

# SCCARA-GRAM



## Santa Clara County Amateur Radio Association

Volume 26, Number 1

January 2010



## President's Prose

The annual holiday dinner meeting was a success, with 30+ people in attendance. Good food and good company as usual. Bob Vallio (W6RGG), ARRL Pacific Division Director, was our guest. Bob introduced the officers and directors for 2010. He announced that PACIFICON will return to the San Ramon Marriott Hotel this October 15-17 and that there will be no charge for parking. He also announced that BPL is basically dead in the United States now that Manassas, VA, has turned their test system off. He also stated that PAVE PAWS is still an issue and that most 70 cm repeater owners have taken appropriate actions, but that a small number have apparently chosen to ignore direction from the ARRL. Perhaps the FCC will be able to get their attention.

If you haven't done so recently, now might be a good time to check the condition of your gel cell batteries. A fully charged 12V battery should have an open-circuit voltage (OCV) of about 12.9 volts. An OCV of 12.648 indicates 80% charged and an OCV of 12.27 indicates 50% charged. A dead battery will have an OCV of 11.64 or less. These numbers equate to 2.15 volts/cell for a fully charged battery and 1.94 volts/cell for a completely discharged battery. The exact values vary slightly depending on the manufacturer and who you talk to, but they're close enough. Take the measurements at room temperature.

It's not too soon to be thinking about Field Day. Don Village (K6PBQ) will have reserved the Mt. Madonna site for 2010 by the time you read this.

That's it for now. Have a happy New Year and don't forget the 2-meter FM net on Monday nights, and the 10-meter SSB net on Thursday nights.

73,  
Don - AE6PM



## Secretary Says

To All SCCARA Members: It is time to renew your membership. Please check the mailing label for your renewal status.

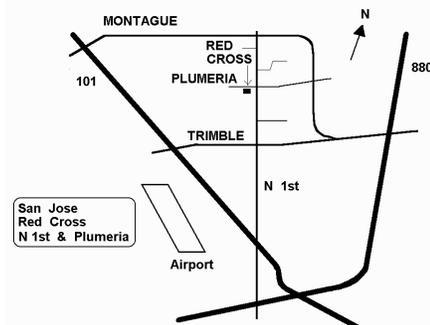
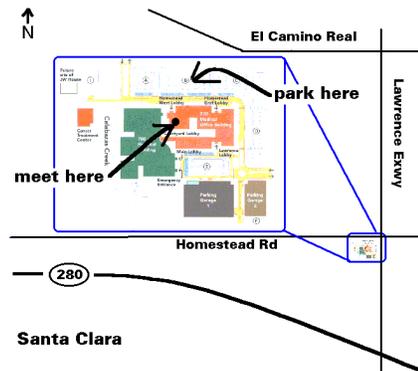
73, Jeannie Felix, KG6YOR  
Secretary

## Calendar

- 1/11 SCCARA General Meeting
- 1/18 SCCARA Board Meeting--(San Jose Red Cross, 7:30p, all are welcome)

## General Meeting

Day: Monday, Jan. 11, 2010  
Time: 7:30 PM  
Place: Kaiser Santa Clara, Rm 196, 1  
Featuring: AM Transmitters



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**

(all officers are also directors)

President Don Steinbach, AE6PM 867-3912  
e-mail: ae6pm@arrl.net  
Vice President Fred Townsend, AE6QL 263-8768  
e-mail: fred@detolight.net  
Past President - - -  
Secretary Jeannie Felix, KG6YOR  
e-mail: jrfv7600@yahoo.com  
Treasurer Ned Tufekcic, AC6YY 690-7250  
e-mail: ac6yy@arrl.net  
Station Trustee Don Village, K6PBQ 263-2789  
e-mail: donvillage7@yahoo.com  
Director John Glass  
Director Lou Steirer, WA6QYS 241-7999  
e-mail: wa6qys@aol.com  
Director Wally Britten, KA6YMD 293-3847  
e-mail: ka6ymd@arrl.net  
Director John Parks, W6JPP 309-8709  
e-mail: w6jpp@arrl.net  
Director Gary Mitchell, WB6YRU 269-2924  
e-mail: wb6yru@ix.netcom.com

**COMMITTEES**

Editor Gary Mitchell, WB6YRU 269-2924  
e-mail: wb6yru@ix.netcom.com  
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 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 Village, K6PBQ. On ten meters, 28.385 MHz USB, Thursdays at 8:00 PM. Net control: Wally Britten, KA6YMD. Visitors welcome.

