

K6YQT

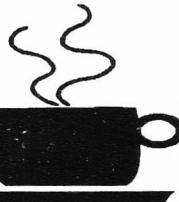
PAARA NEWSLETTER
VOLUME 49 NUMBER 11 November 2000

W6OTX



PAARAGraphs

Celebrating 63 years as an *active* ham radio club—*Since 1937*
Newsletter for the Palo Alto Amateur Radio Association, Inc.



CALENDAR

- Nov.....3, PAARA Meeting, 7:30,
Menlo Park Recreation Center
700 Alma Street, Menlo Park
Nov.....8, PAARA Board Meeting, 7:30
Red Cross Bld., 400 Mitchell Ln., Palo Alto

Dec.....1, PAARA Meeting, 7:30
Dec.....6, PAARA Board Meeting, 7:30

Jan.....5, PAARA Meeting, 7:30
Jan.....10, PAARA Board Meeting, 7:30

2 m CODE PRACTICE, 2000 to 2030 PST Tues
N6NFI 145.23 repeater
Also try 7.100 for 24 hr code
practice

PROGRAM

November 3, 2000
7:30 P.M.



"DXers seminar."

Bring QSL cards you are proud of
and stories to go with them."

Join us for pre-meeting eyeball

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

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

Board of Directors, PAARA, 2000 Oct. 11

The meeting was held as usual at the Palo Alto Red Cross building and convened at 7:30 P.M., without quorum due to low attendance. Andreas, N6NU, recorded the role call. Only discussion with no formal policy making ensued.

The By-laws assert how much dues for membership are. We considered how a change that leaves the issue of dues to the B of D would ease adapting policy to members' needs for services that cost. Particularly, should the membership's call sign badges be part of the dues or only initial membership fees or on an as ordered basis? Badges will be bought and delivered when the Treasurer informs the Badge Manager that payment has been obtained.

Secretary Jay, WA6SBO, informed those present of his internet inquiry to our banker on funds availability. Someone noted that the Treasurer has put a bookkeeper to the task of reviewing and reporting our financial status in a formal way.

Club expenses, especially the newsletter, costs about \$18 year/member compared to income of \$12 year/member in dues. Other income of the (past) auctions aren't available and the flea market income isn't reliable. Dues need to be discussed by the general membership. Should dues be prorated for members joining at arbitrary times throughout the year?

Discussion of a new class of club membership, beyond the monthly speakers free annual membership, focused on those deserving special honor for contributions to the club.

Andreas showed photos of a trailer with 70-foot tower which is for sale. Everyone was enthusiastic and we remembered that Andreas had been previously authorized by the B of D to act unilaterally and expeditiously in the purchase of same for club Emergency Disaster Response and Field Day use. Soon Andreas (the Tower / Trailer committee of one) will visit and inspect (and raise and lower) the gear in a test for suitability.

Quorum was achieved at about 8:30 with the arrival of two more members.

Joel, KA7TXV, and Jay's participation in Club fund raising at the next Foothill College Ham Flea Market was cancelled due to extraneous (read: real job) overriding commitments. Next Spring we'll use the Livermore Ham Flea Market to sell members' equipment to raise club funds.

The meeting became controversial when the issue of a quorum was revisited when someone noted that the By-laws had been changed, no record of the change was available, and there

(Continued on page 105) Board of Directors

Miscellaneous Dates

Flea Market at Foothill (info at: <http://joslin.com/FleaMarket>)

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

EMARC Electronics Museum Amateur Radio Club

meets 4th Friday 7:30 each month,
contact: Sheldon Edelman 650-858-2176, Edelman@richochet.net

NCDXC Northern California DX Club

meets 2nd Friday 7:30 each month, repeater for member info 147.360, Thur 8:00PM,
contact: Bob Mammarella KB6FEC 408 729 1544.

NorCalQRP Northern California QRP Club

meets 1st Sunday each month,
contact: Jim Cates 3241 Eastwood Rd., Sacramento, CA 95821.

Perham Foundation,

contact: Jerry Tucker N6NV 650-961-3266

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@svpal.org

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:

SCCARA Santa Clara County Amateur Radio Association

Operates W6UU repeater 146.385+ Nets: 2m, W6UU, 7:30 Mon; 10m,
28.385, 8:00 Thur. meets 2nd Mon each month.
contact: Jack Ruckman AC6FU

SVECS Silicon Valley Emergency Communications

Operates WB6ADZ repeater (146.115 MHz+)
contact: Lou Stierer WA6QYS 408 241 7999

WVARA West Valley Amateur Radio Association

operates W6PIY repeater 147.39+, 223.96, 441.875, 1286.2
meets 3rd Wed every month.

contact: Glen Lokke Jr. KE6NBO at 408 971 8626, or glokke@pacbell.net

Disaster Services,

PALO ALTO CHAPTER, American Red Cross

Meets 3rd Wed. each month 7:30PM,
HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite,
contact: Alan Ball 650-688-0423.

