

W6OTX

W6ARA

PAARA NEWSLETTER

K6OTA

K6YQT

VOLUME 55, NUMBER 7, July 2006

PAARAgraphs



Celebrating 69 years as an active ham radio club—Since 1937
The Palo Alto Amateur Radio Association, Inc.



CALENDAR



July	7	PAARA Meeting	
		7:00–9:30	
		Menlo Park Rec Center	
		700 Alma Street	
		Menlo Park, CA 94025	
July	12	Board Meeting	7:00pm
		Red Cross Bld., 400 Mitchell Lane Palo Alto	
		<i>(due to Parking Lot problems location may change, check net before Bd. meeting)</i>	
Aug	4	PAARA Meeting,	7:00pm
Aug	9	PAARA Board Meeting,	7:00pm
Sep	8	PAARA Meeting,	7:00pm
Sep	13	PAARA Board Meeting,	7:00pm



NEXT MEETING

July 7, 2006

SPEAKER

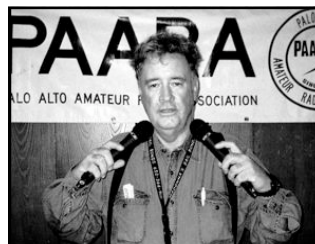
and **PROGRAM:**

APRS for Everyone

At the July 7th PAARA meeting, Peter Sheerin, K6WEB—outgoing club VP—will demonstrate the advanced capabilities of the APRS system, showing that it's capable of more than just position reporting. We will also have a wrap-up of our Field Day efforts, and announce the winner of Gerry's Field Day Photo Contest.

APRS is capable of far more than just showing the whereabouts of other hams—its protocol, infrastructure, and varied supporting software can be used to send cellphone-like text messages, emergency distress calls, or NTS messages. It can show the paths of amateur satellites, official weather alerts, display the locations of DX spots, and automatically control rotators to spin your beam to make that important contact.

~Peter, K6WEB



President's corner

Wow. Talk about a couple of rather exciting and fun filled months that we have just experienced. The annual fund raiser for PAARA was held in May at the Flea Market where we actually made a little bit of money for our radio club this year. The Treasurer, **Ron Chester, W6AZ**, has all the details and presented that information to the Board of Directors at the last meeting. A big thank you to the PAARA members who helped out so much at the Flea Market. **Joel Wilhite, KD6W** and **Doug Teter, KG6LWE** manned the PAARA sales trailer and another truck full of donated electronic stuff. **Carol Randall, W6GEM** and **Terry Finn, AA6T** who sold coffee, donuts and etc, all morning in the hot sun. **Stan Towle, WA6ZGI** and **Gerry Tucker, N6NV** who brought the coffee and donuts to the flea market site. **Ron Chester, W6AZ** spent the whole morning collecting space rental fees from the sellers. There were several other PAARA members who provided assistance at the site as well so I hope that I have not forgotten to mention a member in this memo. For example, **Rolf Klibo, N6NFI**, assisted selling the donuts while **Rob Riley, KG6HVW** assisted with an extra run to the store. The guys from the Red Cross were both extremely helpful as were a number of people from ASVARO. Thank you all for your help.

This little memo is being written before the June 06 Field Day exercise. Therefore we have limited information to report at this time. We expect another huge turn out of PAARA members who will bring their friends and relatives to show them what the Amateur Radio Service can do. I understand from **Mike Gavin, W6WZ**, that there are a few blocks of operator and/or logger time still available. So, that means that you are certainly welcome to sit at one of the radio stations and work some QSO's. We are especially hoping that some of you will take the time to use the GOTA (get on the air) station with your kids or younger friends who are under 18 years of age. This will allow us to earn even more points in this huge annual contest of skill. I will see you there on June 24 & 25.

~73 de AA6T. Terry Finn.

**PAARA Radio NET every Monday evening at 8:30 P.M. local time on the
145.230 –600 MHz repeater, PL tone off**

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Miscellaneous Info

VE Exams, 3rd Saturday each month, 10:30AM, 145.23— PL=100Hz

Redwood City Main Library, Community Conference Room
 1044 Middlefield Road, Redwood City, CA
 contact: <http://amateur-radio.org/> or Al, WB6IMX@att.net

ELECTRONICS FLEA MARKET

Sponsorship by A.S.V.A.R.O.
 (Association of Silicon Valley Amateur Radio Organizations)
 Second Saturday of month, March-October, 6am–2pm
 Howard M. Krawetz, N6HM 650-856-9761
 Contact: <http://www.electronicfleamarket.com/>

LIVERMORE SWAP MEET Now in Robertson Park, Livermore, every first Sunday of the month. 7 am to 11:30 am. Free admission for buyers. For further info, see: www.larkswap.com or contact Ian Parker, W6TCP at swapmeet@livermoreark.org

PAARA Palo Alto Amateur Radio Association
 meets 1st Friday 7:30pm each month, Net 145.230 each Monday 8:30,
 contact: <http://PAARA.org/> or Terry Finn, AA6T, 650-366-9111

FARS Foothills Amateur Radio Society
 meets 4th Friday 7:30pm each month
 contact: <http://www.fars.k6va.org/>

