Sierra Foothills Amateur Radio Club

http://www.sf-arc.org/ March 2011 PO BOX 1005. NEWCASTLE. CA

At the key of SFARC

S F A R C

OFFICERS

PRESIDENT
Al Martin, NI2U
amartin4@wavecable.com
VICE PRESIDENT
Charles Baker, AE6LR
ae6lr@yahoo.com
SECRETARY
Vacant

TREASURER
Bob Balthrope, KD6WTY
kd6wty@yahoo.com
DIRECTORS
Mary Ann Balthorpe, KE6EST
Gary Cunningham, KQ6RT
Jim Griffith, KI6AZH

Field Day Chairman
Dave Hund, N6SHD

REPORTERS
Satellites: Greg, KO6TH
History: Gary, KQ6RT
Misc Radio: Fred, K6DGW
Sunshine: Richard WA6RWS
rkuepper@ymail.com
916-482-5027

RESOURCES

REPEATERS
145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 94.8)
223.860 (-1.6 MHz/PL 100.0)
CLUB NET
Thursdays, 7:30PM, W6EK/R 145.430
CLUB MEETINGS
Second Friday of the month, 7:30PM at the Library, 350 Nevada St, Auburn CA
CLUB BREAKFAST
Last Sat of the month at Susie's Café, Cirby at Riversi Roseville – 8:00 AM
NET CONTROL OPS
Dave Jenkins, WB6RBE
Gary Cunningham, KQ6RT
Norm Medland, W6AFR
Casey McPartland, W7IB
NEWSLETTER EDITOR
Matthew Diridoni, KC6RUO
916-749-3032
matteod@comcast.net
WEBMASTER:
Carl A Schultz, WF6J

Calendar of Events

March 5-6	International DX Contest Phone
March 11	Club Meeting
April 17	Rookie Roundup - SSB
April 30	MS Walk in Folsom, Volunteers Needed! See page 2
May 22	North Hills ARC Swap Sacramento
June 11-13	June VHF QSO Party
June 25-26	FIELD DAY!

SFARC CLUB MEETING PRESENTATION March 11, 2011

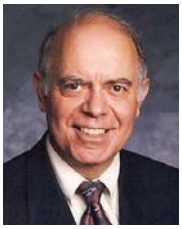
The "Tech Ten" will be presented by George Simmons and will be on our role in support of "Public Events".

The "Program" will be presented by Chuck Baker and will cover "preparing our stations for emergencies".

Everyone is welcome, bring a friend!

In this issue

We encourage members to receive Sierra Signals via email to save the Club the cost of reproduction and mailing



From the Presidents Shack

Al Martin, NI2U

President's Thoughts

Well, the Sun is starting to cooperate, the Sunspot numbers are up. The noise is ranging from good to poor. Chuck AE6LR made a contact on 10 meters to the East Coast. Then Chuck heard a lot of activity on the 10 meter band.

Please remember to re-register for this year. Thanks to those who have.

The Board will be working to make sure we are completely registered with the ARRL. We will make sure the Special Services Registration is complete.

The Board sure could use a secretary. Being able to use Word or an equivalent is a plus but is not necessary.

See you at the meeting on March eleventh.

ARRL VEC
AMATEUR RADIO VOLUNTEER EXAMINER

SFARC has testing sessions on the first Saturday of each month at Raley's on the corner of Auburn Folsom Road & Douglas Bl. in Granite Bay. Sessions are in the multi-purpose room in the back left hand corner of the store. The session starts at 8:00 AM

walk MS
walk to create a world free of MS

walk
to create a world free of MS

RADIO OPERATORS NEEDED FOR THE MS WALK IN FOLSOM CA ON APRIL 30TH

The club is looking for some volunteers to assist in the MS Walk in Folsom on Saturday April 30th. It should take no longer than 3 hours starting about 830.

We're looking for about 8 hams to assist at the rest stops, a sag wagon rider and a NCS at the start/ finish line.

Usually refreshments and an identifying T shirt are provided for the volunteers.

Come out, help a worthy cause and update your spring wardrobe!!!

