SCCARA-GRAM

Santa Clara County
Amateur Radio Association

Volume 27, Number 12 December 2011

December Meeting

Our annual Christmas meeting will be a luncheon on Saturday December 17 at 12:00 noon. This yeat our luncheon will be at the Creekside Inn 544 W. Alma Ave, San Jose (one block west of Hwy 87).

This year we will be having a gift exchange. The way it works is that everyone brings a wrapped gift suitable for a man or women costing about $10.00. This type of gift exchange is always a lot of fun to participate in.

Reservations need to be in by Friday Dec. 9th (see sign-up sheet). Talk-in will be on our repeater. W6UU, 146.985-. Why not renew your membership at the same time.

Looking forward to seeing all of you there.

73 , Don Village K6PBQ

President's Prose

Greetings from Butte, Montana. I'm going to be here until December 6. Can't say I'm crazy about the winter weather at 46N latitude and 5500-plus feet after basking in the Bay Area for the last 44 years, but it's a refreshing change of scenery. On the plus side, it is an opportunity to set up and operate portable from the 7 call area (my original call was W7FLC).

Those of you with limited antenna space might be interested in my installation at this temporary QTH, as shown in photos 1 and 2. I'm using a Hustler 4-BTV 10, 15, 20 and 40-meter trap vertical. It's supported on a Radio Shack 3-foot antenna mast tripod (RS #15-293) made by Antennacraft. The tripod accepts a 4-foot piece of 1-1/4" schedule 40 PVC pipe and the antenna is mounted to the exposed upper end of the PVC pipe, insulated from the tripod.

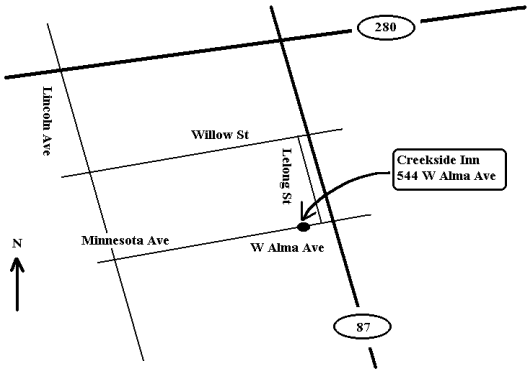
I added three one-quarter-wavelength radials of #14 stranded wire for each band. They are attached to the antenna mounting bracket and simply drop to the ground, in the snow on top of the grass. Their effective electrical length is probably anything but one-quarter wavelength, but I'm able to get an acceptable SWR on all of 40- and 10-meters and most of 15- and 20-meters. By "acceptable", I mean 3:1 or less. Anyway, it works. A radial system on the ground with an antenna so close to the ground such as this serves more as just a return path to the transmission line than as part of a tuned antenna system.

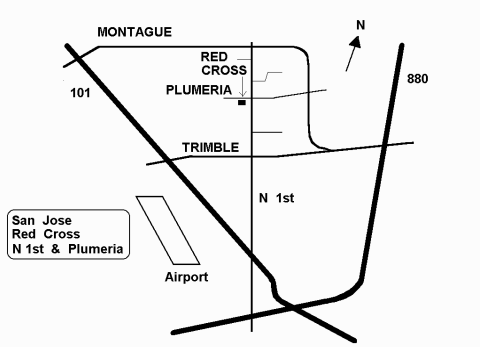
Calendar

12/17 **SCCARA General Meeting**–luncheon!
12/12 **SCCARA Board Meeting**--(San Jose Red Cross, 7:30p, all are welcome)

General Meeting

Day:	Saturday, Dec.. 17, 2011
Time:	12 noon
Place:	Creekside Inn, 544 W Alma Ave S.J.
Featuring:	Annual Holiday luncheon meeting





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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.

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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.

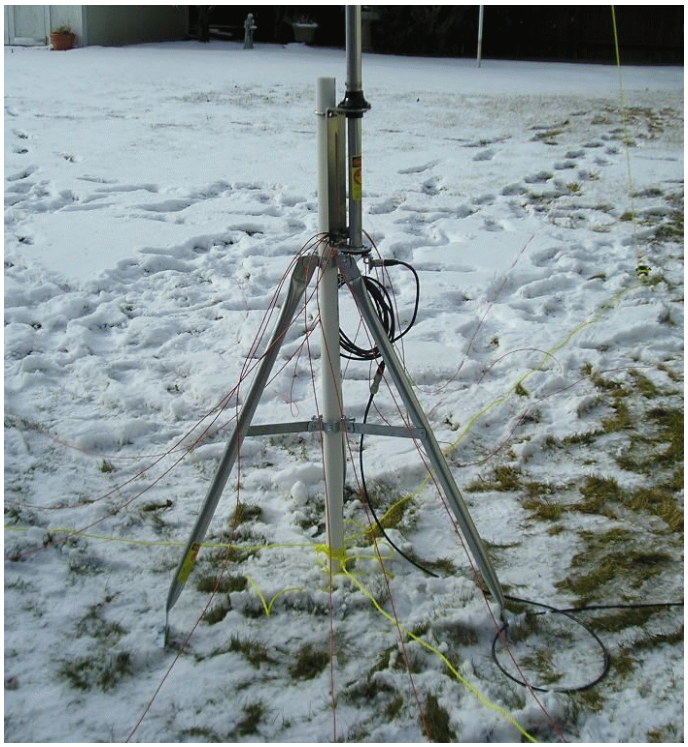
N0ARY PACKET BBS

SCCARA hosts the packet BBS N0ARY (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)

TELEPHONE NUMBERS

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

Hustler 4-BTV antenna temporarily installed in side yard. Note location of guy ropes from spider assembly near top of antenna to the ground.