SAN JOSE CHAPTER. American Red Cross

contact: Scott Hensley KB6UOO, 408 249 7093, shb@richochet.net

VE Exams, 3rd Saturday each month, 11AM, 145.23- PL=100Hz

American Legion Hall, 651 El Camino Real, R.C.
contact: Al Montoya at WB6IMX@worldnet.att.net.

Contest Calendar

~Vic Black, AB6SO~

(for rules and exchanges, see www.contesting.com)

November, 2000

- 3 Ukrainian DX Contest 1200Z, Nov 4 - 1200Z, Nov 5
- 4-6 ARRL Sweepstakes Contest, CW 2100Z, Nov 4 - 0300Z, Nov 6
- 5 High Speed Club CW Contest 0900Z - 1100Z, Nov 5 and
1500Z -1700Z, Nov 5
- 10-12 Japan Int. DX Contest, Phone 2300Z, Nov 10 - 2300Z, Nov 12
- 11,12 WAE DX Contest, RTTY 0000Z, Nov 11 - 2400Z, Nov 12
- 11,12 OK/OM DX Contest, CW 1200Z, Nov 11 - 1200Z, Nov 12
- 18,19 LZ DX Contest, CW 1200Z, Nov 18 - 1200Z, Nov 19
- 18,19 IARU Region 1 160m Contest, CW 1400Z, Nov 18 - 0800Z, Nov 19
- 16 LI/NJ-QRP Doghouse Operation Sprint 1700Z - 2100Z, Nov 18
- 18-20 ARRL Sweepstakes Contest, SSB 2100Z, Nov 18 - 0300Z, Nov 20
- 18,19 RSGB 1.8 MHz Contest, CW 2100Z, Nov 18 - 0100Z, Nov 19
- 25,26 CQ Worldwide DX Contest, CW 0000Z, Nov 25 - 2400Z, Nov 26
- 28 2000 6M Activity Contest 1800Z - 2200Z, Nov 28

Palo Alto Amateur Radio Association, Inc.

PO Box 911

Menlo Park, CA 94026

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Joel Wilhite, KA7TXV(650) 325 8239 '01 ka7txv@qsl.net
Gerry Tucker, N6NV (650) 326 4908 '01 (see "Calendar" for Board meeting times, visitors welcome)

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Submit material for PAARAGraphs by the 15th

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





Beginner's Bulletin

edited by Vic Black, AB6SO

Q. I was confused when I had my first CW contact. The other operator kept saying "hw cpi?"

A. "Hw cpi?" or "Hw cpy?" are abbreviations for "How do you copy me?"

meaning, "Did you understand everything?" CW operators use abbreviations in order to speed up transmissions. This is one reason CW can be faster than it would appear at first glance. Abbreviations must be used correctly, though, to avoid "interesting" interpretations.

During the 1950's the quickest way to get a message to someone who wasn't at home to answer the telephone was to send a telegram (home answering machines didn't exist yet). Telegrams were also used for very important messages since the recipient's signature was required for receiving them. When the message was received at the far end telegraph office, a messenger hand delivered a paper copy to the addressee. Western Union charged by the word so it was economical to use as many shortcuts as possible. Movie actor Cary Grant once received a telegram from a fan wanting to know his age. Her message asked, "How old Cary Grant?" As a joke, he replied, "Old Cary Grant fine. How you?"

Q. During one of my first CW contacts, the other operator sent "dah-di-dah-di-dah", kind of like KA combined, before each transmission. I couldn't find out what that means. Did I copy it wrong?

A. Sounds as if you ran across an OT, or "Old Timer." You can learn a lot from them. That symbol is called a telegrapher's procedural signal, or "prosign." It means "Attention! Important information to follow". You're lucky. He obviously valued your contact and enjoyed chatting with you.

Q. On the repeater, someone told me I don't have to wait for the repeater to turn off in order to answer. Someone else said I should wait for him to say "Over" and wait for the time-out timer to reset. What's the best thing to do?

A. You don't need to say "Over". Many repeaters have a "courtesy tone" or "beep" which tells you it's your turn to talk. You may talk after hearing the tone. The tone indicates that the timer is reset and the repeater is waiting for you to talk. It's still best to wait a second or two, though, so someone else can join the conversation or break in with emergency traffic. If the repeater doesn't have a courtesy tone, you can listen for the background noise level to rise as the repeater turns off. The sound you hear as it turns off is called the "squench tail".

Q. I thought I had to identify myself every time I talked. A lot of operators don't do that. Are they breaking the law?

A. You are required to state your own call at the beginning and end of each session and every 10 minutes during a session. You don't need to say the other station's call at all if you don't want to and you don't need to identify every time you give it back to the other station. If you hear someone calling "CQ", you can just give your call one time and see if he or she re-

sponds. After that you only need to identify every ten minutes. When you sign off then give your call one more time. Communications proceed more smoothly if you don't over identify.

