

SCCARA-GRAM



Santa Clara County Amateur Radio Association

Volume 32, Number 2

February 2016



February Meeting

Don Steinbach AE6PM will give the presentation “Kit Building in the 21st Century” at the February SCCARA meeting. Don, a former SCCARA President, has shared his electrical engineering expertise and home brewing experience with us before and has always put on an enjoyable and informative presentation. Hope to see you there!

Gregg KF6FNA

Prez Sez

A little heads up. The Superbowl is coming February 7th. There could be monumental traffic jams. That means we could hear a visitor or two on our repeater. Try to assist them if you can. RACES may be using our repeater from time to time but there are no scheduled SB related nets so the repeater should be open to all 24/7.

On another note it looks like our general meetings will be permanently in room B6 for 2016. I want to thank Kaiser Hospitals and Lou Steirer, WA6QYS for providing this room. Other clubs pay a hefty fee for their meeting rooms.

The club is changing the coax on our antenna at the Red Cross. If you would like to gain experience and want to rise to the occasion let our Vice President, Greg Lane, KF6FNA know.

If you had planned on attending RadioFest 2016 it has been cancelled.

Now for the rest of the story...

FM Radio, How Did We Get Here?

There was a time when anyone could transmit on any frequency with as much power as they wanted. Because of the alleged misdeeds of Radio during the sinking of the Titanic there was a cry for regulation of the radio spectrum. Before that could really happen there had to be a seizure of the spectrum by the government proclaiming the ether to be a public resource. This effort culminated twenty years later with the founding of the Federal Communications Commission by the Communications Act of 1934. This still pretty much defines radio from the legal side as we know it today. From the hardware side you wouldn't recognize the radios.

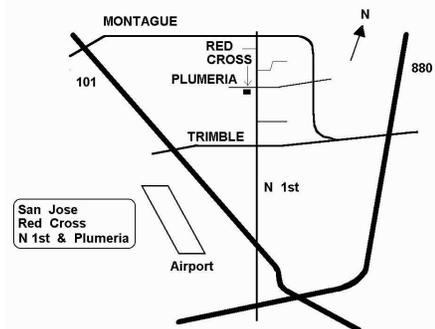
At one time the hams were given 200 Meters and above because this was thought to be unusable spectrum. For those of you that are

Calendar

- 2/8 SCCARA General Meeting
2/15 SCCARA Board Meeting--(San Jose Red Cross, 7:30p, all are welcome)

General Meeting

- Day: Monday, February 8, 2016
Time: 7:30 PM
Place: Kaiser Santa Clara, Hospital B-06
Featuring: Don AE6PM on kit building in the 21st century



The **SCCARA-GRAM** is published monthly by the **SANTA CLARA COUNTY AMATEUR RADIO ASSOCIATION**, PO Box 106, San Jose CA 95103-0106. 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>. (Webmaster: Wally Britten, KA6YMD, 408-293-3847, kafymd@arrl.net)

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(all officers are also directors)

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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 (connect to n0ary-1). User ports: 145.09 MHz at 1200 baud, 433.37 MHz at 9600 baud, and telnet sun.n0ary.org (login "bbs"). Sysop: Gary Mitchell, WB6YRU For general packet info, see the NCPA web site nepa.n0ary.org.

TELEPHONE NUMBERS

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

numerically challenged, that's 1500 kHz or the top end of what is now the AM Broadcast Band. As the hams proved the usefulness of the frequencies above 200 Meters the allocation limit was progressively moved to higher and higher frequencies. Today the free use limit is 20 GHz and above but even that line is not firm as 20 GHz and above is shared by many types of users.

VHF, roughly defined as 30 to 300 MHz was also called the Line of Sight band because its waves didn't bend over the horizon like the HF waves. However if you wanted to talk to someone that was within your line of sight VHF could be ideal.

Aviators were the first to catch on to the usefulness of VHF. Since they were in the air looking down, it was easy line of sight communication. Aviators used a sub band of VHF just over a 100 MHz. Also during WWII both German and Allied tanks used VHF radios around 30 MHz. Finally Allied ships used VHF radios in what was called the TBS Radio (Talk Between Ships) because it didn't give away their presents to enemy listening posts located over the horizon.

