



Mike And Key



An ARRL Special Services Club

Founded 1914

SARC Calendar

March

10th General Meeting: Sacramento Blood Bank, 1625 Stockton Blvd. Sacramento at 7:00 PM. Informal get-together at 6:30 PM.

31st Executive Committee Meeting: Keith Crandall's QTH at 7:00 PM.

April

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: Keith Crandall's QTH at 7:00 PM.

May

12th General Meeting: Sacramento Blood Bank, 1625 Stockton Blvd. Sacramento at 7:00 PM. Informal get-together at 6:30 PM.

26th Executive Committee Meeting, Keith Crandall's QTH at 7:00 PM.

APRS SIG Started

By Tom Preston, KQ6EO

The first meeting of the APRS SIG (Special Interest Group) was held at the QTH of Tom Preston, KQ6EO on Wednesday February 17 at 7:00 PM. There were 8 members in attendance. The first order of business was organization. Mike McDermott, KF6RUQ was appointed as SIG Manager by the group. Mike's phone number is 682-6994 if you need any information. The SIG also decided to move the meeting night to the first Wednesday of the month at 6:30 PM, and we will be moving the meeting back down town to the Sacramento Blood Center.

We then got into APRS itself. We discussed a general overview of APRS and what computer platforms it is available on. We went over the wide area digipeaters that could be used directly from our

area and the digipeat lists needed in the software. We then talked about a local area "relay" digipeater project for the east side of town to help the mobile tracker users get out. This should also help with the power requirements of any base stations in that area. Herb Bennett will be looking into a possible site for the digi. Next was a discussion of a possible APRS station at the Sacramento Blood Bank, and its uses. This will be looked into further in the future. We then talked about APRSdos specifically and diskettes were available with APRSdos and the Northern California maps.

To finish up we went back to the shack to take a look at APRSdos running on the air.

Several of the people at the meeting have started to build and test their APRS base station so it looks like this SIG is taking off well and I think we will all have a lot of fun with this.

Now to start looking at other SIG's the members have expressed an interest in.

Our People

1998 SARC OFFICERS

President

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

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428-0885

Jim White, WS6K
456-9206

W6AK Trustee

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

PIO

Vacant

Newsletter Editor

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

PREZ SEZ

By Tom Preston, KQ6EO

Greetings fellow members:

Well the APRS SIG is off the ground and running. We had eight members there and several others that would have been except for prior commitments. Everyone was very interested and we had a good meeting. I think we will have a lot of fun with APRS.

I have gotten eighteen of the club surveys back. That is about half of our active members. Seven people expressed an interest in a Saturday morning get together so I will start looking into that. If you have any ideas for a meeting place please let me know.

The other SIG's with good interest were Kit Building, Packet/Digital, Computers in Radio, Emergency Communications, and Special Event Support. If anyone is willing to be a SIG Manager for any of these please let myself or a board member know. The list of SIG's in the survey were a guess by me. If anyone has another SIG that they would like to see let me know and I will try to determine the amount of interest. If there is good interest lets get one going.

The survey also brought another interesting fact to light. There was concern about the number of people who would use the 220 repeater. There are more people than I thought with 220 equipment in the club.

I talk about the survey in another article and will have the totals information at the meetings if you would like a copy.

73 until next month.

SARC and W6AK Repeater

SAVE THE DAY

By Les Ballinger, WA6EQQ

This is a report from Mike Golub, El Dorado County Search and Rescue. This started with a call on the 146.91 repeater in Sacramento to Keith Crandall, K6QIF, asking him to call the AAA Auto-Club for a wrecker to pull a stuck 4X4 out of the snow. Triple A would not send a wrecker because it was off the main road. I was monitoring the conversation and made a call to Bill Ozment, W6LSW, on the 147.825 repeater. Bill lives in Pollock Pines and monitors that repeater. He called the El Dorado Sheriff's Department and they called out the SAR Team. The incorrect Lat/Long mentioned in the following report was given to them by one of their ?friends? on the cellphone.

LOST & FOUND EL DORADO COUNTY'S SEARCH & RESCUE VOLUNTEERS

On Friday night, January 8th, 1999, there was a quick rescue. A family of 3 brothers, one with his four year old daughter, decided to go to Sierra-at-Tahoe for a day of skiing. They didn't get out of Sacramento until late. Instead they choose to go for a day of fun in the snow in the Ice House area. (they left no destination plans nor notified anyone of their change in destination).

