



Vol. XXIII No. 3

MARCH 1992

PO Box 3262 Auburn, CA 95604

AT THE KEY

of the Sierra Foothills Amateur Radio Club

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(916) 885-8251

- Coming Events -

MARCH/APRIL

March 13: 7:30 PM Regular Club Meeting at the Firehouse in Auburn

March 28: 8:00 AM Club Breakfast, Suzies Country Cafe, Cirby and Riverside in Roseville. Come out for a great breakfast and good conversation. Talk-in on 145.43 if you are lost

April 10: 7:30 PM Regular Club Meeting at the Firehouse in Auburn

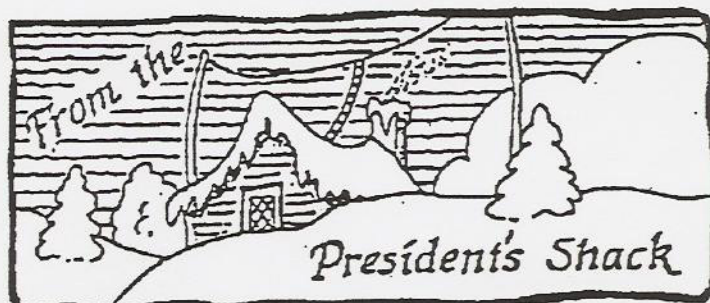
April 25: 8:00 AM Club Breakfast, Suzie's Country Cafe, Cirby and Riverside in Roseville

CLUB 2m/220 NET

The club 2m/220 net meets each Thursday at 7:30 PM on the K6ARR and WB6OHV repeaters. All members are invited to check in, and everyone is encouraged to tell the group about your recent activities.

CLUB REPEATERS

2m	K6ARR	145.430 (-600 Khz)
220	WB6OHV	223.860 (-1.6 Mhz)
440	K6ARR	440.575 (+5.0 Mhz, PL: 94.8)



(Lincoln, N6PMI) Greetings from N6PMI. I would like to let everyone know that my father is fine and there was no permanent heart damage. Things should be back to normal (continue'd on Page 2)

FROM THE EDITOR

(Auburn, K6DGW) How is it that we can have 16 straight days of rain, setting a record for February, no less, and the TV weather people lament that "it isn't really going to help the drought." I'll bet everyone's safety ground (You do have an earth ground, don't you?) is at about as low a resistance as it will ever be.

This issue has a couple of items related to the 2m repeater. As you all must know if you listen much in the early evening or on weekends, we have been experiencing a marked increase in interference. It seems to be coming from a couple of stations in the Clear Lake area who are running quite a bit of power, and are accessing a repeater over on the coast on the same frequency as ours. We only hear their transmissions, of course, and they are quite noisy.

The upshot of this is that Jim has installed CTCSS as a feature that users can turn on and off. We have a little dissertation on CTCSS (aka "Private Line or PL", "Channel Guard," and "Quiet Channel") to help explain it all. Jim and John have always run open repeaters on 2m and 220, and that goal has certainly not changed. With the steady increase in population in the valley, however, it is inevitable that we will need to take interference reducing measures eventually.

Jack, W1FEA begins his regular contest feature this month. Incidentally, Jack will join with Jim, W6PYX again this year to organize our Field Day bash at Blue Canyon Airport. Harlan, KD6ELU, also contributed his experiences in becoming a ham in the early '90's, which brings back a few memories for me of the early '50s. Harlan is the grandson of Judge, K6SKQ. And, last but not least, Dave, WB6RBE, our resident EE has contributed another interesting technical article which should help prevent battery damage. Dave has arranged for parts availability through Sam at Quad 'A's, one of our fine advertisers. Finally, you will find the roster, as provided by our hardworking treasurer, Marj, KA6PTL. Please contact her or me with changes. Additions will be published as they occur.

