



PAARAgraphs



Celebrating 63 years as an *active* ham radio club—*Since 1937*
Newsletter for the **Palo Alto Amateur Radio Association, Inc.**



CALENDAR



- Jan.....5, **PAARA Meeting**, 7:30
Menlo Park Recreation Center
700 Alma Street, Menlo Park
- Jan.....10, **PAARA Board Meeting**, 7:30
Red Cross Bld., 400 Mitchell Ln., Palo Alto
- Jan.....19, **Winter Party**
"Michaels At Shoreline" Restaurant, 2960 N. Shoreline Blvd., Mt. View
- Feb.....2, **PAARA Meeting**, 7:30
- Feb.....7, **PAARA Board Meeting**, 7:30
- Mar.....2, **PAARA Meeting**, 7:30
- Mar.....7, **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

January 5, 2001
7:30 P.M.

Steve Stearns K6OI
"jammer resistant repeaters"

Join us for **pre-meeting eyeball**
6 pm— at Su Hong Restaurant, 1039 El Camino Real, Menlo Park

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

Board of Directors Meeting

December 6, 2000
Red Cross Bldg, Palo Alto

The newly elected Board Members, **Patrick, KB6HBM** and **Dick, KM6EP** were greeted and welcomed. The Secretary's report mentioned the recent election of officers at the General Meeting. The editor's report asserted that all bills have been paid. The President reported that the annual Winter Party was scheduled for Friday, January 19, 2001 at 7 P.M. and would cost about \$25 - 30 per attendee. The party will be held at Michael's Shoreline banquet house and is a joint venture with FARS. Bring guests!

Call Sign Badges were discussed. Alternate attachment techniques include safety pins, clips and the availability of magnets and locking pins will be explored. The badges will be sold for \$5 each.

Membership cards will constitute proof of dues payment and will be honored at Ham Radio Outlet (HRO) with a discount. Dues are due 1 January. Speakers at the monthly club meeting will be awarded a free annual membership. The newsletter's paid subscriptions expire with the February issue and cost \$12/yr.

We spent the rest of the meeting discussing recruitment of new members and the rejuvenation of extant members' interest in club activities. A number of projects were considered and results will be reported as they develop.

The meeting closed on the note that we'd all be pleased to help **Charlie, WD6FAF**, raise his antenna farm at his new QTH on Oahu; this was his last meeting with us.

73, - Jay, Secretary, WA6SBO@ARRL.net

Winter Party

January 19th 7 P.M.

"Michaels At Shoreline" Restaurant, 2960 N. Shoreline Blvd., Mt. View

Joint party with FARS

Speaker:

Garry Shapiro NI6T

"Adventure to Kingman Reef KH5K"

Contact: Andreas Junge N6NU

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

EMARC Electronics Museu Amateur Radio Club

meets 4th Friday 7:30 each month,
contact: Sheldon Edelman 650-858-2176, Edelman@richochet.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@svpal.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, fs@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 WB6IMX@worldnet.att.net

Palo Alto Amateur Radio Association, Inc.

PO Box 911

Menlo Park, CA 94026

President Andreas Junge N6NU.....(650) 233 0843
n6nu@arrl.net
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RGK4U@aol.com
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vic.black@adept.com, ab6so@smrn.com
W6OTX Station Trustee..Fred Canham, K6YT(650) 948 9238
K6YQT Station Trustee..Gerry Tucker, WA6LNV.....(650) 326 4908
Property.....Gerry Tucker, N6NV(650) 326 4908
Badges.....Don Trask, KF6JMQ.....(408) 251 6494
ARES Officer.....Lily Anne Hillis, N6PGM(650) 325 5484
Club Historian.....Steve Stuntz, K6FS.....(650) 322 4952
Advertising.....Bob Korte, KD6KYT.....(650) 595 1842
WebmasterAndreas Junge N6NU.....(650) 233 0843
n6nu@arrl.net

Board of Directors

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trask@shell3.ba.best.com
Joel Wilhite, KA7TXV (650) 325 8239 '01
ka7txv@qsl.net
Gerry Tucker, N6NV (650) 326 4908 '01
Jon Zweig, AD6FX. (650) 324 8751 '02
jzweig@pacbell.net
Pat Gormley, KB6HZM (650) 369 3550 '02