NCDXC Northern California DX Club
 meets 2nd Friday 7:30pm each month,
 repeater for member info 147.360, Thur 8:00PM
 contact: <http://nedxc.org/> or Mike Gavin W6WZ, (650) 851 8699

NorCalQRP Northern California QRP Club
 meets 1st Sunday each month
 contact: <http://www.norcalqrp.org/>

SPECS Southern Peninsula Emergency Communication System
 meets each Monday 8:00pm on Net 145.27, 440.80 MHz
 contact: <http://specsnet.org/> or Tom Cascone, KF6LWZ, 650-688-0441

SCARES South County Amateur Radio Emergency Service
 meets 3rd Thursday 7:30pm each month, San Carlos City Hall.
 Net is on 146.445 [PL 114.8] & 444.50 (PL-100) 7:30 Monday evenings.
 contact: President Gary D. Aden, K6GDA 650-743-1265(D), 650-595-5590 (N)
 Web: <http://k6mpn.org> E-mail: pres@k6mpn.org

SCCARA Santa Clara County Amateur Radio Association
 Operates W6UU & W6UU/R, repeater 146.985-pl
 Nets: 2m, 7:30pm Mon; 70cm, 442.425+ (pl 107.2) Thur.
 meets 2nd Mon each month @ 7:30 PM.
 contact: <http://www.qsl.net/sccara/> or Clark Murphy KE6KXO 408-262-9334
 ARRL/VEC license testing contact 408-507-4698

SVECS Silicon Valley Emergency Communications
 Operates AA6BT repeater (146.115 MHz+)
 contact: <http://www.svecs.net/> or Lou Stierer WA6QYS 408 241 7999

WVARA West Valley Amateur Radio Association
 W6PIY six-meter repeater on 52.58MHz. Normally, six-meters is linked with 147 and 223, while 441 and 1286 repeaters are linked.
 VHF: 52.58 (-500) 151.4 ctess UHF: 441.35 (+5.0 88.5) ctess
 147.39 (+600) 151.4 ctess 1286.20 (-12m) 100.0 ctess
 223.96 (+1.6) 156.7 ctess
 meets 3rd Wed every month.
 contact: <http://wvara.org/>, Bill Ashby N6FFC, 408-267-3118, N6FFC@Juno.com, or N6FFC@ARRL.NET

DISASTER SERVICES

American Red Cross, PALO ALTO AREA CHAPTER
 400 Mitchell Lane
 Meets 3rd Wed. each month 7:30PM
 HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite.
 contact: <http://paarc.org/> or Mac Millian 650-688-0423. MACM@paarc.org
 American Red Cross, SANTA CLARA VALLEY CHAPTER
 contact: <http://santaclaravalley.redcross.org/> or Scott Hensley KB6UOO, (408) 967 7924
fskenslev@Novell.com

(please send changes to PAARAgaphs editor: k6uro@arrl.net)

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 Rick Melrose K6RDM, 408-732-2247, k6rdm@arrl.net

Palo Alto Amateur Radio Association, Inc.

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Director (07)..... Gerry Tucker, N6NV 650-326 4908
n6nv@arrl.net
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n6nu@arrl.net
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k6wx@arrl.net
 Director (06)..... David Ungar, W6DH 650-255-2131
ungar@mac.com

See the calendar for Board meeting times. **Visitors are welcome.**

Appointed Positions

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ab6so@smrn.com
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 Station Trustee K6OTA... Ron Chester, W6AZ
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dteter@wcwi.com
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 Ticket Master Kyle Rice, KG6MSK
 Field Day Coordinator..... Gerry Tucker, N6NV
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n6nfi@arrl.net
 Webmaster..... position vacant
 Technical Coordinator..... Joel Wilhite. KD6W..... 650-325-8239.
joel.wilhite@gmail.com
 QSL Manager..... Rob Riley, KG6HVW (cell) 650 799-1607
kg6hvw@arrl.net

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LIFE MEMBERSHIP

Awarded by Action of the PAARA Board
Ron Panton, W6VG July 2003
Joe Gomes, KB6HDC May 2004



“Tenna Topics”

by Vic Black AB6SO

‘A 12-Band Portable Wire Antenna

At the January, 2003 PAARA meeting, I demonstrated a portable wire antenna for less than \$30 to cover 11 Amateur Radio bands plus the CB band.

The basis of the antenna is a commercial VHF dipole, purchased for \$17 from **Mitch Cipriano AE6AI**. He sells them on his web page <http://www.hamstop.com> along with other items such as power distribution panels, PSK31 rig to computer interfaces and Andersen Power Pole connectors, items that are not available from local retailers. The antenna features a molded center insulator with molded in coax cable and two 4 millimeter studs for mounting the telescoping black anodized elements. The dipole can be mounted either vertically or horizontally. With the elements compressed, the antenna resonates on 440 MHz. Partially extended, the elements radiate on 222 MHz and when fully deployed will cover the 2-meter band. Each antenna comes with 12 feet of RG-174 coax terminated with an FME coax adapter and your choice of one screw on adapter for SMA, BNC or UHF connections. Mitch sells optional connector adapters for very reasonable prices.

An optional homebrew tuning aid for your VHF/UHF antenna would be a short length of white wire with a large ring lug on one end. Slip the lug over one of the telescoping radiators and pull it out to the opposite side of the antenna. Adjust the radiator to a predetermined mark on the wire for the correct length. Do the same on the second side of the antenna to finish setting the correct length before transmitting.

