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MAY 2001

P.O. Box 1005, Newcastle, CA 95658

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

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REPORTERS

Satellite Report
Greg Dolkas, K06TH
40 Years Ago at the SFARC
Gary Cunningham, KQ6RT
VE Program
Bob Metke, W6SUP

REPEATERS

145.430(-0.6 Mhz) PL 162.2
440.575(+5 Mhz) PL 94.8
223.860 (-1.6 Mhz)

CLUB NET

All welcome to check
in Thursdays, 7:30 PM
2M K6ARR & Club
Repeater 145.430

CLUB MEETINGS

Second Fri of the
month 7:30 PM at the
Auburn Library 350
Nevada St. Auburn

CLUB BREAKFAST

Last Saturday of the
month at Susie's Café
Cirby at Riverside Ave.
Roseville - 8:00 AM

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Gary Cunningham, KQ6RT
Joe Sylvia, KF6OQY
Wayne Mikel, KE6DJE

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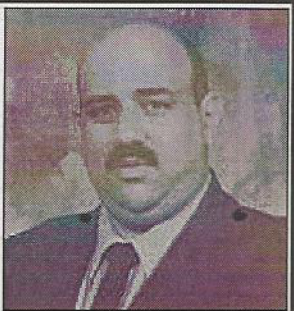
2001 Calendar of Events

(Operating Events in Italics)

May 9	VE Test
May 11	Regular Meeting
May 26	Club Breakfast
Jun 8	Regular Meeting
<i>Jun 9-11</i>	<i>ARRL June VHF QSO Party</i>
Jun 13	VE Test
<i>Jun 23-24</i>	<i>Field Day!! Field Day!!</i>
Jun 30	Club Breakfast
Jul 11	VE Test
Jul 13	Regular Meeting
<i>Jul 14-15</i>	<i>IARU HF World Championships</i>
Jul 28	Club Breakfast
<i>Aug 4-5</i>	<i>ARRL UHF Contest</i>
Aug 8	VE Test
Aug 10	Regular Meeting
Aug 25	Club Breakfast
Sep 8-9	ARRL VHF QSO Party
Sep 12	VE Test
Sep 14	Regular Meeting

From the President's Shack

**Matt
KC6RUO**



Thank you Glenn Stilwell for showing us all the "fresh gear" from Radio Place at our last meeting. Members attending made another record turnout too!

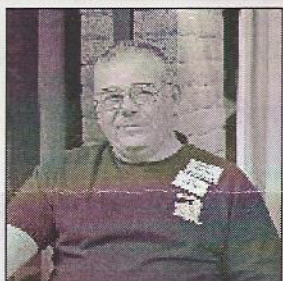
I am looking for a person to assist me with setting up communications for the 2001 Rocklin Jubilee, on June 30, 2001. Please contact me if you are interested in being a liaison between the SFARC & the City of Rocklin.

73,

Matt, KC6RUO

Secretary's Report

**Joe
KF6OQY**



SFARC General Meeting April 13, 2001

President Matt, KC6RUO, opened the meeting at 1935 hours. Officers present: Vice President Steve, KF6OCE, Secretary Joe, KF6OQY, and Treasurer Debbie, KF6LXN. Board members present: Richard, WA6RWS, Eldred, KD6ZSL, and Bob, WA6ULL.

Debbie KF6LXN gave her treasurer's report and Greg, KO6TH, gave his satellite report including the space station and the various frequencies to be used for communications.

Joe, KF6OQY, gave his Secretary's report. He said that at the Board Meeting of April 6, the following took place: President Matt, KC6RUO, will contact those who did not re-join the club for whatever reason so as to remind them that their membership has expired. He also said that the plans for Field Day are complete, except for the food. It will be potluck unless someone wishes to cook as in the past. The White Elephant sale will be held at the Stella Irving room as will the Christmas party. The Picnic will be at the grounds above. The location for these events is: Auburn Recreation Park, Auburn-Folsom Rd. and Race Track in Auburn. Dates will be published at a later date.

Bob WA6RULL reported that Roger N7TK is at home recovering from recent surgery.

Terry Lofthouse, this year's chairperson for the April 22 MS Walkathon described the event. She also furnished T-shirts for those who are scheduled to work the communications.

