

PAARAgraphs

Since 1937

Monthly Newsletter for the Palo Alto Amateur Radio Association, Inc.



Calendar

December 6, **PAARA Meeting**, 7:30

Menlo Park Recreation Center
700 Alma Street, Menlo Park 7:30-9:30 PM

December 11, **PAARA Board Meeting**, 7:30

Red Cross Blvd. 400 Mitchell Ln., Palo Alto

January 1, **1997 PAARA Membership Dues**, \$12/yr
(give check to Dave Bailey, WS6W, Treas.)

January 3, **PAARA Meeting**, 7:30

January 8, **PAARA Board Meeting**, 7:30

January 9, ✕ **Winter Party** ✕ (see page 97)

February 7, **PAARA Meeting**, 7:30

February 12, **PAARA Board Meeting**, 7:30



Program

December 6, 1996 7:30 P.M.

Speaker:?? Not confirmed at press time.

Check on NET Monday night before meeting.

PAARA Radio NET every Monday evening, at 8:30pm,
on the 145.230-600 repeater MHz, PL tone off. •

**IT'S
ALL
YOURS!**



DX

is still pretty hard to find, but 20 meters is still good most every day. 40 CW is good, but only during darkness, local time. My preference is still 15 meters, but only a few East coast stations and weak Spanish speaking stations are heard here. My 15 meter skeds with New Orleans and El Salvador have not been working out for a couple of years. It will be interesting to hear how DX is coming though during the CQ WW DXcontest this month. This will be the weekend of November 23-24. Also in November see page 101 of QST for a list of upcoming events. Plenty of contests with foreign hams anxious to work USA. Also, the US sweepstakes will be taking place in November for any of you who are trying to work "All States" (WAS). Each day brings us closer to the improvement in the sun-spot cycle. Keep listening, and as Cass, WA6AUD says, "Keep the Faith"

Ron, W6VG



VE

The volunteer staff is dwindling at our 3rd Saturday each month FCC tests. After 60 plus years of ham radio and the many jobs it afforded me, I figured it was time to put something back into ham radio. Only 3 PAARA club members are showing up for this important event each month. Thankfully, we also have 2 dependable volunteers who are not PAARA memers. One of these is our vitally needed CW tester. The other comes over from Fremont. **Please!**, let's see some action from PAARA. An extra or advanced license is not necessary. Any day now WB6STW will be giving the exams to any class of applicant. On the October 19 exam date we had only KB6OWG, WB6UVO, KK6LO and W6VG. WB6UVO is the CW examiner, which left us with only 3 to do the paper work, give out exams, and grade the exams. We need at least one more volunteer, and I should hope it will come from PAARA.

Ron, W6VG

Miscellaneous Dates

Flea Market at Foothill

will resume next March

PAARA Palo Alto Amateur Radio Association

meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30, contact: Bill Rausch, AA6PA.....(408) 637-0622.

PAARA Auction, 2nd Saturday of October

contact Jerry Tucker, WA6LNV 415-961-3266

EMARC Electronics Museum Amateur Radio Club

Meets 4th Friday 7:30 each month, contact Sheldon Edelman 415-858-2176.

NCDXC Northern California DX Club

Meets 2nd Friday each month, repeater for member info 147.360, each Thursday 8:00PM, contact John Troster W6ISQ 415-854-3939.

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 415-961-3266

SPECS Southern Peninsula Emergency Communication System

Meets each Monday 8:00PM on Net 145.27, 224.36, 440.80 MHz contact Mike Hastings KB6L CJ, 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 415-593-8952

Disaster Services, Palo Alto Chapter, American Red Cross

Meets 3rd Wed. each month 7:30PM, HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite, contact Ruth Claypool 415-688-0423.

PACIFICON'97,

VE Exams, 3rd Saturday each month, 11AM
American Legion Hall, 651 El Camino Real, R.C.

