

PAARAGraphs

Since 1937

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



Calendar

April 5, PAARA Meeting, 7:30

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

April 10, PAARA Board Meeting, 7:30

Red Cross Bld. 400 Mitchell Ln., Palo Alto,

April 13, PAARA Flea Market, 6:00-2:00

Foothill College, Lot A, (145.27 MHz -)

May 3, PAARA Meeting, 7:30

May 8, PAARA Board Meeting, 7:30

June 7, PAARA Meeting, 7:30

June 12, PAARA Board Meeting, 7:30



Program

April 5, 1996

Speaker Rusty Epps, W6OAT
and

Bruce Sawyer, AA6KE
will present a video on the

World Radio Team Championships for 1996.

**IT'S
ALL
YOURS!**



DX The annual ARRL CW DX contest has come and gone, 32 different countries were worked on 15 & 10 meters, but the hot shot high speed participants were left for the hardier than I. The CW DX tests have lots of high speed senders, and these are not for the newcomer. However, the Phone test is planned for March 1,2, & 3rd. I did not even try 20 meters as I wanted to have a relaxing, enjoyable DX chase. 20 meters is pretty hectic, but sounded as though it was open in good fashion. 15 and even 10 were pretty good, and should be good for the phone test. Try it. Phone is not to my liking, so you won't hear me. **Dan Curry, WB6STW** is a new member of the Northern California DX Club, so expect him to be very active in his new Redwood City domicile. He has done very well with his mobile DXing. I will be checking the bands during the phone test as I like to hear what's going on. The "reply" is just a simple "59 California".

73 Ron W6VG

Flea Market April 13



VE February 17, 1996, VE session was held at the Legion Hall on El Camino Real in Redwood City. Session starts at 11 A.M. each 3rd Saturday of every month. Present on February 17 were **Joe Horne Sr.** WB6OWG, **Bene Irazarry** KK6LO, **Dan Curry** WB6STW, & **Ron Panton** W6VG. No CW tests were given as **Bill Sooman** was not present. Applicants were meager in number, but all showed up early, so the session ended earlier than usual.

73 Ron, W6VG

The Board (from the March 7, Board Meeting)

Present: **Bill Rausch, AA6PA**
John Buonocore, KD6ZL **Vic Black, AB6SO**
Dave Bailey, WS6W **Fred Canham, K6YT**
Kit Kohlmoos, W6ISO **Wally Porter, K6URO**

Treasurer Report: received (listed elsewhere in PAARAGraphs).

Old Business:

- (1) Summary of the by-laws presentation at the March 1st meeting, no revisions requested. See below.
- (2) Licensing class discussion, about 7 instructors, sign-up through City of Palo Alto Rec. Dept.

New Business:

- (1) Flea Market discussed. Final work assignments will be made at the April PAARA meeting.
- (2) Future Net roll will be taken in alphabetical blocks.
- (3) N.C.C.C. CQP plaque will again be sponsored by PAARA, \$35.
- (4) Steve Stuntz will write a review of the PAARA general meeting programs to be published in PAARAGraphs.
- (5) Concern for **Gerry Wagstaffe**, who is very ill.
- (6) Dues notices discussed.
- (7) Raffle \$/prize discussed.

Passed: Change ticket sale to one for \$1. Purpose would be to save time.

Passed: Prize count should be reduced and cost not to exceed \$35.

Flea Market April 13

PROPOSED PAARA BY-LAWS PUBLISHED AND DISCUSSED

The March, 1996, issue of PAARAGraphs carried the proposed new by-laws that have been worked out by the by-laws committee and approved by the PAARA board of directors. At the last general meeting, on the 1st of March, we discussed some important changes. Number 1, reduces the Board of Directors to four members plus the President. Number 2, sets the Board quorum at 3 members. Number 3, eliminates the set dues rate of six dollars and establishes a rate to be set by the Board. Number 4, adds article XI pertaining to the of W6OTX.

It has been very difficult to gather sufficient Board members at our meetings to conduct club business so it was felt that the reduction would in members and quorum would aid in concluding our business matters.