VHF Mobile Radios were not easy to design in 1940. First, they used tubes which meant high voltage power supplies were needed. Second, controlling frequency wasn't easy when the vehicle was bouncing around or even being shot at. As well, bouncing was a major problem when trying to tune the radio. The solution for HV was using either a vibrator or dynamotor power supply. Both were difficult to build and heavy as well. Heavy was OK for a ship but wasn't appreciated by the aircraft builders. Frequency control was solved by using mechanical tuning devices known as piezoelectric crystals. A separate crystal was needed for both the transmitter and receiver.

While crystals solved a problem they created another. To change frequencies you had to change crystals. If you added a switch you could change frequencies but crystal circuits didn't like switches because their excess capacitance tended to change the crystal frequency. If switches were use then they were usually limited to just two or four crystals. Again the crystals had to be duplicated for transmit and receive functions.

During WWII radios were expensive enough that not every airplane or tank had them. Sometimes it was only the group commander that carried a radio. This was interesting for tanks in particular because the enemy, upon seeing a tank bearing a lone antenna, would shoot that tank first knowing it would take out the commander.

Immediately following WWII you could buy an 807 vacuum tube or a crystal for two bits. The 7xxx kHz crystals worked on 40 meters and the 8xxx kHz crystals worked on VHF. The word went out and suddenly those crystal frequencies were the most highly populated ham frequencies.

On HF, the transmitter operates on what is called the crystal fundamental frequency. For 10 meters and above the frequency was doubled and then doubled again (2x2) to provide a 4x output frequency. For 6 meters a 6x (3x2) and for 2 meters 18x (3x3x2).

On 2 meters a problem was seen with surplus crystals. An 18x multiplier also multiplied the crystal frequency error by eighteen. The wartime crystals were mass produced in a hurry so they were sloppy sometimes resulting in considerable error. Strangely the solution was to build sloppy receivers meaning receivers with a wide bandwidth that were not handicapped by the error. That way, in a Net everyone appeared to be on the same frequency even though the frequencies varied a lot. The Gonset Communicators I, II, & III had a bandwidth of 20 to 25 kHz. Later Heathkit's Twoer had a bandwidth of 60 to 75 kHz. That usually worked out fine unless you were in a big town with lots of 2 meter activity and

then you might hear two or three stations at the same time.

Previous to WWII Motorola produced VHF FM radios used by commercial and government services. They were a lot more complicated than ham radios. They used crystals too but the crystals were precision usually in the 6 MHz range. Some hams converted old FM radios to ham frequencies. The AM ham rigs could sometimes hear the FMers as they were now called but the FMers couldn't hear the AMers so there were no AM/FM QSOs. To avoid war the FMers stayed above 147 MHz and the AMers below.

Anyone hearing a FM versus an AM QSO could clearly hear that FM was a lot better, particularly with weak signals. The demand for FM ham rigs began to build. Regency, who had been building scanners and CB radios began to build a FM ham radio. The radio had sockets for 12 crystal pairs (T&R) but with pairs costing \$25 and taking some time to order the radio was unpopular.

In 1970 for my senior project I designed the first digital variable frequency synthesizer to replace the crystals in a commercial FM radio converted to the ham bands. It was a strange contrivance because the radio still had tubes while my synthesizer had 18 integrated circuits. Testing with a counter the rig was dead on. I demonstrated to my instructor and received an A grade even though the instructor was an analog type that didn't understand digital or FM radios. However when I called someone on the air they didn't come back. Then I had someone else call while I listened on another radio. The radio had a horrible noise caused by what was called phase noise.

After my project was published by Cal Poly I got a phone call from an old boss. He had read my write-up and wanted to buy my synthesizer or he would set me up in business to manufacture them. I was somewhat broken hearted to tell him while the frequency stability was excellent the phase noise would drive the sidebands over the FCC limit. There was no easy fix. My second design was better but still failed FCC limits.

Later Regency, ICOM, and Heathkit would come out with all solid state synthesized radios that had phase noise problems. Heathkit sent their radio to the ARRL labs who did a very favorable review of the radio which of course sold lots of radios. It was in LA where every FM channel is used that they found the radio's sidebands would bleed over into adjacent channels. The people with Heathkit FM radios were physically threatened if they didn't get them off the air. ARRL got a black eye and the saying "It may work in Benton Harbor but will it work in LA?" originated.

Heathkit bought back the radios giving each builder the cost of the radio plus a \$75 builder's fee. Regency replaced or repaired the radios for free. ICOM repaired their radios charging the buyer a service fee.