The rest of the antenna has been described in various QRP journals. It consists of two camping clothes drying lines made by Coleman, the ice chest company. The clothes lines look like squat toy yo-yos or small carpenter chalk lines and cost about \$4 each from K-Mart. Each reel holds about 7 yards of nylon line. Pull the line out to its end. Then turn the two halves of the reel counter clockwise about ¼ turn and the reel will disassemble.

Inside there’s a reel with a keyhole to capture the nylon line. Replace the line with wire to make a variable length antenna. I found that #22 PVC covered stranded wire allows me to put 35 feet into each reel. Two reels are enough for a dipole on 40 meters and the upper HF bands.

Smaller diameter wire would allow more wire to be added, but you would have to double the amount of wire for the next lower Amateur band and small wire could fall off of the internal reel and jam it. I chose white wire so I could mark it using a permanent marker to indicate the correct length for various bands. A similar design advertised in Worldradio, the “Yo-Yo-Tenna”, is sold commercially by DWM Communications for about \$37 including shipping and handling (<http://QTH.com/dwm>).

Solder #8 X 22 gauge ring lugs to the wires on the reels. They’re a good fit over the 4mm studs on the VHF antenna center insulator. I also found some “mirror hangers” for 49

cents each at Orchard Supply Hardware. They have a #8 mounting hole and will fit over the center insulator studs. The hangers can be used to strain relief your antenna wire.

For HF use, remove the telescoping elements from the center insulator and attach the two wire reels using the ring lugs, 4mm nuts and mirror hanger strain relief brackets. Another option is to use the telescoping elements instead of 4 mm nuts. At HF the compressed 2-meter elements present a high impedance path and are ignored by your HF signal, although they add weight to the center of the antenna.

Pull out enough wire for the band you want to use the antenna on, wrap the wire around the hook on the clothes line reel and tie the reels to trees using the nylon cord you removed from the reel. The antenna can be mounted vertically, horizontally or as an inverted VEE. Only one reel can be used if you have an antenna tuner for random wire antennas (high impedance end fed, or voltage fed). Another option is to attach one wire directly to your radio without a feed line and mount the other below and horizontally as a counter poise (with the ‘hot’ wire mounted vertically this is sometimes called an “Upper and Outer”).

If you don’t need the VHF/UHF option, make only the HF wire version and use a dipole center insulator or a BALUN for the feed coax connector. With the VHF option, the antenna covers the 40, 30, 20, 17, 15, 12, 10, 6 and 2-meter bands, as well as 222 MHz, 440 MHz and the 11-meter CB bands.

One question that arose was “What happens to the wire inside the reel when you’re transmitting?” When you reel out enough to be resonant on your chosen band, the rest of the wire, rolled up in a ball, is seen by your signal as a high impedance path. The signal ignores it. Another way to think about it intuitively is that your signal will only fit on a piece of wire the correct length. The lump on the end is ignored. Don’t let the lack of an antenna keep you off the air. This is a great little antenna for portable and temporary use and can be used inside as well as outside. It handles 100 watts easily.

Multi-band Expandable Antenna System

If you live in an antenna unfriendly environment, consider using Hamstick-style mobile antennas for your home installation. The big problem is getting access to the antennas when changing bands. Fear no more! Mount several antennas in parallel and feed them with only one feed line. When you transmit, your signal finds the best impedance match for the band of operation and radiates from the correct antenna. This is somewhat analogous to the Hustler mobile system with different radiators for each band.

Mount as many Hamstick or Iron Horse single band antennas as you need onto a single mounting plate. Later attach more as needed. Attach them in parallel and feed with one feed line. Mount them on a metal plate above a conductive surface, such as the top of a mobile home, a building with a steel roof, a steel balcony or onto a metal plate with at least one resonant (quarter wave long) counterpoise for each band. Your signal will find the antenna with the best impedance match and radiate from that one.

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Students become ‘hams’ for good purpose

Nineteen eighth graders at A. C. Stelle Middle School in Calabasas passed their Federal Communications Commission Amateur Radio exams to earn their Technician Class Radio Licenses.

Science Department Chair Karl Beutel challenged his honors science classes to study the material outside of class and take the exams as an extra credit project.

“This is a significant achievement for students this age and will equip them to provide valuable public service,” Beutel said.

“The knowledge the students acquire in electronics, radio theory and safety will serve them well as they continue their education in high school, college and in their careers,” he said.

Norm Goodkin, volunteer examiner and long-time ham radio operator, expects the new ama-

teurs to provide Calabasas with emergency communications services, eventually joining the Amateur Radio Emergency Service and the LA County Sheriff’s Department’s Disaster Communications Service.

Goodkin’s two granddaughters, Mikaylah and Eliana, are also operators and have their own call signs. They’ve been broadcasting since they were 9 years old.

“There’s no age limit in amateur radio. Some very young hams have provided emergency communications worldwide,” Beutel said.

The exam sessions were staffed with accredited volunteer examiners from the Greater Los Angeles Radio Group. In addition to Goodkin, volunteers included Dan Goodkin, Naomi Goodkin, Mari Levenson and Murray Kay.