First they went to play at ice house lake, but due to the lack of snow they proceeded to Wrights Lake. It was taking longer to get there than they had remembered. When the

sun started to drop, it was decided it would be a quicker route to go home out the Wrights Lake by-pass road to Hwy 50. Also they did not know the condition of the road. The group was in a 1999 Ford Expedition 4WD but had passenger car type tires. As luck would have it, they became stuck in the snow and now ice.

What was different about this group was the driver was a ham. He made a call on his home repeater, and through around about way the EDSO was contacted about 17:00. A short callout was made to the OHY team. Within an hour Mike Z, and Ray Pledger who picked up yours truly were off. I must say it was nice to have the lost subject talk you into their location. The only hitch was the driver in the mean time made another call to someone who gave them lat/long of their location. When we looked on our maps, the lat/long did not match where they described their location to be. We did locate them about 21:00, and with a quick tug the ford was loose. We escorted the group down the hill near pavement, where the report was taken.

Even though they did a lot wrong in their day's plans, they did have one good thing, a ham radio. They also had a cell phone, but it was one of those match box size ones, and the signal was too weak to use. This was a good rescue for a lot of reasons, but if you ask my wife Lisa, since I had been home sick for the last couple of weeks off and on, she was glad to get me out of the house and away from her for a few hours...

Mike Golub SAR #85

KIT KORNER

By Frank Zawalick, WD6DCV

Mike and Key

LDG Electronics was formed in late 1992 by three electrical engineers from the Southern Maryland area to promote the use of microcontrollers in amateur radio by developing interesting projects based on the 68HC11 processor. After realizing that there were no easily obtainable 68HC11 development systems at an affordable price, the SBC-1 was developed. The system was designed around the 68HC11 in a single ship and bootstrap mode. This allowed easy programming from a PC over the RS-232 port

Because the SBC-1 was only a single sided PC board and measured over 4 by 4 inches, a new smaller board was designed in 1993 that was double sided and upgraded to include a silk screen and solder mask. The new development system, the SBC-2 became a favorite in colleges and universities because of the low price and immediate startup.

In late 1993, work started on the development of an HF automatic antenna tuner that was controlled by the 68HC11. Once the prototype hardware and software was completed, the project known as AT-11 (AT for automatic tuner and 11 for the 68HC11) using the SBC-2 concept was developed. After much SBC-2 (512 byte on board memory) user feedback, LDG redesigned the SBC-2 to use the new X68C75 Xicor chip that had 8K of EEPROM and integrated port replacement. The result was the SBC-8k. The new board also added provision for an on-board plug in 8K Serial EEPROM chip that Xicor was releasing.

In 1996, the AT-11 was released in kit form just as the article was being published in the January issue of QST. The project realized overnight success. Over 2000 kits were sold in the first 20 months making it one of the most

March 1999

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/~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

successful articles ever published in QST's history. With the success of the AT-11 kit, an assembled version was released in August. It featured a custom made enclosure from Ten-Tec. A 0.1 to 10 watt QRP version of the AT-11 was released in November 1996. In November 1997, the 4:1 Balun Box kit was released. Currently there are at least three new products on the drawing board. Most of these items will be accompanied by an article in QST.

AT-11 Automatic Antenna Tuner

This automatic tuner takes advantage of the modern microprocessor (68HC11) and L network design implementation by automatically analyzing the SWR and adjusting discrete components at speeds much faster than can be accomplished manually. The tuner fits into a 6x8 inch PC board and can handle 150 watts at 50% duty cycle, matching most unbalanced antennas from 80 to 10 meters and

some on 160. The tuner makes a great addition to the ham shack with any 5 to 100 watt HF transceiver (the AT-11 does not require band or frequency data from the radio). PC boards, preprogrammed microprocessors and complete kits are available to allow this project to match just about anyone's construction abilities. The AT-11 has an optional Ten-Tec enclosure available. The enclosure is made of aluminum and comes pre-drilled and punched, with silk screened labels painted on the beige front and back panels. The AT-11 switched "L" network is designed to work with Dipoles, Verticals, Inverted Vees, Beams, or any COAX FED antenna in the 1.8 - 30.0 MHz range.

