

W6OTX**W6ARA**PAARA NEWSLETTER
VOLUME 68, NUMBER 6, June 2017**K6OTA****K6YQT**

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.Celebrating 80 years as an *active* amateur radio club—Since 1937<http://www.paara.org/>

The Lighter Side Of Ham Radio

Why We Do...What We Do

by John Miller, K6MM


John will poke some fun at our glorious **hobby** obsession.

Bring your XYL, YL, Friend, etc.....they need a laugh too.

June 2nd, 7PM,

Cubberly Community Center, Room H-6

Upcoming Events

- June 2 PAARA General Meeting, 7:00 PM
- July 7 Cubberly Community Center, Room H-6, 400 Middlefield Rd, Palo Alto
- Aug 4
- June 21 Board Meeting, 7:00 PM
- July 19 Everyone welcome!
- Aug 16 Location: Marty, W6NEV, QTH 
- Sept. 8th PAARA banquet, Social hour 6pm, dinner at 7pm.

President's Corner

Hello from Tokyo! I'm writing this from an office building in the Tamachi section of the city, near Shinagawa. The weather has actually been very nice. Not too cold and not too hot, with only short bursts of rain. I haven't had time to operate as JI1ZZ, though I did recently renew my license. This time it was renewed until my passport expiration date. Next time maybe it will be renewed for 5 years. At least that's what we were told by the Ministry of Internal Affairs and Communication.



This month is Field Day at last., and we are ready for another fun time with lots of aluminum in the air! Let's all pray to the propagation gods for some sunspots so that 15m will work. The

PAARA Leadership Team needs some help for a few things. And we've made some progress with the Electronics Flea Market.

Yep, it's that time of the year again - ARRL Field Day 2017. As I write, we are just closing orders for the PAARA FD Team t-shirts. If you missed out, I'm sorry to say that it's all over. I got my order in a week or two ago, so I'm all set. I've got to catch up on sleep so that I'll be ready for my usual 40m all nighter on CW. It's going to be fun! Are all of you ready? If you're interested in operating, I'm sure we can find a spot for you. Contact Doug, KG6LWE, or Marty, W6NEV, and they will direct you to the station captain who can get you on the schedule. In particular, we need CW operators. GO-TA needs coaches as well as people who want to be hams, haven't upgraded, or even have lapsed on HF. Also, if you want to be on the setup and tear down crew, we'd love to have you. That aside, the day itself is going to be great. There will be a chance to see all of your friends and have some great food. You can also see one of the most impressive FD setups in

(President — Continued on page 4)

Two Kits that are Useful and Fun to Build: Solid State Oscilloscope & Function Signal Generator de Rich, W6APZ

I always wanted a small oscilloscope that I could put in my pocket as a nifty test tool and to use to demonstrate audio waveforms to my grandchildren. Bob Mix, KF6ABC, mentioned that he had built one that he got from Banggood. I checked out their website, www.banggood.com, (click on Electronics, then Measurement & Analysis Instruments) and sure enough, there were two options for the DSO138, 200-KHz scope. Banggood normally sells the completed and tested scope for \$30.99. I chose the kit with only the surface mount parts on the board. I paid \$23 including the plastic case and shipping from China, but this is currently shown as \$17.79. Yes, it took almost a month for the kit to reach me, but it arrived in good condition. (They now have two improved versions: the DSO150 and DSO62.)

I assembled the electronics in a couple of evenings of spare time without a problem.

I connected a 9-Volt power supply to the oscilloscope and verified that the screen came alive and the boot-up logo came on. I then turned to assembling the plastic case.

The case came nicely packaged, but with no instructions. After doing some searches on the Internet, I found a YouTube video that showed how to assemble the case. Following the video¹, the case went together with only a few problems that required backing up a few steps and

reassembling the sides of the case. Apparently the person demonstrating the assembly got the holes in the case lined up with the PC board functions the first time, so he did not explain that one should be careful to ensure that the holes in the sides of the case fit the connections one has to make to the PCB after assembly.