Wayne, KE6DJE, passed out registration cards with an explanation letter for those who would be interested in joining him in the ARES program. He also gave a brief description of this organization.

Patrick, N6PBM, explained that the joint-venture with River City ARC to man a booth at this year's State Fair is in place as was last year if the membership agrees that we should participate. President Matt, KC6RUO, then put the question to the members present and received a yes answer. As we get more info, I will write it in this column.

In another question put to the membership it was decided that the club not participate in this year's MS 150 mile bike ride on Sept 22 and 23. This event will take place mostly out of our local area. Those who wish to participate should call Wayne, KE6DJE.

Our main event for the evening was a presentation by Glenn Stilwell, WR6O, of the Radio Place. He had a table full of many different types of equipment from 30 amp power supplies that weigh 15 lbs. to the tiny hand held radios. He described and explained the functions of each item then he had the members pass them along for all to inspect. Many questions were put to him from the members as they showed great interest in what Glenn had to demonstrate. This was a great presentation and enjoyed by all. Thank you Glenn for a job well done. Many thanks to all 36 people who attended. Meeting was adjourned at 2110 hours.

Respectfully submitted,

Joe Sylvia, KF6OQY
Secretary

40 Years Ago At The SFARC

**Gary
KQ6RT**



Home of Mike Bowman
Auburn, California
May 10, 1961

The meeting was called to order at 8:15 PM by Pres. Lin Hunter. Minutes of previous meeting and treasurers' report were read and approved.

The main business was the preparation of our coming barbecue picnic on Sunday, June 11, 5:30 PM. (Postponed to June 18th) The following persons were appointed to take care of each division:

Jim Carmen and Walt Dowdy - Steaks & Soda

Lin Hunter - Paper Plates, Cups & Charcoal

Frank Carmen - Prizes

Sage Otow - Ice Cream

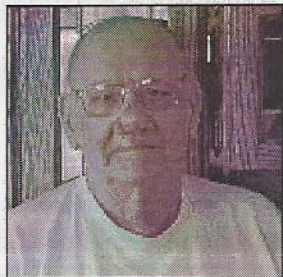
The bread, salad, coffee, potato chips and butter were to be brought by the members. Bob Davis motioned that we spend up to \$15.00 for prizes; seconded by Dick Lund, and passed unanimously. Meeting adjourned at 9:45 and refreshments served.

Respectfully submitted,
Sage Otow

73,
Gary

VE Report

**Bob
W6SUP**



Volunteer Examiner Report

Upcoming Exam Dates for 2001

May 9	June 13
July 11	August 8

Pre-registration is required. Contact Bob Metke, W6SUP for more information.

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

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

SFARC Trivia

K6ARR/R hasn't always been on 145.430 Mhz. What was it's previous frequency and why did it move? It was originally on 146.760, possibly the second most popular repeater frequency after 146.940. Jim moved it when the new 145 Mhz sub-band was opened to repeaters to escape serious interference from a Bay Area repeater.

Sunshine Report

**Jerri
K6GKR**

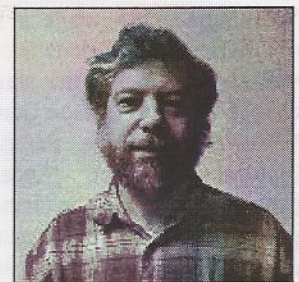


Roger, N7TK

Roger Hedgepeth, N7TK, is recuperating from surgery at home. No other news, which is good news.

Amateur Satellites

**Greg
KO6TH**



Working the International Space Station

Last month, the International Space Station's first crew change was completed. The Expedition 1 crew of two Cosmonauts and one Astronaut came home after a very successful 6 months in space, where they set up house, home, and the ham radio station. Over the later part of their stay in space they restarted the SAREX program, with several successful contacts with schools across the country. The two Astronauts and one Cosmonaut of the Expedition 2 crew wasted no time in getting on the air. The hatch was hardly closed when Susan Helms made her first random phone contact with a ham on the East Coast.

