The Coastside Communicator

Vol. 44, No. 1 January 2012

www.coastsidearc.org

President's Column

Happy New Year! I would like to welcome our incoming club secretary, Mary Ellen-AJ6J, to the list of officers for 2012. Thanks to George-N6GYR for his services as secretary for the last two years.

Traditionally the January meeting is when we start to plan the activities for the year. Please bring your ideas for fun and interesting things to do to the January meeting. If you cannot make it and would like to propose something please feel free to send it to me via email n6tze@arrl.net.

Some old business from last year that needs to be pursed includes the ongoing work of the repeater committee and the newly proposed bylaw committee.

The Repeater committee is currently gathering information on the current repeater setup and maintenance requirements. The bylaw committee was voted on as needed but currently needs members to staff it. We should address this at the next meeting.

I hope to see you at the next meeting.

73,

Casey-N6TZE

December Minutes

The December 2011 meeting was called to order at 7:35PM by our club president, Casey Villyard-N6TZE at the Linda Mar Fire Station in Pacifica. Self-introduction by the members and guests followed.

No corrections to the minutes were noted, it was then moved to approve the minutes as published in the newsletter by Dave Lawrence-KF6TWW, and seconded by Jane Bailey, and passed by the membership.

Treasurer's Report

Frank Erbacher-N6FG read the report the club's financials: $437 in the general fund; $4,680 in the repeater fund; $644 in the digipeater fund and $6,040 in the EOC fund. These individual fund totals add up to a club total of $11,801.

The treasurer paid Frank-N6FG $45 for mailing and publication of the Communicator newsletter, and Membership renewal notice.

Membership

Total club membership stands at 96 with 90 licensed members, 65 of whom are ARRL members, for a total of 1,485 years of experience.

Communications

A newsletter was received from Santa Cruz County Amateur Radio Inc. "Short Skip", the San Francisco Amateur Radio Club "Nuts and Volts", the Santa Clara Amateur Radio Association "SCARA Gram, and the ARRL Leadership Meeting announcement.

Committee Reports

Repeater

Operational.

Autopatch

Operational

Digipeater

Operational

APRS

Not operational. Joe-N3CKF has a replacement TNC that is ready to replace the defective unit on the hill, when a trip is next made.

Emergency Services

No Report

Field Day

No Report

Fog Fest

No Report

Newsletter

Published

Website

Updated and running.

Old Business

None

New Business

A motion from Mary-Ellen-AJ6J, with a 2nd from Ross-W1RAB and an all in favor from the members, to create a By-Laws Committee for the purpose of reviewing and submitting proposed amendments to the existing By-Laws to the membership for discussion and approval.

A motion to adjourn the meeting was made by Dave-KF6TWW, seconded by Dave-K6DMR, and passed by the members so they could partake in the annual Holiday Pot-Luck Party.

Present at the Meeting

The following Life Member has become a Silent Key: Roger Spindler-WA6AFT.

Ralph Bailey-K6DLZ, Jane Bailey-KF6PGF, Frank Erbacher-N6FG, Dave Lawrence-KF6TWW, Walt Long-KG6EDY, Casey "Dave"Villyard-N6TZE, Joshua Villyard- N6TZF, Audrey Villyard-WA2KPS, Robert Barbitta-W6LOG, Joe Pistritto-N3CKF, Scott Mercer-KI6SEJ, Mike Bevington-AA6Xl, Doreen Bevington-KE6AGG, Adrian Bevington, Ariel Gallega-K6RYL, Ross Burton-W1RAB, Elle-W1DOG, Lee Mc Kusik-AG6CB, Carmel Gallagher-KJ6ERS, Mary Ellen Scherer-AJ6J and David Rinck-K6DMR.