From ARRL Headquarters November 14, 1996

ARLB080 New 2.3 GHz service

The FCC has proposed to create a new Wireless Communications Service (WCS) in the 2305-2320 and 2345-2360 MHz bands and to award licenses on the basis of competitive bidding. The bands include a 5 MHz segment that Amateur

(Continued on page 96)

The Board Minutes

(November 6, 1996, 7:30PM Board Meeting)

Present: **Bill Rausch, AA6PA***, Pres

Dave Bailey, WS6W, Treas.

Vic Black, AB6SO, VPres.

Fred Canham, K6YT*

Kit Kohlmoos, W6ISO*

Steve Stuntz, K6FS*

Wally Porter, K6URO

*Board Member

Minutes: (of previous meeting) approved.

1. Treasurer Report: **Dave, WS6W** (see page 95).

2. Holiday Dinner - **Kit, W6ISO**, investigated Fabbro's and **Dave, WS6W**, investigated the Bold Knight in Sunnyvale. It was decided that Fabbro's is the better location since it is more centrally located for the membership. The cost per person will be about \$25, and the tentative date is January 9, 1997 (*price, place and date confirmed, 11/10/96, see page 97*). **Kit, W6ISO**, moved that this option be investigated further. **Fred, K6YT**, seconded. The motion passed.

3. Amateur Radio Class - The *Now You're Talking* books were returned to **Bill, AA6PA**. Since only four people signed up for the last class, it was decided that more publicity is needed for the next class, which will most likely be held next spring. One possible suggestion was the Palo Alto Weekly. **Wally, K6URO**, said that an orientation meeting 2 to 3 weeks before the class would be a good idea. The books are now in **Dave's, WS6W**, custody.

4. Officer Nominations - We have nominees for all offices except Treasurer. The elections will be held at the next meeting (12/6/96).

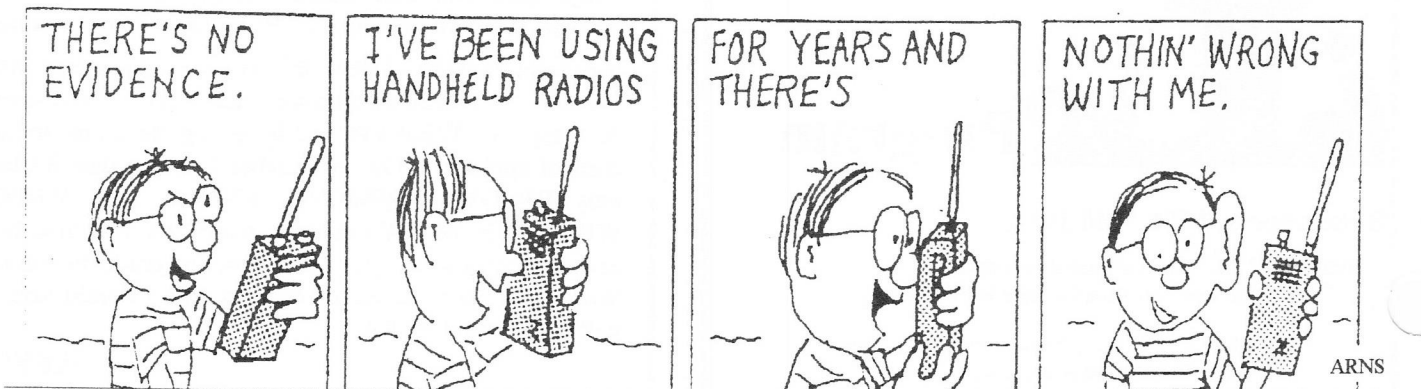
Steve, K6FS, moved that the meeting be adjourned and **Kit, W6ISO**, seconded.

