

Sierra Foothills Amateur Radio Club

Newsletter



users.newworld.net/wingman/sfar

March 2002

P.O. Box 1005, Newcastle, CA 95658

At the Key of S.F.A.R.C.



PRESIDENT

Richard Kuepper, WA6RWS
530.878.6220
rkuepper@juno.com

VICE PRESIDENT

Eldred Wilkerson, KD6ZSL
530.878.6223
kd6zsl@yahoo.com

SECRETARY

Steve Faulkner, KF6OCE
916.725.3255
SEFaulkner@aol.com

TREASURER

Mike Hudson, K66EFK
916.624.4714
mihudson@firstam.com

DIRECTORS

Debbie Cunningham, KF6LXN
916.663.4143
dmc@midtown.net
Bob Boeckman, WA6ULL
916.987.9910
wa6ull@aol.com

Roger Hedgpeth, N7TK

916.983.2912
rolifo@aol.net

REPORTERS

Satellite Report

Greg Dolkas, KO6TH

40 Years Ago at the SFARC

Gary Cunningham, KQ6RT

REPEATERS

145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 94.8)
223.860 (-1.6 MHz/PL [none])

CLUB NET

All welcome to check in
Thursdays, 7:30PM, K6ARR/R
145.430

CLUB MEETINGS

Second Friday of the month,
7:30PM at the Auburn
Library, 350 Nevada St,
Auburn

CLUB BREAKFAST

Last Sat of the month at
Susie's Café, Cirby at
Riverside, Roseville - 8:00 AM

NET CONTROL OPS

Dave Jenkins, WB6RBE
Gary Cunningham, KQ6RT
Joe Sylvia, KF6OQY

WEBMASTER

Chris Wright, KF6OGD
wingman@newworld.net

NEWSLETTER EDITOR

Fred Jensen, K6DGW
VOX: 530.885.8251
FAX: 530.745.9622
k6dgw@arri.net

2002 Calendar of Events

(Operating Events in Italics)

Mar 2-3 *ARRL Int'l DX (Phone)*

Mar 8 **Regular Club Meeting**

Mar 10 *NA-Sprint (RTTY)*

Mar 30 **Club Breakfast**

Mar 30-31 *CQ WW WPX*

Apr 12 **Regular Club Meeting**

Apr 27 **Club Breakfast**

May 10 **Regular Club Meeting**

May 25 **Club Breakfast**

Jun 8-10 *ARRL VHF QSO Party*

Jun 14 **Regular Club Meeting**

Jun 22 **Club Breakfast**

IN THIS ISSUE

Officers' Reports

Meeting Program Schedule

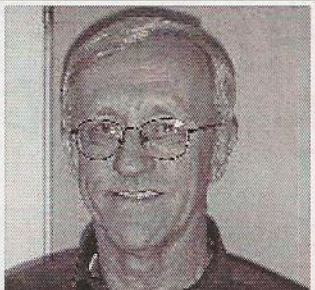
ARES Report

FCC News

Beverage Antennas

**From the
President's
Shack**

**Richard
WA6RWS**



I received a message from the coordinator of the Auburn MS walk that is coming up on April 13th. We will need 11 operators to man all the checkpoints. If you are interested please contact me by email or let me know at the next club meeting.

Also, if you would like the newsletter sent to you by email, please let Fred or me know so we can add you to the email list.

Field day is coming and anyone interest in being the chairperson, please let me know. If not, you will be stuck with Roger and I as co-chairpersons!!

I have been having a lot of fun listening to Jeff Hillard's 440 IRLP system that is located in Auburn. IRLP is "Internet Radio Linking Project". Tune in to 444.500mhz if you get some free time.

I noticed there is going to be a swap meet at the Radio Shack in Placerville on April 6th at 8am. Talk in frequencies, 146.865, 440.750 and 440.700mhz.

The board meetings are held the first Friday of each month at 7pm at Round Table Pizza in the Raley's shopping center in Loomis. Everyone is invited to attend.

See you all at the monthly club meeting on March 8th.

73,

Richard, WA6RWS

Secretary

**Steve
KF6OCE**



(I did not receive Steve's column in time for the deadline this month, and unfortunately, I was hacking and coughing at home during the February meeting, so I can't offer any news either. Ed.)

