



PAARAgraphs



Celebrating 65 years as an *active* ham radio club—*Since 1937*
Newsletter for the Palo Alto Amateur Radio Association, Inc.



CALENDAR

- March.....1, **PAARA Meeting**, 7:30
Menlo Park Recreation Center
700 Alma Street, Menlo Park
- March.....6, **PAARA Board Meeting**, 7:30
Red Cross Bld., 400 Mitchell Ln., Palo Alto
- April.....5, **PAARA Meeting**, 7:30
- April.....10, **PAARA Board Meeting**, 7:30
- May.....3, **PAARA Meeting**, 7:30
- May.....8, **PAARA Board Meeting**, 7:30

The ARRL has a code practice:
URL <http://www.pcpractice.com/CW/>
-Don KF6JMQ

PROGRAM

March 1, 2002 7:30 P.M.



Speaker:

(Program unknown at press time)

Join us for **pre-meeting eyeball**
at **Su Hong Restaurant**, 1039 El Camino Real, Menlo Park
Food will be served at 6:00 sharp, so guests will be on time for the PAARA meeting. Those arriving late will be responsible for their own order and bill.

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



PAARA PROJECT

2002

Joel KA7TXV

The kits are in and 15 club members (and more to come) are busy making progress in the construction phase. The Monday night net was the longest I can remember in club history. My handheld was so hot I could barely hold it and later changed to low power. It seems the creativity is out there, as many folks had recommendations for floating the crystals and other construction hints.

This has inspired me to continue the momentum and so here I inaugurate the PAARAGraphs Kit Corner Column. Each month I will report on Club Project Kit status or search out other kit projects from my basement or from the workbenches around the club. Anybody that has kit building near and dear to their heart like I do, I wait to hear from you. I love to collaborate with others in the endeavor of advancing the art of our hobby along with the understanding of our hobby through construction projects.

As soon as a majority of the Warblers get on air, I would encourage a filed test and ultimately check into the Western Warblers Net on Sunday night. I will report in a summary article the results and trophy those who have engineered changes to the design and those who have extraordinary operating results. Who knows, we might have a permanent station for Field Day dedicated the Warbler and definitely for QRP events.



Kit Corner

I have built many kits over the years and I like most, built many a Heatkit, the most challenging was a 2-channel oscilloscope. My needs and desires as a youngster were much simpler and basic compared to present days. Before I was licensed, I started out with a walkie-talkie kit given to me by my parents. They

(Continued on page 28) Kit Corner

Miscellaneous Dates

- PAARA** Palo Alto Amateur Radio Association
meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30,
contact: Andreas Junge N6NU.....(650) 233 0843
- FARS** Foothills Amateur Radio Society
meets 4th Friday 7:30 each month,
contact: Sheldon Edelman N6RD, 650 493 7212, n6rd@earthlink.net
- NCDXC** Northern California DX Club
meets 2nd Friday 7:30 each month, repeater for member info 147.360, Thur 8:00PM,
contact: Bob Mammarella KB6FEC 408 729 1544.
- NorCalQRP** Northern California QRP Club
meets 1st Sunday each month,
contact: Jim Cates 3241 Eastwood Rd., Sacramento, CA 95821.
- Perham Foundation,**
contact: (408) 734 4453,
- SPECS** Southern Peninsula Emergency Communication System
meets each Monday 8:00PM on Net 145.27, 440.80 MHz, www.specsnet.org
contact: Tom Cascone, KF6LWZ, 650-688-0441 specs@sypal.org
- SCARES** South County Amateur Radio Emergency Service
meets 3rd Thursday 7:30 each month, San Carlos City Hall.
Net is on 146.445 [PL 114.8] & 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 glotke@pacbell.net
- Disaster Services,**
PALO ALTO CHAPTER, American Red Cross, www.paarc.org
400 Mitchell Lane
Meets 3rd Wed. each month 7:30PM,
HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite
contact: Mac Millian 650-688-0423. MACM@paarc.org
- SAN JOSE CHAPTER, American Red Cross**
contact: Scott Hensley KB6UOO, (408) 967 7924, FSHENSLEY@NOVELL.COM
- VE Exams, 3rd Saturday each month, 10:30AM, 145.23- PL=100Hz**
Redwood City Main Library, Community Conference Room
1044 Middlefield Road, Redwood City, CA
contact: Al WB6IMX@att.net.
- Swap meet, LosPositas College, Livermore, 1st Sunday each month.**
Contact: Cliff Kibbe (209) 835 6715 or Eliot Ross (925) 606 7710
- (please send changes to PAARAgaphs editor: k6uro@arri.net)

How to succeed: try hard enough.