**N0ARY PACKET BBS**

SCCARA hosts the packet BBS N0ARY (Mt Umunhum). User ports: 144.93 (1200 baud), 433.37 (9600 baud), telnet sun.n0ary.org (login "bbs"). Sysop: Gary Mitchell, WB6YRU (packet info: [www.n0ary.org/ncpa](http://www.n0ary.org/ncpa))

**TELEPHONE NUMBERS**

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

# Treasurer's Treatise

Our financial status as of December 31, 2009, is:

	Balances	
Account	12/31/2008	12/28/2009
Checking	2,708.06	5,718.26
Savings	6,843.87	3,845.45
Cash on Hand	300.46	414.03
<b>OVERALL TOTAL</b>	<b>9,852.39</b>	<b>9,977.74</b>

73  
Ned  
AC6YY

## 40 dB Power Tap

Last month I described a -30 dB (1/1000) power coupler designed around a transformer using a toroid core. It handles the full legal transmitter power output on any of the HF (3 to 30 MHz) amateur bands. The power tap described in this article is designed for less power (50+ watts) over a wider frequency range (to approximately 500 MHz) and provides a smaller sample (1/10,000 power).

Power taps such as this one and the one described last month are used to pick off a representative sample of the transmitted waveform with a known amplitude scale factor (such as 30 or 40 dB). The resulting low-level signal can then be used to safely drive an oscilloscope to observe the transmitted waveform, a frequency counter to measure the transmitted frequency, a spectrum analyzer to measure sideband suppression or look for spurious emissions, a sensitive and accurate power meter to measure transmitted power or, in conjunction with a return-loss bridge, measure VSWR.

The design of this power tap was originally published in the June, 2001, QST and has appeared in several articles since. The authors (Wes Hayward and Bob Larkin) state that if the tap is duplicated using their mechanical design, it should be flat within about 1 dB through 500 MHz. The unit I built is shown in Figures 1 and 2. See Fig. 3 for the design details.

The parts list is modest:

- 1 - Hammond 1590A diecast aluminum alloy enclosure
- 2 - N connectors (UG-58A/U)
- 1 - BNC connector (UG-1094/U) w/lockwasher, nut and ground lug
- 3 - 820 ohm 5% 1/2-watt carbon film resistors
- 1 - 51 ohm 5% 1/4-watt carbon film resistor
- 1 - 1" x 1.5" x 0.032" sheet brass or copper (can be thinner)
- 1 - 1" piece #22 AWG solid insulated wire
- 8 - #4-40 x 3/8" machine screws
- 8 - #4 lockwashers
- 8 - #4-40 x 1/4" nuts

Composition resistors could probably be substituted for the carbon film resistors, but do not use metal film or wirewound resistors. Again, this project follows the Hayward/Larkin design exactly, and saving a few pennies on resistors doesn't make sense.

All of the components are located approximately along the vertical and lateral centerlines of the enclosure. The brass plate is soldered to the center pins of the two type N connectors. There are three 820 ohm resistors connected in series from the plate to the center pin of the BNC connector. The 51 ohm resistor connects from the

center pin of the BNC connector to the ground lug installed with the BNC connector. The piece of #22 wire is also soldered to the plate and extends 0.6" beyond it, parallel to, and nearly touching the resistors. The #4-40 nuts holding the N connectors prevent the enclosure cover from seating properly, so the inner ridge of the cover is filed away as required to clear the nuts (two on each side).

The power meters in most ham radio equipment are not particularly accurate. On the other hand, lab-quality power meters are usually designed to measure very low power levels (less than 10 milliwatts) due to the types of power sensors that are used. Simple devices such as the couplers or power taps I've described are easily constructed and translate high power to low power with a high degree of accuracy if care is taken in their construction.

The coupler described last month introduces some loss since the 50-ohm instrument load is reflected back into the primary of the transformer. The transformer had a 31-turn secondary and a 1-turn primary, so the effective resistance at the primary is  $50/(31)(31)$  or 0.052 ohms in series with the transmission line. The power tap in this article places a 2485 ohm load across the transmission line.

Don Steinbach, AE6PM



Fig. 1. The completed power tap. The enclosure is 3.64" long x 1.52" wide x 1.06" high.



