



# PAARAGraphs

Celebrating 61 years as a *real* ham radio club—Since 1937

Newsletter for the Palo Alto Amateur Radio Association, Inc.



## CALENDAR

- |     |     |  |
|-----|-----|--|
| Mar | 6,  | <b>PAARA Meeting, 7:30</b><br>Menlo Park Recreation Center<br>700 Alma Street, Menlo Park 7:30-9:30 PM   |
| Mar | 11, | <b>PAARA Board Meeting, 7:30</b><br>Bakers Square Rest., 949 Veterans Blvd., Redwood City<br>(Temporary until Red Cross building repairs flood damage) |
| Apr | 3,  | <b>PAARA Meeting, 7:30</b><br>“Home Brew Night” ( <i>Ham gear that is</i> )  |
| Apr | 8,  | <b>PAARA Board Meeting, 7:30</b>   |
| May | 1,  | <b>PAARA Meeting, 7:30</b>   |
| May | 6,  | <b>PAARA Board Meeting, 7:30</b>   |



## PROGRAM

March 6, 1998  
7:30 P.M.

### Speaker:

**“Richard Harrington”**

PAARA Radio NET every Monday evening at 8:00 P.M., local time  
on the 145.230 -600 MHz repeater, PL tone off



VE

Rain heavy, didn't expect many aspirants, but was wrong. Many showed up. Our exam force was short handed tho, Gene was necessarily absent, and for part of the session Dan Curry was not in his normal position. On hand we did have Joe Horn Sr., WB6OWG, Ron Panton, W6VG, and we were fortunate to have Mr. Girton himself, W6NW. Bill Sooman WB6UVO was on hand to administer the CW tests. It always seems that all the aspiring hams show up the same time. So for a while, it gets pretty hectic. One ham aced the extra with NO wrong answers. Doesn't happen to us very often, if ever. 73, Ron W6VG



## PAARA PONDERINGS

de VIC BLACK, AB6SO

A long-awaited series of major El Nino storms finally hit Northern California with a vengeance beginning February 2 & 3 bringing wide spread flooding, land slides, fires, tornadoes, lightning strikes, major road closures and downed trees, power and telephone lines which resulted in evacuations and traffic grid lock. Even the American Red Cross was adversely affected. The Palo Alto office, where the PAARA board meets, was evacuated when San Francisquito Creek overflowed into downtown Palo Alto. Renovations are estimated to take 4 to 6 months before the building will be habitable again. Lilly Anne Hillis N6PGM reported cars floating in the nearby University Avenue underpass where University passes under El Camino. The water rose up to the level of El Camino in the flooded underpass.

San Mateo County activated the Emergency Operations Center (EOC) in Redwood City. Representatives from many agen-

(Continued on page 22) Ponderings

## Miscellaneous Dates

- Flea Market at Foothill** (info at: <http://joslin.com/FleaMarket>)  
 Mar. 14 Silicon Valley Emergency Communications Society (SVECS)  
 Apr. 11 West Valley Amateur Radio Association (WVARA)  
 May 9 Palo Alto Red Cross  
**Jun. 13 Palo Alto Amateur Radio Association (PAARA)**  
 Jul. 11 San Jose Red Cross  
 Aug. 8 Santa Clara County Amateur Radio Association (SCCARA)  
 Sep. 12 Southern Peninsula Emergency Communications Society (SPECS)  
 Oct. 10 Electronics Museum Amateur Radio Club (EMARC)
- PAARA** Palo Alto Amateur Radio Association  
 meets 1st Friday 7:30 each month. Net 145.230 each Monday 8:30,  
 contact: Dave Bailey, WS6W 408 730 5215
- EMARC** Electronics Museum Amateur Radio Club  
 meets 4th Friday 7:30 each month,  
 contact: Sheldon Edelman 650-858-2176, [Edelman@richochet.net](mailto: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 WA6LNV 650-961-3266
- SPECS** Southern Peninsula Emergency Communication System  
 meets each Monday 8:00PM on Net 145.27, 224.36, 440.80 MHz  
 contact: Mike Hastings KB6LCI, 408-243-6745 or 408-249-6909.
- 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: Dick Collins K6ANN 650-593-8952
- 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](mailto: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, [fsh@richochet.net](mailto:fsh@richochet.net)
- VE Exams**, 3rd Saturday each month, 11AM, 145.23- PL=100Hz  
 American Legion Hall, 651 El Camino Real, R.C.  
 contact: Joe KB6OWG.