AT-11 Tuner
 Size: 6.5 x 8.5 x 2.5 (Enclosure)
 Configuration: Switched "L"
Network
 Inductor Range: 20 uH
 Capacitor Range: 2700 pf
 Tuning Time: 0.1 - 6.0 sec (3.0 average)
 Current Consumption: 15 - 500 ma (250 average)
 Voltage Requirements: 11-14 DC
 Coverage: 1.8 - 30.0 Mhz
 Impedance Load: 6 - 800 ohms
 Power Range: 5 - 100 Watts (150 @ 50% duty)
 Construction Time: 6 - 8 hrs
 Kit: \$150.00 w/Enclosure:\$180.00
 Assembled:\$219.00
 Shipping: \$8.00 - 10.00

QRP Tuner
 Size:5.0 x 6.5 x 1.3 (Enclosure)
 Configuration: Switched "L"

Network
 Inductor Range: 20 uH
 Capacitor Range: 2700 pf
 Tuning Time: 0.1 - 3.0 sec (1.5 average)
 Current Consumption: 10 - 190 ma (75 average)
 Voltage Requirements: 11-14 DC
 Coverage: 1.8 - 30.0 Mhz
 Impedance Load: 6 - 800 ohms
 Power Range: 0.1 - 10 Watts (30 @ 50% duty)
 Construction Time: 2 - 4 hrs
 Kit: \$100.00 w/Enclosure: \$125.00
 Assembled: \$159.00
 Shipping: \$6.00 - 8.00

BA-1 Balun Box
 LDG Electronics designed the 4:1 Balun Kit to allow easy interface of ladder line antennas and long wires to the LDG line of Automatic Antenna Tuners. The unit is available in kit form only and can be built in 15 to 30 minutes. The small size and easy-to-build construction will make this balun a welcome station accessory.
 Size: 4.7 x 6.1 x 1.2 in
 Weight: 6 oz. w/enclosure
 Configuration: 4:1
 Frequency Coverage: 1.8 to 30 MHz
 Power Range: to 200 Watts
 Cost w/enclosure: \$25.00
 Shipping: \$6.00

LDG Electronics
 1445 Parran Road
 St. Leonard, MD 20685
 Phone: 410-586-2177
 Fax: 410-586-8475
 Web: www.ldgelectronics.com
 E-mail: ldg@ldgelectronics.com

Survey Results

By Tom Preston, KQ6EO

I think I have received all the completed surveys that I am going to get. I have received eighteen surveys. Thanks again to all of you that participated. You gave the board some good information and we will try to put it to good use.

All 18 attended general meetings, although 6 (33%) attended four or less. 12 attended at least one Board Meeting and 12 went to Field Day.

I think I will put the rest in columnar form for ease of reading.

Bands and Modes

HF	
CW	8
SSB	12
FM	3
AM	2
Data	4
VHF/UHF	
SSB	1
FM	18
Data	10

Rigs

	Base	Mobil/HT
HF	13	4
6M	3	2
2M	12	15
220	6	9
440	7	16
CB	4	6

Other Equipment

Computer	17
TNC	10
Multimode TNC	5

The Sacramento Amateur Radio Club Founded 1914. An ARRL Special Service Club. **1998 SARC Officers:** President—Tom Preston, KQ6EO, 722-9358; Vice President—Frank Zawalick, WD6DCV, 682-1589; Secretary—Jim Rich, N6SZQ, 361-3542; Treasurer—Ed Braaten, K6EKB, 939-1432; **Directors:** Les Ballinger, WA6EQQ, 393-4775; Herb Bennett, KA6VHF, 451-6864; Gary Bryant, KB6KZZ, 646-1171; Keith Crandall, K6QIF, 452-5056; Glenn Hartzell, W6WBO, 428-0885; 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, Mike 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.

Audio DSP	6
Battery Backup	10
Generator	6
Solar Panels	3
Antenna Analyzer	7
Voitmeter	13
Modes Used – Past or Present	
CW	10
SSB	14
FM	18
AM	5
RTTY	4
AmTOR	3
Pactor	4
Gtor	2
ASCII	3
HF Packet	3
Packet	11
TCP	2
APRS	6
Satellite Voice	1
Satellite Data	1
Weather Sats	1
SSTV	2
ATV	2

Link Support

Owned, Trustee of, or Support of	
FM Repeater	4
Digipeater	2
APRS Digi	1
BBS	1
Node	1
HF Gateway	1

Emergency and Training

ACS/RACES	11
ARES	3
NTS	2
Blood Bank Station	3
License Teaching	1
VE Testing	2
Net Manager	1
Net Control	7
Radio Direction Finding	1
MARS	1
CAP	1
CDF VIP	2