73, Fred K6DGW

PRESIDENT'S SHACK (cont'd)

normal this month, I hope ... but one never knows. We also have a picnic chairperson, and guess what, it is Debbie, N6ZSM. Thanks Debbie for taking on the job and also the snack bar for another meeting. Remember folks, let's not rely on just a few people to do the work. It's up to all of us to make the club the best.

Let's all remember that we are getting ready to put PL on the repeater, so if anyone has any questions, please give me a call. We have members waiting to help and a place to get the PL boards and the price is reasonable. We will be planning a date at the March meeting.

The club program for March has not yet been set, but we have a couple of members preparing programs for us. If I find out before press time, Fred will get it in the newsletter. *[He didn't]* Anyone wanting to put a program on at a meeting please let me know and pick a month. I would rather plan ahead a little so let me know ASAP.

Well, that's it from me this month, but just a parting thought... Our club is only as good as our members make it, so let's make it the best in the area.

73 from Dennis, N6PMI
in the foothills of Lincoln.

VE TEAM NEWS

(Roseville, W6SUP) Bob reports that, as of press time about Feb 25, a total of 46 applicants had taken 72 exams. John Mathis, who is 12 yrs old passed his Technician. One person who Bob did not name went from zero to General this month.

Tests are scheduled for Wednesday, 3/4 (which is full) and for 3/18. Bob emphasizes that you must pre-register for the exams. Contact him at 783-7610. Bob and his team will also take their exams on the road for disabled candidates.

RADIO SCHOOL

(Roseville, W6SUP) The Radio School continues in full force. They are looking for Advanced candidates, so if you are interested in upgrading, contact K6GKR or W6SUP at 783-7610. Incidentally, our radio school must work pretty well because another novice student, Jim Womack, passed his Technician examination. Congratulations!



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Operating

The competitive side - by Jack Morgan, W1FEA

We seem to be surrounded by competitive events - the ongoing Olympic Games at Albertville are a good example. We are also finishing a "season" of competitive amateur radio events as well. This operating "season" starts in September and runs through March every year. This column will discuss the many facets of contesting ranging from hardware (operating equipment and antennas) to strategy (operating techniques).

Over the years, the ARRL, CQ magazine and even clubs as small as our own have sponsored contests for almost every band and mode of operation. Novices and old timers alike can participate and have a great deal of fun in the process. There is even a possibility that a radio contest will be included as a future Olympic event. The recent World Games in Seattle hosted such a contest and teams from all over the world competed.

Our Club has focused on the annual (June) Field Day as a major operating and social event. Field Day has probably introduced more of us to "contesting" than any other single event. The excitement of a team of club members setting up stations in the wilds and working hundreds of other similar stations around the country is unique.

That same excitement can be found throughout the year in the more traditional contests. Schedules are found in QST, CQ and the National Contest Journal (NCJ). QST has a "Contest Corral" directory of upcoming contests and refers you to the appropriate issue for full details of the larger contests.

CQ Magazine has a similar "Contest Calendar" of events. NCJ, a publication of the ARRL, is dedicated to contesting. It is recommended reading as a source of contest tips, tricks and techniques.

When you look at these directories you will notice an amazing variety of contests. There are state contests (or "QSO parties" as they are called) that pit operators in the respective state against the rest of the world. The California QSO Party (CQP) is the largest and best organized in the country and thousands participate each year. The prizes include nice certificates and personalized bottles of wine!

There are DX contests such as the "World Wide" or "WPX" that involve tens of thousands of operators in every corner of the globe. Many hams use these contests as an excuse to travel to some exotic QTH and become rare DX for the weekend.

There are technology contests that feature a particular mode

of operation such as RTTY or AMTOR. There are VHF QSO parties that only allow operation on six meters and above. There are contests for YLs ("young" ladies) and one for Novices and Technicians. This last one, the Novice Roundup, is another great way to get introduced to contesting. This time the Novices and Techs compete against the rest of us.

