



PAARAgraphs



Celebrating 64 years as an *active* ham radio club—*Since 1937*
Newsletter for the Palo Alto Amateur Radio Association, Inc.



CALENDAR



- Apr.....6, **PAARA Meeting**, 7:30
Menlo Park Recreation Center
700 Alma Street, Menlo Park
- Apr.....11, **PAARA Board Meeting**, 7:30
Red Cross Bld., 400 Mitchell Ln., Palo Alto
- May.....4, **PAARA Meeting**, 7:30
- May.....9, **PAARA Board Meeting**, 7:30
- June.....1, **PAARA Meeting**, 7:30
- June.....6, **PAARA Board Meeting**, 7:30

2 m CODE PRACTICE, 2000 to 2030 PST Tues
N6NFI 145.23 repeater
Also try 7.100 for 24 hr code practice

PROGRAM

March 2, 2001
7:30 P.M.

Speaker:
Dr. Francis Winslow



Director of Emergency Services
City of San Jose

**"The Role of Amateur Radio in Civil
Emergencies"**

Join us for pre-meeting eyeball
at Su Hong Restaurant, 1039 El Camino Real, Menlo Park
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 order and bill.

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

Fred Canham, K6YT, SK

I was very sorry to read that Fred Canham, K6YT, became a Silent Key on February 16th. It was Fred's voice that I first heard coming from the speaker of my newly-completed Knight Kit Star Roamer 4-tube shortwave radio in 1968, leading the "Igerotes" net on 160 meter AM with his then-call of W6QWF. As a 14-year old kid, I was fascinated by the discovery that some real Hams were still using AM, the only mode that the Star Roamer could handle. Fred's commanding signal and opulent modulation filled the bedroom as he passed the frequency over to fellow Igerotes like W6EAJ with his water-wheel-powered station up on Horse Mountain Ridge in northern California.

When I joined PAARA a couple of years later, I was astonished to hear in person the voice I had been listening to on 160. Fred was the only PAARA president I knew from then until I left the Bay Area to pursue grad studies in Boston in 1976. It's difficult to put any bounds on his many, many PAARA contributions – whether as a stalwart at the Board Meetings, as the guy who assembled and mailed the PAARAgraphs that I edited and printed, as net control for the AM and later FM simplex PAARA nets, as a participant in PAARA's support for the Redwood City 4th of July parade and other civic events, as the leader of the Field Day effort and master tower climber and generator maintainer, or even as a troubleshooting expert on ailing ham radio equipment. Fred's easygoing manner, generosity with his time, lifelong dedication to amateur radio, and wry humor helped form PAARA into one of the longest running radio clubs on the West Coast.

Shortly after I moved back to the Bay Area, I gave a talk at the PAARA club meeting last year and was privileged to meet with Fred again and chat briefly about our many years of association. It was a great gift to experience his humor and enduring interest in ham radio for what was to be our last encounter.

I still have the Star Roamer radio that I built when I was a kid. But now, propped up next to its dial, is a treasured QSL card I received almost three decades ago. The QSL commemorates an on-the-air visit with the Igerotes net using my new license and a Heath DX-100 AM transmitter – and the card is printed with the callsign W6QWF. May you rest in peace, Fred; the Palo Alto radio club has flourished because of you.

® Rick Ferranti WA6NCX
San Carlos, California

(We would be pleased to publish experiences others have had with K6YT—ed)

Miscellaneous Dates

Flea Market at Foothill (info at: <http://joslin.com/FleaMarket>)

PAARA Palo Alto Amateur Radio Association
meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30,
contact: Andreas Junge N6NU.....(650) 233 0843

FARS Foothills Amateur Radio Society
meets 4th Friday 7:30 each month,
contact: Sheldon Edelman N6RD, 650-493 7212, n6rd@earthlink.net

NCDXC Northern California DX Club
meets 2nd Friday 7:30 each month, repeater for member info 147.360, Thur 8.00PM,
contact: Bob Mammarella KB6FEC 408 729 1544.

NorCalQRP Northern California QRP Club
meets 1st Sunday each month,
contact: Jim Cates 3241 Eastwood Rd., Sacramento, CA 95821.