How to fail: Try too hard.

—Macolm Forbes

Join us for pre-meeting eyeball

QSO March 1st

gab & gobble

Food will be served at 6:00 sharp, so guests will be on time for the PAARA meeting. Those arriving late will be responsible for their own order and bill.

6 pm— at Su Hong Restaurant
1039 El Camino Real
Menlo Park

—across from Kepler's Book Store—

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

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ab6so@smm.com
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K6YQT Station Trustee..Gerry Tucker, N6NV.....(650) 326 4908
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ARES Officer.....Lily Anne Hillis, N6PGM(650) 325 5484
Club Historian Vacant?
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ka7txv@qsl.net
Gerry Tucker, N6NV (650) 326 4908 '03
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Rolf Kliibo, N6NFI '03
Jim Rice, K6AK '03

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

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Submit material for PAARAgaphs by the 15th

Use WORD, rich text, ascii, .pub, .ps, or .jpg,

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

(Continued from page 27) Kit Corner

were betting I would have the parts spread across my room in a day and then never finish the pair. To their amazement, both worked after installing the 9-volt. This proved rather entertaining at first but after spying on my sisters to my brother after a day or two became boring. But on one afternoon while operating bicycle mobile with a friend, a station far away heard us chatting and thus began my first lesson in operating DX (and QRP). Little did I know we were in the peak of a sunspot cycle (early 70's).

In high school electronics class, we were given a choice of making an AM/FM radio or a short wave broadcast regenerative HF receiver, can you guess which one I made? The teacher built the HF rig too but was having a problem with his. After I had my unit running, we compared our units and they looked what we both perceived to be identical and so we compared notes. I had made a correction in the schematic and soon had his up and running. I built other projects like a strobe kit, a light flasher and a chasing light display for a school play, can you say low budget. After I

(Continued on page 29) Kit Corner

CHEAP SATELLITE WEARS WELL IN SPACE

(From the Chronicle, Tuesday 2/12)

Tom Stuckey, Associated Press

“Once every 100 minutes, a bargain basement satellite loops around the earth, sending and receiving digital messages over antennae made from a metal tape measure.

A sailor on a solo crossing the Atlantic bounces signal off the satellite to stay in touch with his family. New Zealanders on a cross-country hike use it to communicate with friends back home.

Any ham radio user with the proper digital packet-transmitting equipment who is within 2,000 miles of the 25-pound satellite can use it to send single-line text messages to a public channel.

After four months in space, the U.S. Naval Academy's satellite is proving surprisingly resilient, to the delight of the midshipmen and faculty advisers who designed and built it.

The Prototype Communications Satellite (PCSat) was the 44th amateur satellite put in orbit. It is one of more than a dozen built by university students around the world.

At a cost of just \$50,000—including plane tickets to the Alaska launch site—it was built with off-the-shelf parts not designed to withstand the rigors of space. Its life span was expected to be only a few months.

Six students built the satellite last year after a three-year research and design project made possible with a grant from Boeing Co. The department of Defense Space Test Program approved the project and put it on the launch list.

A tape measure from Home Depot provided the antenna. Power comes from two dozen AA batteries that are recharged by the solar panels, which are in sunlight an average of 75 minutes per orbit.

Midshipmen designed circuit boards, ordering them from an Internet supplier. Parts rated for use in space, which are built to withstand the effects of radiation from the sun, would have been too expensive, so the students went with regular circuit boards.

Sept. 29 was Launch Day. There were anxious moments at the academy as the cube-shaped satellite hitched a ride aboard an Athena rocket that blasted into space from Kodiak, Alaska.

Save for the failure on one of the six solar panels, damaged when the satellite separated from the rocket, there have been no problems.

In the following weeks, people in remote areas began to use the satellite as word about it spread through an international organization of ham radio operators.

Just how long PCSat works depends on how much solar radiation bombards the satellite and how long the batteries, solar panels and thousands of transistors withstand the sun's damaging effects.”

(Thanks to Don Trask, KF6JMQ, for the above Chronicle article.)

(Continued from page 28) Kit Corner

clenched my Novice ticket in 82, my sights changed dramatically. Like most, I operated for years cutting my teeth (fist) on the CW Novice bands on a HW 101 I purchased from a guy who never completed it. Now if I had only kept it. I guess it is true what they say about hindsight.

In the last year I have been working on antenna projects like the 3 element, 6-meter beam by Cushcraft and the C3s by M squared that we used at Field Day last year. **Bob Korte (KD6KYT)** came over one afternoon and helped me line up tube elements for the C3 while I popped rivets in sections that could be pre assembled. Chris used this antenna exclusively for the CW effort and had nothing but praise for the design. The six-meter antenna worked like a charm after adjusting the feed point match with a MFJ antenna analyzer. Signal reports on six were solid up until the band died sometime around 10:30.

I home brewed a full wave 80-meter loop antenna from the formula in the ARRL Antenna handbook over my property last year. I later added a section to achieve resonance down at the Warbler frequency noted in a previous article. I must say there is no substitute for having a big chunk of wire up in the air for producing a contest grade signal while using QRP power. I am lucky to have so many trees surrounding our lot here in Menlo Park.

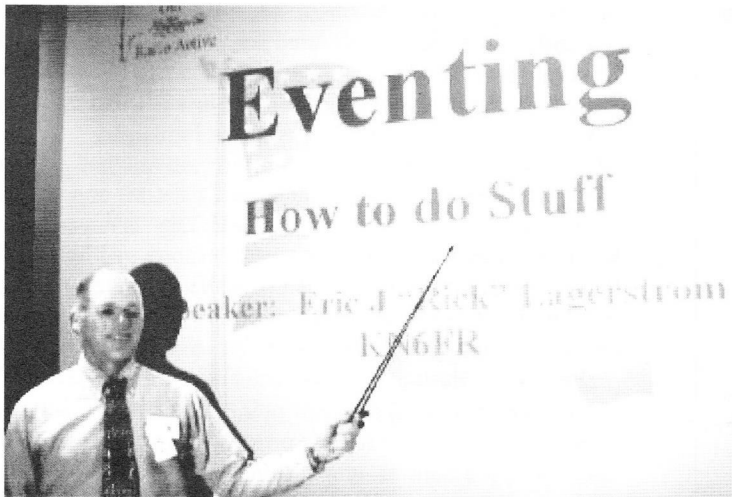
I also built the Ten Tec 1230 in hopes to have it finished in time for Field Day last year but some parts were missing and so I couldn't finish it in time but have since completed it. It operates on the 220MHz band in FM mode only with a respectable 20-watt output. I ran into a slight problem with the modulation adjustment of the unit and decided to put it off to the side until later. I also built the Ramsey DDF unit and have finished everything on it except for putting the magnets on the bottom of the antenna structures. What they delivered with the kit was like a refrigerator magnet, which I deemed to be unpractical for adhering to the rooftop of a car. I put it off to the side as well until I can come up with a better idea than the one they provided.

The Rascal

After I built the Warbler, I searched around the web for a low cost transceiver to computer audio interface kit to use my computer for other digital modes using my HF rig and found the Rascal from K4ABT. The Rascal is a copy of a circuit that was published in QST some months back (like most kits). The kit order selection choices had a specific part number to interface to a brand of radio.

What I received was an addendum sheet to cover the wiring difference for my radio from the standard instructions. What is evident from inspecting the parts and the PC board before construction is the simplicity of the kit. There isn't much to it, 2 transformers, an optoisolator, a pot, cap, resistor and an LED all mounted on a single sided (no through hole plating) PC board with cables and a plastic soapbox to put it in. It is so simple the PC board has no silkscreen and

(Continued on page 33) The Rascal

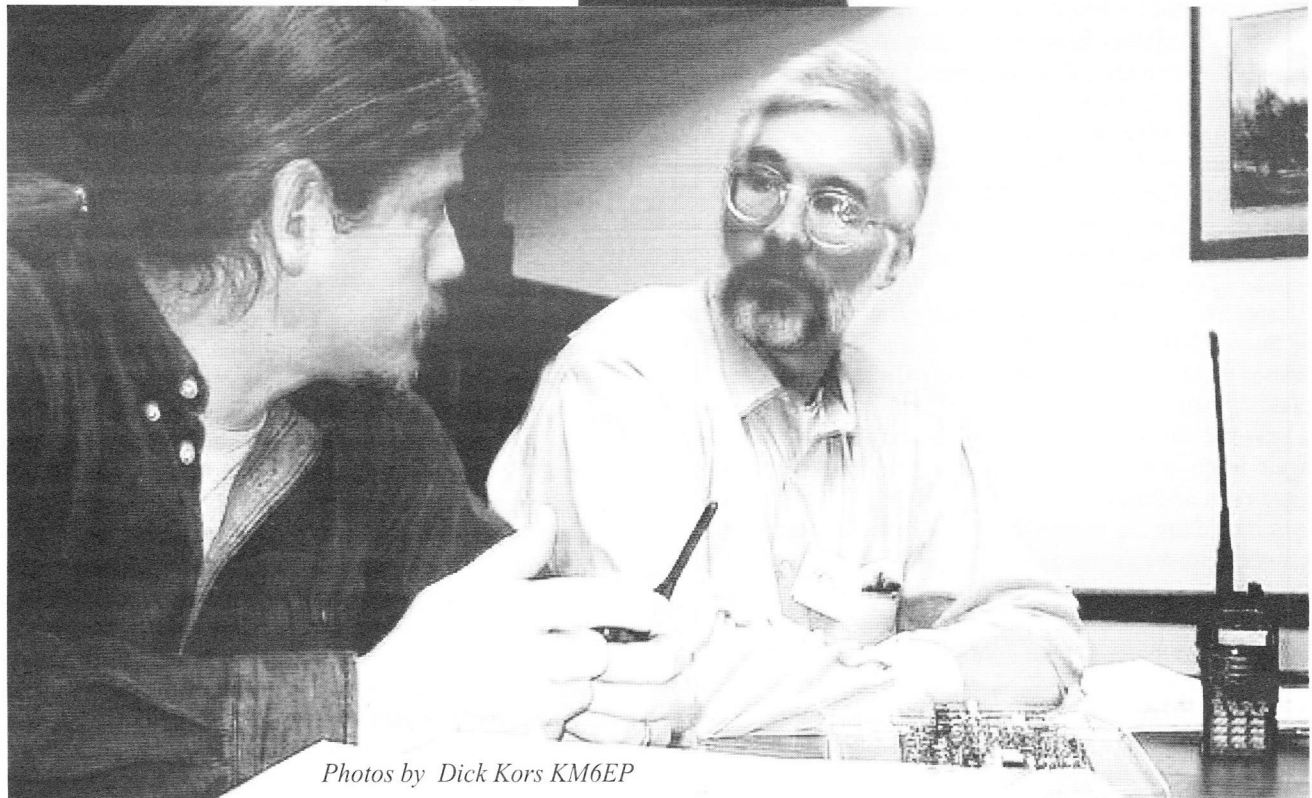
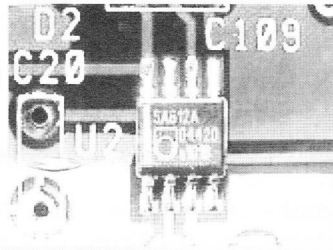


"WinterFest 2002"
Rick Lagerstrom, KN6FR
January 18

"Contesting"
George T Daughters, K6GT
February 1st Program



Club Project
"WARBLER"
PSK
with
Joel KA7TXV



Photos by Dick Kors KM6EP

WorldRadioOnline

Fancy Schmancy - get on the air

—J.D. Harper, K6KSR

Danny had just received his General Class upgrade when he came by the shack for a visit. "It's really frustrating," he complained, "to have my new privileges and no HF gear. But I just can't afford an MP-1000 right now." "No problem!" I told him, the aging Elmer in me rearing its head. "I've got an old beauty of a transceiver you can use until you can get your own station setup." Danny's eyes got wide and he said, "what kind of radio would that be?" I was scrounging in my files for my old TS-520 manual. "She's about 25 years old, one of the hybrid rigs." I said, handing the manual to him. "But she's real easy to use and you'll make a lot of contacts - guaranteed." Danny's expression suddenly changed to one that looked like he'd just swallowed a sourball, whole. "Naw, but thanks anyway" he drawled, "I don't know anything about those old radios. I think I'll wait till I can afford to do some real hamming - you know, DSP, an amp, beam and all that good stuff. "Real hamming? All that good stuff? Where had I been for the past four decades that I could have missed this idea that equipment is everything? Is the newer Ham really more fascinated by bells and whistles than by getting on the air? Well, I've seen enough wanna-bes drooling over the new demo rigs at The Candy Store, to know that's probably the case. And that's likely why new radios hit the market with more regularity than stewed prunes. As they are fond of saying in Detroit: "You ain't nobody till you got the latest model!" "How come you like the old junk anyhow?" Danny asked, scanning my collection of old commercial and military boat anchors lining the shack walls. "Kinda gets in your blood." I said. "There's just something about the faint smell of dust burning off the final tubes, the warmth they give off on a cold morning here in the shack. And the audio quality - vavoom! Nothing like it in the new stuff." I noticed Danny staring at me like I already had the straight-jacket on. Even though we were Ham-brethren, where Danny and I stood was mile apart. He saw the newfangled equipment as a normal, exciting progression of Amateur Radio. Me, too. But, with burgeoning emphasis on the equipment side, I think we're on the verge of losing the rich heritage of resourcefulness, experimentation and compromising attitudes - things that provided a lot of excitement and pride for generations of amateurs. Nevertheless, some things will never change. I turned to a page in the back of my logbook and found the dog-eared sheet of paper. "Danny, my boy," I said, handing him the paper, "do you think that sexier radios mean better DX?" "At this point I'm not sure," he said. And he began reading A Ham Operator's Credo. "Wow," Danny said, "This guy certainly has his stuff together." "And did you notice something else really obvious?" Danny nodded. "He never mentioned anything about equipment. Not what to use, how to use it or why, It's like if you followed this guy's ideas, I guess you could do just about anything in Ham radio - and the gear would be a

secondary consideration." He shook his head and handed me the document. "Boy, have I been a dufus. I believe I'd like to reconsider your offer."

Well, I sent Danny home with a new toy that day. He's learned a lot since that day he walked into my shack with nothing but a yern to get on the air. He'll soon be ready to take his next exam. He's just about got his DXCC locked up, too. And, at his request, I sent him a copy of The Operator's Credo. I suppose I've given out dozens of copies of that old piece. And not one word has been changed since I jotted them down more than 40 years ago.

A Ham Operator's Credo

I Will Learn to Listen - and Listen to Learn

I must remember that hearing is a gift, while listening is learned.

I will always rank listening as paramount in all I do in Amateur Radio.

I will always abide by the "TLS" rule: Think, listen, and speak.

I will develop and depend on my natural listening abilities.

I will listen in order to learn correct procedure and protocol.

I will always remember: the bands are never dead for the expert listener.

I Will Master Protocol and Procedure

Mastering on-the-air protocol will take precedent over equipment operation.

Prosigns, Q signals, phonetics and abbreviations will be my second language.

I will learn the basics of traffic handling, net operation, and emergencies.

I Will Respect Mother Nature's Role

I will study the pivotal roles the ionosphere and propagation play in radio.

I will learn how weather, time of day, location, time of year effects radio signals.

I will learn the meanings of bandwidth and beam width, ground effect, aurora, scatter, ducting, skip, MUF, solar flux, E-layers.

I Will Appreciate My Ability to Compromise

I hold that compromise and resourcefulness are Ham traditions.

I will remember that "making-do" can often be the easiest route to operating.

I will always remember that being on the air is the true spirit of Hamming.

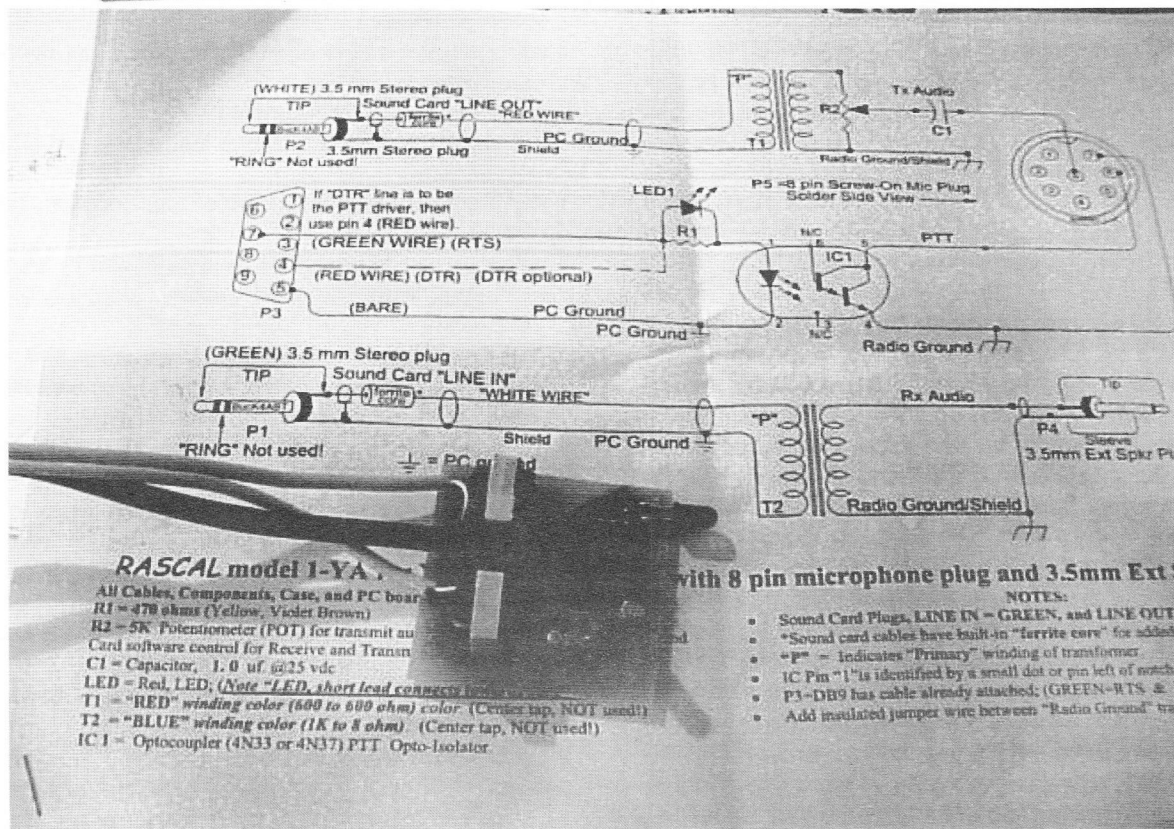
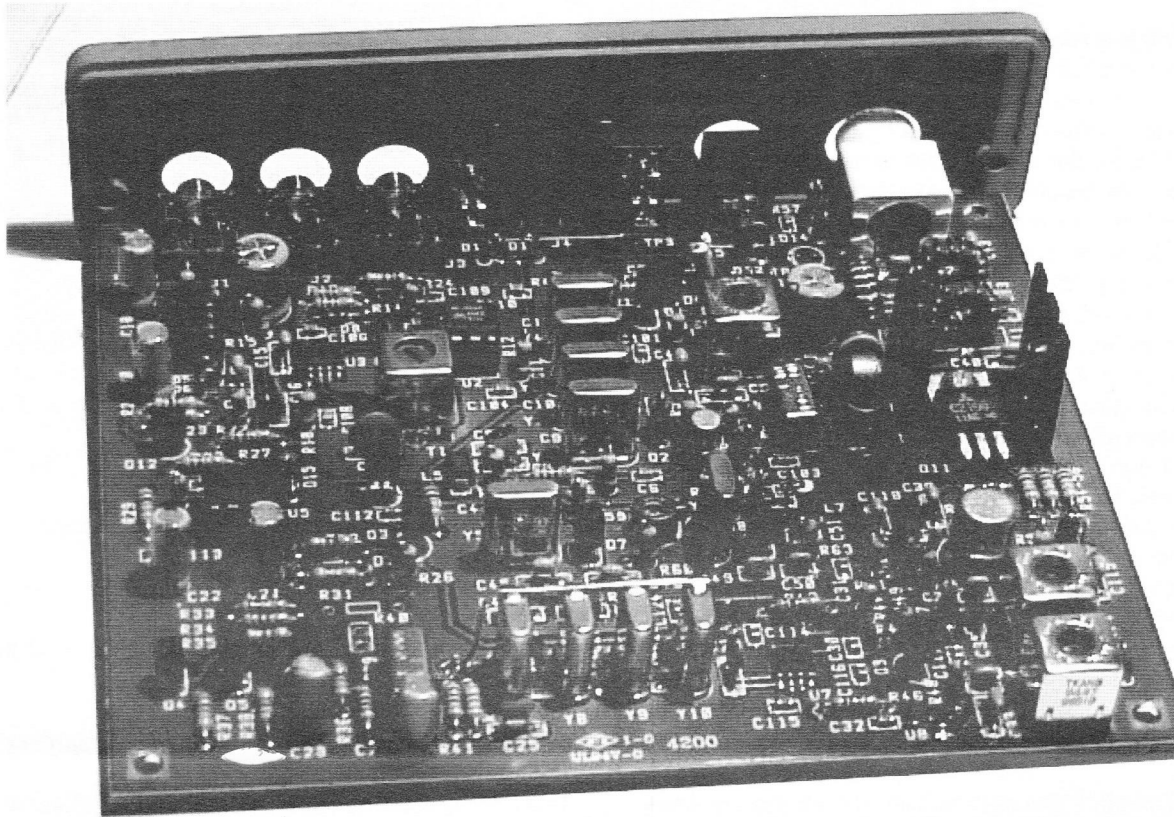
I Will Share What I Learn I will commit to self-study of Amateur Radio - from technology to protocol.

I will openly share the knowledge I gain with anyone who is interested.

These things I hold to be true for all radio amateurs - now and in the future.

— A Grateful Operator

The "WARBLER"



RASCAL model 1-YA

- All Cables, Components, Case, and PC board
- R1 = 470 ohms (Yellow, Violet Brown)
- R2 = 5K Potentiometer (POT) for transmit audio control
- Card software control for Receive and Transmit
- C1 = Capacitor, 1.0 uf @25 vdc
- LED = Red, LED; (Note LED, short lead connects to Radio Ground)
- T1 = "RED" winding color (600 to 600 ohm) color. (Center tap, NOT used!)
- T2 = "BLUE" winding color (1K to 8 ohm). (Center tap, NOT used!)
- IC 1 = Optocoupler (4N33 or 4N37) PTT Opto-Isolator.

with 8 pin microphone plug and 3.5mm Ext S

- NOTES:
- Sound Card Plugs, LINE IN = GREEN, and LINE OUT = WHITE
 - Sound card cables have built-in "ferrite core" for added shielding
 - *P* = indicates "Primary" winding of transformer
 - IC Pin "1" is identified by a small dot or pin left of notch.
 - P3-DB9 has cable already attached; (GREEN-RTS & RED-DTR)
 - Add insulated jumper wire between "Radio Ground" and PC Ground



Congratulations
 Upgrade & New call
Bob Bisio, AE6BN

(Continued from page 29) *The Rascal*

one wouldn't need one either. They also put the manual, a copy of WinPSK and tech setup files on a floppy to install on the computer to complete the set up.

While assembling my unit, some of the parts leads didn't line up with the holes in the PC board and so I had to carefully bend the leads so the leads didn't break off during insertion. I opted for putting the board into a metal box to minimize any chance of interference; I'll thank Buck for the hand soapbox later.

While making the necessary holes in the box to mount the PC board and route wires through, it occurred to me that I might want to use the interface on any of the radios I have. As it just so happens, I have Yaesu, Icom, Kenwood and now a Ten Tec. I concluded to solve the problem by adding another four-pin plug to the design for changing out the radio interface cable instead of hardwiring the one radio interface cable supplied with the kit to the board. If I choose to hook up brand Y radio, I simply disconnect the brand X cable. Each time a new radio comes along, I only need to stock 4 pin plugs and fabricate a new harnesses for each of the radios I want to interface too.

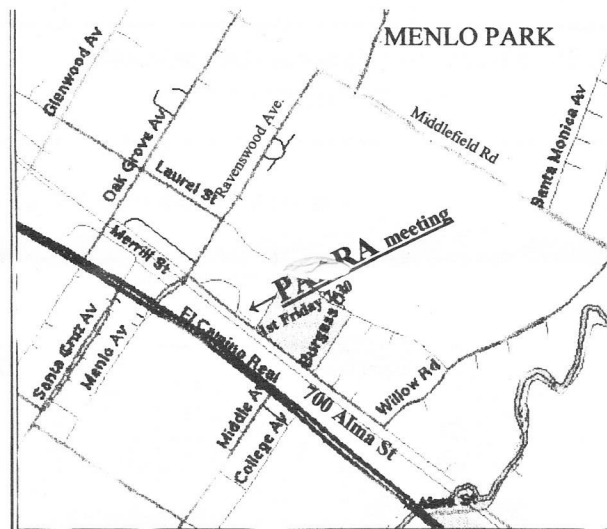
This is the link for the Rascal...<<http://www.packetradio.com/psk31.htm>> All kit prices are 27 dollars which includes shipping in the continental US. Prewired and tested is 49 dollars.

Next Week

—Joel KA7TXV

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

Want and For Sale ads in PAARA-
graphs
 are **FREE** to members
(Submit by e-mail or letter before the 15th of the month)



HSC Halted specialties co.
 Electronics • Prototyping Supplies • Computers • Lasers

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 (650) 969-1448
 FAX: (408) 732-6428

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.

- 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).
- 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 payable in advance by the year with "scanner-ready" copy or text-only ads. Give payment and copy to Bob Korte

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. •

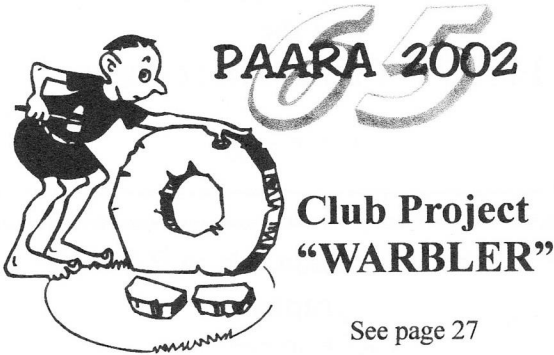
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PAARAgraphs March 2002

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



FIRST CLASS MAIL



See page 27

PSK with Joel KA7TXV

Webb site for propagation information:
www.arrl.org/wlaw/prop/

LAST ISSUE - DUES DUE
 contact PAARA Treasurer

|||||Korsak, Andy KR6DD
 504 Lakemead Way
 Redwood City, CA 94062-3919

94062+3919 27

VC-HI
 Visual Communicator
 Compatible w/ all FM VHF/UHF
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Call For Low Price!

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 • LPT to 303 memories • 101 per band
 • RCP/R Radio Control Program Compatible
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 • Alpha Numeric • Enc-Dec & Duplex Built-in
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 • Alpha Numeric • Enc-Dec & Duplex Built-in
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