Elmer Volunteers

License	2
CW	3
New Ham Station Setup	4
New Ham Operating	3
HF Operating	1

VHF+ Operating	1
HF Digital Modes	1
Packet	2
APRS	2
SSTV	1
Antenna's	3
Computers	2
TNC's	3
Emergency Comm	5
Radio Direction Finding	1

Special Interest Groups

Kit Building	6
Contesting	4
Packet/Digital	7
APRS	7
Teaching	3
Testing	2
Computers in Radio	8
Emergency Comm	8
Special Event Support	7
HF	1

Nets

HF	2
VHF/UHF	3
Discussion	1
Computer	3
Emergency training	8

People interested in a Saturday Morning get together was 7.

Well, so much for the facts. We have enough people interested to get several more SIG's and a Saturday morning get together going. The only net with much interest was the Emergency Training Net. I would like some idea as to what you would like to see here. If we are to start another emergency net I think its purpose should be different than the Noon and Monday Night Nets. Let me know what you would like to see. Any volunteers to contact the people and get things organized. We are having a lot of fun with APRS SIG so lets get some of these other activities going and get even more enjoyment out of our hobby.

Personality Profile

By Tom Hughes WA6ZYK

The Personality Profile will no longer be a monthly feature. Tom will occasionally write one when someone is willing to share "who they are" with us. I personally found the profiles interesting and will miss them. Ed.

Doolittle Special Event Station

from Dave Langston, KB8RAP

I received the following email and wanted to pass it along to the members in case someone wanted to get involved. Ed.

I'm coordinating a Special Event Station to go on the air from the USAF Museum in Dayton, Ohio, as part of the Doolittle Raiders Reunion scheduled the weekend of April 16, 17, 18. In addition to listing the event in the April issue of QST, I'm also attempting to contact hams/clubs in specific locations that had involvement with the raid. Due to the B-25's being flown into McClellan Field prior to loading on the Hornet, I thought you and your members might have a special interest. We would like to hear from you that weekend, and would appreciate your help in getting the word out to hams in your area. We hope to put some of the Raiders on the air during the event.

If you would like further info on the event, please contact me at e-mail langstdj@maritz.com or call at 248-948-4237.

Thanks, and 73!

Dave Langston, KB8RAP

Meeting Minutes

February Meeting Minutes by Frank Zawalick, WD6DCV

The president, Tom Preston (KQ6EO) called the meeting to order at 7:00PM sharp. Introductions followed and we welcomed two visiting guests, Sue Bennett (KF6QET) and James Morikone (KF6UIJ).

Our treasurer, Ed Braaten (K6EKB) informed us that all accounts had been audited and transferred. A complete financial report should be available at the March meeting. Tom Preston has cataloged the vacuum tubes donated to the club and is pursuing a buyer for the lot. Monies received will be placed in the club treasury. Tom Preston presented art work for a logo to be placed on club T-shirts, jackets, etc. We are soliciting art presentations from the membership for considerations.

An APRS special interest group will meet at the QTH of Tom Preston, the third Wednesday (*changed to first Wednesday Ed.*) of the month at 7:00PM. Those interested in attending contact Tom for directions.

Bob Browning (KE6YHQ) and Mike McDermott (KF6RUQ) discussed field day locations and preparations. Discovery Park is a first choice but other locations are being discussed. Frank Zawalick (WD6DCV) discussed the possibility of being involved with Rail Fair 99, as a Special Events station. Rail Fair is held in Old Sacramento, every 5 years and draws railroad buffs from around

the world. It is held during the June Field Day weekend. Operating as a Special Events station would expose amateur radio and the SARC to the world. Frank will contact the appropriate parties and report his findings. He is interested in your suggestions and comments.

The guest speaker was Ed Richins (K6KAB), a tax consultant and financial advisor. He presented the latest in tax information for 1998 and showed numerous ways that club members could benefit financially as volunteers in public service. His primary advice is to keep accurate records and take the time to research all deductions you are entitled to. For specific tax questions, Ed may be contacted at Triple Check Tax Service, 916-485-1065.

Following the White Elephant drawing, the meeting was adjourned at 8:30PM.