(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/>

Webb site for propagation information:

www.arrl.org/wlaw/prop/

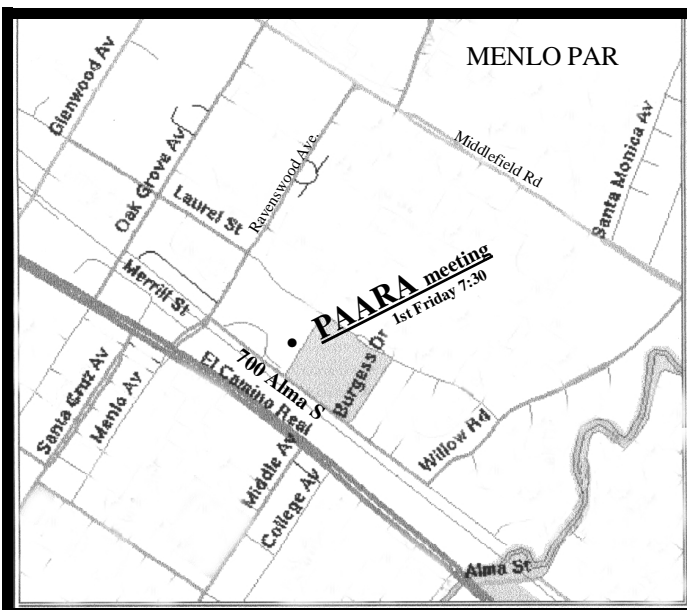
Contest Calendar

~Vic Black, AB6S ~

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

January, 2001

6,7 ARRL RTTY Roundup 1800Z, Jan 6 - 2400Z, Jan
12-14 Japan Int. DX Contest, 160-40m 2200Z, Jan 12 - 2200Z, Jan 14
13 Midwinter Contest, CW 1400Z - 2000Z, Jan 1
13,14 North American QSO Party, CW 1800Z, Jan 13 - 0600Z, Jan 14
14 NRAU-Baltic Contest, CW 0530Z - 0730Z, Jan 14
14 NRAU-Baltic Contest, SSB 0800Z - 1000Z, Jan 1
14 Midwinter Contest, Phone 0800Z - 1400Z, Jan 14
20 LZ Open Contest, CW 1200Z - 2000Z, Jan 20
20,21 North American QSO Party, SSB 1800Z, Jan 20 - 0600Z, Jan 21
26-28 CQ 160-Meter Contest, CW 2200Z, Jan 26 - 1600Z, Jan 2
27,28 REF Contest, CW 0600Z, Jan 27 - 1800Z, Jan 2
27,28 BARTG RTTY Sprint 1200Z, Jan 27 - 1159Z, Jan 28
27,28 UBA Contest, Phone 1300Z, Jan 27 - 1300Z, Jan 28
27-29 ARRL January VHF Sweepstakes 1900Z, Jan 27 - 0400Z, Jan 29



The Victor C. Clark Youth Incentive Program -The ARRL Foundation, Inc.

At the request of the family of the late **Victor C. Clark, W4KFC**, the ARRL Foundation established the **Victor C. Clark Youth Incentive Program**, with the objective of providing support for the development of Amateur Radio among high-school age (or younger) youth. Funded by endowment and contributor support, the Program makes minigrants available to groups that demonstrate serious intent to promote participation in Amateur Radio by youth and enrich the experience of radio amateurs under the age of 18.

Groups that qualify for mini-grants will include, but not be limited to, high school radio clubs, youth groups, and general-interest radio clubs that sponsor subgroups of young people or otherwise make a special effort to get them involved in club activities. Minigrants, not to exceed \$1000 per grant, will be made for such projects as securing equipment for antennas for club stations, purchasing training materials, supporting local service projects that bring favorable public exposure, and similar activities. Preference will be given to projects for which matching funds are raised locally.

