

SCCARA-GRAM



Santa Clara County Amateur Radio Association

Volume 33, Number 7

July 2017



President's Prose

Preliminary Field Day Report

I would like to thank Goetz K6GKB for hosting SCCARA's Field Day this year. I'm also gratefully to his pet "billy goat" (no call sign) that conquered his plot of California wilderness. We enjoyed the peaceful shade of oak trees with vista views of the valley below, as well as visiting deer and wild turkeys.

Special thanks to Wally KA6YMD who was the first person to show up on Friday for set up, and the last one to leave on Sunday after tear down. He transported all of the radios and served as Public Information Officer as well as GOTA Station Captain.

I need to thank Lloyd KD6FJI and Koji AI7HU who helped with both set up and tear down. Special thanks to Rusty KI6ZSK who provided truck transportation for our equipment and supplies.

More information and photos will come later. I was told that the CW Station made 200 QSOs. The SSB Station reported 104 QSOs. The GOTA Station had 5 operators.

73, Gregg KF6FNA, kf6fna@comcast.net



Holiday Lunch

Last year we had to cancel our lunch due to lack of sign-ups. This year the board would like to try to have the luncheon back again. We have a tentative reservation for Saturday Dec 16 at Michael's at Shoreline in Mountain View. We must have a minimum of 25 paid lunches by Monday, August 28th in order to confirm our reservation. See the sign up form (below).

73 Don Village K6PBQ

SVECS Breakfast

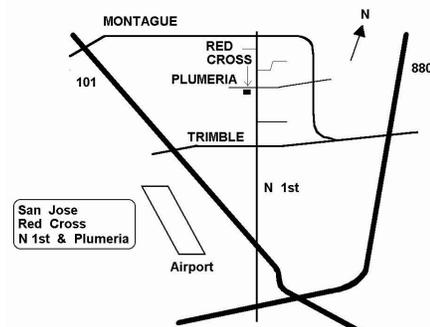
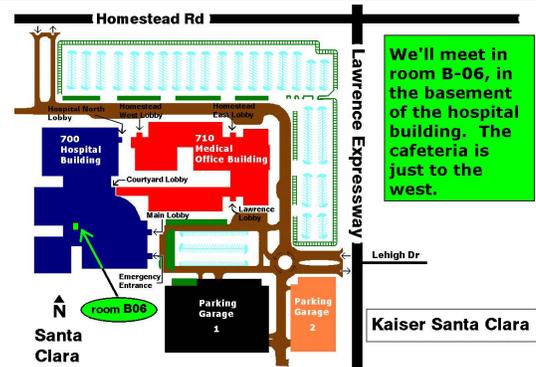
The next SVECS Quarterly Breakfast will be on July 22nd, 2017. Our guest speaker will be Mark Laubach, K6FJC, Assistant District Emergency Coordinator for Santa Clara County ARES/RACES. Mark's presentation will be on planning for the County's 3rd annual Radio Direction Finding Mini-drill on July

Calendar

- 7/8 Electronics Flea Market
- 7/10 SCCARA General Meeting
- 7/17 SCCARA Board Meeting--(San Jose Red Cross, 7:30p, all are welcome)

General Meeting

- Day: Monday, July 10, 2017
Time: 7:30 PM
Place: Kaiser Santa Clara, Hospital B-06
Featuring: {to be announced}



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: www.qsl.net/sccara

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(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 ncpa.n0ary.org.

AMATEUR LICENSE TESTING

ARRL/VEC Silicon Valley VE group:
Morris Jones, AD6ZH: 408-507-4698

29th, and will include RDF fundamentals, equipment requirements and advanced techniques.

The breakfasts are held at the Santa Clara Senior Center, 1303 Fremont Street at Monroe, in Santa Clara. Cost is \$5, payable at the door. We will have our customary \$125 door prize and our fabled raffle drawing for member donated items. Please bring your no longer needed gently used surplus items for our raffle table. Breakfast is served at 0900 followed by program at 1000.