Perham Foundation,
contact: Jerry Tucker N6NV 650-961-3266

SPECS Southern Peninsula Emergency Communication System
meets each Monday 8:00PM on Net 145.27, 440.80 MHz, www.specsnet.org
contact: Tom Cascone, KF6LWZ, 650-688-0441 specs@sypal.org

SCARES South County Amateur Radio Emergency Service
meets 3rd Thursday 7:30 each month, San Carlos City Hall.
Net is on 144.45 & 444.50 (PL-100) 7:30 Monday evenings.
contact:

SCCARA Santa Clara County Amateur Radio Association
Operates W6UU repeater 146.385+ Nets: 2m, W6UU, 7:30 Mon; 10m,
28.385, 8:00 Thur. meets 2nd Mon each month.
contact: Jack Ruckman AC6FU

SVECS Silicon Valley Emergency Communications
Operates WB6ADZ repeater (146.115 MHz+)
contact: Lou Stierer WA6QYS 408 241 7999

WVARA West Valley Amateur Radio Association
operates W6PIY repeater 147.39+, 223.96, 441.875, 1286.2
meets 3rd Wed every month.
contact: Glen Lokke Jr. KE6NBO at 408 971 8626, or glokke@pacbell.net

Disaster Services

PALO ALTO CHAPTER, American Red Cross
Meets 3rd Wed. each month 7:30PM,
HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite,
contact: Alan Ball 650-688-0423.

SAN JOSE CHAPTER, American Red Cross
contact: Scott Hensley KB6UOO, 408 249 7093, sh@richochet.net

VE Exams, 3rd Saturday each month, 11AM, 145.23- PL=100Hz
American Legion Hall, 651 El Camino Real, R.C.
contact: Al Montoya at WB6LWX@worldnet.att.net

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

A great teacher never strives to explain his vision — he simply invites you to stand beside him and see for yourself.

—Rev. R. Inman

Join us for pre-meeting eyeball

QSO April 6th

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 order and bill.

6 pm — at Su Hong Restaurant
1039 El Camino Real
Menlo Park
—across from Kepler's Book Store—



Palo Alto Amateur Radio Association, Inc.

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(see "Calendar" for Board meeting times, visitors welcome)

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Submit material for PAARAgaphs by the 15th
PAARA Website <http://www.qsl.net/paara/>

Contest Calendar

~Vic Black, AB6SO~

(for rules and exchanges, see www.contesting.com)

April, 2001

7-8 SLP Competition (SWL) 0000Z, Apr 7 - 2400Z, Apr 8

7-8 SP DX Contest 1500Z, Apr 7 - 1500Z, Apr 8

7-8 EA RTTY Contest 1600Z, Apr 7 - 1600Z, Apr 8

8 UBA Spring Contest, SSB 0600Z - 1000Z, Apr 8

11-13 DX YL to NA YL Contest, CW 1400Z, Apr 11 - 0200Z, Apr 13

13-15 Japan Int. DX Contest, 20-10m 2300Z, Apr 13 - 2300Z, Apr 15

14-15 MARAC County Hunters, SSB 0000Z, Apr 14 - 2400Z, Apr 15

14-15 QRP ARCI Spring QSO Party 1200Z, Apr 14 - 2400Z, Apr 15

14 EU Spring Sprint, SSB 1500Z - 1859Z, Apr 14

14-15 His Maj. King of Spain Contest 1800Z, Apr 14 - 1800Z, Apr 15

21 TARA Spring Wakeup PSK31 Rumble 0000Z - 2400Z, Apr 21

21-22 YU DX Contest 1200Z, Apr 21 - 1200Z, Apr 22

21 EU Spring Sprint, CW 1500Z - 1859Z, Apr 21

21-22 Michigan QSO Party 1600Z, Apr 21 - 0400Z, Apr 22

21-22 Holyland DX Contest 1800Z, Apr 21 - 1800Z, Apr 22

21-22 Ontario QSO Party 1800Z, Apr 21 - 1800Z, Apr 22

25 Harry Angel Memorial Sprint 1100Z - 1246Z, Apr 25

25-27 DX YL to NA YL Contest, SSB 1400Z, Apr 25 - 0200Z, Apr 27

28-29 SP DX RTTY Contest 1200Z, Apr 28 - 1200Z, Apr 29

28-29 Helvetia Contest 1300Z, Apr 28 - 1300Z, Apr 29

28,29 Florida QSO Party 1600Z, Apr 28 - 0159Z, Apr 29 and 1200Z - 2159Z, Apr 29

28-29 Nebraska QSO Party 1700Z, Apr 28 - 1700Z, Apr 29

28-29 Six Club Sprint 2300Z, Apr 28 - 0400Z, Apr 29

Board of Directors Meeting

2001 Mar 7 Red Cross Bldg, PA

Quorum was obtained at 7:30 P.M. and we discussed the passing of Silent Keys **K6OG** and **K6TY**. A memorial has been established with contributions from Ms. **Virginia Roberts**, a friend of **Lynn & Fred Canham** and from the volunteers of the City of Los Altos. These hams will continue to be missed!

No old business. The Secretary's report was accepted as published in last month in PAARAgaphs. Tax time is occupying us with preparations for same.

New business: Field Day plans are underway. We discussed purchasing a tower trailer and two tribanders. Testing the old green generator is needed. Purchase of a mobile shack (or two - FD is class 2A style for us) and a 6 M beam was discussed. Consideration of filters so we can operate in close proximity and still hear DX occupied much rag chewing energy.

A motion passed allowing **Gerry, N6NV** to purchase a KLM 34A or any suitable trapless tribander.

Foothill Amateur Radio Society & we hope to picnic together; planning underway.

Art Bolton, 6AGY (now **NM6K**) was awarded QCWA's 17th instance of three-Quarter Century Wireless Assoc. plaque for his 80 (how many?) years as a ham. He was born just after the '06 earthquake and so like the rest of us, is too young to remember it!

—73, Jay, Secretary, WA6SBO@ARRL.org

Home computers are being called upon to perform many new functions, including the consumption of homework formerly eaten by the dog.

—Doug Larson

Amateur Radio License Study Seminar,

Exam Offering a one day class

(for any class of license) followed by testing

WHEN: Saturday, April 21, 2001 8:30am - 5pm

WHERE: Foster City Community Center

1000 East Hillsdale Blvd. Foster City

FEE: \$25.00

CONTACT: Ross Peterson

VOICE: 650-349-5349

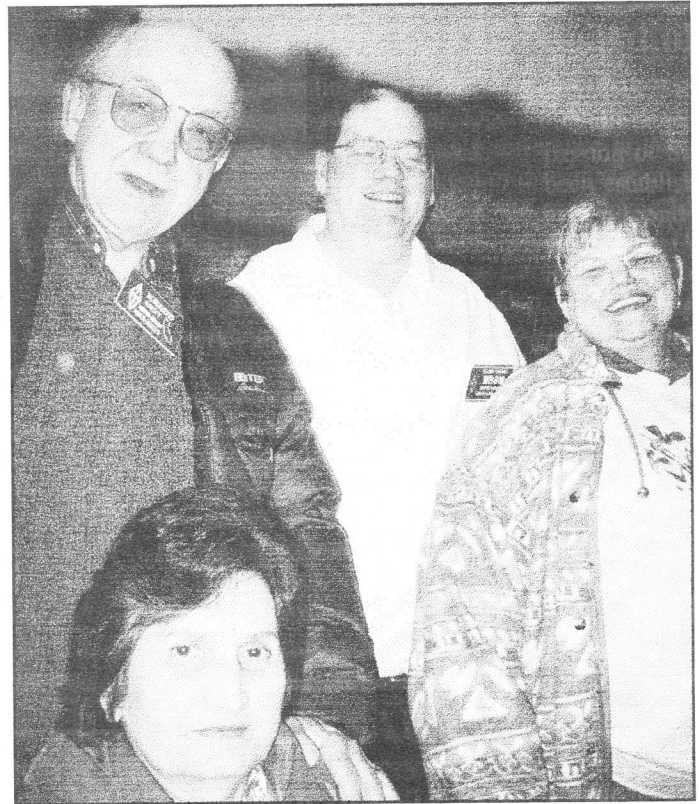
FAX: 650-570-5558

E-MAIL: wb6zbu@arrl.net

Prospective Hams should have an active Ham as a sponsor to assist you in familiarization with amateur radio operation. If you do not know an active ham, we will attempt to introduce you to one.

