

# The READOUT

Year 15 Number 8 August 1993

*The Official Newsletter of the Stanislaus Amateur Radio Association*

## N6KDJ Wins SARA Raffle Over 1700 tickets sold

July 3, 1993 was a lucky day for SARA member Harold "Buzz" Johnson, N6KDJ, who was the winner of the 1993 SARA Raffle. Stub number 1371 was drawn from the box which contained a total 1,758 stubs. Buzz was notified by phone and opted for the .357 Colt Python prize.

The drawing was held at the club station located at Downey High and was supervised by club President Sandy, KC6TBK and Vice President, Liz, KD6GIW. Witnesses included Bob, WA6ZLO; Dan, WA6KDC; Brad, KC6TDH and Liz's husband Lee Eyre who drew the winning stub from the box.

Dobby Dobbins, KC6TVG, sold the most tickets with 140 beating our VP, Liz, KD6GIW, by only one ticket. She sold 139. For his efforts, Dobby was awarded the 10 extra raffle tickets. His name was placed on the stubs and they were dropped into the box before the drawing.

The drawing had been originally scheduled to be held on June 27, 1993,

during Field Day, but it was put over for one week because of problems associated with the loss of the Field Day site. It was decided in fairness to those who were waiting for the last minute to turn in their stubs, to wait an extra week to insure that all stubs were in.

After expenses, the club will clear around \$1,000 which makes this another very successful fund raising event. This was the second raffle where we offered the .357 Colt Python or \$500.00 cash, and like it's predecessor, it was very successful. The draw of the gun makes the tickets very easy to sell.

Special thanks to those of you who sold many more than the original 10 we sent to you. Dan, WA6KDC, sold over 60 and our new member Lindsay Bertomen, KD6VZE, sold 70 in just a few days. Also a special thank you to Jim Shea, KB5FB, who designed and printed the raffle tickets at his cost. Thanks to everyone who took the time to help. It's people like you that make this a successful club as we enter our 17th year.

### SARA Packet KA-Node In Service 144.91 MHz

After being off the air for several months, the SARA full KA-Node packet digipeater is back on the air. The Motorola transceiver was repaired and retuned to 144.91 MHz by Alex, N6LPG and put back on the hill on July 17, 1993 by



LeRoy, NV6S. The system was moved off of 144.97 because it was no longer needed to reach the BBS at Manteca. The club decided instead to use 144.91 MHz to better utilize the

See KA-Node page 11

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## Ham Dealers In Trouble With FCC for selling unauthorized equipment

Three Los Angeles area amateur radio equipment dealers have received Notices of of parent Liability (NAL's) in the amount of \$7,000 each for marketing the Kenwood TS-50S HF Transceiver which could be "... operated on frequencies not authorized for amateur radio use."

The dealers, Henry Radio (Los Angeles, CA), Jun's Electronics (Culver City, CA) and Ham Radio Outlet (Van Nuys, CA) were investigated by engineers from the FCC's Cerritos, California, field office between March 8 and 10, 1993, in response to a complaint lodged against Kenwood on March 5th. The FCC refused to disclose who or which company lodged the complaint. Each of

See "FCC Trouble" page 10

**Stanislaus Amateur Radio Association PO Box 4601 Modesto, CA. 95352**

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#### 1993 SARA Officers

##### President

Sandra Ingram, KC6TBK, 575.4765

##### Vice President

Elizabeth Eyre, KD6GIW

667-5299

##### Secretary

Ernie Rader, K6UVI 838-2921

##### Treasurer

Vacant

##### SARA VHF Net

Thursdays @ 8 P.M.

(Except Holidays)

2 meters 145.39 MHz WD6EJF

220 Band 224.14 MHz WD6EJF

10 Meters 28,440 kHz USB

Tuesdays at 730 P.M.

ARES Net Wednesday 800 P.M.

Contributions to The READOUT are always welcome and may be submitted to the editor by mail or via packet at KD6JZZ-BBS on 144.79 MHz, or directly at my PBBS, WA6ZLO-1 on 144.97 MHz. The deadline for articles is the 15th of the preceding month. Articles regarding religion or politics are not accepted.

##### Editor

Bob Pinheiro, WA6ZLO

1221 Mist Flower Ct.

Modesto, CA. 95355

209-523-5880

*An ARRL affiliated club!*

ARRL membership may be paid through SARA with the club retaining a \$2.00 commission. Please send your ARRL membership form along with your check made payable to SARA. We will deduct the \$2.00 and send a check to the ARRL.

# ARRL Pacific Division Update

By Charles McConnell, W6DPD  
Pacific Division Director

On July 13, 1993, H.R. 2623, The Amateur Radio Volunteer Services Act of 1993, was introduced into the House of Representatives of the United States. This is legislation to protect Amateurs from personal financial responsibility for serving as volunteers in certain Amateur Radio Activities. It was assigned to the House Commerce Committee.

Keep writing the letters to your Senators and Representative urging support for S.J. Res. 90 and H.J. Res. 199, The Amateur Radio Joint Resolutions. As of June 21, nine Senators and forty one Representatives are co-sponsors.

The texts of H.R. 707 and S. 335, The Emerging Telecommunications Technologies Act of 1993, have been incorporated in the House and Senate versions of H.R. 2264, the Omnibus Budget Reconciliation Act of 1993. The Senate continues to propose protection for the Amateur Service in this bill.

## 97.1 13 Report and Order

On July 15, 1993, the FCC adopted a report and order in PR Docket 92-136 which amends the Amateur Service Rules in order to allow Amateur operators more flexibility to provide communications for public service projects as well as to enhance the value of the Amateur Service in satisfying personal communications needs. The effective date of

these changes will be known when the text of the Report and Order is released.

## ARRL Board Meeting Highlights:

1. The ARRL will petition FCC to establish a lifetime Amateur operator license.
2. A new Spectrum Management Committee will replace the VUAC and VRAC.
3. Affirmed the policy to seek expansion of the 20 meter band from 14.350 to 14.400 MHz.
4. The ARRL will seek from the FCC regulations to permit semi automatic digital operation below 30 MHz on frequencies authorized for data emissions, outside the proposed new subbands for automatic operation. Bandwidth for stations in semi automatic operation would be limited to 500 Hz, and transmissions would be permitted only in response to stations under active operator control. ARRL will develop, through its digital committee, operating guidelines for semi-automatic operation.
5. The ARRL will seek relief from regulatory restrictions on HF Digital operations to further the Amateur Services ability to contribute to the advancement of the radio art.
6. James McCauley, AB6EU, was named recipient of the Excellence in Recruiting Award for 1992, and Curtis Nakayama, KH6LE, was named the Field Organization Volunteer of the year for 1992 for the Pacific Division.