Please RSVP so that we can know how many people to expect. Since volunteers make the breakfast possible please consider coming earlier (0730) to give a hand in the kitchen and/or the auditorium. Many hands make light the work.

Lou WA6QYS 408-241-7999 wa6qys@aol.com

ARRL News

From *The ARRL Letter*, June 1, 2017

Build-out of Nationwide First Responder Broadband Network Could Drive Amateur Radio Emergency Service (ARES) Changes

The First Responder Network Authority (FirstNet) -- a nationwide wireless broadband network for first responders -- could change the complexion of how the Amateur Radio Emergency Service (ARES) functions to support communication for responders during disasters and emergencies. As an independent authority within the US Department of Commerce's National Telecommunication and Information Administration (NTIA), FirstNet's mission is to build out, deploy, and operate an interoperable nationwide broadband network dedicated to first responders. Ralph Haller, N4RH, the chairman of the National Public Safety Telecommunications Council (NPSTC), told ARRL that the advent of FirstNet "will likely be as significant as when public safety first began using radio."

"The nationwide network will be hardened, so that it will be more likely that many of today's public safety systems remain operational in emergencies," Haller said, pointing out that Amateur Radio should not expect to have access to FirstNet. He cautioned, "The endurance of Amateur Radio systems in disasters has been a big selling point in the past for incorporating amateur operators in emergency plans, but perhaps not so much in the future."

NPSTC is a federation of organizations that work toward improving public safety communication and interoperability, and ARRL has a seat on NPSTC's Governing Board. Haller predicted that Amateur Radio's role in emergencies will not disappear. "There is no substitute for eyes and ears on the ground in an emergency," he said, adding that radio amateurs "can and should continue to play an important part" in supporting emergency communication.

"Amateur operators can continue to provide valuable information to emergency operations centers in the recovery phase of disasters," he said. "Whether that intelligence gathering is reporting on storm clouds, power outages, or road closures, amateurs can help provide critical, real-time information about conditions over a vast area. While first responders are treating the injured or protecting life and property, the amateur community can concentrate on assessing the overall picture."

On March 30, FirstNet and the Commerce Department announced a 25-year partnership with AT&T as the primary contractor to make FirstNet a reality. "The ability to communicate seamlessly

across jurisdictions is critical for law enforcement, fire, and emergency medical services (EMS) when securing large events or responding to emergencies and disasters,” a Commerce Department news release said. “In those instances, networks can become overloaded and inaccessible, limiting responders' use of vital communication technologies, such as smartphones and applications dedicated to public safety services.”



Ralph Haller, N4RH, the chairman of the National Public Safety Telecommunications Council (NPSTC).

“Be sure the public safety organizations never forget how valuable the amateurs are!”

Public safety agencies already use commercial wireless networks, such as AT&T and Verizon, to supplement their own radio systems and networks, although such communication is not point to point. FirstNet is initially targeted primarily to provide video and data, with mission-critical voice communication at least a decade away. EMS is likely to become a heavy user of the network, which will employ voice command functions a la Siri or Alexa.

Inevitably there will be coverage gaps, and the development of “deployables” is critical. These devices can expand the network to areas it doesn't cover but where it may be needed for a specific incident. Deployables could include satellites -- Inmarsat is a member of the AT&T team. Network security and encryption is a high priority. The Military Auxiliary Radio System (MARS) now uses encryption on its data nets.

While images in the form of digital Amateur Radio television (DATV) and a plethora of digital modes are available to ARES, FirstNet could nudge ARES to more quickly adopt a similar approach. A new generation of radio amateurs steeped in data, image, and video technology is likely to drive ARES to think beyond analog.

Haller advised that the Amateur Radio community should continue to work closely with public safety organizations at all levels to assure that they remain a part of emergency plans.

“The hype about broadband should not result in amateurs inadvertently being swept under the rug,” Haller stressed. “Be sure the public safety organizations never forget how valuable the amateurs are!”

FirstNet will use spectrum at 700 MHz -- no immediate threat to Amateur Radio allocations, although there is no guarantee that this won't change as the network approaches the shift to 5th generation (5G) technology. Amateur Radio has access to significant spectrum above 700 MHz.

The expectation is that within a couple of years, a nationwide “core” network will be ready to roll out, and the first public safety users will be on board. Some regional networks have been set up for proof-of-concept purposes and to work out wrinkles.

-- Thanks to Mike Corey, K1IU, and Ralph Haller, N4RH

QB-50 Constellation Satellites Deployed from International Space Station

More than 2 dozen QB50 constellation CubeSats have been deployed from the International Space Station (ISS), including three carrying Amateur Radio transponders. Built by student groups from 23 countries, the “string-of-pearls” QB50 constellation aims to study the lower thermosphere 200-380 kilometers above Earth. The satellites were launched to the ISS in March aboard an Atlas V rocket.

In all 28 QB50 2U and 3U CubeSats were released into orbit between May 16 and May 25. These included LilacSat-1 (ON02CN), which includes an Amateur Radio VHF/UHF FM to Codec2-BPSK digital voice transponder, APRS digipeater, and a camera; X-CubeSat (ON01FR) and SpaceCube (ON05FR). LilacSat-1 now is operational. Its transponder's FM uplink is 145.985 MHz (67 Hz CTCSS tone); the Codec2 9600 bps BPSK downlink is 436.510 MHz. The uplink frequency for both X-CubeSat and SpaceCube is 145.860 MHz (210.7 Hz CTCSS tone). Downlinks are 437.020 MHz for X-CubeSat and 436.880 MHz for SpaceCube.

LilacSat-1 was developed at the Harbin Institute of Technology. Its primary payload is an ion and neutral particle mass spectrometer, developed by the University of London, to measure the mass and distribution of charged and neutral atoms. Shortly after its deployment, LilacSat-1 took a picture of the ISS solar panels, and the image was received by students on 70 centimeters, using 9,600 bps BPSK.



Eight other QB50 CubeSats will be placed into orbit from India onboard Polar Satellite Launch Vehicles (PSLVs). No launch campaign has been announced for another four QB50 CubeSats. All of the QB50 CubeSats have downlinks between 435.8 and 438 MHz, and reports from radio amateurs are welcome.

In 2014, two precursor QB50 CubeSats were launched -- QB50p1 (EO-79/FunCube-3) and QB50p2 (EO-80). Both carried Amateur Radio transponders.

From *The ARRL Letter*, June 15, 2017

Federal Register Publishes New MF/LF Rules, But Operation is Not Yet Legal

The FCC Report and Order (R&O) spelling out operational rules to allow secondary Amateur Radio access to 630 meters and 2,200 meters now has appeared in the Federal Register, but radio amateurs still may not access the new bands. That's because specific procedures specific procedures, now under development, to detail how radio amateurs will notify the Utilities Technology Council (UTC) of their proposed station location prior to commencing operation, still must undergo approval. The FCC said the notification requirement is necessary to confirm that a station is not located within 1 kilometer of an active power line communication (PLC) system.

“While the R&O has been published in the Federal Register, amateurs may not begin using the new bands until after the FCC's Wireless Telecommunications Bureau issues a Public Notice outlining necessary procedures to notify UTC of pending

operation, as the new rules require,” ARRL Regulatory Information Manager Dan Henderson, N1ND, said. “There is no timetable for that Public Notice to be released. Amateurs need to practice patience.”

The FCC said the notification requirements it adopted “seek to strike a balance between amateur operations used for experimental purposes and PLC operation used by electric utilities for the reliability and security of electric service to the public.” Once notification procedures are in place, radio amateurs intending to operate on either band will notify UTC of their geographical location. If UTC does not object within 30 days, amateur operation may commence. The FCC turned away an ARRL request for direct access to the PLC database that UTC maintains.

