

Calendar of Events

Jun 1	Sat		Two Rock & Roll Bike Trek (Public Service Event) See SCRAPS article inside. Contact: John KD2L (707) 575-9176
Jun 1	Sat	10:00 AM	Red Oak Victory ARC Meeting, Point Richmond
Jun 5	Wed	5:30 PM 7:30 PM	Dinner at Marie Callenders, 2460 Mendocino Ave, Santa Rosa SCRA Meeting , Agilent Technologies, 1400 Fountain Grove Prkwy, Santa Rosa
Jun 7	Fri	7:30 PM	Marin ARC Meeting, Alto Clubhouse, 27 Shell Road, Mill Valley
Jun 12	Wed	6:30 PM	SCRA Board of Directors Meeting, 3450 Airway Dr., Santa Rosa
Jun 19	Wed	7:00 PM Wed 7:30 PM	REDXA Meeting, Carrow's, Petaluma Valley of the Moon ARC Meeting, McDougall Hall, Sonoma Developmental Center, Glen Ellen.
Jun 21	Fri	8:00 PM	San Francisco ARC; VA Medical Center, 42 nd Ave & Clement, San Francisco
Jun 22-23	Sat - Sun		FIELD DAY! See article inside for details.
Jun 24	Mon	7:00 PM	Willits ARS Meeting, Brooktrails Firehouse, Willits
Jun 28-30	Fri - Sun		San Francisco Section Convention , Ferndale, CA Info: www.humbolt-arc.org

Sonoma County Radio Amateurs, Inc.

P. O. Box 116
Santa Rosa, CA 95402-0116

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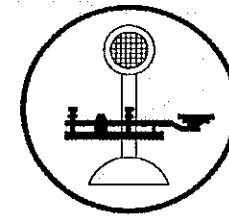
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WB6FRZ



Club Station
W6LFJ

Short Skip

newsletter of the

Sonoma County Radio Amateurs, Inc.

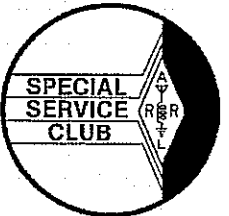
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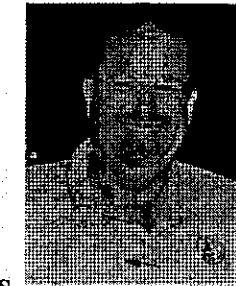
Repeater Station
W6SON

Volume 27 Number 6

June 2002

QTC

by
Bill Hillendahl KH6GJV
SCRA President



The Big Project - ARRL's Education & Technology Program

As most of you know, one of my favorite aspects of our hobby is to teach classes to bring in newcomers to the wonderful world of Ham radio. When I heard **ARRL President Jim Haynie W5JBP** talk about his dream of the "Big Project" when he first took office, I was excited, but skeptical because I knew that it would take money that the League didn't have. Jim said that he would use his persuasion skills to find benefactors, and if you have had a chance to talk to Jim in person, you would know that he is the

guy who could get it done! Well, the "Big Project" is rolling, thanks to the support of the ARRL Foundation, the Brandenburg Life Foundation and other donors. Program Coordinator **Jerry Hill KH6HU** has recruited pilot schools throughout the US to participate. Equipment has been provided to the schools and a professionally

developed curriculum that will include math, science, language arts, social studies and world geography is being developed. The program will provide equipment and a library of manuals, videos and CDs, along with mentoring from a local club.

If you are a League member, you should have already received a mailing from the League asking for a contribution to the \$252,000 needed by June 30th for Phase I. Yep, another request for money. We get them all the time. I generally send a donation to support our spectrum protection

(continued on page 3)

FCC's Releases Details of 5 MHz 136 kHz & 2400-2402 MHz Proposals

The FCC has released the Notice of Proposed Rulemaking in ET Docket 02-98, which proposes to create new amateur allocations at 5 MHz and 136 kHz and to elevate the status of Amateur Radio at 2400 to 2402 MHz from secondary to primary. In response to separate petitions filed by the ARRL, the FCC voted unanimously May 2 to adopt the NPRM in ET Docket 02-98.

The Commission announced in a Public Notice released May 9 that it would propose a new, secondary, domestic (US-only) HF allocation at 5.25 to 5.4 MHz and a new LF allocation 135.7 to 137.8 kHz. If eventually approved, the 5 MHz band would be the first new HF allocation since the early 1980s, when amateurs got 30, 17 and 12 meters. The LF allocation would be the first ever for US hams. The FCC said it received 87 comments on the 5 MHz proposal and 32 comments on the LF proposal.