Today ICOM is still charging buyers a service fee for fixing engineering errors. Heathkit is out of business and Regency is still selling CBs and radar detectors. The good news is there are many fine FM radios available as mobiles or HTs. However there have been a few newcomers of Chinese ancestry. Surprisingly their first out models had sideband noise problems that had to be recalled. First up designs are usually hell.

Think carefully the next time you vote!

73, Fred, AE6QL, ae6ql@arrl.net



Treasurer's Treatise

Annual Financial Statement Year Ending 2015
1/1/2015 through 12/31/2015

INCOME	
Club Badges	10.50
Club Dues - 2015	399.50
Club Dues - 2016	375.00
Donation	20.00
Flea Market	2,700.00
Flea Market Food Booth	594.66
Holiday Luncheon - 2014	50.00
Holiday Luncheon - 2015	341.19
Sale of Assets	646.25
SCCARA-GRAM subscription	30.00
Other Income	15.00
TOTAL INCOME	5,182.10

EXPENSES	
Archive Scan	101.64
BBS	8.12
Business Cards	11.80
Club Picnic	69.62
Field Day	146.40
Flea Market Expense	2,200.00
Holiday Luncheon - 2015	400.00
Insurance	200.00
Membership Forms	13.05
Misc	51.46
Office Supply	13.04
PO Box	74.00
Promotional Flyers	29.50
SCCARA-GRAM	506.20
Secretary Of State	20.00
Software	54.35
TOTAL EXPENSES	3,899.18

NET CASH FLOW 1,282.92

<u>Accounts</u>	<u>1/1/2015</u>	<u>12/31/2015</u>
Savings:	500.07	500.07
Cash:	352.04	431.16
Checking:	6,119.65	7,323.45
Total:	6,971.76	8,254.68

Net gain for 2015: 1,282.92

Goetz Brandt, K6GKB

ARRL News

From *The ARRL Letter*, January 21, 2016

Midwinter 630 Meter Activity Weekend Set for Early February

US and Canadian radio amateurs and experimenters will join forces in February for the first Midwinter 630 Meter Activity Weekend. The event will get under way at 0000 UTC on February 6 (Friday, February 5, in US time zones) and runs through 2359 UTC on February 7.

"This event is being undertaken because of the new and quickly growing interest in present 630 meter activities, both in the US and Canada," said ARRL 600 Meter Experimental Group, WD2XSH, (<http://www.500kc.com>) Experiment Coordinator Fritz Raab,

W1FR. "Much of the interest is in response to the strong likelihood of US amateurs receiving access to the band in the near future, while Canadian hams are eager to learn more about the present level of Amateur Radio activity on their newest ham band." The activity weekend comes on the heels of a special event operation over the November 13-14 weekend that included participation by US and Canadian radio amateurs, and the Maritime Radio Historical Society (MRHS).

Raab said the two activity nights will offer interested amateurs in both countries an opportunity to experience the 630 meter band and, through crossband activity with Canadian amateurs, to take part in activity in the MF spectrum. "Our hope is to see this activity become an annual operating event, to be held every winter on the 630 meter band," Raab said. "For those who may be building for future 630 meter operation, this event will provide an opportunity to test your 'receive' capabilities on MF."

Operation will be from 472 kHz to 479 kHz in various modes. Several Canadian stations will undertake two-way crossband work, all on CW. Submit reception reports via e-mail to the respective operators or via the ARRL 600 Meter Experiment website. <http://www.arrl.org/news/midwinter-630-meter-activity-weekend-set-for-early-February>.

WO1NDR SK

Christina Sand WO1NDR passed away on Wednesday December 23, after a two and a half year battle with brain cancer. Her Funeral Mass was held January 4, at St. Lucy's Catholic Parish church. She joined SCCARA as KG6ORH in 2007, changed to WO1NDR, and was a member again in 2009.

If you'd like to make a memorial gift, the family suggests donating any amount to the science/tech building project at the son's school, Canyon Heights Academy in Campbell, Details at <http://canyonheightsacademy.com/giving>.

73 Wally KA6YMD

Meeting Minutes

General Meeting, Jan. 11, 2015



{No minutes were submitted by the deadline. -- Editor}

Board Meeting, Jan. 18, 2015



19:38 – President starts meeting
President reads few by-laws -9.2 – for the benefit of the board members.

President passes on the club laptop to the new secretary.