Fig. 2. All of the power tap components are visible in this photo. Note the four notches filed in the cover to clear the N-connector mounting nuts.

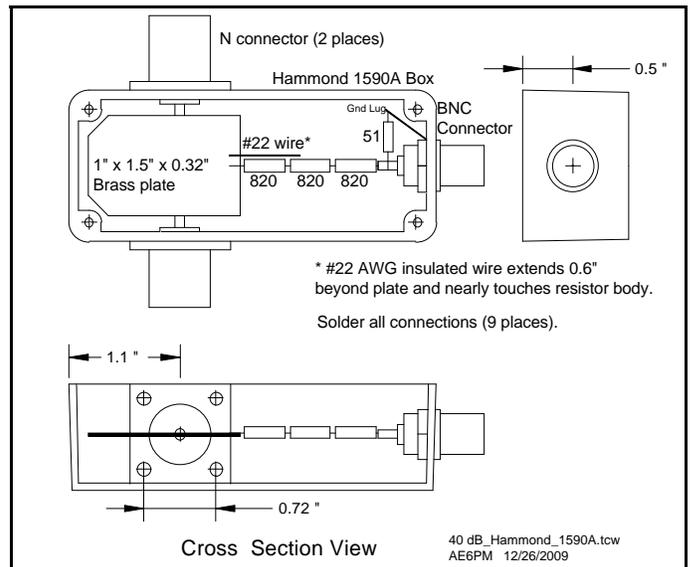


Fig. 3. The mechanical details of the power tap.

## Dec. Dinner Meeting



Gwen KF6OTD, Lou WA6QYS



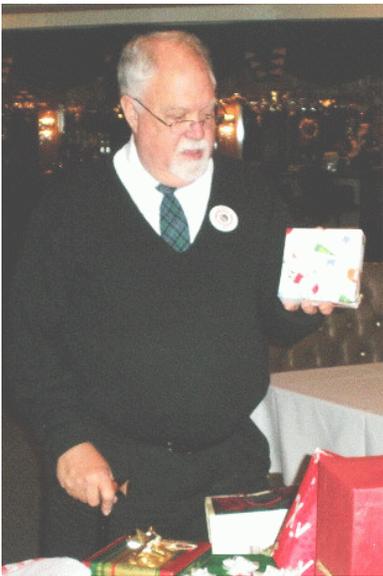
Bob Vallio W6RGG ARRL Pacific Division Director



SCCARA 2010 OFFICERS, BOARD MEMBERS:  
 Ned AC6YY, John W6JPP, Gary WB6YRU, DON  
 AE6PM, Don K6PBQ, Wally KA6YMD, Jeannie  
 KG6YOR, Lou WA6QYS not shown: Fred AE6QL,  
 John NU6P



Ned AC6YY and wife, Rose. John W6JPP



David AE6MV



Barbara KD6QEI, Henry KE6HOU



Jingle Bells Holiday Favors by  
 Barbara KD6QEI



Doug AF6CI and wife Vera



Gift Exchange Presents

Photos courtesy Lou WA6QYS

# ARRL News

From *The ARRL Letter* December 3, 2009

## NOW YOU KNOW!

### A BRIEF HISTORY OF MODERN DAY 160 METERS

By ARRL News Editor S. Khrystyne Keane, K1SFA

This year marks the 40th anniversary of the ARRL 160 Meter Contest. In 1970, the ARRL Board of Directors authorized this new event at their meeting in May. According to the announcement that appeared in the October 1970 edition of QST <p1k.arrl.org/cgi-bin/topdf.cgi?d=63900&pub=qst>, the ARRL Contest Advisory Committee (CAC <www.arrl.org/contests/cac.html>) and "numerous 'top banders'" provided the guidance for the contest; based on their recommendations, they created its initial format.

<[http://www.arrl.org/news/files/LimitationsFor160\\_1979.pdf](http://www.arrl.org/news/files/LimitationsFor160_1979.pdf)>  
Those licensed prior to May 1981 can surely remember the limitations on 160 meters due to the LORAN-A (Long Range Aid to Navigation) stations. These stations -- developed during World War II -- used signals that were transmitted on frequencies in and around our present-day 160 meter band. The LORAN-A stations were responsible for reduced Amateur Radio operations -- including frequency and power limitations -- on 160 meters in the United States.