"We agree with ARRL that propagation and interference conditions in the 3500 kHz and 7000 kHz bands could hinder effective amateur HF communications," the FCC said in its NPRM. "In particular, as ARRL indicates, the nature of the ionosphere prevents communications during certain portions of the day because of increased atmospheric noise levels at certain times on certain frequencies."

The FCC said ARRL's WA2XSY experimental operation "appears to support its contention" that the band could supplement 80 and 40 meters at certain times.

The FCC has proposed letting amateurs operate at full legal limit on a new 5 MHz allocation, but it left open for further discussion whether to restrict the band to Amateur Extra Class licensees or make it available to General and higher class licensees. The FCC also invited further comment on whether the band should be broken down into mode-specific subbands. The ARRL had proposed opening the entire band to RTTY, data (including CW), phone and image emission types.

(continued on page 4)

2002 Club Officials

President	Bill Hillendahl	KH6GJV	707 544-4944
Vice President	Brian Torr	N6IYY	707 575-5871
Secretary	Jeff Basham	W2JAB	707 542-3860
Treasurer	Vicki Cero	KF6ZCT	415 673-3859
Director	John Breckenridge	WB6FRZ	707 838-6398
Director	Jim Lee	KE6VGV	415 892-0317
Past President	Greg Gordon	AC6VJ	707 523-7077
Activities Chairman	Mark Lockwood	KK7CU	707 332-4836
Public Service Chairman	John Mullan	KD2L	707 575-9176
Repeater Chairman	Greg Gordon	AC6VJ	707 523-7077

Short Skip & Web Staff

Editor	Bill Hillendahl	KH6GJV	707 544-4944
Hank's Swap Shop	Jeff Basham	W2JAB	707 542-3860
Web Master	Jeff Basham	W2JAB	707 542-3860

Contacts

Antenna Ordinance/Legal	Lee Dibble	KE6EAQ	707 544-1675
Public Relations	Bill McCall	W2WDM	707 538-2844
Raffles	Mark Lockwood	KK7CU	707 332-4836
Refreshments	Ted DeCroff	KB6PTA	707 542-4008
TV/RF Interference	Alan Bloom	N1AL	707 538-7115
Volunteer Exam Liaison	John Mullan	KD2L	707 575-9176

SCRA Hotline	707 579-9608
SCRA E-Mail	scra@sonomacountyradioamateurs.com
SCRA Web Site	http://www.sonomacountyradioamateurs.com

Tuesday Night Net

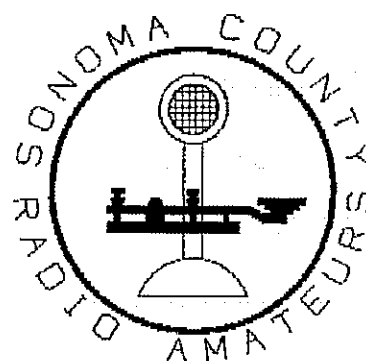
Check in to the SCRA net each **Tuesday** evening on the **146.985-(PL 88.5)** repeater at **7:00 PM**. Announcements are made of upcoming SCRA and other amateur radio activities in the area and what is listed in Hank's Swap Shop. You will also hear the weekly *Amateur Radio Newsline* broadcast.

Short Skip Advertising Rates

Business Cards	\$ 12
1st Quarter Column	\$ 13
Each Addn'l Quarter Column	\$ 4
Full page (one side)	\$ 35
Pre-printed inserts (each)	\$ 35
Guaranteed circulation of 200 per month!	
For more information, contact the Editor.	

HUNGRY BEFORE
THE MEETING?

JOIN US FOR DINNER! We meet at Marie Callenders restaurant, 2460 Mendocino Avenue (corner of Mendocino & Chanate), Santa Rosa. People start showing up at 5:30 PM. No RSVP is required! See you there!



NEXT MEETING
June 5th
7:30 PM

Program:
Field Day 2002
Contesting 1A

(See article)

CLUB MEETINGS

The club normally meets the first Wednesday of each month at:

Agilent Technologies
1400 Fountaingrove Parkway
Santa Rosa, CA

The meeting starts at 7:30 PM

ALL ARE WELCOME!

Please join us at our next meeting. Membership in SCRA is open to anyone interested in Amateur Radio. A membership application is included in this newsletter.

Interested? For more information, contact any SCRA officer, director or member.

Public Service Events Calendar

John Mullan KD2L, SCRAPS Chairman

June 1 - American Lung Association Two Rock and Roll Bike Trek - new event this year. Base of operations at Sonoma State University. 10, 35, and 65 mile courses through West Petaluma, Two Rock and South Sebastopol. Rest stops at Hessel Grange, Plaza Park in R.P., Tomales, Laguna school, and Two Rock.

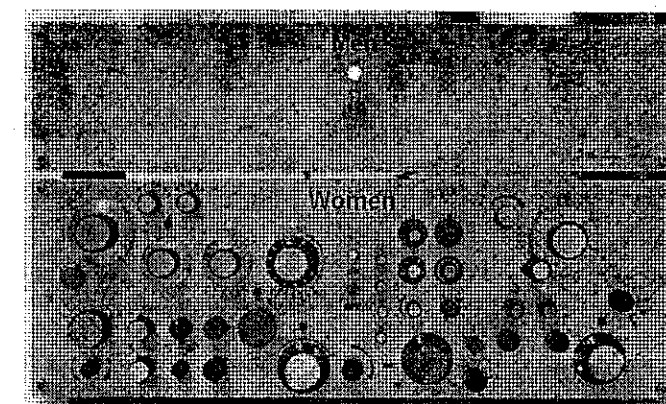
June 22 - Terrible Two - Santa Rosa Cycling Club Terrible Two - This is the granddaddy of all our events in 2002. It starts before the sun comes up and finishes at 11:00 PM. In between bicycle riders will attempt to ride 200 miles, with 16,000 feet of climb. While this is not a race, some riders treat it as if it were. This event has resulted in some major injuries to riders in the past, which have caused our communications to be of vital importance. See <http://www.srcc.com/tt.html> for more information. Start/Finish is at the Willowside School on Hall Rd. Rest stops are in Calistoga, Lake Sonoma, Gualala, Fort Ross, Monte Rio. Sag wagons are used for this event as well. The progress of each rider is tracked over the course, resulting in a large amount of traffic over the net. This event is on Saturday of Field Day weekend.

Jul 20 - Healdsburg Chamber of Commerce Harvest Century Ride - A low key family oriented bicycle event. Start/Finish at Healdsburg High School, several rest stops and sag wagons. Good food when you are finished.

Sept 15 - Sonoma County Diabetes Society ride - Another low

key, family oriented ride. Start/Finish at the Airport Business Park. Rest stops at the EAA hangar on Windsor Rd, at Hoofbeat Park in Healdsburg and on Starr Rd. Several sags. More good food at the end of the day.

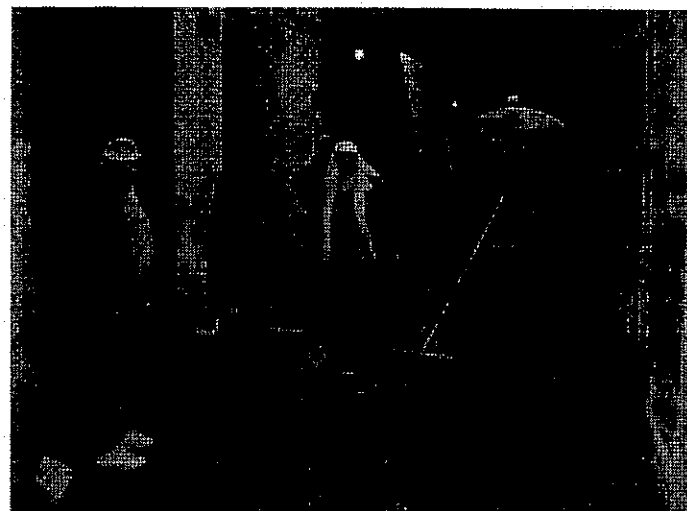
About sag wagons for these events: given that a lot of the vehicles used for sag wagons are whatever the volunteer driver has available with a bike rack, sometimes there is not a lot of room for a radio operator as well as the driver and then bike riders and bikes. Because of this we are often seeing sags without radio operators. This is the choice of the event organizers. We wish we could get radios into each and every one of these sags. Several regular sag drivers have gotten their licenses to help out on these events. If you have the opportunity, talk up the hobby with the sag drivers without radio ops.