A long few weeks later (long for those of us waiting on the ground), the packet station was turned on. Now, most packet stations consist of the radio, antenna, TNC, and computer. On the ISS, they've got everything but the computer. Well, there is a computer, a laptop, but it is currently being used in another part of the station. Fortunately, their TNC can limp along by itself, and that's what they've done.

The TNC is operating with its default settings. This is far from ideal, but it does work. Many of the usual TNC functions - the mailbox, keyboard-to-keyboard, and other functions are disabled. AX.25 operating parameters are at their default values, which, while fine for terrestrial work, makes space communication inefficient. Most visible of all is the station's call sign: **NOCALL**.

So what can you do with a somewhat crippled packet station? DIGIPEAT! Ham Radio's packet network is a

great way to communicate over long distances, especially when the node is several hundred miles overhead. Hams within view of the station can exchange short messages, in what is called "Conversational" mode. There is also widespread digipeating of APRS information, pinpointing stations and their status as ISS flies high overhead.

Listening to the ISS is easy – just tune your standard terrestrial packet station to 145.800 Mhz., turn on the Monitor function, and several times a day you'll hear the station go by. When it does, you'll see the Unproto packets of hams exchanging greetings and APRS stations sending their position information. There's even a network on the ground that captures the APRS packets and posts them on an Internet database and map. Check out <http://www.ariss.org>. Even non-APRS stations get logged, although there is no position information for the map.

Working the ISS while it is in its current configuration, is not difficult but it does take some patience. The very wide view of Earth that the station's TNC sees means that the chance for two hams to double with each other is very high. When this happens, the data gets garbled, and the TNC ignores the packet. Since the Earth-bound stations can't hear each other, only chance (and a little power) allows a packet to get through unscathed. But it does happen; I've done it several times, and saw my call posted on the ARISS web site. It's definitely something worth printing and framing, if not sending away for a QSL card.

To configure your station to work the ISS, give it the commands: UNPROTO CQ VIA NOCALL, and CONVERS. Set your radio to transmit on 145.990 (still receiving on 145.800; this is an odd split!). Then anything you type will be sent to the station. If you get lucky, your message will be repeated by the ISS and will appear on your own screen. If it does, everyone else within the ISS's view will also have your message on their screen. If you see nothing, wait a few seconds and try again. ISS passes only last a few minutes, and with lower congestion, the late night passes work best. Be sure to update your Keplerian elements frequently, and make sure your computer's clock is set right. If you don't have access to satellite prediction software on your computer, there are several Internet sites that will predict when the ISS be in view. <http://liftoff.msfc.nasa.gov> is a good one. Click on Station Tracking, and follow the instructions.

Best wishes for success in bouncing your message off the International Space Station,

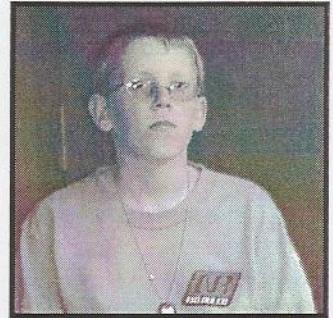
73,
Greg, KO6TH

For Sale

Yaesu FT-90 2m/440 Mobile: \$285
Yaesu FT-2600 2m mobile: \$150.
Mirage B-3106 2m amplifier (.25-8W in, 100 W out): \$150
MFJ Code Tutor: \$40
Patrick, N6PBM, 916.681.5687 n6pbm@lanset.com

SFARC Kid Wins MS Walkathon!

In a surprise move at the MS Walkathon, held on April 22, Danny Cunningham, son of Debbie, KF6LXN and Gary, KQ6RT ran the entire 10 mile route, and finished first. Danny, pictured here at the April club meeting, had not run more than a mile or so before.



His dad told the SFARC News that he was surprised by Danny's decision to run, and that he had no idea prior to the event. So, not only did the SFARC provide communications for the event, we also supplied the winner!

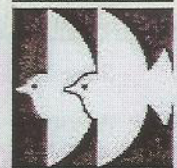
Congratulations, Danny!!

SFARC News Format Changes

Following the lead of the Sacramento Bee, sharp-eyed readers will note a change in the typeface used for SFARC News this issue. The new font, still at 10pts in size, offers us about 10% more space in a normal issue of 6 body pages.

