

# SCCARA-GRAM



## Santa Clara County Amateur Radio Association

Volume 21, Number 7

July 2005



## President's Prose

I found out that I am the president of a cool radio club. If you don't believe that you just had to come to field day. Most of the members were more than cool in fact they were cold. One never knows what Mount Madonna has in store for us in the way of weather. I don't think temperature kept us from having a good time and a successful field day. One of the highlights was the interesting guests that visited us and put in some time on the radios. They were Ned AC6YY and his wife Rose and Christopher KG6YKN who brought along his father Mark KG6YKD. Larry Carr KE6AGJ the DEC/SEC for the county also stopped by for an official visit. I want to thank all the members who worked to make it a great day. Let us start to plan for next year.

Our next event is the annual flea market July 9<sup>th</sup>. We also host the food both minus hot dogs. We can use help from ever one to man the both. We will also have a sales table selling the surplus from our locker. Everyone is invited to drop by Saturday morning and lend a hand. See you there.

73, Clark, KE6KXO



## ARRL News

From *The ARRL Letter*, June 10, 2005

### HOUSE RESOLUTION 230 "A FAIR REQUEST," ARRL PRESIDENT SAYS

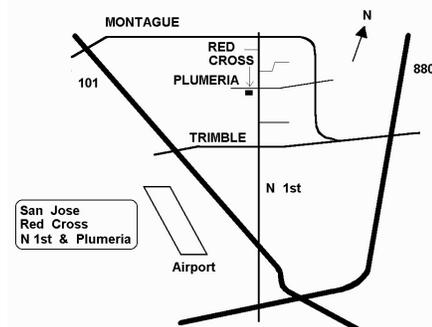
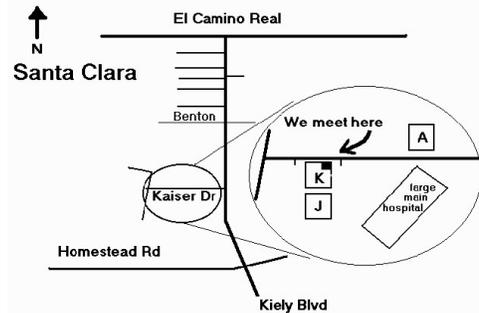
ARRL President Jim Haynie, W5JBP, says House Resolution 230 (HRes 230) represents "a fair request" to the FCC and deserves the support of the US House of Representatives. Sponsored by Rep Mike Ross, WD5DVR, of Arkansas, HRes 230 calls on the FCC to comprehensively evaluate BPL's interference potential incorporating "extensive public review and comment," then to "reconsider and review" its new BPL rules in the light of that public input. Renewing his call for League members to contact their congressional representatives to sign on as cosponsors of the non-binding measure, Haynie said Ross's resolution only asks the FCC to do what it should have done in the first place regarding BPL.

## Calendar

- 7/9 **Electronic Flea Market**—We host!
- 7/11 **SCCARA General Meeting**
- 7/18 **SCCARA Board Meeting**—(San Jose Red Cross, 7:30p, all are welcome)
- 8/8 **SCCARA General Meeting**

### General Meeting:

Day: Monday, July 11, 2005  
Time: 7:30 PM  
Place: Kaiser Santa Clara, Bld K, Rm 1  
Featuring: {to be announced}



The **SCCARA-GRAM** is published monthly by the **SANTA CLARA COUNTY AMATEUR RADIO ASSOCIATION**, PO Box 6, San Jose CA 95103-0006. Permission to reprint articles is hereby granted, provided the source is properly credited.

**The deadline for articles is the last Monday of the month.**

SCCARA was formed in 1921 and became a non-profit corporation in 1947. SCCARA is an affiliate of the American Radio Relay League (ARRL). The club station is W6UW.