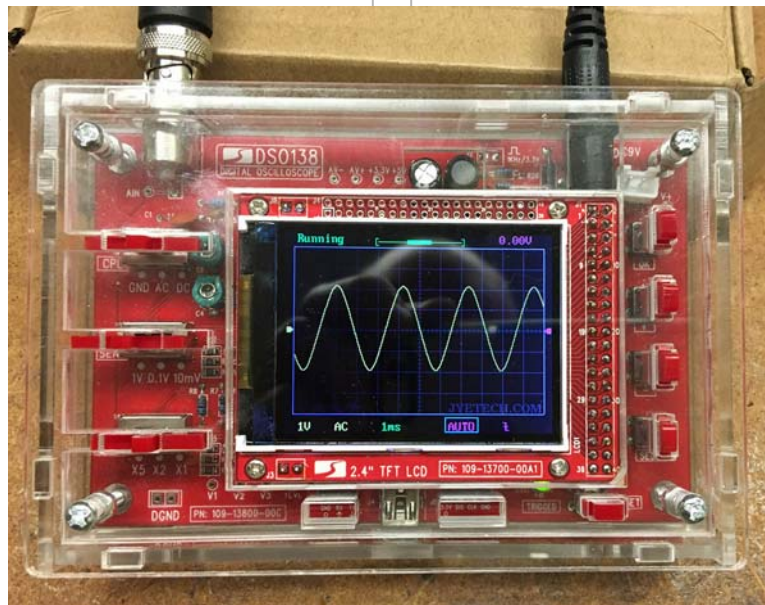
One wants to be sure that the switches and push buttons all operate freely before tightening the four corner screws of the case. See the picture of the completed scope.

You will note that there are three switches on the left side of the scope, four push buttons on the right side, and one push button on the bottom right. The buttons that one pushes are plastic extensions from the printed-circuit-board-mounted switches. These extensions can't fall out when the scope is turned over because of the careful design of the case.

After completing the case assembly, I again fired up the scope and all functioned as before. OK, so how could I get the scope to display a signal?

I needed a function-signal generator to produce waveforms that I could display on the scope. Of course a function generator is a useful piece of test equipment for audio-signal tracing as well as other testing. The Banggood Function Signal Generator XR2206 kit sells for about \$7.69 from China or \$10.75 from their US warehouse (case and shipping included). Since the Chinese warehouse was out of stock and back-ordered and I wanted a clean signal to check my newly completed scope, I paid the higher price, but in about a week I had the kit.

(Kits — Continued on page 3)



DSO138 — 200 KHz Oscilloscope

(Kits — Continued from page 2)

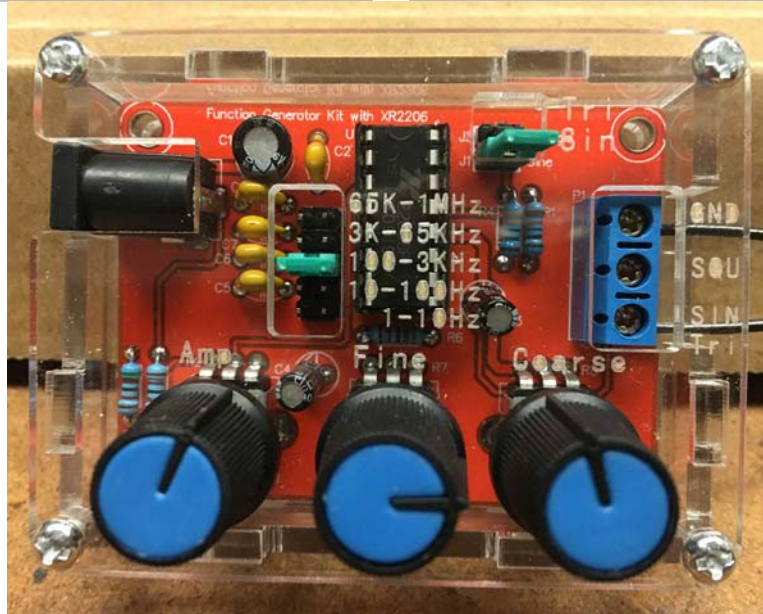
The assembly instructions are very basic, i.e. not a lot of detail, but sufficient to assemble the board. The board is clearly marked with all the R and C numbers and the J numbers for connectors. Because of the blue color of the resistor bodies, the color bands on the resistors are difficult to read, so I measured each resistor to be sure I had the correct part. The kit went together in only one evening and worked immediately. The plastic case was very simple compared to the scope and went together rapidly. See the picture of the completed generator.

The kit keeps cost down by using jumpers instead of switches. The jumper at the top-right is shown in the J1 position, which generates sine waves. In the upper position, it generates triangular waves. The second jumper is seen just below the words "Generator Kit" and selects the frequency range of the output, which is 1 Hz to 1 MHz. The maximum output voltage is 8 Volts peak to peak.