Joe Nardo, the Las Virgenes assistant superintendent of education and also a licensed ham radio operator, praised the project, calling it a “great idea.”

The license provides opportunities for international communications, public speaking, foreign language and technical experimentation.

~The Acorn

Errata

Alert readers **Dave Meacham W6EMD** and **Frank Weiss K6FCW** spotted an error in my June explanation of UTC time. Dave says “Your time zone info half-way down the left column is correct (where you say “...plus (+) west of Greenwich”.

The errors are that the US zones are listed as minus (-). The US is west of Greenwich so our zones are all plus (+). 1500 local time plus 8 hours gives 2300 UTC, not 0700 UTC. The sunlight passes east to west, so at 1500 PST the sunlight has already passed Greenwich, leaving it in the dark at 2300 local time there.”

For simplicity, I left off info about London having the potential for being in two time zones simultaneously, but Frank mentioned it so I’ll add it here. Normally, Greenwich Mean Time and Universal Coordinated Time are the same and UTC never changes. However, during Daylight Saving Time London and surrounding cities use GMT and so therefore can be in two time zones at the same time. Another interesting time oddity is that Russian trains all run on Moscow time even though the Russian railroad system crosses up to 18 time zones.

~Vic Black AB6SO

ARRL Champ



photo KM6EP

Bill L. Dale, Jr. N2RHV, Section Manager

ARRL Santa Clara Valley Section (SCV)

First licensed in New Jersey in 1993 as a No-Code Tech, I upgraded to General and Amateur Extra by 2001. I completed CERT training, Level 1 Emergency Communications and work Emergency Communications and public service events. I held the EC/RO position for Milpitas and I’m still active in Milpitas ARES/RACES. In 2001 I helped found the Milpitas Amateur Radio and Electronics Society (<http://w6mlp.org>) a Special Service Club, and serve as Affiliated Club Coordinator for the section. I teach Ham Radio and Electronics Workshop classes in Milpitas. See my blog at <http://radioflier.blogspot.com>

Announcement: Field Day Photo Contest

FD participants are invited to take some quality photos of the PAARA FD effort as we will have a contest for best photo at the august meeting. Bring a framed photo to enter into the contest, to chosen by vote of the August attendees. The winning photo will be featured (with credit), in the 2006 FD QSL card. Good luck.

~de, N6NV.



photo K6URO

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HUGE CUBESAT LAUNCH SET FOR JUNE 28



In what AMSAT-NA is calling the largest deployment ever of Amateur Radio satellites, 13 "CubeSats" carrying ham radio payloads are set for launch June 28. If all goes according to plan, a Dnepr-1LV rocket will carry the CubeSats into space from the Baikonur Cosmodrome in Kazakhstan. A fourteenth satellite in the package will not carry an Amateur Radio payload.

The CubeSat project is a collaboration between California Polytechnic State University-San Luis Obispo and Stanford University's Space Systems Development Laboratory. All of the CubeSats set to launch this month were designed and built by students at various universities in the US and elsewhere in the world.

Cornell University, Cal Poly, and the University of Arizona each will send two CubeSats into space. Other US schools participating in the mass CubeSat launch are the University of Illinois, the University of Kansas, Montana State University and the University of Hawaii. In addition, schools in Norway, S Korea and Japan have built CubeSats for this month's launch.

One of the CubeSats, known as SEEDS, was built by students at the Nihon University in Japan. It contains a CW beacon, Digi-Talker and other experiments. The CW beacon will be on 437.485 MHz and use the call sign JQ1YGU. The Digi-Talker experiment will be activated later. All 13 CubeSats will identify using Amateur Radio call signs.

According to AMSAT-NA, the satellites will be put into a 500-by-566 km (310 by 351 miles) orbit with a 97-degree inclination. Each tiny satellite is a 10 cm (4 inch) cube weighing just 1 kg (2.2 lbs) into which the battery, transmitter and various experiments are packed.

Twelve of the satellites have downlinks in the Amateur Radio satellite allocation between 435 and 438 MHz, and one will operate on 145.980 MHz, so there will be lots of signals to listen out for after launch. None of the spacecraft will carry a transponder.

Transmitter power outputs range from 10 mW to 2 W.

CubeSats were initially conceptualized by Prof. Robert Twiggs of Stanford and have been demonstrated by him several times at PAARA.

~Dick Kors, KM6EP

PAARA

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Rick Melrose K6RDM, 408-732-2247, k6rdm@arrl.net
 or the PAARA computer expert, **Mark Cohen, K6EF**,
 with a copy to the
 PAARA Secretary, **Adrianus Schrauwen, W6AJS**

FOOD AND BEVERAGE AT FIELD DAY

The Field Day activity during the last full weekend of June this year will be the venue of a new and exciting method of keeping the participants well fed and watered during the warm, dry afternoon and the cool night. PAARA member Rick Line, KG6TMD, has agreed to command a small group of volunteers from the First Baptist Church of Menlo Park who will provide food and beverages on site at Field Day. This will be the first time that participants will be asked to pay for the food and beverages through a voluntary donation of money. Please note that all profits from this little venture will be submitted to the USO to aid their efforts around the globe for our troops. None of these funds will be used by the Church or the volunteers, just to make sure that we have a clear separation of religion and radio activities at our Field Day.