Once UTC has developed the new information collection procedures, the FCC must submit them for review to the Office of Management and Budget (OMB). “The Commission will publish a separate notice in the Federal Register, inviting comment on the new information collection requirements adopted herein,” the FCC said in the R&O. “The requirements will not go into effect until OMB has approved [the notification procedures] and the Commission has published a notice announcing the effective date of the information collection requirements.”

In an unrelated action, the FCC allocated 1,900-2,000 kHz to the maritime mobile service (MMS) on a primary basis for non-Federal use in ITU Regions 2 and 3, and limited the use of this allocation to radio buoys on the open sea and the Great Lakes. Amateur Radio was upgraded from secondary to primary in the 1900-2000 kHz segment in 2015.

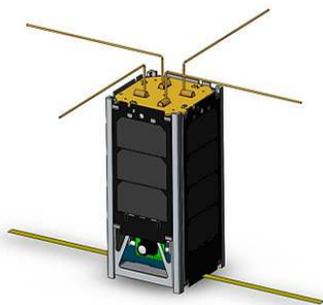
From *The ARRL Letter*, June 22, 2017

INSPIRE-2 Ground Controllers Turn to Amateur Radio to Rescue Stalled Satellite

Amateur Radio came to the rescue of the INSPIRE-2 CubeSat, built by the University of Sydney in collaboration with the Australian National University, and the University of New South Wales. According to the Wireless Institute of Australia (WIA), the CubeSat is designed to “explore the lower thermosphere, for re-entry research and in-orbit demonstration of technologies and miniaturized sensors” and is part of the QB-50 constellation of research CubeSats. Its operational frequency was coordinated by IARU to be in the satellite segment of the 70-centimeter Amateur Radio band.

After its deployment from the International Space Station (ISS) in late May, INSPIRE-2 showed no signs of life. The engineering group on the ground tested various scenarios on the INSPIRE-2 engineering model, concluding that the spacecraft's battery had depleted due to the CubeSat's extended stay on board the ISS prior to orbit. The ground controllers theorized that the satellite was trapped in an endless loop, but was still listening while trying to deploy its antenna, making reception of signals from Earth difficult.

The ground team devised a set of commands that, if received, would instruct the satellite to wait until its battery was charged before attempting to deploy its antenna. UNSW and ANU ground stations transmitted the recovery command without success,



however, eventually deciding that more power was needed to overcome the lack of receiver sensitivity caused by the still-stowed antenna.

PI9CAM at the CAMRAS Foundation Dwingeloo Astronomic Observatory in Leiden, the Netherlands, responded to a call to the moonbounce community and offered to transmit a high-power signal using a 25-meter dish that's normally used for radio astronomy but also for EME.

Success of the approach was confirmed on June 11, and Dimitrios Tsifakis, VK1SV, who is part of the ANU team, was subsequently able to send commands to the satellite from the ANU Earth station for the first time. The satellite had come back to life!

WIA called it, “a wonderful example of successful collaboration between radio amateurs and the academic community.”

-- Thanks to WIA News

Hundreds of Stations Report Hearing WSPR Signal from Canada C3 Expedition

Hundreds of Amateur Radio stations have reported receiving the WSPR signal being transmitted by CG3EXP on 20, 30, and 40 meters from the Canada C3 expedition to track the vessel Polar Prince as it transits Canada from east to west via the Northwest Passage in 150 days to celebrate Canada's 150th anniversary. This marks the first time that WSPR has been used to track a vessel. The expedition, which started on June 1, will continue until October 28, ending in Victoria, British Columbia. It's currently on the third of 15 planned legs of its journey, en route from Baie-Comeau, Quebec, to Charlottetown, Prince Edward Island.

CG3EXP has been transmitting on 20, 30, and 40 meters at 20-minute intervals since leaving Toronto on June 1. The CG3EXP WSPR HF end-fed antenna, on the ship's port side, slopes up to the mid mast at 62° -- some 46 feet of insulated wire, approximately 0.5 λ on 30 meters. A live tracking link, generated by QRP Labs, the supplier of the transmitting hardware, is being hosted by Jeff Milne, VE3EFF.