—Ken Dueker. W6YX.

More Info: www.arrl.org



Clubs CAN Die

An amateur radio club CAN die.

The mail carrier often returns mail to me marked "insufficient postage," "addressee unknown," or "moved."

But imagine my surprise when a newsletter I had addressed to an amateur radio club came back stamped "deceased."

I don't know whether the club had actually "died," or if the postmaster of that community merely perceived the club as defunct, but it started me wondering how a club might make the obituaries.

Suppose we start by dropping a few club activities. We might decide that recruiting newcomers to Amateur Radio is too much bother. Or that asking people to check into the net is a bit much. And suppose we question the need for attending our monthly meeting.

Is it possible we might soon develop an organizationally illiterate generation of hams? Of course, some in the club would never ever notice we had dropped those activities, unless we announced it in our newsletter. But interest would fade, little by little. And eventually, without member enthusiasm, no one would do the club's work. Without workers, a club must die.

Is that what you want?

You must decide; your presence or absence can make a difference.

Come to meetings.

Get (or stay) involved in club activities.

Or don't act, and watch it die.

(Reprinted from *The Pros News* Feb 1996)



PAARA PONDERINGS

de VIC BLACK, AB6SO

I was recently asked why there isn't a central location for important Amateur Radio information. That one's easy to answer.

PAARAgaphs often has the news ahead of any of the national magazines. If you received nothing else from your PAARA membership, you'd still be ahead of most other Amateurs. Remember to say you saw it in PAARAgaphs first. We are also negotiating retail discounts for our members at local radio dealers. One moderate purchase discount could easily pay for your annual PAARA membership.

Speaking of news, this is the month to announce Amateur Radio world records being set and challenged. **D68C**, the Comoros Islands DXpedition, broke all previous records for numbers of contacts set on an expedition. Nearly 170,000 contacts were made on the 160 through 6 meters bands. One W6 operator even worked them on 10 meters using an FM handie-talkie while standing at a bus stop! Keep in mind that from California the Comoros Islands are located at the antipodes. That is, they are located as far away as you can get on the earth. Every direction is long path from California. This may actually be an advantage for us in California since power radiated from here all converges at the antipodes and none is lost to non-productive directions. Besides the records listed below, be sure to check out the truly astounding digital mode news in this month's Web Wanderings!

Bonnie Crystal KQ6XA was PAARA's speaker at the PAARA/FARS Joint Winter Party last year where she discussed her trip to the Peruvian Andes. While there she communicated through solid rock using very low frequencies during her discovery of the world's second deepest known cave. Her latest adventure is operating HF pedestrian mobile with the new international group known as HFPack. On Sunday, 18 February 2001 she claimed a new world terrestrial distance record for a pedestrian-to-pedestrian hand held transceiver contact when she worked **ZL1BK/Pedestrian Mobile** to **KQ6XA/Pedestrian Mobile**. Time 02:14 UTC to 02:25 UTC. Freq 28.337 MHz. Mode: CW and USB. Signal reports 539 CW and 33 USB. Approximate great circle distance = 6,500 miles (10,460km). KQ6XA/PM near San Mateo, California ran 20 Watts (Vertex/Standard VX-1200 HF Manpack transceiver) to a 6.5m long whip antenna (fishing pole mounted on a pack frame) and dragging a 3m long counterpoise wire on the ground. Meanwhile, on the other side of the Pacific, **Max Pompe, ZL1BK/PM** near Auckland, New Zealand ran 5 Watts to a 1.8m long whip antenna (homebrew side-mounted on a Yaesu FT-817) and also dragging a 3m long counterpoise wire.

Still another Amateur Radio world distance record was established when **Larry Kayser VA3LK** worked **Lawrence "Laurie" Mayhead G3AQC** for the first LF-to-LF two-way transatlantic Amateur Radio exchange on 136 kHz. The two-way QSO required two weeks to complete between Feb 5 and Feb 19 using extremely slow CW (90-second-long dits and 180-second-long dahs). Using dual-frequency CW, or DFCW

(a form of frequency shift keying to speed up the communications over ordinary QRSS), special software required 70 minutes to send VA3LK's call sign. The low baud rate allows use of extremely narrow filters, thus improving the signal to noise ratio. Even though the stations pumped as much as a kilowatt input to their antennas, the effective radiated power was probably in the 300 milliwatt range at what is normally an audio frequency.

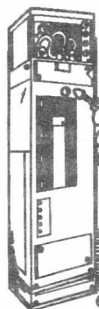
After looking for extraterrestrials for two years using the Seti @ Home distributed computing software, PAARA President **Andreas Junge N6NU** has decided to call it quits. He said, "I just finished unit number 3,000 for Seti @ Home. Thanks to everybody who helped. After almost two years and 6.69 years of computer time into it, it is time to stop. I managed continuously to stay in the top 0.5% group. That is 12,464th out of nearly 2.8 million users last time I looked. It was fun."

Last month I wrote about the potential for using disposable alkaline cells printed on paper to power disposable radios. Now comes word that airlines will begin to attach disposable paper RF ID tags to baggage at airline terminals later this year. The tags will be used to track baggage through the terminals. They will actually be 2.4 GHz radio beacons complete with folded dipole antennas printed on sticky-back labels and powered by printed batteries. One of the first air terminals to use the new technology will be San Francisco International Airport. In the meantime, Texas Instruments has just announced a new RF ID tag with a transponder that transmits bar code-type information on the 902-928 MHz band for tracking inventory in warehouses.

There are also plans to put FRID tags in the 70 cm Amateur band. The new RFID devices are regulated under FCC Part 15 rules. A major concern is that they will raise the background noise level until the shared bands they are using will become unusable. They may end up interfering with other Part 15 devices, which we already use. We usually just don't realize that they are in the Amateur bands. An example is the 70 cm remote door lock transmitters used by new cars. If the RFID tags become widespread, we should at least attempt to modify some of them for our benefit as licensed users of the bands. A fun project would be to mount one of the beacons in front of a parabolic reflector to create a hand held radio/antenna combination. The reflector could be made by gluing aluminum foil onto a piece of Bristol board, such as a paper file folder, then bending it into a flat parabolic trough shape or a corner reflector, especially on 2.4 GHz. How far can you communicate with a flea power paper rig such as this?

Joe Veres KE6UIE and **Mike Sinkewitsch WB6MZS** have installed a new coordinated repeater using Mike's call sign. It's on a frequency of 440.450 + 107.2 PL. This is an unusual repeater since both men work at Canada College where they have installed a remote base HF transceiver with an inverted VEE antenna. Whenever 10 meters is open, Mike links the 70 cm repeater to the remote base, which transmits on the 10-meter FM calling frequency 29.600 MHz. This allows you to use your handie-talkie to "work the world". The great part about it is that even if you have a Technician Class license, without HF privi-

(Continued on page 32) PAARA PONDERINGS



WEB WANDERINGS

de Vic Black, AB6SO

On 25 February 2001, Ernie Manly W7LHL of Graham, WA worked Larry Liljequist W7SZ in Washougal, WA using 5 Watts on 1296 Mhz. So what?, you ask. This contact was a true QRP Earth-Moon-Earth (EME) QSO! They used the software digital mode PUA-43, which is based on forty-three tone Frequency Shift Keying (FSK) with adaptable very long-term integration. This automated transmit and receive communication mode provides an extreme ability to trade-off data rate against signal strength.

Stations were built around home brew DSP-10 2-meter transceivers and transverters along with freeware downloaded from the Internet. Antennas were 10 and 12-foot television receive-only (TVRO) type dishes. Those are the older backyard TV antennas that are commonly available now for free as consumers upgrade to the newer 18-inch digital TV dishes. Signal levels for the contact were only -155 dBm.

Their first PUA-43 1296 MHz EME contact was Jan 9, 2001 with both stations running 40 Watts. Copy was Q5 with the computer screen displaying 100% copy of calls, grid squares and confirmations both ways even though no signal at all was visible on the spectral waterfall display!

W7LHL has also received his own EME echoes while running only 1.2 Watts at 10 GHz. While mountain topping last summer, Ernie and Larry worked each other QRP over a 665 km terrestrial path on 10 GHz using the PUA-43 mode. In addition, Bob Larkin W7PUA has received his own EME echoes on 2-meters running 5 Watts into a 4x12 element Yagi antenna array.

In all fairness, it's extremely important to mention that it's not just the radios and software that made these contacts possible. The operators have an enormous amount of experience behind them. There's a standing joke among the EME fraternity that 600 watts is QRP and that the receiving station is doing all of the work if the transmitting station uses any lower power. There's a lot of inertia in the EME group so it's significant that this pioneering QRP work is being done by W7SZ who normally uses an array of (4) 40-plus element Yagis and 1kW on 432 MHz. W7LHL is no stranger to microwave world records, either. His, then remarkable, 426 km 2-way 10 GHz record QSO with W7JIP set in 1960 stood for 16 years.

Bob Larkin published a three-part article in QST magazine for September, October and November 1999 describing the DSP-10 2-meter home built SSB, FM and CW transceiver, which is tailor made for VHF, UHF and Microwave weak signal uses. RF parts are assembled on a single PC board and combined with an Analog Devices EZ-KIT Lite demo board for the IF and audio processing. Freeware controls it through a PC serial port. Details and software links are at <http://www.proaxis.com/~boblark/dsp10.htm>.

Many philosophical arguments are raging over whether it's

actually Amateur Radio if you must wait for your computer to tell you that you have a valid QSO or not. Keep in mind that we evolved to this point as an answer to a challenge. If we only wanted to communicate reliably, we'd use the telephone or Internet. The fun part comes from the limbo bar going lower and lower. You may still operate at your own level of comfort. Most of us will never operate EME. Only a few of us have been fortunate enough just to hear recordings of EME contacts. That doesn't mean this work is all for naught, though.

We used to say that the sky is the limit. In the future, maybe even the sky won't be the limit. Rather, we're limited mostly by our own lack of imagination. It's significant that EME work is evolving towards economy and simplicity. Future challenges may include portable and mobile EME. Antennas may evolve to look similar to solar water heating panels in order to circumvent CC&Rs. Perhaps this same philosophy should be applied to our Amateur satellite program. This is the strength of the nanosat program at Stanford. The AO-40 launch fee alone could have paid for 20 Stanford cubesats from inception to in-orbit use.

Everything we do is based on the pioneering work of those who have preceded us. In the future, we may be using terrestrial links similar to what is now cutting edge EME and LF work. A new LF digital mode is called WOLF. I foresee this PSK-31 variant as being useful on the lower HF bands at the next solar cycle low point. You can check it out at <http://www.scgroup.com/ham/wolf.html>. The new phase shift keying mode appears to add forward error correcting to PSK-31 and sends the information at a very slow speed in order to increase the signal to noise ratio. This should be perfect for use on 80 and 160 meters, for instance. One reason 160 meters is not more popular is that there is a lot of noise on the band and resonant antennas are very large. A digital mode, which would allow lower effective radiated power, would encourage more use of the band.

The question of legality has come up with regard to the newer digital modes. ARRL Laboratory Supervisor, Ed Hare W1RFI, has expressed the opinion that "there is no reason such integration techniques can't be used on HF. Basically, Hams can use a wide range of 'non-standard' digital modes, subject to the conditions that the modulation method is legal on the frequency used and that the encoding method is in the public domain. The FCC has told ARRL that publishing the encoding method on a public web page is sufficient to meet the public domain requirement."

Computer sound cards and Internet-available software have replaced more expensive hardware based radio accessories for such things as digital signal processing audio filters and PSK-31. Now you can get on packet radio without a terminal node controller, or TNC, by going to <http://www.qsl.net/soundcardpacket>. Brainstorm a little. What Amateur Radio uses can you think of for your computer's sound card?

The US Naval Observatory maintains an interactive web site at http://aa.usno.navy.mil/AA/data/docs/RS_OneYear.html that will display an entire year's worth of sunrise and sunset data for any location. You may enter city name or longitude/latitude in-