Please bring along your thirst, hunger and wallets to try out this unique method of keeping the participants watered and fed over the weekend. In fact, do not hesitate to buy a cold beverage or a fat burger with beans for your favorite radio operator who is hard at work in one of the busy on site radio stations. Remember, we are trying for as many QSO's as possible, so we need to keep those operators happy and busy on the key or microphone. See you all at Field Day.

~Terry Finn. AA6T.

PARKING AT FIELD DAY.

The annual Field Day exercise will be in a new location within the Bayfront Park this year. Due to the planning committees extensive investigation of the actual park area, they have decided to move the stations and operational areas inland and into a valley. The idea was to keep all of the radio stations, towers, antenna's, rest rooms and command post within a 1000 foot circle. The radio stations would be on top of the southern ridge giving them the most elevation available in that area, while the command post and eating area would be further down in the valley. The vehicle parking area will be off of the main road and on a rocky area free of the tall grass. Look for the parking sign near the command post and keep the main road clear for emergency vehicles. Also, please be careful of the risk of fire. Do not allow your vehicles to ignite the tall grass.

~Terry Finn. AA6T.

German QRZ?

After several years hiatus, The German Bundesnetzagentur has released an online call lookup at:

<http://ans.bundesnetzagentur.de/Amateurfunk/>

(click on Rufzeichen)

During the time this data was unavailable, German hams were allowed to request to have their entries removed from the public domain if they had data protection issues. The part that says "Standorte von automatisch arbeitenden Amateurfunkstellen" will soon include repeaters, links and other stations operating in automatic mode.

Note that any entries currently on QRZ.COM have been entered from the German hams themselves.

73, Mitch DJØQN/K7DX

~from QRZ

Field Day 2006: ISS Ham Radio Station in Repeater Mode



NEWINGTON, CT, June 7, 2006--The Amateur Radio on the International Space Station (ARISS) equipment will be on the air in crossband repeater mode during ARRL *Field Day* Saturday and Sunday, June 24-25, but pass times for North America are iffy. Crew members Jeff Williams, KD5TVQ, and Pavel Vinogradov, RV3BS, may work some stations personally, but they're already booked pretty heavily during FD weekend.

"We have heard from the ISS crew that they are willing and planning to put the Kenwood radio in crossband repeater mode for Field Day," says NASA ISS Ham Radio Project Engineer Kenneth Ransom, N5VHO. "They will try to participate as time permits but the pass times for North America are not favorable." He's holding off on releasing a schedule of potential pass times until after a planned ISS orbital "reboost" takes place June 9.

Ransom also says the crew may be very busy Field Day weekend since a Russian Progress supply rocket is scheduled to arrive at the ISS Monday, June 26, and much of the crew's time could be devoted to preparing for its arrival. He says the crew's sleep schedule may keep Williams and Vinogradov away from the radio during several possible passes. The crew's normal sleep schedule is 1930 until 0730 UTC, but it could be shifted to work around the Progress docking.



Ransom says the ARISS Phase 2 station will be configured in crossband repeater mode--437.800 MHz up/145.800 MHz down, but it's being requested that only low-power (QRP) Earth stations access the system. "The definition of a QRP station for this activation will be the same criteria that AMSAT is using for its QRP operations on ECHO (AO-51) for Field Day," Ransom explains. One of AO-51's FM transponders (145.880 MHz up/436.150 MHz down, no CTCSS tone needed) will be QRP only during the Field Day period.

A low-power (QRP) station may run no more than 10 W to a vertical or handheld antenna. Some examples:

A barefoot handheld transceiver running 10 W or less output into any type of vertical whip antenna (rubber duck, etc) or *handheld* beam antenna (Arrow type). A mobile station running 10 W or less output into a car-mounted mobile whip antenna. A base station running 10 W output into a vertical omnidirectional antenna on the side of a house.

Ransom says station configurations that would *not* qualify as low-power (QRP) operation would include those using any type of high-gain beam antenna (KLM, M², Cushcraft etc) or any station running more than 10 W into *any* type of antenna.

The crossband repeater should be activated Thursday, June 22 late in the crew day, so earthbound operators will have a chance to practice with their QRP setups and learn how best to deal with the Doppler on the uplink, which can be considerable. The crossband repeater will be deactivated June 26 to accommodate the scheduled docking of the Progress cargo supply ship.



Expedition 13 Commander Pavel Vinogradov, RV3BS (left), and Flight Engineer Jeff Williams, KD5TVQ.
 [NASA Photo]

If Williams or Vinogradov *do* find time to get on the air, Ransom says, they also will use the crossband repeater mode. Williams will give a report of "NA1ISS, 1 Alpha ISS," while Vinogradov will give a report of "RS0ISS, 1 Alpha ISS."

Contacts through the ISS crossband repeater count as a satellite contact for Field Day bonus points, but contacts with the crew do not count for Field Day bonus points.

Ransom says Bob Bruninga, WB4APR, has indicated that PCSat2--which is mounted on the outside of the ISS--will be in packet mode and operating on 145.825 MHz simplex during Field Day weekend.

During FD 2005, the ISS Expedition 11 crew of John Phillips, KE5DRY, and Sergei Krikalev, U5MIR, thrilled a number of ARRL Field Day 2005 operators by handing out contacts from space. Phillips managed about two dozen Field Day contacts over North America during last year's event.