**40 Years
Ago At The
SFARC**

**Gary
KQ6RT**



Home of Clayton Goodpastor
Auburn, California
March 14, 1962

The meeting was called to order by Pres. Dick Lund at 8:15 PM. Minutes of the previous meeting were read and approved.

Bob Richier introduced the speaker for the evening, Mr. Tony Buzdap, K6IKV, who is the ARRL section Emergency Coordinator of 20 N. California Counties. We were advised to join the ARRL and become active in their program. He explained the RACES, which is licensed by FCC and works with C.D. on assigned frequency; but the AREC is permitted to use all Ham bands in time of extreme emergencies. He passed out forms for us to read and fill out so we can volunteer our services. He also said he is looking for an activity center in the Auburn area.

Mr. George Hudson, W6BTY, of Sacramento, SCM of ARRL, came with Mr. Buzdas and made additional explanations and we are to contact him for further information.

Each Tuesday, 7:00 P.M. Herb Brewer, W6JN of Sacramento CD, has a net check in on 2 M. We were told to write to ARRL for information on registering with them and for Field Day information.

Alex Hertz, K6RYY, of Calamar Electronics visited us with his YL, WA6HYU, and told us of the Ham equipment he handles and invited us to visit his place of business.

Jim Carmen reported to the club that we have permission to share room with CD and we should take steps to move in, so we set Sun. Mar. 18th, 2:00 P.M. for all able members to meet there to clean and prepare the room. All CD equipment can not be used by the club, only those affiliated with CD, and at their net check-in and emergencies only.

There were 16 registered, at the meeting and also Mrs. Grace Bowman was present. Meeting was adjourned, at 10:10 and

again the refreshments were served by our kind hostess, Mrs. Goodpastor.

Respectfully Submitted,
Sage Otow

73,
Gary, KQ6RT

Vice President's Corner

**Eldred
KD6ZSL**



2002 Meeting Programs

MARCH – Radio on a Horse

Operating a radio in the wilderness on horse back is quite a balancing act, and to add to the radio operator dilemma he or she must sweep the trail while talking on the radio and controlling the horse, so come to the March meeting and Mary Anne Balthrope, KE6EST, who will tell you all about the thrills and chill that you can encounter on the supporting the Western States Endurance Run and Tevis Cup Endurance Ride. Mary Anne will demonstrate, and let you see the equipment that is used by the radio operators.

APRIL - QRP

Bob Balthrope, KD6WTY, Tel: 1-916-682-9871, e-mail kd6wty@yahoo.com QRP presenter. Ask bob about QRP, he will tell you how to start, and transmit your radio signal around the world with a few watts. Would you like to build a QRP rig? Just ask Bob and all you will need a sardine can, or old aluminum pot (this will impress the wife like you are going to cook a pot of stew) at the same time ask for \$20.00 for cost over run, and open your junk box pull out some old radio parts, coat hangers, coil wire, etc.

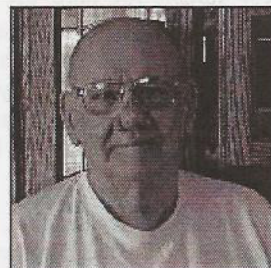
SFARC Goes PDF

As reported in last month's SFARC News, we have begun distributing the electronic version of the News as Adobe PDF documents. If you don't yet have the free reader, you can get it at www.adobe.com/products/acrobat/readstep2.html, install it on your machine, and directly open the PDF files. It is also located on the club web site for download. The PDF file size is significantly smaller than the Microsoft Word files.

An HTML version, viewable in your web browser is available at home.pacbell.net/andrea/SFARCHome.htm.

VE Report

**Bob
W6SUP**



Volunteer Examiner Report

Exam Dates for 2002

Mar 13 Apr 10

May 8 Jun 12

Bob and Jerri plan to conduct exams once a month on the second Wednesday evening. Pre-registration is required. Contact Bob, W6SUP, or Jerri, K6GKR, for more information.

Special arrangements and dates can be made to accommodate the disabled, including conducting tests at home.