*An apology is the superglue of life.  
 It can repair just about anything*  
 —Lynn Johnston

### PAARA MONDAY NIGHT NET

8:30 PM 145.230-600 MHz repeater  
*PL tone off*

Latest news between monthly issues of PAARAGraph

## Palo Alto Amateur Radio Association, Inc. PO Box 911 Menlo Park, CA 94026

President.....	(vacant)	
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Treasurer.....	Doug Schliebus, W6HXL.....	(650) 851 0727
Trustee/Property/Badges..	Fred Canham, K6YT .....	(650) 948 9238
ARES Officer.....	Lily Anne Hillis, N6PGM .....	(650) 325 5484
Club Historian.....	Steve Stuntz, K6FS.....	(650) 322 4952
Advertising.....	Bob Korte, KD6KYT .....	(650) 595 1842
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John Buonocore, KD6ZL	(650) 366 1658 '99
Terry Conboy, N6RY	(510) 944 5388 '99
Steve Stuntz, K6FS	(650) 322 4952 '99
Vic Black, AB6SO,	(650) 366 0636 Past Pres

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

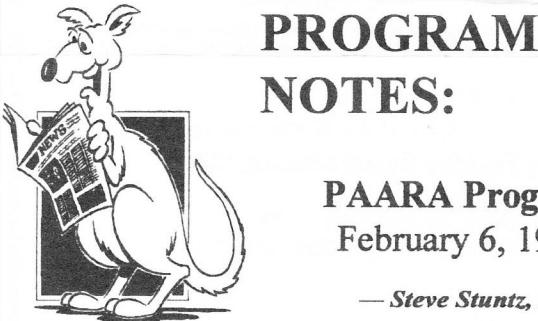
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Submit material for PAARAGraphs by the 15th

**PAARA Website** <http://www.qsl.net/paara/index.html/>



## PROGRAM NOTES:

### PAARA Program, February 6, 1998

— Steve Stuntz, K6FS

This meeting inaugurated PAARA's latest catchup acquisition - an elegant bulb-changing 3-M overhead projector, purchased by **Wally Porter, K6URO**. Now we can really accommodate our distinguished visitors!

Guest speaker at our meeting February 6, was **Ken Kitlas, KD6OBU**, topic: "Amateur Rocketry and Ham Radio". Going back to the 1940's, as Kit outlined it, an active amateur rocketry club has been active; much of its experimental activity has taken place in the Smoke Creek desert area of Nevada, about 100 miles north of Reno, the nearest town being Gerlach, home of the annual "Burning Man" event. Radio, especially ham-band VHF/UHF, serves three purposes: telemetry (transmitting signals from the rocket); command (sending control instructions to the rocket); and radio location (tracking the "bird" in flight, and finding it after it has returned to earth down-range).

Describing his early experiences as a member of the group,

*(Continued on page 23) Program Notes*



## WEB WANDERINGS

de Vic Black, AB6SO

Subj: March Wanderings  
 From: vic.black@adept.com  
**WEB WANDERINGS**  
 de Vic Black, AB6SO

Antennas are one of the more interesting aspects of the hobby for many amateurs. Publisher **Jack Stone** says, "Selected as a ham site of the month, this popular online magazine has many fresh tech articles ready for viewing at: <http://www.antennex.com>". This commercial venture has a subscription fee, but you may try free article previews to get the flavor of this antenna related electronic magazine.

The very popular J-Pole antennas are half wave VHF/UHF verticals with bottom quarter wave matching stubs. They don't need a ground plane or radials to work well. ARRL Technical Information Service (TIS) maintains a J-Pole bibliography from as early as 1950 including magazine articles from QST, CQ, and 73 is at <http://www.arrl.org/tis/bibs/antjpole.html>.

**Jeff Herman W8EDU** offers plans for TV twinlead and 2 copper pipe J-Poles as well as about 20 other home brew projects at <http://cnswww.cns.cwru.edu/misc/w8edu/projects>. See <http://home.fia.net/~n4bz/ham/jpoles.htm> for variations such as twinlead, ladder line, collinear and copper cactus (multi-band) J-Poles.

**Gary Deutschmann KG0ZP** offers plans for a multi-band copper cactus, double or triple high J-Poles and single coax feed for the copper cactus at <http://archimedes.galillei.com/raiar>. A 5/8 wave, 2 meter copper J-Pole from **Ed Humphries N5RCK** is at <http://www.qsl.net/K7ON/ant/jpole.txt>.

Go to <http://www.cvarc.org/PROJECTS.HTM> for really nice diagrams of roll up 300 ohm twinlead or copper pipe J-Poles plus cubical quads. Stacked 2 meter J-Pole and copper cactus J-Poles for 6 meters through 1.2 GHz are presented at <http://207.65.92.2/jerome/J-pole.htm>. Many antenna articles, including several on J-Poles, can be found at [http://www.qsl.net/wb4hfn/antenna\\_menu.htm](http://www.qsl.net/wb4hfn/antenna_menu.htm).

The Woodstock, NY QSY Society maintains a really nice Web page at <http://home computer.net/~qsy/index.html>. Look for links to their club projects pages for professional drawings of a simple twinlead 2-m J-Pole designed by **Joe Leggio WB2HOL**, a 2-m copper J-Pole and a 6m/2m/70cm Tri-Band J-Pole. **Keith Hibbert WB2VUO** describes a 10 meter maxi J-Pole from TV push up mast or galvanized chain link fence top rail at <http://www.qsl.net/k7on/ant/10mjpole.txt>.

You can also buy finished antennas. Jade Products sells roll up twinlead J-Poles as well as base station twinlead J-Poles mounted in PVC radomes for easy, permanent mounting. They are available in kit form. See <http://www.jadeprod.com/jadepole.html> for their offerings. Shoestring Antennas lo-

cated at <http://www.qth.com/shoestring> is a commercial source for 2 meter, 1-1/4 meter and 70 cm ladder line J-Poles plus 2 to 6 element quads.

I use an Antennas West 2M/70cm dual band Pico-J, a roll up twinlead J-Pole. The pocket antenna stores in a sun glasses pouch. It's handy to use from motels, while hiking, mountain topping or at home. They offer Pico-J's optimized for 2M FM & packet, 220MHz and Aviation bands. Go to <http://www.antennaswest.com/antennaswest>.

For truly stealthy VHF/UHF antennas, check the microstrip patch antennas and a tutorial on this exciting technology offered by Ant-Panel Products at <http://www.qth.com.antpanel/MSA.htm>. The antennas look like solar panels and are unidirectional with high gain. This technology is commonly used in computer mouse shaped GPS receiving antennas.

For a change of pace, check plans for simple 2 and 6 meter halos or an 8 element 432 MHz quagi with a 5 foot wood boom and six welding rod directors plus a wire quad driven element and quad reflector. Go to <http://members.aol.com/n2kbk/index.html>.

**Eric McFadden WD8RIF** has posted about 80 articles on all types of antennas at <http://www.qsl.net/~wd8rif/archives.htm>. He also has a FB Ham/Railfanning page linked to this site.

The PAARA HF Mobile SIG is becoming active. **Dan Curry WB6STW** recommends <http://www.w6aaq.com>, maintained by **Don Johnson W6AAQ**, former PAARA member and the Screw Driver Mobile Antenna inventor. There's lots of information about **Don**'s publications and setting up mobile rigs. **Dan Curry**'s personal Web page at <http://www.qsl.net/wb6stw> is also interesting.