February Board Meeting Minutes

By Frank Zawalick, WD6DCV

The monthly board meeting was called to order on Feb 24, 1999 by SARC president Tom Preston. The first APRS SIG meeting was held Feb 17th at the QTH of Tom Preston. Preliminary items and agendas were formulated, as well as appointment of Mike McDermott as SIG manager. It was decided that following APRS meeting would be held the 1st Wednesday of each month at 6:30PM at the Blood Bank Alhambra Annex. Preceding this meeting, Blood Bank support persons would operate net functions from the radio room. This would also allow the support persons to update and/or repair the Blood Bank packet terminal. Two possible antenna locations for the APRS Digital Repeater (APRS Digi) are the old KROY radio

tower and the OES tower. Both of these locations are being investigated. The surveys received indicate a strong club interest in Packet. It was considered that a PACKET SIG could be incorporated with the APRS SIG at a future date. Field Day locations are still being investigated. Frank Zawalick, WD6DCV, has contacted the California Railroad Museum to determine if SARC operation of a special events station during Rail Fair 99 was a viable option. This 10 day event is a once in 10 years activity that happens to coincide with ARRL Field Day weekend. A membership vote will determine our support of Rail Fair or participation in Field Day. We do not have the manpower to support both events. Participation in Rail Fair would expose our hobby to the general public. Frank should receive a Rail Fair position prior to the general membership meeting. Tom Hughes has elected to find a buyer for the tubes which were donated to the SARC. The results of the surveys indicate a large number of members have HF/UHF/VHF capabilities both mobile and fixed. Also many have emergency back-up power capabilities and have expressed a desire for emergency training and operations. Fifty percent of the surveys have been returned which is better than was expected. For those members that returned the surveys, THANK YOU for your cooperation, for those who have not.. there still is time and your input is appreciated. The meeting was adjourned at 8:30PM.

March Meeting

The guest speaker for March 1999 meeting is Rick McCusker, KO6DJ.

Rick is a former member of the SARC and is currently an editor for World Radio Magazine. In his position as editor, Rick has visited the Dayton National Convention, operated from the Queen Mary, toured the

USS Pampanito which is moored in San Francisco, Ca. He has assured us that his presentation will be one not to miss.

BUY, SELL, or TRADE

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.

Classes and Testing

VE Testing - N6DK in Sacramento 383-2113

VE Testing - W5YI in Roseville 783-7610

VE Testing - 3rd Saturday of the month at 9:00 AM. Carmichael Elks Lodge, 5631 Cypress Ave. Carmichael. Corner of Cypress and Hackberry.

Ham Classes - RCARCS. Call 492-6115 for further info.

Ham Swaps

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.

Yuba Sutter ARC Swap Meet - Saturday March 13th at American Legion Post, 5477 Feather River Blvd. in Linda.

North Hills Radio Club - Sunday May 23rd at Bella Vista High School in Fair Oaks.

River City ARCS - Saturday April 24 at Bella Vista High School.

Emergency Service Organizations

SBC

Sacramento Blood Center
Contact Jim Rich N6SZQ

OES-ACS:

Auxiliary Communications Service of the Governors Office of Emergency Services

Contact Cary Mangum, State ACS Officer at 916-2621670

or

Les Balinger WA6EQQ
Herb Bennett KA6VHF

SARCR

Sacramento Amateur Radio Communications Reserve
Sacramento City RACES
Contact Chuck Miller KD6AQM at 916-362-5924. Net on Monday's at 19:00 on 145.190 PL 162.2

CDF-VIP

California Division of Forestry
Volunteers in Prevention
El Dorado Co.
Contact Bill Ozment, W6LSW at 530-644-7066

Please contact Tom Preston KQ6EO with any other organizations that should be listed here

Contest Reminders

by Jim, N6SZQ

The sunspots are increasing, the higher HF bands are finally starting to open up, and the winter contest season is in full swing. A few reminders of some upcoming "big ones":

Friday, March 5, 4 PM PST to 1600 on March 7: ARRL International DX Contest, Phone. My favorite contest of the year. Try to work as many stations in as many DXCC countries as you can on 160, 80, 40, 20, 15, and 10 meter bands in 48 hours! This is a great way to work rare DX. See December 1998 QST, page 97 for details.