73,
Bob, W6SUP
511 Oak St.
Roseville, CA 95678
916.783.7610
w6sup@rsvl.net

Amateur Satellites

**Greg
KO6TH**



RS-12/13 Switches Modes

Echoing the recent car commercials for a vehicle that converts "from an SUV to a Pickup in minutes", satellites RS-12 and RS-13 have been switched to a new operating mode. The Siamese pair of Russian are now in modes K and T, respectively, meaning that they have uplinks in the 15 meter HF band, and downlinks on 10 meters and 2 meters. Previously, RS-12 was in mode A (2 meters up, and 10 meters down), and RS-13 was off.

The change in mode puts a whole different sort of satellite presence in orbit. With their uplinks on 15 meters, they become the only satellites which require more than a basic technician license. They also become the potential targets for some really wild combinations of propagation and satellite operating skill. No longer restricted to line-of-sight propagation, past users of RS-12's mode K have bounced

their signals off both the ionosphere and the satellite to complete their long distance contacts. A few years ago, one Ham reportedly received his DXCC award totally through this little satellite. Many more have become unwitting satellite operators, when their casual 15 meter conversation is picked up by the passing bird, and dutifully repeated on 10 or 2 meters.

To operate either satellite, you will need an SSB or CW transmitter for the 15 meter band, and an SSB or CW receiver for either 10 or 2 meters, depending on which satellite you want to work. Both satellites have "linear transponders", which means that everything the satellite hears within the uplink passband is repeated on the downlink. RS-12, having both up and downlinks with the HF bands is particularly appealing; a simple transmitter and the old short wave receiver is all that is needed. Note that operating satellites requires that you have a full duplex station - both transmit and receive must be active at the same time so that you can hear your own signal. This is primarily in order to track the Doppler Shift, but it is also useful for adjusting your station for best operation. (I've worked a few stations who weren't doing this, and it was much more difficult to hold onto the conversation as the satellite passed by.) The frequencies currently in use are as follows:

RS-12: 21.210-21.250 up, 29.410-29.450 down

RS-13: 21.260-21.300 up, 145.860-145.900 down

In addition, and the first thing to check before transmitting, both satellites have CW beacons which are very easy to hear. RS-12's is at 29.207, and RS-13's is at 145.857. Listen for the satellite's name as the CW telemetry cycles through.

But, the fun doesn't end there. RS-13 is equipped with a QSO robot, which is reported to be active. Just past the top end of the passband (145.908) you should be able to copy the robot calling CQ. If your fist is good, sending "RS13 DE yourcall AR" on the robot's uplink of 21.140 at between 15 and 20 wpm should get you an acknowledgment on the downlink with a QSO number. QSL cards are provided by the Russian Sport Federation at Box 88, Moscow Russia. Details can be found on the AMSAT web page (<http://www.amsat.org>).

There's no way to know how long the satellites will remain in these modes, so head over to the JTrack website (<http://liftoff.msfc.nasa.gov/RealTime/JTrack>) to find out when the next pass is, fire up the rig, and (license permitting) work the new modes. Even those with just a Short wave receiver can still listen in on the fun, receiving signals from the other side of the ionosphere.

Coming Ham Events

Foothill Flea Market - 2nd Saturday of each month from March through October at Foothill College, Los Altos.

Livermore Swap Meet - 1st Sunday of each month at Las Positas College in Livermore, 7:00 AM to noon, all year.

Talk in 147.045 from the west, 145.35 from the east. Contact Cliff Chiba, KF6EII, larkswap@usa.com

RadioFest 2002. Saturday, Feb. 16, 2002, 7:00AM to 3:00PM at the General Stilwell Community Center, Ord Military Community, 4260 Gigling Road, Seaside, CA. Talk-in 146.97- PL 94.8. Sponsored by the Naval Postgraduate School Amateur Radio Club. See <http://www.k6ly.org/radiofest> for additional details.

North Hills Ham Swap

The North Hills Radio Club will be holding it's annual ham swap on Sunday, May 19, 2002. The event is held from 0600 - 1200 PDT at Bella Vista High School, 8301 Madison Ave., Fair Oaks, CA (east of Sunrise on the north side of Madison).

The raffle prizes will include (among others):

1. ICOM-270H dual band mobile
2. Uniden BC-80XLT handheld scanner
3. A pair of Motorola FRS HTs

Seller spaces (2-car stalls) are \$10.00 and parking is free for buyers. The NHRC will have coffee, donuts, soft drinks, and hot dogs on sale as well. Talk-in is on K6IS - 145.19 (-/162.2) and 224.400 (-/no pl). For further information, visit the NHRC at <http://www.k6is.org> or email nhrc@k6is.org.

Sunshine Report

Jerri
K6GKR



(No news from Jerri, which is good news for us)

HAVALARK



TRAVEL
Since 1976

WORLDWIDE TRAVEL

Let us help you plan your next trip.
We are consultants for cruises, tours,
and destinations all over the planet.

Experience makes the difference!

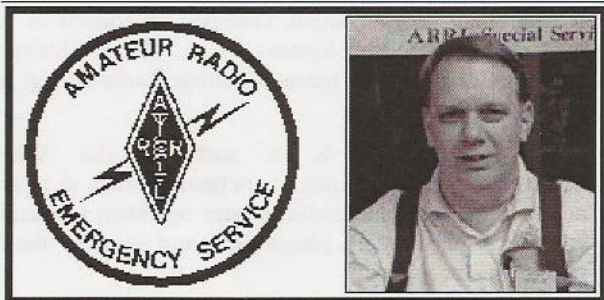
530-823-7595 • 800-660-7595

Auburn Town Center • 354 Elm @ 1-80

Email: havalark@jps.net

Web site: www.havalark.com

Contact Tim Woodburn, W6TJW
530.823.7595



ARES Prepares You

How you ask? Let me tell you just a few of the ways:

Physically... You are trained in what radio gear to have ready to go, personal supplies to have at the ready, and prescription medications, etc.

Procedurally... Radio protocol, tactical calls, controlled nets vs. uncontrolled nets, ITU phonetics, etc

Mentally... Training in what our role is at shelters, command posts and in Red Cross ERV's.

Emotionally... What hardships to expect while working at Red Cross shelters. Not hardships to you, but the hardship you will see around you while on shift.

While no amount of training can truly prepare you for everything, we do try to prepare you for most of the situations you may run into.

Are some situations worse than others? In my years of being a responder for 2 different fire departments, the SFARC, and for ARES I can honestly say "yes." After spending hours on end at a shelter in 1996 and seeing the despair of people who were left homeless after losing their homes and indeed everything but the clothes on their backs to flood waters, I was shocked at what I saw, but I also saw how the Red Cross and Salvation Army were helping them out, and that impressed me and made me glad to be a part of the team of people helping out.

Don't let any of this scare you away from a very fulfilling volunteer effort. Most of the assignments that we get sent out on are hours of quasi-boredom punctuated by a few minutes of frantic activity, and that frantic activity is what we are there for, to make it look easy because we have been trained to make it look easy. If this is a volunteer effort you would be interested in please E-Mail me at ke6dje@arrl.net

73,

Wayne Mikel, KE6DJE
Placer County ARES EC

Western States Endurance Run

Every year since the mid 70's, on the last full weekend in June, up to 450 people gather at Squaw Valley on Saturday morning at 0500, and begin a leisurely jog through the Sierra Nevada which will end triumphantly at the stadium at Placer High School in Auburn.

Sound like fun? Actually, most of us would view this as collection of 450 of the craziest people on the planet for it is anything but a leisurely jog. To reach Auburn, they will climb a total of 18,000 feet, and descend a total of 22,000 feet. Starting at about 6,500', they will reach a maximum of 8,700', ultimately descend to 700' at the Middle Fork of the American River, and finish, 100.2 miles later, at 1,300' in Auburn. They will run on snow and ice at the summit, and in 100+ degree heat in the canyons.

The first runners will begin arriving in Auburn around 2130 or so, for elapsed times of 16 - 17 hours. Many will run all Saturday and most or all of Saturday night, arriving on Sunday morning. Triumphant? Well, "yes," if they finish within 24 hours, for those get a silver belt buckle inscribed "100 miles, one day." And, "sort of yes" if they finish within 30 hours ... they get a bronze buckle. One millisecond over 30 hours ... nothing, nada, el zippo.

The race traverses some of the most rugged terrain in the US. The runners will pass through 24 checkpoints along the way, and a number of them will drop out due to fatigue, injury, sickness, or possibly a momentary flash of reality! Some get lost, some fall. All of which leads to ham radio.

Each checkpoint needs communications, and we hams provide it, using VHF and UHF voice systems donated to us for the event. We use packet radio to transmit data for all runners from the major checkpoints, and of course, there is an NCS station located in Auburn.

The "Date Rule" for the WSER is "last full weekend in June." For Field Day, it is "fourth full weekend in June." Usually, these rules result in the same weekend, making it hard for hams to give up FD for WSER, but not in 2002. FD is on June 22-23 and the WSER is on June 29-30.

In many ways, operating communications for the WSER is great training for emergency conditions. Because of the donated infrastructure, you can get by at many checkpoints with a dual-band (VHF/UHF) HT.

Want to help out in the WSER this year? Visit <http://home.pacbell.net/andreaq/> and select the Western States pages. There are major checkpoints which you can drive to on paved roads, some which you can drive to on dirt roads, and some which will bring tears to any 4-wheeler's eyes. There are also shifts at NCS.



4755 Pacific St., Rocklin, CA 95677-2407

Manager: Randy Erwin

TEL: 916.624.0641 / FAX: 916.624.5249

<ur29@unitedrentals.com>

***MAJOR SPONSOR OF
THE SFARC FIELD DAY!***

National Ham News

(Courtesy ARRL Bulletins and ARRL Letter)

ISS Packet Operations

No more NOCALL! Normal packet activity--with a real call sign--should begin soon on the International Space Station. Amateur Radio on the International Space Station (ARISS) Board Chairman Frank Bauer, KA3HDO, said Expedition 4 crew will install the new packet module sent up to the ISS last August, and the system should be up and running by February 25.

Since Amateur Radio gear was installed on the ISS in 2000, the packet system--crippled with a dead RAM (random access memory) backup battery--has been operating in digipeat mode using the NOCALL call sign and other TNC default settings. Earthbound users have been able to access the system nonetheless, but the lack of a call sign has been an annoyance.

Expedition 3 Crew Commander Frank Culbertson, KD5OPQ, was to have changed out the packet module during his ISS tour last year, but other duties took priority. The new module, using the call sign RS0ISS, will employ a specially developed ROM programmed with standard ISS defaults, a new battery and an extended memory--up to one megabyte. The TNC also has eight-bit capability to support Russian Cyrillic typesets, and a one-minute timeout disconnect from the PMS if no pertinent packets are heard.

Although the mailbox function will be activated, hams are discouraged from using it. "Currently there is no computer hooked up to the packet module," Bauer explained. "In addition, the crew will be much too busy to respond to messages posted there."

ARISS packet radio frequencies will remain the same. The uplink is 145.99 MHz; the downlink is 145.80 MHz. For additional information, visit the ARISS Web site <<http://ariss.gsfc.nasa.gov/EVAs/amsat01.pdf>>.

New FCC Web Site

The FCC has redesigned its Amateur Radio Service Web site and changed the URL to wireless.fcc.gov/services/amateur/. The new layout makes it easier to find information on topics most requested by amateurs, including licensing, amateur

exams, filing an application, changing an address or using the Universal Licensing System (ULS). The refurbished site also provides links to recent Amateur Radio-related news from the FCC.

"The new design is a part of the Wireless Telecommunications Bureau's continuing effort to meet the needs of the Amateur Radio Service operators as identified in focus groups, letters, phone calls, and e-mails," the FCC said in a news release.

The new design clusters FCC public notices, news releases, and other official documents affecting Amateur Radio operators on the right side of the page. On the left side of the page, the new navigation scheme displays information on the Amateur Radio Service, the sequential call sign system, licensing and vanity call signs as well as amateur-related communications policies such as reciprocal agreements. The site also offers links to information on the limited federal preemption known as PRB-1, the Part 97 Amateur Service rules and the Wireless Telecommunications Bureau and ULS sites.

The site, launched on February 20, includes a search engine for the entire FCC Web site www.fcc.gov. Direct questions or comments concerning the FCC's Amateur Radio Service Web site to Bobby Brown, babrown@fcc.gov, or Jennifer Bush, jbush@fcc.gov. For information concerning the Amateur Radio Service, contact Bill Cross, bcross@fcc.gov; 202-418-0680.

And Elsewhere at the FCC...

And then there was one. The FCC indicates that a lone missing paper vanity call sign application filed last October is holding up the resumption of routine vanity processing. Yesterday, the FCC processed 33 vanity applications received last October 23 and 24. Today it plans to run another 41 applications received October 25 and 26. Processing remains stalled beyond that receipt date, however. FCC efforts, assisted by the ARRL, to contact the elusive applicant to have the individual resubmit a vanity application have proven difficult.

The FCC appears determined to hold off further processing until the remaining applicant is given an opportunity to resubmit an application and, thus, retain a place in the processing queue. No amateur vanity call signs have been granted since February 1, when applications received at the FCC October 22, 23 and 24 were processed. The FCC later rescinded vanity grants for October 23 and 24, however, after it realized that it needed further information for an October 23 application. Prior to late January, no vanity call signs had been issued since October 30.

The ARRL has estimated that some 2050 vanity applications now are in the FCC's processing pipeline--the majority of them filed electronically. The FCC's policy is to give equal processing weight to paper and electronic applications. Some two weeks' worth of October paper vanity applications apparently were mislaid after mail was sent off last fall for anthrax decontamination.



Ham Equipment and Supplies

- Yaesu
- Kenwood
- Icom
- MFT
- & many more

5675-A Power Inn Rd (at Fruitridge)
916.387.0730
www.radioplace.com

FCC Wireless Telecommunications Bureau personnel at the FCC's Gettysburg, Pennsylvania, office used information gleaned from payment receipts to contact the known paper filers via e-mail or telephone to have them resubmit copies of their vanity applications. That effort--again with ARRL help--led to this week's vanity processing.

Beverage Antennas

The Beverage antenna falls into the category of "sort of weird" radio things. Used as a receiving antenna on lower frequencies (primarily 80 and 160 meters), it defies the cardinal antenna rule of "as high and clear as possible." In fact, high and clear is exactly what a Beverage does not like. Another cardinal rule is "minimum losses." The Beverage is a very lossy antenna ... so much so that it is essentially useless for transmitting. So, why it's popularity?

To understand this, we first need to understand the low and medium frequency (AM broadcast band to about 5 MHz) receiving problem. Atmospheric noise is severe on these frequencies, especially at night, when the ionospheric absorption declines. Lightning strokes around the globe can all be heard as a nearly continuous background on 160 meters, resulting in noise levels of S9 or worse at times.

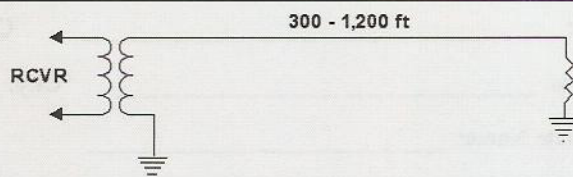
A second problem arises from the AM broadcast band (and to some extent signals in the 300 – 500 KHz range). These signals can be extremely strong since many come from 50KW or larger transmitters. Thus, their harmonics, even though weaker and within specifications, are audible in the ham bands. AM broadcast channels are 10 KHz apart, and while adjacent channels are not assigned in any given location, on average, and at night, there are strong stations audible on nearly every channel.

A related problem is intermodulation between all of these signals ... they can combine in any non-linear device to produce sum and difference frequencies which can also be heard. And, non-linear devices abound ... the joints in your tower or in the rain gutters on your house, metal buildings, wood buildings with metal roofs, all end up being sources.

So, hams using lower frequencies for weak signal contacts are more interested in improving the signal-to-noise ratio of the received signal than they are at maximizing the received energy. Directional antennas can be used to reduce the effective level of BC harmonics by pointing the null at the offending station. Unfortunately however, the common directional antenna for hams (yagi beam) is truly unwieldy at 80 and 160 meters.

