

Sierra Signals

Sierra Foothills Amateur Radio Club

Auburn, CA

An ARRL Special Service Club

<http://www.sf-arc.org>

April 2004

P.O. Box 1005, Newcastle, CA 95658

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



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REPORTERS

Satellites: Greg, KO6TH

History: Gary, KQ6RT

Digitals: Rob, WW6G

REPEATERS

145.430 (-0.6 MHz/PL 162.2)

440.575 (+5.0 MHz/PL 94.8)

223.860 (-1.6 MHz/PL 100.0)

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
Casey McPartland, W7IB

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2004 Calendar of Events

(Operating Events in Italics)

Apr 9	Regular Meeting
<i>Apr 17</i>	<i>MI QSO Party</i>
Apr 17	MS Walk
Apr 24	Club Breakfast
MAY 3	BPL COMMENT DEADLINE
May 8	BBQ with El Dorado ARC
<i>May 8</i>	<i>NV QSO Party</i>
May 14	Regular Meeting
May 16	NHRC Ham Swap
<i>May 28-30</i>	<i>CQ WPX (CW)</i>
May 29	Club Breakfast
JUN 1	BPL REPLY CMTS DUE
Jun 11	Regular Meeting

IN THIS ISSUE

Officers Reports

UO-11 Turns 20!

BPL and Urban Legends

Welcome New Graduates



Well, happy April. The days are warming, flowers are blooming and the radio bands have had surprising openings. Even of the way down the sunspot cycle, spring holds out hope and an occasional DX!

My thanks to Casey for standing in for me last month. From all accounts, the speaker was great,

and so was Casey.

This month, we have the MS Walk on April 17th and there will be more details coming – stay tuned. Finally, Field Day is right around the corner. Guess tings really are heating up.

SPECIAL REPORT **Technician Licensing Class**

Casey, W7IB, and I ran a Technician License class which ran for a period of six (6) weeks with the licensing examination on the 7th week. The class was a mix of video, lecture and question review. As a result of the class and the examination session, we are pleased to welcome the following new hams!

KG6UEI	Leslie Nye
KG6UHQ	Patricia A. Balasa
KG6UHR	Jessica D. Balasa
KG6UHS	Cheyenne M. Gamon
KG6UHT	Le Grand Scott
KG6UHU	Desiree K. Scott
KG6UHV	Tim R. Tweitmeyer
KG6UHW	Sandra C. Dennison
KG6UHX	Patricia G. Gibbs
KG6UHY	Lee Leishman
KG6UHZ	Norman D. Medland
KG6UIA	Judy A. Faulkner
KG6UIB	Steve P. Reis
KG6UIC	Sheila S. Burres
KG6UID	Benjamin J. Whipple
KG6UIE	Susan M. Webb
KG6UIF	Arnold M. Hooker
KG6UIG	Deborah L. Kramer

Our thanks to Larry AE6CC, Donna KD6PJJ and all of the volunteers who made the examination session a success.

Looking at the result and the interest, we may do one in the fall.. Our next examination session is April 3rd at Folsom Lake College starting at 8AM. See you there.

73,

Rob, WW6G

Minutes of Regular Meeting **March 19, 2004**



President Rob, WW6G, was out of town on business; Vice President Casey, W7IB, presiding.

Meeting called to order at 7:32 PM.

36 members and guests present.

Officers present:

Donna, KD6PJJ, Treasurer
Bob, WA6ULL, Secretary
Larry, AE6CC, Director
Kevin, KG6RIO, Director

Bob, WA6ULL, read minutes of the Feb. Meeting Motion to approve by Joe, WA6AGR, and seconded by Bob, WD6WTY. Motion carried.

Donna, KD6PJJ, gave the Treasurer's report: Opening balance: \$1,744. Revenue: \$142. Closing balance: \$1,916.04.

M.S.Walk: Apr. 18. Sign up with Rob, WW6G.

May 8th: Joint Meeting and Picnic Georgetown Ca. Check for time and on Thu net.

Satellite Report: Greg, KO6TH. AO-40 Battery OK Other battery shorted Satellite works now

ARRL NEWS: Jettie W6RFF Section Manager Comment on BPL to FCC By May 3rd and Reply Comments due by June 1st. The ARRL will go through them and make up listed comments and send to the FCC.