The minutes of the meeting will be in Sept. 1993 QST.

## 1.5 Gigabytes on single 2.5 inch disk

The world of compact disc technology has not been idle. Sony says that soon we may see 1.5 gigabyte storage on a single 2.5-inch magnetic disk, using CD technology. They claim 200 megabytes of storage on such a disc already. In addition, the world's major consumer electronics companies have teamed up to create a worldwide standard for storing

linear video material on CD's. This effort took place to avoid a "VHS- vs.-Beta" struggle. Digital compression techniques now allow a full hour of video to be stored on a compact disc, and the new standard will allow the same disc to be played on a wide variety of units.

Design News, June 21, 1993 and Broadcasting & Cable,

July 5, 1993 via W5YT Report.



# Editor's Notes

By Bob Pinheiro, WA6ZLO

—Our 1993 Field Day effort short circuited when the Corp of Engineers who manage the parks along the Stanislaus River refused to bend the rules a bit. The main problem was their refusal to allow camp trailers and vehicles in close to the operating positions. As a result, those participating in the event opted to go elsewhere. Some went to the high Sierra while others operated from the club station at Downey High. Despite the last minute foul up, we managed to make several contacts and a make our presents known. Next year we promise to have all the bugs worked out ahead of time.

—As a result of the foul up, it was decided to hold up the raffle drawing for one week to give everyone the opportunity to get their stubs in. Thank you to all of those who helped sell the tickets. It was a very successful fund raiser. The winner was Buzz Johnson, N6KDJ. See the story on the front page.

—The club's communications trailer is coming along nicely thanks to Harold "Buzz" Johnson, N6KDJ. After reading of our needs in the last **READ-OUT**, Buzz called me and offered his help in repairing the broken windows and window frames on the trailer. We gratefully accepted. Buzz lives in Keyes, which is only a few miles from where the trailer has been sitting for the last two months at Denis RV in Turlock. Buzz towed the trailer to his home and within a matter of two weeks, all the windows and window frames had been repaired and two new slider type windows were installed on each side of the trailer.

Buzz did a very professional job and the windows look great. In addition, Buzz secured a forced air propane heater which was donated to the club. Buzz will be installing it later. And there is more good news. Buzz talked to a friend of his who has a 4 KW generator that he is not using. He would not sell it, but he agreed to loan it to the club for a year, or until he needs it. Buzz said he would build a steel plat-

form for it on the tongue of the trailer and bolt it down. Additionally, Buzz said he would paint the trailer when it was ready. I asked Buzz where he got all of his experience. He told me that he has been rebuilding trailers for many years and used to fix them up and sell them before he retired. His expertise shows in his workmanship.

The next phase involves getting the trailer to Jim, N6KMR's, for work on the inside. We may have to replace the aging paneling inside and will have to reinforce the floor. Once that work is done the trailer will be turned over to Carl Barnett, KD6JHE, who is a professional carpet layer. He will install the flooring.

After he is through the trailer will go back to Buzz's home to install the heater, and hopefully an air-conditioner (if we can find one), and for the paint job.

Ernie is working on the registration papers and getting the unit licensed. It will be ready in time for the Riverbank Wine and Cheese Festival in October for which SARA will be providing the communications. We will also have the trailer at the August meeting of *SARA* to give club members the chance to look it over and make any suggestions they may have.

Additional good news came from Ken, WA6CSC and Brooks, KD6ISC, both of whom offered spots to park the trailer on their property. Ken's spot in an open area behind his home in Hickman. Brooks has an open shed at the rear of his property in Turlock. No decision has been made on the parking spot as of this date.

Again thanks to all who have offered help with the trailer, especially, Buzz Johnson. Once it's done, it will be something the club can use and be proud of.

—Our membership has risen to 170 with the addition of the following new and old members. Welcome to Al Carpenter, KD6YWO; James Campbell, KC6NEB; Anthony Gray, KD6YAZ and Mal Swan, KD6YWD. All are new Technicians. Also welcome back to Len Mendonca, WA6FOL, of Turlock. We are pleased to have all of you as members of *SARA*. It's your support

that makes it happen.

—According to an article in *Broadcasting & Cable* magazine, bootleg cable converter boxes have become so adept at decoding scrambled cable TV signals that one major manufacturer has come out swinging with an entirely new version.

General Instrument's Video-I Cipher II, which has been broken over the past few years, has been updated to VideoCipher II Plus. This will involve replacing several thousand cable boxes, at no cost to legal viewers.

The original VideoCipher was not fool proof because according to experts, it was too easy for pirates to sneak in between the security links and steal the special codes required for descrambling the signal. VideoCipher II Plus incorporates all the security links within one integrated circuit in each box, making it much more difficult to access the data.

But other cable box manufacturers have their own ideas. Scientific-Atlanta, Jerrold and Zenith just released their own versions of low-risk descramblers, and the power they contain is impressive. Intel 386 microprocessors and all-digital circuitry allow cable operators to change codes and features by simply down loading new commands into the system.

—Charles McConnell, W6DPD, has apparently decided not to run for reelection as Pacific Division Director of the ARRL. Vice Director Brad Wyatt, K6WR, has announced he will run for the position. Brad is a life long member of the ARRL and has been a licensed Amateur radio operator since 1946. He has been an active Vice Director visiting more than 85 clubs in the division. Brad makes his home in San Jose.

—A milestone was reached in March of this year when the number of licensed Amateur radio operators reached 602,876 for the first time in history. The technician class license continues to be the most popular class. 73, Bob

# PACIFICON '93 Hamfest October 22-24, 1993 at Concord Hilton Hotel

The Pacific Division Convention  
of the  
American Radio Relay League



OCTOBER 22-24, 1993  
Concord Hilton Hotel

The Pacific Division Convention of the American Radio Relay League, PACIFICON '93, will be held at the Concord Hilton Hotel October 22-24, 1993. The event, sponsored by the Mt. Diablo Amateur Radio Club, will feature technical forums, a swap meet, exhibitors and VE examinations. The schedule includes

## TRANSMITTER HUNT

Be sure to bring that special antenna and attenuator for the big 2 meter transmitter hunt Sunday morning. Loads of fun. The full details are in the PACIFICON '93 program.

## BANQUET

Always a sell out The PACIFICON '93 banquet Saturday will start with no-host cocktails at 6 PM followed by a delicious dinner at 7 PM. S. Marti Volcoff, FCC Regional Engineer will provide an entertaining talk.

