



Mike And Key



An ARRL Special Services Club

Founded 1914

SARC Calendar

- October
- 14th General Meeting:
Sacramento Blood Bank,
1625 Stockton Blvd.
Sacramento at 7:00 PM.
Informal get-together at
6:30 PM.
 - 28th Executive Committee
Meeting: Sacramento Blood
Bank at 7:00 PM.
- November
- 11th General Meeting:
Sacramento Blood Bank,
1625 Stockton Blvd.
Sacramento at 7:00 PM.
Informal get-together at
6:30 PM.
 - 25th Executive Committee
Meeting: Sacramento Blood
Bank at 7:00 PM.
- December
- 9th General Meeting:
Sacramento Blood Bank,
1625 Stockton Blvd.
Sacramento at 7:00 PM.
Informal get-together at
6:30 PM.
 - 30th Executive Committee
Meeting: Sacramento Blood
Bank at 7:00 PM.

Introduction to Amateur Radio DELAYED

By Tom Preston, KQ6EO

The "Introduction to Amateur Radio" meeting, originally set for October, has been rescheduled for November. This is due to the fact that several people were away and there was just not enough time to prepare by this month. So we will use the meeting this month to prepare and maybe it will be even better.

In last months newsletter Jim Rich made the statement "A hobby that doesn't bring in new participants, and a club that doesn't recruit new members, won't last very long". Very true and hopefully the November "Intro" meeting will be a good step in correcting that problem. Also, a hobby that can't keep its participants and a club that

can't retain its members won't last very long either. Maybe our members will use this opportunity to get reintroduced to amateur radio and find a "new" band or mode or whatever to renew their interest in the hobby.

PREZ SEZ

By Gary Bryant, KB6KZZ

Dear members:

The weather is changing, days are cooler, and that's a signal its the time of year too start thinking about club elections. Of course to be elected you have to be nominated, and that's what starts every October in our club. To nominate a member for club office we ask two things:

1. You ask the member that you are nominating if they are willing to take-on, and fulfill the position for the year 1999.
 2. That the candidate has been a member in good standing for at least one year..
- If the answer is yes! to both questions, then your half-way elected.

Our People

1998 SARC OFFICERS

President

Gary Bryant, KB6KZZ
646-1171

Vice-President

Stan Harter, KH6GBX
SK

Secretary

Jim Rich, N6SZQ
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JWRich9@aol.com

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Steve Cates, KC6TEV
391-7341

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393-4775

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428-0885

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Jim White, WS6K
456-9206

W6AK Trustee

Keith Crandall, K6QIF
452-5056 k6qif@cwnet.com

PIO

Richard Yeager, KG6GE

489-6334

Newsletter Editor

Tom Preston, KQ6EO
722-9358 mikekey@jps.net

Sorry for all the business-like talk this month, but club elections are important. Your club officers are the BACKBONE of the club, so please give them your support so they can offer you a chance to belong to the OLDEST & BEST AMATEUR RADIO CLUB IN SACRAMENTO.

73's until next month.

KIT KORNER

By Frank Zawalick, WD6DCV

Last month I discussed the NORCAL QRP Club and the number of fine kits that were developed and sold to the membership. In this installment I am going to be like the radio com mentor, Paul Harvey, and will tell you the "rest of the story" The success of the NORCAL kits in the amateur radio community was quite impressive. The demand for the kits exceeded the expectations of all concerned. It was soon realized that NORCALs interests were not to produce kits commercially but to tap into the talents of its members to design and produce limited productions of quality qrp radios. To commercialize these kits was not the name of the game. However a partnership was arranged with Bob Dyer, KD6VIO, a NORCAL member to commercially produce these kits. This partnership became Wilderness Radio, located in Los Altos, CA.