An applicant for a mini-grant must write a brief, but complete proposal including such items as:

- 1.names, call signs (if applicable), addresses and telephone numbers of sponsors
- 2.objectives of the proposed program
- 3.existing resources if relevant (e.g. status of school club station, etc.)
- 4.concise, realistic statement of financial need
- 5.description of local resources (e.g. matching funds, specific financial and/or equipment/material contributions)
- 6.commitment of relevant local non-ham group (e.g. school, school science coordinator and/or principle, school board)
- 7.any relevant supporting documentation including letters of support, letters of intent, pledges and the like
- 8.timeframe; local evaluation process; criteria for evaluating program effectiveness/success.

The ARRL Foundation is eager to assist worthy local Amateur Radio youth efforts through the Victor C. Clark Youth Incentive Program. We look forward to receiving your proposal in the near future. Our address is:

The VICYIP Program
The ARRL Foundation, Inc
225 Main St
Newington CT 06111

Please, no proposals by email.

-American Radio Relay League, Inc

New Call

Chuck Enderby N6CEE from KG6CDK.

Family Radio Service GPS Packet

-Vic Black, AB6SO

Garmin gets FCC approval to market GPS-capable FRS transceivers:

The FCC has granted, in part, a request for a waiver of the Part 95 Family Radio Service rules [§95.193(a) and 95.631 (d)] that will let the company manufacture and market for a one-year trial period FRS transceivers capable of transmitting location information derived from the GPS on FRS channels.

The FCC says Garmin must include information in the instructions accompanying the units that the capability to transmit GPS-derived location information is provided "for personal and public safety purposes" only and that no other use is authorized. Current FRS rules permit transmission only of F3E voice communications and CTCSS tones. The units must be designed to limit transmission of emission type F2D GPS-derived location information digital data bursts to not longer than one second and not more often than one burst every 10 seconds, to be actuated by the FRS user.

The FCC declined to permit Garmin to manufacture unit that can automatically poll other FRS units to determine their locations based on GPS-derived location data. The Wireless Telecommunications Bureau adopted the waiver September 28.

- FCC via ARRL Amateur Radio News.

WANTED

Owner's manual for ICOM IC-228H 2-meter Transceiver for Pat, KB6HBM. If you have a copy and are willing to loan it for a few days, please either contact Pat directly, or contact Rich, W6APZ, at w6apz@arrl.net who will get the information to Pat.

PAARA Winter Party

January 19th

at

"Michaels at Shoreline"

The cost will run \$20-\$25 each

We would like a final count at the January meeting.

Contact:

Andreas N6NU



PAARA PONDERINGS

de **VIC BLACK, AB6SO**

Congratulations to **Rolf Klibo N6NFI's** wife **Pamela** for her new call sign **KG6EDX**. Also congratulations to **Jon Zweig's** son **Sam** for his new call sign **KG6EEH**. **Chuck Enderby** is sporting a new vanity call sign. Formerly **KG6CDK**, he is now **N6CEE**.

At the December club meeting show and tell, PAARA member **Steve Stuntz K6FS** proudly displayed his ARRL Millennium DXCC certificate, which was awarded for working 100 DXCC entities during the year 2000. Congratulations to Steve for contacting the required 100 countries while running 10 watts SSB with his homebrew Elecraft K2.

CQ magazine has announced several awards to celebrate the official beginning of the new millennium. As in the ARRL award, applications must include a listing of stations worked, but QSL confirmation is not required. Awards are available for working 500 US counties, 40 CQ Zones, 100 countries, or a choice of 400 call sign prefixes in mixed mode or 300 prefixes in single mode (CW or SSB only) during calendar year 2001. Go get them.

The world's Radio Amateurs can claim more technological "Firsts" now that Phase 3-D satellite is finally flying after nearly ten years of starts and stops. At nearly 1400 pounds and close to 20 feet across when the PV panels are deployed, the satellite is the largest Amateur Radio satellite ever. It was built and launched by Amateur volunteers from 15 nations, using scrounged parts in many cases. In the tradition of the Webersat, which was launched by students of PAARA member **Bob Twigg KE6QMD**, the 15-meter HF antenna was made from a retractable steel measuring tape from a local hardware store. The photovoltaic panels represent the largest deployable subassemblies ever attempted by Amateurs. They will provide 600 Watts of power to the satellite. Phase 3-D, renamed Oscar 40, has transmit capabilities on more frequency bands than any satellite in history, including commercial, NASA and military "birds". These bands include HF, VHF, UHF and Microwave bands, in addition to a modulated infrared laser. It holds the altitude record for any satellite equipped with a GPS receiver. Only time will tell how many other records will be set by the satellite as it leaves its transfer orbit and settles into its final orbit to start exercising its many capabilities. There are already plans for the International Space Station operators to use the satellite as a space based repeater for communicating with Amateurs on the ground. German call sign **DP0WH** has been assigned to AO-40. The successful launch of Oscar 40 made the general news because it accompanied history's largest commercial communications satellite into orbit.