Our dues rate has been set at \$6.00 since the 3 cent stamp. The cost of printing and mailing PAARAGraphs is about three times that. We can't continue with the present publication at this rate indefinitely. We really need to pass this one. Please, trust the Board to keep dues to a minimum (we pay them too).

Article XI regarding the station Trustee explains itself. We just need to establish who, why, when and so forth.

The membership will vote on the new BY-LAWS at the April 5th meeting.

Many thanks to all that helped on this committee. They include **Fred Canham**, **Lilly Anne Hillis**, **Sy Stein** and the Officers and Directors of PAARA.

Kit Kohlmoos, W6ISO

PAARA Station History

From pg. 76, July 1942, QST.

"Pacific Division, Santa Clara Valley.....Regretfully report OTX listed missing on active duty with the Navy. Wilbur was Secy.-Treas. Of the Palo Alto Club for a number of years and very active in amateur radio."

(tnx to Paul,— Does anyone know more about this???)

Northern California's Largest Electronics Flea Market

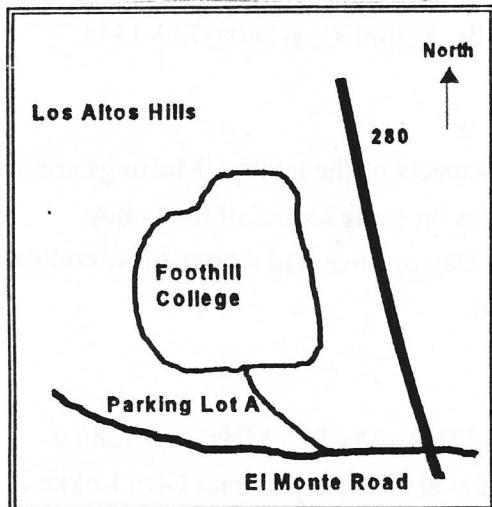
Continuing Under Perham Foundation Sponsorship in 1996



- Come to Parking Lot A, Foothill College, Los Altos Hills
- Second Saturday of the Month, March-September, 6 am - 2 pm
- Sellers: \$15.00 per Vehicle (2 parking spaces)
- All appropriate taxes must be remitted to the State Board of Equalization.
- BUYERS FREE!!! (but bring 4 quarters for the College parking fee)
- Support your local non-profit electronics organization
- Refreshments provided by beneficiary organization

NOTE: All Campus parking rules enforced. Please park legally, between marked lines only! Do not park where there are no lines.

LOCATOR MAP:



<u>Date</u>	<u>Beneficiary Organization</u>
March 9.....	Palo Alto Chapter, American Red Cross
April 13.....	Palo Alto Amateur Radio Association (PAARA)
May 11.....	Perham Foundation
June 8.....	Santa Clara County Amateur Radio Association(SCCARA)
July 13.....	South Peninsula Emergency Communication System (SPECS)
August 10.....	Electronics Museum Amateur Radio Club (EMARC)
September 14.....	West Valley Amateur Radio Association (WVARA)

NEED MORE INFORMATION?

Call on the SPECS repeater (145.27 MHZ -) or phone Perham Foundation at (408) 734-4453

HELP THE PERHAM FOUNDATION REOPEN THE MUSEUM TO THE PUBLIC

THE PERHAM FOUNDATION SPONSORS

Disaster Services, Palo Alto Chapter, American Red Cross

Provides worldwide amateur radio communication under agreement with the National Red Cross. Active in HF, packet, BBS, ATV, OSCAR Gateway, and NASA satellite communication. Meets on the third Wednesday of each month at 7:30 pm. Contact Alan Ball, at (415) 688-0423.

Palo Alto Amateur Radio Association (PAARA)

Meets the first Friday of each month, Menlo Park Recreation Center, at 7:30 pm. Active on Field Day. Net meets at 8:30 pm on Monday (147.45 MHZ simplex) Contact Bill Rausch, AA6PA, at (415) 327-4662.

PERHAM FOUNDATION

Electronics History Organization, formerly housed at Foothill College. Sponsors of the Electronics Flea Market. Contact Perham Office at (408) 734-4453 or Gerry Tucker, WA6LNV, at (415) 326 4908.