The PVC pipe is installed inside the tripod, the antenna base is clamped to the PVC, and the radials fall to the ground.

The antenna hasn't experienced any high winds yet, but that will surely happen. I attached three 3/16" polypropylene ropes to a ring (AES 2104213 GuyTie) that floats just above the spider assembly and ran those down to three stakes located 10 feet out

from the bottom of the PVC pipe and spaced approximately 120 degrees radially. The free ends of those ropes are tied to the bottom of the PVC pipe to keep it from moving laterally. A 100-foot length of rope cut into three equal pieces works perfectly. This constitutes a rather unorthodox self-supporting pyramid system that's quite simple to erect with only one person. When I leave, the pieces all go back into their original boxes.

On a different note, if you have a Technician Class license and would like to try HF, now is the time. The 10-meter band is starting to open up, and you can operate from 28.300 to 28.500 MHz using SSB voice and 28.000 to 28.300 using RTTY and data. General, Advanced and Extra Class licensees can operate anywhere from 28.000 to 29.700 MHz.

Don't forget the 2-meter FM net on Monday nights, and the 10-meter SSB net (28.385 MHz USB) on Thursday nights. Anyone who has a license can join in.

73, Don - AE6PM

Duplexers, Diplexers, and Circulators

By Don Steinbach, AE6PM

Duplexers, Diplexers and Circulators are passive devices that are connected between a transmitter, a receiver and an antenna to perform various functions like radio-frequency signal combining, separating, or isolation. They are typically designed for use at vhf frequencies and higher.

Duplexers The duplexer is a passive frequency-selective three-port device designed specifically to allow simultaneous transmission and reception on adjacent frequencies on the same antenna. They have separate transmitter and receiver ports (connectors) and a common (shared) antenna port. Obviously, the transmitter and receiver cannot operate on the same frequency, but they can be very close to the same frequency. This is accomplished by using highly frequency-selective band-pass and band-reject filters in the two independent transmit and receive channels. Duplexers are carefully tuned to the specific transmit and receive frequencies being used. The primary duplexer attribute for each channel is low insertion loss through the channel and high isolation between the channels. The duplexer protects the receiver from overload and desensitization while the transmitter is operating at full power, or from other strong signals in the immediate area. It also protects the transmitter from "receiving" strong local signals that might result in spurious signals being produced in the transmitter final amplifier. Typical duplexer specifications might be insertion loss of less than 1 dB and isolation greater than 75 dB.

Duplexers are based on very high-Q tuned circuits that often take the form of cavity resonators. Some cable lengths need to be exact quarter- or half-wavelengths, the resonators themselves are sometimes silver plated internally, and mechanical adjusting rods might be made from Invar for dimensional stability over temperature changes. A duplexer 'set' typically consists of 4 or 5 resonators such as shown in Figure 1. Typically, two of the resonators (also called "cavities") would be in the receiver path and pass the receive frequency and notch the transmit frequency. The other two resonators would be in the transmit path and pass the transmit frequency and notch the receive frequency.

Fig.1. A 4-resonator duplexer similar to the one used on the W6UU 70-cm repeater. A unit like this costs about $1,800, has an insertion loss of 1.0 dB or less and isolation of 90 dB. A set for 2 meters is much larger than this. A resonator for 6 meters approaches the size of a trash can. The panel in this photo is 19" wide.

Diplexers The diplexer is similar in function to the duplexer in that it combines two (or more) ports into a single port. Like the duplexer, the diplexer is frequency selective, but typically broadband. A typical application for a diplexer is to allow two transceivers on two different bands to share a common transmission line. For example, a 2-meter transceiver and a 70-cm transceiver might each be connected a single diplexer which is connected to a single coax. On the other end of the coax might be a dual-band antenna, or another diplexer that separates the signals for connection to two separate antennas.

Remember the splitter we used to separate the VHF and UHF TV signals from the single 300 ohm twin-lead from the antenna so we could get the signal to the separate VHF and UHF tuner inputs at the TV set? That's functionally equivalent to a diplexer consisting of a low-pass filter for the VHF channels (54-216 MHz) and a high-pass filter for the UHF channels (470-890 MHz).

The diplexer concept can be expanded to more ports, such as three inputs for a triplexer. Gary Gordon, K6KV, described a triplexer to connect 10- 15- and 20-meter field day stations to a single tri-band beam. See QST magazine for June 2010.

Circulators The circulator is a 3-port ferromagnetic-based device that allows rf energy to be coupled only from port A to port B, from port B to port C, and from port C to port A. The isolation between the ports is such that almost no rf energy can flow in the reverse direction. If port A is connected to a transmitter, and port B is connected to an antenna, the forward power will pass from port A to port B and any reflected power back from the antenna will pass to port C. An isolator is a special case of a circulator with the third port (port C) terminated by a dummy load equal to the system characteristic impedance in which case any power from port C will be dissipated as heat.

In another application, a transmitter could be connected to port A, an antenna to port B and a receiver to port C, similar to a duplexer connection. Energy from the transmitter (the transmitted signal) would flow to the antenna, and energy from the antenna (the received signal) would flow to the receiver. Unfortunately, any reflected energy from the transmitted signal due to mismatch at the antenna would also flow back to the receiver connection at port C possibly damaging or desensitizing the receiver. Circulators are somewhat frequency dependant and also require exact impedance

matching to be fully effective. The reverse isolation between ports is typically 20 to 25 dB.