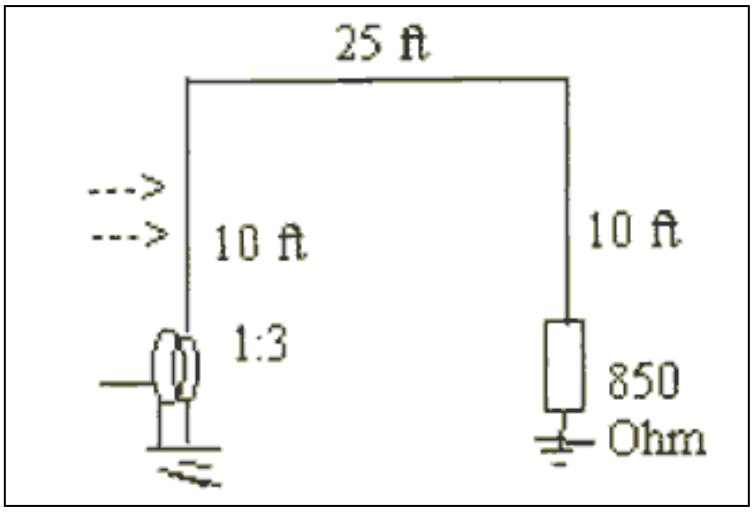
Please contact me with any questions,

George KG6LSB
grsim@mindspring.com

Miscellaneous Radio
More Low-band Receiving Antennas

The Beverage and K9AY loops are by no means the extent of receiving antennas, and some other designs will fit into typical city lots more easily. As is the case with the Beverage and K9AY Loop, these antennas all employ termination resistors and they are very inefficient and hence, never used for transmitting.

The "Ewe": Developed by Floyd Koontz, WA2WVL [the name derives from the shape as in inverted "U" with a little humor tossed in], the Ewe is much smaller than a Beverage, but like the Beverage, is coupled to the ground and is thus sensitive to differences in ground conductivity between one installation and another.

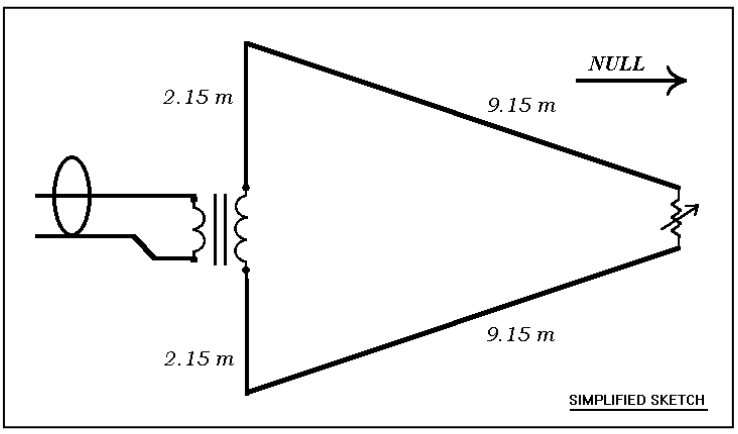


It is basically two short vertical elements coupled together by a horizontal wire. It exhibits a cardioid [heart shaped] pattern with a deep null off the terminated element. A common usage here on the left coast would be to aim that null at around 070-080º placing the large forward lobe towards the Pacific and Pacific Rim. This nulls out the bulk of North American signals [and noise].

The left-most vertical wire is "fed" from the bottom and acts as the "driven element," although this is a receiving antenna, and we're not driving it with power, we're taking power out. The right-hand wire is "fed" from the top [via the horizontal wire] so the currents in it are 180º out-of-phase with the other element. The result is that it acts as a reflector producing the deep null in the azimuth pattern. The horizontal wire contributes very little in capturing the incoming signals.

The impedance at the coax connection is about 800Ω so it is typically coupled to the coax with a transformer having a 3:1 turns ratio, yielding a 9:1 impedance ratio. The remaining mismatch is not really an issue with receiving antennas. As before, the power in the termination is miniscule and a small non-inductive resistor is sufficient.

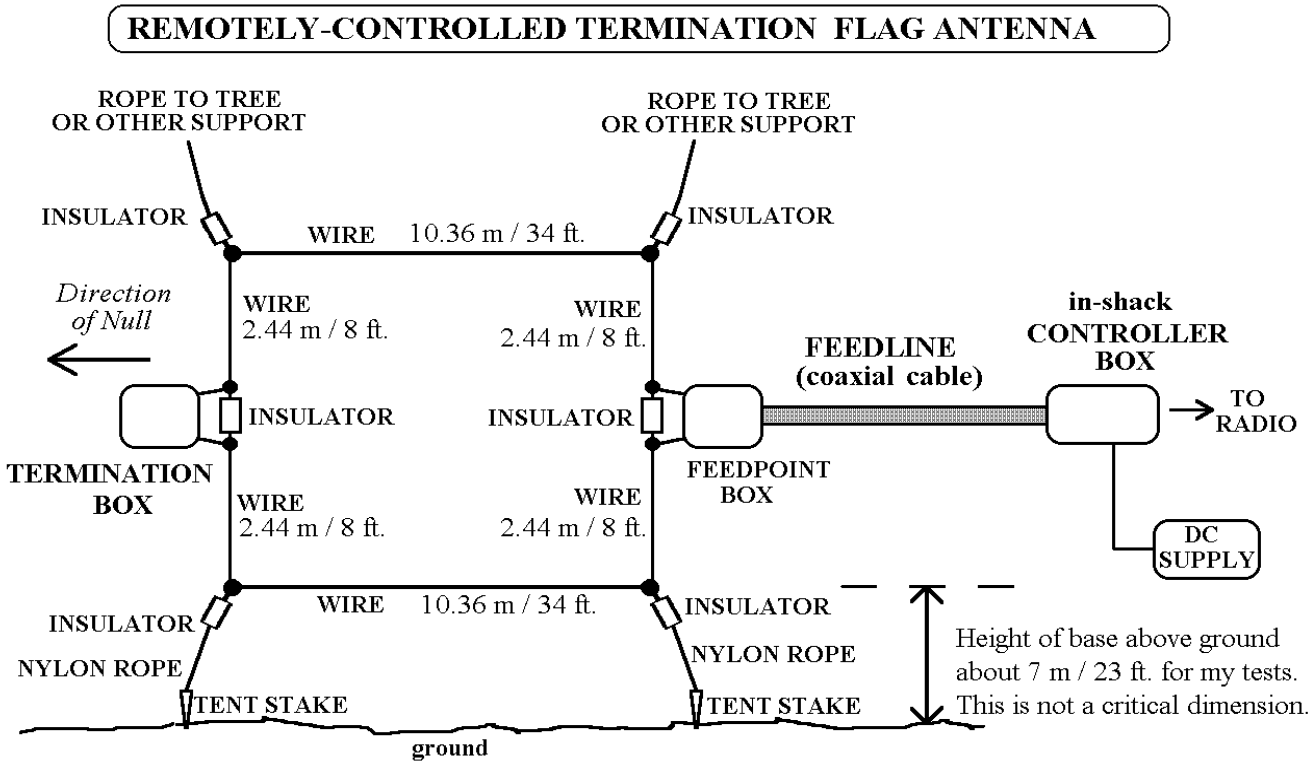
The Pennant: A problem with the Ewe is that the ground conductivity plays a role in it's performance and thus it will work better or worse over different grounds. Ground conductivity in the Auburn area is fairly poor [decomposed granite over granite] and performance can be quite variable. The Pennant antenna, devised by EA3VY is independent of the ground, and is also small and more suitable for small lots. In the late '90's, K6SE [now SK] did extensive work with them, optimizing them for 160 and 80 meters.



The antenna is very simple and looks just like a pennant. I found this one on the Internet at www.angelfire.com/md/k3ky/page37.html however there is a wealth of information on the Web. Like the Ewe, the termination resistor and feed point impedance is in the 800Ω range, and a 3:1 turns ratio transformer, typically wound on a ferrite core, yields a 9:1 impedance transformation. It too provides a cardioid pattern. Unlike the Ewe, the pennant is independent of the ground, and the depth of the null is fairly sensitive to the termination resistance. As a result, a potentiometer is often used, being adjusted for the deepest null.

It is a loop so it samples both the E and H-fields of the incoming electromagnetic wave. It is often constructed with wire and fixed supports, however it's optimum dimensions are small enough that it can be built in the manner of a quad and rotated. It really doesn't matter how high it is, the captured signal strength is proportional to the area enclosed by the elements.

The Flag: The flag antenna is a modified version of the pennant and can be a bit smaller, thus making it more easily rotatable. Like the pennant, it is ground-independent and it height doesn't matter too much. It too produces the cardioid pattern in which the forward lobe is quite broad and the deep null is used to reduce QRM and noise.



The flag is a little more complex mechanically than the pennant, but with proper adjustment can produce a deeper null. Because the enclosed area is proportionally larger than the pennant, it will produce somewhat higher signal strengths to the receiver.

JF1DMQ first wrote about them in the mid-'90's in a Japanese magazine, and they caught on with the top-band crowd.

This particular design includes a pre-amp in the “feedpoint box,” hence the need to feed DC power to it down the coax. The box also contains the transformer, in this case a 4:1 turns ratio. You need good isolation between the primary and secondary, and it is best to wind the transformer on a balanced binocular core.

Placing the pre-amp at the antenna can improve the received S/N ratio a little, especially if the coax run is RG-58 and/or long, however it isn't a big effect since even longer runs of small coax don't introduce too much loss at 160 or 80 meters. It is also a good idea to wind a few turns of the coax through a large enough toroid both where it exits the feedpoint, and at or close to the radio. The shield of the coax can act as a mini-beverage and feed unwanted common-mode signals into the receiver. The toroids will choke those currents off. In fact, it is a good idea to do that with all your coax runs where they enter the shack.

Transmitter Power: A problem with separate receiving antennas in small areas is feed-through of your transmitter power being high enough to damage the front end of today's solid state radios. Coastal marine stations in the early and mid-20th century had separate transmitter and receiver sites, a few to maybe 15 miles apart. Operators were at the receiver sites and keyed the transmitters through telephone connections. That's pretty much out of the question for hams, so some form of receiver protection is usually required.

One common method is to place a high speed vacuum relay across the receiver input and key it along with the transmitter to short the input to ground when transmitting. Today of course, we have a variety of solid state devices that can accomplish the same thing without electromechanical devices, and you can use the stray transmitter power to key them.

Although not related to receiving antennas, it would be worth your time to check and see if your radio[s] provide a static bleed path to ground. It could be an RF choke, or a high value resistor [100KΩ or so] from the center conductor of the coax to the chassis. Precipitation static can build up a seriously damaging charge if there is no bleed, even though the noise itself isn't huge in your headphones. At N6A in Alpine County during the 2009 Cal QSO Party, we fried the front ends of two ICOM 756PRO II's from snow static. It's real easy to install a bleed resistor, but if you're reluctant to go into your radio, just screw a coax-T onto the radio connector, the coax onto one of the ports, and a connector with the resistor in it onto the other.

February gave us some welcome solar activity and 10 meters was really open during the ARRL DX CW contest. Things should only get better on HF from here on.

73,

Fred K6DGW

Sunshine Report

Dave Hund, N6SHD is recovering from shoulder replacement surgery and should be back at the bowling alley soon. He says he will try and be at the next club meeting.
Richard

ARRL HAS AN EXCELLENT NEWS FEED

If you like to have updated information from the ARRL at your fingertips, ARRL has a great Newsfeed that you can subscribe to using your internet browser.

Go to http://www.arrl.org/arrl.rss to view or even subscribe to the RSS web page and news is updated 24 hours per day.

Mark Your Calendar

June 25, 26, 2011

SFARC SATELITE REPORT
By Greg Dolkas, KO6TH

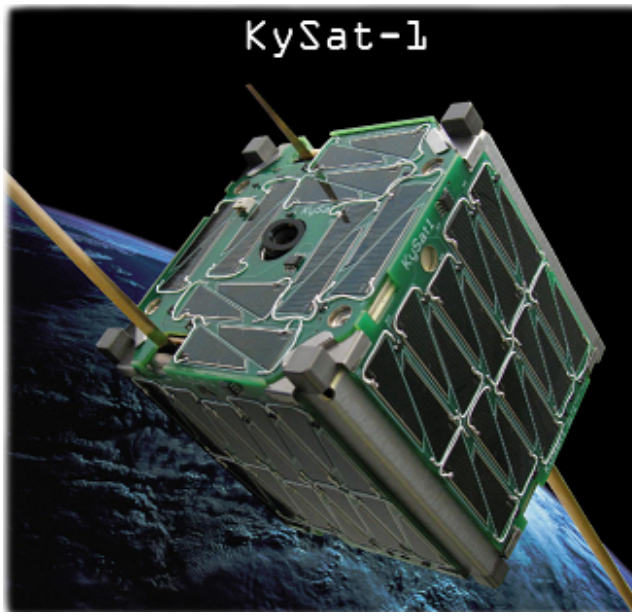
Kentucky Enters the Space Race!

By the time you read this, and with a little luck, the great state of Kentucky will be added to the prestigious list of Space-faring nations. My first thought was that this was akin to adding Kansas to the list of great Sea-faring nations, but in fact, Kentucky Space has delivered its first satellite, ready for launch on February 23rd. And, to be fair, Kansas has access to the Missouri River, so to the Mississippi River, and therefore the Gulf of Mexico and the oceans beyond, so I shouldn't be so quick to judge.

The satellite, "KySat-1", was built by Kentucky Space, an "ambitious non-profit consortium of universities, public organizations, and private companies", according to their website. The objective is simple: train students in the dynamics of satellite design, testing and operation and they are doing this through a variety of projects including high altitude balloons and experimental hardware for the International Space Station. Through an educational outreach program, the satellite ground stations can be taken to schools throughout the state for students to have a first-hand interaction with the satellite. Lesson plans and equipment loan programs are being

developed for teachers, and a website managed jointly by students at the University of Kentucky at Lexington and Morehead State University will provide students and the general public access to the satellite's location and telemetry.

KySat-1 is a small satellite, built into the standard "Cubesat" frame. The result of four years work, it's a mere 4 inches on a side, and weighs in at only 2.2 pounds (1kg). But in that small frame they have packed a VHF/UHF FM Ham transponder, digital camera, and a high bandwidth commercial S-band transmitter. Powered by solar cells, the operating power is about 1 watt. KySat-1 will have an uplink (Earth to Satellite) on 145.850, and a downlink on 436.790, plus or minus a bit for Doppler shift. They will also have a Web-based flight software package, which will allow for commands to be sent to the satellite for picture taking, telemetry gathering, and various mode changes.



NASA is providing the launch capability through their Project ELaNa (educational Launch of NanoSatellite). Also on board are satellites from two other student-led projects. This is their first launch, so we all hope everything goes according to plan. The launch is planned for 2:09pm PST on February 23rd from the Vandenberg Air Force Base here in California, and should place all three satellites in a Sun-Synchronous orbit, some 405 miles above the Earth. Such an orbit should result in the satellite passing over the student's heads (literally, hopefully, not metaphorically) at about the same times, twice every day.

You can follow their progress at http://ssl.engineering.uky.edu/missions/orbital/kysat1

Since writing this, the launch of KySat-1has been delayed. They are now hoping to head for orbit as early as the first half of March, but that will depend on some debugging of the ground support system. Apparently, about 8 minutes before liftoff, a communication problem was detected between the ground system and the rocket. The rocket itself is said to be fine, and they're keeping the batteries topped up; it will just take a little longer to get things going. This is, after all, rocket science.

Greg KO6TH

THE DUES ARE DUE!

If you have not paid your 2011 dues, please send them in as soon as possible. We have reduced the cost of mailing the newsletter by sending it out to most of the members by email. Thank you for helping us save the money for printing and mailing costs. Other costs we have are the upkeep of the repeater, website and utilities. There are also the cost of rent for the library and the donation to the church for the Christmas party.

This year we hope to have some interesting and helpful presentations. We will list the future presentations in the newsletter prior to the meeting so you can mark your calendar as a reminder to come to the meeting.

Please send your renewal for 2011 to the address indicated on the Membership Application available on the back of the newsletter or on the web page.

BOARD OF DIRECTOR MEETING MINUTES

February 11, 2011

Board meeting commenced at 1800 hours at the Round Table Pizza in the Auburn Town Center.
Present were officers Al Martin, NI2U, President; Chuck Baker, AE6LR, VP and Bob Balthrope, KD6WTY, Treasurer. Directors Mary Anne Balthrope, KE6EST; Gary Cunningham, KQ6RT and Jim Griffith, KI6AZH. Also present were Richard Kuepper, WA6RWS, acting secretary and Carl Schultz, WF6J, webmaster.
The board discussed the information on the financial report spreadsheet. About half the club members have now renewed. Kuepper volunteered to send out a reminder letter to past due members to renew their membership.

Al and Bob will speak to George, KG6LSB about picking up the mail and making bank deposits.

Al discussed requirements to be a special services club with the ARRL and tracking those who sign in at the club meeting whether they are ARRL members.

Carl volunteered to be our PIO for the club. Carl also did a presentation on our website and changes that should be made. Board agreed the club should be listed as owner of the domain and email address should be W6EK. Carl will meet with Rick Prime for details.

Jim Griffith talked about having a theme night for the club meeting suggesting next meeting be that night.

Meeting adjourned at 1905 hours.
Richard WA6RWS, Acting Secretary

GENERAL MEETING MINUTES

February 11, 2011

General meeting commenced at 1930 hours at the Placer County Library in Auburn. Present were officers Al Martin, NI2U, President; Chuck Baker, AE6LR, VP and Bob Balthrope, KD6WTY, Treasurer. Directors Mary Anne Balthrope, KE6EST; Gary Cunningham, KQ6RT and Jim Griffith, KI6AZH. Special guest, Bob Wortman, WB6VYH, ARRL Sacramento Section Technical Coordinator.

Al led everyone with the Pledge of Allegiance. Officers, Directors, members and guests were introduced. Bob, KD6WTY gave the treasurer's report and said we have $1366.85 in the bank.

VE report – There were 8 examiners at the Feb exam. Eight tested for Tech and 6 passed. Four took the General exam and 3 passed. Two took the Extra exam and 1 passed scoring 100%. Next VE exam will be 5 March at Raley's store in Granite Bay.
Satellite report – Greg, KO6TH discussed Feb QST and articles about satellites.

Raffle – Gene, KG6NYH talked about all the goodies including of course an atomic clock.

Sunshine report – Richard, WA6RWS reported that Dave Hund was recuperating at home after shoulder surgery. Please join in the 12pm schedule with Joe, KF6QY on 7.245 M-F. He would like to hear from all of you.

Tech-Ten was presented by Richard, WA6RWS explaining the changes to the auto patch codes. Cards with instructions were given to members. The auto patch is for members of the club unless there is an emergency which is available to all hams.

New Business – Casey, W7IB said that NARCC had voted to set aside 9 frequency pairs for digital only. More news to follow. Club is still looking for someone to be secretary.

George, KG6LSB stated Starbucks has donated the coffee for the meeting and Donna brought in the desserts. George also talked about the upcoming MS walk and need for radio operators. George also demonstrated a device he made to attach PL259 connectors to coaxial cable. George also presented Alan, KI6WDV with a 43" Bird balloon in place of a Bird 43 wattmeter.

Al talked about being a special services club. Bob, WB6VYH will check on club status as a special services club.

Al gave a very informative presentation on "Ununs" and "Baluns".

Raffle was held and meeting adjourned at 2100 hours.

PS, new ham Bob Brodousky, who took his test on 5 Feb, had not been issued his license when he signed in for the meeting. He checked later on his IPAD and was just issued KJ6MOS and he immediately filled out an application for membership in the club. Congratulations Bob!

Richard WA6RWS, Acting Secretary

Fifty Years Ago at SFARC
March 8, 1961
Home of Lin Hunter

Meeting was called to order by Lin Hunter at 8:25 pm. Minutes a treasurers report was read and approved.

Very unfortunate that Lewey Blender, W6LRW passed away and a bill of $5.20 for flowers were approved to be paid to Footes Florist.

We heard from the 20th district Fair manager and others that the rear room of the old Naval reserve building would quite sure be available for our club use. Pres. Lin Hunter and Sec. Sage Otow were appointed to present in writing the reason for requesting this room, and for what purpose it will be used.

The exhibit for the Fair was discussed and it seemed difficult for us to make it. However some members said if we can do a good job, then we should participate.

Field Day has been considered by some. A station for JACL picnic was discussed and we will try if we can make the necessary preparation. Craig Tindall reported progress and code and theory classes.

Secretary asks, and it was approved by members, to admit George Lambert WA6JIT, and Puffy Rogers W6UMF, as our members from Roseville.

Motion was made and seconded by Frank to adjourn at 9:00 pm. Lin hunter then got on the air to make Aerojet station, W6IJK's first contact. All members present were able to say a few words and their members likewise.

Refreshments were enjoyed before we all departed.

Respectfully Submitted,
Sage Otow, Secretary

SIERRA FOOTHILLS AMATEUR RADIO CLUB
P.O. Box 1005
Newcastle, CA 95658

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Sierra Foothills Amateur Radio Club
2011 Membership Application

Please Print

Name: _____ Call: _____ Class: _____ e-mail: _____

Address: _____ City: _____ State: _____ Zip: _____

Associate Name: _____ Call: _____ Class: _____

Phone Number: _____ Application: (Circle One) New Renewal

Member Dues: Circle Amounts That Apply.

Applications (for new members only) received in the middle of the year will be pro rated. Contact the President or Treasurer for exact rate.

Membership: (P)	$22.00	Name Badge: (R)	$7.00
Associate: (Q)	$ 7.00	Repeater Donation: (S)	$_____
Auto Patch Donation: (T)	$_____	Newsletter Booster: (V)	$_____
Misc. Donation: (X)	$_____	Christmas Donation: (W)	$_____
		TOTAL: (Y)	**$_____**

OFFICE USE ONLY: DO NOT WRITE BELOW THIS LINE

Date: _____ Treasurer: _____ Secretary: _____ Roster: _____

Payment: _____ Check Number: _____ Cash: _____