The output is taken from the three-terminal connector on the right side of the unit. The connected output wires are shown in the Sine/Triangle wave position. Square waves are available from the center and top connection.

The three controls at the bottom operate smoothly and adjust the Amplitude and Frequency of the output within the range shown by the jumper position above.

Testing of the function generator was simple with the scope. I set up the function generator to produce a sine wave, connected it to 9-Volt power supply and the input probe of the scope. The resulting waveform is shown in the picture



Function Signal Generator XR2206

of the DSO138.

I had fun building these kits. Although these kits are easy to build, successfully building a kit increases one's skills and makes one feel good.

1 There are many YouTube videos covering the DSO138. Some concentrate on just the assembly of the case, others go into calibration procedures.

Some of the ones I found are listed below.

https://www.youtube.com/watch?v=9vtHWP2_KAU

<https://www.youtube.com/watch?v=g9S31AnRT6o>

<https://www.youtube.com/watch?v=385SHJS9AYs>

<https://www.youtube.com/watch?v=jQ8X7oMvE5g>

<https://www.youtube.com/watch?v=TVs8Szdn4eA>

<https://www.youtube.com/watch?v=Wc9CGgsVjwl>

<https://www.youtube.com/watch?v=thQ0OJ0brms>

<https://www.youtube.com/watch?v=CvSp3PxKR6E>

<https://www.youtube.com/watch?v=fDtqO2wDdHk>

<https://www.youtube.com/watch?v=uH4guEgUjavo>

<https://www.youtube.com/watch?v=FlniY41j7B0>

W6DLF, Silent Key

David Francisco Flack
May 10, 1945—May 8, 2017

Memorial Service: Saturday, 3 June, 11:30 AM,
 Unitarian/Universalists Church in Sunnyvale

(President — Continued from page 1)

the western United States. If we're lucky, we'll even get some media up there again. Last year we had a TV crew come by and made the local NBC affiliate news. If you want to see it, go to: <https://www.facebook.com/steve.lipman/posts/10154110868466508>.

Looking at a recent propagation report (one of my favorites is <http://dx.qsl.net/propagation/>), it looks like things are quiet as far as flares and CMEs, but we're just coming out of another run of zero sunspots. If you recall, last Field Day we had zero sunspots through most of the contest. That made for some tough sledding on 15m and precluded any significant opening on 10m. While 40m worked, signal strength was down just a bit, but traffic was up as people were moving down the bands. This year may well be similar, with 20m shutting down earlier than it has. So, we too will be moving down the bands in search of more contacts. That will likely mean more time on 80m for both phone and CW. We have to watch for the right time to change bands so that we don't linger too long on an unproductive band. We won't know what the propagation will really be like until we get somewhat closer and can see what the solar flux and sunspots look like.

The PAARA Leadership Team is looking for a few good men and women to help us keep things running smoothly. Right now we desperately need help in 5 areas! First, Marty needs help with the coffee and cookies. This is an easy job. He also needs help with the Pacificon special event station in the fall. We have a Flea Market coming up in August, and I'll need your help for that. Jim, K6SV, needs a new helper to affix labels and stamps to PAARAgaphs. His son Eric, KJ6LAY, is on a different work schedule and can't help any longer. And lastly, John, K6MM, our webmaster, needs a helper. He's now president of the NCDXF and has less time than ever. If you can help out in any way, please contact any club officer.

PAARA leadership recently participated in a meeting with the ASVARO board and other member clubs. We're trying to save the Elec-

tronics Flea Market from fading away. This will be an ongoing process. If you're interested, let one of us know and give us a hand. 73 DE JI1ZZ IN JA.

-Kristen (K6WX)

May 17, 2017 Board Meeting Minutes

Through an email exchange, the board agreed to not hold a board meeting due to conflicting schedules and that there were no "hot" topics on the agenda for May. Any important Field Day decisions and votes were topics of the April meeting.

Jim Thielemann
 Secretary/membership
 K6SV

Please welcome new members:

Charles Bell	W5OUV
Anthony Hanni	KM6ETX

Announcing: 2017 Inductees, CQ Amateur Radio Hall of Fame

(Xenia, Ohio - May 19, 2017) - The CQ Amateur Radio Hall of Fame has 18 new members for 2017, CQ magazine announced today. This brings to 310 the total number of members inducted since the hall's establishment in 2001.

Kristen McIntyre, K6WX - Apple software engineer and inventor (her name is on 22 granted or pending patents), promoter of STEM (science, technology, engineering and math) subjects for girls through various talks and YouTube presentations.

From: <http://www.eham.net/articles/39247>



PAARA 5/5/17 Raffle Prize Winners

Left to Right, Front to Back

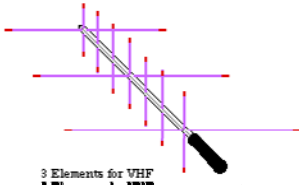
- | | |
|-----------------------|--|
| 2 nd Prize | Mark Farley / AA6TT / BridgeCom 220 HT |
| 5 th Prize | Mark Farley / AA6TT / Solar Inflatable Lantern |
| 1 st Prize | Gerry Tucker / N6NV / Kenwood TM281A |
| 8 th Prize | Joe Metas / WB6JOE / Cage Screwdriver |
| 7 th Prize | Joel Wilhite / KD6W / LED Lantern |
| 4 th Prize | Doug / KG6LWE / TRJ-1 Triband Antenna |
| 3 rd Prize | Randy / MFJ 288Y GP-5 Receiver |
| 6 th Prize | Alexia / no call / LuminAid |

June Raffle Prizes

- 1st Tytera MD-380 / DMR Digital Portable HT
 Operates in Analog and Digital Modes
 5 Watt Output
 Uses Time-Division Multiple-Access / Double # of Users
 Private Call / Group Call / All Call



- 2nd Arrow 2m Yagi Antenna
 3 Element VHF / 7 Element UHF / Max Gain



- 3rd CS-201A Daiwa Coax Switch



- 4th Battery Tender Junior
 5th MFJ 335BS Mag Mount
 6th Portable BBQ Grill "thanks Nick N6VOA"
 7th Clarus LED Lantern "thanks Nick N6VOA"
 8th Six Compartment Plastic Boxes "thanks Nick N6VOA"

PAARA FIELD DAY OPERATIONS

Please join in the fun at PAARA Field Day. We are located in Bedwell Bayfront Park, 1600 Marsh Road, Menlo Park. Operating starts at 11 AM Saturday and ends 11 AM Sunday.

The park is located at the Bay end of Marsh Road. Enter through the main gate and drive to the end of the blacktop. Follow the yellow direction signs to get to our operating area. It's at the South East corner of the park. Look for the antennas, you can't miss them. If you want to help, please join us starting 5 PM Thursday and all day Friday for set up and testing. You can also help take down Sunday afternoon. It's great fun with a lot to learn about emergency field operations.

ESTATE SALE

The following items are for sale from a SK estate:

- SGC SG-230 Automatic Antenna Tuner - 1.8 to 30 MHz - 200 Watts PEP. \$395.
- Diamond SX20C SWR/Power Meter. \$60.
- Ameritron AL-800 1200 watt PEP output linear amplifier. Never used. You will be the first to install the 3CX800A7 tube. \$1500.

100% of the money from any sale will go to the widow.

Contact Don Steinbach (AE6PM)
 ae6pm@arrl.net
 (408) 867-3912

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

President	Kristen McIntyre, K6WX	510-703-4942
	kristen@alum.mit.edu	
Vice President	Marty Wayne, W6NEV	408-246-7531
	mcwayne2@comcast.net	
Secretary	Jim Thielemann, K6SV	408-839-6815
	thielem@pacbell.net	
Treasurer	Ron Chester, W6AZ	408-243 2221
	ron@taxhelp.com	

Directors

Director ('17-'18)	Joel Wilhite, KD6W	408-839-5948
	kd6w@arrl.net	
Director ('16-'17)	Walt Gyger, W6WGY	408-921-5901
	walt@tradewindsaviation.com	
Director ('17).....	Larry Rebarchik N6DB	650 465-8210
	n6db@arrl.net	
Director ('17).....	Darryl Presley, K16LDM	650 255-2454
	ki6ldm@arrl.net	

Appointed Positions

Membership.....	Vic Black, AB6SO	650-366 0636
	ab6so@smrn.com	
Database	Jim Thielemann, K6SV	408-839-6815
	thielem@pacbell.net	
Chaplain	Rick Melrose K6RDM	408-341-9070
	K6RDM@yahoo.com	
Public Affairs	<i>Position Vacant</i>	
Station Trustee W6OTX, K6YQT, W6ARA....	Gerry Tucker, N6NV	
Station Trustee K6OTA...	Ron Chester, W6AZ	
Property Manager	Gerry Tucker, N6NV	
Fund Raising Coordinator.	Bob Korte, KD6KYT	408 396 4745
	bob@rgktechsales.com	
Badge Coordinator	Doug Teter, KG6LWE	650-367-6200
	dteter@wawi.com	
Historian Position	<i>Position Vacant</i>	
Raffle Coordinator	Jim Rice, K6AK	650-851-2274
Field Day Coordinator ...	Doug Teter, KG6LWE	650-367-6200
ASVARO Rep.....	Clark Martin, KK6ISP	
	kk6isp@comcast.net	
Webmaster	John Miller K6MM	
	webaron@gmail.com	
Technical Coordinator ...	Joel Wilhite, KD6W	408-839-5948
	kd6w@arrl.net	
QSL Manager	Marty Wayne, W6NEV	408-246-7531
Speaker Coordinator	Marty Wayne, W6NEV	408-246-7531

PAARAgaphs Staff

Editorial Board		
	Bob Van Tuyl K6RWY	Kristen McIntyre K6WX
	Ron Chester W6AZ	Vic Black AB6SO
	Joel Wilhite, KD6W	
Editor	Bob Van Tuyl, K6RWY	408 799-6463
	rrvt@swde.com	
Back Up Editor	Jim Thielemann, K6SV	408-839-6815
	thielem@pacbell.net	
Advertising.....	Walt Gyger, W6WGY	408-921-5901
	walt@tradewindsaviation.com	
Member Profiles	Diana Lloyd, KK6YGM	650-988-8882
	dianalloyd76@gmail.com	
Technical Tips	Vic Black, AB6SO	650-366 0636
	ab6so@smrn.com	
Photographer.....	<i>Position Vacant</i>	

VE Exams

Redwood City Main Library, Community Conference Room, 4th Saturday 10:30 am each month and De Anza Park, Sunnyvale, 2nd Saturday 10:30 am each month except November and December. See website for details and exceptions: <http://amateur-radio.org> or Contact Al, WB6IMX@att.net

Electronics Flea Market

Sponsorship by A.S.V.A.R.O. — Association of Silicon Valley Amateur Radio Organizations
 Second Saturday of month, March-October, 6am–2pm
 Howard M. Krawetz, N6HM 650-856-9761
 Contact: <http://www.electronicfleamarket.com/>

PAARA — Palo Alto Amateur Radio Association

Meets 1st Friday 7:00pm each month at Room H-6, Cubberley Community Center; Net 145.230 - PL 100Hz Mondays at 8:30. See our website at <http://www.paara.org> for more information or contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:30pm
 Contact: <http://www.fars.k6ya.org>

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:30pm each month,
 Repeater for member info 147.360, Thursday 8:00PM
 Contact: <http://ncdxc.org> or Mike Gavin W6WZ, (650) 851 8699

QCWA Chapter 11

Northern California Quarter Century Wireless Association

Meets third Wednesday monthly at Harry's Hofbrau in Redwood City @ 11:30 AM.
 Guests are welcome. Saturday morning net on 146.850 MHz, PL 114.8

50 MHz & Up Group

Meets 1st Thursday each month at 7pm in the Texas Instruments Building E conference room in Santa Clara.
 Contact: <http://50MhzandUp.org>

SPECS

Southern Peninsula Emergency Communication System

Meets each Monday 8:00pm on Net 145.27, 440.80 MHz
 Contact: <http://specsnet.org> or Tom Cascone, KF6LWZ, 650-688-0441

SCARES

South County Amateur Radio Emergency Service

Meets 3rd Thursday 7:30pm each month, Belmont EOC, Belmont City Hall, One Twin Pines Lane, Belmont CA 94002. Net is on 146.445 [PL 114.8] & 444.50 (PL-100) 7:30 Monday evenings. Contact: President Gary D. Aden, K6GDA 650-743-1265 (D), 650- 595-5590 (N)
 Web: <http://k6mpn.org> E-mail: pres@k6mpn.org

SCCARA

Santa Clara County Amateur Radio Association

Operates W6UU & W6UU/R, repeater 146.985-pl
 Nets: 2m, 7:30pm Mon; 70cm, 442.425+ (pl 107.2) Thur.
 Meets 2nd Mon each month @ 7:30 PM.
 Contact: <http://www.qsl.net/sccara> or Clark Murphy KE6KXO 408-262-9334
 ARRL/VEC license testing contact 408-507-4698

SVECS — Silicon Valley Emergency Communications

Operates AA6BT repeater (146.115 MHz+)
 contact: <http://www.svecs.net> or Lou Stierer WA6QYS 408 241 7999

TEARS — The Elmer Amateur Radio Society

Dedicated to operational training, knowledge building & FCC exam testing.
 KV6R repeater under construction.
 Contact: AA6T@ARRL.NET
 Most members are Extra Class or VE's. See QRZ dot com/kv6r for class info


WVARA — West Valley Amateur Radio Association

W6PIY six-meter repeater on 52.58MHz. Normally, six-meters is linked with 147 and 223, while 441 and 1286 repeaters are linked.
 VHF: 52.58 (-500) 151.4 ctcss UHF:
 147.39 (+600) 151.4 ctcss 441.35 (+5.0) 88.5 ctcss
 223.96 (+1.6) 156.7 ctcss 1286.20 (-12m) 100.0 ctcss
 Meetings are 2nd Wednesday of every month except July, August and December.
 Contact: <http://wvara.org>, Bill Ashby N6FFC, 408-267-3118, president@wvara.org

**American Red Cross,
 Santa Clara Valley Chapter**

Contact: <http://santaclaravalley.redcross.org> or Scott Hensley KB6UOO, (408) 967 7924
shensley@Novell.com

(Please send changes to [PAARAgaphs editor](#))



James Farrey
 Sales Manager

James Electronics Ltd
 1355 Shoreway Road, Belmont, CA 94002
 Tel: 650•592•6718 x 350 Fax: 650•802•1520
 Direct: 650•802•1511 jfarrey@jameco.com

www.jameco.com

Your grandfather told your father and your father told you. If he had invested his money in real estate he would be a rich man today — what will you tell your children?

Whether to invest or reap the rewards of having invested in Real Estate, Call **KARL DRESDEN**, KJ6GUK, full time Realtor since 1976 — BRE#00525686

Terrace Associates, Inc., 777 Woodside Rd., Suite B, Redwood City, CA 94061; Office Ph: 650-369-7331,
 Fax Ph: 650-369-7339,

KARL Cell Ph: 650-274-8155 General License KJ6GUK
Email: KARLDRESDEN@juno.com


Badges are ready for pickup.

If you would like to order a badge, see **Doug Teter, KG6LWE.**

PAARA Weekly Radio Net
 Info and Swap Session every Monday evening at 8:30pm on the N6NFI 145.230 MHz repeater

<u>Week</u>	<u>Control Operator</u>
1 st	Joel KD6W
2 nd	Doug - KG6LWE
3 rd	Jack - W1VSL
4 th	Rob - KC6TYD
5 th	Rob - KC6TYD

If you're interested in trying out at Net Control, Contact Doug, KG6LWE. It's good practice, and lots o' fun! Give it a try.



Cubberley Community Center
 4000 Middlefield Road, Palo Alto, CA 94303
 650/329.2418
 650/856.8756 fax
www.cityofpaloalto.org

Legend
 bled Parking
 lic Pay Telephone

Meeting Location — Middlefield Road between San Antonio and Charleston in Palo Alto. 4000 Middlefield Road

<http://www.foto.mail.ru/list/shkurkin>

Vladimir Vladimirovich
 SHKURKIN
 Editing and Translation Services
 English-Russian-English
shkurkin@ix.netcom.com

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

Club meetings are on the first Friday of each month, 7:00pm at the Room H-6, Cubberley Community Center.

Radio NET & Swap Session every Monday evening, at 8:30pm, on the 145.230 –600 MHz repeater, PL 100Hz.