**N5RV**'s Mobile HF Home Page is linked to PAARA's Web page or access it directly at <http://home1.gte.net/n5rv>. There's info on Noise Cures, Antennas, Accessories, etc. Photos of ham 4WD caravans include some of my favorite destinations such as Cerro Gordo.

The **KA6WKE** HF Amateur Radio Mobile Page is at <http://www.geocities.com/CapeCanaveral/3518/hfmobile.html>. You'll find lots of information on how to set up an HF mobile rig and keep it running. All of these sites advise you to plan on about 40 - 60 hours for planning and installing your station if you expect optimum results.

The Motorcycling Amateur Radio Club (MARC) Web site at <http://www.calgary.shaw.wave.ca/~dpushie/marc> will be of special interest to motorcycling PAARA members. There are tips on VOX set up, push-to-talk switches, power supplies and mounting antennas on motorcycles (not easy on a plastic fairing) plus e-mail addresses for questions or idea sharing.

January's Web Wanderings featured Ham Radio Online, touted as the "World's Leading Amateur Radio Web Site". Publisher **Ed Mitchell KF7VY** of Issaquah, WA has linked PAARA's Web Site to Ham Radio Online. This will give us a lot of exposure to Web surfers. **Ed** said, "Vic, I'm updating the list and have PAARA listed. I moved out of Palo Alto in 1989. I was then **WA6AOD** and an assistant EC under the late **Jim**

(Continued on page 23) Wanderings

(Continued from page 19) *Ponderings*

cies worked around the clock for several days. Disaster Services Workers reported from the American Red Cross, Sheriff's Office, California Highway Patrol, US Army California National Guard, California Department of Forestry, Office of Emergency Services, California Department of Transportation (Caltrans) and other agencies. They dispatched search and rescue units, and deployed vehicles, boats and even aircraft from the center.

Governor Pete Wilson declared a state of emergency in 27 counties. In addition, Governor Wilson has asked President Clinton to declare a major disaster for those 27 counties battered so severely by the current winter storms. More than 10,000 California state employees have been committed to flood response efforts throughout the state, bringing critical support to local areas affected by the winter storms. "The intensity of this week's storms has challenged emergency response personnel working round the clock," said Governor's Office of Emergency Services Director Richard Andrews. "Protecting lives and property is difficult, but rewarding work and Californians have proven that, once again, they are up to the challenge."

In addition to all the other state employees committed to storm relief, the CDF deployed 2,216 people, Calif. Conservation Corps raised 524, CHP called in an additional 2,500 uniformed officers and Cal Trans called in 5,000 personnel.

The California National Guard's Crisis Action Center activated 719 soldiers and airmen throughout the state. A Blackhawk helicopter (UH60) assisted with evacuations in San Benito County and two more were assigned to Colusa and Mendocino Counties. One OH58 RAID helicopter, equipped with Forward Looking Infrared Radar is being used to identify cracks and leaks in the California levee system. More storm relief information is available from the OES home Web page at <http://www.oes.ca.gov>.

PAARA members responded as emergency communicators and flood watch spotters. The volunteers included: Bill Smith KE6CHQ (Red Cross Shelters), Lily Anne Hillis N6PGM (AEC, Menlo Park), Ken Dueker KB6BPM (AEC, Atherton), Jim Price KO6GM (San Mateo Co. Sheriff's OES), Bill Fies K6TYO (San Mateo Co. Sheriff's OES) and Vic Black AB6SO (Redwood City Police Department Flood Watch and Sheriff's OES).

February 2 and 3 Jim Price volunteered at 1 am to work as a flood watch spotter with the Redwood City Police Department and then did a second shift as Emergency Operations Center (EOC) Net Control Operator for the San Mateo County OES Net. Vic Black responded to the 1 am call and stood by as an auxiliary OES EOC Net Controller. Several other PAARA members were overheard giving impromptu reports of traffic hazards, stalled cars, flooded intersections and other incidents. At the height of the operation about 350 county residents were evacuated to shelters. Flooding in the mid peninsula area was the worst we've seen since about 1955.