Now you might ask, how do you "compete"? The "rules" (found in the magazines mentioned above) specify a fixed total number of hours you can participate during a given weekend. The object is to "work" as many eligible stations as you can during this period. A typical contest exchange lasts only a few seconds and might include a serial number, signal report, state or ARRL section. They are all different. The score is usually calculated by multiplying the number of QSOs by the number of sections or countries worked. These results are compiled by the sponsor and later published in their journals. Awards are usually mailed to you but sometimes are presented in person at an awards banquet.

Finally, some might ask - why compete? Some of the reasons "why" include:

1. It is fun. And now with contest software available, your logging and reporting are almost automatic.
2. You can work new countries or states in short order. It is possible to make your DXCC (100 countries) in a single weekend or WAS (Worked All States) in an afternoon!
3. It sharpens your operating skills tremendously.
4. You make many new friends around the world that share your new interests.
5. You have new incentive to improve your station.
6. There are awards to be won and recognition to be got. Our club is one of the best in the west in the ARRL Field Day event. At the World Games radio competition, the winning team (Americans from W1 land) stood on podiums, received their "Olympic" medals and watched Old Glory be raised.



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ARRL REPORT

Jettie Hill, W6RFF

Section Manager, Sacramento Valley Section

At the January 1992 ARRL Board meeting that is held on even numbered years, an election of Officers is held. The top Officers are nominated and elected by the current Board Members. Nominations are usually of current Board Members or Officers, and are made by other Board members. Like any organization, there is a certain amount of politics involved in who is nominated for what office.

This year, there was a change in the top position. Larry Price, W4RA, had expressed his desire not to continue as President, but would be interested in becoming the "International Affairs Vice President" - to which position he was elected.

The new President is George Wilson, W4OYI. He is a senior partner in the law firm of Wilson, Wilson, and Plain, in Owensboro, KY. George has been Vice Director, Director, Vice President, and First Vice President. His term of office will run through January 1994.

Other elected officials are: Rod Stafford, KB6ZV (our former Division Director) as 1st Vice President; Jay Holladay, W6EJJ from Southern California and Tom Frenaye, K1KI as Vice Presidents. David Sumner, K1ZZ continues as Executive Vice President, and James McCobb, K1LUU remains Treasurer. A new position of Chief Financial Officer was created and Barry Shelley was elected to that post.

DXCC keeps on rolling; Computerization on the ARRL DXCC Desk continues, although processing time has again increased due to illnesses and a large influx of applications. Since October 1991, every DXCC endorsement has been computer processed, with approximately 1,000,000 country credits converted from Paper to computer records. In addition to full-time DXCC staff, a number of other licensed HQ employees continue to work extra part time in the processing of DXCC applications.

Finally, the FCC has a new address for all amateur license applications and modification: Federal Communications Commission, 1270 Fairfield Road, Gettysburg, PA 17325-7245.

73,

Jettie, W6RFF

WHO WAS THAT MASKED STATION?

Joe, KC6LWZ is now being heard as KM6QA following his successful upgrade.

NEW LICENSE IN THE '90s

Hi! My name is Harlan Hite. I am 16 years of age, and I am enrolled in San Juan High School which is located in Citrus Heights. I currently passed my No-Code Technician test. You are probably wondering how I learned and got enthused about Ham Radio. My Grandfather is a Ham. You probably know him as The Judge (K6SKQ). He got me interested in the organization. At first, I was not interested. Then I asked myself, "how can I not be interested in something I did not know about." He showed me. A few years ago I started to study Morse code, but I could not get that down pat. Then I heard about a new thing the F.C.C. was unleashing which was the No Code test. I immediately checked into it. The first time I took the test, I did not pass. The second time, I did. It was on November 20, 1991, the day before my birthday. That made me feel real proud. Then it was the dreadful wait for my call. I received it in January. My call sign is KD6ELU. A few reasons why I like Ham Radio: It is a clean hobby; I can get help when there is no phone around; There are clubs to join and learn about how ham technology is improving. Now, that is my little story about how I became a Ham. Hope to talk to you all on the air or on packet.

73, Harlan KD6ELU

"PL" - WHAT IS IT?