FCC. No action on New License Proposals.

Joe, WA6AGR: NHRC Apr 20 "Bring a friend night." Demos, Working Stations, Ham Swap Will Be May 16th Bella Vista High School, Orangevale. Raffle of FT 1500 2m Mobile MFJ Power Supply Diamond Antenna .Tickets \$1.00

ARES: New Training Officer is Bob, KB6KQG

Gary, KQ6RT - Raffle: Atomic Clock, Batteries, Light W.R. sub. Antenna Analyzer MFJ 259B to be given away at Field Day \$2.00 a ticket or 3 for \$5.

Test To be given at VFW building Sunday for class and others.

Joe, KF6OQY: Signs for car doors 2 for \$40 Last time to order.

Break at 7.55 PM

Guest Speaker Rui Cumba Placer County OES program Manager talked about OES and how it works with Police and Fire. Police and Fire have there own systems. They do things

in advance. Healthy Forest Program/fuels .. Forest Thinning up in Tahoe. Placer County, you know, goes to Tahoe

Homeland Security ----His Office Focal for H.S. OES funds ..Money to Police And Fire Volunteer Programs ...Placer County Not a Major Target.....Madrid TroubleBus turning over could be a major event.. Chemical Events ...a lot chemical products move through County... State Budget Affects County Budget....

Medical Personnel Retired not practicing nurses And doctors back up regular personnel

Question on floor about subjects. Discussion on Repeaters and what's coming up.

Raffle by Gary KQ6RT

Adjourned 8:53 By Casey, W7IB

Submitted by Bob, WA6ULL
Secretary

Forty Years Ago at the SFARC

Reported by Gary, KQ6RT

Minutes of the SFARC April 8 1964

1. Meeting was called to order and the minutes were approved as written.
2. Film on "Wave Behavior" was enjoyed by all.
3. Introduction of members and guests were a new innovation by our president.
4. Field day discussion on where and what equipment will be used on this years Field Day.
5. Since Joe Merryman donated the trailer frame and Ken Weger suggested the club obtaining one, they were assigned the tasks of building this trailer as soon as possible using the money necessary as needed and reporting progress at each meeting. It is hoped other members will assist in the building of this trailer and thereby make it really a club project.
6. Club certificate to be designed by Ken Weger with clubs final approval.
7. QSL card to be designed by Ken Weger and with clubs approval have 200 printed.
8. Discussed raffling off an AM/FM radio.
9. Picnic to celebrate the 6th anniversary of SFARC to be held on May 24, 1964 Sunday at the Auburn Fair Grounds picnic area and is to be a Pot Luck affair with the club providing beer, soda, coffee, tea, chips, bread and ice cream.
10. Discussed the clubs fan doublet on 40 and 80 meters and letting the CD use it on

a permanent loan until such time the club needs it for their exercise. No decision.

11. Sig Goepner won the \$5.00 gift certificate from Cal TV.

12. Joe Merryman won the Weller soldering gun from Lombard's.

13. The club was authorized to subscribe to RPX for \$2.00.

14. Meeting was adjourned and refreshments served.

Respectfully submitted,

Kenneth J. Weger, WA6EMU
Secretary

W3PMP Estate Sale

On May 1, 2004 starting at 8 AM, Irene Greenslade will offer for sale the radio equipment of her late husband Bob, silent key W3PMP. The sale will be at their residence, 5695 Arrowhead, Rocklin.

Silent Keys

It is with regret that we record the passing of two well-known amateurs in the Sacramento Valley section.

Joe Bryant, KB6SNU, passed away on December 31st, 2003 Joe was a long-term member of the North Hills Radio Club and was known to many of the SFARC members. Joe was very active in the Air Force MARS program, and was the communications director for the Merced Fly-In.

Curt Tillman, KG6MNM, also a member of the NHRC, passed away on Monday the 26th of January, 2004 Curt had 20 years of experience in cable TV, and was the Regional Staff Engineer for Network Engineering in Central California for Comcast at the time of his death.

Sonoma Ham Fest

Jim Hill, K6UUW

The Valley of the Moon Amateur Radio Club (VOMARC) will hold its hamfest on April 24th in beautiful Sonoma. Activities include a swap meet, VE session, breakfast, fox hunt, and a lot friendly folks.