The NorCal 40A, 40M CW Transceiver, was first available radio and today is one of most popular. It is a rugged, high performance 40 meter CW transceiver, ideal for portable and home use, only 2.2"H x 4.6"W x 4.5"D. output is 2W+, clean QSK and an ultra-stable 2MHz VFO. Receiver sensitivity is -137dbm (outstanding), drawing 15 mA on receive and 250 mA typical on transmit. This radio is a field proven N6KR design with one PCB, NO jumpers and NO chassis wiring. The NORCAL 40A was reviewed in June '96 QST. Retail price \$129 and is complete with all parts, controls and silk-screened aluminum case. This is an excellent project for a beginner or a pro.

The Sierra is an all HF band CW transceiver, designed by N6KR. It uses plug-in band modules for 160-10 meters. Once again there is virtually no chassis wiring - all controls and components mount on a single board. Receive current drain is 30 mA with excellent sensitivity, AGC, RIT and a 5 pole variable bandwidth crystal filter. Transmit power is 1.5 to 3 watts. QSK is fast and clean. This radio appears in the 1996 and 1997 ARRL Handbook and was reviewed in June '96 QST. The cabinet offers plenty of extra space for individual customization and measures 2.5"H x 6.2"W x 5.5"D. Retail price with 1 band module is \$245, with 3 band modules \$295 and with 6 band modules \$369. This kit is recommended for the intermediate and experienced kit builder.

The "SST" or Simplified Superhet Transceiver is the lowest priced and smallest member of the Wilderness

radios. It covers a carefully selected portion of the CW band on 20, 30 or 40 meters, including the most popular QRP operating frequencies. A 40 meter novice/tech plus version is also available. With half the amount of other single board kits, the SST is a GREAT kit for the first time builder. Alignment is easy without special test equipment. It has a razor sharp 3-pole crystal filter and the audio output is optimized for use with standard Walkman-style stereo headphones. Receive current drain is typically 14 mA. Output power is 2 watts. This is a rugged self contained HF station designed to be taken anywhere. Retail price is \$85.

The KC1 Keyer/Frequency Counter is an ideal companion to the SST and the NorCal 40A. It incorporates an Iambic Keyer (both mode A and B), multi-partition non-volatile message memory, NO CPU noise and only 4 mA current drain. It utilizes a "Universal Displayless Frequency Counter" which reports operating frequency (+/- 1kHz as 3 digits in CW (audio tones). The KC1 works with direct conversion or superhet rigs and will count VFOs up to 50 MHz using an on board RF amp. It has multi-band support, up to 4 user-programmable VFO offsets, including add or subtract modes. A search mode incorporates using the keyer paddle to enter target frequency. Retail price is \$45. A front panel for NorCal 40A/KC1 is \$12 seperately or \$6 if ordered with NorCal 40A.

The KC2 Multi-function Accessory Module is the perfect match for the Sierra. It is a 1.1" x 2.9" module that combines a 4-digit LCD counter with 100 Hz resolution, and Iambic keyer with EEPROM message

memory. The display doubles as a bar-graph S-meter and QRP digital wattmeter. Programming is done with four push-button switches, so a keyer paddle is only required if using the keyer. The KC2 draws 7 mA and a special technique is used to eliminate nearly all digital noise without receiver muting. The frequency counter has 4 programmable offsets and runs off the receiver VFO. (Max input frequency 6.4 MHz) Retail price \$75. A front panel for Sierra/KC2 is \$15.

The BuzzNot Noise Blanker is an inexpensive noise blanker that works well with the Sierra, NorCal 40A and other NE602-based transceivers. It reduces interference from some impulse-type noise sources including nearby power poles. It is especially helpful when using wider filter bandwidths. A panel-mount gain control potentiometer with built-in on/off switch is included. Only four connections are required for installation. Retail price \$19.

A Wilderness Radio Minilog, measure 5"x4" , contains 50 pages for QSO information. The front and back covers provide useful reference material: a complete list of DX country prefixes, HF band allocations and QRP frequencies. The back of each page is left blank for notes or CW copy. Retail price \$6 each, 3 for \$15.