Announcement:

Risk and Impact of communications outage – Jim Oberhofer –
Speaker for the Quarterly SVECS Breakfast on Jan 23rd, 2016.

19:49
Previous Secretary reads out the minutes of the last General

Meeting (Nov 09, 2016) for approval- Lou moved to approve the minutes as stated. Seconded by Don and was carried.
President calls for approval. Minutes approved as read.

19:55

Previous Secretary reads out the minutes of the last Board Meeting (Nov 16, 2016) for approval - Meeting minutes accepted by President as corrected.

20:00

Discussed about the membership database to be maintained. Members need to join the SCCARA & SCCARA_BOD groups on Yahoo groups to be able to access the attachments on the group. Greg warned about sharing the member database over email due to privacy concerns. Fred suggested sending the email to everyone in Blind Carbon Copy.

20:10

New member packet needs to be handed over to new members. Secretary needs to maintain the packet.

20:12

Discussion about Directors & Officers insurance:
A suggestion has been made to add the provision for D&O insurance policy to the General Liability policy of the corporation. Goetz will check with the Insurance provider regarding adding the rider to the general liability policy.

20:20

Treasurers' report:
Checking – 6641.34
Savings – 500.07
Cash – 496.16
Total - 7637.57

It was reported that a keyer was available for sale from one of the members. President moved to check with the board if the club can buy it. Motion not seconded.

20:27

Trustee's report:
Don will make reservation for this year's holiday banquet.
Club station will be open on Saturday, January 30, 2016.

20:32

Vice Presidents report:
Speaker for February – Don Stienbach – He will speak on "Kit Building on the 21st Century." In March 2016, our general meeting will be a dinner meeting. Don added that it is recommended that we bring our family and friends.

20:37

President:
Action for Coax cable for club station – Found it for \$240 – it is on its way. Rotor cable – 18/22 – 40 cents per foot – Fred ordered 220 feet of the cable, \$380.

20:46

Lou reported about the new antenna that has been setup in Alviso.
20 m: Low – 1.17 – High – 2.2
40m: Low – 1.39 middle of the band High – 4.2 lower part of the band

20:48

President mentioned that there is an error in the election. Don K6PBQ made a motion to appoint Lloyd for 1-year position to the board. Seconded by Don AE6PM and carried. Motion approved. Lloyd is appointed as the board member. Clarke, Bill & Lloyds positions on the board will be up for election in the November 2016 elections.

21:00
 Wally gave a report on the club repeaters.
 440 repeater has no issues.
 2m repeater at eagle rock has issues with control line.

21:07
 Board discussed about the request from RACES regarding usage of SCCARA repeaters during Super Bowl. So far no official communication happened on this.

21:08
 Editors report:
 Gary informed that the new forms could be filled in with the PDF reader.
 Club archives: All the videotapes have been digitized and is uploaded to the website. Gary and Bill are working on uploading the old newsletters into archives.

21:20
 B6 room in Kaiser Permanente is booked for entire year for SCCARA general meetings.

21:24
 Gregg made a motion for SCCARA to buy a table at the flea market in March 2016 to sell the club equipment that is no longer needed. Don K6PBQ seconded and carried.

Don K6PBQ made a motion to recognize that Brad Wyatt K6WR was a life member of SCCARA and he died last month, so our last remaining life membership has ended. Seconded, approved ten in favor, one against.

21:27
 Meeting adjourned.

Praveen Akunuru, KK6VGB, Secretary

Lights, Camera, Action!



Your Editor has been busy archiving, and not just past SCCARA-GRAM newsletters...

Did you know SCCARA has *videos*?

Best of all (in my opinion) is a 16 mm film made by the first SCCARA members back in **1925!** Maybe not "best" in quality -- it was made by amateurs when movie film was in its infancy after all -- but it has historical value and we get to see our founding members! It's about 17 minutes long, the first four minutes look like some of the members on vacation at a mountain lake. The rest is a little more like what you'd expect.

Except for the 16 mm film, all videos are on VHS tape and have been transferred to DVD, then to mp4 video files.

The 16 mm film was scanned frame by frame in HD format, (3 megapixels per image). Each image was then reassembled into a high definition (HD) 1920x1080 digital video. This isn't the cheapest way to go, but it produces the highest quality and it's much gentler on the film. The film is 90 years old and has not always been stored properly. If every there's a time to transfer the film, better to do it now before it degrades any more.