Their website is at www.vomarc.com for more information and a map, or email Jim at jhill@vom.com

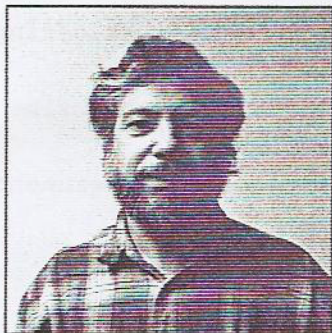
North Hills Ham Swap

This annual event will be held on Sunday, May 16 at Bella Vista High School on Madison Ave. in Orangevale. Festivities start early.

Amateur Satellites

Reported by Greg, KO6TH

UO-11 Turns Twenty!



This past March 1, 2004, marked an extraordinary event: the 20th birthday for the UO-11 satellite. As its name indicates, UO-11 was only the eleventh Amateur satellite successfully launched. As the event indicates, it is also one of the oldest still in operation.

UO-11 was launched on March 1, 1984 on a Delta rocket from the Western Test Range, now known as Vandenberg Air Force Base. The launch was the culmination of a mere 6 months of intense work; an opportunity made possible by signs that the Remote Imaging satellite LANDSAT-4 was nearing its end of life. The replacement had to be launched quickly, and there was space available on the launch vehicle if a suitable microsat could be built in time.

The satellite was built by the University of Surrey, in the U. K. It was only their second satellite. The first, UOSat-1, was launched in October of 1981, and became UO-9 when its amateur-band transmitter was turned on, with a mission to study radio propagation from outer space. It performed well until 1989, when its orbit decayed and it burned up while reentering the earth's atmosphere. UO-11 was joined in orbit in February of 1990 by the third Surrey satellite, UO-14 which only recently went silent due to battery problems. The Surrey team certainly has had a record of successful satellite projects.

UO-11 is also a research satellite. Its primary function is to study the environment in low Earth orbit. On board are a variety of voltage, temperature, and current sensors, and experiments to count the impacts of space dust, measure electron energy levels, and to measure the electron flux spectrum (whatever that is!). There is also a digital B&W camera, and experimental digital communications circuitry. A Digitalker with a vocabulary of more than 550 words is also on board, and has been used to announce telemetry for educational demonstrations. Thousands of Amateurs, students, and university groups have participated in the collection and analysis of the spacecraft's telemetry.

The spacecraft is currently in a default mode, where it is turned on for 10 days, then off for 10 days. When on, UO-11's telemetry signal can be heard on 145.825 MHz (plus or minus the Doppler shift). The telemetry is sent at 1200 BAUD in ASCII text. Years ago, when Bell model "208" modems were common, this was a very convenient format. Today it takes some special hardware or sound card software to decode. There is also a weak 2.4 GHz beacon which can be heard on 2401.1428 MHz. More information about UO-11 can be found on the AMSAT-UK web site at <http://www.uk.amsat.org/uo-11/>, including pictures of the spacecraft and its launch. Anyone who has heard UO-11 during the month of March can also apply for a special QSL card to commemorate the birthday event.

Results of Pacific Division Morse Code Requirement Survey

Reported by Bob Vallio, W6RGG

ARRL Pacific Division Director

(Ed Note: BPL is not the only amateur related action before the FCC ... there are several license restructuring petitions now in Comment phase. The results of this survey provide some good insight into feelings within the division and may offer some ideas and strategies for your own comments)

Survey Method

The survey was distributed on December 15, 2003, to 5,619 ARRL members of the Pacific Division who subscribe to e-mail from their Director and Section Manager, or approximately 56% of the total members in the Division. 1,207 (~20%) responses were received, which is incredibly good for a survey.

A few members chose not to answer all five of the questions -- the questions they did answer were included in the results with no attempt to guess at answers to the others. A few other members provided only a written opinion without directly answering the survey questions.

While written comments were not solicited in the survey (for fear there would not be enough time to read and assimilate them all), quite a few were received. All of these comments were read and general themes extracted (see "Conclusions" section below).

Results

The questions asked follow, along with the tally count taken for each possible response and percentages of the total number of responses to the question. The number of responses to each question ranged from 1,075 to 1,095.