Wilderness Radio
PO Box 734
Los Altos, CA 94023-0734 USA
Phone: 650-494-3806
Hours: 9:00A - 6:00P (Pacific)
E-Mail: qrpbob@datatamers.com
Web: www.fix.net/~jparker/wild.html

There you have it.. The rest of the story!

On the Air W6AK

146.91 – PL 100

442.80 + PL 100

224.1 - (coming soon)

Sacramento Valley Noon Net
Every day at Noon

On the Net

<http://home.sprynet.com/sprynet/w6ak>

Meetings

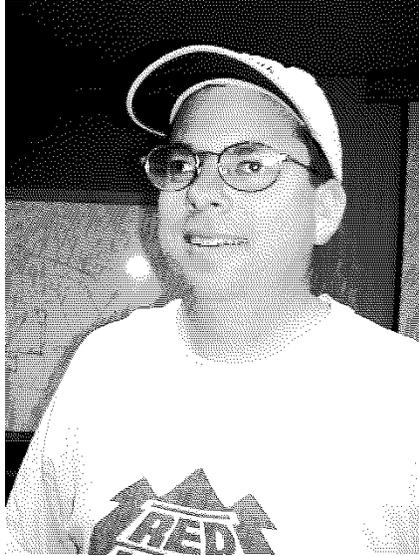
**General Meetings are the second
Wednesday of every month at the
Sacramento Blood Center, 1625
Stockton Blvd. Sacramento.
7:00 PM**

Please Join Us

Personality Profile

By Tom HughesWA6ZYK

**Bob Browning,
KE6YHQ**



Bob is a true Native Son having been born in the Fruitridge area of Sacramento. After Grade School, he then attended Fern Bacon followed by Luther Burbank where he graduated in 1975. Following that, he attended Sacramento City College, Cosumnes College and graduated from Sac. State in 1983 with a degree in Geography. He says that this extended period between the completion of High School and completion of College was due in considerable part to his being a musician in a Rock & Roll Band and the late hours involved with that. He also handled the sound and lighting for the group.

Working with those responsibilities with the Band aroused the beginnings of his interest in electronics. The final push, which brought him into Ham radio was somewhat unique. It seems that his sister and her family were preparing to take an extended, two year, sailing trip from Seattle to Mexico. Then thru the Panama Canal and up to Louisiana. She wanted to get her license so that she could keep in touch during that trip. Knowing that, at that time, her

knowledge of electronics was near zero he felt that he was totally safe in telling her "If you get your license, I'll get mine!" Well you can guess what happened then! Bob says she studied hard for a year and passed her test for a General Class license and then advised him "It's your turn!". He briefly held a Tech-Plus license prior to passing his General Class test approximately three years ago.

His first rig was an ICOM IC-730 which had seen duty on a boat for some time and was given to him in pretty bad shape. He sent it to ICOM to be refurbished but they advised him that it wasn't worth the expense and recommended that he just go ahead and use it but not to try to get too much power out of it. He finally gave up on it and is now using his Yaesu 50RD on 2M & 440.

Bob is involved in Property Management and is a Past President of the Community Associations Institute. That group is made up of people who live in Home Owner Associations, people who manage those associations, Lawyers and Accountants.

In November, Bob and his wife Linal plan a trip to Laos and Thailand with a group from Sac. State. During that trip, he hopes to get in contact with some of the groups presently involved in DX Expeditions in that area.

Bob became aware of the S.A.R.C when he read one of our newsletters at The Radio Place. Since it was also the closest, he decided to visit, liked what he saw and became a member. He is interested in Emergency Communications however his work doesn't presently allow

participation in that. When something like a flood occurs he is heavily involved in helping the property owners recover.