A few more enhancements are on the way, mainly because the editor is bored with the old format.

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EMCOMM 2001

EMCOMM 2001 is over and we are talking about extending next years EMMCOMM to a two-day event! How exciting to have to go to a two day event after only two years of EMMCOMM.



One of the hours was on Psychological Reactions Of Victims & Workers In Disasters. I learned quite a bit at this hour. Did you know that it is OK for you as a disaster service worker (DSW) to feel stress? Think about it, you are responsible for almost all communications in and out of a relief shelter. That's a bunch of stress.

There are a few ways to help lessen **your** stress levels however.

1. Take care of yourself (You are no good to anyone if they have to call a medic for you)
2. Plan on working in shifts of only 4 hours (Don't try to work it all straight through)
3. Take breaks, at least a 15 minute break every 2 hours (Get away from the radio, but be sure and tell the NCS)
4. Eat right... Coffee and donuts are not the right things (remember the basic food groups?)
5. Accept help from others (Use runners, aids, etc)
6. Before you go to help at a shelter, be assured in your own mind that your family is safe and will continue to be safe while you are away

In your work as a DSW in shelters, you will no doubt have dealings with the public. Keep this one thought in mind as you do. **YOU ARE NOT A CRISIS COUNSELOR.** Refer all victims to the shelter personnel or trauma specialists.

More next month about emergency antennas and how to set up your "72 Hour Kit"

Wayne Mikel KE6DJE
Placer County EC

Repeaters for New Folks

(Ed Note: Periodically the SFARC News has run a series on repeaters to help the new hams in the club get up to speed quickly. We have a number of new ham members, so here is a condensation in one article.)

There's nothing like carrying on a full-quieting conversation with a mobile station 50 or more miles away using only a handheld radio to impress a potential new ham. Repeaters make this possible, and here are a few tips to make them work better for you:

First, some basics. Repeaters are permitted on 29 Mhz and above. A repeater receives your signal on one frequency, and retransmits it on another — on 2 meters, the two

frequencies are nearly always separated by 600 Khz, while on 70 cm (440 Mhz) they are separated by 5 Mhz.

Repeaters are usually identified by their transmit frequency, which is the frequency you receive them on. Some repeaters require that you transmit to them (i.e. their receive frequency) below their transmit frequency, and others require you to transmit above. This is commonly called the "offset," and will usually be designated simply as "plus" or "minus" unless the offset is not the standard 600 Khz or 5 Mhz. Basically, transmitting to the repeater turns its transmitter on and it rebroadcasts everything you say.

In densely populated areas (like Northern California), most repeaters require you to also transmit an inaudible low frequency tone of a specific frequency. This is called Continuous Tone Coded Squelch System (CTCSS), and it allows two repeaters with partially overlapping coverage to share the same frequency pair. RCA (out of the radio business now) called this "Quiet Channel," GE calls it "Channel Guard (CG)," and Motorola calls it Private Line (PL), which hams have adopted as the acronym for CTCSS. You must transmit the correct PL tone or the repeater will not operate for you

When you stop transmitting, most repeaters will continue to transmit for a few seconds. This is called "carrier delay," and allows the other station to begin transmitting, avoiding the annoying squelch tail ("kahchunk") you hear when the repeater does stop transmitting. In older times when repeaters used electromechanical relays, it also reduced the wear and tear on the relay contacts. Repeaters are now keyed with solid state devices, so this no longer matters.

Repeaters are amateur stations, and the FCC requires them to transmit an ID at least every ten minutes. If on CW, it must be at 20 wpm or less. They must also have provision for automatically shutting down if the transmitter becomes continuously keyed. This is called "timing out the repeater," and the timeout time varies between repeaters, but is usually in the several minute range. If you talk continuously longer than the timeout time, the repeater will shut down, and you may be told that "the alligator got you." You may also be encouraged to shorten your transmissions!

The timeout function usually resets a second or two after the signal into the receiver goes away (i.e. you release the PTT switch). Many repeaters transmit a beep when the timeout timer has reset, which is often called a "courtesy tone." Sometimes the nature of the tone ("beep", or maybe "beep boop") carries some information about the state of the repeater. If you or your contact transmit before the reset occurs, the repeater sees it as a continuous transmission and will eventually time out.