The 220-foot-long Polar Prince, a former Canadian Coast Guard vessel, is a research icebreaker.

Stations with an HF receiver and the free WSPR application (<https://physics.princeton.edu/pulsar/k1jt/wspr.html>) can receive the CG3EXP signals directly from the ship on 40, 30, or 20 meters, and the location can be gated to the internet and tracked on WSPRnet (<http://wsprnet.org/drupal/wsprnet/map>).

The project is seeking radio amateurs who are in close radio proximity to the route to receive the CG3EXP signal using the WSPR application on their existing equipment and uploading the data to the internet. This can be entirely automated via the WSPR application.

-- Thanks to Radio Amateurs of Canada

China Launches Satellites Carrying Amateur Radio Transponders

CAMSAT has announced that two Amateur Radio payloads piggybacked on the optical remote-sensing microsattellites OVS-1A and OVS-1B were launched on June 15 from China's Jiuquan Satellite Launch Center. The primary launch mission is a hard X-ray modulation telescope satellite. The Amateur Radio payloads are designated CAS-4A and CAS-4B.

CAS-4A (call sign BJ1SK) carries an inverting U/V linear transponder, with a CW telemetry beacon at 145.888 MHz and 4.8 kb GMSK telemetry at 145.835 MHz. The transponder uplink is 435.220 MHz; the downlink is 145.870 MHz.

CAS-4B (call sign: BJ1SL) carries an essentially identical inverting U/V linear transponder, with a CW telemetry beacon at 145.910 MHz and GMSK telemetry at 145.890 MHz. The transponder uplink is 435.280 MHz; the downlink is 145.925 MHz.

"The frequencies of transponders are center frequencies, and uplinks/downlinks are both 20 kHz wide," CAMSAT's Alan Kung, BA1DU, explained. "The transponders are linear and good for SSB/CW operation."

Both CAS-4A and CAS-4B are equipped with quarter-wave monopole antennas for VHF and UHF.

-- Thanks to Alan Kung, BA1DU/CAMSAT

Meeting Minutes

General Meeting, June 12, 2017



{No minutes received. -- Editor}

Board Meeting, June 19, 2017



{No minutes received. -- Editor}

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

December Luncheon Sign-up

Our annual December meeting will be a luncheon on Saturday, December 16, at 12 noon. This year our luncheon will be at Michael's at Shoreline, 2960 North Shoreline Blvd in Mountain View. You have a choice of three entrees, \$30 each. We need your **paid** reservations (this form) no later than Monday, August 28. I hope to see you all there!

73, Don Village K6PBQ

For the annual meeting in December, sign me up for the following lunch(es) at \$30 each:

Roast beef English cut Chicken Cordon bleu Broiled Salmon

Name: _____ Call _____ Total for lunch(es) \$ _____

Give this form (or copy) with payment to the treasurer, or mail to: SCCARA, PO Box 106, San Jose CA 95103-0106



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



FIRST CLASS

ADDRESS SERVICE REQUESTED

SCCARA Membership Form for 2017

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

Name: _____ Call: _____ Class: _____
 Address: _____ Licensed since (yyyy): _____
 City: _____ State: _____ Zip: _____ Licence Expiration
 Date: (mm/dd/yyyy): _____
 Telephone: _____ New Member Renewal I'm also an ARRL member
 E-mail: _____

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

Membership type and dues: Individual, \$20 Family, \$25 Student, \$10 (under 18)

Memberships start January 1 and expire December 31.
 Family memberships (more than one member per household): please include the above info for each member, use separate forms.

New members:

Dues are prorated: dues x (11 - month) x 10% (Example: July would be \$20 x (11-7) x 0.1, which is \$8)
 If joining in November or December: normal dues for next year, the rest of this year is included free.

I want the paper newsletter delivered by U.S. Mail for an additional \$30 per year
 (Prorated, \$2.50 per month. That's \$27.50 if starting in February, \$25 if starting in March, etc.)

\$ _____ **Total** enclosed

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