A New Year is coming

By Tom Preston, KQ6EO

A new year is coming and it is again time to look ahead. Gary discussed the upcoming elections but there are other things to think about too. I keep hearing that the club is at a crossroads and it is time to get our club moving out of the intersection before we get run down. I look back over this year and Field Day seems to be the only club activity except the monthly meetings. Field day was fun and several of the meetings were very interesting but if our club is to grow or just to continue we have to do more. Several people have tried to stimulate interest in other activities (Les Ballinger with a VHF contest weekend and Frank Zawalick with a kit building day to name a couple) but to no avail. Lets start talking about what the club wants to do, what our individual interests are and how can we get together and enjoy them, and what we can do to get more new people interested in OUR CLUB. So come on, lets hear from all of you either at the club or board meeting or send them to me and I will bring them up.

October General Meeting Room

For the general meeting of Wednesday evening, October 14, we will again be in the Sierra - Tahoe Room of the Alhambra

The Sacramento Amateur Radio Club Founded 1914. An ARRL Special Service Club. **1998 SARC Officers:** President—Gary Bryant, KB6KZZ, 646-1171; Vice President—Stan Harter; Secretary—Jim Rich, N6SZQ, 361-3542; Treasurer—Steve Cates, KC6TEV, 391-7341; **Directors:** Les Ballinger, WA6EQQ, 393-4775; Herb Bennett, KA6VHF, 451-6864; Ed Braaten, K6EKB, 939-1432; Glen Hartzell, W6WBO, 555-5555; Tom Preston, KQ6EO, 722-9358; Jim White, WS6K, 456-9206. **W6AK Trustee—**Keith Crandall, K6QIF, 452-5056; Mike and Key Editor—Tom Preston, KQ6EO, 722-9358. **Club Dues—**\$16 per year, from January to December (new memberships will be prorated). **The SARC Newsletter, Mile and Key,** is published monthly by and for the membership of the Sacramento Amateur Radio Club. Permission is granted to other amateur radio organizations to reproduce in whole or in part for internal non-profit use, provided credit is given to the SARC Newsletter and to the authors of the reproduced materials. **Articles—**Manuscripts and letters are welcome. Items may be sent to Tom Preston, email at mikekey@jps.net, or snail-mail at Editor, *Mile and Key*, 8425 Arcaro Ct. Citrus Heights, Ca. 95610. **Advertising—**commercial non-personal advertising, business cards through full page, is available. Contact the editor above for information. Classified advertising is free to members of SARC. Submit ads monthly to the Editor at the above addresses.

Annex. This is the building at the corner of Stockton and Alhambra. Do not confuse this with the meeting room in the main building called the Sierra - Tahoe Room. If you have any problems finding us just give a call on the repeater, as we will be monitoring. See you there at 7:00 PM.

Meeting Minutes

September General Meeting
Minutes
By Jim Rich N6SZQ

The Sacramento ARC meet in the blood bank's Alhambra Annex on Wednesday, September 9. The SBC provided us with a fine meeting room, and the free use of an overhead projector and screen. They were used by our speaker, Ed Farmer, an author and antenna expert. Ed is a gifted speaker who makes highly technical subjects interesting and easy to understand.

Ed discussed radio wave propagation, antenna design and Near Vertical Incidence Skywave (or NVIS) antennas. The military uses NVIS antennas for frequencies between 2 and 15 MHz. In one scenario a National Guard unit, responding to a tsunami in Eureka, would use a backpack HF radio, 20 watts of power, and a NVIS antenna to communicate with other stations throughout the State. By using a computer program, and guidelines provided by Ed, the Guard radio operator would "optimize frequency selection" so as to achieve "telephone-quality audio". The optimal frequency would take into account the distances to be covered, our location in the sunspot cycle, the time of year, and time of day. The two "critical issues" for NVIS propagation are to select the correct frequency and the correct antenna. However, even with the proper

antenna and optimal frequency, under most conditions NVIS cannot guarantee "Q5" audio much beyond a range of 300 miles. So if the Eureka station wants to send a message to a San Diego station, a net control and a relay station would probably be required.

Ed then gave us a summary of basic radio wave propagation principles, explaining such concepts as sunspot cycles, ionosphere layers, refraction and reflection, angle of incidence and take-off angle, and multi-hop propagation versus chordal propagation.