Reported by David Rinck-K6DMR

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News

December Holiday Meeting Pictures

ARRL UPDATE

COMEDIAN TIM ALLEN STARS AS RADIO AMATEUR ON NEW TV SHOW

Tim Allen -- star of Home Improvement, Toy Story, The Santa Clause and Galaxy Quest, just to name a few -- stars in Last Man Standing, an ABC comedy airing at 8 PM (EST) on Tuesday nights. Allen plays Mike Baxter, KA0XTT, a married father of three and the director of marketing at an outdoor sporting goods store in Colorado whose life is dominated by women. While Amateur Radio has not been prominently featured in the first episodes, according to John Amodeo, NN6JA -- the producer of Last Man Standing -- it is a part of the show and an important part of Mike's character. At press time, the episode that will establish Mike as a radio amateur is scheduled to air mid-January.

Last Man Standing -- starring Tim Allen as MIke Baxter, KA0XTT -- airs Tuesday nights on ABC at 8 PM EST. The ARRL has provided Amateur Radio materials, such as issues of QST and certificates for DXCC, WAS and WAC to the show. In this photo, Allen, as Baxter, tunes his IC-92AD handheld transceiver as his boss (played by Hector Elizondo) watches.

"Tim's character Mike is involved in creating the sales strategy for the store, including their catalog and Internet identity," Amodeo told the ARRL. "The store is like Bass Pro Shops or Cabelas. There is a strong self-sufficiency overtone to Mike's approach to life. Ham radio fits in the story as a means of emergency communication. It's not directly featured in the foreground story, but at the moment, it's a background element on the home set. Once I allow something to be put on the set, there's a chance the writers will feature it. Now that we have actually established Mike Baxter as KA0XTT, we can do more things featuring Amateur Radio."

NTSB URGES STATES TO BAN CELL PHONE USE BY DRIVERS

On Tuesday, December 13, the National Transportation Safety Board (NTSB) recommended that States ban the non-emergency use of *all* cellular telephones and other "portable electronic devices" (PEDs) by drivers of motor vehicles. This would include hands-free cell phone operation and all text messaging while mobile. While this NTSB recommendation has been the lead story in national media, the "distracted driving" issue has been receiving serious attention for several years. A number of states and municipalities have prohibited texting and handheld cellular telephone use by all or some drivers, though none has gone so far as to outlaw all hands-free cell phone use. To avoid unintended consequences to Amateur Radio operation, the ARRL has been closely

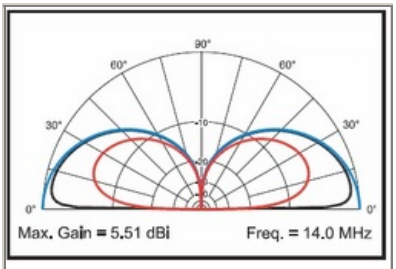
involved with this issue for several years. The full text of the NTSB report is not yet available, and it is not yet known whether the broad term "portable electronic devices" might be construed as including all or some Amateur Radio equipment.

On January 30, 2009, the Executive Committee of the ARRL Board of Directors approved and released an ARRL position paper on Mobile Amateur Radio Operation. In that paper, the ARRL encourages licensees to conduct Amateur Radio communications from motor vehicles in a manner that does not detract from the safe and attentive operation of a motor vehicle at all times, but points out that mobile two-way radio equipment has been in use for at least 70 years and is quite dissimilar from full-duplex cell phones.

THE DOCTOR IS IN:

GROUND CONDUCTIVITY AND RADIATION ELEVATION PATTERNS

Stan Korzep, W8NNX, of Orlando, Florida, was wondering that if he improved his ground conductivity, would he also improve his radiation elevation pattern? With this in mind, he wrote to the Doctor: Late night as I pondered why -- with 10 meters so hot -- I was not working any DX stations in the Asia Pacific region. My first thought was that the competition was too great. I still use the three element trap Yagi that was on my tower in the 1980s when I had much better luck. Thanks to my power company, I have a far field noise source that allows a pretty good check of antenna pattern, F/B and the ability to determine if there is a gain compared to my other antennas. With a pretty good SWR, and greater than 20 dB F/B, I believe that the tribander has survived three hurricanes and two decades of use quite well.



The required elevation angle for a small number of F layer hops to the Pacific is quite small.

I seem to recall a QST article ["The Antenna Elevation Pattern -- What's the Big Deal?" Mar 2010, pages 39-40] that noted that the elevation angle of maximum radiation was largely determined by the antenna's height. I wonder if this might be a factor in my lack of success. Since my antenna is limited to 24 feet by homeowners and county rules, the installation has not changed in 32 years -- only the results have deteriorated. The decline in the rainfall over the two decades here at my location (I maintain two rain gauges in the back yard) may have changed the apparent ground.

The ground beneath my house and antenna is what the locals call "sugar sand," one step up from beach sand. Its ability to provide a good ground is akin to pure distilled water. I read some time ago about the relationship of soil fertility, carbon and soil conductivity. Will improving my ground conductivity improve my radiation elevation pattern? Your thoughts would be appreciated.

Here's what the Doctor had to say:

A better ground will certainly change the elevation contour of your antennas due to reflections -- in phase for vertical antennas (reinforcing the low angle radiation) and out of phase with horizontal (tending to cancel the lowest angles); however, the major impact will occur at some distance from the antenna. The exception is for vertical antennas that use the Earth as part of their ground system -- their efficiency will improve with better conductivity near the base -- independent of the reflection part of the equation.

Your height of 24 feet is interesting for a tribander. That is about 0.35 wavelengths on 20 meters, just above 0.5 wavelengths on 15 and about 0.7 wavelengths on 10 meters. Over EZNEC's "Typical ground" (0.005 S/m conductivity, dielectric constant of 13), that gives the results in Table 1 below on the 10 and 20 meter bands based on my model of a similar tri-bander.

Band (Meters)	Peak Elevation (degrees)	Gain at Peak (dBi)	Gain at 5 degrees (dBi)	Gain at 10 degrees (dBi)
20	35	8.2	-3.9	1.7
10	20	11.9	4.2	9.3

Table 1: Peak Gain and Gain at Elevation Angles for a 24 foot High Yagi over EZNEC "Typical" Ground

The results for 15 meters will be in between. If your ground is less conductive, it will actually be better (less cancellation at low angles); however, you will not get as much reinforcement at the peak angle at which the reflection is in phase. The extreme would be the "free space" case in which there is no ground at all. There the peak is at the horizon and you have the results shown in Table 2 below.

Band (Meters)	Peak Elevation (degrees)	Gain at Peak (dBi)	Gain at 5 degrees (dBi)	Gain at 10 degrees (dBi)
20	0	4.7	4.6	4.7
10	0	6.9	6.9	6.9

Table 2: Peak Gain and Gain at Elevation Angles for a 24 foot High Yagi in Free Space

Thus, with a low horizontal antenna, the long haul performance will be better with a poor ground than with one of high conductivity. This will change as the antenna gets high enough so that the angle of peak gain gets close to the optimum angle for the distance you want to work. This angle will be quite small for few hops to the Pacific -- typically a 6000 to 10,000 mile path. As seen in Figure 1, even at 5 degrees elevation, it will take two to four hops to get there. Again, this is not the ground directly under the antenna, but the ground from which the reflection takes place, some distance away. The higher the antenna is, the further the distance to the ground that will reinforce the peak of the elevation pattern.

Thanks Doctor! Do you have a question or a problem? Send your questions via e-mail or to "The Doctor," ARRL, 225 Main St, Newington, CT 06111 (no phone calls, please). Look for "The Doctor Is IN" every month in QST, the official journal of the ARRL.

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Amateur Radio History

The Wayback Machine

by Bill Continelli - W2XOY

Repeaters...It seems they are everywhere, and they are. Several thousand amateur repeaters operate on our bands from 29.5 MHZ all the way thru the microwave range. In fact, there are more amateur repeaters in the U.S. & Canada than there are AM Broadcast Stations. How and when did this evolve? Let's take a look at the development of repeaters in the Amateur Community.