Q. When I worked a SSB station in the East, there was a lot fading. The operator asked me to repeat my suffix, so I repeated my call. Someone told me I didn't do it correctly.

A. For repeats, always repeat only the part requested. It's best to repeat about 3 times. If you are requested to give your grid, for instance, you might repeat: "CM87, CM87, CM87". Resist the urge to get chatty and say something else during that repeat since anything else might cause confusion during marginal operating conditions.

Q. When I heard a lot of stations calling a rare DX station I decided to "bust the pile up." He was sending CW way too fast so I asked him to QRS, or slow down, so I could get his call sign and give him a call. He ignored me and didn't reply. What am I doing wrong?

A. In an ordinary rag chew session it's OK to ask the other operator to slow down and most will be very happy to do so in order to help you learn. On the other hand, during contests, DXpeditions or while chasing rare countries, it's unrealistic to expect a rare station to slow down, although some will. They usually try to achieve the highest possible rate of contacts. That rate, sometimes called the "Q rate", for QSOs per hour, will often exceed 200-250. Only a few seconds are allotted for each contact. Speeds of 30-50 wpm are quite common and if you want to compete, you must develop your skills. You will only alienate other operators if you continue to call without any chance for success.

On the other hand, many DX exchanges consist of only a signal report. If you listen for awhile, you should be able to pick up bits of the DX station's call sign over several minutes. Then you only need to be able to recognize your own call sign in order to work that station at a speed much higher than you could otherwise copy 100%.

Q. I called my first DXpedition and everyone started yelling "wrong call area!" What were they talking about?

A. The following is from a press release for a DXpedition to a very rare country. "We hope to keep the pileup spread to a minimum. We would like not to work by call areas, but if needed, the order for North America will be 1-2-3-4-8-9-Ø-5-7-6. Europe and Asia will be Ø-1-2-3-4-5-6-7-8-9." What this means is that the DX station may accept calls only from certain areas at a time in order to minimize interference and give deserving operators a chance for success. Also, note the odd distribution of US areas. That's because it's lumped into three areas, East, Midwest and West to make maximum use of propagation in effect at a particular time.

You are expected to conform to their announced wishes, otherwise they will ignore you. If you live in the W6 area, but have a W7 call sign, you must wait until they ask for W7 calls. DXpeditions are easier to work after they've been on the air a few days and the huge crowds have died down somewhat. At that time they may ask for special groups such as YLs only, QRP, slow (QRS) or mobile stations.



PAARA PONDERINGS

de VIC BLACK, AB6SO

A fairly recent demographic change has overtaken Amateur Radio. It's been with us for a long time, but it's becoming more evident as it accelerates. The amateur fraternity is aging. I hear lots of calls for involving more youngsters to prevent the hobby from slowly disappearing by attrition. I'm all in favor of encouraging youth involvement although I'm somewhat skeptical about the rest of the story.

Recent polls show that the average adult has only about 2 to 3 hours per month to spare for social, fraternal and hobby activities. Retirees tend to have more time available, even though many complain that they are as busy as always. With the population living longer there will be more retirees available to share their life experiences through Amateur Radio. Many retirees have a long history of technical achievements behind them and can make important contributions to the Amateur Radio art. Regardless of their work history, most are looking for something meaningful to do during retirement. I firmly believe that we're missing the boat by not aggressively recruiting Senior Citizens into the hobby along with the youngsters.

On Sunday September 24 PAARA members **Bill Fies K6TYO**, **Loren Archer KG6LRN** and **Doug Mecham KC6UKJ** demonstrated Amateur Radio to Boy and Girl Scouts in Palo Alto. **Bruce Le Grande KB6LWN** in Middletown (Lake County), along with PAARA mobile operators **Andy Korsak KR6DD** and **Vic Black AB6SO**, provided repeater contacts for the Scouts' third party traffic under the watch of control operator **Bill Fies**. This was the first exposure to Amateur Radio for many of the Scouts.

The 10 GHz band 2000-km barrier was broken by a new World Terrestrial Distance Record of 2079 km set on June 25 when German operators **Dieter DJ4AM**, in Israel, contacted **Adalbert DJ3KM** over water on the Italian island of Lampedusa, in the Mediterranean Sea. **VK6KZ** and **VK5NY** set the previous record on December 30, 1994 for a distance of 1912 kilometers.

Gary Lauterbach AD6FP from Los Altos and Moss Beach operator **Ron Smith K6GZA** set a 24 GHz North American distance record 16 September during the 10 GHz and Up Cumulative Contest. The path between Northern California's Mt Oso, 3350 feet (CM97hm), and Southern California's Mt Frazier, 8000 feet (DM04ms), was calculated at 375 km. Signal strengths varied from S5 to S7 using SSB.