A Beverage antenna (named after an early experimenter in wireless communications) is really quite simple: A long wire, strung about 10 feet off the ground in the direction you want to receive from. The transmission line connects between one end and ground through an impedance matching transformer, and the far end is often connected to a ground system through a terminating resistor. The diagram below illustrates the antenna configuration.

The horizontal part of the antenna should be fairly close to



the ground ... not more than 10 feet high. If you need to cross a driveway, just bury it! In fact, you can actually just lay it on the ground and it will work fairly well, primarily because the "real" electrical ground is somewhat below the surface. This is called a BOG antenna ("Beverage On Ground") It also doesn't need to be in the clear. You can string it through a forest using trees as supports, or, if you can get the neighbors' permission, on standoffs down the fence behind suburban houses. Electric fence wire is a common material.

The terminated Beverage shown in the diagram is directional along the wire, from right to left. That is, signals arriving from the right will be heard, while there will be deep nulls off the sides (perpendicular to the page) and off the left end. If you omit the terminating resistor, it will be bi-directional along the direction of the wire.

So, how, or perhaps why does it work? The Beverage antenna is a traveling wave antenna. Referring again to the diagram, the arriving signal wave is essentially a plane, perpendicular to the ground and moving from right to left. As it encounters the wire, it begins to induce a current wave in it, traveling in the same direction. This wave moves a bit faster than the wave in space, which effectively tilts the arriving wave over a bit. As the wave continues down the wire, it reinforces the current wave on the wire, which is why "longer is better" is the rule for Beverages. Ultimately, the current wave reaches the transformer, and its energy is fed to the receiver.

In the case of the terminated Beverage, the same thing happens with a wave arriving from the left, however it's current wave on the wire is dissipated in the resistor. If there is no resistor, the current wave meets an open circuit, is reflected back and ultimately ends up in the receiver. Waves arriving perpendicular to the wire induce very little or no current wave in the wire because the space wave passes all parts of the wire at the same time. Signals will be weaker, but the noise and QRM will be weaker still, which was the original goal.

160 meter DX fanatics will operate from large ranches with arrays of Beverages in different directions from a central pole. They choose the one that yields the best S/N ratio.

Copyright, 2000 All Rights Reserved.

The SFARC Newsletter is published monthly by the Sierra Foothills Amateur Radio Club for the information of its members and friends. The newsletter is distributed via the US Mail and email, and is posted to the SFARC web site. Permission is granted to non-profit amateur radio organizations to reproduce text verbatim with attribution. Use of images is prohibited without prior written approval of the SFARC and all individuals pictured in the images. Logos are the property of the represented organization and may not be used without permission. Contact the Editor for further information.

**SIERRA FOOTHILLS AMATEUR RADIO CLUB
2001 MEMBERSHIP APPLICATION**

Name: _____ Call: _____ Class: _____ email: _____

Address: _____ City: _____ State: _____ Zip: _____

Associate Name: _____ Call: _____ Class: _____

Phone Number: _____ Application: (Circle One) New Renewal

Member Dues: Circle Amounts That Apply. Applications received in the middle of the year will be pro rated. Contact the President or Treasurer for exact rate.

Membership:	\$22.00	Name Badge:	\$6.50
Associate:	\$ 7.00	Repeater Donation:	\$ _____
ARRL	\$34.00	Auto Patch Donation:	\$ _____
ARRL (Spouse)	\$ 5.00	Newsletter Booster:	\$ _____
ARRL (Special)	\$28.00	Worldradio Renewal:	\$ _____
		TOTAL:	\$ _____

NOTE* Renewing your ARRL membership through the Club earns the Club money with no additional cost to you. To renew your ARRL membership through SFARC, make check payable to SFARC and mail to P.O. Box 1005, Newcastle, CA 95658.

OFFICE USE ONLY: DO NOT WRITE BELOW THIS LINE

Date: _____ Treasurer: _____ Secretary: _____ Roster: _____

Payment: _____ Check Number: _____ Cash: _____

SIERRA FOOTHILLS AMATEUR RADIO CLUB
P.O. Box 1005
Newcastle, CA 95658