Later in the week, the EOC went into full 24-hour operation. Bill Fies K6TYO began operating from 8 pm - 4 am. Vic was operating split shifts from 5 - 10 pm and 4 - 8 am in order to accommodate a normal daytime work schedule. Jim Price worked daytime 8 hour shifts. The crew relayed many messages from people whose only means of communications was by amateur radio.

This was especially true for La Honda residents who were cut off from the world for several days. Life went on as usual. Heart attacks didn't stop. Pregnancies didn't go on hold and fires didn't put themselves out. One of the jobs done by the hams was to assign cell phones to rescue workers. As expected, the phones didn't work in many areas (especially neighborhoods that previously opposed antennas and installation of cell sites). Sheriff Horseley visited the amateur radio operations center in Redwood City and was very impressed by the capability to communicate when all else failed.

Well known La Honda VHF competitor Dianna Killeen KB6NAN seemed to be on a 24 hour schedule for several days helping her neighbors using only battery operated equipment. She left the air several times when lightning strikes came close to her location.

Hopefully, I have given credit to most of you , but with such a wide spread response it is difficult to keep records of all participants. I was aware of San Mateo County OES operations, but many of you worked with Santa Clara County and various cities. Oh, yes! Thanks to Evelyn Woods for the Speed Sleeping Course!

Join me in congratulating PAARA member Dave Rice W6NUC for his upgrade to Amateur Extra Class. Another job well done! On Sunday, February 8, Dave left home telling his wife he would return as soon as he worked his last state for mobile Worked All States. He picked up the needed Delaware contact (yes, Dave, a ham DOES live in Delaware). He also worked his first Europeans---one in Finland and the other in Portugal. Nice work from a mobile setup. And he returned in time for planned chores around home.

PAARA was ably represented in the July, 1997 IARU HF World Championship by Kit Kohlmoos W6ISO who ranked sixth place in Santa Clara Valley Section with 147 QSO's which earned 18,354 points. Not bad for a casual weekend of fun operating. And it's enough to qualify for the PAARA 60-60 award for making 60 contacts during the last half of 1997 in honor of PAARA's 60<sup>th</sup> anniversary, although Kit submitted a separate log for that award. Kit entered the championships in the Single Operator, Mixed Mode category. There were 1,329 entries world wide. Sorry for the apparent lag in reporting contest results, but many contests aren't reported by the sponsors for up to an entire year. ☺☺☺

—Vic AB6SO

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An apology is a good way to have the last word—Dell Crossword Puzzles

(Continued from page 20) Program Notes

Kit showed color-slides of operations at the test-site, and described early experiments with fuel mixtures. One of their earliest "mixes" was a smoke trailing combination of motor oil, asphalt, and potassium perchlorate, later replaced by a liquid fuel similar to that used in the big time launches from Cape Kennedy.

By overhead projected maps and 35-mm color slides, Kit showed the desolate, remote areas where his group set up launch sites and camped for days, living under primitive conditions after trekking over rough, unpaved "state" roads.

One requirement encountered was that the rocket group secure "certificates of waiver" from the Federal Aviation Administration for rockets penetrating altitudes above 13,500 feet above sea level. These had to be arranged a month in advance of operations, giving location and times of proposed launches. NOTAM's (Notices to Airmen) were published in accordance with FAA practices; Kit remarked that he had actually seen flights diverted (by air traffic control-ed.) from launch areas.

One of the fascinating aspects of even amateur rocketry is the velocities and rates of acceleration encountered: for example, a vehicle starting at zero may reach a speed of 5,000 feet per second in flight - almost five times the speed of sound. At takeoff, G-forces up to 40 were usual, with up to 5,000 at launch.

One of the common problems was controlling temperatures of rockets standing on launch pads: the Nevada sun beating down on a waiting bird could cause premature fuel ignition. Another was the effects of low atmospheric pressure at high altitudes causing arc breakdowns in on board electronics.