Santa Clara County Amateur Radio Association (SCCARA)

SCCARA, one of the oldest general interest clubs in the area, operates the W6UU repeater(146.385 MHZ+) located in the foothills of Mount Hamilton, overlooking San Jose. 2 meter net on W6UU at 7:30 pm Mondays (except for meeting night) and 10 meter net on 28.385 MHZ USB, 8 pm Thursdays. Meets second Monday every month. Contact Hugh Collis KD6EFL at (408)246 9374, or the club hotline (408) 249-6909.

Southern Peninsula Emergency Communication System (SPECS)

Operates the W6ASH repeater system (145.27 MHZ-, 224.36 MHZ-, and 440.80 MHZ+) located on El Camino Hospital, serving the Mountain View-Palo Alto area. The 2 meter and 220 MHZ repeaters are normally linked; the 440 MHZ machine operates independently. The machines offer autopatch facilities into many local fire and police agencies. SPECS meets Mondays at 8 pm. Contact Bob Mammarella, KB6FEC, at (408)729-1544.

Electronics Museum Amateur Radio Club (EMARC)

EMARC is a general interest club with members interested in virtually all aspects of the hobby. Meetings are at 7:30 pm on the fourth Friday of each month, and normally include a speaker on some aspect of the hobby. Yearly activities include a winter holiday banquet, the annual ARRL Field Day in June, and a homebrew contest every September. Contact Sheldon Edelman, MK6GV, at (415) 858-2176.

West Valley Amateur Radio Association(WVARA)

WVARA operates the W6PIY repeater system on 147.39 MHz+, 223.96 MHz., 441.875 MHz, and 1286.2 MHz located in the Los Gatos area. Meetings are the third Wednesday of every month. Contact Glen Lokke Jr., KE6NBO, at (408) 971-6826.

Miscellaneous Dates

Flea Market at Foothill (6AM - 2PM)

Mar 9...Palo Alto Chapter, American Red Cross
 Apr 13...Palo Alto Amateur Radio Association (PAARA)
 May 11...Perham Foundation
 June 8...Santa Clara County Amateur Radio Association (SCCARA)
 July 13...South Peninsula Emergency Communication System (SPECS)
 Aug 10...Electronics Museum Amateur Radio Club (EMARC)
 Sept 14...West Valley Amateur Radio Association (WVARA)

PAARA Palo Alto Amateur Radio Association

meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30, 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 Sy Stein WA6ROM 408-734-4453

SPECS Southern Peninsula Emergency Communication System

Meets each Monday 8:00PM on Net 145.27, 224.36, 440.80 Mhz+ contact Mike Hastings KB6LCJ, 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.

VE Exams, 3rd Saturday each month, 11AM

American Legion Hall, 651 El Camino Real, R.C.

ELMER



Palo Alto Amateur Radio Association, Inc.

PO Box 911

Menlo Park, CA 94026

President.....Bill Rausch, AA6PA....temp.(408) 867-4576
 VP/ Program Director... Vic Black, Jr., AB6SO.....(415) 366-0636
 Secretary.....To Be Filled
 Treasurer.....Dave Bailey, WS6W(408) 730-5215
 Trustee/Property/Badges.. Fred Canham, K6YT(415) 948-9238
 ARS Officer.....Lily Anne Hillis, N6PGM ... (415) 325-5484
 Club Historian.....Steve Stuntz, K6FS.....(415) 322-4952
 Raffle Chairperson.....Sy Stein, WA6ROM.....(415) 967-0362

Board of Directors

John Buonocore, KD6ZL	(415) 366 1658	'97
Fred Canham, K6YT	(415) 948 9238	'97
Lily Anne Hillis, N6PGM	(415) 325 5484	'96
Kit Kohlmoos, W6ISO	(415) 366 7813	'96
Bill Smith, KE6CHQ	(415) 366 9173	'96
Sy Stein, WA6ROM	(415) 967 0362	'96
Rich Stiebel, W6APZ	(415) 494 0128	'96
Steve Stuntz, K6FS	(415) 322 4952	'97

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

PAARAGraphs Staff

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Submit material for PAARAGraphs by the 15th

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.

Flea Market April 13

by Rich Regent, K9GDF

¹PAARA-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 repeater Mhz, PL tone off. • Membership in PAARA is \$6.00 per calendar year which includes a subscription to PAARAGraphs. • Make payment to the Palo Alto Amateur Radio Association.