Submitted by **Dave, WS6W**



ELMER

BY RICH REGENT, K9GDF



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

President.....Bill Rausch, AA6PA.....(408) 637-0622
 VP/ Program Director...Vic Black, Jr., AB6SO.....(415) 366-0636
 Secretary.....To Be Filled
 Corporate Secretary.....Kit Kohlmoos, W6ISO.....(415) 366 7813
 Treasurer.....Dave Bailey, WS6W(408) 730-5215
 Trustee/Property/Badges..Fred Canham, K6YT(415) 948-9238
 ARES Officer.....Lily Anne Hillis, N6PGM ...(415) 325-5484
 Club Historian.....Steve Stuntz, K6FS.....(415) 322-4952

Board of Directors

John Buonocore, KD6ZL (415) 366 1658 '97
 Fred Canham, K6YT (415) 948 9238 '97
 Kit Kohlmoos, W6ISO (415) 366 7813 '96
 Bill Smith, KE6CHQ (415) 366 9173 '96
 Steve Stuntz, K6FS (415) 322 4952 '97

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

PAARAgaphs Staff

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1997 ARRL January

VHF Sweepstakes Contest Rules

By **Billy Lunt, KR1R**, Contest Manager(blunt@arrl.org)

It's time to kick off the first VHF contest of the new year 1997. Football fans, don't fret; you won't even have to miss a game. This event is scheduled to take place on the off weekend between the conference playoffs and the Superbowl -- January 18-20, 1997. It's the perfect thing for an exciting break from the gridiron.

VHF contesting is loads of fun, and you don't need to be a proud owner of a lot of real estate to house your antennas, unless, of course, you are a real dedicated advocate of weak-signal contesting and have H frame after H frame full of antennas on 10 or 15 different bands! It really doesn't take a lot of equipment or antennas to have fun in this event. If you have a hand-held or two, you can make dozens of contacts while experiencing the fun and excitement of VHF contesting, but the real fun does comes when you get into weak-signal CW and SSB operating. Weak-signal work is where the real bread-and-butter contacts are made. But don't give up if you only have an FM transceiver. You can still have a lot of fun. Many ham radio clubs encourage their members to participate in this event. So if you live in a metropolitan area or near a large VHF contest club, there will be a lot of FM activity on the bands during the VHF Sweepstakes.

The contest period is from 1900 UTC Saturday, January 18, to 0400 UTC, Monday, January 20, 1997. You can operate during the entire contest, or as much or as little as you like. It's entirely up to you, but the more you operate, the more fun you're going to have. You also have a choice of entering single operator (single band, multiband, QRP

(Continued on page 99)



Nominating Committee Report

Kit Kohlmoos, W6ISO, Committee Chairman

The Committee recommends the following for PAARA Officers and Board member, to be voted at the next PAARA meeting, December 6, 1996:

- President.....Vic Black, AB6SO**
- Vice-President.....Dave Meacham, W6EMD**
- Secretary.....Dave Bailey, WS6W**
- Treasurer.....**
- Director 97-98.....Charles Grandjean, WD6FAF**

(Directors: John KD6ZL, Fred K6YT and Steve K6FS terms continue through 1997)

Voting will be conducted during the bussiness section of the December 6, meeting in accordance with PAARA bylaws.



TREASURER REPORT

Dave Bailey, WS6W

Revenues '96	AUG	SEP	OCT	1996 Total
Dues	0	30	6	588
Flea Market	0	0	0	6116.28
AMPEX Auction	0	0	3336.01	3336.01
Advertisements	0	0	0	600
Holiday Dinner	0	0	0	0
Raffle	81	0	0	81
Equipment Sales		447.82		447.82
Total Revenues	81	477.82	3342.01	1116.11
Expenditures '96				
Stamps/Envelopes	32	0	0	64
DMV	0	0	0	43
State of CA	0	0	0	10
City of Menlo Park	150	0	0	300
Speaker's Dinner	9	10	0	110
Flea Market	0	0	0	1737.24
AMPEX Auction	0	200	0	200
Meeting Refreshments	0	0	10.43	81.95
PAARAgaphs	216.89	255.69	198.68	2072.15
Picnic	0	0	0	86.63
Field Day	0	0	0	76.39
Holiday Dinner	0	0	0	0
Amateur Radio Class		155.16	0	155.16
Misc.	13.85	0	313.25	640.91
Total Expenditures	421.74	620.85	522.36	5587.86

HR Online The Contest Calendar

NOVEMBER 1996

NOV 23-24: 21st Annual Suncoast Amateur Radio and Computer Convention and 1996 ARRL SouthEastern Division Convention, sponsored by the Florida Gulf Coast Amateur Radio Council.