**Web page:** <http://www.qsl.net/sccara>.

**OFFICERS - DIRECTORS - STAFF**

President	Clark Murphy, KE6KXO	262-9334
	e-mail: clarkmurph@yahoo.com	
Vice President	- - -	
Secretary	David Paul, AE6MV	946-3423
	e-mail: ae6mv@arrl.net	
Treasurer	Lloyd DeVaughns, KD6FJI	225-6769
	e-mail: kd6fji@arrl.net	
Station Trustee	Don Village, K6PBQ	263-2789
Director	Don Steinbach, AE6PM	867-3912
	e-mail: ae6pm@arrl.net	
Director	Don Apte, KK6MX	629-0725
	e-mail: aptekk@aol.com	
Director	Don Village, K6PBQ	263-2789
Director	Lou Steirer, WA6QYS	241-7999
	e-mail: wa6qys@aol.com	
Director	Wally Britten, KA6YMD	293-3847
	e-mail: ka6ymd@arrl.net	
Editor	Gary Mitchell, WB6YRU	269-2924
	e-mail: wb6yru@ix.netcom.com	

**COMMITTEES**

Repeater	Wally Britten, KA6YMD	293-3847
	e-mail: ka6ymd@arrl.net	
N0ARY BBS	Gary Mitchell, WB6YRU	269-2924
	e-mail: wb6yru@ix.netcom.com	

**SCCARA REPEATERS**

SCCARA owns and operates two repeaters under the call W6UU:

2 meter: 146.985 - PL 114.8  
70 cm: 442.425 + PL 107.2

Phone auto-dial and auto-patch is available. The two meter repeater is located at Eagle Rock near Alum Rock Park in the foothills of east San Jose. The 70 cm repeater and N0ARY BBS is located at the Regional Medical Center (formerly Alexian), east of downtown San Jose, north of 280 and 101.

**SCCARA NETS**

On our two meter repeater: Mondays at 7:30 PM, (not the second monday--our meeting night). Coordinator: Don K6PBQ. On ten meters, 28.385 MHz USB, Thursdays at 8:00 PM. Net control: Wally KA6YMD. Visitors welcome.

**N0ARY PACKET BBS**

SCCARA hosts the packet BBS N0ARY (San Jose). User ports: 144.93 (1200 baud), 433.37 (9600 baud), telephone 408 259-8497. Sysop: Gary WB6YRU

**TELEPHONE NUMBERS**

SCCARA contact Clark KE6KXO:	408 262-9334
ARRL/VEC Silicon Valley VE group,	
Morris Jones, AD6ZH:	408 507-4698

"What this basically asks the FCC to do is to take another look at their methodology and how they arrived at the conclusions they did," Haynie said. The FCC adopted rules to govern so-called Access BPL last October 14 in ET Docket 04-37. "I think that's a fair request and something that we should do as amateurs to make sure this is done right and without a lot of haste." Haynie says Motorola's announcement of its Powerline LV system suggests the FCC rules can provide much greater protection to radiocommunication services without preventing properly engineered BPL systems from going forward.

Ross, who is one of two amateur licensees in the US Congress (the other is Rep Greg Walden, W7EQI, of Oregon), introduced HRes 230 on April 21. He told Broadband Over Power Line World (BPLW) recently that he's concerned about potential interference that BPL deployment could generate. (The interview is on the BPLW Web site <<http://www.etopiamedia.net/bplw/pages/bplw33-5551212.html>>.)

"Based on my own knowledge of the unique nature of the high-frequency radio spectrum, I was concerned about the evidence submitted to the Federal Communications Commission that I believe demonstrates the need to postpone any rules regarding BPL deployment," Ross said. He explained that passage of HRes 230 would put the House on record as "supporting a more careful study by the FCC of the radio interference issue, especially as it relates to public safety communication, and reconsideration of the adequacy of the rules in light of this study."

While HRes 230 does not specifically address the BPL concerns of the Amateur Radio community, Ross said those concerns were what led him to look more closely at BPL's implications for the public safety community. He noted that the federal interagency emergency SHARES (SHARED RESOURCES) network uses HF, and many states and localities still use the 30-50 MHz "low-VHF" band for public safety communications--spectrum that some BPL pilot projects also have occupied.

Ross said BPL interference on HF would be proportional to the extent of the technology's deployment using medium-voltage power lines. "Broadband energy cannot be put on these lines without causing interference to radio receivers using the same frequencies," he explained to BPLW's Marc Strassman. He also said the existing emission limits are "much too high" and never were intended to apply to systems like BPL. Existing BPL systems should be made to conform to future limits, he added.

He said BPL's potential to disrupt aviation operations is so great that the National Telecommunications and Information Administration (NTIA) successfully argued to prohibit Access BPL via medium-voltage power lines on frequencies used by commercial aeronautical communications.