Since these were experimental rockets, they varied in size and payload capability from a few ounces to as much as ten pounds. On several of the larger ones, amateur two meter repeater type installations were attempted. Kit pointed out dipole antennas laid up along the sides of several larger birds, which of course were cylindrical in shape, with the customary nose cones and tail fins. Rocket body diameters ranged from two to five inches, with the latter being the most often used.

From the radio point of view, Kit noted that on board antennas were customarily placed in the nose cone, which resulted in some interesting propagation problems, especially when high energy liquid fuels were used, due to ionization of the exhaust gases emanating from the rear of the bird. In that direction, antenna radiation from the rockets was essentially

(Continued on page 24) Program Notes

**Bring a Show & Tell**  
to the next  
**PAARA meeting**

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

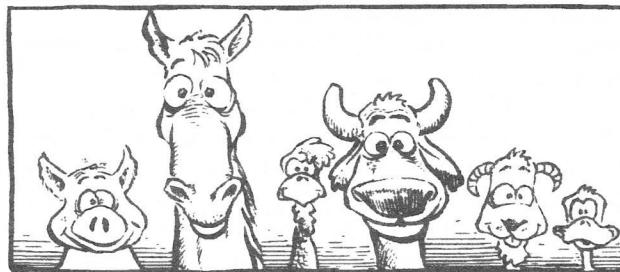
Club meetings are on the first Friday of each month, 7:30pm at the Menlo Park Recreation Center, 700 Alma Street, Menlo Park, CA. • Radio NET every Monday evening, at 8:30pm, on the 145.230-600 MHz repeater, PL tone off. • Membership in PAARA is \$12.00 per calendar year which includes a subscription to PAARAGraphs. • Make payment to the Palo Alto Amateur Radio Association.

(Continued from page 21) Wandering

Lomasney, WA6NIL, and an active member of SPECS. 73, Ed, KF7VY <http://hamradio-online.com>". Thanks for the link, Ed!!

If you've ever experienced sporadic-e propagation, you'll appreciate the slogan of Mike Smith VE9AA in New Brunswick, "See you (all of a sudden!) on the Magic Band-6 meters". ☺☺☺

—Vic, AB6SO



Join us for pre-meeting eyeball

## QSO March 6th gab & gobble

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



## PAARA WEB SITE

check it out  
<http://www.qsl.net/paara/index.html>  
webmaster: Andreas Junge KF6NEB

## HOME BREW NIGHT

April 3rd  
enter PAARA Home Brew Contest  
PRIZES  
info at March PAARA meeting

## PAARA MONDAY NIGHT NET

8:30 PM 145.230-600 MHz repeater  
PL tone off

Latest news between monthly issues of PAARAGraph

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nil, so that ground monitoring and command equipment had to be stationed at considerable distance from the rocket's path in order to remain in the on board antennas' useful lobes. This was a special problem when dipole antennas were "pasted" vertically up the side of the rocket, since ground equipment directly under the rocket, or even off to one side at the launch site, were essentially seeing the ends of the dipoles - and as everybody knows, dipoles radiate most energy at right angles to their longitudinal axes.

Recovery of a rocket after landing down range became another problem, despite the use of on board beacon transmitters, due to difficulty crossing rough, vegetated terrain - and often to invisibility of the parachute used to ease the bird back to earth after fuel burn out; the usual procedure was to keep visual contact with the rocket during flight, and estimate its impact point when viewed from the launch site.

Kit concluded his account of the vicissitudes of amateur experimental rocketry by showing some circuit boards designed command-control and telemetry operation. ☺☺☺

—Steve K6FS

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## PAARAGraphs Ad Rates

PAARAGraphs accepts paid advertisements from non-members.

(short personal ads remain free for members in good standing).

All ad rates listed are per issue only.

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

These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association.

The PAARAGraphs editors reserve the right to reject any ad deemed to be not in the best interest of the Association. All fees are for "scanner-ready" copy or text-only ads.