The FCC requires that a "control operator" be present on the repeater frequency and monitoring its operation at all times. Most repeaters are controlled by DTMF ("Touch Tone") codes. These codes allow the control operator to turn the repeater on or off, enable or disable PL, connect link systems, etc. They are also used by everyone to control phone patches if the repeater is so equipped.

So, here are some tips for getting the most out of repeaters:

1. You transmit by pressing the Push-To-Talk (PTT) switch on your radio or microphone, which should really be called the Push-THEN-Talk switch. The order of events is critical, unless you like to talk to yourself.
2. When you transmit, your radio must reach full power, the repeater receiver must hear you, it must decode the PL (if any), key the transmitter, the repeater transmitter must come up to full power, and the distant receiver must detect the signal and open its squelch. This sequence can take upwards of a second in some cases, and if you talk before all of this happens, again, you are talking only to yourself. So, the best move is to press PTT, take a breath, and then talk.
3. Many (most) handhelds have a battery saver mode that essentially shuts down nearly all of the radio for most of the time, turning the receiver on briefly every second or two to see if there is a signal present. This is another good reason to pause after you press PTT to allow the handhelds on the frequency to detect that there is a signal present and open their squelch. If you don't provide this delay, they will miss a couple of initial words of each transmission.
4. Generally, it is good to keep your exchanges short and to the point, however it is possible to be too short: "Yes," "No," "What?," and other one-word questions/answers can easily be lost due to noise, and #2 and #3 above. Experienced hams will use "Affirmative," "Negative," "Say again," to avoid this problem.
5. You are required by FCC regulation to relinquish the frequency and repeater to someone with emergency traffic.
6. If you are just rag chewing with someone, and you leave a couple of seconds gap before pressing PTT, you will allow other users to break in with emergency traffic, or to make short call.
7. The FCC requires that you identify with your call sign every ten minutes, and when you finish transmitting. You need only identify with your call. Common practice is to first announce your presence on the repeater with just your call sign. No one calls CQ on a repeater.
8. There are "open" and "closed" repeaters. Open repeaters are free to any user, and their usage is encouraged. (K6ARR - 145.430 -/162.2, KI6TE - 146.355 +/94.8, and K6ARR - 440.575 +/94.8 are open) Closed repeaters, which are most often part of larger, linked systems, are not. Despite an on-going (many years) debate, closed systems are perfectly legal. While all amateur frequencies are shared, repeater equipment on that frequency is privately owned and is not necessarily shared. Most, although not all, 2 meter repeaters are open, whereas many 440 Mhz systems are closed.

Finally, to the question of "How does one choose a frequency pair for a repeater?" A number of years ago, the

FCC delegated coordination authority to volunteer regional organizations (Northern Amateur Relay Coordinating Council or NARCC <www.narcc.org> for Northern California). These coordinators establish procedures and policy to "sanction" the use of frequency pairs/PL tones to minimize interference. Nearly all possible 2m and 70 cm pairs in No. Cal. are currently coordinated.

So there you have it. Feel free to ask questions of any of the "old timers" and enjoy one of the great communications modes available to amateurs.

AO-40 Update

(Excerpts from the ARRL Letter and AMSAT)

AMSAT-NA President Robin Haighton, VE3FRH, this week raised the possibility that AO-40 could inaugurate transponder operation this summer, if tests and orbital maneuvers between now and then go as planned.

"We are learning how to fly this thing," Haighton said. "But I still think we're going to end up with a darned good satellite." The most likely initial transponder configurations, Haighton said, would be Mode L/S--1.2 Ghz up and 2.4 Ghz down, Mode U/S--435 Mhz up and 2.4 Ghz down, and possibly Mode V/S--145 Mhz up and 2.4 Ghz down.

Recent data suggest that the mid-December incident that silenced AO-40 for two weeks and rendered some systems unusable also might have blown a hole on the 400-newton motor side of the spacecraft. "Speculation is there could be damage, and sunlight is getting right in," Haighton said. He noted that ground controllers have detected a distinct rise in temperature when sunlight strikes that side of the satellite. The speculated opening was not causing any major problems, he said, but it could explain why efforts to adjust AO-40's attitude via magnetorquing have been unpredictable.