Sonoma County Radio Amateurs, Inc.		Membership Application		New [] Renewal []	
Please Print Clearly					
Name _____	Call Sign _____	License Class _____	Date _____		
Address _____		Hm Phone _____	Wk Phone _____		
City/State _____		Zip _____	E-Mail _____		
ARRL Member? [] Yes [] No					
Dues & Fees: (SCRA dues year is from 3/1 to 2/28)			Payment Calculations: Make checks payable to SCRA		
Individual/Associate Member	\$ 20 (\$5.00/qtr)	Dues - Full Year (3/1 to 2/28)	\$ _____		
Family Membership	\$ 30 (\$7.50/qtr)	Dues -			
Under 18 Membership	\$ 10 (\$2.50/qtr)	Prorated _____ Qtrs. X \$ _____ /qtr	\$ _____		
Badge	\$ 7	Badge	\$ _____		
Badge Information		Other - _____	\$ _____		
Call Sign _____		Donation	\$ _____		
First Name _____		Total	\$ _____		
City _____		Mail to: SCRA, P. O. Box 116, Santa Rosa, CA 95402			



Ranger Sam explains the rules of "incarceration" to the group on the boat ride to the Rock



L-R - Brian N6IY, Paul, Tim KH8IDP, John WB6FRZ & Karl K6QMT at hard labor.



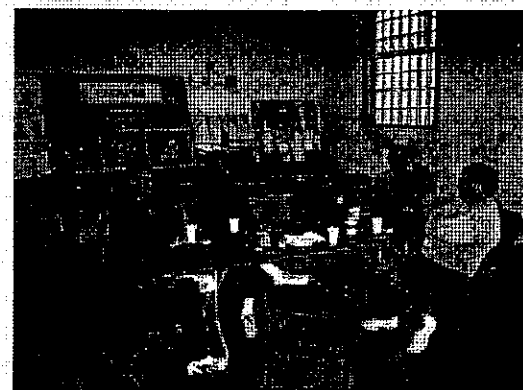
Roy Adam N6FUN and XYL Yumiko from the SF club share in the work.



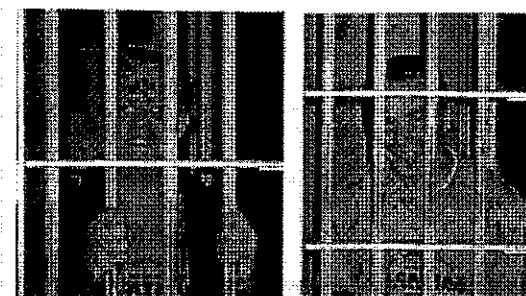
Mark KK7CU attempts contact to the free world to arrange escape.



The escape tunnel.



The convicts at rest



Jeff W2JAB
Would you buy a used radio

Zach KG6ABA
from either of these guys?



June Program Field Day and Contesting 1A

Join us on **Wednesday, June 5th**, for an in depth discussion on the club's annual Field Day activities. Set up, operations, logging, and of course, FOOD will be discussed. An introduction to contest operating will be made to take the mystery out of the process. It really isn't hard; anyone can do it.

At the May meeting, **Mike Polkinghorn K6PUD** made a presentation on how he helped put together a large scale Field Day operation in the South Bay. Hams from all over the area join in and over the years the event has grown to be generally a 10A+ operation. Mike, thanks for a great program.

SCRA's Mobile Communications Unit The "Toaster"

If you have not had a chance to come by and help, make it a point to do so. The project is fun and you get to be on the ground floor of designing and building the club's mobile communications center. The "Toaster" will be able to be used at public service events, Field Day, ARES events, and, of course, true emergencies should the need arise. The vehicle will also be a good public relations device to keep Amateur Radio in the mind of the general public. Work parties are held each Saturday from 10 AM until about Noon at **Lee Dibble's home, 1290 Parsons Drive, Santa Rosa.** Come and join the fun!

Are you a budding author? Write an article for *Short Skip* on a Ham radio-related subject, technical or non-technical. E-mail the article to kh6gvj@arrl.net. We'd love to see YOU in print!

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J. Mullan, Photographer

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jmullan@pacbell.net

John C. Mullan
Photographer

Fresh-Tasting "Toaster" Fundraiser

By John Breckenridge, WB6FRZ

The club needs your help in a tasty fund-raiser for the "Toaster!" As many of you know, the club has taken on the project of restoring a motor home (the "Toaster") and transforming it into an effective portable communications center. To raise funds for this task, we are asking YOU to help sell coupon books for tasty deals at Fresh Choice restaurants. The price is \$5 per book and contains \$85 worth of coupon savings at any Fresh Choice restaurant. Buy several to sell or as gifts, or get one for yourself and family. Either way you win, and the community is served by making it easier for your club to complete work on this worthy project. For details, contact John Breckenridge, WB6FRZ at (707)838-6398 or come to the next club meeting.

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Our Secretary, Jeff Basham, was presented one of the Press Democrat's ten Youth Service Awards for 2002 at the May 14th ceremony at the LBC. Jeff was nominated in the Drama category by his teachers at Piner High School where Jeff



Jeff W2JAB and Builders Exchange CEO Keith Woods at the ceremony.

Photo by KE6VGV

is a Senior. Jeff was selected from a field of fifteen candidates from other area high schools. Jeff was recognized for his service to Piner's drama department, specifically his effort in keeping the lighting system running, and for his extracurricular work using his amateur radio and people skills in community service. Way to go, Jeff!

QTC (continued from page 1)

each year, as well as the other charities I support. This year I sent in a donation to the Big Project. I think that it is equally important as spectrum protection because without licensees, for whom will we be saving the frequencies? If you have it in you budget, please consider sending in a donation. For more information on Education and Technology Program, visit the ARRL website at: www.arrl.org

See you at Field Day! And bring a newcomer!



ARES Comm Log

by Rich Freitas KF6SZA
Greater Santa Rosa
Emergency Coordinator

EmComm 2002 Report

EmComm 2002 has come and gone. The weekend flew by as quickly as anything you enjoy doing but I guess it's that way with most things in life. The bad ones go by excruciatingly slow while the good ones seem to be over in an instant. The venue, the content and the organization of this event left nothing to be desired except more of the same. Even the weather was superb. If it sounds like I had a good time you're right! I was extremely impressed with this conference on emergency communications.

After driving the requisite five hours to Palo Cedro (go to Redding, hang a right and drive for 10 miles) we checked into our motel and decided to see what was happening at the conference site even though the event wasn't to open until the next morning. We arrived just in time to help set up the special event station tent after which about 35 us attendees converged on a local restaurant for dinner and I attempted to ingest a prime rib that easily would've satisfied a family of four.

At 7:30 the next morning the doors opened for check-in and the conference was off to a good start. We had some opening ceremonies which were followed by a state OES/ACS update and a presentation on how mutual aid works (or should work) by Bill Pennington, WA6SLA, Asst. Chief Telecommunications Officer for California OES. The next session outlined the historic role of private volunteer organizations in America and was presented by Dave Thorne, K6SOJ, Sacramento Valley SEC and a major organizer of the event. Bill Frazier, W7ARC, gave a report on the World Trade Center event titled "I Was There" and he was for ten days! We heard a report on a major exercise recently conducted in Shasta County and then a presentation on "ready kits". After that we moved to either of two sessions; American Red Cross Introduction to Disaster Services or Traffic Handling and Radiogram Workshop. Now we were into the serious stuff. In between all of this was lunch and a chance to view the displays of club and individual mobile emcomm units. At the end of Day 1 we had some time to socialize, compare notes and enjoy a great BBQ dinner accompanied by the school jazz band. Tired and satisfied we trudged back to our motel rooms while the hardier soles dispersed to their tents and campers.

The next morning began with divergent classes on Disaster Services (a repeat from Saturday), a great presentation on Incident Command System and SEMS by

Jerry Boyd, K6BZ, Sacramento Valley Section Manager. These sessions were followed by a WX Spotter/SKYWARN class and an ARES Leadership Seminar. At this point it was time for the closing ceremonies and time to start planning for next year's event.

All in all I was very pleased with the conference. I would encourage all of you with an interest in emergency communications to consider attending next year's event. By the way, the club who won first prize in the mobile emcomm unit show was the group that sold us "The Toaster". Next year we can show them a real communications vehicle!

Our weekly ARES net is at 7:30 PM on Mondays on the SCRA 146.985- MHz repeater. Please join us.

FCC (continued from page 1)

Assuming the 5-MHz band eventually is authorized, it could be a few years before it actually becomes available. The band 5.250 to 5.450 MHz now is allocated to Fixed and Mobile services on a co-primary basis in all three ITU regions.

On 136 kHz, the FCC has proposed mirroring technical limits suggested by Canada during World Radiocommunication Conference 2003 preparations to 1 W effective isotropic radiated power (EIRP) and with a transmission bandwidth of only 100 Hz. The ARRL has asked for than 2 W EIRP and a maximum transmitter power of 200 W PEP.

The FCC proposed no restrictions on antenna size or design, saying it did not want to inhibit experimentation by hams. It proposed to limit access to the band to General and higher-class licensees, as ARRL had proposed.

The FCC said it was reluctant to also propose allocating an amateur band at 160 to 190 kHz--as ARRL had requested--because of concerns about possible interference to unlicensed power line carrier (PLC) systems in that band. The FCC noted it had turned down a 1978 ARRL petition for the same reason.

The FCC said ARRL's request to upgrade the 2400-2402 MHz band "has merit." It did not propose any changes in service rules or operational requirements.

The NPRM is available on the FCC Web site http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-136A1.doc. The FCC is expected to soon make this proceeding available for comments filed via its Electronic Comment Filing System (ECFS). Visit the ECFS site <http://www.fcc.gov/e-file/ecfs.html>, click on "Search for Filed Comments" and enter "02-98" in the "Proceeding" field.

Sonoma County Radio Amateurs, Inc.

Membership Meeting, 1 May, 2002

1) Call to Order, Verification of Quorum - The meeting was called to order by Secretary Jeff Basham, W2JAB, at 7:32 pm at the Santa Rosa Agilent Technologies facility.

a) Introductions

i) Officers & Directors - The club officers and directors introduced themselves. Treasurer Vicki Cero, KF6ZCT, was excused.

ii) Guest Speaker - Michael Polkinghorn, K6PUD, was introduced.

iii) Visitors - Boies Bevans, WD6EGG, recently of Rancho Palos Verdes, and his son Bill introduced themselves.

iv) New Calls and Upgrades - Patrick Coyle, KG6JSF, upgraded to General.

2) Approval of Minutes - It was moved and seconded by Bill Waters, AC6MA and Randy Black KE6VMZ, that the minutes as printed in Short Skip be approved. The motion passed.

3) Officer and Director Reports

a) Vice President - Brian, N6IY, made plea for members to consider acting as Net Control for Tuesday night nets. Copies of the script were made available.

b) Secretary - Jeff, W2JAB reported the following:

i) The information in the newsletter has been updated

ii) Field Day merchandise is available, please place order tonight.

iii) Mail has been distributed

c) Treasurer - Jeff, W2JAB, updated the membership on the current financial status in Vicki's absence

d) Directors

i) Jim Lee KE6VGV - Nothing to report

ii) John Breckenridge WB6FRZ - Nothing in particular to report.

e) Past President - Greg AC6VJ - Nothing to report.

4) Committee Reports

a) ARES - Rich KF6SZA gave report on EMCOMM. The convention was impressive, well-attended. Also, check into ARES net on Mondays, 7:30pm 146.985 pl 88.5

b) Rolling Toaster Communications Van - Lee KE6EAQ reports that Toaster still needs work. It needs to be out of his barn by end of June. Come out, you'll learn something. 10am every Saturday at 1290 Parsons Dr., SR. Lee gave an update on the expenses and donation. Since last month, the Fresh Choice coupon book sales have earned \$135.

c) Activities Committee - Mark Lockwood KK7CU reported the following:

i) Field Day volunteers needed. Need people sign up for station captains, setup, and take down.

ii) Alcatraz - There are 17 spots left. Order T-shirts tonight from John, WB6FRZ, for \$15.00.

d) Newsletter Editor - Some members just received Short Skip today, even though they were all mailed on April 18.

e) VE Session - John Mullan, KD2L, reported that a VE session was held April 20. Processing of data for that session is only now beginning.

f) Public Service - John Mullan KD2L, reports that upcoming events Wine Country Century bike ride on May 4. Need lots of operators; about 2000 cyclists are expected. Also, there is a new (for SCRA) event, the American Lung Association's Two Rock & Roll bike ride on June 1. The Terrible Two bike ride is on June 22, the same weekend as Field Day. John also asked what folks would like for the Field Day menu. Chicken and Ribs seems to be the answer.

g) Repeater Committee -

i) The RLC-4 controller has been purchased and is replacing the RLC-2 on English Hill. RLC-2 has been moved to Castle Rock.

ii) A repeater in San Jose which uses the 146.985 pair backwards had been off the air when our testing of the frequency began. It has been turned on, but without PL (it should be in PL). If the SCRA repeater is not coordinated, it is the "burdened" repeater and should not cause interference.

5) Unfinished Business - None

6) New Business - None

7) Member Biography - Jeff, W2JAB, described how he got interested in

ham radio.

8) Show & Tell - Al Ferrara, WA6MXI, and Bob Magnani, K6QXY, had the newly-restored SCRA generator in the parking lot for all to see. Thanks to Al and Bob for doing an excellent job in the restoration. Al reports that it should be kept under a car cover to prevent further body damage.

9) Recess - There was a 10 minute break from 8:13 to 8:23 pm

10) Program - Michael Polkinghorn, presented on "How to Have a Big Honkin' Field Day". He has seen Field Day grow from just a few stations to 18. There are more problems with more stations, but there are more people to help solve those problems, and many lessons learned along the way.

11) Raffles -

a) Lottery - Catherine Heater, KE6QHJ, was selected for the membership lottery. Catherine was not present and the lottery rolled over.

12) Announcements - None

13) Adjournment - The meeting was adjourned at 9:42 pm.

Respectfully submitted by Brian Torr, N6IY, acting Secretary

Minutes of the May 8, 2002, Board of Directors meeting did not arrive in time for publication.

ALCATRAZ!

On Saturday morning, May 18th, a group of brave souls made their way to San Francisco's Pier 41 for an overnight stay on the Rock.. The weather was cooperating and the trip over had a bit of fog which cleared quickly. Ranger Sam was assigned to our group and led us on our short "hard labor" project. Then the group was treated to the audio tour of the cell house and the fine feast prepared by Jim Lee KE6VGV. Once the meal was consumed, off to the theaters for a view of the most recent movie filmed on Alcatraz, the Rock. When the movie was over, Ranger Sam took the group on an evening tour of the island, including the powerhouse, the underground tunnel to the industries building, the chapel, the gun gallery and the hospital. Of course, the sleeping accommodations were the luxurious D block, complete with snoring and seagull sounds. After release from the island, many of the group played "tourist" in San Francisco. Check out the photos on the next page.

CHARLES J. TARR

Attorney at Law

WA6VAG

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HSC Web Specials!

The items below can be found in the "Specials" area of our on-line shopping pages at www.halted.com...check them out and use our secure site to place your order for the holidays!

Fujitsu FPG-310 Color Pen Plotter GPIB (IEEE-488) interface Bboxed, w/ manual, cord, 90-day warranty HSC# 19131	Computer Power Supply, ATX, 145W HSC# 18350	\$9.95
Rechargeable 12VDC Battery 40 AH, lead/acid, Yuasa NPX-150R HSC# 18917	Network card, ISA bus, 10-Base T HSC# 18943	\$4.95
Server Cabinet, ATX rack mount, with Power Supply, White color HSC# 80541 New Price!	Computer Speakers, powered HSC# 18662	\$9.95
Battery charger, NiMH HSC# 19151	Game-pad, Microsoft "Sidewinder" HSC# 80486	\$12.50
SCSI Controller, Initio, PCI Bus HSC# 18218 New Price!	Compact AC Inverter for the car, 100W HSC# 19021 New Price!	\$14.95
SCSI Controller, Adaptec 1505, ISA Bus HSC# 17995 New Price!	Motherboard, 486DX4 AT HSC# 18529 New Price!	\$9.95
Mouse, 2-button HSC# 18731	Motherboard, Baby AT, 486VLB HSC# 18903	\$9.95
Mouse, w/ numeric keypad HSC# 80539	Multimeter, analog, VOM HSC# 19260	\$9.95
Scrolling mouse, translucent body HSC# 18829	Multimeter, DMM, with transistor check HSC# 80370	\$14.95
Computer Power Supply, ATX 200W, "Mini-Tower"-style HSC# 18665 New Price!	Multimeter, DMM, tilt-up display, nical HSC# 80504	\$39.95
	Computer Joystick, "FX2000" HSC# 18772 New Price!	\$3.00
	Tower Chassis, 7-Bay "RAID" HSC# 80544	\$42.50

Disk Drive Deals!

- Seagate ST 15150N 4.3 GB "Barrecci" SCSI
- 7200 RPM, 8.09 G/rev avg. seek time
- 21 Hds, 11 Disks, 3.711 Cyl.
- Standard 50-pin SCSI
- 3.5" size, half-height (1.5" tall)
- Reliable, 90-day warranty

HSC# 18412 \$32.50

- Seagate ST18171WC, Ultra-SCSI Wide AS42
- Formatted capacity: 9.1GB
- Spindle speed: 7200 RPM
- 3.5" size, half-height (1.5" tall)
- 80-124 mb/sec internal transfer rate
- Average Access (read/write): 0.7-10.7 ms

HSC# 18753 \$39.95

Special... buy this drive & get a 50-pin (HSCA23700) or 68-pin (HSCA23720) Adapter for \$10.00! Normally a \$20 - 30 value!

PCMCIA Goodies!

- EPSON Edmotel PCMCIA interface card
- Both 10Base2 and 10BaseT cables included!
- Compatible with notebooks/PCs with Type II slots
- Hot card insertion and removal - no power down
- No jumpers or switches - two LED status lights
- New, boxed, diskette & manual, 90-day warranty

HSC# 19125 \$9.95

- Intel PRO/100 PCMCIA Network Adapter Card
- MBLA1800 LAN card supports 10BaseT/100Base-TX
- For PC Card Type II sockets, 32Kb packet buffer
- Full duplex support (10Mbps networks only)
- Edmotel System, IEEE 802.3 & 802.3u spec
- With RJ45 cable, OEM packed, 90-day warranty

HSC# 19190 \$39.50

- Epson/Adaptec AP440B PCMCIA SCSI Card
- Up to 2 MByte/sec PC Card bus rate
- New, OEM pack with DB25 cable, 90-day warranty

HSC# 19160 \$49.50

VHS Video To Go!