Antarctica's KC4AAA to be on the air for Field Day (Jun 16, 2006)



-- KC4AAA at Amundsen-Scott South Pole Station, Antarctica, has announced plans to participate in ARRL Field Day 2006. The station's Satellite Communications Technician Robert Reynolds, N0QFQ, will head up the effort. Operations from KC4AAA will commence at 1800 UTC on June 24 and continue through 2100 UTC on June 25. Experience has shown that best opportunity for North and South American stations to contact KC4AAA appears around 2300 UTC on the Eastern Seaboard, moving westward with time until the window

closes around 0400 UTC. Given South Pole's location right under the auroral oval, propagation can make South Pole intercontinental HF radio communications a challenge, so listen carefully! The primary operating frequency will be on or about 14.243 MHz. KC4AAA operators will monitor and exploit other bands, but 20 meter SSB will be the primary operating mode. South Pole will operate as a "home" station with supplied power (Class 1D). Reynolds plans to have a team of up to 10 operators staffing the station, most of whom are in a ham radio licensing class at the station. KC4AAA will be running 1 kW and will mainly use a pair of log-periodic antennas aimed toward the US. KC4AAA plans to upload its Field Day log to Logbook of The World (LoTW). QSL cards will be sent later in the year.

For more information, contact Nick Powell, NH6ON.



Technical Tips

By Vic Black AB6SO

Battery Isolators in Two Battery Mobile Systems

A battery isolator is a device using diodes to permit two batteries to charge from the same alternator while blocking current flow from one battery to the other. Isolators are available from car parts stores or from boat supply outlets, such as West Marine. They prevent one battery from discharging into the other in a short time period. The reason this occurs is because any two batteries will have slightly different internal resistances and will therefore discharge at different rates if the batteries are simply connected in parallel. The “stronger” battery allows current to flow out so the batteries can reach electrical equilibrium. The only problem is that it usually overshoots a bit so now the other battery is the “strong” one. The second battery tries to charge the first battery, which has now become the “weaker” battery. Eventually, both batteries are discharged because of internal losses and from “robbing” each other. The result? You can’t start your car. The battery isolator ensures that your radio battery is totally separate from the battery used to operate the vehicle, but both will be recharged whenever the engine is running.

HF Tuning: Tune Up or Tune Down?

When HF single sideband first became popular it was generated using readily available oscillators in the 9 MHz frequency range as local oscillators (LO) and VFOs in the 5 to 5.5 MHz range. The LO was fed into a mixer along with the VFO signal. The output was both the difference and sum of the frequencies. This produced 20 meter signals above the LO frequency and 75 meter signals below the LO frequency. Since the 10 MHz band is digital or CW only it became the de facto dividing line between upper and lower sideband usage. On 160, 75 and 40 meters we transmit on Lower Side Band (LSB). Above 10 MHz we use Upper Side Band. The only exception is the 60 meter band, which is channelized and shared with the military. There we must use USB by mandate from the military. Because we use USB above 10 MHz it is best when receiving to tune from the top of the band down into the signal on bands below 10 MHz and to tune up from the lower part of the band into the signal on HF bands above 10 MHz. If you tune the other way around, the signal will be difficult to tune in as it will suddenly pop up out of nowhere and surprise you.

Screw Sizes

Theoretically, metric and US fasteners are not interchangeable. However in practice, because of built in manufacturing tolerances or allowable deviations from the norm, a #10-32 screw or nut (.190 major diameter, .032 pitch) can be interchanged with M5 x .8 (.196 major diameter, .032 pitch). I used this fact to advantage on my bicycle when some rusty nickel plated steel hex head M5 screws needed replacing. There are now some elegant low profile stainless steel hex socket drive button head #10-32 screws in their place.

Buying Lead Acid Batteries

If you can get a used sealed lead acid battery for free, then go for it. But if you have to pay for a new one, you’ll want to get the freshest battery you can buy. Determining the age of new batteries can be a challenge. If the battery has sat around off a charger for more than six months it may be starting to sulfate. Sulfating can be caused by excessive water loss from the electrolyte from standing for a long time. It occurs when lead sulfate cannot be converted back to charged material.

Manufacturers date code their batteries by stamping a code into the case or by affixing a label. Many use a combination of alpha and numeric characters to indicate the date of manufacture using alpha characters for the month and digits for the year. For instance, “A3” would mean January, 2003, “B3” would be Feb., 2003 etc. Usually they skip the letter “I”.

Fusing Mobile Grounds by Ed Hare W1RFI, ARRL Lab

In mobile installations, some manufacturers stipulate that the negative lead of the radio should be connected to the engine block or chassis; others say to connect the negative lead directly to the battery. If the negative lead is connected to the engine block or chassis it should NOT be fused. If the fuse fails, the shield of the coax feeding the antenna could act as the return path, if the chassis of the radio is not grounded. This will increase the likelihood of noise and, for high-powered rigs, could exceed the safe current-handling capability of the coaxial cable.

If the negative lead is connected directly to the battery, both the positive and negative leads should be fused as close to the battery as possible. The negative lead must be fused to protect the wiring against the possibility of high starter currents. If the connection between the battery and engine block were to fail, and corrosion inside engine compartment does take its toll, when the starter is engaged as much as 200A could attempt to flow through the negative lead, the radio chassis and/or the coaxial cable. This would be an unsafe condition that could set the wire insulation on fire.