Permission is hereby granted to reprint from this publication with appropriate source credit.

Tired?

Are you Tired? Rundown? Overworked?

Some irrefutable statistics show why. The population of this country is 270 million, but 90 million are over 65, leaving 180 million to do the work. People under the age of 21 total 95 million, which leaves 75 million to do the work.

But the federal government employs 40 million, leaving 35 million to do the work. Fifteen million are in the armed forces, leaving 20 million to do the work. Deduct those in state and city offices, hospitals, insane asylums, etc., and you have 815,000 to do the work. But 462,000 of these are bums or vagrants who refuse to work, so that leaves 353,000 to do the work.

Now it may interest you to learn that there are 352,998 people in jail — leaving just two people to carry the load. That's you and me, brother. And tired or not, I wish you'd do your share!

Darroll Moline, WA6DNZ Buena Park ARC, ARN
(By the way, Have you written for PAARAGraphs lately?)

Harold Vance Wardlow, Silent Key, W6FLE

Cmdr Harold Vance Wardlow, a resident of Menlo Park for nearly 45 years, died Feb. 14 in Menlo Park. He was 92. A native of Fountain Valley, Mr. Wardlow worked for Mackay Radio in Palo Alto during the 1920's. He then began his 32 year career in the U.S. Navy, retiring as a Commander. He participated in the Pacific campaign during World War II and the Korean War. Following his military career, Mr. Wardlow became a local independent real estate broker. His wife, Anna Schiedewitz Wardlow, passed away in 1988. He is survived by his brother, two sisters, three step grandchildren and five step great grandchildren. *From SJ Mercury, 2/27/1996-K6YT*

(It is believed Mr. Wardlow was a charter member of PAARA)

True Story:

(Whatever happened, it had to be more exciting than the average Ivy League football game...)

An MIT student spent an entire summer going to the Harvard football field every day wearing a black and white striped shirt, walking up and down the field for ten or fifteen minutes throwing birdseed all over the field, blowing a whistle and then walking off the field. At the end of the summer, it came time for the first Harvard home football game, the referee walked onto the field and blew the whistle, and the game had to be delayed for a half hour to wait for the birds to get off of the field. The guy wrote his thesis on this, and graduated.

Dan Mitchell



HOW ARE YOU AT TROUBLESHOOTING? EVERY TIME THE XYL AND I STAND SIDE-BY-SIDE ON CAMERA, THE PICTURE FLOPS OVER!

Flea Market April 13

TREASURER REPORT

Dave Bailey, WS6W

Revenues	JAN 96	FEB 96	Total 96
Dues	138	174	312.00
Flea Market	0	0	0.00
AMPEX Auction	0	0	0.00
Advertisements	0	0	0.00
Holiday Dinner	0	0	0.00
Total Revenues	138	174	312.00
Expenditures			
Stamps/Envelopes	0	0	0.00
DMV	43	0	43.00
State of CA	10	0	10.00
City of Menlo Park	150	0	150.00
Speaker's Dinner	0	24	24.00
Flea Market	0	0	0.00
AMPEX Auction	0	0	0.00
Meeting Refreshments	15.66	6.34	22.00
PAARAGraphs	203.09	189.37	392.46
Picnic	0	0	0.00
Field Day	0	0	0.00
Holiday Dinner	0	0	0.00
Misc.	31	0	31.00
Total Expenditures	452.75	219.71	672.46

The Missing Q Signals

Some Q signals have never made it to the ARRL's official list. Yet you may agree, after reviewing those listed here, that at least a few of these would be useful. As with regular Q signals, each can be a statement or a question, depending on whether a question mark follows it.

by John Queen, KA0SEY, ARNS

- QLF: "I'm sending with my left foot."
"Are you sending with your left foot?"
- QRC: "Warning, rag chewer on frequency."
"Are you a rag chewer?"
- QAH: "Please send me your QSL card so I can add it to my wall without bothering to send you mine."
"If you send me your QSL card, will you promise not to be upset when I don't send one back?"
- QOK: "Your last transmission was okie dokie."
"Was my last transmission okay?"
- QFH: "This frequency is mine. Go elsewhere."
"Is this frequency hogged?"
- QBS: "Its getting deep here."
"Did I tell you about the one that got away?"
- QZZ: "I fell asleep on an open mike."
"Is that just 60-hertz hum, or are you snoring?"
- QBA: "My antenna is big."
"How big is your antenna?"
- QHI: "I'm jumping in quick to say 'hi,' then going QRT."
"Are you leaving after just one transmission?"