Other March Contests
9-10: CLARA Family HF Contest
13-15: QCWA QSO SSB Party
14-15: Wisconsin QSO Party
20-21: Bermuda Contest
20-21: Russian DX Contest
20-21: Ohio QSO Party
20-21: Alaska QSO Party
20-22: BARTG Spring RTTY Contest
20-22: Virginia QSO Party
(Looks like March 20-21 is busy)

FCC Amateur Enforcement Line

202-418-1184

A Tribute to the Silent Service

From the Submarine Veterans of World War II (at <http://geocities.com/Pentagon/Quarters/7906/index.html>) Contributed by Jim Rich, N6SZQ

What They Did

During the 1,347 days of W.W.II, 465 skippers took 263 boats and 16,000 men out on 1736 patrols, collectively spending 79,838 days at sea, of which 31,571 days were spent in operating areas where they attacked 4,114 merchant ships, firing 14,748 torpedoes and sinking 1,178 of them along with 214 Naval vessels. Of these 263 boats 52 and 3,617 men never returned. In this same period, the Germans lost 781 U-boats, the Japanese lost 130 and the Italians lost 85. 16,200 Japanese merchant seaman were killed and 53,400 wounded out of the total force of 122,000 by U.S.submarines. A force of 2% of the U.S. Navy accounted for 55% of Japan's maritime losses.

Never in the annals of military history has there been a record of achievement to equal that of the United States Submarine Service during World War Two. With 1.6 percent of all naval personnel the Submarine Service sank over fifty-five percent of all Japanese ships sunk, including one third of all Japanese men-of-war.

They also performed many other tasks such as carrying ammunition to Corregidor, evacuating the Phillipine Government and all it's gold. Attacking enemy land positions, landing spotters and raiders on many islands. Rescuing downed US pilots, one of which was George Bush, later President of the United States.

Secret surveillance was another mission of US submarines. US submarines scouted every landing made during the war in the Pacific and on many occasions acted as 'point' for the invading forces guiding them to the invasion place.

The United States Submarine service had the Island of Japan isolated long before the end of the war. They were unable to supply their army in the field, or even sustain the economy of the home islands. It is questionable under those circumstances that the atomic bomb was really needed.

All of this was done under the strictest secrecy, most of it not revealed for more than forty years after the end of World War Two.

Finding True North

Submitted by Tom Preston KQ6EO
By unknown author

In principle, north can be located by using a magnetic compass and making an appropriate correction. Magnetic north is substantially off from true north -- the exact amount varies by location. But there are better ways. Polaris, the north star, can be used, but this is inconvenient -- you have to wait for a clear night -- and not entirely accurate either. The most accurate way to find a true north south orientation is by using the sun itself to find the direction of a shadow cast by a vertical object when the sun is at its zenith. This is easier than it sounds, and can be done by measuring the length of the shadow cast by the upright before and after noon.

Set up a vertical pole (or a use a rope with a weight) to cast a shadow on the ground. If you use a rope you will need to make the reference point somewhere near the top to cast a visible shadow -- like a

stick knotted into the rope). The base of the shadow will be the first point for your south-north axis and the reference point or top of the pole will trace the second point. At some time in the morning, mark the spot on the ground where the reference point casts its shadow. Measure the length from the base to the end of the shadow, and using a string of that length, trace out a semi-circle on the ground with the base of the shadow as its center point.

As the sun rises higher in the sky, the shadow will first shorten as noon approaches, and then will lengthen. At some in the afternoon it will reach the semi-circle you traced in the morning. Note the spot when it crosses the arc the second time. The midway point between the morning and afternoon points, will be directly north of the base point of vertical object.

My Daily Prayer

I want to thank you God

For being close to me so far this day.

With your help, I have not been impatient, lost my temper, been grumpy, judgmental or envious of anyone.

However, I will be getting out of bed in a minute and I think I'll really need Your help then.

Amen

This space
intentionally NOT
left blank

Advertising
Space
Available

Contact Tom KQ6EO at 722-9358

METRO ELECTRONICS

ELECTRONIC DISTRIBUTORS

1831 J STREET
SACRAMENTO, CA 95814

(916) 442-1512
FAX: (916) 442-1586

Sacramento Amateur Radio Club

P. O. Box 161903, Sacramento, Ca. 95816-1903

MEMBERSHIP APPLICATION and RENEWAL FORM

Date _____ New Renewal Change of Address

MEMBERSHIP CLASS

General, \$16.00 Associate, \$16.00 Family, \$16.00+\$5.00 for each additional 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.

The Radio Place

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Tuesday - Friday 9:00 - 5:30
Saturday 10:00 - 4:00



5675-A Power Inn Road, Sacramento, CA 95824
Telephone 916/387-0730 FAX 916/387-0730



Sacramento Amateur Radio Club
P.O. Box 161903
Sacramento, CA. 95816-1903

FIRST CLASS

To: