



FARS

FOOTHILLS AMATEUR RADIO SOCIETY

September 2011

Volume 41, Number 9

CQ CQ CQP!

www.fars.k6ya.org

September Club Meeting

Date: Friday, September 23rd, 2011

Time: Socializing at 7PM, Meeting starts at 7:30PM

Place: Covington School, 205 Covington Road, Los Altos
(near Foothill Expressway and El Monte Rd)

FARS Annual Homebrew Night

What have you been working on?
And are you ready to show it off?

Physical Projects
and/or
Ham Radio Experiences
are acceptable entries.

*** CASH Prizes ***

Snacks: Cookies and coffee will be served.

Questions: Bring your hardest radio questions.

The mysterious Dr. Know-It-All reveals all answers.

Post-Meeting Snacks: Denny's on Mathilda in Sunnyvale.

September Raffle Prizes

The prizes for the raffle will be:

First Prize: Yaesu VX-3R
2m/440 HT Wideband



Second Prize: Amidon AB200-10
Toroid Balun Kit



Third Prize: 2011-2012 ARRL Repeater
Directory

The FARS RELAY President's Corner

Membership Meeting. Our next membership meeting is scheduled for Friday, September 23rd at 7 PM. The program this month is the **FARS Homebrew Night**. Time to dig out those Ham projects you have been working on and get them ready to show off. This is your night to share your experience with our audience.



Participants are not limited to physical projects. Ham radio experiences are acceptable entries. Feel free to put up a couple of slides to help the audience visualize the experience.

Each participant will have 5-10 minutes to share. Then our audience will select the best entries for cash prizes.

FARS CQP. We are participating in the California QSO Party (CQP) on October 1st, 2011. This is a contest where stations around the country are looking specifically for California stations, so we are activating the club station up at Maryknoll on Saturday from 10AM until we get tired. Please volunteer to help with setup, takedown, or operating the station. All license classes may participate as we will have control operators on site.

We have water, food, restrooms, shelter, etc., so everyone can hang out for as long as they desire. If you want, bring up your own portable gear and make some contacts for yourself.

Contact Michael Pechner, NE6RD, to volunteer or schedule an operating time slot. For more details click on www.fars.k6ya/events/fars-cqp.

Electronics Flea Market. The next electronics flea market is scheduled for October 8th and will be hosted by the Silicon Valley Chapter of the American Red Cross. Check out www.electronicfleamarket.com for all the details.

Winter Banquet 2012 has been scheduled for January 20, 2012, so put it on your calendar. More details to come.

Membership. New memberships paid through September are prorated to \$5 for the rest of 2011!

de Mikel, KN6QI

The **Wish-You-Were-Here prize** is a **CASH** prize awarded each meeting to a member who is present and has paid their 2011 dues. Are you on the list for the drawing?

CLUB INFORMATION

www.fars.k6ya.org

President: Mikel Lechner KN6QI
Vice President: Steve Stearns K6OIK
Treasurer: Dick Baldwinson N6ATD
Secretary: (open)
Radio Officer: Phil Hawkins KA6MZE
Training Officer: Kevin Weiler K6XXX
Relay Editor: Joanna Dilley K6YL
FARS Board: Robert Flemate KE6TFU
Mark Hardy K6MDH
Peter Chow AF6DS
Charlie Morrin KI6FXV
K6YA Trustee: Phil Hawkins KA6MZE

Contact the FARS Board of Directors at fars-board@svpal.org.

Email Announcements: Members and non-members are encouraged to subscribe to the FARS Announcement list to receive reminders of FARS activities and other news. Browse www.fars.k6ya.org/mail, click on Subscribe/Unsubscribe and follow the instructions under "Subscribing to fars-announce". You may submit announcements to the FARS Announcement at fars-announce@svpal.org. The list is moderated and messages will require approval by the moderator.

Meetings: FARS meetings are held at 7 PM on the fourth Friday of each month except January (Winter Banquet); and sometimes there are changes for June (for Field Day) and November & December (for holidays). **Visitors are always welcome!** Directions on the website as well as in this newsletter. Talk-in: N6NFI (145.23-/100Hz) or W6ASH repeater (145.27-/100Hz).

Membership: Annual FARS membership is \$15. A club badge is \$9. With membership you'll receive the monthly FARS Relay, and you'll also qualify for the monthly CASH Wish-You-Were-Here drawing at each membership meeting.

Newsletter: The FARS *Relay* is the official monthly newsletter of the Foothills Amateur Radio Society. Contributions to the newsletter from members, family, and guests are earnestly solicited! Photos, operating news, articles, etc. can be submitted to the editor at any time. Contributions are subject to editing and/or compression.

Newsletter Editor:

Joanna Dilley K6YL Joanna.K6YL@gmail.com
PO Box 51985 Also available at FARS meetings.
Palo Alto, CA 94303 Photos © K6YL unless noted otherwise.

**What can YOU do
to help protect and preserve
spectrum and privileges
for all amateur radio operators?**

SUPPORT YOUR NATIONAL SOCIETY →



**The Amateur Radio Relay League
(ARRL)**

www.arrl.org

CALENDAR OF UPCOMING EVENTS

www.fars.k6ya.org/events/calendar

Visitors are welcome at all events!

SEPTEMBER

23 [Club Meeting](#), Covington School, Los Altos, 7PM

OCTOBER

1-2 The [45th Annual California QSO Party](#), "CQP"

FARS will be operating @ Maryknoll in Los Altos

6 Board Mtg, Los Altos Town Crier, 7:30PM

8 [Electronics Flea Market](#), DeAnza College, 5AM

Last flea market for 2011!

14-16 [Pacificon 2011](#), Santa Clara Marriott Hotel

A ham convention can't get much closer!

21 [Club Meeting](#), Covington School, Los Altos, 7PM

NOVEMBER

3 Board Mtg, Los Altos Town Crier, 7:30PM

18 [Club Meeting](#), Covington School, Los Altos, 7PM

DECEMBER

1 Board Mtg, Los Altos Town Crier, 7:30PM

16 [Club Meeting](#), Covington School, Los Altos, 7PM

FARS Membership Dues Reduced for 2011

Payment of dues for 2011 supports the club and provides you with current membership status – you'll qualify for the **CASH** Wish-You-Were-Here prize awarded at each membership meeting, and you'll also receive the FARS Relay in your email each month.

The FARS board has reduced the membership dues for 2011 to \$15. Use your \$5 savings to purchase raffle tickets, or put it in your pocket and be \$5 richer. If you've already renewed for 2011 at \$20, you may request a refund. Or simply leave it as a donation.

UPDATE – New memberships are now prorated to \$5 for the remainder of 2011.

FARS is a California 501(c)(3) non-profit corporation, so donations and membership dues are tax deductible with the California Franchise Tax Board and the Internal Revenue Service.

AUGUST MEETING REPORT

Congrats to the August raffle prize winners!

Mikel KN6QI -- **Yaesu FT-1900R**

Mobile 2m Transceiver w/ 55W output

Peter KJ6PUN -- **XOX-TRAK Controller**

Automatic Controller for Satellite Stations (by K6XOX)

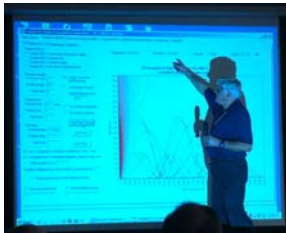
Del K6JPX -- **2011 ARRL Handbook for Radio Comm**

Dan KJ6OSD -- **2011-2012 ARRL Repeater Directory**



Peter KJ6PUN,
Dan KJ6OSD,
Mikel KN6QI,
and
Del K6JPX
(left to right)

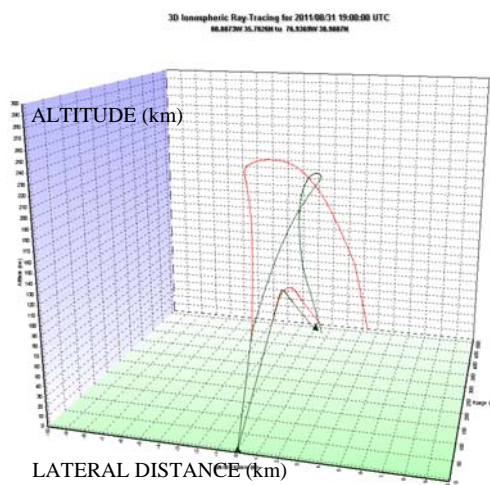
Kevin K6XXX was luckily present to collect \$55 when his name was called for the **Wish-You-Were-Here prize**.



Steve K6OIK
as he discusses the use of Ray
Tracing to predict HF
Ionospheric Propagation

Additional information from
Steve follows.

The two 3-D ray trace graphs below are for two different 20 MHz paths to College Park, MD. One originates in Statesville, NC and the other in Saratoga, CA. The 3-D plots are interesting because they show the effect the



earth's magnetic field. Upon entering the ionosphere, the rays split into two rays. This is called magneto-ionic splitting. The ordinary ray, shown in red, follows a different path through the ionosphere than does the extraordinary ray, shown in green. It is especially interesting that the ray paths are curved and don't always follow a great circle path from transmitter to receiver.

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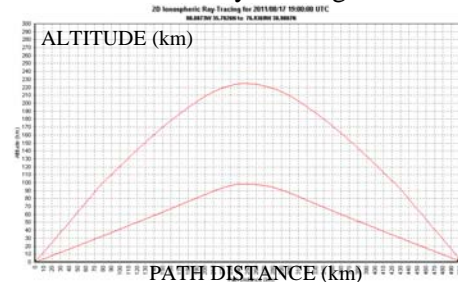
The audience was fascinated to hear this sequel to Steve's talk back in February 2010 on the use of VOACAP to predict HF propagation paths.

August Speaker: Steve Stearns, K6OIK

Topic: "Predicting HF Ionospheric Propagation by Ray Tracing"

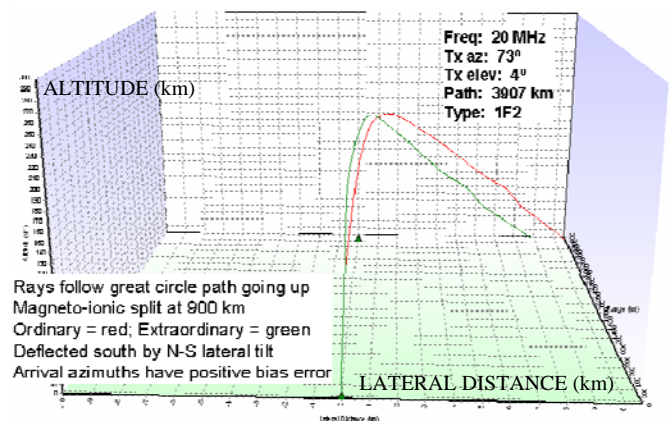
We learned that ionospheric ray tracing is a method entirely different from VOACAP for predicting HF propagation. In many cases, ray tracing gives better insight into propagation effects than VOACAP. Steve explained why and showed real time examples using a program called Proplab-Pro 3.0, which is priced within reach of the serious DX'er. Steve also showed what Proplab-Pro 3.0 can do that VOACAP can't. He spoke about the limits and future of both approaches to the problem of prediction.

Below are a few ray traces generated by Proplab-Pro 3.0.



This is a 2-D plot for a 500 km path from Statesville, NC, to College Park, MD, which shows that the transmitter can reach the

receiver either by an E layer path at takeoff angle of 29 degrees or by an F2 layer path at takeoff angle of 51 deg.



Proplab-Pro can be purchased from Thomas Hood's NW7US web site <http://prop.hfradio.org/> for \$40 less than its regular price. But there's an even better deal available on that web site. It is the STD Internet Space Weather & Radio Propagation Forecasting Course which incl. Proplab-Pro and other useful software for a price that's about the same as the regular price of Proplab-Pro by itself!

California QSO Party

October 1st & 2nd, 2011

FARS will be participating under club call K6YA in this event!

More info at www.fars.k6ya.org/events/fars-cqp or contact Michel Pechner, NE6RD.

BBQ
1PM to 3PM

When: Saturday, October 1st beginning @ 10AM

Where: The Soccer Field at Maryknoll Residence in Los Altos

23000 Cristo Rey Drive, Los Altos, CA [MAP](#)

GPS Coordinates: 37.33403, -122.081795

(same location as Field Day)

Provided: HF Station for 10m-40m, power, Port-a-Potty, water, soft drinks, BBQ, food, and Ham Radio fun!

Optional: Bring your own gear to set up and make qso's!



Low Power, High Power? SSB or CW?
CQP is a fun contest for all.

The California QSO Party is a great opportunity for stations in California because everyone else HAS TO WORK US!



**All 58 CA Counties
will be on the air!**

For California stations the object of the contest is to work as many stations as possible on SSB and CW. You can work the same station on each band and each mode for score credit.

***** California stations *****
work all stations in or out of California
(with a bonus/multiplier for each of the 50 US states and 8 Canadian provinces).

***** Stations outside of California *****
work stations in California only
(with a bonus/multiplier for each of the 58 California counties).

Operating in this contest can be a part-time effort for enjoyment or a serious effort for points. Logs do not have to be submitted, so participate at any level you are comfortable with.

You can find the full rules and award details on the CQP web site at www.cqp.org.

California QSO Party

2011 is the 45th Anniversary of CQP

How well do you know California? Below are some interesting questions for you.

#1 - What is the California county with the **2ND LARGEST POPULATION?**

- Los Angeles – 1st largest
- a.) San Diego
 - b.) Orange
 - c.) Riverside
 - d.) San Bernadino
 - e.) Santa Clara

#2 - What is the California county with the **SMALLEST POPULATION?**

- a.) Alpine
- b.) Sierra
- c.) Modoc
- d.) Mono
- e.) Trinity

#3 - What is the California county with the **LARGEST SIZE** (square mileage)?

- a.) San Bernadino
- b.) Inyo
- c.) Kern
- d.) Riverside
- e.) Fresno

#4 - What is the California county with the **SMALLEST SIZE** (square mileage)?

- a.) San Francisco
- b.) Santa Cruz
- c.) San Mateo
- d.) Marin
- e.) Almador
- f.) Sutter

#5 - What is the California county with the **2ND LARGEST POPULATION DENSITY** (population per square mile)?

- San Francisco – 1st largest
- a.) Orange
 - b.) Los Angeles
 - c.) Alameda
 - d.) Sacramento
 - e.) Santa Clara

#6 - What is the California county with the **SMALLEST POPULATION DENSITY** (population per square mile)?

- a.) Alpine
- b.) Inyo
- c.) Modoc
- d.) Sierra
- e.) Trinity

#7 - Which of the 58 counties was the **LAST ONE FORMED?**

- a.) Imperial
- b.) Riverside
- c.) Kings
- d.) Madera
- e.) Glenn



Information thanks to www.counties.org.

Answers at the bottom of page 8.

PACIFICON 2011

Amateur Radio Convention
is Coming Soon!

This annual ham radio convention will be bigger and better at the new Santa Clara venue!

Events, Forum Topics, and Exhibits Include:

- ** Friday All-Day Antenna Seminar
- ** Friday Legal Seminar
- ** Friday Evening Open MDARC Meeting
- ** Saturday Breakfast and Keynote:
Speaker Gordon West, WB6NOA
Ham radio educator and author of numerous excellent books and audio tapes on ham radio licensing.
- ** Saturday Evening Banquet and Keynote:
Speaker Joe Taylor, K1JT
An American astrophysicist and Nobel Prize Laureate in Physics for his discovery of a new type of pulsar that opened up possibilities for the study of gravitation.
- ** Outstanding Technical Forums
- ** Exciting Ham Equipment Exhibitors
- ** Great Saturday & Sunday Swap Meets
- ** Daily Radio Prize Drawings
- ** Transmitter Hunts, Beginner & Advanced
- ** ATV Activities
- ** HFpack and QRP Activities
- ** Ham License Exams
- ** Saturday All-Day Technician License Class
- ** Leo Laporte "The Tech Guy" Live radio broadcast
- ** Boy Scouts JOTA Station
- ** ARRL Forum
- ** Parachute Mobile
- ** Satellite Communication & Mobile Station
- ** KPH Marine Live
- ** HF RTTY Live
- ** HF Marine RTTY Press Transmissions Live
- ** Projects and Forums for Young Amateurs
- ** Original Collins Radio Van
- ** WWII Mobile Radio Command
- ** Amateur Fire Communications Center

October 14-16, 2011

Santa Clara Marriott Hotel

2700 Mission College Blvd, Santa Clara, CA

www.PACIFICON.org

This *Great West Coast Ham Radio Convention* returns to the San Francisco Bay Area and will again be sponsored by the Mount Diablo Amateur Radio club.



A General Admission ticket entitles you to the following: A full slate of outstanding forum presentations about a wide range of amateur radio related topics, a large Exhibit Hall filled with exciting product exhibits, a series of Amateur Television demonstrations, great QRP and HFpack activities, an outdoor Swap Meet, a One Day Technician Class to prepare you to pass the license examination at PACIFICON and get your first ham radio license, fun and informative T-Hunts, a chance to discuss important national amateur radio issues with top ARRL leaders, the Boy Scout Jamboree-On-The-Air (**scouts in uniform admitted free**), chances to win great radios and other prizes throughout the convention, and perhaps the best part - interact and share information with lots of other amateur radio enthusiasts to further (or begin) your own knowledge and to advance the hobby. Tickets may be purchased online or at the door.

Note: Some events have an additional charge beyond the \$20 registration/admission cost. See the website for additional information for: **Breakfast Keynote, Banquet Saturday, Antenna Seminar and Ham License Exams.**



REPORT: HamCon 2011 in Los Angeles, CA

The 2011 ARRL Southwestern Division Amateur Radio Convention took place in Southern California the second weekend of September. This particular convention rotates between multiple locations in SoCal and Arizona, with this year's QTH at the Marriott in Torrance. This will give you a taste of what can be expected at Pacificon in October.

Vendors represented every aspect of amateur radio, from transceivers to antennas and every associated fun gadget.

Elecraft proudly displayed their new KX3 (*below left*) – an all-band, all-mode ultraportable transceiver. They also created a welcoming hands-on display of their entire K-line which was very popular. An Elecraft K3 (100 watt 160-6 meter transceiver) was the top prize raffled off at the Saturday night banquet and made one ham very happy.



Flex Radio, Buddipole, Pryme, and RadioSport also had interesting displays and good foot traffic.



Presentations covered numerous topics, including T-hunts, contesting, emergency preparedness, satellites, troubleshooting, working Hawaii on 2 meter Tropo, antenna launchers, EME, ATV, sun spots, D Star, microwave, and more.

The “Evolution of CW” by Ken Miller K6CTW proved a fascinating topic.

#8 - Which is the Morse code prominently used today?

- a.) International Morse Code
- b.) Continental Morse Code
- c.) American Morse Code
- d.) a and c
- e.) a and b
- f.) none of the above

#9 - Ted McElroy holds the world record for copying perfect cw at what speed? (The year was 1939 and he survived multiple, consecutive 15 minute tests at ever increasing speeds.)

- a.) 65.2 wpm
- b.) 68.2 wpm
- c.) 71.2 wpm
- d.) 75.2 wpm

Answers on the next page.

The speakers at the Sunday breakfast were Gayle K6GO and Margie KG6TBR from the YLDXC (YL-DXpeditions Club), who provided a humorous and exciting account of their DXpedition to Curacao earlier this year. Interested in a DX location that already has a station? Check out the amazing rentable digs of PJ2T at www.pj2t.org and get ready to make 1000's of qso's from this new DXCC entity formed by the breakup of the Netherlands Antilles in October 2010. Are you a YL interested in this incredible club? Check out www.yldxpeditions.com. Their next adventure awaits you!

OPERATING REPORT: DEMONSTRATING AMATEUR RADIO

Spreading information on amateur radio and encouraging new hams is a vital part of our hobby. Keith K6ZJI stepped up again this year to demonstrate ham radio to his community at the annual Whisman neighborhood block party in Mountain View. Presenting on both the emergency communications aspect as well as the social and technical enjoyment of our hobby, he covered all the bases with his impressive setup.



HF, VHF, UHF, battery power, solar panels, informational handouts and HRO catalogs --Keith did an incredible job. Thank you also to his team, including Byron KG6UOB, Red W7RIT, Joanna K6YL, Rick N6DQ and several others who assisted with this event.



Also on demonstration at the event was the use of the DN and UP buttons on the top of the IC-706 mic to send CW!

Who knew?!

REPORT: Halted Electronics Annual Parking Lot Sale

Halted Electronics in Santa Clara held their annual parking lot sale on Saturday, September 17th. To no surprise numerous hams turned out to take advantage of the deals. Thanks to the FARS net for spreading this timely QST!



ANSWERS

#1 - a, #2 - a, #3 - a, #4 - a, #5 - a, #6 - a, #7 - a,
#8 - e, #9 - d

REPORT: CW APP FOR THE iPhone

Thanks to Mikey NE6RD I now have useful means of learning CW that doesn't require a computer. There are many great computer programs available, for example G4FON, but I was in need of a comparable iPhone app that I could use on-the-go.



“Morse Elmer” uses the Koch Method and also Farnsworth spacing to help you find your preferred settings. You have full control of the set of letters/numbers/punctuation used for training, whether it be a custom set (i.e. “5 H S I E” if you’re nutty, screen shot above right) or the default set (above left). Keep hitting the “+” sign and eventually you’ll be up to all 43 characters in the default set. Speed and spacing is entirely up to you. Comparison of your notebook to the Results screen and optional entry of your score provides a graph of your progress. You’ll be picking up speed in no time!

Of course, not everyone has an iPhone, so feel free to write in to the FARS Relay editor with your app/program suggestions. RookieRoundup CW and Straight Key Night are in December!

FARS Member Badges

We’re ready to take your order online or at the mtg.

Available for pick up at the next club mtg

FARS Relay

Have a photo, article, or operating news to share?

Please contact Joanna.K6YL@gmail.com

FARS Weekly Net

Thursdays @ 8 PM

N6NFI repeater, 145.23-/100Hz

This net is open to all interested hams.

The purpose of the net is to keep club members informed about club activities; to exchange other club-related info; and to socialize.

9AM Talk Net

Weekdays @ 9 AM

N6NFI repeater, 145.23-/100Hz

This net is open to all interested hams.

This is an informal net that is very popular.

www.9amtalk.net

Ready to Upgrade Your License?

What is a Passing Score you might ask?

Technician & General exams – 26 out of 35 (74.2%)

Amateur Extra exam – 37/50 (74%)

www.baears.com – This group holds “Ham Crams” 4 times a year. Pre-registration required, sign up on the website. \$30

- Saturday 9/24, 8 AM @ Redwood City

www.amateur-radio.org – The Sunnyvale VEC holds test sessions on Saturdays often alternating between Sunnyvale and Redwood City. Walk-ins only, no pre-registrations. \$15

- Saturday 10/8, 10:30 AM @ Sunnyvale
- Saturday 11/12, 10:30 AM @ Sunnyvale

www.pdarrrl.org/vec/vecscv – The Silicon Valley ARRL VE holds test sessions on the 1st and 3rd Saturdays of each month. Arrive between 8 AM and 11 AM to the Saratoga Fire Station at 14380 Saratoga Avenue. Walk-ins only, no pre-registrations. \$15

- Saturday 10/5
- Saturday 10/15

www.sbara.org – The Tri-City VE Group holds test sessions at Hurricane Electric in Fremont each month, alternating between Saturday morning and Tuesday evening. The address is 48233 Warm Springs Blvd. Walk-ins welcome. \$15

- Tuesday 10/11, 6:30 PM
- Saturday 11/12, 9:00 AM

BAEARS Ham Cram

Next Session: Saturday, September 24th
8 AM
Redwood City, CA
www.baears.com

Electronics Flea Markets 2011

Saturday 5 AM to 12 Noon

3/12 hosted by PAARA 7/9 hosted by FARS !!
4/9 hosted by SPARK 8/13 hosted by SVECS
5/21 hosted by SCCARA 9/10 hosted by WVARA
6/11 hosted by SPECS 10/8 hosted by SVCARC

www.electronicfleamarket.com

FARS Email Notices

Easy to subscribe!

www.k6ya.org/mail

Receive reminders of activities and other news.

Weekly FARS Net

Thursdays @ 8 PM

N6NFI Repeater 145.230(-), 100 Hz PL

ARRL Rookie Roundup 2011 on CW!

The objective of a [Rookie Roundup](#) is for newly licensed operators to experience competitive Amateur Radio. Experienced operators are also strongly encouraged to participate in order to help new operators – either on the air or in person.

This event is held in SSB, RTTY and CW.

CW is up next on December 18th!

During this event a Rookie will be defined as a ham first licensed in 2009, 2010 or 2011.

Time to learn & practice CW:

3 months to go!

Did you enjoy the contesting aspect
of Field Day?

Consider participating in the
2011 California QSO Party
(CQP)
October 1st-2nd, 2011

www.cqp.org



*All 58 CA
Counties will be
on the air!*

**California stations
work all stations in or out of California**
(with a bonus/multiplier for each of the 50 US states
and 8 Canadian provinces).

Stations outside of CA work stations in CA only
(with a bonus/multiplier for each of the 58 counties).

The ARRL Pacific Division Convention

Pacificon 2011
comes to Santa Clara, CA
October 14-16th, 2011

www.pacificon.org



**Tickets are already on sale, including to the
Sat. Banquet and Fri. Antenna Seminar!**

FARS Membership Renewal Form

Note that the dues for 2011 have been reduced to \$15. You may also renew online by logging onto the FARS website, then using PayPal to pay.

<https://www.fars.k6ya.org/membership>

Date: _____

PLEASE fill out the form for all new/renewal members.

Name(s) & Callsign(s) & Class (E-A-G-T-N-None): _____

Mailing Address: _____

Home Phone: _____ Work Phone: _____

ARRL Member? _____ Email: _____

Preferred Modes (e.g. HF-SSB/CW/VHF/QRP/Other): _____

I'm willing to Elmer new hams with: _____

Special topics of interest / suggestions for club meeting speakers: _____

Dues: \$15 per year. Membership runs from January 1 to December 31. New membership applications accepted later in the year may have their dues prorated (see dues schedule). Please include \$9 for a club badge if desired. Your call sign and first name as it appears above will appear on the badge. Renewing members should provide at least their name, call, and the date. Also include any info that may have changed. Put "N/A" where you wish to remove (or not provide) info.

Send your check payable to FARS, to:

FARS c/o Michael Lechner, 436 Memphis Drive, Campbell, CA 95008



How to get to FARS meetings (*Visitors are always welcome*)

Meetings are held at the Covington Elementary School (directions below) on the fourth Friday. Socializing at 7 PM with the regular meeting at 7:30 PM. There may be changes in the meeting dates for January, June, November, and December.

DIRECTIONS:

From Interstate 280. take the El Monte exit Northeast. Cross Foothill Expressway. (A) At the first traffic light turn right on Covington. (B) Immediately at the fork take the left street (Covington). Go about 1/10th of a mile. Turn left into the parking lot. The gym is the tall building to your right with red and white stripes.

From Foothill Expwy., take the El Monte exit and go Northeast; then follow directions as above at point (A).

From US101 or El Camino: take San Antonio Road west (to Foothill Expressway). Then follow directions above at point (A).

TALK-IN via the [N6NFI](#) (145.230-; 100Hz PL) repeater or the [W6ASH](#) 145.27- (100Hz PL) repeater.