DECEMBER 1996

DEC 14-15: Troy Amateur Radio Association 5th Annual - TARA RTTY SPRINT, 14-15 Dec

JANUARY 1997

JAN 11: ThunderBird ARC will host its 2nd annual West-Fest Hamfest in Glendale, AZ ·JAN 18: Amateur Radio & Youth and Southwestern Academy Radio Club will hold their 5th annual Hamfest, 8am-2pm. Located at Southwestern Academy in Flint Michigan. Dealer setup Friday after 6pm or Saturday after 6am. 8' tables \$10. 100s of dealers with new and used equipment. Contact Keith Allen/N8QNA (810) 232-5170 or kallen@tir.com

FEBRUARY 1997

FEB 1: Second annual Potter-Randall ARES hanfest. Free hamfest no charge at the door. WHERE: 2500 Tee Anchor Blvd, National Guard Armory, Amarillo, Texas ·Augusta (Maine) ARA presents Winter 'Fest 1997, 9 February 1997

MARCH 1997

MARCH 1: Black Warrior Hamfest 97 - Tuscaloosa, Alabama Location: West Alabama State Fair Grounds, Tuscaloosa, Alabama, 8:00 am till 5:00 pm The Black Warrior Hamfest will include dozen of dealers from all over the Southeast. Pleaty of parking, Tailgate area, food, Swap tables and lot's of fun. For more information contact: Kelly Bruce, WD4DAT (205)339-7882 or Email to bwaha fest@juno.com.

APRIL 1997

APRIL 26: UVARC is hosting a Hamfest and Computer Show in Roseburg Oregon Location: Douglas County Fairgrounds Time: 9 AM - 3 PM Admission: \$5. Largest Show in souteren Oregon. Commerical dealers, Swap tables, Seminars, VE Testing, Hourly drawings, Grand Prize drawing for computer and Ham intrests. Tables and Booths available. For more information contact w5pii@juno.com.

JUNE 1997

JUNE 24: The Hanover Area Hamming Association is pleased to announce that our 4th annual hamfest will be held at the Pleasant Hill Volunteer Fire Department in Pleasant Hill PA, about 5 miles south of Hanover PA on PA Route 94.

JULY 1997

JULY 13: TenTen International Biennial Convention, Council Bluffs, IA, 13 July 1997. More info later.

AUGUST 1997

AUG 16: Roanoke Valley Amateur Radio Club of Roanoke, VA will be holding it's annual Hamfest/Computer Show at the Roanoke Civic Center on August 16th 1997 from 9:00am - 3:00pm. Contact Terry or Ben Vlug at 540-890-6782 or via ae4ew@ix.netcom.com. Dealers contact Claude Slomczewski at 540-774-8971 or ke4uvo@intrlink.com. ·AUG 24: Woodstock '97 Hamfest at McHenry County Fairgrounds, Woodstock, Il . Contact: Bob Grosse N9KXG, Talk In 146.52 Simplex, email TCRGINC@AOL.COM or visit the web site at <http://www.angelfire.com/pages1/tcrg/index.html>

(Continued from page 94)

Radio shares with government services between 2305 and 2310 MHz. Just before it adjourned, the 104th Congress approved a provision as part of the much-larger appropriations bill that directed the FCC to put the 30 MHz of spectrum in the 2.3 GHz region up for competitive bidding to help balance the budget. It's believed to be the first time the Congress has ordered the reallocation of specific frequencies. The National Telecommunications and Information Administration (NTIA) had identified for reallocation the amateur segments 2300-2310 MHz and 2390-2400 MHz in May 1994, so reallocation of part of that subband came as no surprise. At its special session in October, the ARRL Board of Directors approved a proposal to seek an increase in the amateur service allocation status, from secondary to primary, in the 2300-2305 MHz segment. The FCC says the new WCS service would allow licensees to provide any fixed, mobile or radio location service, or satellite Digital Audio Radio Services (satellite DARS), consistent with the international frequency allocations for these bands. The Commission also proposed to adopt no restrictions on eligibility for a WCS license and to allow WCS licensees "to partition their service areas, disaggregate spectrum, and franchise portions of their spectrum or service areas on a leased basis." Competitive bidding for the two segments will begin no later than next April 15. Comments are due by December 4, 1996, and reply comments by December 16, 1996.