Membership in PAARA is \$25.00 per calendar year, which includes one subscription to PAARAgaphs \$6 for each additional family member (no newsletter).
 Make payment to the
 Palo Alto Amateur Radio Association,
 P.O. Box 911, Menlo Park, CA 94026-0911

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



This space Available

Ilse Beck, E. A. , KI6IBM
 Beck Business Services

441 N. Central Avenue, #9
 Campbell, CA 95008

Enrolled Agent
 Income Tax
 Bookkeeping/Payroll
 Elder Care
 Consultations
 Billing and A/R

Phone/FAX: 408-267-8234
 Email: ilsebeck@jps.net

Ron Chester
 Santa Clara
 (408) 243-2221
 Ron@taxhelp.com

Tax Preparation & QuickBooks Consulting - Ham discount




Photo For Any Occasion
WBY Photography
 Jack Of All Trades, Master Of Some.
Bill Young
 408-245-1161 or
 408-475-6191
 I come to you photographer.
 wbyphotography@me.com
 www.photoforanyoccasion.net

PAARA DMR Repeater Frequencies	
144 – 144.9625 up 2.5 MHz	DMR—NOR CAL Brandmeister Network
440 – 444.475 up 5 MHz	DMR
1.2G – 1284.15 down 12MHz	D-Star Voice
1.2G – 1249.15 half duplex	D-Star Data



PowerFlare® safety lights:
 Ultra-rugged 360 degree LED beacon
 for your emergency kit, car, home ...
Order on eBay (search for "PowerFlare")
 or email sales@powerflare.com

Silicone
RESCUE TAPE
NO ADHESIVE! NO STICKY RESIDUE!
8,000 V 500° F
 ELEC. INSULATION HEAT RESISTANCE

The highest quality coax sealing tape on the market!

ENTER YOUR SPECIAL COUPON CODE TO GET THE PAARA DISCOUNT
 Order online at www.rescuetape.com - (702) 953-0968

Submit items to **PAARAgaphs** by the
3rd Wed to: rrvt@swde.com
 Text: .doc, .rtf, or .txt
 Photos: jpg, png or tiff

Subscription Problems? Contact Database
 Manager: Jim Thielemann, K6SV,
 408-839-6815, thielem@pacbell.net

PAARAgaphs Ad Rates

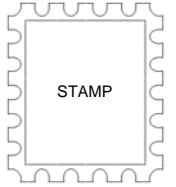
PAARAgaphs accepts paid advertisements from non-members. (short personal ads remain free for members in good standing). **All ad rates listed are per issue.**

- 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 per issue).
- For Profit organizations and/or individuals: \$5-business card size, \$25-half page, \$50 full page or back cover per issue.

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 Ron Chester, W6AZ**

PAARAgaphs — June 2017

Accept no substitutes. Produced and printed in California USA



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

FIRST CLASS MAIL

HAM RADIO OUTLET

MULTI-STORE BUYING POWER!

ICOM



IC-7600
All Mode Transceiver



IC-7200
HF Transceiver



IC-7100
All Mode Transceiver



ID-5100A Deluxe
VHF/UHF Dual Band Digital Transceiver



ID-51A Plus
VHF/UHF Dual Band Transceiver

KENWOOD



TS-590SG
HF/50MHz Transceiver



TM-D710G
2M/440 Dualband



TM-V71A
2M/440 Dualband



TM-281A
2 Mtr Mobile



TH-D74A
2M/20/440 HT

YAESU
The Radio



FT-991A
HF/VHF/UHF Transceiver



FDX1200
100W HF + 6M Transceiver



FT-450D
100W HF + 6M Transceiver



FTM-400XD
2M/440 Mobile



FT-60R
2M/440 5W HT



- RETAIL LOCATIONS - Store hours 10:00AM - 5:30PM - Closed Sunday
- PHONE - Toll-free phone hours 9:30AM - 5:30PM
- ONLINE - WWW.HAMRADIO.COM
- MAIL - All store locations

HRO is family owned and operated by active Ham's!

AMHERST, CA (800) 834-8046	OKLAHOMA, CA (877) 882-1748	PORTLAND, OR (800) 785-4287	PHOENIX, AZ (800) 598-1588	MILWAUKEE, WI (800) 558-4411	WOODBRIDGE, VA (800) 444-4799	PLANO, TX (877) 458-9130
BURBANK, CA (877) 892-1748	SAN DIEGO, CA (877) 520-9823	DENVER, CO (800) 444-9476	ATLANTA, GA (800) 444-1927	NEW CASTLE, DE (800) 644-4478	SALEM, NH (800) 444-0047	ONLINE STORE WWW.HAMRADIO.COM

Contact HRO for promotional details. Shipping including Hawaii, Alaska and Canada. Call will be routed to the nearest store. All HRO 800-numbers can assist you. If the first time you call is busy, you may call another AZ, CA, CO, GA, TX, VA residents add sales tax. Prices, specifications and descriptions subject to change without notice.