Now that the film has been transferred to digital video could use some restoration by a video expert. It mostly needs correction for contrast and exposure.

📺 **ATV**
 (circa 1990, 21 min.).
 W6ORG (So. CA, not a SCCARA member), gives an introduction to Amateur fast-scan TV.



Radio shacks with ATV

📺 **HAM Radio in Space**
 (ARRL film, 1991, 33 min.)
 Amateur satellites and Space Shuttle astronauts who are also amateurs.



All STS-37 astronauts were HAMs



Jay N5QWL, astronaut



Tony W7ORE, astronaut



Micro-sat



OSCAR satellite

📺 **KC6SOC at Norwood school works space shuttle**
 (14 min.) SCCARA member Terry Young KC6SOC at Norwood Elementary School working the Space Shuttle with students, March 28, 1992.



☛ **WB2JKJ JHS 22 school radio club** (circa 1990, 29 min.) WB2JKJ Jr. High School HAM Radio club "22 Crew" in New York. English teacher Joe Fairclough uses Amateur Radio as a teaching aid in class. (SCCARA made a donation to them.)



Robert, student



Joe WB2JKJ says "HAM radio is a better way to teach English"



☛ **SCCARA Field Day 1992** (25 min.). SCCARA participating in Field Day at Mt. Madonna Park, June 28, 1992. Despite being over twenty years ago, it almost looks like this could have been last year.



Beam antenna on our 60 foot trailer-mounted tower



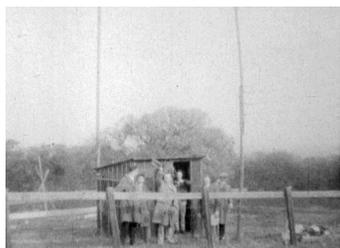
Logging a contact (I wrote that software! ☺ -- Editor)



One of the stations

☛ **SCCARA in the 1920's** (circa 1925, 17 min.)

Two of the first SCCARA members proudly showing off some of their radio equipment. (Hats and ties were common back then.)



That's a REAL radio shack!



Spark gaps and Leyden jars

The KC6SOC video at the beginning and end has some footage where nothing is going on. The WB2JKJ video has some dead spots. Edited versions of those two were made. The editing makes them a little shorter, but no real loss in content. Both the full and edited versions are available.

The HD video from the film is a 6.3 GB file, too big even for a regular DVD. A lower resolution (standard definition) version was made for the web site.

All videos are available on our web site, except the HD video: http://www.qsl.net/sccara/video_archives.htm. The web page also has additional information and more still images.

If your internet connection is slow, we can copy the videos to your USB flash drive or a DVD, or you can borrow a USB flash drive with the videos on it and copy to your hard drive. The HD video is available only on USB flash drive or we can figure something out. There is no cost. Contact the Editor to make arrangements.

73, Gary WB6YRU, editor

Packet Pieces

Downloaded from the BBS packet network:

=====
 Date: 22 Oct 2015 01:25
 From: GM3YEW@GB7YEW
 To: HUMOUR@WW

An American tourist in London decides to skip his tour group and explore the city on his own.

He wanders around seeing the sights and occasionally stopping at a quaint pub to soak up the local culture chat with the lads and have a pint of Guinness.

After a while he finds himself in a very high-class area... Big stately residences... No pubs no shops no restaurants and worst of all... NO PUBLIC TOILETS. He really really has to go after all those pints of Guinness.

He finds a narrow side street with high walls surrounding the adjacent buildings and decides to use the wall to solve his problem. As he is unzipping he is tapped on the shoulder by a London Bobbie who says "I say sir you simply cannot do that here you know."

"I'm very sorry officer" replies the American "but I really really HAVE TO GO and I just can't find a public toilet."

"Ah yes" said the Bobbie "Just follow me". He leads him to a back "delivery alley" then along a wall to a gate which he opens.

"In there" points the Bobbie. "Whiz away sir anywhere you want."

The fellow enters and finds himself in the most beautiful garden he has ever seen. Manicured grass lawns statuary fountains sculptured hedges and huge beds of gorgeous flowers all in perfect bloom. Since he has the cop's blessing he unburdens himself and is greatly relieved.

As he goes back through the gate he says to the Bobbie "That was really decent of you... Is that what you call

"British Hospitality?"

"No sir" replied the Bobbie "that is what we call the French Embassy.

HOW THE FIGHT STARTED

Saturday morning I got up early quietly dressed made my lunch grabbed the dog and slipped quietly into the garage.