{Editor's note: RF cavities for 6 M can be, but don't necessarily have to be large around like a trash can. The narrow variety are tall. There is a 6 M repeater at the Crystal Peak commercial radio site with cavities that are only about four inches across, but reach nearly from the floor to the ceiling! I understand the short fat ones are more selective (higher Q) than the tall narrow ones. There exist some repeaters on 10 M too, their cavities look like large water heaters. In contrast, one of the 70 cm cavities shown in Don's article can be held in one hand.}

Solar Power's Dark Side

by Fred Townsend

You know that solar power is better than sliced bread, it's free for the taking, and it's green, nonpolluting. It's the perfect way to fight PG&E's rising bills. Then when the next earthquake hits you will have emergency power without the put-put generator and the hazards of storing gasoline.

Admittedly, solar is a complex subject poorly understood even by some scientists and engineers but for hams that are already on the roof-top doing antennas and have some understanding of the concepts of electricity, solar power seems so obvious. Just place the cells out there and the sun will do the rest. Right?

Before you can install the array you must figure out which way to aim the cells. The sun rises in the east, it's directly overhead at noon, and sets in the west. That sounds like any direction but north will work. OK! You'll compromise and point the array south. Hopefully your house doesn't face south so all your neighbors will not have to look at your solar collectors.

If you look carefully there are a lot of other critical questions to be answered like that shade tree that's your best friend in summer. Will it shade the cells? Will the leaves blow over the cells? Could a broken tree limb fall on the cells? Can I locate the array anywhere on the south side or should I be concerned about access for cleaning? If it falls I know the beam will shatter the glass but are the cells so fragile the wire antenna is a problem too? What happens when the birds sitting on the beam poop? Will the white spots effect power output? Finally, where will you place the solar wires so you will not transmit and receive RFI (Radio Frequency Interference)?

Maybe it's not quite that easy. Maybe it makes good sense to seek out an experienced contractor. Then the next question becomes how do you find that contractor? You might be wondering do all contractors know what they are doing or perhaps are there some that are good carpenters that know a little bit about electricity or maybe vice versa? A contractor's license is a good place to start checking out a potential contractor but you'll want to get references too. Because solar is relatively new you may not be able to find a really experienced contractor but of course you'll do the best you can.

All right, you triage and select a contractor. Perhaps it's the contractor that only uses bikini clad installers or the one that did the install for your friend or maybe it's your brother in-law but you have made your choice. (Or maybe your wife has made your choice for you.) What do you tell your contractor to install?

In all likelihood your contractor will have a sales person to help you with this critical phase. You may have a brand in mind. Perhaps you want to go US and stay away from the cheap Chinese brands you don't know. Likely the contractor will tell you that all cells are made in China and the other brands don't have as good a warranty. Don't be surprised if the salesperson keeps pushing away from branding and concentrates on size. Size does count.

The salesperson will probably recommend a KVA rating based upon his or her survey of your house. They may also tell you that your roof will support a larger array. It's more than you need but PG&E will buy back the excess power. It's like putting money in the bank. Finally you agree on a size and the salesperson totals up the bill. It's a lot more than your original estimate. True, there is a lot of hardware that you didn't realize you needed but ouch, that's a lot of money. Your contractor will agree that the system costs a lot of money but there are state and federal rebates that will pay up to 80% of the total costs so you'll pay only a fraction.

Finally you ink the deal. The installation is quickly completed and you see the dial spending backwards. You can't wait to start getting money back from PG&E.

Fast forward a year. You are still waiting on some of your rebates and you may be a tad dis-satisfied causing some buyer remorse. What do you know a year later that you wished you had known when you bought the system?

The biggest question facing any solar buyer is will the warranty be worth the paper it is written on? Does that warranty include parts and labor or just parts? In other words if a panel fails will you be out the cost of labor to replace the panel even though the replacement panel is free. As a side did the contractor warranty your roof will not leak after he walked all over it to install your solar array? You probably won't even notice the leaks until it rains.

For a warranty claim to be honored one of two things must happen. The manufacturer and contractor must continue in business or the bonding (insurance) company must have assumed the manufacturer's and contractor's liabilities. Normally the bonding company's liability only covers the period of installation. When the job is completed bonding insurance goes away. Therefore it is a good idea to ask the contractor if his performance bond can be extended beyond the installation period; say five years.

Insurance issues don't end with the bond. What happens if that tree falls into the middle of your array? Your manufacturer's warranty is conditional and will not normally cover an errant baseball, the owner's negligence, or an act of God. You will want to make sure your home owner's insurance covers the entire solar system. Your broker can provide you with a rider but of course your rates may go up.

Let's return to the viability of your warranty. The federal government has pumped 535 million dollars into Solyndra this year alone with upwards of 10 billion pumped into all US solar production companies in the year 2011. If the whole alternative energy industry is included, i.e. solar and wind, the number is more like 35 billion. This does not include subsidies going to home owners and public agencies, such as schools, to purchase systems. As Evert Dirksen once said, "A billion here, a billion there, and pretty soon you're talking real money." With this kind of money being pumped into the energy industry, why isn't company failure the exception rather than the rule? Why have US manufacturing companies been unsuccessful in competing with the Chinese? Or, to put it another way, why is free energy so damned expensive?

The Sun projects a tremendous amount of energy over a tremendously large volume of space. The problem is almost all that energy serves no greater purpose than to provide a porch light to space travelers. In other words the energy is lost into space without doing significant work. The little amount of energy that is captured by earth is mostly in the form of electromagnetic heat energy. This electromagnetic energy is not the same as the electrical energy that powers your rig. It must be converted by solar voltaic cells to DC electrical energy. Then the DC is further converted to something resembling 240 VAC@60Hz electrical energy.

The cells are made of silicon as are the devices used for both conversions. The DC to AC conversion, called inversion, is highly efficient exceeding 90%. The voltaic conversion is much

less efficient. The resistance in the cells is also significant so even after the electricity is produced some energy is again lost to Ohmic heat losses. Voltaics work better cold than hot.