If you had to guess when the first repeater came on the air, what would you say? 1970?, 1965?, 1955? Try 1932!!! It was in the early 30'S that the first "Duplex Phone Relay Stations", (as they were then called), came into existence. W1AWW & W1HMO set up a manned relay station in a 90 foot wooden lookout tower near Springfield Mass. They used a superregenerative receiver tuned to 60 MC (the top of the old 5 meter band), and a modulated oscillator transmitter on 56 MC, (the bottom of the band). Stations in Connecticut, Massachusetts or Rhode Island could transmit on 60 MC, and have their signals manually rebroadcast on 56 MC. This relay station, of course, was in operation only when amateurs were on duty at the lookout tower. Fully automatic repeater operation was still over 30 years away.

In the 1950'S and early 60'S, there were a few AM repeaters on the air in California. But for the most part, VHF operations in the 1940'S thru the late 60'S were on AM phone in the simplex mode, with a handful of sideband stations thrown in. Using crystal controlled transmitters with about 10 watts, and single conversion superhets, the typical VHF operator had a range of 10-15 miles, not counting any band openings.

There were a handful of FM stations of course, but the development of FM as a mainstream amateur mode of communication had been pushed aside by sideband. As early as 1940, QST had construction projects for a complete 112 MC FM station, but FM took a back seat in 1947 when sideband appeared. Now, however, thanks to an FCC edict, it was about to make a comeback.

In 1960, the FCC issued new requirements for the users of VHF commercial frequencies. Over the period from 1960 to 1970, commercial users gradually phased in narrow band (5 KC deviation) equipment to replace the wide band (15 KC) transceivers they had been using. Rather than revamp the older equipment to meet the new standards, they simply purchased new radios. The old units made their way to the surplus market, where they were quickly snapped up by amateurs. Converting this equipment to ham frequencies was relatively easy, and soon hundreds of stations were operating on 52.525 MC and 146.940. Why those frequencies? Well, 52.525 was the lowest 6 meter frequency on which wide band FM was allowed, and 146.94 was chosen to accommodate Technicians who weren't allowed above 147 MC. Thus, these became the first "calling Channels".

It wasn't long before some surplus commercial equipment was revamped into repeaters. Unlike the 1932 setup, these were fully automatic devices, with no need for a control operator to be present. This, however, presented problems. Part 97 at that time contained no provision for repeater operation, and it was unclear as to whether it was legal to operate a repeater without a control operator present. Many proposals were presented to the FCC to clarify the rules in regards to repeaters. FM and repeaters received considerable publicity in 1969 when Hurricane Camille caused widespread destruction in the Gulf Coast and Virginia. This was the first time mobile rigs, FM and repeaters were used extensively in an emergency. FM activity increased in late 1969 and early 1970 with the ARRL's announcement that it no longer considered Technicians to be just experimenters, but rather full fledged Communicators. Also adding to the popularity of FM was the introduction of the first commercial rigs for the amateur market, from manufacturers such as Galaxy, Clegg, and Drake. By 1970, it was clear that coordinated, legal growth of FM and repeaters was necessary.

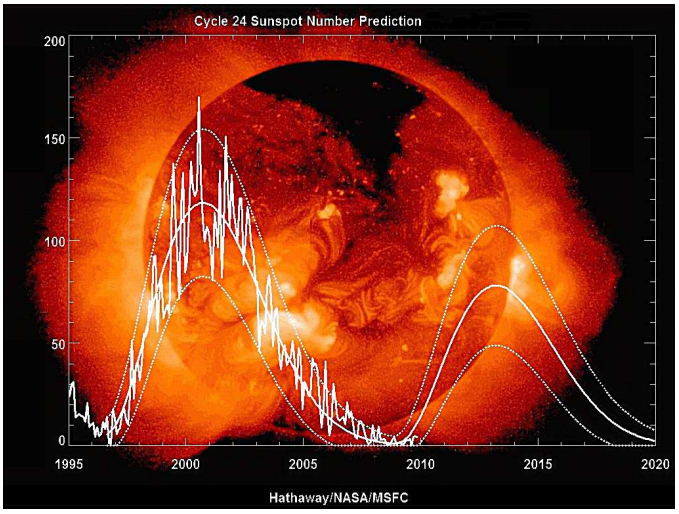
In early 1970, the FCC proposed its first repeater rules. They were as follows: On 6 meters, repeater inputs would be from 52.5 TO 52.7, with the outputs at 53.0 to 53.2 MHZ.. For 2 meters, repeater inputs would be authorized from 146.3 to 146.6, and the corresponding outputs would be from 146.9 TO 147.2. On our 220 band, the input/output subbands were 223.1--223.3 and 224.1--224.3, while on 440 repeaters would be authorized on 447.7--448.9 for inputs and 449.1--449.3 for outputs. (By the way, it looks like the 1970 FCC proposal contained a typo in the 440 MHZ segments). "Whistle on" or other coded access would be required--carrier activated repeaters would NOT be allowed. No cross band, linked or chain repeaters or multiple outputs would be allowed. The maximum power permitted was 600 watts input (about 400 watts output). And, finally, the FCC declined to allow fully automatic repeater operation, the proposed rules required the licensee of a repeater station to be in attendance at the transmitter or at an authorized fixed control point and to monitor all transmissions of the station.