New Outgoing QSL Service fee:

The fee for the ARRL Outgoing QSL Service is going up. Effective January 1, 1997, the fee for the Outgoing QSL Service will be \$4 per pound or any portion of a pound. The fee remains at \$1 for ten cards or fewer.--Joe Carcia, NJ1Q

DXCC Processing Status: The DXCC Desk reports that the number of unprocessed applications at the end of October 1996 was 604 (46,284 QSLs). It received 340

(Continued on page 99)



Winter Party Thursday January 9 Fabbro's Restaurant

2915 El Camino Real Redwood City
Happy Hour 6-7 PM Dinner 7:00 PM

a choice of

• Fish • Prime Rib • Veal Marsala •

\$25 per person

wine and cider with the meal furnished by PAARA

55 seats available dont miss out

Pay Kit, W6ISO and indicate your menue choice



PAARA PRIDE

wear your
PAARA Badge

to

meetings, picnics, field days, winter parties, ham fests, flea markets, Pacificons...(if you need one, contact Fred, K6YT)

PAARAgaphs Ad Rates

PAARAgaphs 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 PAARAgaphs 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.

PROGRAM NOTES:



PAARA Meeting, November 1, 1996

Thanks to Steve Stuntz, K6FS

Guest speaker was **Dr. Delbert "Del" E. Philpott, WA6YOQ**, Scientific Research Consultant and Research Associate, U.S. National Aerospace Agency (NASA).

Opening his remarks by noting that 20-25 years ago PAARA was the first ham club he belonged to, and our own **Andy, VE3FZK**, the first ham club member he was introduced to, Del proceeded to entertain and inform an enthusiastic audience with comments and projection slides depicting his professional and personal experiences at the North Pole and in Soviet Russia, investigating the effects of weightlessness on human and other animal physiology.

He is, by the way, internationally recognized for his research work on these problems, during early manned and unmanned (what was that dog's name?) high altitude and space flights.

In pursuit of knowledge preparing for space exploration, Del spent many months in what was then the USSR, during Cold War years, collaborating with Russian scientists in the 1970's, in both Moscow and Star City, Russia's space-research center in Ukraine.

At the outset, Del and his co-workers spent long months at the magnetic north pole, on Bathurst Island, 77° North, well above the Arctic Circle in Canada's Northwest Territories (worked any VE8's lately?), investigating the effects

of high-altitude exposure on living tissue, borne aloft by huge helium-filled balloons. The fun started when he and his team discovered that the research vehicles were blown by jet-stream into Russian territory. This brought international politics into the mix; ultimately a program of friendly cooperation between U.S. and Soviet scientists was achieved, involving acquisition of space on Russian research satellites. In his travels to Russia, despite his VIP status, Del had no choice but to endure the same conditions of food and accommodations as did his Soviet colleagues, as well as routing encounters with the KGB.

Illuminated by many slides, Del presented a scientist's eye travelogue and commentary on aspects of Russian life as he experienced it, starting with his arrival in Moscow at the Christmas season, and his attendance at an introductory social bash, for which he had prepared by shaving with

toothpaste, due to lack of hotel room soap (can anybody truthfully top that story?).

The high point of one trip - and of Del's account - was his neatly finagled flight aboard a duly scheduled Lufthansa flight from Moscow to Frankfurt, Germany, as the only passenger, accompanying specimens of live organisms retrieved from a space flight, requiring special care. The whole affair was arranged by his Russian co-workers, and was as comically tense as a Hitchcock movie.