Silicon is the second most abundant element in the Earth's crust. 3.8 million tons are refined every year but only 5 thousand tons are of electronic grade. Electronic grade silicon is expensive and the cells are difficult to manufacture. Furthermore the cells are fragile so they must be protected. That is done by covering the array with glass but the glass reduces efficiency so a tradeoff must be made between the protection level and efficiency. The cells themselves are arrayed in a series parallel configuration. Series cells are like the old series string Christmas tree lights. If one cell fails, all the cells in series fail too. (Think about the bird poop spots.)

Just as thick glass will affect cell efficiency so will dirt or bird poop. The glass on the rear window of your car is a good deal like the glass on your solar array except it is much thicker. The glass won't get smashed bugs like the windshield but it does accept condensate and dust. Eventually, all that stuff becomes a dirt film that cuts down efficiency. At some point you will need to clean your array but when? Do you make it an annual event like your rain gutters?

There is a major difference between clogged rain gutters and a dirty solar array. Dirty gutters may be a nuisance but they don't cost you lost revenue. Moreover, you can usually clean the gutters from the ground using a ladder. That's probably not true for your solar array. You will probably need boots on the roof and a compatible soap solution to remove the dirt film and perhaps a non-scratching brush too. Pressure washers are not recommended.

Wouldn't it be nice if you could gage the efficiency of your array from the ground so you don't needlessly put boots on the roof? But wait, perhaps you already have that capability! You have your metering system that shows both the month to month averages as well as the instantaneous output of your system. At any moment you can see the energy your array is pumping out. Won't that tell you when cleaning is necessary?

The major problem is how much energy is the sun is sending your way. Planet Earth is always moving relative to the sun so your array is almost never aligned optimally with the sun. Furthermore, the atmosphere, the air layer around the Earth, is always changing too. Water vapor, i.e. clouds, filters out energy. Finally your house may be shadowed at various times during the day. Bottom line the instantaneous energy output gage is almost useless because you don't know much energy is available in the first place.

Your best energy gage is the month by month energy totals. You'll need to keep records. These can be compared month to month but are best compared on an annual same month to same month basis. However by the time you realize you are not operating optimally, you have failed to collect a significant amount of energy.

By the middle of the summer you may be wonder where those PG&E checks are. You inquire and find out PG&E doesn't send out checks. They bank the credits for the energy you send them and of course they debit your account for the energy used when the sun is not shining. Still that is OK since you figure that means you will never need to write a check to PG&E again. Six months later you receive your January bill. You owe PG&E money. February you owe even more. What happen to your bank?

January 1st PG&E zeros out your bank. No refunds. Nothing! This means during the winter months when there is less sunlight you will again have to pay for gas and electricity. Usually, by April your array will produce enough power to fully offset your usage and your bills will drop to zero. If you live long enough your energy savings will fully repay the initial installation costs.

Oh remember that emergency gas generator that your solar array was going to replace? You had best keep it around for a rainy day when the sun isn't shining. Unless you buy expensive and bulky, limited lifetime, batteries, you can not store electricity itself. That means you will still be at the mercy of PG&E when brownouts or interruptions occur.

In summary it is hard to resist the allure of free electricity. The trouble is you are betting your solar array will stay together long enough to pay off the substantial installation bill. Every system is different. You will need to do your homework.

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ARRL News

From *The ARRL Letter*, November 3, 2011

FCC TERMINATES PROCEEDINGS AFFECTING THE AMATEUR RADIO SERVICE

The FCC issued an Order on November 1 that terminated hundreds of proceedings, including six proceedings that members of the public, including the ARRL, had asked not to be terminated. Two of these six proceedings involved the Amateur Radio Service. This follows a June 2011 Public Notice that sought comments on whether or not it should terminate approximately 800 docketed proceedings.

On July 20, 2011, the ARRL filed comments with the FCC on this matter, explaining that it had no objection to the termination of the proceedings in the Public Notice, save for one item: The ARRL's Petition for Rulemaking (RM-10165) Amendment of Parts 2 and 97 of the Commission's Rules Regarding the 2300-2305 MHz Band. In this Petition, the ARRL requested that the FCC change the Amateur Radio Service's allocation in that band from Secondary to Primary. This Petition was one of the six items to be terminated. Read more at www.arrl.org/news/fcc-terminates-proceedings-affecting-the-amateur-radio-service.

From *The ARRL Letter*, November 10, 2011

ARRL COMMITTEE SEEKS MICROWAVE BAND PLAN INPUT

Attention microwavers! An ARRL Ad Hoc Committee has been tasked by the Board of Directors with recommending updates to the ARRL band plans for the amateur bands between 902 MHz and 3.5 GHz. If you are now active on any of these bands or are developing plans to do so, the committee would like to hear from you.

The band plans for these bands may be found at www.arrl.org/band-plan-1.

- 902-928 MHz
- 1240-1300 MHz
- 2300-2310 and 2390-2450 MHz
- 3300-3500 MHz

You can find additional background and a form for submitting information at www.arrl.org/news/arrl-committee-seeks-microwave-band-plan-input. Please respond by December 15, 2011.

From *The ARRL Letter*, November 17, 2011

ARISSAT-1 EXPECTED TO RE-ENTER APRIL 2012

According to predictions from Mineo Wakita, JE9PEL, the ARISSat-1 SATELLITE (see www.amsat.org/amsat-new/index.php) is due to re-enter Earth's atmosphere in early April 2012. Launched from the International Space Station on August 8, the satellite is traveling in a low orbit and is steadily losing altitude. The rate of orbital decay may be accelerated by increasing atmospheric density caused by increased solar activity. With that factor in mind, some ARISSat-1 decay predictions suggest re-entry as early as February 1.

ARISSat-1 remains quite active, sending voice messages, digital telemetry and Slow Scan TV images. Amateurs have also been able to enjoy contacts through ARISSat-1's linear transponder despite the fact that the UHF antenna was apparently damaged prior to (or during) deployment.