## EXHIBITORS

Exhibit space will be filled with vendors from all aspects of amateur radio with bargain prices. The main exhibit hall will be open 9 AM to 5 PM Saturday and 9 AM to 3 PM Sunday. In addition, smaller suppliers will have table top exhibits open Friday evening.

## FORUMS

In keeping with this year's theme, "Ham Radio In The Next Century", an outstanding series of technical sessions has been planned. It will be a two track program giving ample opportunity for you to

hear and see the talks from exceptionally knowledgeable speakers.

## Schedule

### SATURDAY

- Trends in Amateur Radio -Russ Bloom, ARRL Technical department.
- Future of Contesting
- Digital Signal Processing in amateur Radio equipment- Richard Blasco from HamPut.
- Control and analysis of satellites- Stuart Fox, S.A.T.
- Spread Spectrum Scene: Digital Communications for the 21st century- Randy Roberts.
- Transmitter hunting- Syd Furman.
- Future of DX'ing Jim Maxwell.
- Beginning Packet- NCPA.
- TCP/IP and other advanced packet topics- NCPA.
- Amateur radio Legal Topics- Chris Imlay, ARRL Legal Counsel
- QRP technology- Jeff Jones

### SUNDAY

- Antenna Ordinances- Chris Imlay, ARRL Legal Consul.
- DSP in Amateur Radio- Russ Bloom, ARRL Technical Dept.
- Advanced Direction Finding Techniques- John Conkle, Delfin Systems
- Why CW- Jim Maxwell
- Introduction to SPICE- Jeff Paulan
- Antennas-
- ARRL Forum

### EMERGENCY PREPAREDNESS

The Emergency Preparedness focus in 1992 was very successful and you asked for more in 1993. There will be displays and three outstanding speakers. Don't miss these.

5:30 - 6:30

Impact of New Technologies on Emergency Preparedness- Chief Jerry Boyd, Martinez Police Dept.

7:00 - 8:00

New Technology in the Cal. State Communication- Art Botterrel, Telecommunications Manager Region II OES

8:30 - 9:30

The Crash of Flight 232- Captain Al

Haynes, United Airlines Airlines (retired)

## LOCATION

The Concord Hilton is a luxury hotel. Concord is 27 miles east of San Francisco. Accommodations include:

- Fitness Center
- Swimming Pool
- Hot Tub
- Walking distance to shopping
- Great restaurants in Hotel
- Hotel guests get free transportation to Sun Valley Mall, BART and Buchanan Airport. Free complete breakfast included.

A special PACIFICON '93 room rate of only \$72 a night (single), slightly more for double. You must mention PACIFICON '93 to get the special rate. Contact the Concord Hilton at 800-826-2644. Get your reservations in early. Rooms are sure to sell out. PACIFICON '93 P.O. Box 272613, Concord CA 945527 (510) 932-6125

## TALK-IN

2-meter talk-in frequency 147.06+ (PL 100) is a high level machine and is reachable from most Northern California areas.

## SWAP MEET SATURDAY AM

Once again you will have a chance to offer your seldom used but still working ham related items to thousands of eager PACIFICON '93 attendees on Saturday Oct. 23.

-Located in the restaurant parking lot across from the Hilton hotel on Diamond Blvd. -7 AM until Noon.

-Admission for sellers only \$10

-Double wide space.

-Sorry, no reserved spaces. First come get the best spots, so come early.

-Buyers get in free.

-Coffee, doughnuts and hot-dogs will be available also.

## AMATEUR RADIO BALLOON LAUNCHES

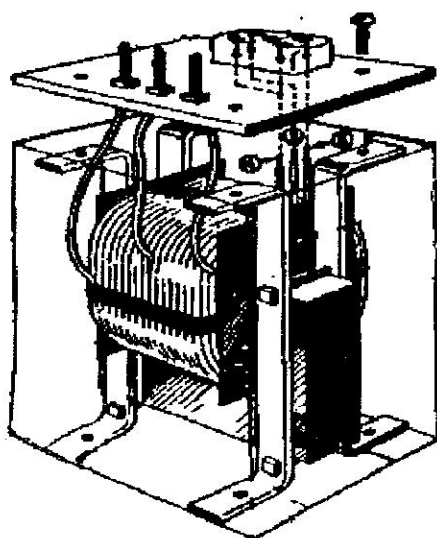
Bill Brown, WB8ELK, famous for his amateur radio equipped balloons, will launch a fully instrumented balloon with

More next month including information for the non-ham ladies tours of San Francisco and Marin County.



## Technical Tip

# Explaining Electrical Resonance



By William Van Horn, K3CP

"Hi Elmer," said Ima Lidd. "I would like to talk about resonance and its relationship to frequency and wavelength."

"OK, Ima," replied Elmer. "that's a good subject and maybe it will help if we define the term first. Resonance is said to occur when two or more objects are vibrating at the same speed, frequency is the speed at which they are vibrating and wavelength is the length of the wave formed."

"When we throw a stone into a lake, we produce waves. The distance between the crests of the wave is the wavelength and the number of waves is the frequency. Since frequency is related to time we say the frequency is cycle per second. Are you with me, Ima?"

"Yes, I think I am, Elmer. It's like snapping a rope and watching the waves that result."

Elmer said, "That's another example of the same concept. In both examples, the wave would continue forever if it were not for resistance or friction. If the rope vibrated at the rate of once per second, we could say that it's frequency was one cycle per second or one hertz. Now, if we snapped the rope once per second our snapping would be in resonance with the vibration of the rope."

"In amateur work we use frequencies much higher than that, of course. If we had a tuned circuit that resonated at one million times per second the vibration would be one megahertz (mega is just another way of saying million). As in the water and rope waves the vibration would decay due to the resistance of the circuit. Now, if we connected a transmitter that was running at one Mhz. to a one Mhz. tuned circuit, we could say that the transmitter and the tuned circuit were resonant. Going one step further and connecting a resonant antenna to the tuned circuit, we could cause the current in the antenna to vibrate at one Mhz."

Ima interrupted, "Good, I understand that, but what would be the wavelength of the one Mhz. signal?"

"There's a very simple formula for converting frequency to wavelength. It is,  $WL=300/f$ —where WL is wavelength in meters and f is frequency in Mhz. So the wavelength of one Mhz. would be  $300/1$  or 300 meters. Now let's take an example using one of our ham bands. We know that the frequency band from 3.5 Mhz. to 4.0 Mhz. is called the 75 and 80 meter band. Here's how that happens.  $300/4.0$  Mhz. = 75 meters, and  $300/3.75$  Mhz. = 80 meters. There is some rounding off of these numbers for other bands. For instance  $300/7.0$  Mhz. = 42.9 meters, but we call it the forty meter band. You can figure some other examples for yourself, Ima."