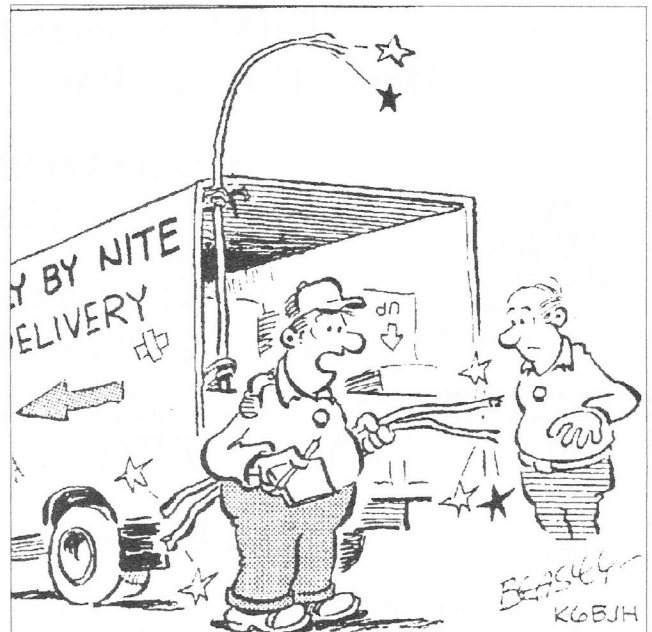
Del seemed to enjoy talking to PAARA as much as we were to hear his technical and personal accounts. It would be a joy to have him back for another program!



Join Us At The Next PAARA Meeting December 6, 7:30

**PAARA
MONDAY
NIGHT NET**

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



SUPPOSED TO DELIVER A "VERTICAL" ANTENNA TRIED HAULING IT "VERTICAL," BUT THERE'S JUST SO MANY @*!! # OVERPASSES AND HIGH WIRES.

(Continued from page 95) VHF Sweepstakes

portable or rover), multioperator or limited multi-operator. If you have only FM gear, a good choice is QRP portable. It puts you in a different category from the multitudes of serious single operators.

The object of the event is to work as many amateurs in as many different 2° × 1° grid squares as possible using authorized frequencies from 50 MHz and up. You can work stations once per frequency band (rovers can be worked again when they move to a new grid square). When you make a contact during the contest, you transmit the four-digit identifier for the grid square you are in (eg, FN31, EN91, CM96). If you don't know what grid square you're in, there is an article on page 86 of April 1994 QST that explains how to figure it out. You'll need to know your latitude and longitude, since grid squares are laid out in 2° × 1° blocks.

How to Get Entry Forms:

Official entry forms and complete rules for the 1996 10-Meter Contest are available electronically from several sources: · From the ARRL Internet Infoserer. Send an e-mail message to info@arrl.org. The subject line is ignored. Enter the following text in the body of your message: HELP SEND JANVHF.FRM SEND JANVHF.RLS QUIT · From the ARRL BBS (860-594-0306), in File Area 2 (contests). · From the ARRL Web home page at <http://www.arrl.org>.

Complete rules and entry forms for all the 1996 ARRL-sponsored contests are included in The ARRL Contest Yearbook, which is available for \$5 postpaid from Publication Sales at ARRL HQ (order number 5382).

Grid squares are also the contest multipliers. You count the number of different grid squares that you worked per band. QSO points have different values, depending on which band they are made on: 50 and 144-MHz QSOs count 1 point each; 222 and 432-MHz QSOs count 2 points each, 902 and 1296-MHz QSOs count 4 points each; and 2.3-GHz-and-higher QSOs count 8 points each.

For your final score, you multiply the sum of all your QSO points times the different grid squares you worked per band.

Rover entries are scored differently. For a rover's final score, multiply the sum of all your QSO points times the number of different grid squares you worked per band (regardless of which grid square they were made in) plus one additional multiplier for every grid square that you activated (made a contact from).