With a fuse, the fuse will blow, the starter won’t turn and there is no risk of engine- or passenger-compartment fire from the overloaded negative lead.

There is still a possibility that if the fuse opens, the return path for the radio will be the coaxial cable shield, etc., but that is the lesser of two evils compared to 200A through a small wire.

The most important factor is that if an auto manufacturer has installation guidelines (Chrysler, GM and Ford all do—they are reprinted in the ARRL RFI Book), they should be followed exactly if you want the manufacturer to support the installation

Wire Nuts by Monte Stark KU7Y

Monte “Ron” Stark KU7Y sent along a tip about using twist-on wire connectors. “Don’t forget that when the chips are down and you need to connect to a power source, but don’t have the ‘right’ connector, you can always cut the wires and use wire nuts! This is better than giving up and going home.” He also mentioned that wire nuts might be used in lieu of coax connectors for antennas. “Just to make something clear, this is a ‘last case’ thing, but better than nothing!” Wire nuts are designed for connecting AC mains wiring and cost only a few cents each. Your best bet is to buy a packaged selection of several standard sizes and carry them in your “Grab-it-and-Go” kit. That way, you’ll always be prepared for whatever connection you need to make. Just stick two stripped wires into a tapered insulated nut and twist

PAARAgaphs—July 2006
 Celebrating 69 years as an *active* ham radio club—*Since 1937*

BOARD OF DIRECTORS MEETING. JUNE 7, 2006



dance were President **Terry Finn, AA6T**; former Vice President **Peter Sheerin, K6WEB**; Treasurer **Ron Chester, W6AZ**; **Andreas Junge, N6NU**; **Kristen McIntyre, K6WX**; **David Ungar, W6DH**; **Rick Line, KG6TMD**; **Doug Teter, KG6LWE**; **Joel Wilhite, KD6W**; **Rob Riley, KG6HVW**; **John Eisenberg, K6YP**; and **Stan Towle, WA6ZGI**.

Both the Secretary, **Adrianus Schrauwen, W6AJS**; and Board member **Gerry Tucker, N6NV** had excused absences as Adrianus was out of the Country and Gerry was in Southern California. The Board will consider replacing the Vice President and/or assigning his duties to others at the next Board meeting, as we are much too busy with Field Day duties this month. It was noted that former Vice President Peter Sheerin had submitted his resignation to the full membership in attendance at the last regular meeting on Friday evening, June 2/06.

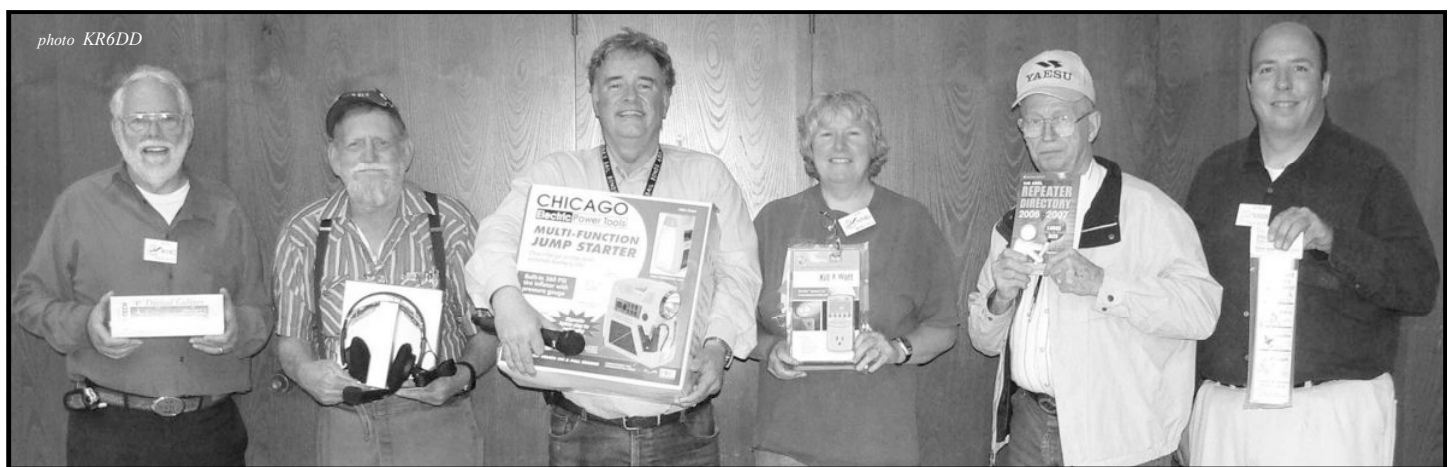
Due to the stuffy conditions and lack of easy parking, the participants elected to leave and travel up to the BRIX Charcoal Grill at 1246 El Camino Real in Menlo Park so we could all have something to eat. Ron Chester gave the Treasurer's report, then there was a general discussion about the up coming Field Day activities. Rick Line gave a brief presentation on how the food concession would be handled and what we should expect from his group.

Rob Riley had prepared a training session on the computer for the logging software that would be used at the Field Day site. The meeting adjourned early so the logging participants could go to Doug Teter's home in nearby Menlo Park for the actual logging software training. There was adequate electrical power and much more comfortable seats available at Doug's house.