Last month, AMSAT-NA announced a competition to see who can record the last bits of telemetry as ARISSat-1 makes its final plunge (www.arrl.org/news/arissat-1-team-announces-morse-code-contest). To decode the CW or BPSK telemetry you must use the ARISSATTLM software (available at www.arissat1.org/v3/) for Windows or Mac OS. The CW signal is transmitted at 145.919 MHz and the BPSK signal appears at 145.920 MHz, plus or minus Doppler.

{Editor's note: The satellite has to be above your local horizon in order for you to receive it. Normally people use software or on-line web sites to find out when any given satellite will be overhead. However, those predictions will get increasingly inaccurate as the orbit decays. So, your best bet is to monitor continuously until you learn that it has re-entered. You might get lucky. Here are some satellite resources from AMSAT:

Online satellite pass predictions:
www.amsat.org/amsat-new/tools/predict/index.php

Receiving ARISSat, operating tips, info:
www.amsat.org/amsat-new/ARISSat/ARISatHowTo.php
}

Meeting Minutes

General Meeting, Nov. 14, 2011

Kaiser Hospital, 710 Lawrence Expressway, Santa Clara CA 95051 Status: Unreviewed

The SCCARA General Membership Meeting was called to order by Don Steinbach AE6PM at 19:40.

Introductions of members were made.

Announcements:
Lou WA6QYS had several announcments: the club station will be open Saturday Nov 19 for the SSB Sweepstakes starting at 1pm. The next SVECS breakfast will be in January. Gwen KF6OTD worked Christmas Island and the Marquesas - only 98 countries to go! Lou also has gotten confirmation that we have the Kaiser meeting room all next year.

Viki KI6WDS passed around printed rosters for members to check and update their information in the interminable database update process.

Don K6PBQ reminded everyone the Christmas luncheon is Dec 17 at Creekside Inn; let him know your dinner choice if you are attending.

John W6HW said the club is solvent; the treasurer's report will be at the board meeting.

Fred AE6QL showed an article from his alma mater, which passed 96 students from a Technician's class.

There was discussion on the Field Day Results not being in the ARRL CQ.

Theresa Nemeth is seeking phone volunteers for a KKUP (Cupertino community radio station) radio marathon on Nov 24, and thanked John W6JPP and Gregg KF6FNA for coordinating.

Election of Officers was held. Don announced that all officers and 3 of the directors are up for election. He recognized Joe W6SNV for helping round up candidates. All the incumbents were nominated except John Altieri, Treasurer: President Don Steinbach AE6PM, Vice President Fred Townsend AE6QL, Secretary Viki Moldenhauer KI6WDS, Directors Gary Mitchell WB6YRU, Wally Britten KA6YMD, and Lou Steirer WA6QYS. Joe W6SNV nominated Goetz Brandt for Treasurer, Tom W6TJK seconded. A voice vote was taken for all candidates with no votes against.

Fred AE6QL spoke on the topic of Broadband Over Powerline (BPL). In a nutshell, digital data is inserted onto power lines in the 2-30MHz range, and then transmitted by the power network. Unfortunately, power lines radiate the data across a significant amount of the amateur radio spectrum, up to 400m away from the power lines (read antenna). This can interfere with a lot of hams. There are some techniques which would help alleviate the problem (put notches into the digital data, where the amateur radio spectrum is), but these are not required or enforced. Fred described the history of the legal battles over this technology and urged people to join the ARRL and to help support the Spectrum Defense Fund.

The meeting was adjourned at 20:40.

Board Meeting, Nov. 21, 2011

Red Cross Building, 2731 N 1st St, San Jose CA Status: Unreviewed

The SCCARA Board Meeting was called to order by Vice President Fred AE6QL at 19:37.

Attendance: Vice President: Fred Townsend AE6QL; Secretary: Viki Moldenhauer KI6WDS; Treasurer: John Altieri W6HW; Trustee: Don Village K6PBQ; Directors: Lou Steirer WA6QYS, Gregg Lane KF6FNA, Gary Mitchell WB6YRU; Wally Britten KA6YMD; Visitors: Clark Murphy KE6KXO, Gwen Steirer KF6OTD, Goetz Brandt K6GKB; Absent: President Don Steinbach AE6PM, Director John Glass NU6P.

Announcements: Fred AE6QL announced Don AE6PM was out of town and had sent inputs via email.

Secretary's Report: The October Board meeting and November General meeting minutes were reviewed; there were no comments and they were approved as submitted. The new database was discussed: Gary WB6YRU and Wally KA6YMD requested full Microsoft Access copies as well as CSV format. Consensus was reached on: saving the database every December in both database and CSV format; hiding the Silent Keys and keeping everyone else

in the database, paid for the current year or not; and in February/March updating the search to that year (to not show unpaid members as current).

Vice President's Report: Fred AE6QL has arranged for James Brown to speak at the January meeting on "RFI in the shack".

Treasurer's Report: John W6HW reported the balances:
checking = $3434.42
savings = $3847.39
cash = $508.45
for a total of $7790.26.

N0ARY BBS Report: Gary WB6YRU reported the BBS is working fine.

Editor's Report: Gary WB6RYU observed just after he published the HF band plan, changes to the 60m band came out; he will publish the updated one. Gary also handed out new business cards with the new PO Box and zip code.

Repeater Chairman's Report: Wally KA6YMD said the repeater is working ok, and no maintenance is scheduled. Gary had a question on a club 2m antenna; Gregg knows of a new Comet in the storage shed. Fred suggested we would want a commercial grade antenna for the repeater.

Web Masters Report: Wally KA6YMD is publishing things as he receives them.