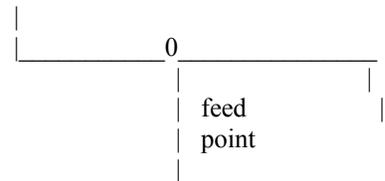
Even with computer programs, selecting the best frequency to use to communicate between two points is as much an art as a science. Sometimes you can be talking to a distant station, enjoying good quality audio, when suddenly the other station's signal is gone. Often this is due to a solar flare, which can foul up HF propagation for several days.

Ed believes a simple dipole antenna, mounted one-half wave length above ground, "isn't a bad DX antenna", due to its low take-off angle. However, for most emergency communications, you need good coverage over short- to medium distances. For this, a NVIS antenna, with its high takeoff angle, is much better. A half-wavelength dipole is "easily the best antenna" to use for NVIS.

The optimum distance above ground for a NVIS antenna is .15 to .25 wave length, according to Ed, although anything in the .10 to .30 range would be useable. Putting up such a dipole antenna for 40 or 75 meters is often difficult, especially if you have only one antenna mast or limited space. So many hams use an inverted-vee dipole. However, Ed cautioned that you lose some signal strength that way, and the antenna ends should always

be high enough off the ground so that people cannot touch them.

So Ed recommends that if you don't have enough space for a pure dipole, you should configure your NVIS dipole so that it is all in one plane, like this (viewed from above):



A NVIS antenna is perfect for the "goal-oriented communications" the Military and Amateurs involved in emergency communications must use. This is quite different from the "opportunity-oriented communications" that most hams, including DXers, use: at a convenient time you chose a band that seems to show some activity, tune around for an interesting, clear signal, and then give it a call. Under goal-oriented communications, you must communicate by radio with a specific station or group of stations, at any time, on short notice, even if you can't hear them at first. You and the other station(s) use agreed-upon criteria to select the optimal NVIS antenna and radio frequency to maximize your ability to communicate accurately.

Ed concluded his talk by advising our club on the feasibility of using a NVIS antenna at our blood bank station. If there is a lot of rebar in the blood bank's roof, then the roof should act as an electrically reflective surface. In that case, two simple dipoles, cut to 40 and 75 meters, fed through one feed point, and set at .15 to .25 wavelength above the roof surface, should provide good NVIS coverage. Ed recommended we not use a loaded antenna, with traps. If we do not have enough space to run a straight

line dipole for 75 meters on the roof, Ed suggested configuring our antenna as in the example above.

We concluded the meeting with a short discussion of club business. An "Introduction to Amateur Radio" meeting was set for October (it has been delayed until November). We also discussed the reasons for the club purchasing and installing a 220 MHz repeater.

September Board Meeting Minutes
By TomPreston KQ6EO

The SARC Board met Wednesday evening, September 30, at Keith's house. The Directors and Officers discussed the October meeting, our relationship with the blood bank, the planned "Introduction to Amateur Radio" meeting now in November/October, and better procedures for informing the club membership before spending club funds.

October Speaker

The October General Meeting speaker will be us. We will have a planning meeting for the November intro meeting. We will also see a video from the ARRL

Novembers General Meeting will be the delayed "Introduction to Amateur Radio" program so be ready to discuss what you can demonstrate and thinking about who you can bring to introduce to our hobby.

BUY, SELL, or TRADE

Estate Sale

ELENCO Signal Generator SG-9000 100Khz-150Mhz

Oscilloscope (Unknown Manufacturer) Wideband 12 Mhz

EICO TV Sweep Generator

EICO VTVM

LAFAYETTE Telsat-23 23 Channel CB

SBE Model 33 Mobile HF SSB XCVR (2 available) 80-10 Meters (Pre-WARC)

HEATHKIT HW-22 Mobile SSB XCVR

Home Brew HF RF Amplifier (Output Unknown)

All items are offered as "Best Reasonable Offer". Contact: Frank Zawalick / WD6DCV / 682-1589

Advertising of Ham related items are free to club members. So if you have anything to sell or trade or you are looking for something, get the information to Tom Preston, KQ6EO and I will post it here.