CNN was the world's first news agency to report that the first QSO from the International Space Station had been made by Amateur Radio Astronauts/Cosmonauts using 5 Watts from a hand held radio and temporary antenna with signal reports of R5, S9 on the ground ("Space station crew 'hams' it up ahead of cargo ship visit" CNN, Nov 13, 2000). Members of the space crew get weekends off from their duties and so are ex-

pected to spend a lot of time on the air since their recreational activities are somewhat limited. German engineers designed repeaters for use on the ISS while Italian engineers contributed antennas. During 2001, it is expected that Slow Scan TV will be installed. Discovery Channel cable TV featured the first ISS Amateur Radio contacts, thereby exposing a major part of the world's population to Amateur Radio.

We're eagerly awaiting the Atlanticon announcement in March of the introduction of a new kit for computerless portable PSK-31. **George Heron N2APB** reports that the simple rig will integrate digital signal processing, spectral analysis and 8051 micro controller Input/Output functions all on one PC board. George said, "There's a bunch of interesting PSK31-related happenings coming in the near future. We can't talk much about them right now, but each is guaranteed to capture the keen interest of PSKers throughout the country. NN1G, N2CX and I enjoy reading every detail of your successes, and we can assure everyone that there is more fun ahead for this digital mode. Those of you who have (or will soon have) Warblers and PSK-xx transceivers are getting in on the ground floor of some exciting times ahead."

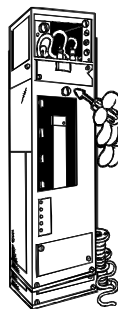
Amateurs are being encouraged to try software-defined radios. Why stop there when you can have software-defined TV? **Brian Cieslak AE9K** reports from Waterford, Wisconsin, "I tried my hand at SSTV. With these new SSTV programs that use the sound card it was really easy and a lot of fun. I arbitrarily chose the MSCAN program, ran to Radio Shack to buy an audio cable and hooked the sound card up to the line output on my DSP filter. Lo and behold I was receiving SSTV pictures on 14.230 Mhz. Way too cool. After listening for a while I was amazed at how well the DSP algorithms in the SSTV program were pulling signals out of the noise (PSK31 fans can appreciate this). I finally got brave and called one of the SSTV guru to ask questions about sending pictures. He said 'Heck, just put your microphone up to the speaker connected to the sound card and hit the send key'. So I did and voila! I sent my first SSTV picture." Brian admits that acoustically coupling your rig this way carries some risks. "If the phone rings or you sneeze it will mess up the picture you're sending", but this is the simplest way to give it a try.

Johann Lochner ZR1CB reports that **Ron Ross KE6JAB**, who spoke to PAARA about his Antarctic trips, became the first APRS user ever to be tracked in Antarctica when SUNSAT satellite logged his beacon on 14 November 2000. Ron was deploying automatic weather stations as the beacon reported his location as 71.31.33S, 008.47.45E.

Doug Slusher KF6AKU and **John Boyd KE6ORI** report their new 50-watt 6-meter repeater is on the air. Try it, as they would like to get an idea of the coverage. The repeater, KE6ORI, is located at Shroyer Mt, Marin County, at an elevation of 1200 feet. Output is 52.88 MHz, 114.8 Hz PL with input on 52.38 MHz, 114.8 Hz PL.