If you look at license manuals from this time, you will find a chart (Part 97.61, Authorized Frequencies and Emissions) that dictated how much power amateurs could use on topband. This was broken up into band segments of 25 kHz, going from 1800 kHz up to 2000 kHz. In band segments of 25 kHz, it lists each US state and dictated how much power could be used during the day and during the night. For example, amateurs in Connecticut on 1844 kHz could use 100 W during the day, but had to go down to 25 W at night; Connecticut hams were not even allowed on during the day or night between 1850-1975 kHz! Conversely, Oklahoma hams had daytime topband privileges of 1000 W and could use 200 W at night on 1800-1825 kHz.

On May 21, 1981, US amateurs got some good news when the FCC lifted most of the restrictions on 1800-1900 kHz: For the first time, kilowatt powers were authorized for both daytime and nighttime use as the LORAN-A stations were being phased out. In 1979, the Coast Guard began replacing the LORAN-A stations with LORAN-C stations. These newer stations operate on 100 kHz, enabling the restrictions on 160 meters due to LORAN functions to be dropped.

Most amateur transceivers didn't even begin to include 160 meters until the influx of Japanese imports began in the 1970s. As a result of that -- as well as the elimination of the HF LORAN system -- 160 meters has grown in popularity over the past couple of decades. Now in its 40th year, the ARRL 160 Meter Contest is still growing. From the first running in 1970 with 270 logs submitted, to 2008 with 1280 logs submitted, more amateurs are becoming fascinated with all that topband has to offer. If you've never been on 160 before, try making a few contacts. If you're a topband veteran, this is the chance to strut your stuff. For more information on 160 meters, check out DXing on the Edge: The Thrill of 160 Meters <6354> by Jeff Briggs K1ZM. Now you know!

From *The ARRL Letter*, December 17, 2009

## FIRST CHINESE AMATEUR RADIO SATELLITE NOW IN SPACE

AMSAT China (CAMSAT <<http://www.camsat.cn/>>) reports that at around 0230 UTC on December 15, China launched its first Amateur Radio satellite -- named XW-1 <[www.amsat.org/amsat-new/satellites/satInfo.php?atID=116&reURL=satellites/futures.php](http://www.amsat.org/amsat-new/satellites/satInfo.php?atID=116&reURL=satellites/futures.php)> -- into space. The microsatellite -- a secondary payload aboard the CZ-4C rocket launched from the Taiyuan Satellite Launch Center -- was launched into a Sun-synchronous orbit with an apogee of approximately 1200 kilometers. XW-1 successfully reached orbit at 0253 UTC. Members of the XW-1 launch team reported they received a beacon from the satellite shortly after the satellite deployed. In the first few days, the XW-1 team will work on the satellite's FM and store-forward transponder mode and its linear transponder mode. Once those tests are complete, they will upload a new flight program to set up the payload schedule. The satellite's communications payload includes a beacon and three crossband transponders operating in FM, SSB/CW and digital modes. Uplink and downlink frequencies can be found on the CAMSAT Web site <[www.camsat.cn/index.php?ption=com\\_content&view=article&id=56&Itemid=67](http://www.camsat.cn/index.php?ption=com_content&view=article&id=56&Itemid=67)>. For the latest Keplerian elements for XW-1 and other satellites, check out the WIAW Keplerian Bulletins <[www.arrl.org/wlaw/kep/](http://www.arrl.org/wlaw/kep/)>.

---

## Meeting Minutes

### General Meeting, Dec. 19, 2009



Don Steinbach called the meeting to order @ 1330 hours

Don Steinbach asked the board for permission to make reservations for Field Day at Mt. Madonna

W6RGG, Bob Vallio (Pacific Division Director) announced the 2010 officers and Directors, Also gave report on ARRL Business and answered questions pertaining to Amateur Radio

There were 32 members and their guests that attended today's Holiday Luncheon

Meeting Adjourned @ 1345

Submitted By, Jeannie Felix

---

### Board Meeting, Dec. 14, 2009



UNAPPROVED MINUTES

Red Cross 2731 N. 1ST STREET, SAN JOSE, CA. 95134

The meeting was called to order @ 7:40 pm by Don Steinbach

Last month's board meeting minutes read and approved

Board Members:

Don Steinbach, AE6PM, President  
Fred Townsend, AE6QL, Vice President  
Jeannie Felix, KG6YOR, Secretary Elect  
Ned Tufekic, AC6YY, Treasurer  
Don Village, K6PBQ, Station Trustee  
John Glass, NU6P, Director  
Lou Steirer, WA6QYS, Director  
Wally Britten, KA6YMD, Director  
Gary Mitchell, WB6YRU, Director  
John Parks, W6JPP, Director

Guests:

Herman Dekruyff, KI6ETZ

Gwen Steirer, KF6OTD  
Clark Murphy, KE6KXO

No excused absences

#### Announcements

Don Steinbach asked the board members to review agenda. Don announced deadline for the SCCARA-GRAM is no later than 12/28/09

#### Comments

Don Steinbach announced to the board that December SCCARA-GRAM is very nice and Thanks to Gary

#### Old Business

Don Steinbach announced Club contact info on ARRL website has been updated

#### New Business

Board Meeting Minutes for Oct. 19 and Nov. 16 Approved  
General Meeting Minutes for Nov. 9 Approved

Holiday lunch/meeting headcount: 30  
Board agrees to pay for guest

Board agrees to send SCCARA-GRAM to Nov. 9 meeting visitors

#### bylaws revisions

- \* ECD for proposed revision from Gary Mitchell
- \* Simplify membership dues (6.2)
- \* Membership Application on website should be changed back until by-laws are done
- \* Membership Application in SCCARA-GRAM has not been changed
- \* Specify when new officers assume duties (5.1.4)
- \* Change spelling from By-Laws to Bylaws (all)
- \* Review duties of the Secretary (2.4.3)

SCCARA Storage roof  
Generator covered for the winter

Treasurer's Report  
\$6295.21 (Checking)  
\$3845.45 (Savings)  
\$16.06 (C.O.H)  
Total \$10,156.72

#### Vice President

1/11/2010 PowerPoint Presentation of AM Transmitters  
1/16/2010 Tour of KLIV 1590 AM (DO NOT PUBLICIZE UNTIL CONFIRMED)

#### Station Trustee

January last Saturday Station open for operation

#### Editor

Articles in SCCARA-GRAM, Photos are better quality than in the past

#### BBS

Purchased low band radios & working on tuning them so they will work properly

#### Repeater Chairman

440 Repeater seems to be working properly

John Glass reported a New 440 Repeater is on order, programming cable & software included, Model # TKR-850 Kenwood

Webmaster  
Keeping website up to date when info is sent to be posted  
Other

John Parks reports he is still working on visit to U.S.S HORNET

Lou Steirer reports next SVECS Quarterly Breakfast is January 23, 2010 and presentation TBA

submitted by,  
Jeannie Felix, Acting Secretary

---

## Packet Pieces

### Downloaded from the BBS packet network:

=====  
Date: 24 Jan 2007 14:50  
From: ZL3AI@ZL2BAU  
To: HUMOR@WW  
Subject: Cheers/Tech/Patton  
-----

#### Cheers

Some of the best Norm Peterson quotes from "Cheers":

"What's shaking, Norm?"  
"All four cheeks & a couple of chins."

"What's new, Normie?"  
"Terrorists, Sam. They've taken over my stomach & they're demanding beer."

"What'd you like, Normie?"  
"A reason to live. Give me another beer."

"What'll you have, Normie?"  
"Well, I'm in a gambling mood Sammy. I'll take a glass of whatever comes out of the tap."  
"Looks like beer, Norm."  
"Call me Mister Lucky."

"Hey Norm, how's the world been treating you?"  
"Like a baby treats a diaper."

"What's the story, Mr. Peterson?"  
"The Bobsey Twins go to the brewery. Let's cut to the happy ending."

"Hey Mr. Peterson, there's a cold one waiting for you."  
"I know, if she calls, I'm not here."

"What's going on, Mr. Peterson?"  
"A flashing sign in my gut that says, 'Insert beer here.'"

"Whatcha up to, Norm?"  
"My ideal weight if I were eleven feet tall."

"How's it going, Mr. Peterson?"  
"Poor."

"I'm sorry to hear that."  
"No, I mean pour."

"How's life treating you, Norm?"

"Like it caught me sleeping with its wife."

"Women. Can't live with 'em.... pass the beer nuts."

"What's going down, Normie?"

"My butt cheeks on that bar stool."

"Pour you a beer, Mr. Peterson?"

"Alright, but stop me at one....make that one-thirty."

"How's it going, Mr. Peterson?"

"It's a dog eat dog world, Woody & I'm wearing Milk Bone underwear."