I hooked up the boat up to the truck and proceeded to back out into a torrential downpour. The wind was blowing 50 mph so I pulled back into the garage turned on the radio and discovered that the weather would be bad all day.

I went back into the house quietly undressed and slipped back into bed. I cuddled up to my wife's back now with a different anticipation and whispered 'The weather out there is terrible.'

My loving wife of 10 years replied 'Can you believe my stupid bloody husband is out fishing in that?'

And that's how the fight started ...

I took my wife to a restaurant. The waiter for some reason took my order first. 'I'll have the strip steak, very rare please.'

He said 'Very rare, aren't you worried about the mad cow?'

I said 'Nah, she can order for herself.'

And that's how the fight started ...

My wife and I were sitting at a table at my high school reunion and I kept staring at a drunken lady swigging her drink as she sat alone at a nearby table.

My wife asked 'Do you know her?'

'Yes' I sighed 'she's my old girlfriend. I understand she took to drinking right after we split up those many years ago and I hear she hasn't been sober since.'

'My God!' says my wife 'Who would think a person could go on celebrating that long?'

And that's how the fight started ...

A woman is standing nude looking in the bedroom mirror. She is not happy with what she sees and says to her husband 'I feel horrible. I look old, fat, and ugly. I really could use a compliment.'

The husband replies 'Your eyesight's darn near perfect.'

And that's how the fight started.

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 and who to contact for each. If your topic isn't listed, ask one of the Elmers under the topic that comes closest and we'll ask around.

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.

Topics:

Antennas, feed-lines, tuners: NV6W, W6JPP, K6PBQ

Lightning protection, grounding: WB6YRU

Station set-up, equipment: K6PBQ, W6JPP

TVI/RFI: WB6YRU

Homebrew projects, construction: WB6YRU

Packet Network (BBS, forwarding): WB6YRU

Code operating and installations: NV6W, K6PBQ

DX (long distance/propagation): NV6W

Emergency operating/preparedness: WA6QYS

HF operating techniques (SSB, CW): NV6W, K6PBQ

Legal/FCC rules: WB6YRU

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

EchoLink: KK6MX

License testing, new amateurs: W6JPP

Contacts:

NV6W, James D. Armstrong, Jr.,
evening & msg: 408-670-1680

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 N0ARY
e-mail: wb6yru@ix.netcom.com

Newsletter Notes

The last *SCCARA-GRAM* was the first to use "pdf control fields," that's what allows you to fill in the blanks on the membership form within your pdf reader. You can then print the filled-in page. Advance pdf readers will let you save the filled-in page as a new pdf file, and you can print it later or whatever.

Turns out the boxes may not print at all if left blank. And not everyone gets the exact same thing depending on what pdf reader they use.

The form (both here and the stand-alone form on the web site) has been changed slightly. It should be a little more universal now. Let me know if there are any problems.

73, Gary WB6YRU, Editor



SCCARA
 Santa Clara County Amateur Radio Association
 PO Box 106
 SAN JOSE CA 95103-0106



FIRST CLASS

ADDRESS SERVICE REQUESTED

SCCARA Membership Form for 2016

If renewing and none of your info has changed, we only need your name and call

Name: _____ Call: _____ Class: _____

Address: _____ Licensed since (yr): _____

City: _____ State: _____ Zip: _____ Licence Expiration
 Date: (mm/dd/year): _____

Telephone: _____ New Member Renewal I'm also an ARRL member

E-mail: _____

(only for club communications and the SCCARA-GRAM (pdf) newsletter)

Memberships start January 1 and expire December 31. Annual dues are: **\$20 Individual \$25 Family \$10 Student** (under 18)
 For family memberships (members at the same address), please include the above info for each member, (use separate forms).

New members:

- If joining in January: normal dues
- If joining in February through October: dues x (11 - month) x 10% (e.g. for July, that's: \$20 x 4 x 0.1, which is \$8)
- If joining in November or December: normal dues. That's for next year, and the rest of this year is included free

I want the newsletter on paper delivered by U.S. Mail for an additional \$30 per year, prorated (\$2.50 per month).
 So that's \$27.50 if starting in February, \$25 if starting in March, \$22.50 if starting in April, \$20 starting in May, etc.

\$ _____ Total membership payment for: individual family student

Give this completed form and payment to the Secretary or Treasurer at any meeting or mail to the club address.