## FOR SALE

by  
PAARA

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# ARRL Online

From ARRL Pacific Division: February 1998

## 50 Years for W6OWP Code Practice Sessions:-

Fifty years ago this month, Bart, W6OWP, began the West Coast code practice and qualifying runs. The first official announcement appeared in the June 1948 edition of QST. Congratulations, Bart, and thanks!

## ARRL Radio Coaches Program to Enhance Elmering:

Over the years, countless letters and articles have been written in the pages of QST about Elmers, those patient, inspired souls who thoroughly enjoy bringing newcomers into the world of Amateur Radio. Now, the ARRL's new Radio Coaches program takes Elmering to new levels. Through the Radio Coaches program, you and your fellow club members can become part of a national effort to better the lives of youth using Amateur Radio. And ARRL will provide the game plan and materials!

Radio Coaches stems from the kickoff of America's Promise, the Alliance for Youth, a national campaign to improve the lives of the nation's young people and put them on paths for brighter, more productive futures.

The mission will be to give young people an ongoing relationship with a caring adult and a marketable skill through effective education. Amateur Radio will be our chief tool.

Through Radio Coaches, we want to reinforce the idea that Amateur Radio is a "sport for the brain." Ham radio provides not only a lifetime of enjoyment, but also, potentially, a lifetime career.

## For Sale Complete VHF Station

**Yaesu FT-5100 Dual Band 2 mtr 440**

decode option installed.

**Astron 20 m 20amp**

pwr supply with meters

**Yaesu YS 500 SWR / PWR meter**

**MFJ VHF Dummy Load**

**Diamond X-50 Dual Band Base Antenna.**

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or E-mail: [davidkrice@EMAIL.MSN.COM](mailto:davidkrice@EMAIL.MSN.COM)

—73 de Dave,W6NUC

To get involved contact Radio Coaches, c/o Field Services Department, ARRL, 225 Main St., Newington CT, 06111; or e-mail [coaches@arrl.org](mailto:coaches@arrl.org).

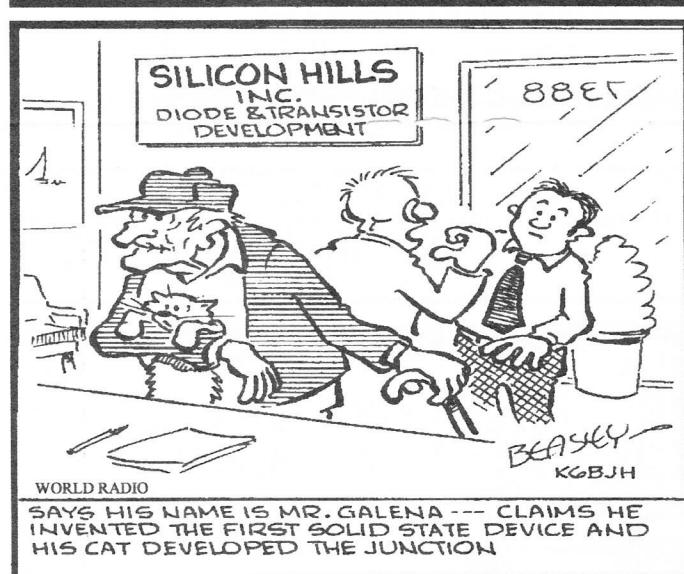
## Ham RF Exposure Guidelines

**Effective Jan. 1, 1998:-**

Compliance with the new guidelines should be relatively easy for the vast majority of hams and should require few changes in current operating practices. These Amateur Radio rules will deal with the general public for the first time in a new substantial manner; therefore, compliance is very important.

There are numerous information resources - an excellent summary of the guidelines is contained in October QST, pages 51 and 52. An article titled "How To Do a Routine Evaluation," starting at page 50 in the January 1998 QST, will answer most questions. Also, an ARRL book on this subject should be available soon.

For the latest news on this matter and linkage to related Web sites, visit the ARRL RF-Safety Web page at <http://www.arrl.org/news/rfsafety>. To obtain the FCC documents directly refer to the FCC site at <http://www.fcc.gov/oet/rfsafety>.<sup>©©©</sup>



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