(Continued on page 32) WEB WANDERINGS

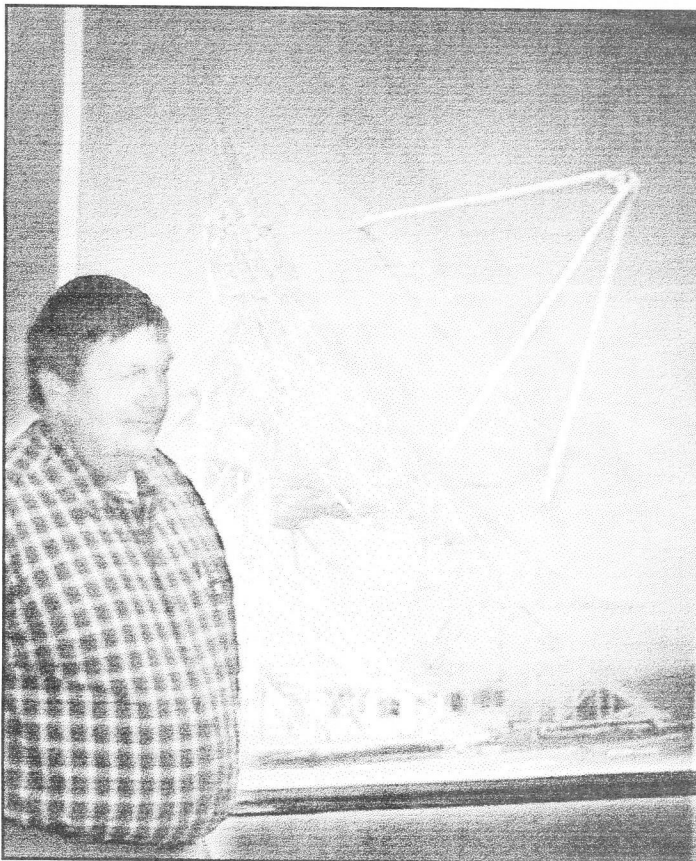
(Continued from page 30) PAARA PONDERINGS

leges, you can still get on 10 meters through the repeater since you are controlling only the repeater and the control operator is controlling the remote base. Operate the repeater just like any other local repeater. The only difference is that you may receive a come back from an out of district station. This is an excellent way to experience some DX and maybe help you to decide to learn the 5wpm code for your upgrade to General Class.

In the mornings, you can hear Europe coming through the repeater and during the late afternoon you can often work South America or Japan and other Asian stations. During the middle of the day, the band is often open to other parts of the world, but especially the East Coast and into the Southern and Mid-western states. Normally, the 10-meter calling frequency would be used to establish contact and then you would QSY to another frequency to talk. Since you won't be able to do that with the remote base, it's best to keep your transmissions short (signal report, name and QTH) so as not to hog the frequency. Also, let others use the repeater so you don't tie it up indefinitely, even when it's not currently linked. —Vic AB6SO

PAARA Radio NET

every Monday evening
 8:30 P.M., local time
 on the 145.230 -600 MHz repeater, PL tone off



JUNKBOX

REPLENISHMENT TIME

SALE

Friday 7:45 PAARA Meeting

all old goodies & some new

for information check net or CONTACT:

Andreas N6NU, (650) 233 0843

(Continued from page 31) WEB WANDERINGS

formation and it will calculate the times for you. This is good information to know for scheduling Grey Line or portable operating times. You can enter your own location and print it and then enter a DX city and print it. This will allow you to compare times to determine the exact time for sunset-to-sunset QSOs on the low bands, for instance.

J-Track 2.5, <http://liftoff.msfc.nasa.gov/realtime/JTrack/Amateur.html>, is a great site for checking the current position of satellites. You can view a 2 dimensional world map with the satellite tracks overlain along with the Grey Line, or you can go to a 3 dimensional view of the earth showing over 500 satellites flying about simultaneously. There are individual links to the common amateur satellites. If you want to try working one of the "easy-sats", this site will definitely help. Other useful sites are <http://www.heavens-above.com> and <http://spaceflight.nasa.gov/realdata/sightings/index.html>. —Vic AB6SO

REGISTER NOW FOR

TECHNICIAN CLASS HAM RADIO COURSE

WHAT: The Foothill Amateur Radio Society (FARS) presents the "No [Morse] Code Technician Class" amateur radio license course. During this course, you will NOT ONLY learn what you need to know to get your first federal amateur radio license, but you will also learn what to do once you have your license and how to use the information you learn. The FCC exam (35 multiple-choice questions - of which you need only 26 correct to pass) covers operating practices, rules and regulations, and basic radio theory. The exam will be given during the last class session. Free further training is available through the FARS club