The proposed repeater rules appeared unduly restrictive to many hams. Except for 2 meters, each band had only a 200 KHZ wide input/output window. On 2 meters the input/output subbands were 300 KHZ wide--but 2/3 of the repeater output subband was above 147 MHZ--where Technicians weren't allowed!! The FCC had still not acted on the ARRL's 1969 proposal to open all VHF frequencies to Technicians. When the FCC was questioned on the legality of a Technician using a repeater whose input was within the 145-147 subband, but whose output was above 147, they said the Technician operator COULD NOT USE THE REPEATER. The FCC went on to say "the licensee of such a repeater should sit there with the latest Callbook showing license class and keep his finger on the NO-NO button". (Yes, this is an actual quote). So much for liberal repeater rules.

Despite the FCC's rather restricted proposed rules, repeater operations flourished throughout 1970 & 1971. Over 200 repeaters were on the air by 1971, almost all of them in the 146--147 MHZ range so they could be used by Technicians. But, with the uncertain status of future FCC rules, the lack of national frequency standards, and the inability of Technicians to operate the full 2 meter band, a dark cloud hung over the FM world.

In our next installment, we will review the ARRL's national plan for 2 meter FM, as well as the revised FCC rules on repeater operation. I hope you will join me.

SOLAR UPDATE



THE K7RA SOLAR UPDATE

Tad "We all live for the Sun" Cook, K7RA, reports: We're continuing to see good conditions, although sunspot activity has declined a bit. The average daily sunspot numbers for December 29-January 4 declined nearly 20 points (when compared to the previous seven days) to 88.1; this is the lowest reported weekly sunspot number average since September 2011. The average daily solar flux was off 6.4 points to 143.1. Another problem seems to have cropped up with NOAA reporting of data that we use in this bulletin. Last month, the sunspot numbers had to be corrected. Now it appears that some of the geophysical data does not check out. Check the planetary A index for the last few weeks of December 2011, they should match, but they don't (unless the problem has been corrected by the time you read this). But the numbers for all of 2011 match what we have reported in the bulletin, and I suspect it is the correct version. The near term outlook is for solar flux at 140 on January 5-6, 135 on January 7-8, 130 on January 9-11, 125 and 135 on January 12-13, and then back to 140 on January 14-21. The next short term peak is expected at 150 on January 24-26. The expected planetary A index for January 5-9 is 5, 8, 15, 10 and 8, then back down to 5 on January 10-27. That predicted A index of 15 on January 7 -- if accurate -- will be the highest since October 25, when it was 27, and 31 the day before. That activity was sparked by a coronal mass ejection that affected earth around 1800 UTC on October 24. For more information concerning radio propagation, visit the ARRL Technical Information Service Propagation page. This week's "Tad Cookism" is brought to you by The Sunrays' *I Live for the Sun*.

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COMING EVENTS

CERT Training – North County Fire Authority
See http://www.northcountyfire.org for more info.

CERT Training – San Mateo County
See http://www.smcready.org/Community/Training.html for more info.

QCWA Lunch at Harry's Hofbrau - 3rd Wednesday of every month, 1909 El Camino Real in Redwood City, CA. No host. 11:00AM to 1:00PM (approx).

ASVRO Silicon Valley Electronics Flea Market – 2nd Saturday of each month from March through October.
De Anza College in Cupertino, CA. 7AM to noon
Web Page: http://www.electronicsfleamarket.com/
Talk-In: W6ASH 145.27- (100Hz PL)
N6NFI 145.23- (100Hz PL)

LICENSE EXAMS

AERO-Auxiliary Emergency Radio Organization
Contact: Dave Gomberg
Phone: (415) 731-7793
Email: dave1@wcf.com
Web Page: http://www.wcf.com/aero/exams/
When: Sun. Feb. 12th, 2012
Location: Jewish Community Center
3200 California Street at Presidio Avenue
San Francisco CA

Bay Area Educational Amateur Radio Society
Offering a one day study session for Technician or General theory, followed by testing. Fee: $30.00
When: Sat. Jan. 28th, 2012
Where: The Event Center
Saint Mary's Cathedral
1111 Gough Street
San Francisco, CA 94109-6686
Registration required, class size is limited.
Web Page: http://www.baears.com/ for info and registration.
Questions: Ross Peterson (650) 349-5349 or wb6zbu@arrl.net

Silicon Valley Volunteer Examiner Group
First and third Saturdays of each month, 8AM-11:00AM.
Saratoga Fire Station 14380 Saratoga Ave, Saratoga, CA
Fee: $15
Walk-ins only, No pre-registration
E-mail: (preferred): mojoteri@attbi.com
Phone: (408) 507-4698 (Morris Jones, AD6ZH)
Web Page: http://pdarrl.org/vec/vecscv/index.html

Sunnyvale VEC Exam Sessions
Fee: $15 Cash
Walk-ins only, No pre-registration
Cut-off-time, 30 min. after starting time.
Exam: changes, directions, call (408) 255-9000 24/hr
E-mail: wb6imx@worldnet.att.net
Web Page: http://www.amateur-radio.org

Sat	Jan 14th	Sunnyvale, CA	10:30	AM
Sat	Jan 21st	Redwood City, CA	10:30	AM

Online Practice Exams
Within the practice tests, online study resources, (Wikipedia, NASA, ARRL, etc.), are provided for many of the questions. The list of resources available for each question is constantly growing because users can add their own favorite links to the study materials. Users can also track their test scores over time and see which sub-elements are giving them the most trouble. Practice Tests:http://copaseticflow.blogspot.com/

CARC MEETING/EVENT SCHEDULE

Jan 11th	2011 Agenda Planning, LM Fire Station
Feb 8th	2011 Agenda Finalizing, LM Fire Station
Mar 14th	LM Fire Station, Pacifica
Apr 11th	LM Fire Station, Pacifica
May 14th	LM Fire Station, Pacifica
Jun 13th	Field Day Planning Mtg, LM Fire Station
Jun 23-24	CARC Field Day, Sweeney Ridge
Jul 11th	Field Day Wrap-Up Mtg, LM Fire Station
Aug 8th	*Back to School Night, LM Fire Station
Sep 12th	LM Fire Station, Pacifica
Sep 22-23	Pacific Coast Fog Fest, Pacifica
Oct 10th	2011 Officer Nominations, LM Fire Station
Nov ?	Election Dinner, Nick's Restaurant - Pacifica
Dec 12th	Holiday Potluck Dinner Meeting, LM Fire

*? to be determined # updated ---- canceled * tentative date*

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www.smcready.org

In Memoriam

Roger G. Spindler-WA6AFT/SK

THE COASTSIDE AMATEUR RADIO CLUB

The Coastside Amateur Radio Club (CARC) is affiliated with ARRL, and meets the second Wednesday of each month at 19:30 hrs. in the Linda Mar Fire Station Community Room, on Linda Mar Blvd. in Pacifica. Visitors are welcome.

The CARC has been organized since 1959, serving Bay Area amateurs, and providing emergency communications services to the City of Pacifica. Membership dues are $20.00 per year for the administration of the Club and the publication of the Communicator.