Within 30 days after the contest, send your entry to ARRL January VHF Sweepstakes, 225 Main St, Newington, CT 06111; or upload your ASCII entry files, following the ARRL Suggested Standard File Format, to the ARRL BBS

(860-594-0306); anonymous FTP them to <ftp.arrl.org>; or send them via Internet (to contest@arrl.org), again following the ARRL Suggested Standard File Format.

This announcement gives the complete contest rules below and in ASCII format. Official entry forms and complete January VHF Sweepstakes rules are available in The ARRL Contest Yearbook. This new book is a great reference manual for contest rules and score records, and has everything you need to participate and enter any ARRL-sponsored contest, plus more. Everyone should have a copy at hand. Entry forms are also available ASCII format.

ARRL affiliated clubs compete for gavels in three categories: local, medium and unlimited. If you belong to an ARRL affiliated club, check it out -- your club may be competing and you may be eligible to contribute your score toward your club's aggregate score.

Certificates are awarded to the top-scoring station in each category in each ARRL/RAC section. Start your planning now. Clear your calendar for the weekend of January 18-20, 1997. This is a great opportunity to work new grid squares toward your VUCC, while having loads of fun and excitement, all jam-packed into one weekend.

You don't want to miss this one!

(Continued from page 96) DXCC Processing

applications (25,602 QSLs) for endorsements and new awards during the month. Applications being sent out at the end of October were received less than a month earlier. A few applications received prior to that time were in the process of being audited, and so had not yet been completed. For more information, contact **Bill Kennamar, K5FUV**, tel 860-594-0291; e-mail bkennamar@arrl.org.

**Join us for pre-meeting eyeball
QSO**



gab & gobble

6 pm— at Su Hong Restaurant

1039 El Camino Real, Menlo Park

—across from Kepler's Book Store—

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. • Make payment to the Palo Alto Amateur Radio Association.

12 Store Buying Power!



Look for the
HRO Home Page
on the World Wide Web
http://www.hamradio.com

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Victory Blvd. at Buena Vista
1 mi. west I-5

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(800) 854-8046
I-880 at 23rd Ave. ramp

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http://www.hamradio.com

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Exit: I-504A, Mr.
Hawley, Mr.
from Hwy 5 & 217

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(800) 444-9476
Joe, KIRBGA, Mr.

PHOENIX, AZ 85021
1939 W. Dunlap Ave
(602) 742-3333
(800) 844-4476
Gary, WBS, Mr.
1 mi. east of I-17

ATLANTA, GA 30340
6771 Buford Highway
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(800) 444-7827
John, KANIC, Mr.
Doraville, 1 mi. no. of I-285

WOODBRIDGE, VA 22191
Washington D.C. area
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(800) 444-4799
Rick, AAROR, Mr.
Exit 161, I-95. So. to US 1

SALEM, NH 03079
Zephyrus Hwy
(603) 898-3750
(800) 444-0047
Chuck, KIMAZ, Mr.
CLW@HAMRADIO.COM
28 mi. No. of Boston

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• 4.5w w/optional battery
CALL NOW FOR LOW INTRO PRICE!



DX-70T HF Transceiver
100W 160-10 Mhz • 10W 6M Genov. Rk.
Full DSK, 100 Mems • Compact, Removable
Dual VFO 1200C • 6.2 lbs.



FT-50R
• 2M/40M HT Compact HT
• Alpha numeric display
• Wide Band receive
• Battery Saver
• 172 Memories
• Hi-Speed scanning
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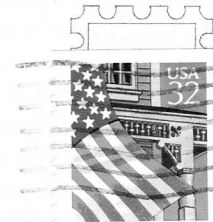
FT-51R
• 2M/40M HT
• 2W Standard
• 5W Optional
• Alpha Numeric
• 80 Memories
• 82 Memories
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• Coded SQL built-in
Special Low Pricing!



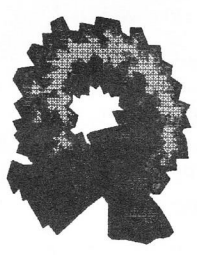
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