Ross also wants the Commission to address "without further delay" the "substantial number" of BPL interference complaints now pending at the FCC. And while he'd like to see his colleagues eventually approve HRes 230, he hopes the FCC will "take the interference issue to heart, whether or not the resolution is adopted."

He further expressed the hope that BPL companies will "realize it's in their interest to treat the interference issue as a technical and engineering challenge, not as a political issue."

Speaking at Dayton Hamvention in May, Haynie urged individual amateurs to begin participating in the political process. "We've got to ratchet up our presence," he told a forum audience. Haynie said that while ARRL can serve as the unified voice of the national association for Amateur Radio, individual licensees are voters, and lawmakers are quite aware that there are radio amateurs in their

districts.

Regarding HRes 230 specifically, Haynie said this week that the task at hand is to encourage other House members to sign on as cosponsors of the resolution as the first step toward House adoption. And that's where League members come in, he said.

"I really encourage you to contact your congressional representative," Haynie said. "It's listed in the front of almost every phone book who your congressman is. If not, you can go to the United States House of Representatives Web site <<http://www.house.gov/>> and find out by typing in your ZIP code. I really encourage you to do this because it's important to the future of Amateur Radio."

The full text of HRes 230 <<http://www.arrl.org/tis/info/HTML/plc/filings/hres230/HRes230.pdf>> and a sample letter <<http://www.arrl.org/tis/info/HTML/plc/filings/hres230/HRes230-SampleLtr.doc>>

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## Meeting Minutes

### General Meeting, Jan. 10, 2005



*{No minutes received by the deadline. --Ed.}*

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### Board Meeting, June 20, 2005



President Clark Murphy, KE6KXO, called the meeting to order at 19:35. A quorum was present.

Attendees: Clark Murphy, KE6KXO, President; Lloyd DeVaughns, KD6FJI, Treasurer; Don Village, K6PBQ, Director and Station Trustee; Lou Steirer, WA6QYS, Director; Wally Britten, KA6YMD, Director; Don Steinback AE6PM, Director; Don Apte, KK6MX, Director, Gary Mitchell, WB6YRU, Editor and BBS Chairman; David Paul, AE6MV, Secretary, Gwen Steirer, KF60TD, XYL.

The meeting was opened at 19:45 by Clark.

An ex-Club member, Bill Parent, KE6OUG, has become a silent key. Clark sent a sympathy card, as did Don Village.

Clark has surveyed remaining Club Equipment:  
- Extra charger, about 2 Amp, in storage, should be sold.  
- The ICOM AT-500 tuner should be sold; it works on ICOMs older than what the club owns.

The minutes of the previous meeting were discussed and accepted

Treasurer's report: not available. He has info on the disk he brought, but it's in Quicken, and no one had a laptop with that software at the meeting.

Wally Britten reported that both the repeaters are working okay.

Gary Mitchell reported that BBS is running okay, and that an Internet link to Ohio added. Regarding providing a speaker to RACES to discuss the use of the N0ARY bulletin board, as an

inducement to RACES members to join SCCARA, Gary believes that N6HM would be the best person to talk to RACES.

Old Business:

New Ham letters: we have a few left.

Regarding the new design for the club QSL cards, we need the status. Wally will ask Jeannie to email what she has to Gary.

Field Day details:

- Lou has Mike LCJ's tuner that we wanted to borrow.
- Wally will be in charge of the GOTA Station.
- Check-in time at Mount Madonna is 13:00.
- Fred Townsend will be at Clark's at 09:00 to load the trailer. Then to Fred's house.
- We will take the radios tonight so no one needs to come in to Red Cross on Friday.
- Take instructions too.
- Clark will bring power supply.
- Lloyd took both home, and one won't charge fully. He will set that one to full charge tonight.
- Fred is bringing a BBQ.
- Clark and Gwen will bring stoves.
- Gwen has bought charcoal, will only charge for what is used.
- Wally and Clark will both bring extension cords.
- Wally will phone Sandy Buckenham.

We need to invite the ARRL SEC for the Santa Clara Valley Section and DEC for SC County Larry Carr KE6AGJ, to Field Day. Wally will invite him.

Last month we increased the annual dues to \$20/year. Discussion. Steinbach/Steirer motion, regular membership \$20, family rate \$ 25.00 and junior rates under 18, remain at \$5.00. Accepted unanimously.

Flea market booth results from June Sales: \$1279.75 profit.

Rockwell / Collins DKWM 380 – Bob is fixing the Collins.

Amplifier – can't find Red. Estimated worth is \$ 350.00 Don Steinbach will test the amp.

Club Station open next month? Last Saturday afternoon/evening? Not this month, we'll be at Field day!

Put up a radio station at the next flea market? No, too ambitious.

New Business:

- Discussion of autodial phone patch instructions from Gary. Clark – need more details, instructions should be more detailed. David – we need a small card with the essential information.
- New member letter proposal from Gary. Not much discussion. Clark suggested that everyone read the proposal and be prepared to discuss it at the next Board meeting.

Lou Steirer - Lou passed around the Flea Market signup. If you haven't signed up, please contact Lou QYS. The cost for the spaces will be \$20 rather than \$15, starting this month.

Don Steinbach moved that we adjourn, Lou Steirer seconded, and Clark adjourned the meeting at 21:28.

Post-adjournment message from Lou Steirer: One Ham built a separate room in his home, with a single chair in its center, and

with all its walls fully covered with mirrors. When asked the purpose of such a room, he replied that he went there to reflect...

David Paul, AE6MV  
Secretary

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## Fuel Cells, the real story

Opinion by Fred Townsend AE6QL (ae6ql@arrl.net)

This story starts four decades ago. I was a freshman in high school when the Russians launched Sputnik, the first artificial Earth Satellite. Suddenly the membership in the Science Club exploded as attention turned from terrestrial to celestial. Rocketry was hot stuff. There were no launch failures in junior rocketry since exploding rockets were just as much fun as flying rockets. Guys just like to break things I guess.

Around 1960 the cover of Popular Mechanics Magazine featured an Allis Chalmers tractor powered by a fuel cell. The tractor was shown as practical example of fuel cell technology already being spun off by NASA from the space race.

The concept was so simple. In chemistry I had learned of the process called electrolysis whereby a current is passed through water to separate the water into the component hydrogen and oxygen. A fuel cell was merely the reverse process of electrolysis.

The Popular Mechanic's Magazine article suggested fuel cells would become an ordinary device just as soon as few problems were worked out. The problems were the need for a cheap source of very pure hydrogen and oxygen plus an alternative to the expensive element, platinum, which is used a catalyst. A catalyst does not enter into the chemical reaction and therefore is not consumed but the idea of having an element worth twice as much as gold laying about, perhaps under your hood, in a fuel cell did seem problematic.

My father was a petroleum chemist. I asked him where we obtained hydrogen thinking he might have some laying around in his lab. He said he wasn't sure of the hydrogen but he would check around. He also indicated that while hydrogen is a very common element that handling it was not so easy. He explained hydrogen was the smallest atom and it formed the smallest molecule in existence. Because it was so small it had a tendency to leak out of almost every type of container. Also the fuel to air explosive range for hydrogen and oxygen was 2 to 98 percent making the mixture extremely easy to ignite. He hauled out the encyclopedia and showed me the pictures of the Hindenburg Zeppelin in its last dying moments. A point well made.

I then asked him why simple electrolysis could not be used to obtain hydrogen. Such a process would have the added benefit of supplying just the right amount of oxygen too. He explained that electrolysis was not a very efficient process and it would take vast amounts of electricity to supply viable amounts of hydrogen automotive fuel. He also explained there was a secondary problem. How do you store the hydrogen and oxygen after electrolysis? The only practical way would be to compress the elements into high pressure gases or liquids. This would be expensive and would consume lots of energy too.

I was fortunate to live in Kern County. Kern, in addition to being the largest oil producer in the state, is host to Edwards Air Force base where much experimental rocketry took place. It was home to the Bell X2 and the Republic X15 rocket planes which set many of the world flight records in their time. One day my father asked me if I wanted to see where we obtained liquid hydrogen, one fuel of rocketry.

We traveled to this facility near an oil refinery west of Bakersfield. It was located there because it obtained the hydrocarbons from the refinery. The oil was stripped of its carbon in a coking process. After stripping they sold off the coke and compressed the hydrogen gas to a liquid form. The compressors were massive and seemed to take the bulk of the electricity used by the site. Still it was considered the most efficient process available. It would take even more electricity if electrolysis was used to separate the hydrogen from water.

The plant superintendent explained the facility was experimental. They were the exclusive suppliers to Edwards AFB and they had no other commercial customers. Three years later the plant shut down because of the lack of customers and the high cost of production.

Four decades later there are no commercially produced cars, trucks, or tractors running on fuel cells. Fuel cells are still only within the price range of NASA. However there are a few deep pocketed, large companies, which claim to be developing fuel cell applications.

One of them is General Motors which claims it spent a billion dollars developing a fuel cell powered car. In production they estimate the car will sell for \$40,000 and get about 200 miles between refueling. They quietly admit that at \$40,000 they will be losing money on every car sold. The effort seems to be a good faith effort to placate the greenies and offer an alternative to GM's now scrapped electric car program while quietly extending a hand to Washington for help.

Even if GM were to find a way of economically producing a fuel cell powered car there is an even bigger problem. There are no neighborhood hydrogen filling stations. No filling stations means there are no bulk suppliers either. Only a very limited amount of hydrogen is now available. Where will the massive amounts of hydrogen needed to fuel large scale deployment of fuel cells come from? There are three possible sources each with its own dirty secrets.

The most economical process for hydrogen production remains the coking process. It has changed very little in four decades. It still first starts with petroleum. There goes the idea of hydrogen as an alternative to fossil fuels. The process also produces coke. There is an extensive market for coke so disposal is not a problem. However the problem perceived by greenies is the burning of coke produces CO and CO<sub>2</sub>. The same greenhouse gases the greenies claim causes global warming. In the end, score the coking process as a double negative. It uses petroleum and passes gas.

The alternative to hydrogen production is perfecting a fuel cell that does not use pure hydrogen. There has been a lot of effort directed in this direction. Most efforts use either methane or gasoline. This instantly solves the supply problem because these fuels are already in high volume distribution. However, both are hydrocarbon fossil fuels with all attendant supply and greenhouse problems. In the end this approach has another double negative score.

The third approach is electrolysis. Electrolysis is thought to be the totally clean approach or is it? Electrolysis requires electrical power for both separation and compression. Wind and solar are unreliable sources and not available 24 hours, 7 days a week. New

hydroelectric and geothermal sources are practically non-existent and have other environmental concerns. That means that great bulk of present production and almost all new electrical power production is focused on burning fossil fuels.

This says the reality of electrolysis produced hydrogen is not fewer greenhouse emissions but more emissions. The only good news here is in the West the fossil fuel of choice is natural gas, methane which is considerably cleaner burning than coal. However in the East the fossil fuel of choice is coal. Coal not only produces greenhouse gases but fly ash and nuclear radiation.

By now the reader is thinking I am mistaken. I must mean nuclear power plants. Sadly it is true that coal burning power plants, worldwide, place more radiation in the atmosphere in one day than has ever been placed in the air by all nuclear reactors, including accidents, in history to date. Coal contains very small percentages of uranium. The uranium is burned along with the coal producing radioactive greenhouse emissions.

Switching the coal burners to natural gas gets rid of the radiation but creates additional supply problems. Natural gas is already in short supply in some states during the winter months. The USA is already a large importer and the plans are already drawn to import liquid natural gas (LNG) from the Middle East making the US even more vulnerable to foreign supply. Yet, another double negative score?

Yes, electrolysis is another double negative score unless the electricity is produced by a nuclear power plant! When nuclear power is used to produce hydrogen, greenhouse gasses, fly ash, and nuclear radiation are all eliminated. So is the dependence on foreign sources and when hydrogen is produced at night when the electrical loads are lightest, the nuclear power plants actually work more efficiently because of the leveling effect. Score the combination of hydrogen and nuclear power a triple plus.

Today, Germany and France are actually using their reactors to produce night time hydrogen. The great irony is these countries are using technology that was originally developed in the United States to produce their nuclear power.

The future seems clear. We can switch to nuclear power today and have a greater reduction on greenhouse gases than switching every car on the road to fuel cells to say nothing of reducing the dependence on foreign fossil fuel or we can wait until we run out of fossil fuel and then we will switch tomorrow. The only difference is amount of greenhouse gases, fly ash, and airborne radiation we will be subjected to in the mean time. Seems like a no brainer to me.

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## Need Help?