Station Trustee's Report: Don K6PBQ had the station open for the November Sweepstakes: 45-50 contacts were made; the 15m and 10m bands were open. He will make Field Day reservations for Mt. Madonna park. He has 19 people for the Christmas luncheon so far. The club will comp Bob Vallio's meal. The station will not be open until Jan. 28 (which is the same day as the next SVECS breakfast).

Old Business:
Don AE6PM had sent the following input to the board meeting by email, with comments by Fred, both to be entered into the minutes: (Secretary's note: I've prefaced each line with who wrote it):

(start of email)
FT> Please see comments below.
FT> FT

DS> From: Don Steinbach [mailto:dlsteinbach@comcast.net]
DS> Sent: Sunday, November 20, 2011 9:01 PM
DS> To: Fred Townsend; Viki Moldenhauer; John Altieri; John Glass; WA6QYS; WB6YRU; K6PBQ; Gregg Lane; KA6YMD; KE6KXO
DS> Subject: SCCARA BoD Meeting Input

DS> Hi All,

DS> I'm in Butte until December 6. The current temp is 11 degrees and dropping. Wish you were here.

FT> Ordinarily I would take anyone vacationing in Butte in November as a sign of serious mental illness but I suspect this not a trip of choice. I hope all goes well. Whatever you do, don't stick your tongue on the flag pole. FT

DS> Here are my inputs for the November 21 Board meeting:

DS> 1. Bob Vallio would like to attend our holiday lunch. One chicken please, Don Village.

DS> 2. Honda EU2000i generator:
DS> I did an internet survey of the Honda sources in the San Jose, Gilroy and San Mateo areas -- a total of 11 dealers. Here are the prices I found:
DS> - Valley Saw (Salinas), Abbott's (Gilroy), Power Equipment (San Martin), Hollister Honda (Hollister), K-119 (San Bruno), Adaro (San Leandro), Honda of San Mateo (San Mateo), The Motor Cafe (Sunnyvale) and Voyager Marine (Alviso) all $1,149.95.
DS> - Gardenland (Campbell) $1,069.99
DS> - Mmi Power (Milpitas) $1,046.00
DS> - Mission Honda (Daly City) $999.00
DS> - Mayberry's that advertises in QST sells it for $899 but their website clearly states "NOTE - not compliant with CA EPA regulations". Could that be true of all EU200i's?

FT> No it is not true. It is illegal to sell non-CARB compliant versions for use in California. Online catalogs clearly show CARB versions. (At first I thought CARB meant carbureted. It means California Air Resources Board approved.) FT

DS> I'll defer to Wally for anything further on this issue.

DS> I wouldn't propose spending any additional money for whatever it might take from Honda to parallel two generators.

FT> It takes an additional sync cable. FT

DS> If we exceed 2kw, unplug the coffee pot or use propane lanterns.

DS> 3. Two-meter repeater:
DS> - The Kenwood NXR-700 that was proposed at the October meeting isn't appropriate for our needs. We should be looking to buy a Kenwood TKR-750 class unit. One version of the NXR-700 that I'm aware of costs around $7,200 (www.epcom.net) while the TKR-750 will cost $1,500 to $2,000. There are several TKR-750/850 units in use in the area and we already own the programming software (Heaven help us). We are using a TKR-850 now for our 70 cm repeater. The K6SA 2-meter repeater is a TKR-750. There is local technical expertise. John Glass may be able to get us a favorable price on a ready-to-go unit.

DS> - The subject of a circulator keeps coming up. Under no circumstances should we spend any money until we have a known problem, and this can be proven to be the one and only fix. Otherwise we're just buying volcano insurance for our members.

FT> Don I couldn't disagree more. Your logic is folly. To use your logic no one should by a first aid kit until someone is injured and only then if it can first be proven to benefit the patient. It is much easier to prevent problems than it is to track them down. Particularly when you have to trek up the mountain to find the problem.

FT> Circulators do not solve all problems but they solve so many as to be a bargain. Before I explain the benefits let me say something about factory installed options.

FT> Factory installed options are just that, installed by the factory. That means they are covered by warranty and are tested with the radio. Also there is no question as to how to install them. However this may be a mute question. According to John Glass there are no factory options, other than model, on Kenwood Radios.

FT> Circulators perform three major functions:

FT> 1. They protect the transmitter from open coax problems.
FT> a. A Reflectometer circuit can also be used in lieu of a circulator.
FT> 2. They prevent mixing in the transmitter power amplifier. (Commonly called inter-mod problems.)
FT> a. Cavities can also be used in lieu of a circulator to reduce inter-mod but do not eliminate it.
FT> 3. They diplex the antenna between transmitter and receiver.
FT> a. Filterplexers can be used in place of a circulator.

FT> There are a type of circulator, known as an isolator or 3 port circulator that only perform functions 1 and 2 above. They do not diplex. It may be that Kenwood repeaters already incorporate such a device. There are also hybrid structures that preform the same function. If that is the case then it would be somewhat wasteful to add a full circulator. However filterplexers have major problems that are fixed by circulators.

FT> The beauty of Circulators is they are small (but heavy) and have no adjustments of any kind. Connect them and forget them. Filterplexers are the direct antithesis. They are big by comparison. They are fragile and have many, very difficult to adjust, tweaks. They are not frequency agile and they are not very portable. They also do not store well. They have the possible advantage of reducing or eliminating the need for cavities on the receiver.

FT> I ask the board to consider what we are buying with the future in mind. There are many repeaters out there that are more than 30 years old. The first repeaters were setup in the mid-sixties so it is possible some are over 50 years. There is no reliability reason why the repeater we buy today won't hang around that long. However there are technical and political reason to think it will not last that long.