WHEN: Six Thursday evenings, April 26 - May 31, 7-10 PM

WHERE: Terman Library Conference Room

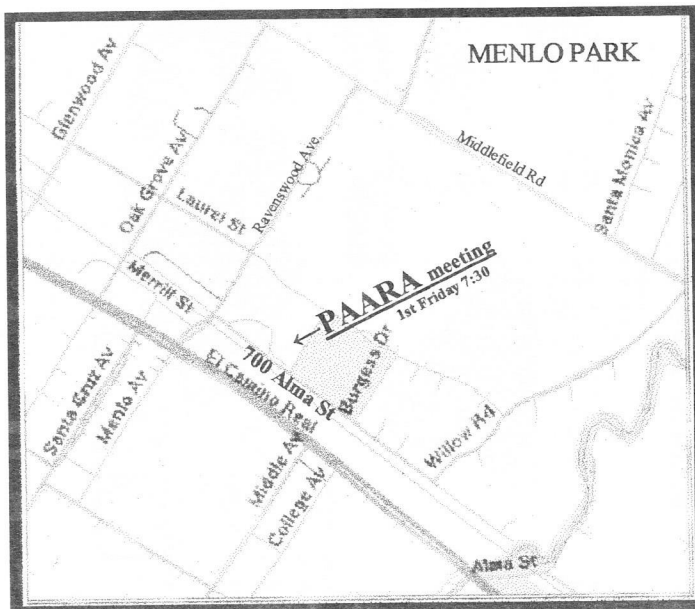
(next to the JCC), 661 Arastradero, Palo Alto, CA

FEES: \$15 Students (under 18), \$25 Adults Payable upon registration, to cover the cost of study materials. Additional examination fee of \$8, payable to the VEC prior to the FCC exam. BONUS: One year FREE membership in The Foothill Amateur Radio Society for course graduates.

WHO: This class is open to all. There are no age limits, or minimum requirements.

HELP: FARS volunteers will help answer your questions before the class starts, during the class, and after you get your ham license.

RESERVATIONS: Contact: Rich Stiebel, (650)494-0128, email: W6APZ@arrl.net Further information: <http://www.fars.k6ya.org/classes.html>



PAARA · Palo Alto Amateur Radio Association · P.O. Box 911, Menlo Park, California 94026-0911

- Club meetings are on the first Friday of each month, 7:30pm at the Menlo Park Recreation Center, 700 Alma Street, Menlo Park, CA. •
- Radio NET every Monday evening, at 8:30pm, on the 145.230-600 MHz repeater, PL tone off. •

Membership in PAARA is \$12.00 per calendar year which includes a subscription to PAARAgaphs, \$6 for additional family members (no newsletter).
 Make payment to the Palo Alto Amateur Radio Association.

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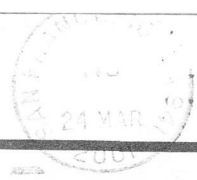
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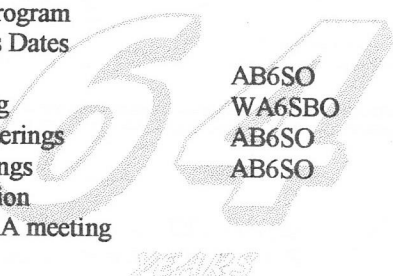
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FIRST CLASS MAIL

Inside

K6YT Silent Key Calendar & Program	WA6NCX	27
Miscellaneous Dates		28
Contests	AB6SO	28
Board Meeting	WA6SBO	29
PAARA Ponderings	AB6SO	30
Web Wanderings	AB6SO	31
Junkbox Auction		32
Map to PAARA meeting		33



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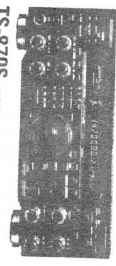
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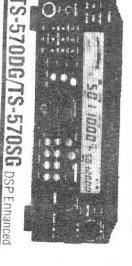
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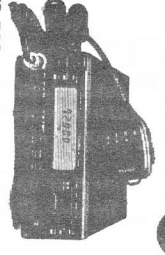
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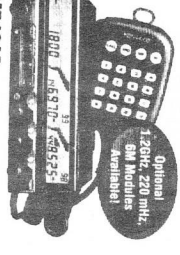
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