Submitted by: Terry Finn. AA6T.

for the Secretary, Adrianus Schrauwen, W6AJS, who was in Europe and unable to attend the meeting.

The Board of Directors met for the regular monthly meeting at the Palo Alto Red Cross offices on Wednesday, June 7th, 06. In atten-



Congratulations: June 2nd PAARA Raffle Prize Winners

- 1st Prize: Ed Gentry KG6KKP / Heil Pro-Set Plus with HC-4 and HC-5 Mic Elements
- 2nd Prize: Terry Finn AA6T / Multi-Function Jump Starter
- 3rd Prize: (not available) / Kill A Watt / AC Electricity Usage Monitor
- 4th Prize: Mike Gavin W6WZ/ 6" Digital Caliper
- 5th Prize: Del Harbold K6JPX / ARRL 06-07 Easy to Read Repeater Directory
- 6th Prize: Byron Beck KG6UOB / QSL Card Holder
- 7th Prize: Kristen McIntyre K6WX / ARRL QSO Log Book

PAARA Members and Visitors: THANK YOU FOR YOUR SUPPORT of the exciting monthly raffles! Since Feb. 03, 86 Radios, including a Yaesu FT-847, an Icom 706 MK IIG, a Yaesu FT-897D, and TWO Elecraft KX1's have gone to Fellow Hams, THANKS TO YOU!

PAARA is having a remarkable year in 2006! If you aren't a member, please join PAARA now, and experience fun 2006 events with the "friendliest club around."

~K6AK Jim

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PAARA July 7th Meeting

PAARA “The Friendliest Club Around”

Palo Alto Amateur Radio Association, Inc. www.paara.org

Date and Time: Friday, July 7th at 7 p.m.

Menlo Park Rec. Center, 700 Alma St., Menlo Park, CA.

Welcome Members and Visitors / Raffle Prizes:

FIRST PRIZE: LDG Z-100 Antenna Tuner



- Tunes From 0.1 to 125 Watts
- Latching Relays
- Current Draw Is Nearly 0 When Tuner Is Not Tuning
- 200 Fast Memories / Decreases Tuning Time Up To 95%
- Optional Interfaces Available For Popular Radios
- Operating Range Is 1.8 To 54MHz

SECOND PRIZE:

Heil “The Traveler” Headset and Cable For Your Radio



Heil ‘iC’ Boom Mic Element
 Pendant Switch / PTT & Up/Down Frequency Control
 Interface Cable NOT Included

THIRD PRIZE: Eton FR-250 AM/FM/SW Radio / Cell Phone Charger / Flashlight

FOURTH PRIZE: Samlex Regulated DC Power Source 120VAC – 13.1V – 5.5 Amps

FIFTH PRIZE: Practical Wire Antennas Book / Radio Society of Great Britain

SIXTH PRIZE: Northern California Repeater Directory / NARCC

SEVENTH PRIZE: Electric Radio Book / Celebrating a Bygone Era

Since February 2003, 86 Radios, including a Yaesu FT-847, an Icom 706 MK IIG, a Yaesu FT-897D, and Two Elecraft KX1’s have gone to Fellow Hams.
 Special Thanks to Bob, Howard, Rick, Mark, and everyone at HRO for their continued SUPPORT!

~K6AK Jim

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Bike Mobile



Directions to PAARA meeting:

<http://paara.org/meetings/>

Palo Alto Amateur Radio Association

P.O. Box 911, Menlo Park, California 94026-0911

Club meetings are on the first Friday of each month, 7:00pm at the Menlo Park Rec Center, 700 Alma Street, Menlo Park, CA.

Radio NET & Swap Session every Monday evening, at 8:30pm, on the 145.230 –600 MHz repeater, PL tone off.

Membership in PAARA is \$18.00 per calendar year, which includes one subscription to PAARAgaphs \$6 for each additional family member (no newsletter).

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145.230 –600 MHz repeater

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control operators:

Week	Operator
1 st Mon.	Pink Foster, KG6ILA
2 nd Mon.	Peter Sheerin, K6WEB
3 rd Mon.	Peter Sheerin, K6WEB
4 th Mon.	Bill Rausch, AA6PA
5 th Mon.	Volunteer!



Join us for pre-meeting eyeball

QSO

July 7th

gab & gobble

Food will be served at 6:00 sharp, so guests will be on time for the PAARA meeting. Those arriving late will be responsible for their own food order.

5:30 pm—at Su Hong Restaurant

1039 El Camino Real

Menlo Park

across from Kepler's Book Store

on El Camino Real

Walking distance from Caltrain!

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PAARA BADGES



To order one,
contact our Badge Coordinator:

Doug Teter, KG6LWE
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W6AZ



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1. Not-for-profit ads by association members for ham-related items and wants. No cost for business card-size ads (additional space at \$2.50 per business card size).
2. For Profit organizations and/or individuals: \$5-business card size, \$25-half page, \$50 full page or back cover.

These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association. The PAARAgaphs editors reserve the right to reject any ad deemed to be not in the best interest of the Association.

All fees payable in advance by the year with "scanner-ready" copy or text-only ads. Give payment and copy to Terry Finn, AF6TF