Ham Swaps

PACIFICON 98
Concord Airport Sheraton Hotel
October 16 - 18

Placerville - 3970B Missouri Flat Rd. #3 Placerville. Third Sunday of the month, 7:00 AM to 11:00 AM. Talkin 146.865 - PL 142.2 or 440.700 + PL 88.5

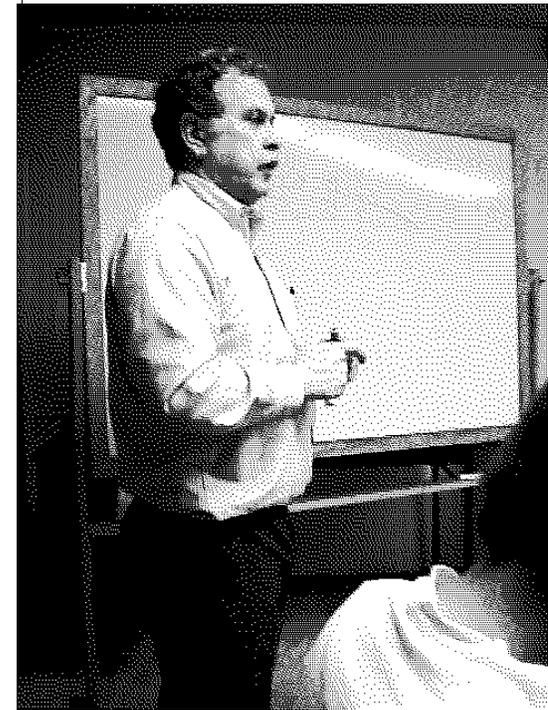
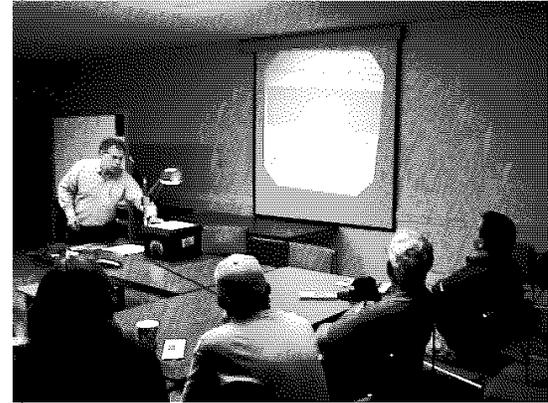
Livermore Swap Meet - Las Positas College in Livermore. First Sunday of each month, 7:00 AM - 12:00 noon. Talkin 147.04 (from west) or 145.35 (from east).

Foothill Flea Market - Foothill College in Los Altos Hills. Second

Saturday of March through October.

Below are some pictures of Ed Farmers lecture on antenna and propagation

Photos by Gary Bryant.





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Sacramento Amateur Radio Club

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MEMBERSHIP APPLICATION and RENEWAL FORM

Date _____ New Renewal Change of Address

MEMBERSHIP CLASS

General, \$16.00 Associate, \$16.00 Family, \$21.00 Student, \$8.00

Please fill in and circle anything you do not wish to have printed in the SARC Roster.
 Family memberships must reside in the same household.

NAME _____ CALL _____

LICENSE CLASS: N T T+ G A E Birthday _____ ARRL Member: Yes No

Family member: NAME _____ CALL _____

LICENSE CLASS: N T T+ G A E Birthday _____ ARRL Member: Yes No

Family member: NAME _____ CALL _____

LICENSE CLASS: N T T+ G A E Birthday _____ ARRL Member: Yes No

ADDRESS _____

CITY _____ ZIP _____

TELEPHONE (____) _____

E-MAIL ADDRESS _____

Areas of interest, bands and modes used:

Emergency communications capabilities: ACS/RACES or ARES

New memberships in mid-year will be pro-rated.

This form must accompany your check, made payable to SARC. Send to SARC at address above.