FT> NARCC has already floated a plan to realign the repeater frequencies. The Kenwood repeaters can be remotely frequency switched or frequency reprogrammed. A circulator diplexer will support that function. A filterplexer will not. Moving a filterplexer is painful and time consuming.

FT> The idea of a portable repeater is intriguing. We could bring a repeater with us to field day. It would make a fill-in repeater too. This would be a wonderful asset for emergency service, conventions, etc. If the repeater were frequency agile it would be frosting on the cake.

FT> I do not ask the board to commit to a circulator but not to discard the idea out of hand either. Let's do due diligence. This repeater should last a lifetime, at least mine. FT

DS> - We have an antenna available now,

FT> We do?

DS> and one to be recovered from the City of San Jose some day.

FT> That.s probably defective. FT

DS> - We have a duplexer available now (it's on the wall at Regional). No technical reason not to reuse it.

FT> Oh contraire! We don't even know if it works. There are lots of reasons, some enumerated above, not to reuse it. Do you know how to retune it if needed? FT

DS> - I believe we have an equipment rack available at Clark's house. The subject of making the repeater portable has come up. It's unclear how this would benefit the members of SCCARA.

FT> Also enumerated above. FT

DS> - I believe we have a controller available.

DS> - We may have coax available. If its condition is questionable, it's simple enough to test it. Since we're probably talking about a short run, cost probably isn't an issue.

DS> Viki - please include this email in the meeting minutes.

DS> 73,
DS> Don - AE6PM

(end of Don's email and Fred's reply).

Repeater: There was lively discussion about the repeater, with the following conclusions: We should ask John Glass NU6P to come to the meeting and speak on service and tech manuals; Discussion of the pros and cons of a circulator and portability of the repeater was deferred until John Glass could be present.

Generator: Amidst more lively discussion starting from Don's email, Clark observed that new generators come with a 60 or 90 day warranty, and maybe we should buy one right before field day. Clark will also ask about availability considering the earthquake in Japan and flooding in Thailand. Further discussion will wait until Don returns.

New Business:
Lou WA6QYS moved that the next regular Board meeting be moved from Dec. 19 to Dec 12; Gregg KF6FNA seconded, all agreed.

Fred adjourned the meeting at 20:40.

Viki Moldenhauer, KI5WDS, Secretary

Packet Pieces

Downloaded from the BBS packet network:

==========
Date: 1 Jun 2010 20:09
From: KG6BAJ@KG6BAJ
To: HUMOR@WW
Subject: Stock Advise

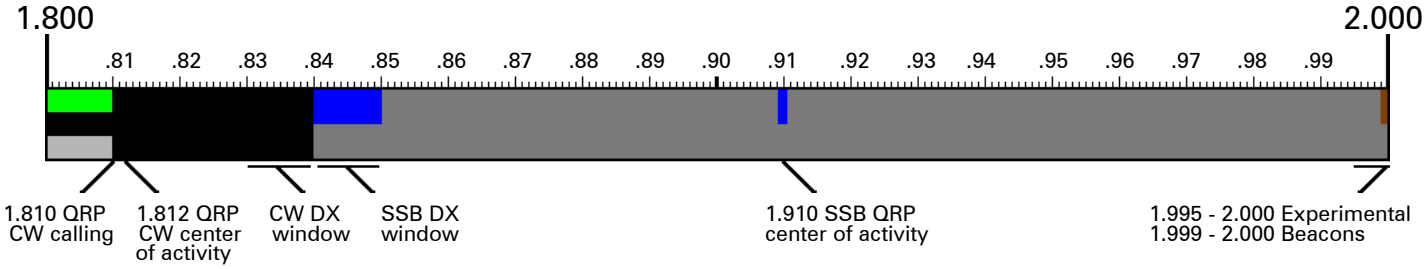
I called my stockbroker this morning and asked him what I should be buying now.

He said, "Canned goods and ammunition."

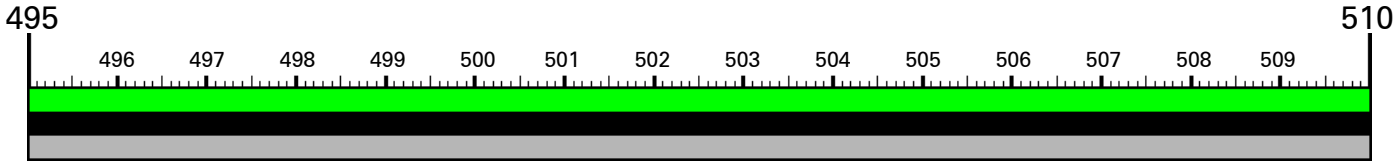
(continued page 10)

MF Band Plan

160 M, 1.800 - 2.000 MHz



600 M, 495 - 510 kHz



NOTE: Operation in this band is limited to amateurs with special temporary experimental licenses only, modes: CW, FSK, PSK, MSK31.

There is a possibility some of this band will be allocated to amateur radio in the future.

Beacons	Phone (SSB, non-FM)
CW	Modes up to 500 Hz wide
Digital (RTTY, data)	Modes up to 2.7 kHz wide

References: IARU, HF band plan for region 2, effective Jan. 1, 2008 <www.iaru-r2.org/band-plan>
ARRL <www.arrl.org>
Beacons: NCDXF <www.ncdxf.org/beacons.html>
600 meters: <www.500kc.com>

Typical Digital Usage

These frequencies were gathered from several source, they are not guaranteed to be complete nor accurate. They are listed here merely as guidelines as to where activity in each mode might be found.

	AMTOR	CLOVER	MFSK16	MT63	packet	pactor	PSK31	RTTY	THROB
160 M					1.802		1.83815		

	FAX	Hellschreiber	SSTV	
160 M		1.804	1.890 1.916	

RTTY or AMTOR: Listed frequencies are with the MARK tone. MARK is the low tone, SPACE is the high tone. The dial frequency is the carrier. To set the listed frequencies with the MARK tone: on LSB **add** the MARK frequency to the carrier frequency to get the dial frequency, and for USB **subtract** the MARK frequency from the carrier frequency to get the dial frequency.

