA1ARW, from Burgos, Spain. He was spending 4 weeks here as a chaperone for 15 high school students who were attending 4 English classes each day at Dominican University here in San Rafael. We arranged to pick him up on the Campus on Monday morning, the 21st. After the usual introductions, we went to lunch, then did a tour of the Alto clubhouse and the radio room. We then drove to the Marin Headlands for a view of the Golden Gate Bridge. I should say, for a rather fuzzy view of the towers through the fog.

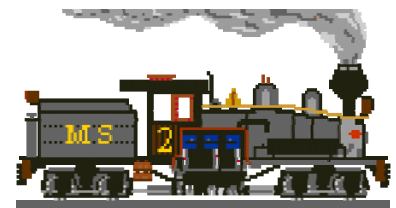
We had better luck after reaching the top of Mt. Tam where Luis ran into a couple visiting from Spain. We were above the fog, then, and Luis got a general idea of the area as we walked the loop path around the peak. Leaving Tam's East Peak, we took the ridge route to Fairfax and got him back to his duties overseeing his students' activities later in the afternoon. Rich & Phil planned to meet up with him again two days before he left for home as he needed to pick up a part at HRO in Oakland. That, too, was an enjoyable experience ending with lunch at Quinn's Lighthouse Restaurant in Oakland.

At home in Spain, Luis lives about a 3 hour drive from his parents' home where his station is located. He operates a Kenwood TS 570D, on a 3 element tri-bander yagi for 10-15-20m and a multi-band inverted V dipole for 30-40-80m. He also likes to work 2m repeaters. CW on HF is his favorite mode, although he operates some SSB from time to time.

Luis works as an English teacher at an Elementary School near Madrid. He has been studying English for twenty years and still loves the language. The radio makes a wonderful tool for him to keep up with it. He lived in Laurens, South Carolina (USA) for four years. His radio station is located in a small town up in the mountains in Northern Spain, near Burgos. When he is off work, he tries to be on the air as much as he can. His favorite bands are 10-17-15m and he likes rag chewing rather than the usual 599 and 73! Contests are not something he enjoys much, except for the Spanish National CW Contest. He likes collecting QSL cards.



<<<<<This building near the East Peak parking lot is used to store a replica of a Mt. Tamalpais & Muir Woods RR gravity car which was on display during the 100th



**General Membership Meeting** is held on the first Friday of each month at Alto District Clubhouse on Shell Road in Mill Valley, starting at 7:30 PM. Turn right at the first stop light west off hwy 101 at the Mill Valley/Tiburon exit. Angle right at next stop sign, then turn left at next street, Shell Road. We are in the two story building on the left directly under the power lines.

**Business/Board Meeting** meets at the Alto District Clubhouse in Mill Valley on the second Thursday at 7:30 PM. Members are encouraged to attend to try to keep the clowns honest.

**Sunday morning informal meeting**, grinningly called the bible/babble class, meets every Sunday morning at the Alto District Clubhouse in Mill Valley starting at roughly 0800 hours and runs to around 1100 hours +or-. Sometimes we even talk about radio. This weekly event is hosted by **Ben Sawtelle N6PJZ**, our Ham of The Year in 1996, whose absence would be the result of serious disease or dismemberment, only. So far, he hasn't forgotten how to get there.

**Dues structure is: \$25. per year. \$30. for family memberships.** No dues are charged for Life or Honorary members.

<p><b>Marin Amateur Radio Society</b></p> <p><b>President:</b> Denice Stoops KI6BBR 672-0303</p> <p><b>Vice President:</b> Randy Jenkins KA6BQF 510-526-4089</p> <p><b>Secretary:</b> Elisabeth Thomas-Matej KG6IMV 381-0585</p> <p><b>Treasurer:</b> Dave Hodgson KG6TCJ 332-1864</p> <p><b>Additional Board Members:</b> Norm Baetz WA6CLK 898-4887 John Boyd KE6ORI Rich Carbine W6UDS 479-3136 Horst Dannecker KA6BHZ Phil Dunlap K6PHD 491-0318</p>	<p><b>Education Chair:</b> Ben Sawtelle N6PJZ 382-1170 kermode7@hotmail.com</p> <p><b>Membership:</b> Dave and Phil</p> <p><b>VE Liaison:</b> Randy Jenkins KA6BQF 510-526-4089</p> <p><b>Bldg. Manager</b> Rich Carbine W6UDS 479-3136</p> <p><b>Trustee for W6SG:</b> Augie Koehler KØCQL</p> <p><b>Trustee for K6GWE:</b> Doug Slusher KF6AKU</p> <p><b>Sunday Emergency Nets:</b> <b>HF</b> Ben's been doing both. <b>VHF</b></p>	<p><b>DX Representative of ARRL:</b> Jerry Foster WA6BXV 892-3829</p> <p><b>WEBMASTER</b> Glenn Meader N1ZKW 987-3948 N1ZKW@ARRL.NET</p> <p><b>Public Service Event Coordinator</b> Randy Jenkins KA6BQF 510-526-4089</p> <p><b>ARRL San Francisco Section Mgr.</b> Bill Hillendahl KH6GJV@ARRL.ORG</p> <p><b>Editor of QSA-5:</b> Phil Dunlap K6PHD 491-0318 K6PHD@ARRL.NET</p>
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