- QBO: "Don't sit next to that guy in the meeting."
"Buddy, can you spare some soap?"
- QCQ: Calling CQ in Q signals.
"Is there any end to this insanity?"
- QNA: "Not applicable."
"Does that statement apply to anything?"
- QOZ: "Tap your heels three times."
"Where am I?"
- QPP: "I must QRT for five minutes; nature calls."
"Can you direct me to the nearest water closet?"
- QTP: "I must QRT for fifteen minutes; nature calls." or "Did he fall in?"
- QCW: "I'm going to whistle Morse on FM (or SSB)."
"Why are you whistling Morse?"
- QET: "Phone home."
"Has anyone called me from another planet?"
- QFT: "Move back a foot from the microphone, you moron."
"Did I blow out your speaker?"
- QGE: "I bring good things to life (to the party)."
"What good things do you bring to parties?"

from the Nov. '95 Foundation for Amateur Radio "Auto-Call"—KA0SEY Editor

Flea Market April 13

Get The Right Keyer Paddle Base

by Andy Emars, NX1Q ARNS

Two keyer paddle types are available today, iambic and non-iambic. An iambic paddle sends alternating dot and dashes when both paddles are held together, whereas the non-iambic paddle sends a series of either dots or dashes, depending on which paddle made contact first.

In addition, manufacturers offer three varieties of mounting base: gold, chrome, and black. How does a paddle's base affect its CW signal? That's the subject of this article.

The gold-base paddle

Obviously, the gold-base paddle is the most expensive. Gold is soft. I'm sure anyone who has listened to CW on the bands has heard a few soft, almost sluggish-sounding CW signals. It's fair to assume that a gold-plated paddle produced those "golden waves," whose rise- and fall-times are long—tens of milliseconds. Your ear senses the gentle approach to full amplitude, and the slow fade-out each time the paddle's contact is broken.

Neither more transmitter power nor increased receiver gain will eliminate the soft sound of a gold-base paddle. A gold base is fine for impressing your non-ham friends, but real CW ops leave their gold in jewelry and tooth fillings.

The chrome-base paddle

This paddle carries a middling price. Its shiny appearance is striking; you can see your reflection in it. But a drawback you may not be aware of is that it also induces reflections in the feedline of your antenna system. In our ham radio studies, we all learned about antennas and feedlines, and the importance of eliminating reflections.

So avoid chrome paddles if you have a marginal antenna system, particularly if you operate in VHF or UHF bands. Chrome belongs on your bumper, not under your paddle!

The black-base paddle

The least expensive base is best in all-around performance and handling. CW from a black paddle sounds crisp and clean. It's a real CW man's paddle! And there are no reflections from this paddle.

A proper CW waveform features a dash about 500 milliseconds long at 20 wpm, with rise and fall times of 5 milliseconds or so. A black paddle produces just those waveforms.

As a bonus, a black paddle has "the stealth" look so desirable when chasing rare DX that might be scared away by the glitter of gold or the flash of chrome.

So if your heart's desire is to send the best CW, get your fingers around a black-base paddle. You can invest the money you save in Morse Code lessons or CODECK, the Morse training flash cards!

I hope you found this article enlightening. This newsletter often includes such technical articles—for the educational benefits they provide. If the material is difficult for you, ask any old CW geezer for clarification. You might even ask for a demonstration of a real CW QSO.

from the April '95 South Orange ARA (Mission Viejo, Ca.) "The Propagator"—Paul Levey, N1ZM, Editor

Flea Market April 13

**PAARAGraphs, April
AO-13 Schedules 1996¹**

Mode Schedule

N QST *** AO-13 TRANSPONDER	SCHEDULE ***	1996 Jan 08 - Apr 01
Mode-B : MA 0 to MA 140		
Mode-BS : MA 140 to MA 240		
Mode-B : MA 240 to MA 256		Alon/Alat 220/0
Omnis : MA 250 to MA 100		Move to attitude 180/0, Apr 01

Please note that the higher powered engineering beacon 145.985 MHz is ON for the period: MA 0 - 40. (The lower powered beacon at 145.812 MHz is then off).