NCPA Northern California Packet Association
The digital organization of Northern California. www.n0ary.org/ncpa

May 20, 2011

==========
Date: 8 Apr 2010 00:05
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: Charitable Lawyer

Mr. Wilson was the chairman of the United Way, which had never received a donation from the most successful lawyer in town. He called on the attorney in an attempt to make him mend his ways. "Our research shows that you made a profit of over $600,000 last year, and yet you have not given a dime to the community charities! What do you have to say for yourself?"

The lawyer replied, "Do you know that my mother is dying of a long illness, and has medical bills that are several times her annual income? Do you know about my brother, the disabled veteran, who is blind and in a wheelchair? Do you know about my sister, whose husband died in a traffic accident, leaving her with three children?"

The charity solicitor admitted that he had no knowledge of any of this. "Well, since I don't give any money to them, why should I give any to you?"

==========
Date: 2 Jun 2010 21:35
From: RAY<RA@KG6BAJ
To: HUMOR@WW
Subject: Would you believe it?

Some phrases are only used when they are untrue.

"I'm not racist, but ..."
"I'm sure I ..."
"I don't want to contradict you..."
"With all due respect"
"Far be it for me ... "
"It goes without saying..."
"... not to mention ..."
"No offence, but..."
"Oh no, I couldn't possibly."
"I shan't make this a long speech."
"Nothing, darling."
"Serves 4"
"I'm no prude, but ..."
"No, I wasn't asleep."
"Near miss" (used to describe a near hit)
"Network upgrade"
"Care in the community"
"Back in 5 min"
"I'll just put you on hold for a moment."
"Congratulations! You have been specially chosen/selected ..."
"Child-proof lid"
"Traffic-calming measures"

regards,
Ray

==========
Date: 28 Sep 2011 01:24
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: Not-so-dumb blonde

One day a blonde was sitting on a plane next to one of those smart businessmen.

He asks her if she would like to play a game. She politely declines, but the man explains the game to her anyway.

He says, "It goes like this: I will ask you a question and if you get it wrong you will give me $5, and vice-versa."

She said no again, and tried to fall asleep.

The man begged and said, "I'll give you $50 for each question, or how about $500?" At that number, the blonde agreed.

The businessman explains again, "If you get my question wrong you give me $5, and when you ask the question, and I get it wrong, I will pay you $500.

"Okay," she replies.

He asks, "Who was the sixth president?"

She admits she doesn't know, and gives him $5.

Now it's her turn, and she asks, "What has purple legs, five arms and only two yellow teeth?"

The businessman doesn't know - he uses his laptop, checks the internet, emails his friends, but no one knows the answer. So he gives her $500.00.

Then, as they're landing he asks her, "What was that thing anyway?"

She thinks for a minute, then hands him $5, and walks off the plane.

==========
Date: 26 Sep 2011 01:39
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: Hired help

A man dials his home and a strange woman answers.

The man says, "Who is this?"

"This is the maid," answers the woman.

"We don't have a maid," says the man.

The woman says, "I was hired this morning by the lady of the house."

The man says, "Well, this is her husband. Is she there?"

The woman replies, "She is upstairs in the bedroom with someone who I figured was her husband."

The man is fuming and says to the maid, "Listen, would you like to make $50,000?"

The maid says, "What will I have to do?"

The man tells her, "I want you to get my gun from the desk, and shoot the witch and the jerk she's with."

The maid puts the phone down; the man hears footsteps

and then two gun shots.

The maid comes back to the phone "What do I do with the bodies?"

The man says, "Throw them in the swimming pool."

Puzzled, the maid answers, "But you don't have a pool."

A long pause and the man says, "Is this 555-5309?"

==========
Date: 6 Sep 2011 16:02
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: You might be a redneck if

You might be a redneck if ...

Someone asks to see your I.D. and you show them your belt buckle.

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, 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
Legal/FCC rules: WB6YRU
SCCARA (club inner workings): K6PBQ, WB6YRU, WA6QYS
EchoLink: KK6MX

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

This is the time for membership renewals. Don't forget the club address is now PO BOX 106 and the zip+4 is 95103-0106

The last band plan chart in the series appears in this issue. This chart includes a segment around 500 kHz. Notice it mentions that a special experimental license is require. So, that's not an amateur band *yet*, but there are people working on it.

73, Gary WB6YRU, editor

Annual December Meeting Sign-up

Our annual December meeting will be a luncheon on Saturday December 17th, At Creekside Inn 544 W. Alma Ave, San Jose. We will have a choice of three entrees, $28.00 each.

Reservations need to be in by Friday December 9th. See December meeting article for information on the gift exchange. Talk-in will be on our repeater, W6UU 146.985-.

I'm looking forward to seeing all of you there. Why not renew your membership (back cover) at the same time

73,Don Village K6PBQ

For the annual December meeting, sign me up for the following lunch(es) at $28.00 ea.

_____Coulette Steak _____Chicken Marsala _____Salmon

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

Give this form (or copy) with payment to the treasurer of Mail to SCCARA PO BOX 106 San Jose CA 95103-0106

SCCARA
Santa **C**lara **C**ounty **A**mateur **R**adio **A**ssociation
PO Box 106
SAN JOSE CA 95103-0106

Affiliate of the ARRL,
American Radio Relay League

FIRST CLASS

ADDRESS SERVICE REQUESTED

SCCARA Membership Form for 2012

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

Name: _____ Call: _____ Class: E A G 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.

Rev. 6/16/2008