1. A Morse code testing requirement should be retained for the General Class license.

Response	Count	PCT
Strongly Agree	369	33.7
Somewhat Agree	208	19.0
Neither Agree or Disagree	83	7.6
Somewhat Disagree	131	12.0
Strongly Disagree	304	27.8

2. A Morse code testing requirement should be retained for the Extra Class license.

Response	Count	PCT
Strongly Agree	663	60.8
Somewhat Agree	121	11.1
Neither Agree or Disagree	63	5.8
Somewhat Disagree	79	7.2
Strongly Disagree	164	15.0

3. In the interest of getting new people into the hobby, an entry-level license without a Morse code testing requirement, but with limited power and limited HF band privileges, should be created.

Response	Count	PCT
Strongly Agree	461	42.1
Somewhat Agree	250	22.9
Neither Agree or Disagree	114	10.4
Somewhat Disagree	82	7.5
Strongly Disagree	187	17.1

4. In light of BPL and other serious issues that threaten the future of amateur radio, how much time and funding should the ARRL put into retaining the Morse code license testing requirements?

Response	Count	PCT
All out effort	57	5.2
Significant Effort	275	25.3
Moderate Effort	343	31.6
Minimal Effort	152	14.0
No Effort	260	23.9

Note: Respondents were advised to choose "No Effort" if they strongly wanted to eliminate the Morse requirement

5. How much time and funding should the ARRL put into eliminating the Morse code license testing requirements?

Response	Count	PCT
All out effort	51	4.7
Significant Effort	132	12.1
Moderate Effort	236	21.7
Minimal Effort	168	15.5
No Effort	488	44.9

Note: Respondents were advised to choose "No Effort" if they strongly wish to retain the code requirement.

Evaluation of Results

Bias Potential

While sufficient responses were received to achieve statistically significant results, there is a potential for bias in the results.

- o Distributing the survey via e-mail excludes those members without e-mail access, as well as those who did not subscribe to e-mail from their Director and Section Manager. The roughly 44% of the membership in the Pacific Division that did not receive the survey may very well have a somewhat different

demographic makeup compared with those it did reach. In particular, persons with e-mail access tend to be somewhat younger than those without e-mail access.

- o The demographic makeup of the Pacific Division is quite a bit different compared to other divisions because in addition to Northern California, it includes the states of Nevada and Hawaii, and the U.S. possessions in the Pacific. Moreover, parts of Northern California are often cited as among the most politically liberal in the U.S. Hence, caution must be exercised in assuming that these results are representative of ARRL membership at large.

- o Based on the written comments received, a large number of respondents believe that removal of the testing requirement jeopardizes the continued existence of sub-bands devoted to CW as an operating mode. This is unfortunate as it clearly introduces bias toward retention of the requirement. Unfortunately, it is not possible to measure the magnitude of such bias, and no time remains to conduct a follow-up survey.

- o Three survey respondents were highly critical of the reference to BPL in question 4, further commenting that the questions were attempting to lead the responder to an answer. It is fair to note that all three of those offering the criticism were highly in favor of retaining the Morse code testing requirement, and that no one was critical of the identical reference in question 5. Questions 1 and 2 already asked how strongly they agreed or disagreed with retaining the testing requirement, and BPL was deliberately introduced as an issue after those questions. The very purpose of Questions 4 and 5 was to ask how much the ARRL should devote in effort and financial resources, in carrying out their wishes vis-à-vis the Morse code testing requirement. Those questions cannot be answered without mentioning the other issues. There are members who feel that the ARRL should have filed comments with the FCC for every Morse code testing proposal filed with the FCC thus far -- these questions were an attempt to see how widely held this feeling is. Furthermore, the results (30% favoring a significant or substantial effort be undertaken to preserve the testing requirement) seem well in line with the number strongly favoring retention of the requirement (33%), so any bias introduced here seems nominal.

Conclusions

A significant number of survey responders favor retention of the Morse code testing requirement for the existing General class license -- 52.7% in favor, 39.7% opposing, 7.6% neither for nor against.

An overwhelming majority of survey responders favor retention of the Morse code testing requirement for the existing Amateur Extra class license -- 71.9% in favor, 22.3% opposing, and 5.8% neither for nor against. Of those in favor, most had very strong opinions -- 60.8% strongly agree, 11.1% somewhat agree. It would seem that the Amateur Extra class code testing requirement is very much a "sacred cow".