At the other end of the spectrum, **Larry Kayser VA3LK** in Eastern Ontario, Canada, is preparing for the TransAtlantic II LF record attempt set for November 10-27 from Newfoundland. Transmissions on 137.710 kHz will involve very slow CW at 0.4 wpm. A cross-band contact, 136 kHz to 20 meters, was achieved between Great Britain and Canada on 10 September with **GØMRF/P** on 135.71 kHz and **VE1ZJ** on 14.043 kHz in Nova Scotia. While sports records in the Olympics were about to be broken by tenths of a second, or by mere inches, this 4332 km record more than doubled the previous distance

record.

Slow CW is used because it requires less bandwidth, allowing the receiving station to employ narrower filters. This dramatically increases signal-to-noise ratio. Apparent increases of 20 dB or more are achievable using very narrow filters. This is like increasing power output by a factor of 100:1. This is important since power is limited to 1-watt effective radiated power (ERP) on LF. At this frequency even several hundred foot long antennas are extremely short compared to a wavelength. Antenna efficiency is usually LESS THAN 1/10 OF 1 %. A station output of 1 kW into a 200-foot long antenna at 100 feet elevation may just barely achieve 1W ERP. Most stations operate in the milliwatt ERP range. You can read more at <http://www.g0mrifreeserve.co.uk/atlantic.htm>.

Steve Yates AASTB from Fort Worth, TX reminds us that, "this band (160-190 kHz range) is not an amateur band since no license is required, but I haven't found anyone there yet that is not also a ham." Check Steve's web page at <http://www.geocities.com/aa5tb/longwave.html>

Are you ready for an all-Amateur satellite launch? For many years Amateur Radio operators have sent ATV and simplex repeater equipped helium balloons aloft. The balloons have an inherent maximum altitude of about 100,000 feet because atmospheric pressure diminishes with altitude allowing the balloon skin to expand. Helium gas atoms are very small in diameter and will penetrate most materials in a short period of time. As the balloon expands, it stretches and thins out, allowing the helium gas to leak from the balloon. When equilibrium is achieved the balloon stops climbing. If the balloon climbs much further, helium will leak out or the thin envelope will rupture and the balloon will fall. Now, newer balloons are being tested with a polyurethane skin, which is more resistant to helium leaks.

Polyurethane skinned helium filled balloons will stay aloft for months at a time. They will carry heavy packages up to twice the height of current models. Smaller versions will ultimately carry amateur repeaters into the upper reaches of the atmosphere at very low cost. Even more exciting is the possibility of attaching rockets under the helium balloons. These hybrid rocket/balloons, or "rockoons" will carry the rockets to the edge of the drag-inducing atmosphere where even amateur built rockets will be able to carry small satellites into low earth orbit. The rockets will probably launch straight up through the balloons.

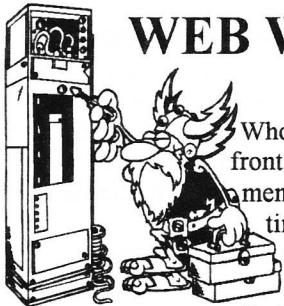
Ground controller, **Chuck Wyrick KM4NZ**, reports that satellite AO-27 has returned to analog Amateur Radio service. Oscar-27's repeater controller for analog FM crashed July 31. After several attempts at reloading the controlling software success was achieved September 9. Wait to ensure the satellite is in analog mode, with no data being sent, before transmitting on the 145.850 MHz uplink frequency. The downlink is on 436.797 MHz. The satellite will be turned off occasionally for tests during the next few months.

Hams will go way out of their way to collect other people's castoffs. **Patrick Taber NM5A** from Albuquerque sent along this tongue-in-cheek "warning": "Don't let the others confuse you. Old coax is very dangerous stuff. Coil it carefully and mail it to me for safe disposal. I do not charge for this service."

(Continued on page 103) Ponderings

WEB WANDERINGS

de Vic Black, AB6SO



Who said Amateurs aren't at the forefront of digital communications experimentation? It's Leonids Meteor Scatter time again. But, wait! If you favor digital communications, try a new and different mode this year. Try FM

Packet Meteor Scatter. Anyone with a TNC, radio and software can listen in on the excitement. In order to transmit you will be best off with about 100 watts ERP on 6 meters (try 100 watts into a dipole) or about 500 watts ERP on 2 meters (try about 100 watts into a 5 or 6 element Yagi). Go to the BEACONet/PropNET web site <http://go.to/BEACONet> and select the hyperlink titled Fast Links. Download the software, UI-View, and the setup/configuration instructions. Remember that this is an experimental mode and you may not be successful. On the other hand, you may become one of the true pioneers in this new VHF weak signal FM digital mode.

The bands have been really hot recently and the higher HF bands can only improve with the approach of winter. This is a good time to mark <http://www.dixer.org> home page of the DX Notebook maintained by **Herb Blair K5AT**. The page is useful to the dyed in the wool DXer, as well as the casual DXer or contester. There are links to QSL routes, DX Spots, Most Wanted Lists, Upcoming Events, DX News Bulletins, Contesting Schedules, DXCC Forms and Country Lists. Also, try the link http://dixer.org/dxp_logs.html for lists of Upcoming DXpeditions. Log Searches and links to current and past DXpeditions. **Bruce Horn WA7BNM** maintains a Contest Calendar web page at <http://www.hornucopis.com/contestcal>. It has links to all of the major contests with schedules, rules, etc. Some operators have been working as many as 50 countries during a weekend using less than one watt and low-level dipoles. This won't last forever, so "make hay while the sun shines". The web site for eHAM.net has an interesting article for building your own 6-meter square dipole. This antenna is reminiscent of the old standard commercially available "Squalo", or square halo, which was popular during the '50s and '60s. It's omnidirectional, but horizontally polarized so you can use it for SSB. The longest side is about 2 feet long. This makes it possible to use for mobile installations, whereas a standard dipole would be too long and directional. Go to eHAM.net at <http://www.eham.net/articles/1248> for drawings, bill of materials and instructions. **George Dowell K0FF** offers a partial kit with all metal parts drilled, punched, bent, and threaded. Inquire at k0ff@arrl.net. Similar antennas are sold commercially by **KB6KQ** (see <http://www.kb6kq.com>) and M2 Antenna Systems at <http://www.m2inc.com>. The M2 antennas are called HO Loops. Designer **Mike Staal K6MYC** claims a gain over standard dipoles even though these antennas ARE curved dipoles. Using clever marketing specmanship, Mike told me that the apparent gain comes from low angle radiation, which normally goes up higher with a regular dipole where it's wasted. Mike discusses stacking gain on his web site. It's common to

see 2 antennas stacked vertically for 2-meters and 70cm mobile installations. I use **KB6KQ** 6- and 2-meter antennas and PAARA member **George Londero KR6BB** uses the M2 6-meter variety with great success while mobile at rest. George stores his antenna in the car trunk while in motion so there's nothing visible on the outside of the car when he's not on the air.

Radio history buffs will appreciate the personal web site of **Roger Wendell WB0JNR** from Aurora, CO. The site at <http://www.qsl.net/wb0jnr/maritime.html> tells about Roger's stint as a Radioman with the US Coast Guard. There are photos of the commercial ship to shore installation at KPH in Bolinas and the Coast Guard Station NMC in Alameda. While studying at the Coast Guard Training Center in Petaluma, CA, Roger set the Coast Guard record for receiving CW at 40+ wpm for 5-character coded groups, (more difficult than plain text). In a recent e-mail message Roger said, "Throughout my five month stay at 'Two Rocks' (the unofficial name of the Coast Guard's Petaluma, CA Radio School), many of us enjoyed weekend visits to nearby NMC, KPH and other radio facilities of interest. Of course, many of us also enjoyed the movies, beaches and all of the other trappings north of the Bay Area. Petaluma's local drive-in theatre was always fun on a Friday night. During intermission a dozen or so different car horns could be heard practicing Morse for next week's test at Two Rocks." Roger's reminiscing brings back memories for me. When I was in high school, there were fewer hams than now and it was traditional to send HI in Morse code using the car horn whenever we passed another Amateur Radio operator. It didn't take long for us to devise a way to automate the process so we could send high speed CW with the car horn. Old rotary telephone dials had a gear-like cam behind the dial for operating a micro switch to generate the dial pulses. We filed off the cam for number 5, mounted the dial to the dashboard, and connected it in parallel with the car horn button. Then by dialing number 7, we could send di-di-di-dit di-dit, or HI, in Morse code. Sometimes e-mail is a valuable adjunct to on-the-air activity. PAARA member **Jeff Wheldon KF6PDF** reports from Gustine in the Central Valley: "Spent a little time doing California QSO Party on CW & SSB. Strong signals from far away places. This is what makes it fun. I received this follow up e-mail: 'Jeff san: Glad to meet you OM. Thank you very much for QSO this morning. It is very kind of you telling me your address Gustine is in Merced Co. It is new county for me and now worked 50 of CA counties. I will send my card to your address that you told me on the air; maybe your address on Buckmaster is not good now. I am 63 years old on next Dec. and have been a HAM for 42 years on CW. I like to work with USA very much for my county hunting. I have 938 cards and now looking for 62 other cards, hi. 73 de JA2AJA Mano Hiroshi.'"





Thoughts

Antenna Selection Guide

by James R. Duffey KK6MC/5

Although I am not an antenna engineer in real life, I play one on the Internet and occasionally at hamfests. Many times there is an implication that the choice of antennas is unique, that there is one best antenna for each situation. Often there are several antennas that would be applicable.

The Amateur Radio antenna literature, including the Internet, is bewildering to the newcomer who usually just wants a simple question answered: "What type of antenna should I put up?" The old "Understanding Amateur Radio" published by the ARRL used to address this very nicely. This publication was sort of a Novice handbook, which served as an introductory technical reference. It bridged the gap between the less than practical knowledge obtained by studying to pass the Novice test, and the detailed ARRL Handbook covering nearly every facet of Amateur Radio. The antennas presented in "Understanding Amateur Radio" were effective, worked well, needed little tuning, and were explained well. With all the new operators coming into Amateur Radio it would be nice if the League would consider updating this or releasing a similar book. I think it would help to bring many of the newcomers up to speed. With the lack of direction for beginners in mind, I have compiled a list of antennas that I suggest beginners try. I developed this for my hamfest talks so you may have seen these before.

Good antennas for Beginners:

1. Single band dipole or inverted Vee (depending on whether you have one tall support or two). These can be erected with little or no tuning. If tuning is needed, the direction to go is clear. If the resonance is too high, add wire; if it is too low, prune wire. Most will work fine when cut to formula.

2. Parallel dipoles for multiple bands. This is best limited to even harmonically related bands to reduce interaction. Tuning is harder than single band dipoles or inverted Vees, but an antenna cut to formula will usually work fine if the elements are adequately separated.

3. Single band quarter wave verticals supported by a fiberglass crappie fishing pole such as the SD-20. A good ground is required, but little tuning is required and it is straightforward.

4. A coat hanger special for 2 M and up for local FM work. These are inexpensive, can be built from easily obtained materials and will outperform antennas costing much more.

5. VHF/VHF Cheap and easy Yagis. See <http://www.clarc.org/Articles/uhf.htm> These antennas, designed by Kent Britain WA5VJB, are easy to build, require no tuning after building, and can be built for less than \$5 with easily obtained parts using only hand tools. These antennas are only about 1 dB below the ideal gain for the boom length.

6. Quagis. These are also built from easily obtained materials, require no tuning other than careful measurements, and have a gain within 2 dB or so from ideal. They are good antennas to

use if you are starting weak signal (CW and SSB) VHF work.

One or more of the above antennas should be applicable to the needs of nearly every newcomer. Bands from HF to UHF are covered. Antennas for the advanced amateur, or for those who have built the above antennas and are looking for slightly improved, albeit slightly harder to build antennas, include:

More Advanced Antennas:

1. Loops, both horizontal and vertical. The standard formulas do not apply as closely as they do for dipoles, and achieving a 50 Ohm match needs some matching. Nonetheless, they are good performers and most hams can easily get one going.

2. element Yagis, either wire or tube. Wire antennas covering a fixed direction are cheap and provide good bang for the buck. Again, these antennas can be made to work with little if any tuning or matching. Cut to length they will usually work pretty well. If you don't have the means to raise and rotate a tube based Yagi, lots of fun can be had with a wire Yagi in a fixed direction. Such an antenna pointed at Europe, the Caribbean, Japan, or South Pacific will yield a lot of DX, particularly during a DX contest.

3. Center Fed Zepp. Implementation of the balanced feeder requires some thought and consideration, and the addition and operation of a tuner adds some complexity and cost. However, the bang for the buck is hard to beat in a multiband antenna. The Z match is a good tuner to use with this antenna.

4. Optimized 3 element or greater Yagis for VHF/UHF. The latest handbook has plans for these. They require careful construction and matching requires some careful measurements, but these will work nearly to theoretical expectations.

5. Long (greater than a wavelength) wires. These require some care in feeding (use an L match) and need to be pointed in the right direction as long wires can be very directional.

6. Phased verticals. These require a good ground, and care needs to be taken to get the phasing right, but good performance in a limited space can be obtained.

All of these antennas are a good step up from the usual ham's first antenna and can be built and erected with little fuss. I suggest beginners avoid the following antennas, not because they don't necessarily work, but because they present one or more problems that can be difficult for the beginner to deal with. In other words, they require some fussing. The beginner could better spend this time operating.

Antennas to Avoid:

1. The Windom or off-center fed antenna. These can have feedline radiation, which can cause several problems. The feedline radiation in these antennas can be very difficult to eliminate.

2. The G5RV. I am referring to the type that is fed with a combination of coax and a matching stub of balanced feeder. This antenna can have feedline radiation if fed without a balun, and excessive losses if fed with one. Without the coax it is essentially a center fed Zepp which is covered above.

3. The W8JK. This antenna has a low radiation resistance and can have significant losses if care is not paid to loss sources that can be neglected in other antennas: wire diameter, joints, and end insulators.

4. End fed random length wire. These can be tricky to feed,

(Continued on page 103) Thoughts



Technical Tip

More DX Tips by Monte "Ron" Stark KU7Y

First off you really need to "get inside" the DX station's head. Listen to see just what he's doing. What kind of calls is he coming back to? Is it a pileup operation where the contacts consist of just the RST, or is it a real QSO where you chat a few times before ending? Is it a split operation? What speed is he using?

Make sure you and your rig understand each other when using the split feature. The very best way to work split is to use a radio that has two receivers that can be used at the same time, like the FT-1000MP, for example. Find the stations that are working the DX station and notice what the DX station is doing. Is he moving up 200 Hz each time? If so, put your transmitter 200 Hz up from the station that is working the DX now and get ready to call.

In these situations, only send your call once and listen. In a split operation, you don't need to listen for very long, just a couple of seconds. If the DX station isn't sending then send your call again. Watch for them when they're trying to get a broken call fixed. Let's say I send my call, KU7Y and hear the DX station send 7? I'll respond with a quick KU7Y again. Sometimes this will go on for 2 or 3 times until he gets my call OK. Or until he gets someone else's call OK!

If he sends "6?" and you're a 7, then do not send. Only send when you think there is a good chance that he's trying to clarify your call. If the DX station is working stations simplex (on his own frequency), then you need to be much more careful of when you send. Be sure that the DX station is not sending when you call. Try not to be the last guy calling.

In 99% of the situations, don't waste time sending the DX station's call.

They already know who they are. They need to know who you are. Use QSK. Learn how to keep your sanity while listening to the whole world call at the same time you do. Using a memory keyer is strongly recommended. Or just use your logging program and it's memories.

Always make your call as short as you can. Repeat your call only after knowing that the DX station is still trying to dig someone out. In a pile-up, never ever use the old 3x3 calling style. That came about back in the old days when you would call CQ on one frequency and then start tuning the band with your receiver to see if anyone was calling you. The 3x3 call gave the calling station time to look around the band a bit. In today's world of transceivers, that style is about as useful as AM on a crowded SSB band during a contest. Even on 160m where the JA stations only have a few kHz up above 1900, they send QSX and the frequency they will listen to; say, QSX 1827 for example. Then you set your transmitter to 1827 and send your call. But still not a 3x3.

Be ready to hit the kill button. If you hear the DX station, or if you even think you hear the DX station start to send, stop your transmission ASAP. Don't make any more QRM than you

have to.

Learn when to get on the air. Watch the gray line. That will usually give you the best conditions. Get the DX info. Know who will be where and when, and be there before the crowd. DX spots are OK but that's when the crowds hit and you really want to be there before the crowd if you can. When working on a project, leave the rig tuned to a good DX frequency. I used to leave it on 21.024 or 14.024. Leave the filters wide open. There is a real thrill to hearing a quick tune up, followed by a DX call and then sending yours and hearing it come back all before the rest of the world has reacted! If your rig can scan, that's another great thing. Program in several DX frequencies and let it scan. Soon you will hear some activity and you will be there early.

Read all the books you can about DXing and antennas. Try to improve your antenna and also try, as best you can, to get more than one antenna up. Visit my Home Page at <http://www.qsl.net/ku7y>.

(Continued from page 102) Thoughts

often resulting in RF in the shack on one or more bands. These can be tamed, but the time and effort are better spent by a beginner on the air.

5. J-Pole and end fed Zepp. These have problems with implementing balanced to unbalanced transitions without baluns. This leads to feedline and stub radiation. The coat hanger special is an easier antenna to build and performs just as well.

I suggest that beginners build their own antennas rather than buying them. The ones I suggested are simple to build, only require hand tools and do not require tuning. The hardest skill required is soldering. Ron Stark KU7Y, says that soldering is not even required and suggests that good antenna wire connections can be put together with wire nuts. I have not tried this, but someone who is afraid to solder might try it. These are my opinions. I don't suggest the above solutions are unique, but they work and they will work well in most situations. For situations not covered, such as indoor or covenant restricted antennas or portable applications I could make up a couple of new lists that cover these situations, but there are others better qualified to do so.

Dr. Megacycle KK6MC/5: James R. Duffey, 30 Casa Loma Road, Cedar Crest, NM 87008

(Continued from page 100) Ponderings

Pat added, "Yes, I'm a 5 wpm Extra and proud of it. I struggled hard to reduce my code speed from 13 wpm Advanced."

Get more use from your all mode 6M rig by dropping by 50.4 MHz on Sunday evenings at 7PM local time for a hour or so of pleasant AM conversation and fun. Net control, **Bud Kessler W6PJD**, is in Shingle Springs with relay stations throughout the Central Valley and the Sierra Foothills.

Thanks to **Pete Burbank NV4V** for an interesting tip. "I was staring at the pile of extra 'transaction registers' that come with blank checks from the bank. Seems like I never use them all. Then my massive brain realized that these would make cool portable logbooks. Just change the headers to date, time, call, QTH, name, etc. Fits nicely in the pocket too."

PAARA Field Days

PAARAGraphs November 2000
 Celebrating 63 years as an *active* ham radio club—Since 1937

BAND/MODE	1987**	1988#	1990	1991?	1992	1993	1994	1995	1996	1997	1998	1999	2000
XMTRS	3	3	3	3	3	2	2	2	2	2	2	2	2
CW 80													
40	163	190	94	89	126	6	108	193	340	158	60	194	
20	183	366	240	331	374	119	393	414	367	151	228	308	
15	54	165	126	76	191	140	41	45	106	48	17	173	222
10												1	96
VHF/SAT/PKT	11	18	24	29	16	34	20	3	19				
CW NOVICE(#)	5	60	6	3	12	26	3						
CW QSOs	264	416	609	580	536	628	677	198	682	759	797	333	462
"CLASS A" CW POINTS <150W	1056	1664	2436	2320	2144	2512	2708	792	2728	3036	3188	1332	1848
PH80													
40	73	92	79	251	139	28	259	100	115	40	94	2	211
20	552	637	834	531	413	666	404	499	955	720	793	582	410
15	345	407	292	150	264	128	330	5	29	61			242
10													89
VHF/SAT	5	5	24	7	7	87	93	47	84	80	128	89	87
PH NOVICE	109	46	11	204	47	46	64	36	100	72	71		
PHONE QSOs	1187	975	1250	1275	990	1147	956	1283	862	1321	1102	1212	803
"CLASS A" PH POINTS <150W	2374	1950	2500	2550	1980	2294	1912	2566	1724	2642	2204	2424	1606
CLAIMED SCORE	3430	3614	4936	4870	4124	4806	4620	3358	4452	5678	5392	3756	3454
BONUS POINTS	400	900	900	900	1100	1100	900	700	700	800	800	500	800
TOTAL POINTS	3830	4514	5836	5770	5224	5906	5520	4058	5152	6478	6192	4256	3954
REPORTED IN QST	3830	4514	5830	5770	5226	5906	5530	4058	?	?	6192	?	6484
PLAQUE POINTS*	2380	2987	3750	3712	3481	3875	4167	3074	3848	4815	4613	3156	2942

* POINTS ARE THE CLAIMED SCORE (FROM QSO's), DIVIDED BY THE SQUARE ROOT OF THE NUMBER OF TRANSMITTERS AND THEN THE BONUS POINTS ARE ADDED

**ESTIMATED FROM QST SCORE

#There was probably a score correction by ARRL which is accounted for in the 1988 column at novice CW.

-Gerry Tucker, N6NV

(Continued from page 97) Board of Directors

was no authoritative answer to be had. (Later Don, KF6JMQ, by email pointed out that the extant By-laws say there are four and the PAARAGraphs newsletter lists five Directors.)*

The meeting ended at 9 P.M.

73, Jay, WA6SBO, Secretary

*listed below as in PAARAGraphs February 1999, page 12. Doug Schliebus, K1DIT served as Treasurer and elected Board member. —ed.

PAARA BY-LAW AMENDMENT

At the January 8 General meeting a motion was made and passed to amend PAARA By-Laws as follows:
(changes are underlined)

Amendment 1

Article II, Second sentence, shall read:

Five members of the Board of Directors shall constitute a quorum for transaction of business.

Article III, shall read:

The Board of Directors shall consist of the officers, four directors and the immediate past president.

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"HAM CRAM & EXAM"

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33641 Mission Blvd., Union City, CA

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E-mail k6ty@arrl.net

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

- Club meetings are on the first Friday of each month, 7:30pm at the Menlo Park Recreation Center, 700 Alma Street, Menlo Park, CA. •
 - Radio NET every Monday evening, at 8:30pm, on the 145.230-600 MHz repeater, PL tone off. •

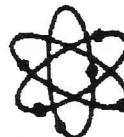
Membership in PAARA is \$12.00 per calendar year which includes a subscription to PAARAGraphs, \$6 for additional family members (no newsletter).

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PAARAGraphs November 2000

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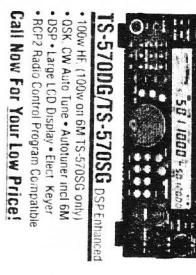
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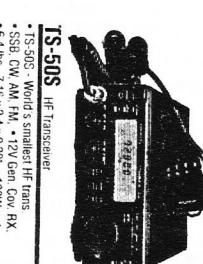
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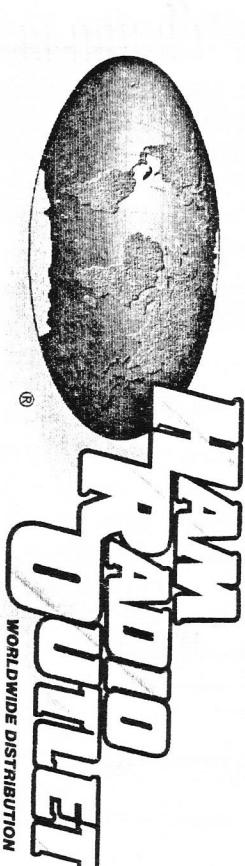
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