"Let's see," said Ima. "300 divided by 148 Mhz. equals 2.03. I guess that's close enough to call it 2 meters."

"Yes, that's right, Ima," said Elmer. "You have it right. Now let's take an example where we have a transmitter at 4 Mhz., a tuned circuit that is also resonant at 4 Mhz. and an antenna cut for 4 Mhz. The vibrations (power) would be transferred from the transmitter to the tuned circuit to the antenna. Do you understand?"

Ima answered, "I do, but how do we know how long to make our antenna so that it will be resonant at 4 Mhz.?"

"That's what I am going to explain. 4 Mhz is 75 meters long. Since we are not on the metric system yet, (although we are getting there) we must convert 75 meters to feet. One meter equals 39.37 inches. A 75 meter antenna would be 2952.75 inches. That means that in our system of measurement, the wave length of 4 Mhz. is 246 ft. long. Since we only need a half wave length for our antenna it would be 123 ft. long. The formula for calculating the length of a half wave antenna is  $L=492/f$ —where L is the length in feet, f is the frequency in Mhz. We see that  $492/4$  Mhz. also equals 123 feet. The formula in the handbook is  $468/f$  which comes to 117 feet. Something called 'end effect' is responsible for the difference in length. End effect is caused by the capacitance of the insulators and other things and results in a formula which is  $(492 \times 0.95)/f$  or  $468/f$ ."

"Thanks, Elmer. That was a good explanation. I'll see you next time."

Courtesy of W3OK Corral Newsletter,  
Delaware-Lehigh Amateur Radio Club, Inc.



# SARA Minutes

By Ernie Rader, K6UVI, Secretary

The regular monthly SARA meeting was called to order at 7:30 PM on July 20th, 1993 by president Sandy, KC6TBK. As introductions took place, 27 members and visitors signed the attendance sheet. The treasurer gave a general report of the balance in the bank, but nothing was formally passed to the secretary. Secretary Ernie apologized for missing the last two meetings, the first due to the measles, and second due to attendance at an ADA meeting. It was moved and seconded to accept the minutes as printed in **The READOUT**.

The vice president had no report other than apologizing for missing a meeting as well due to medical reasons, and president Sandy passed for the introduction of Old Business. Liz and Ernie told of their Field Day experiences and Sandy and Brad reported on the attendance at the club station during the event. It was explained that the raffle had been postponed until the following weekend at the club station, and Buzz Johnson, N6KDJ won. He opted for the gun.

Bob, ZLO told how Denis RV couldn't do the restoration on the communications trailer, and that Buzz had taken over the job and was well on his way to finishing many of the tasks already. Bob went on to say the raffle prize had arrived and has been paid for, and that the communications trailer was to be open for inspection and suggestions at the next club meeting. He also said that he and Ernie had scouted the Del Puerto Canyon road and surrounding hills and had found a perfect place to put a cross band repeater for the next event to take place up at Frank Raines Park.

LeRoy, NV6S reported that he, Ernie, K6UVI; Bob, WA6ZLO; Tom, KE6PZ; Brad, KC6TDH and Terry, N6KIG, had made a trip to the repeater site and replaced most of the tower guys, reinstalled the KA-Node, and installed the new duplexers for the 440 repeater.

LeRoy requested permission from

the club to purchase a new antenna for the 440 repeater. He said the one in use now was more of an "attenuator" than an "antenna". It was moved and seconded to allow the expenditure not to exceed \$200.00. LeRoy also explained that shortly after getting home from the work party, the 10 meter digipeater had locked up, and he had to go back up to shut it down. He didn't get home until after 3 AM. It was suggested that Alex be asked to look at the TNC which seems to be the problem. Sandy, KC6TBK, suggested that Brad, TDH, take the PK-232 in the club station up to replace the old MFJ.

While the work party was on the hill, the autopatch decided to die. One broken wire was repaired, and after getting down off the mountain, the PL level was increased at the autopatch terminal at Steve's (N6EKV) house. It works fine now.

Break between 8:03 and 8:15 PM  
Under new business, Sandy read a letter of resignation from the Treasurer, Andy, KD6MOD. He said he could no longer fulfill the treasurer's duties. Ernie will take over until a special election can be held next month.

A letter was read from Burt Vasche of Modesto City Schools, regarding renewing our agreement to use the classroom at Downey High School for our club station.

Sandy suggested that the club provide short presentations to local community service organizations and Bob suggested that we wait until the communications trailer is done. Bob also asked that he be reimbursed for a toner cartridge for his printer since 99% of his printer work is for **The READOUT**. Moved and seconded to make that payment.

The club welcomed four new members that joined that evening. Liz spoke of her conversation with Brad Wyatt, vice director of the Pacific Division. It centered around legislation being prepared in recognition of ham radio operators in general, and the need for our membership to

write to our local legislators asking for their support. Bob said he'd publish something in **The READOUT** which could be used for this activity.

The evening's presentation was a tape recording of a thirty minute public service program aired on KHOP. It was interviews with Mike Siegal, KI6PR with ARRL information, and Ernie, K6UVI on emergency communication.

It was moved and seconded to adjourn the meeting at 9:02 PM. Respectfully submitted, Ernie, K6UVI, Secretary.

## Please Execute Him!

By Dave, WD5BRP

The following excuses written by parents to teachers. Honest!

1. Dear school: Please excuse John for being absent on Jan. 28,29,30,31,32, and also 33.
2. My son is under the doctor's care and should not take fisicaled. Please execute him.
3. Ralph was absent yesterday because of a sore trout.
4. My daughter was absent yesterday because she was tired. She spent the weekend with the Marines.
5. Please execute Jimmy for being. It was father's fault.
6. Please excuse Joyce from (gym) for a few days. Yesterday she fell out of tree and misplaced her hip.
7. Excuse Gloria. She has been under the doctor.
8. Carlos was absent yesterday because he was playing football. He was hurt in the growing area.
9. Please excuse Ray Friday from school. He has very lose vowels.
10. Please execute Wayne for being out yesterday, because he had the fuel.
11. Plesse excuse Sarah for being absent. She was sick and I had her shot.

Courtesy of W3OK Newsletter, Delaware-Lehigh ARC.

# Kenwood TS-50: Super Little HF Rig

By Jim Carmody, NN50

I have a penchant for small things, and I enjoy mobile HF and DX-peditioning. So, the TS-50 in the QST ad looked to me like a lonely puppy in need of a home.