A significant number of survey responders favor an entry-level license without a Morse code testing requirement, but with limited power and limited HF band privileges -- 52.7%. A number answered in opposition of this effort with comments that the existing Technician class handles this if the code

requirement is simply removed. While this interpretation of the question is not quantifiable, it is safe to assume that the number in favor of a new entry-level license is somewhat (but perhaps only slightly) higher than the survey results indicate.

The level (in terms of staffing and funding) at which respondents expect the ARRL to respond to their wishes regarding Morse code testing is all over the map, as shown in the results of questions 4 and 5. There is no clear single level that will please even a simple majority.

Common Themes Among Comments

Although written comments were not solicited as part of the survey, quite a few respondents included them. The common themes noted in these comments are:

Arguments in favor of retention of the Morse testing requirement:

- o Removal of the requirement would be more "dumbing down" of the license requirements.
- o It is a gateway that keeps undisciplined people and poor operators out of the service. Several cited "protecting the lower part of the bands" as a motivation. Many others cited CB operators.
- o It is a traditional rite of passage -- "I had to do it, so you should also be required to."
- o Morse code is a tradition that binds all amateurs together.
- o People who have to work harder for their license will appreciate it more, and therefore be better (or more devoted) operators.
- o "If I can pass the code test, anyone can", or "Those who say they cannot pass the code test are just plain lazy and haven't worked hard enough."
- o CW is more reliable than other modes, so every amateur should learn it.
- o Removal of the code requirement jeopardizes CW sub-band allocations.

Arguments against retention of the Morse testing requirement:

- o There are some who just cannot learn Morse code well enough to pass the test.
- o The requirement keeps good people out of significant facets of the hobby.
- o A requirement to demonstrate CW proficiency in order to use non-CW operating modes on HF frequencies defies logic.
- o Morse code is less important given the newer digital modes.
- o CW is the only operating mode with a specific test requirement.
- o There is no incentive for young people to learn Morse code.

A number of respondents argued for increased code speed requirements, especially for the Amateur Extra class license. There seemed to be no understanding of the FCC's reason for reducing the requirement (most informed sources believe it was to escape from all the "special accommodation" procedures for those with various medical issues), or how unreceptive the FCC is to any notion of increasing the code speed in the current testing requirement.

Nearly everyone indicated their appreciation of being asked for their opinion.

Several dozen respondents suggested a more difficult written test should the Morse code requirement be dropped.

At least 3 respondents cited the Novice class license as fulfilling any need for an entry-level license (apparently not aware that this class was no longer available for new licensees). Several others pointed to the withdrawal of the Novice class license as a serious mistake.

What's So Special About Oct 14, 1960?

The March issue of *Sierra Signals* asked that question. The answer involves the velocity of light and is a bit obscure, but interesting. We need to know the velocity of light (actually all electromagnetic radiation) to calculate wavelengths, antenna sizes, doppler shift, and a variety of other electronic quantities in our hobby.

Measurement of that velocity would seem to be fairly straightforward. Send a pulse over some distance and measure how long it takes to get there. It's complicated a bit by the fact that light is pretty fast, but the principle is sound. In fact, it was demonstrated in one of the forums at 2003 Pacificon. Basically, we need a standard of distance, and a standard of time.

The distance standard would be the meter. Originally defined to be one ten millionth of the distance between the equator and the north pole (a definition that is more than a bit unwieldy and hard to obtain), it was ultimately re-defined to be the distance between two scratches on a platinum-iridium bar kept in Paris (ok, very very precise "scratches"). Precise copies ... "secondary standards" ... of the bar were made for each country, and the U.S. secondary standard was #27.

The unit of time is the "second." Originally, it was pegged to the earth's rotation through astronomical observations, however it developed that the earth doesn't maintain a constant rotation rate. Technology advanced and the atomic clock was invented (not the ones Gary gives away at meetings, however!). These clocks used atomic vibrations, which are extremely constant, and ultimately, the second was defined as the time required for exactly "9,192,631,770 cycles of the radiation which corresponds to the transition between two energy levels of the ground state of the Cesium-133 atom" to go by.

Meanwhile, the uncertainty between the secondary standards for the meter was beginning to bug some folks who really care about exactness. After much discussion, and because atomic vibrations are so incredibly constant, the meter was redefined as "1,650,763.73 vacuum wavelengths of light resulting from unperturbed atomic energy level transition $2p_{10} - 5d_5$ of the krypton isotope having an atomic weight of 86." They must have really worked on that one. It occurred about noon on October 14, 1960.