.....
 •
 • **2001 Dues = \$12, are due now** •
 •

Pay to
 • **Bob Korte KD6KYT, Treasurer** •
 •



WEB WANDERINGS

de Vic Black, AB6SO

PAARA's November meeting featured a discussion by **Jon Zweig AD6FX**, **Andreas Junge N6NU** and **Jack Troster W6ISQ** on working DX and QSL techniques. If you want a small number of high quality color phot

QSLs, but you don't want to spend a lot of money, you can easily make your own using several techniques. A high school Ham in Hawaii sent me a nice tourist color post card featuring a surfer. He laser printed his call sign on a transparent label and affixed it to the front of the card. Then he printed the QSO info on a paper label and affixed that to the back of the card. If he wanted to make more, he could approach the wholesale outlet listed on the card to buy in bulk in order to save money. The Signmaker NV5A of Baton Rouge sells self-inking rubber stamps with QSL exchange format blanks and legends. Go to his web site at <http://thesignman.com/stamps/index.html>. You can also get a rubber stamp with your call sign in large letters. Use those two stamps to stamp the information on the back of post cards.

If you need a larger quantity for a contest or mini-expedition, a local print shop can overprint your call sign on the front of post cards. You could even buy a selection of different views and stack them up for the overprinting so you would have a variety of cards. Many ink jet or laser printers will accept card stock. Try running the blank side of a post card through your ink jet printer using a mail merge program linked to your logging program. It will generate all of the QSO information and address the card simultaneously. Some retailers, such as Walgreen, sell custom photo Christmas and greeting cards. You can put any photo on the cards with any message you want. Why not QSL info?

Just remember to put as much information as you can think of on the cards. Awards are available for confirming many types of contacts, so information such as your CQ zone, IARU zone, IOTA numbers, FISTS numbers, 10-10 numbers, US counties and Maidenhead grid squares will make your card more desirable. Make sure there is enough information on one side of the card to confirm the QSO without turning the card over. This saves time and reduces errors for QSL managers and awards checking personnel.

A common problem when sending QSL cards to some eastern European countries is that postal thieves steal the mail for the postage stamps or else to steal the contents (especially if there appears to be a postal reply coupon or money inside). Avoid using collectible commemorative stamps. Folding over a reply envelope inside is a tip off to experienced thieves that there may be money or postal reply coupons inside. **Bob Konior K4RFX** came up with a ruse to fool potential thieves. He says, "Something I have found to work very well is to use plain, cheap, unfolded, nesting envelopes so that you CAN see thru to the material inside. I photocopy the front page of our club newsletter and fold it around everything inside so that it just looks like junk mail to the curious. I have had great result

since doing this."

Occasionally I report on small CW keys and paddles. Christchurch, New Zealand Amateur Radio Club ZL3AC Home Page features a paddle key club project. Click on "Projects". The Galbraith paddles are small and rugged with silver plated contacts concealed inside the body of the paddle. Multi-position brackets allow mounting the paddle on a base of your choice, or can be turned to the front and used to mount the paddle behind a transceiver front panel. Cost, with shipping, is only US \$40. See them at web site www.nzart.org.nz/nzart/branches/chch/branch05.

Bob Hightower NK7M from Chandler, AZ points us to the web page of **Richard Meiss WB9LPU**. Richard makes his own keys and CW paddles in Speedway, Indiana. Go to <http://www.w1tp.com/mrm.htm> to see Richard's handiwork. There are photos and design drawings for 8 straight keys, 6 iambic paddles and 3 non-iambic paddles. Most key ideas have been tried at one time or other so it's unusual to see anything truly innovative. Richard has come up with keys that use either springs or magnets to provide tension. His contribution to the art is in the pivots for his keys. They use ball bearings dropped into enclosed machined pockets as the pivot points. These are some of the slickest keys I've seen in a long time.

If you use a pick up truck for portable operation, you may want to see the portable antenna support at <http://www.netxqrp.org>. Click on "Projects" for a description of the simple support for a lightweight inverted VEE up 30 to 40 feet. The author, a Texan, calls it a "Bubba Pole" and says he likes anything to do with "pick up trucks and fishin' poles."

Go to <http://www.cplus.org/rmw/english1.html> for Radio Deluxe Freeware by **VE2DBE**. It predicts the performance of a radio system using digital terrain elevation data for automatic extraction of a path profile between a transmitter and a receiver. Superimpose topo maps downloaded from the Internet and use this software to create 3-D images of your VHF transmitter or repeater's coverage area. Free topographic maps are available on-line at <http://www.topozone.com>.

You can now receive telemetry signals from the AO-40 (Phase 3-D) beacon on 145.898 MHz. AMSAT News Service directs us to the web site <http://www.amsat-dl.org/p3d> for downloadable software to decode the telemetry. Currently available software is a zip file (PRT.exe) from North American Command Station operator **Stacey Mills W4SM** and runs on Windows 95 through 2000 operating systems. Mac and Linux programs are being developed. IZ8BLY also has an AO-40 telemetry-decoding program available at <http://iz8bly.syonline.it/P3D/index.htm>.

Thanks to **Rohn Blake KR0H** for directing our attention to a very long list of downloadable Amateur Radio software intended mostly for use with your soundcard. Go to <http://leden.tref.nl/~nl9222tv/software.htm>. One in particular that should be fun is Binster. It's used in conjunction with your HF rig to simulate a stereo effect while copying CW with earphones. It causes the CW to seem to be emitted from the middle of your head rather than coming in at your ears. Many operators find CW easier to copy with this effect.

Penn State University's Component Database Server is lo-

(Continued on page 6) Web Wanderings

PAARA Club Meeting

Election of Officer

December's annual elections were held at the general meeting. There were no contests. One nay vote assured a heady appearance of our process and all the candidates accepted the results. One vote taking by hand count swept all the candidates into office in about ten minutes. The Press showed no interest by their absence.

The election results included the reelection of **President Andreas, N6NU**, Treasurer **Bob, KD6KYT**, Secretary **Jay, WA6SBO**, and Directors **Don, KF6JMQ**, **Joel, KA7TXV**, and **Gerry, N6NV**. Newly elected were Vice President **Dick, KM6EP**, Directors **Jon, AF6FX**, and **Patrick, KB6HZM**.

After the election we had SHOW & TELL. Then **Eric, WA6HHQ**, talked about his company, Elecraft and the present and future product line of the K2, the K1 and a 100-watt amplifier and antenna tuner kits. We adjourned to a pizza parlor where we loaded an antenna with RF from **Dave's, WB6PPD**, new QRP rig.

73. - **Jay WA6SBO@ARRL.net**

Honorary Member 2000

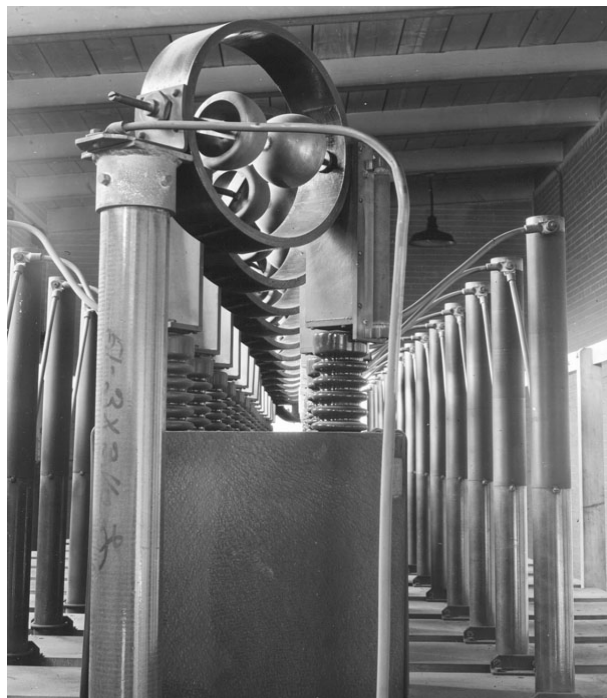
(Speaker 12/01/2000)

Eric Swartz, WA6HHQ

Andreas, N6NU project:

filter section & power amplifier section.

Photo courtesy **Jon, AD6FX**



AMATEUR RADIO TRAINING CLASS:

What: Ham radio volunteers are conducting a special training course, open to the public, to help you get your first federal amateur radio license: “No [Morse] Code Technician.” This is a “cram course:” just ONE Saturday. The FCC exam (35 multiple-choice questions) will be given at the end of the class. Free further training is available through the Amateur Radio Emergency Service.

When: Saturday, January 20, 2001 (8:30 AM - 5:00 PM)

Where: Foster City Community Center 1000 East Hillsdale Blvd. Foster City Fee \$20.00

Contact: Ross Peterson

Phone: 650-349-5349 FAX: 650-570-5558

E-mail wb6zbu@arrl.net

Sponsors Foster City Police Department, City of San Mateo
OES, SCARES

(Continued from page 5) *Web Wanderings*

cated at <http://zeus.cedcc.psu.edu>. This web site helps you to identify electronic parts visually. Sections include Component Identification, Vendor Data and Component Data based on part numbers. Components include resistors, capacitors, inductors, ICs and semiconductors. Each section includes a handy chart for visual identification of unknown types of components plus color codes, standard values, value ranges, sizes and types.

Ed Hare W1RFI, the ARRL Laboratory Supervisor, recommends that home brewers bookmark <http://webhome.idirect.com/~griffith/semixref.htm>. This site has a cross reference with data sheets and case drawings for transistors and semiconductors.

Thanks to **Jay Melvin WA6SBO** for pointing us to <http://ariss.gsfc.nasa.gov>, the web site for the Amateur Radio experiment aboard the International Space Station. Links to news articles are updated regularly. Another one to try if you like keeping up with space communications is <http://www.space.com>.



Moved; Left no forwarding Address:

(PAARAgaphs returned by US POST OFFICE)

Gregory Hutchins KF6YCR

PO Box 12835
Stanford, CA 94309-2835
No update in QRZ!

Joel Wilhite KA7TXV

2 Iris Lane
Menlo Park, CA 94025-1736.

For address change notify
Don Trask, KF6JMQ.....(408) 251 6494
trask@shell3.ba.best.com

SEMINAR & EXAM:

AMATEUR ("HAM") RADIO

WHAT: Amateur Radio ("Ham") License & Communications Training Course Conducted by the Stanford Amateur Radio Club (W6YX)

WHEN: Tuesdays 7 - 9 p.m., Jan. 30, Feb. 6, 13, 20;
FCC Exam Saturday, Feb. 24: Q/A session @ 10 a.m.;
EXAM starts promptly at 10:30 a.m.

WHERE: STANFORD UNIVERSITY FIRE/POLICE STATION

EOC CLASSROOM, 1st Fl. 711 Serra Street (From El Camino Real, turn on to Serra Street (West-bound). Turn RIGHT on Campus Drive East. Turn RIGHT on to Bonair Siding. Turn RIGHT into parking lot behind Police/Fire Station.)

FEE: \$30 for current Stanford students; \$50 for all other [Cash or checks payable to "Stanford Amateur Radio Club", P.O. Box 7615, Menlo Park, CA 94026-7615]. Includes a copy of textbook, Now You're Talking (ARRL) & \$10 VEC fee.

SIGN UP:

KEN DUEKER, KB6BPM - kdueker@w6yx.stanford.edu / 650-851-7248

FIRST CLASS IS January 30, 2001 - sign up NOW! This course is open to the public - priority given to Stanford University students/affiliates and public safety personnel from Stanford, Palo Alto, and surrounding agencies. This is course is designed to help you obtain your Technician-Class Federal license [no Morse code] - the (EASY!) Federal exam is administered as part of the class. The class also provides an introduction to emergency communications and how Amateur Radio is used. Free further training is available through the Amateur Radio Emergency Service

WØQK

ELECTRONIC COMPONENT SUPPLY
TEST EQUIPMENT • COMPUTERS



Alltronics

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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).

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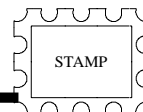
PAARA • Palo Alto Amateur Radio Association • P.O. Box 911, Menlo Park, California 94026-0911

- 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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PAARAgaphs January 2001



Palo Alto Amateur Radio Association, Inc.
PAARAgaphs Newsletter
P.O. Box 911
Menlo Park, California 94026

FIRST CLASS MAIL

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1st Friday 7:30 PM

Visitors Welcome