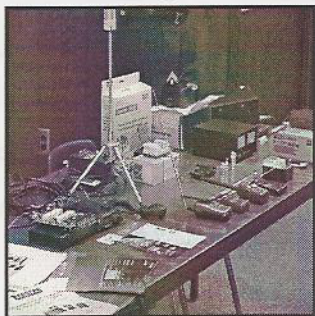
AO-40 currently is approximately 195 miles--above Earth at perigee--its closest point--and some 31,600 miles--at apogee. Plans call for raising the orbit at perigee to around 320 miles. The maneuver would "hardly affect" the satellite's apogee, Haighton said.

Once the orbit has been adjusted, ground controllers would orient the spacecraft's attitude and check out the various onboard transmitter and receiver systems to see what works and what does not. "We're still pretty confident that the 2 meter and 70 cm transmitters are not there," Haighton said, "but we're equally confident that the receivers for those bands still are."

The satellite has been transmitting telemetry on the 2.4 Ghz (S-2) beacon, and signals reportedly have continued to improve--although the beacon has been out from time to time as needed to conserve power during eclipse periods.

Parade of New Equipment at the April 13 Meeting

The April 13 meeting was certainly enlivened with the array of new equipment depicted at the right for the raffle prizes! (just kidding!) Actually, the picture shows only part of the equipment presented by Glenn Stilwell, WR6O, owner of *The Radio Place* in Sacramento.



Glenn's long-time knowledge of the ham radio industry, history, and current trends.

In addition to just talking about the items, they were passed around. On the right, you will note two of our directors, Bob, WA6ULL and Eldred, KD6ZSL, intently discussing the merits (or perhaps drooling over?) a multiband, multimode radio. Glenn answered many questions from the members, and everyone no doubt staked out their next "must-have" item for the shack.



Thanks for a super, hands-on and informative presentation, Glenn.

For the very well attended meeting, Glenn's presentation included handheld transceivers, power supplies, mobile and base radios, test equipment, QRP transceivers, antenna tuners, and much more. The presentation was particularly interesting because of

FCC Warning on 40m QRM

(ARRL Pacific Division Newsletter)

FCC Advises Several Hams about Transmit-Frequency QRM while operating split. [Ed. Note: For our new folks, "split" means transmitting on one HF frequency while receiving on another. A "pile up" where many stations on the same frequency are calling a DX station is not QRM, however calling the DX station on top of another QSO in progress is]

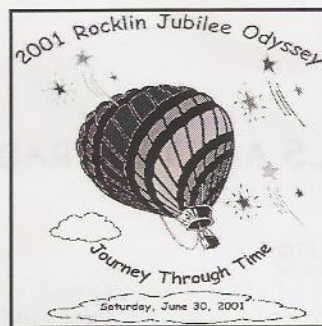
The FCC recently sent advisory notices to several hams who may have caused QRM on their transmitting frequencies while operating split to work SSB DX on 40 meters. The complaints stemmed from operations during February.

"While this may not have been malicious interference, please be advised that amateurs must operate in accordance with Section 97.101 of the Commission's rules, which sets out the general standards for operation of an Amateur Radio station and specifically covers frequency sharing and interference," FCC Special Counsel for Amateur Radio Enforcement Riley Hollingsworth wrote.

Since most of the rest of the world only has access to 7.000 to 7.100 Mhz--still in the US CW subband--US stations working 40-meter SSB must listen for DX stations in the US CW band while transmitting "up" within the US 'phone allocation.

COMING EVENTS

Rocklin Jubilee



Mark you calendars for the 2001 Rocklin Jubilee on Saturday, June 30, 2001. Rocklin Police will be looking for radio operators for communications and traffic control. This is a family event, and all are invited.

Swap Meets

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

Livermore Swap Meet - 1st Sunday of each month at Las Positas College in Livermore, 7:00 AM to noon. Talk in 147.045 (west)/145.35 (east).

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Applications received in the middle of the year will be pro rated. Contact the President or Treasurer for exact rate.

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

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

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