"What's the story, Norm?"

"Boy meets beer. Boy drinks beer. Boy meets another beer."

"Can I pour you a beer, Mr. Peterson?"

"A little early, isn't it, Woody?"

"For a beer?"

"No, for stupid questions."

Tech

----

When I worked as a technical-support specialist for a computer company, customer help calls ranged from the mundane to the bizarre.

One memorable problem I had to trouble-shoot came from a man who complained that every time he flushed his toilet, his computer would reboot.

It turned out that he lived in a rural area with water supplied by a well with an electric pump. Every time he flushed, it would turn on the pump, causing a dip in the electric power, which in turn would cause the computer to restart itself.

Patton

-----

A funny story is told about General George Patton from his World War II days. He once accepted an invitation to dine at a press camp in Africa. Wine was served in canteen cups but, thinking he was served coffee, Patton poured cream into his cup. As he stirred in sugar, Patton was warned that his cup contained red wine and not coffee.

Now, General Patton could never, never be wrong. Without hesitating he replied, "I know. I like my wine this way."

73, David ZL3AI.

=====

Date: 22 Nov 2005 12:21

From: W1GMF@W1GMF

To: HUMOR@USA

Subject: HUMOR FOR TODAY 1102

-----

Why do mummies have trouble keeping friends?  
They're so wrapped up in themselves.

Why don't skeletons ever go out on the town?  
Because they don't have any body to go out with.

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, W6JPP, K6PBQ, WB6YRU

Lightning protection, grounding: WB6YRU

Station set-up, equipment: K6PBQ, W6JPP

TVI/RFI: WB6YRU

Homebrew projects, construction: KD6FJI, WB6YRU

Computers: older IBM PC: WB6YRU

Packet Network (BBS, forwarding): WB6YRU

Code operating and installations: WB6EMR, K6PBQ

DX (long distance/propagation): WB6EMR

Emergency operating/preparedness: WA6QYS

HF operating techniques (SSB, CW): WB6EMR, K6PBQ

Classes/license upgrading: W6ACW

Legal/FCC rules: WB6YRU

SCCARA (club inner workings): K6PBQ, WB6YRU, WA6QYS

EchoLink: KK6MX

W6ACW, Ed Hajny, (408) 739-6105

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

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

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

W6JPP, John Parks, (408) 309-8709  
e-mail: w6jpp@arrl.net

K6PBQ, Don Village, (408) 263-2789  
e-mail: donvillage7@yahoo.com

WA6QYS, Lou Steirer, (408) 241-7999  
e-mail: wa6qys@arrl.net

WB6YRU, Gary Mitchell, (408) 269-2924  
packet: home BBS NOARY  
e-mail: wb6yru@ix.netcom.com

---

## Newsletter Notes

We're on a roll--another technical article in as many months! Thank you Don AE6PM. And photos too--thanks again to Don AE6PM and to Lou WA6QYS.

In my opinion, articles like this from the membership and photos improve the newsletter by an order of magnitude. Not only are they interesting and/or valuable, but it's something from the membership. This makes the newsletter more of a SCCARA-GRAM instead of an ANYCLUB-GRAM.

Let the authors know that you've read and appreciate their efforts.

73, Gary WB6YRU, editor

---

## Need Help?



**SCCARA**

Santa Clara County Amateur Radio Association  
PO Box 6  
SAN JOSE CA 95103-0006

Affiliate of the ARRL,  
American Radio Relay League



**FIRST CLASS**

**ADDRESS SERVICE REQUESTED**

**SCCARA Membership Form for 2010**

If none of your info has changed, fill in name and call only

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

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

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

Telephone: ( ) \_\_\_\_\_  New Member  Renewal  
 I'm also a member of the ARRL

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

Memberships begin January 1 and expire December 31.

**If renewing:** annual membership dues (base rate) are: \$20 Individual, \$25 Family, \$10 Student (under 18)

**For new members:**

If joining in January: base rate

If joining in February through October: base rate x (11 - month) x 10% (e.g. for June, that would be: base rate x 50%)

If joining in November or December: free for November and December if paying the base rate for the following year

\$ \_\_\_\_\_ **Dues payment for:**  individual  family  student

For family memberships (at the same address), please include a separate form for each family member.

**I want the newsletter by:**  U.S. Mail  internet (make sure your e-mail address is legible and correct)

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