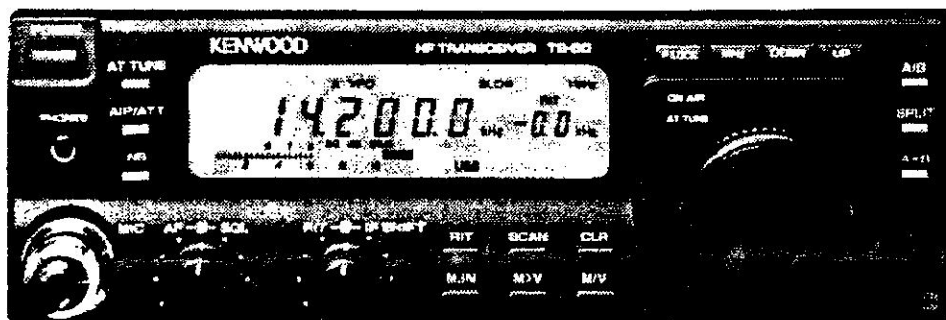
My unit came from HRO. The only, accessory yet in stock was a 500-Hz CW filter, model YK-107C. Filter installation was easy, but it loomed huge over all of the surface-mounted stuff.

The TS-50 weighs 6.4 pounds, is 7-1/2 inches wide, by 2-1/4 high, by 10 deep. The mobile mike has up/down and user-programmable buttons. The rig comes with a sturdy mobile mounting bracket.

The TS-50 delivers 100 Watts

numbers not mentioned in the manual do some neat secret stuff. The meat of any rig is how it operates. I am a long-time dyed-in-the-wool ICOM fan born in Missouri, so I didn't expect much from a Kenwood receiver, yet this one is sensitive on all bands and resistant to, strong adjacent signals. Though smaller than a rotor-controller it seems the equal of my ICOM 735 and may approach the performance of the much larger Yaesu FT-890. All reports on the rig's SSB audio have been superlative.

The TS-50 has a large heat-sink and a quiet fan. It never gets hot. I send CW with an MFJ keyer, though I could install a keyer inside; it isn't crowded! Draw-backs? It has no VOX, no RF speech pro-



PEP on SSB, 50 Watts on CW, 25 Watts on AM, and 10 Watts on FM. The receiver covers 30 kHz to 30 MHz continuously, with 6-kHz filter on AM and 2.4 kHz on SSB and CW—unless you install the 500-Hz filter. Two VFOs and a T/F-set function allow split operation. The 100 memories remember splits and modes, and you can scan between memories.

The receiver has IF-shift, and can receive CW in either sideband. The noise blanker works. Other features appear on two pop-up menus, when you hold down FLOCK for two seconds. The A-Menu controls power level, dial-light brightness. AGC, CW keying delay, offset, reverse sideband, FM sub-audible tone and ten other items. The B-Menu covers code practice, meter peak-hold feature (nice!), memory protect, automatic power off, mike gain and more—22 items total.

There are 27 other microprocessor-controlled functions that you can access from the four mike buttons—including antenna tune, noise blanker, RIT, T/F Set and AF Mute. I suspect the ten menu

cessor, and no internal keyer (but delay T/R works like VOX). The tuner is external but remote controlled (so you can put the tuner in back, near the antenna, where it should be anyway). The buttons are small; that comes with the territory.

I have heard people discussing mods already—transmitter “tweaking” to 140 Watts, among others. A bad idea if you don't have the use of a spectrum analyzer. Most of the extra power your Bird Wattmeter shows may be harmonics and intermodulation products. If so, you'll increase TVI and in-band spurious emissions, while making your signal less intelligible. ed.)

The AM audio is good enough to, justify the purchase as a shortwave radio alone. I found no glitches, no reason to, fear the low serial numbers. The price: less than \$1100 with 500-Hz CW filter. I'm wildly enthusiastic and I don't leave home without it.

From the April '93 Texas DX Society “The Bullsheet” Joe Staples.  
W5ASP, Editor via the Amateur Radio Service News Bulletin.



## Printer and Beam

- (1) Star Model 1000 nine pin printer. Like new. Used only 20 hours. \$100
  - (2) Cushcraft AV4 Beam. 10-15 and 20 Meters. \$125.00 or best offer. Good condition.
- Call Bob, WA6ZLO, 209-523-5880 evenings.

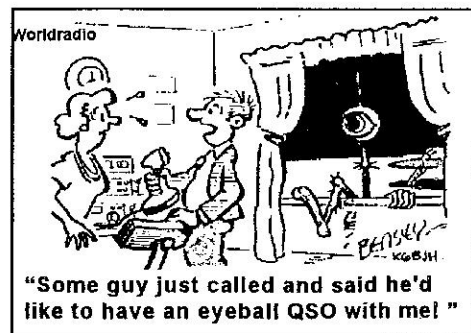
## DC Power Supply Converter

- (1) Triad-UTRAD 30 amp DC Power supply converter-charger. Converts 110 VDC to 12 volts DC. Like new. \$45.00
- Call Boyd, W6DSM, 209-524-7412

## VE Exams Northern California

Scheduled ARRL Volunteer Examiner test sessions in the Pacific Division except Hawaii. To take a test you must show two means of ID; have the original of your license and a copy of it, if you are licensed; have the original of any CSCE to prove your passing a test before any VE group. All tests are walk-in unless noted below. Fee is \$5.60 Except for Novices. No-coders welcome.

Bishop.....	August 12 .....	619-873-4777
Fairfield .....	Aug 28, Sept 25,	
	Oct 30 .....	916-662-0801
Glen Ellen.....	Aug 7, Nov 16 .....	707-996-6461
Merced .....	October 9 .....	209-383-2166
Modesto .....	September 11 .....	209-883-2968
Novato .....	September 11 .....	415-883-9789
Oakhurst .....	September 11 .....	209-683-8772





## 2 Meter Bandplan

144.00-144.05	EME (CW)
144.05-144.06	Propagation Beacons
144.06-144.10	General CW and weak signals
144.10-144.20	EME and weak signal SSB
144.20	National Calling frequency
144.20-144.30	General SSB operation
144.30-144.50	OSCAR Subband
144.50-144.60	Linear translator inputs
144.60-144.90	FM repeater inputs
144.90-145.10	Weak signal and FM simplex
145.01,03,05,07,09	Widely used for packet radio.
145.10-145.20	Linear translator outputs
145.20-145.50	FM repeater outputs
145.50-145.80	Misc and experimental modes
145.80-146.00	OSCAR subband
146.01-147.37	FM repeater inputs
146.40-146.58	Simplex
146.61-146.97	FM repeater outputs
147.00-147.39	FM repeater outputs
147.42-147.57	Simplex
147.60-147.99	FM repeater inputs

## FCC News Notes

The FCC's Enforcement Division has been busy lately. Four out-of-band CB operators are being fined from \$2,000 to \$3500 each, and a \$10,000 whopper was issued to Lonnie N. Gwinn of Federal Heights, CO for selling external CB radio frequency power amplifiers at a truck stop.

Four computer companies—Arche Technologies, Fremont, CA; Clevo, Inc., Walnut, CA; Computer Corner, Albuquerque, NM and Tech-Repair, Kaneohe, HI were ordered to cough up from \$7,000 to \$10,000 each for marketing personal computers which did not contain the proper FCC equipment approvals.

And it cost the Southern Railway Company \$7,500 when they refused to allow an FCC inspection of their base radio station.

The FCC has proposed new regulations aimed at preventing conflict of interest among its employees. It could prevent Commission officials from presenting FCC Forums at amateur radio functions.

W5YI Report

## Self-Healing Components

Self-healing components are growing in popularity. A large capacitor that heals itself after it shorts internally is undergoing testing for high-voltage power lines.

Current capacitors use film, oil, and other materials. When such capacitors dry out and short, the only option is to replace them. The new type of capacitor uses a film that can heal itself; it is a thin sandwich of plastic and metal. If a short circuit develops anywhere across it, the metal layer burns away. This removes the short, effectively returning the capacitor to normal service quickly.

Like many new materials, it still has some bugs in it, one of which is gases which build up inside the capacitor. But a fiber-optic device shows engineers when internal stresses are shifting; a loop of the fiber-optic cable runs around the capacitor. This effectively creates a resonant loop, and any internal pressures will change its resonant frequency. That sets up a signal that can be measured. The Engineer, 22 Apr 1993 via W5YI Report



## Technical Report

By LeRoy Campbell,  
NV6S

Things have been busy with planning, preparation and finally, with actual work on the mountain top. On Saturday, July 17, 1993. WA6ZLO, K6UVI, KC6TDH, KE6PZ, N6KIG and I made the trip up the newly graded road to Mt. Oso. Bob and Brad worked on cleaning up the two meter site and KE6PZ, Tom McKenny and N6KIG, Terry Pinheiro, worked on installing new guy wires on the tower while Ernie, K6UVI and I went to the digital site and installed the two meter KA-Node.

When I returned to the two meter site, I chased a problem on the auto patch which was ultimately located and solved. KE6PZ finished up on the tower and put the coax together for the 440 duplexers. I changed out the duplexers and fired up the repeater. It works great! It was a good day and we all returned home around five except for myself. I went to N6EKV and N6JTD's place and made an adjustment to the phone patch. I finally made it home at around 6 PM.

Brad called a little later to tell me that he was hearing some strange noise on ten meters that he suspected might be our ten meter digi having some sort of fit. I ended up having to go back up Mt. Oso. A call was put out on the air for anyone wanting to make a trip with me and Bill, KC6VWO, volunteered to go along.

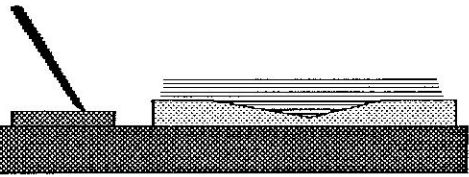
We were off for another hurried trip to the mountain top. When We arrived, the ten meter digi was indeed acting up and causing the noise. I shut it down and brought it down for repairs. I was also noticing a small problem with the 220 repeater which I solved while there. Bill and I got home around 3:00 AM

I have many people to thank for assistance including Alex, K6LPG, who tuned up the two digi transceiver and changed the frequency, tuned the duplexers for the 440 repeater and many other chores. He has been a great help. All of those mentioned who assisted on the trips to Mt. Oso need to be thanked. The membership has been patient while waiting for all the work to be accomplished and still wait for more work to get done is pretty special as well. Thanks to all. 73. LeRoy



# FROM THE DESK OF

**Tim Low, N6ZUC**



This month will update us on some topics I've covered in past newsletters. On the hit list will be concerns over human exposure to rf fields, and the heightened fear with exposure to 60 hz power line radiation. This is a hot topic, and something we as amateurs need to keep up on.

First, I want to draw your attention to an article I wrote for **The READOUT** which appeared in the July 1991 issue. The topic for that month was all about my vision of mass communications for the future. As a brief recap, I speculated that the next 10 years would see the death of local radio and TV as we know it. In its place would be high powered satellite broadcasting, and fiber optic cable into the home. All that you see and hear would be via these new mediums. Some people I talked to about the subject thought my time table was a little premature. I still stick by my observations.

Now nearly two years later, I'm convinced I was right on target with my predictions. As you probably read in the June issue of **The READOUT**, DCR, (Digital Cable Radio), has announced some very aggressive plans for expansion in the near future. With corporate backing from communications and industrial giants Time Warner, and Sony, DCR will increase its reach into American homes by expanding its present format offerings from its current 28 separate channels, to 250 within the next two to three years. These CD quality channels are now being carried by cable companies across the country. Depending on their success, you will see more startup companies trying to get a piece of the action. At the same time, DCR is looking to expand their system to include reception by automobiles. Plans are under way with the best bet being on them making that a reality in the next few years. Much of this depends on the launch of some new high powered satellites.

Another of the incredible advances they will offer is a new interactive remote control, another subject I covered in the July 91 article. Plans are for this remote control to handle multiple devices, and at

the same time have a small liquid crystal display that will allow you to see information concerning the music your listening to. Such things as artist and song title, news bits and sports scores, and eventually as a means by which to talk back to the system.

The giant Time Warner is also set to begin building a fiber optic super system in the city of Orlando, FL. The system will serve 10,000 homes with an interactive audio/video cable system. The system will utilize 750 Mhz of bandwidth for forward distribution, and 100 Mhz on the interactive back haul. Quite a system.

There is currently an interactive TV test going on in the Bay Area. Customers can play along with tv game and sports shows. All of this from the comfort of your own living room. If I was wrong at all in July of 91, it was that it all apparently will happen sooner than I thought. I'll keep you posted on any new developments.

There is probably no hotter health topic these days than that of the effects of human exposure to Radio Frequency fields, and those generated by power transmission lines. Indeed recently here in San Diego County, there was a trial whereby the claim was made that the proximity of San Diego Gas and Electric lines, caused or aggravated the cancer of a child living in a house beneath them. From what I've been able to gather from news media accounts, "experts" seem to be saying that the closeness of the transmission lines could not have caused the disease, but believe that it may be a contributing factor in increasing the severity of it. The trial was won by SDG&E, but there will be more.

These court challenges bear watching closely. In November of last year, I dealt with the growing concern of human exposure to RFR, (radio frequency radiation). In it I outlined how the current standard was developed, how it's measured, and what the limits are. Since that time the FCC has begun its push to adopt the new guidelines developed by the IEEE, (Insti-

tute of Electrical and Electronic Engineers). These were developed as a result of a ten year study by that organization.

These limits have now been adopted by ANSI, (American National Standards institute), who you may remember was the author of the current guidelines used by the F.C.C.. Under the plan, the old ANSI standard of 1000 mW per centimeter squared, would become the standard for controlled workplace exposure. The next tier would be for exposure by the general public in an uncontrolled environment. It would be much stricter, with an exposure of 200 mW per centimeter squared.

The F.C.C. was do to release the complete text of the proposal as I was writing this, (April). The Commission is expected to give a lengthy comment period on this one, so if you feel like responding to this inquiry, see the April and May 93 issues of **The READOUT** for details on how to go about it.

In January of 1992 I wrote about how the radio spectrum was a commodity, being sold and traded on a daily basis. My warning was that you had better do your part to get your Representatives on our side, before it was too late. The chickens may be coming home to roost, as the Clinton administration is making plans to release 200 Mhz of spectrum from government use, to public use. Some of the spectrum that could be released, might be frequencies now shared by government and Amateurs. Although there seems to be strong opposition, the current administration is bound and determined to auction at least part of it to the highest bidder. This to raise revenues for the ailing national treasury. Unless we make unmistakably clear how important the spectrum allocated to the Amateur community is, the big monied interests will win out. This will not be a one time war either, but an ongoing battle. Arm yourself.

Comments? Questions? Answers? Suggestions? Send them to me via packet at N6ZUC @ KC6NZN.# SOCA. CA.USA. NA, or write me in care of the **READOUT**. 73 -Tim

# FCC Trouble

From front page

the dealers were ordered to either pay the fine or to "...file a written response showing why the forfeiture..." should be reduced or not imposed.

The violations cited by the FCC involved equipment that was not properly type accepted (approved) as required prior to marketing to the public. The compact TS-50S is promoted as the world's smallest HF transceiver in a full back page advertisement in the July QST. While the ad did not give the frequency ranges, a sales brochure initially distributed to Kenwood's dealer network and the public showed operating ranges which were significantly above and below the authorized U.S. ham bands. While the Kenwood Company later had the flyers reprinted to show TS-50S operation only on authorized amateur spectrum, the FCC said it confirmed the radios would operate outside the ham bands.

While the FCC visited the three amateur radio equipment dealers in early March, the NAL's were not issued by J.R. Zoulek, Engineer-in-Charge of the Los Angeles field office until July 2nd. Zoulek

told us that, for the most part, amateur transceivers that have the capability to transmit on other than amateur spectrum must be approved (type accepted) by the FCC. He said there were exceptions, ...such as spectrum assigned to the U.S. Government.

The 27.5 to 28.0 MHz band is partially allocated to the Land Mobile (Business Radio) service and Part section 90.203 (a) and (b) of the FCC Rules cover the land mobile service type acceptance requirements. "The Kenwood TS-50S was capable of operating on frequencies that require type acceptance by Title 47 CFR [Government law]," Zoulek said. "If there are other [amateur] radios out there that operate on spectrum that requires type acceptance, we would like to know about them. Just because you have amateur frequencies in there too ...does not exempt you from the necessity of having them type accepted (FCC approved.) Amateur transceivers that just transmit on amateur frequencies are not required to be FCC approved. Just about any transmitter that operates under Part 90 of the Rules is required to be type accepted. Approved transmitters are included in the Commission's current Radio Equipment List.

Zoulek said there were exceptions.

For example, radio transmitters operated by federal agencies and the military on Government frequencies do not require type acceptance. I asked Zoulek how would a dealer or importer know whether the transceivers he was marketing were legal and he referred me to the technical standards in the Rules for the various radio services. (Such as Part 23 Fixed, Part 80 Maritime, Part 87 Aviation, Part 90 Land Mobile and Part 95 Personal Radio.) The Part 2 Table of Allocations lists the frequency bands designated to each radio service.

We compared the publicized TS-50S transmit frequency ranges outside amateur spectrum with the Part 2 Allocations and found a multitude of bands that indeed require FCC equipment type acceptance. Zoulek said there were several frequency bands at issue, not just the so-called freeband between 27.5 MHz and the bottom of the amateur ten meter band. He said he was especially concerned about interference to public safety frequencies. The radio regulations are written as a scheme to encourage people to transmit in an orderly fashion. And if people would abide by the Rules, then we would not have any problems."

WSYI Report

## Technician Class license most popular

The Technician Class continues to be the fastest growing ham class by far. Up until 1991, the Amateur Service grew at a trickle under 3%. Thanks to the arrival of the Codeless Technician ticket in 1991, ham radio now healthy and increasing at nearly a 10% rate. The Technician Class is expanding even faster, around 20%.

In 1985, one amateur in five was a Technician. Five years later (1990) it was one in four. Today, one third of all ham operators hold the Technician Class. If the current trends continue, in four years (late 1997) fifty percent of all amateurs will be a Tech. And by the end of 1998, we could have one million licensed ham operators!

The big unknown is the effect of renewals which will be resuming at year end after a five year hiatus. The five year void was caused by the difference between the previous five year term and the new ten year license which began in 1984. Between Jan. 1989 and Dec. 1993, there have been no renewals - and no one has been dropped from the ham operator rolls.

The FCC is now in the process of developing a procedure to remind amateurs to renew their license. Instead of filling out a Form 610 application, amateurs (with no information or address changes) will simply return a postal card sized reminder to renew for another ten years.

WSYI Report

## FCC Rules Enforcement

The FCC has fined a Florida woman for unlicensed operation on 2 meters. Margaret G. Taylor of Vero Beach received a Notice of Apparent Liability for \$2,000 for allegedly operating on 145.53 Mhz. In another action, the FCC fined Rodney Sedeno, NH6UC, Technician-class operator, \$2,000 for unlicensed operation on 27.085 Mhz. Two others were also fined \$2,000 for "out-of-band" CB operation. Courtesy of ARRL Letter

**Next SARA Meeting**

**August 17, 1993**

**730 PM**

**Stanislaus Co. Administration Bldg.**

**Lower Level Conference Room**

**You're Invited.**

# Aesthetic Value Destroyed by .45 Slug

By Pat Barthelow, AA6EG

Most of us have to contend with non ham members of the household who influence the setup of our ham stations based on aesthetic values. A piece of RG-8 or RG 213 coax dropping from the ceiling to our rig sometimes causes great QRM from the YL or XYL. This relates a story of one ham's solution to this problem.

Lets call him Joe, call sign KB8ANG. Joe had a hard enough time convincing his YL, the neighbors, and the city council that his 95 ft. Rohn tower and Mono banders on 20, 15 and 70 were beautiful. He wanted to discretely bring his coax down to a wall plate which he located about the height of a 110 AC outlet behind the station table. He went to the attic where the coax had been brought

through the eve vents and was ready to drop down behind a wall. Joe traced the floor plan and wall locations, squatting and crawling across the 2 x 4 joists on the ceiling.

Making careful measurements with his carpenters tape. Naturally, position directly above the ham shack was located in about the tightest vertical space in the attic. Joe became covered in dust, spiderwebs and fiberglass fill. Joe also carefully noted the nail ends from the roof shingles outside sticking through the roof framing. "Wouldn't want to bump my head on those" he thought, and squatted down even more. He crawled out of the attic to get his brace and bit to punch several adjacent holes in the horizontal 2 x 4 framing directly above his wall plate. He wasn't exactly sure if his measurements in the attic were precisely over the wall plate, so he went down and placed a flashlight facing in wards through the wall plate hole so he could see the light from the attic.

After punching the holes on top with the brace and bit he could not see the light. After double checking his measurements he realized that about five feet down is a cross brace 2 x 4 which was blocking the light from view. He wondered how he could punch a hole through the cross brace when his bit was only 18" long.

After giving it some thought he concluded he would use his surveyor's bulls eye vertical level and his 1911 vintage Colt .45 service automatic. He reasoned that he could then put the gun barrel precisely vertical down through the holes in the top framing, and fire a bullet through the middle brace which would provide a hole big enough to feed his coax lines through.

He went down to his bedroom where he retrieved the .45 and loaded it with a single round. He carefully checked that the safety on the weapon was for safety reasons. If you have ever been in an attic squatting down with the balls of your feet on the edge of the rafters you know that you must be careful to avoid

putting your feet or hands on the sheet rock between rafters.

Accordingly, Joe carefully placed his flashlight so as to see the bulls eye bubble on his level and carefully held the level clamped to the .45 automatic.

He poked the muzzle down the drilled holes in the top 2 x 4, centered the bubble and pulled the trigger. He was not quite prepared for what happened. First, the recoil of a .45 automatic is not a trivial matter, even when you are standing, with both hands in firm grip. The blast was as deafening as the recoil was violent, a fact which he noted from a position which he did not anticipate. He found himself knocked off the 2 x 4, his hand and leg protruding through the ceiling sheet rock and a big bump on his head.

To add further confusion, his YL saw him come partly through the ceiling after hearing the gunshot and was in hysterics. He tried to reassure her that he was O.K. and carefully pulled himself back up into the attic and rested.

When he crawled back out of the attic he was a sight to see. He was dazed, covered with fiberglass and sheetrock dust. With his ears ringing, he sat down and rested some more. When he had calmed down, he went into the shack to see how things went there. There certainly was a hole in the 2 x 4 cross brace all right. But the problem was he could see it from his ham shack. The slug did the job, but, the expanding gasses blew out the sheetrock on both sides of the wall and slightly enlarged the crawl space to get under the house. He resigned himself to all the damage and then proceeded to clean up the mess.

The next day he hired a contractor to repair the damage. Much to his chagrin he learned later at the hardware store he could have purchased a five foot extension for brace and bit.

Based on CQ article, May 1990, Pg. 33. "Coaxial Cable Cover and Concealment". Courtesy of "The Scuttlebutt" the newsletter of the Naval Postgraduate School ARC of Monterey, CA.

## KA-Node operational

From front page

node features. The system has worked flawlessly and easily connects to other systems and individual operators from Fresno to Sacramento.

To connect to the node tune your two meter rig to 144.91 MHz SIMPLEX. Then type "C SARA". The node will respond "Connected to node SARA (WD6EJF) Channel A. Welcome to the Stanislaus Amateur Radio Assoc. K-Node, Digi is OSO, Club Call WD6EJF-1 (2 MTR) 28.103/145.79."

28.103 MHz is the SARA 10 meter digi frequency. 145.79 MHz is an error. It should read 145.39 for the SARA two meter repeater.

Once you have connected, type the letter "J" and the node will list all the stations it has heard and can connect to. There is a bunch! If you want to use the system as a digi, type "C OSO" and then type "C XXXXX". Where the "XXXXX" is the call of the station you wish to connect to. If you need any help, type "help" and follow the prompts. Incidentally, the 10 meter digi is down for repairs. Thanks to Alex and Leroy for getting the system going again.



# Calendar

Aug 17 .....SARA Monthly Meeting ..... 730 PM  
 Aug 29 .....Reno Hamfest ..... All Day  
 .....Stead Air Force Base, Reno, NV  
 Sept. 5 .....Livermore Swap Meet ..... 7 AM -12 PM  
 Sept 11 .....Foothill Swap Meet ..... All Day  
 Sept 17-19 .....ARRL SW Div. Convention ..... 3 days  
 .....Holiday Inn on the Beach in Ventura, CA.  
 Sept. 21 .....SARA Monthly Meeting ..... 730 PM  
 Sept. 25 .....Amador ARC Hamfest ..... All Day  
 .....Senior Center in Jackson  
 Sept. 26 .....River City ARC Swap Meet ..... All Day  
 .....Sacramento  
 Oct. 19 .....SARA Monthly Meeting ..... 730 PM  
 Oct. 22-24 .....Pacificon '93 Convention ..... 3 days  
 .....Hilton Hotel in Concord, CA.

SARA meets the third Tuesday of each month (except holidays) at the Stanislaus County Administration Building 11th and H Streets in downtown Modesto. The meetings are held in the lower-level conference room at 730 pm. Visitors and interested persons are most welcome to attend. SARA is an ARRL affiliated club and is also affiliated with the Stanislaus County and City of Modesto RACES\ARES programs.

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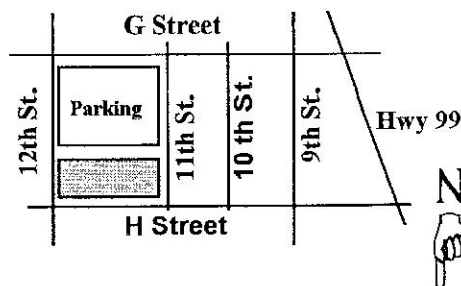
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**Modesto, CA. 95352**



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SARA Meeting Location  
 1100 H Street, Modesto, CA  
 Lower Level Conference Room.  
 730 pm third Tuesday of each month.



**Next SARA Meeting is August 17, 1993 at 730 pm & You're Invited!**