The upshot of all this re-defining is that distance is now defined in terms of the same standard as time, which to scientists and mathematicians, mean that the velocity of light is now a

defined constant rather than a measured constant. It is, in fact, *exactly* 299,792,458 meters/sec or 1,802,156,282,200 furlongs/fortnight. On October 14, 1960, it became meaningless "to measure" the velocity of light, just as it is meaningless to try and "measure" the number of minutes in an hour, the number of degrees in a circle, or the number of days in March. The velocity didn't change much from the most recent accepted value, so the old formula of $\lambda/2 = 468/F$ (MHz) to calculate the size of our dipoles still gets us close enough.

Incidentally, the metric system was officially authorized in the U.S. in 1866, although its use was made voluntary. As a citizen of the UK was once heard to say, "We're going metric all right ... inch by inch."

BPL Urban Legends

The period for comments on the FCC's NPRM regarding Access BPL has been established, and closes May 3, 2004. The Reply Comment period closes June 1, 2004.

The May issue of QST (generally out around the middle of April) will carry an "It Seems To Us" editorial that is mandatory reading for anyone intending to file comments to the Access BPL NPRM. The ARRL has made it available on the public web pages at www.arrl.org ... it's the lead story. In it, Dave Sumner, K1ZZ, tackles and dispels some urban legends in our midst about BPL. For example:

- The NPRM does not "authorize" Access BPL. It is legal now. Providers must comply with all of the rules for carrier current systems in Part 15, but they don't need any further authorization and some are proceeding.
- The NPRM, taken in whole, tends to impose more regulation on Access BPL, not less.
- A major key to all HF users surviving Access BPL is the database the NPRM will require. The FCC asks some specific questions about it and we should all answer those questions.

In order for all of our comments to be heard and considered, we must be very careful that we really understand what the FCC is doing. Dave's editorial goes a long way to help in that regard.

There is also a small repository of resources, ideas, and strategy discussions at www.foothill.net/~andrea/j/Ham15.htm which may also assist in drafting comments.

Forgot Your CORES/FRN Password?

(ARRL Letter)

Time to renew, and you can't remember your FCC password (after all, it's been 10 years, no?) It's possible to reset your CORES/FRN (Commission Registration System/FCC Registration Number) password via the FCC Web site for electronic application filing. (This is the password you need at: <https://svartifoss2.fcc.gov/core/coresHome.html>) This might come in handy if you have forgotten your password, need to change it to another password or were automatically registered

for CORES through a Volunteer Examiner Coordinator and don't know your password.

Visit the secure "Forgot your Password" <https://esupport.fcc.gov/password.htm> Web site and complete

all the required fields. You will need to supply your FCC Registration Number (available via ULS or through many on-line call sign servers, such as ARRL's) as well as your Taxpayer Identification Number (TIN), typically your Social Security number. Applicants also will need to supply name, e-mail address and telephone number.

Contributions

(A Plea From Your Editor)

It's turning out to be a "slow news year," folks! How 'bout helping me out with some news, articles, ideas, ... whatever ... for *Sierra Signals*? An email to k6dgv@arrl.net will do it. And, if you would like to be on the email edition list, do the same. The email edition is in living color.

Don Tollefson
Owner



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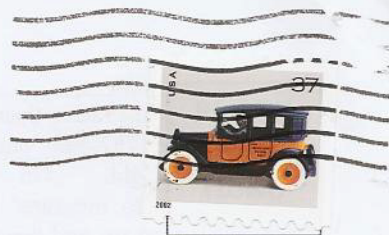
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SIERRA FOOTHILLS AMATEUR RADIO CLUB

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Newcastle, CA 95658



SIERRA FOOTHILLS AMATEUR RADIO CLUB 2004 MEMBERSHIP APPLICATION

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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:	\$7.00
Associate:	\$ 7.00	Repeater Donation:	\$ _____
Auto Patch Donation:	\$ _____	Newsletter Booster:	\$ _____
Miscellaneous Donation:	\$ _____	Christmas Donation:	\$ _____
Worldradio Renewal:	\$ _____	TOTAL:	\$ _____

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