"PL" stands for "Private Line," and is Motorola's trade name for the Continuous Tone Coded Squelch System (CTCSS). CTCSS sends a continuous low frequency audio tone while transmitting. There are 38 such tones ranging from 67.0 Hz to 250.3 Hz. All are below the audio passband of FM receivers and are thus not heard. The receiver decodes the tone, and, if it is the correct one, unsquelches the receiver. All other signals will stay muted, even though they may be strong enough to break the normal carrier squelch.

GE called its CTCSS "Channel Guard" which is what is installed at the repeater. RCA (when it was in the radio business) call its CTCSS "Quiet Channel. Regardless of the name, they are all the same. All you require is a small encoder board. A good one is available from Communications Specialists at 800-854-0547, for \$29.95. The club technical committee is ready for anyone who needs help getting PL installed in their radio.

TRIVIA

We all know that 1992 is a leap year. Can you describe the formula used to determine whether or not a specific year is a leap year? (Hint: It is not "evenly divisible by 4")



CHARLES P. McCONNELL, W6DPD
DIRECTOR, ARRL PACIFIC DIVISION
1658 W. MESA AVENUE
FRESNO, CA 93711-1944
209-431-2038



PACIFIC DIVISION UPDATE. March 1992

NEW FCC ADDRESS. The FCC has a new address for all Amateur Radio License applications and modifications. It is Federal Communications Commission, 1270 Fairfield Road, Gettysburg, PA 17325-7245

SPACE SHUTTLE STS-45. As of January 31, 1992, the FCC has formally granted the Amateur astronauts scheduled to fly aboard Shuttle mission STS-45 permission to operate Amateur Radio from space

DXCC PROCESSING TIME. The processing time for DXCC applications has increased recently as a result of major steps in the computerization of DXCC record keeping at ARRL headquarters. For the same reason, the monthly DXCC Awards listing in *QST* will not appear in March, as a crucial computer switch-over takes place. Those listings will appear in April *QST*

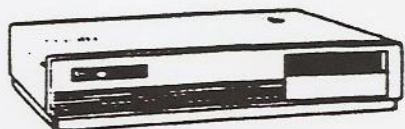
H.R. 73 and S. 1372. We have until the end of this Congressional session in 1992 to get these pieces of legislation passed in the Congress. Please continue to bombard your Congressman and your Senators to urge their support and cosponsorship of this important legislation. With your help, this legislation will be passed by Congress and signed into law by President Bush. You can get the addresses of your Senators and your Congressman in your newspaper or your telephone book

WARC '92. The conference began February 3, 1992, in Torremolinos, Spain with 1,000 delegates from 113 countries. ITU Secretary-General Pekka Tarjanne of Finland opened the conference, calling the new century, just eight years away, the century of telecommunications. The conference delegates were assigned to various committees and subcommittees to debate the issues and develop consensus. The final conference report will be issued in early March. Copy the WIAW Bulletins for conference reports

COMING EVENTS.

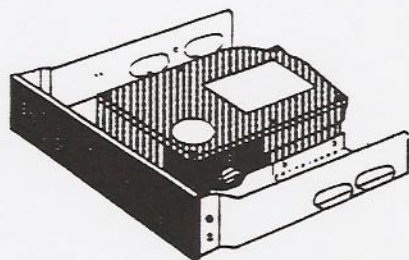
1. **LIVERMORE SWAP MEET.** 1st Sunday of each month at Los Positas College in Livermore, CA. 7 AM to Noon, all year. Contact WU7R for information.
2. **FOOTHILL SWAP MEET.** 2nd Saturday, March-September. Foothill College. Los Altos, CA.
3. **INTERNATIONAL DX CONVENTION.** April 10-12, 1992 in Visalia, CA. Contact N6IC for information.
4. **ARRL SAN JOAQUIN VALLEY SECTION CONVENTION** and 50th Fresno Hamfest. May 1-3, 1992, at the Airport Holiday Inn in Fresno. Contact W6YEP 209-224-0233 for details.
5. **ARRL NATIONAL CONVENTION.** August 20-23, 1992, in Los Angeles. Contact W6BF for information.
6. **SIERRA HAMFEST AND COMPUTER FAIRE.** October 10, 1992. Carson Valley Inn in Minden, NV. Contact Ed Rogers, W6FFT, for information.
7. **ARRL PACIFIC DIVISION CONVENTION.** October 16-18, 1992 in Concord. Contact Pete Tormey, N6QGN for information.