- "Videoconex" Model No VHS-105 player deck
- Dual power option - 110VAC or 12VDC
- Perfect for center lining the kids in the van!
- Many other uses: home, business, camping...
- Standard NTSC VHS format, full front-panel controls, soft-touch buttons with LED's
- Remote control sensor on front panel - remote NOT included... many work with generic remotes?
- Removed from working service, 90-day HSC warranty

HSC# 19048 \$19.95!

VHS for even less!



- Magnavox Model No VR9100AT01 video player
- Standard "I" type connectors for inline connection
- Real panel switch selects Ch. 3 or Ch. 4 output
- RCA jacks for line level video/audio connect
- Pulled from working service. Units have slight markings from removed infrared transmit element covering front panel infrared detector. Remote NOT included.
- For 110VAC, 60Hz operation
- Removed from working service, 90-day HSC warranty

HSC# 19152 \$17.50!

External CD-RW!



- Hewlett-Packard Model 7200 Series CD-RW
- Use just like a floppy! Shares printer port
- Drag & drop up to 650MB on a single CD-R
- 2X write on CD-RW, up to 6X read on CD-R
- 1X RW, 150KB/sec, 2X RW, 300KB/sec
- 6X Read, 800KB/sec - drives small, all HP websites
- EIDE (ATAPI) interface w/MB, front tray load
- 74 min. on 135mm disk, 21 min. with 80mm disk
- Power supply not included (power provided)
- Refurbished, 90-day HSC warranty

HSC# 19036 \$49.50

Lab Bench Supply!

- Model No. AEEC-350, 0-50VDC, 83 Amp
- 110VAC, 60Hz - 160VA - small footprint
- Dual digital meters for voltage and current
- Short-circuit protected, grounded I+ve lead
- New, IEC power cord, manual, 90-day warranty

HSC# 80606 \$139.00

Variable Transformers!

- One of the most useful instruments on your bench!
- Always wanted one, but they were too expensive!
- Two sizes to choose from, now they're affordable!

- Both new in box, made in China
- Model AEEC-500VR
- 0 - 120 VAC output, 500 VA
- Measures 6.5" x 10" x 7" tall
- Features meter, illuminated switch, line cord, fuse

HSC# 80474 \$45.00

- Our most popular model!
- Model AEEC-250VR
- 0 - 120 VAC output, 250 VA
- Measures 8" x 10" x 9.5"
- Features meter, illuminated switch, line cord, fuse

HSC# 80461 \$95.00

Solder Pots!

- Finally... we found a source for solder pots! New, 90-day HSC warranty, very handy for the workbench!
- AEEC-10P - handy compact desktop unit
- 110VAC, 110 Watts - perfect for small jobs
- Adjustable temp. levels - 300 to 430 deg. C
- Both dimensions: 30mm dia x 30mm deep

HSC# 80610 \$32.00

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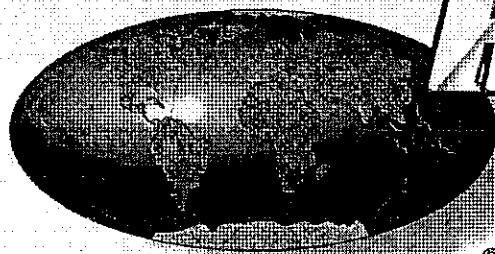
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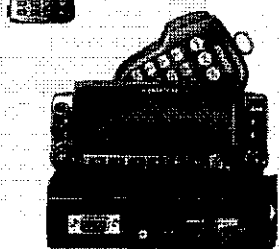
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- 220 mHz, opt. barometer unit
- Alpha Numeric Display
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FT-100D HF/6M/2M/70CM Trans.

- Compact Transceiver w/detachable front panel
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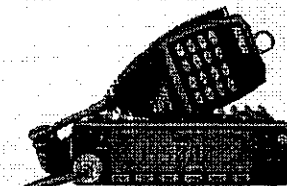
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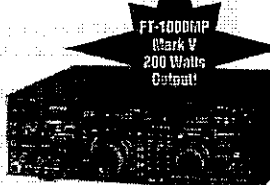
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- "S" Meter
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- 100 mHz • Built-in TNC 1200 & 9600 Baud
- Front Panel GPS In • Rear DB-9 Port
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