CARC supports two repeaters, WA6TOW/R (VHF and UHF); a Packet Digipeater, WA6TOW-1; and an APRS Digipeater, WA6TOW-2. Users of the machines provide repeater support and maintenance strictly through donations.

VHF: 146.925 MHz –offset 600 KHz PL 114.8
UHF: 441.075 MHz +offset 5 MHz PL 114.8

PL Tone: 114.8 Hz is used on both repeaters, as needed, for noise suppression.

Packet Digipeater: 145.050 MHz, Packet Node: PAC
APRS Digipeater: 144.390 MHz.

CARC/Pacifica OES VHF Simplex: 146.535 MHz
PL Tone: 114.8 Hz is used, as needed, for noise suppression

VHF Net
The club sponsors a VHF net each Wednesday, with the exception of meeting nights, at 21:00 hrs. for membership check-ins, notices, and QST's. Note: The WA6AFT repeater on 440.725 MHz may be used as an alternate if the WA6TOW repeater is down.

HF Net
The club sponsors a HF rag chew net on 3.852 MHz, or the first clear frequency up/dn, on Saturday at 09:00 hrs. with an alternate frequency of 7.228 MHz.

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The Coastside Communicator is a monthly publication of the CARC. All articles contained herein are the opinions of the authors and not necessarily those of the club members or editor.

CARC, P.O. Box 1106, Pacifica, CA 94044

53 Years of Service — 43 Years Affiliation

Coastside Nets

Monday
07:30 PM on WA6TOW
146.925 MHZ, PL 114.8
San Bruno ARC Net

Tuesday
7:30 PM on WA6TOW
146.925 MHZ, PL 114.8
Daly City ARES Net

8:00 PM on WA6TOW 146.925 MHZ, PL 114.8 and KC6ULT 146.865 MHz, PL 114.8 simultaneously, but not linked. San Mateo County ACS Net

Wednesday
9:00 PM on WA6TOW
146.925 MHz, PL 114.8
Coastside Amateur Radio Club
Wednesday Night Check-in.

Saturday
9:00 AM on 3.852 MHz, or the first clear frequency up/dn.
(alt freq of 7.228 MHz.)
Coastside Saturday Morning Group.

10:00 AM on WA6TOW
146.925 MHZ, PL 114.8
QCWA Ch. 11 NoCal. Net

Sunday
7:00-7:30 AM on WA6TOW
146.925 MHz, PL 114.8
Knights of the Megahertz Net

CLUB OFFICERS				
Office	**Name**	**Call**	**Phone**	**E-Mail Address**
President	Casey Villyard	N6TZE	(650) 355-0488	n6tze@arrl.net
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Secretary	Mary Ellen Scherer	AJ6J	(415) 239-4513	aj6j@arrl.net
Treasurer	Frank Erbacher	N6FG	(650) 355-4355	n6fg@arrl.net
CLUB STAFF				
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Emergency Services	Frank Erbacher	N6FG	(650) 355-4355	n6fg@arrl.net
Field Day	Frank Erbacher	N6FG	(650) 355-4355	n6fg@arrl.net
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Newsletter Publisher	Frank Erbacher	N6FG	(650) 355-4355	n6fg@arrl.net
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Trustee of Club Call	Frank Erbacher	N6FG	(650) 355-4355	n6fg@arrl.net
Web-Hosting	Joe Pistritto	N3CKF	(650) 464-4859	jcp@pistritto.com
Website	Dorene Bevington	KE6AGG	(650) 359-5194	ke6agg@arrl.net

Meeting Notice:

Jan 11th 2012
Linda Mar Fire Station
Pacifica, CA

2012
Agenda Planning
Meeting

COASTSIDE COMMUNICATOR

DAVID RINCK, EDITOR
P.O. BOX 1106
PACIFICA, CA 94044

FIRST CLASS

TO:

53 Years of Service
COASTSIDE AMATEUR RADIO CLUB
WA6TOW
SINCE 1959
PACIFICA, CA