Amateurs have a long history of helping each other. An experienced amateur who helps another is traditionally called an "Elmer." If you have a question or problem, you are encouraged to ask one of SCCARA's Elmers. Below is a list of topics including who to contact for each.

If you consider yourself to be reasonably competent in at least one area of amateur radio and would be willing help others, please fill out an Elmer form from the club secretary.

Antennas, feed-lines, tuners: WB6EMR, K6PBQ, WB6YRU  
Lightning protection, grounding: WB6YRU  
Station set-up, equipment: K6PBQ  
TVI/RFI: WB6YRU

Homebrew projects, construction: KD6FJI, WB6YRU  
Computers: KB6NP; IBM PC: WB6YRU  
Packet Network (BBS, forwarding): WB6YRU  
Code operating and installations: WB6EMR, K6PBQ  
DX (long distance/propagation): WB6EMR  
Emergency operating/preparedness: WA6QYS  
FM (VHF/UHF, repeaters): WA6VJY  
HF operating techniques (SSB, CW): WB6EMR, K6PBQ  
Classes/license upgrading: W6ACW  
Legal/FCC rules: WB6YRU  
SCCARA (club inner workings):  
K6PBQ, WA6VJY, WB6YRU, WA6QYS  
Children's Discovery Museum, volunteer operator:  
K6PBQ  
EchoLink: KK6MX

W6ACW, Ed Hajny, (408) 739-6105

WB6EMR, James D. Armstrong, Jr.,  
evening & msg: (408) 945-1202

KD6FJI, Lloyd DeVaughns,  
day: (408) 918-4635, evening: (408) 225-6769  
e-mail: kd6fji@arrl.net

KK6MX, Don Apte, (408) 629-0725  
e-mail: kk6mx@aol.com

KB6NP, Jon Dutra, day & msg (408) 428-2058  
evening (408) 867-8654  
packet: home BBS NOARY  
e-mail: jad@aol.com

K6PBQ, Don Village, (408) 263-2789

WA6QYS, Lou Steirer, (408) 241-7999  
packet: home BBS NOARY

WA6VJY, Stan Getsla, day: (408) 738-2888 x5929,  
evening & msg: (408) 275-0735

WB6YRU, Gary Mitchell, msg (408) 265-2336  
also (408) 269-2924  
packet: home BBS NOARY  
e-mail: wb6yru@aenet.net

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## Newsletter Notes

No article was submitted regarding SCCARA's hosting of the flea market, but it's our turn to host the flea market and I'm sure Lou (our flea market chair) can use all the help he can get. We'll start early morning (5 AM) on Saturday, July 9, and run through early afternoon. In case you haven't heard, the flea market is at De Anza College now (Cupertino), in the North East parking lot.

Due to some bureaucratic reason from the college, we can't cook anything on site, so no hot dogs at our concession stand, but there will be sodas, coffee, and doughnuts. So, we'll still need some help there.

73, Gary WB6YRU, editor

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# SCCARA Membership Form for 2005

(Fill in name and address if there is no mailing label below; make corrections if the label is incorrect)

Name: \_\_\_\_\_ Call: \_\_\_\_\_ Class: E A G T+ T N

Address: \_\_\_\_\_ Licensed since (yr): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ - \_\_\_\_\_ Licence Expiration  
Date (mo/yr): \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_  New Member  I'm also an  
 Renewal  ARRL member \_\_\_\_\_

E-mail: \_\_\_\_\_ Packet: \_\_\_\_\_

For family memberships (at the same address), please fill out a separate form for each. Indicate the "primary member" for mailing purposes: \_\_\_\_\_

Annual membership dues are payable at the first of the year and expire the following December 31. New members joining on or after July 1, pay half the membership dues.

**Annual Membership dues:**  \$15 Individual  \$20 Family  \$5 Student (under 18)

Please send the repeater Auto-Dial/Auto-Patch codes (no charge, circle): ..... Yes  
WE MUST BE ABLE TO VERIFY YOUR AMATEUR RADIO LICENSE  
BEFORE ANY REPEATER CODES WILL BE SENT

Give this completed form (or copy) with payment to the Secretary or Treasurer at any meeting or mail to the return address below.

====> PLEASE DO NOT TEAR OR CUT FORM <====



**SCCARA**  
Santa Clara County Amateur Radio Assn.  
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Affiliate of the American Radio Relay League



**ADDRESS SERVICE REQUESTED**

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