Table 5. Future SAREX Flights

Mission	Launch	Length	Amateur Radio Crew	Inclination	Config.	Op. Modes
STS-76	3/21/96	9 days	Richard Searfoss, KC5CKM, PLT	51.6	M	FM Voice
MIR Docking Flt-3			Shannon Lucid, TBD, MS			
Atlantis			Linda Godwin, N5RAX, MS			
			Ron Sega, KC5ETH, MS			
STS-78/LMS	6/27/96	16 days	Susan Helms, KC7NHZ, MS	39	C	FM Voice
Columbia			Charles Brady, N4BQW, MS			Packet
			Robert Thirsk, VA3CSA, MS			
			Jean-Jacques Favier, TBD, MS			
STS-79	8/1/96	9 days	Jay Apt, N5QWL, MS	51.6	M	FM Voice
MIR Docking Flt-4			Jerry Linenger, KC5HBR, MS			
Atlantis						
STS-80	11/7/96	16 days	Ken Cockrell, KB5UAH, CDR	28.5	C	FM Voice
Columbia			Tammy Jernigan, KC5MGF, MS			Packet
STS-81	12/5/96	9 days	To be determined	28.5	C	FM Voice
Atlantis						Packet

Notes: CDR=Commander, PLT=Pilot, MS#=Mission Specialist, PS#=Payload Specialist

Dear Radio Club Trustee:

We want your help! **FREE CD-ROMS!** We have a product called HamCall which includes all U.S. licensed amateurs and hams from over 120 countries. The CD-ROM contains information such as: callsign, name, address, license issue date, license expiration date, birthdate, previous call, previous class, latitude and longitude, grid square, county, hours past GMT and area code. Along with that, "see what he or she looks like!" Now you can see a picture of the person you are searching for at the push of a button. HamCall includes group and individual photographs and we are asking for your help in reaching the members of your radio club to get more photos for our next disc.

Simply take a group photo at your next club meeting and send it to us along with clear individual photos of your members. So that they can be included, individual pictures must have that person's signed permission with them. Group pictures may have one permission form, but everyone in the photo must sign it. Permission forms that you may copy are available upon request, or just write "I give my permission for my photograph to be used in Buckmaster products", on a piece of paper or the back of the photo and sign it.

In return for the photos, you will receive one free HamCall for every 10 individual photos and permission slips (sorry, not counting the group photo). The free HamCall discs will be mailed directly to the club trustee. We do not decide how they are distributed or used but they must not be sold. Your help in this matter is appreciated. The members of your club will love having their photo accompany their license information.

BUCKMASTER PUBLISHING

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¹ from The AMSAT Journal, February 1996

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DOS DSK • 300Hz CW Filter Included

CALL FOR OUR LOW PRICE!

HANDHELDS

FT-51R

2m-400MHz Dual Band

200 Meters, Cluarable

Dual Rx. (V/U or U/V)

Built in LTCS

Auto Duplex Memories

Channel Scope

4.5w maximum power

Call For Intro Price!

YAESU

DUAL BAND HANDHELDS

FT-530

2m-400MHz Dual Band

200 Meters, Cluarable

Dual Rx. (V/U or U/V)

120 Meters, Cluarable

100W HF Gen Cov Transceiver

DOS DSK • 300Hz CW Filter Included

CALL FOR OUR LOW PRICE!

KENWOOD

TS - 60S/TS - 60S

2m-400MHz Dual Band

200 Meters, Cluarable

Dual Rx. (V/U or U/V)

120 Meters, Cluarable

100W HF Gen Cov Transceiver

DOS DSK • 300Hz CW Filter Included

Call For Intro Price!

HANDHELDS

TH-79A(D)

2m/400MHz

Ultra Compact

2m/14 SWR

40 Meters

Encore Built In

CALL NOW!

Dual Antennas

1.5W Output

1.5W Input

1.5W Output