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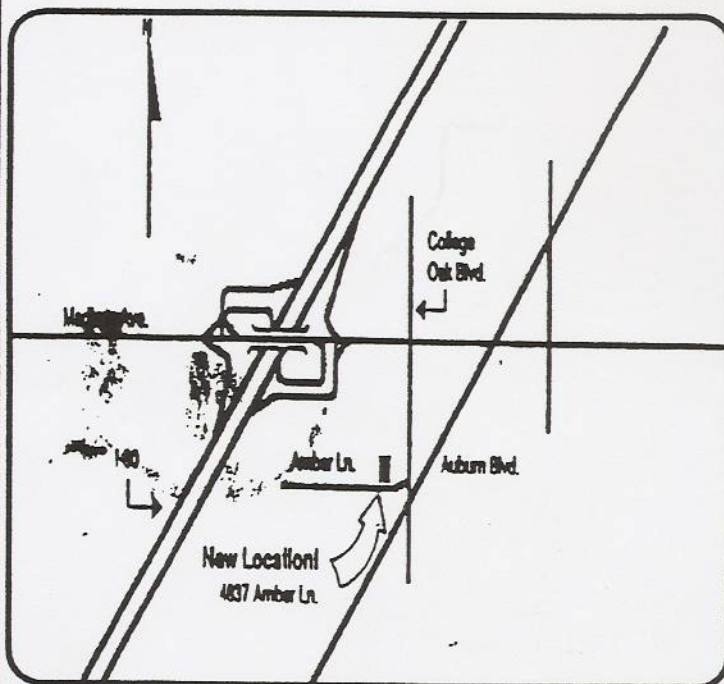
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TECHNICAL CORNER

Dave Jenkins, WB6RBE

Battery Saver-Switch

Rechargeable batteries can be ruined by deep discharge or by reversing a cell. This will happen if the battery is left connected to a radio until it is completely discharged. The circuit presented here protects a 12-volt battery by disconnecting the load when the battery voltage drops to 10.6 volts. This prevents complete discharge of the battery or reversal of a cell. In addition, this circuit provides a simple push-button power control, which avoids wearing out the power switch on your radio. Using the transistor specified for Q1, load current up to 4 amps can be accommodated. For larger loads, use additional transistors wired in parallel. Because MOSFETs are used, the transistors do not require any drive current, and the control circuit can drive any number of them. Use connecting wire appropriate for the desired load current.

There is nothing critical about the parts placement. If the load current is less than 2 amps, Q1 does not need a heat sink. If greater current drain is contemplated, Q1 should be bolted to the metal enclosure, using a nylon washer and mica insulator to prevent shorting the transistor to the enclosure. All of the components for the control circuit will easily fit on a piece of perforated board 1.2" x 1.5". The specified enclosure is 2" x 3" so there is no problem fitting all the components. Molex cable connectors provide easy, convenient connections to the battery and radio. If you have several batteries and radios, these connectors make it easy to change among them.

To use this circuit, connect the battery and radio. Push the "ON" button to turn on power to the radio. Push the "OFF" button to turn power off. If the battery discharges to 10.6 volts, the circuit will automatically turn off the radio. If the radio goes off immediately after the "ON" button is pushed, then the battery needs to be recharged.

By changing the value of R1, the turn-off voltage can be altered. This makes it possible to use the circuit with 7.2-volt NiCad battery packs, which is the lowest voltage that this circuit is designed to protect. Set the turn-off voltage at about 10% below the rated voltage of the battery pack. Then the value of R1 is: $(V-5.0) \times 20.0/5.0$ where V is the turn-off voltage, and R1 will be in k-ohms. For a 7.2-volt NiCad pack, set V to 6.5 volts, then $R1 = (6.5-5.0) \times 20.0/5.0$, or $(1.5) \times 4.00$ which is 6.00 Kohms, and the closest 1% resistor value is 6.04k. For use with 7.2 volt battery packs, R3 must also be changed to a 1.96k, 1% resistor.

Quad A's Electronic Supply can provide a kit of parts to

build this circuit. The schematic follows on the next page, along with the parts list.

Next month I will detail a simple electronic circuit breaker for all those 12-volt accessories around the shack. It can be combined with this circuit to protect the battery from both deep discharge and high current.

REPEATER TIPS

Here are a few tips to get the most efficient use out of VHF and UHF repeaters.

1. **Push-to-Talk:** The key here is PUSH ... then TALK, in that order. Surprisingly, it takes a bit of hand-mouth coordination, but it is critical (obviously).

2. **Pre-Talk Delay:** When you key your transmitter, there can be an appreciable delay before the distant receiver actually hears your words. This delay comes from the time it takes your transmitter to begin producing RF, unsquelch and PL decode time at the repeater receiver, repeater key-up delay, and unsquelch time at the distant receiver. The delay is greater if the receiver is in scanning or battery-save mode.

All of this can add up to a second or more. So the best rule is, PUSH the PTT switch, take a deep breath, let it out, and then start talking.

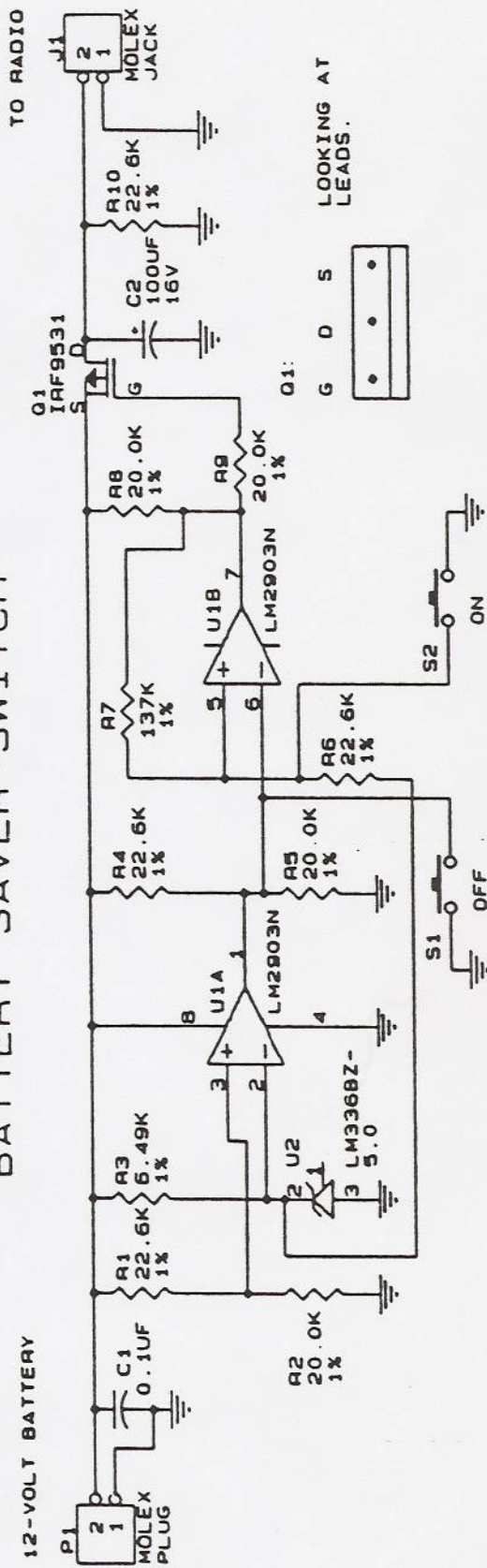
3. **Short Transmissions:** Amateur operating guides often emphasize short transmissions. However, too much of a good thing is bad for communications. One word answers, like "yes," "no," and "what?" are often lost in the delays or in fades.

Professional communications operators use "affirmative," "negative," and "say again" instead of "yes," "no," and "what?" This convention provides enough syllables and redundancy that the receiver can miss part of the word and still know what was said.

4. **Post-Talk Delay:** Pause for a second or two after your contact has turned it over to you, to allow time for another station to make a quick call, and thus get double duty from the repeater. The K6ARR and WB6OHV repeaters are open repeaters and there is nothing wrong with a rag-chew or roundtable. Just leave a door open for other users.

5. **ID:** Give your call at the beginning and end of your QSO, and every ten minutes during the QSO. You don't need to give the call of your contact. (Good for those of us with lousy memories!)

BATTERY SAVER-SWITCH



Parts List:

- 1 Molex 2-pin plug
- 1 Molex 2-pin jack
- 1 0.1uF, 25-volt capacitor
- 1 100uf, 16-volt capacitor
- 1 6.49k, 1%, 1/4 watt resistor
- 4 20.0k, 1%, 1/4 watt resistor
- 4 22.6k, 1%, 1/4 watt resistor
- 1 137k, 1%, 1/4 watt resistor
- 1 IRF9531 MOSFET transistor, 12A, 60-volt
- 1 LM2903N dual comparator
- 1 LM336BZ-5.0 voltage reference
- 2 Push-button
- 1 0.1" center perf-board, 1.2" x 1.5"
- 1 LMB-772 enclosure
- 1 insulating kit: nylon washer, mica insulator
- 1 8-pin socket for LM2903N
- 2 3/16" grommets, protect wires exiting enclosure

DAVID JENKINS - NB6RBE

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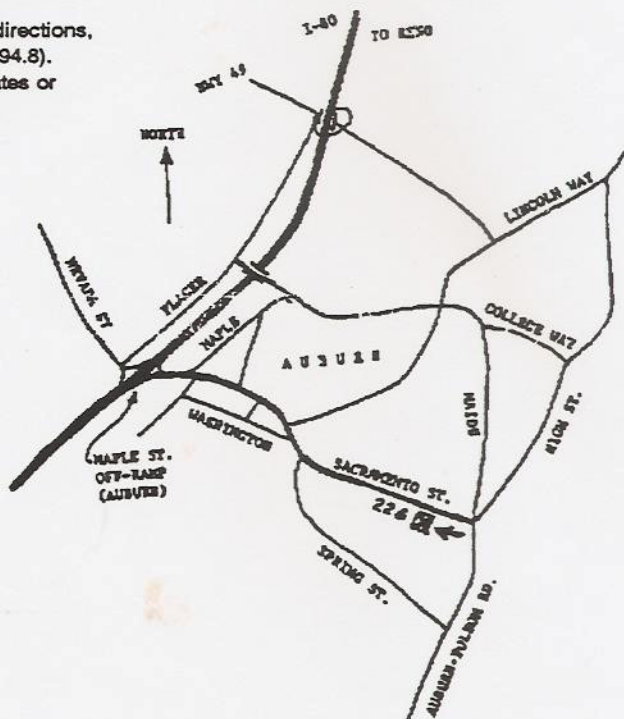
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Sierra Foothills Amateur Radio Club

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CLUB USE: # _____ Date: _____ Roster _____ Paid by: Cash/Ck# _____
Mail to: Treasurer, SFARC, P.O. Box 3262, Auburn, CA 95604

Regular club meeting is at 7:00 PM on the 2nd Friday
of each month, at the Auburn Fire Station, 226
Sacramento Street, Auburn CA. See map for directions,
and talk-in on 145.43, 223.860, or 440.575 (PL 94.8).
Page 1 of the newsletter contains additional dates or
changes.



SIERRA FOOTHILLS AMATEUR RADIO CLUB
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