

President's Message -- The CVARC Board of Directors

By Steve Champion, AE6NX

That time of year is here again. Soon a Nominating Committee will be looking for members who are willing to serve on the CVARC Board for January-December 2006. Several of the current board members are unable, for various reasons, to serve next year. It may seem a bit early to be thinking about this, but now is a good time because the election takes place at the November CVARC meeting. At that meeting the Nominating Committee will present a slate of candidates, and additional nominations can be made from the floor.

Some of the existing board members that are offering to stand again are interested in continuing in their existing position. Others are open to changing their role. The function of the Nominating Committee is to match volunteers' skills to the positions and to recommend a slate of candidates to the membership. When the Nominating Committee meets, they need to have input from members who are willing to serve as well as suggestions of people who they should approach about serving. If you approach the Nominating Committee with such suggestions it is helpful if you already know that your suggested candidate is open to serving on the board.

You may have never considered serving on the CVARC Board, but I ask you to think about whether you would be able to do so. It is not essential to have a long history with the club. In fact, your experience with a Homeowners Association, Church, or Temple may be as important as your Ham Radio experience.

So what does the CVARC Board do?

The purpose of The Board is to deal with the day-to-day running of the club. In most businesses The Board functions in a way that means the people "at the top" make decisions which are passed down to those below. An organization like CVARC works the opposite way. The elected Board makes decisions on behalf of the membership. Before making major decisions they may consult all members, but for practical reasons many decisions are arrived at by consensus among the Board members about the best course to take.

The Board meets once a month, on the Thursday following regular CVARC meetings. The meetings run from 7:30pm to about 9:30 or 10:00pm. In addition to the Board Meetings themselves, there is often some informal discussion at General Meetings or by email. The functions of Board positions are outlined in the By-Laws (www.cvarc.org/By-laws.htm), but in reality the exact division of labor varies somewhat each year depending on the skills and interests of the individuals involved. Sometimes specific responsibilities are handled individually and sometimes through committees.

Here are my own one-line synopses of the positions as I see them. It goes without saying that there is quite a bit of overlap between the positions.

President: Chairs the Board and General meetings. Writes a monthly message in the newsletter

Vice President: Performs the role of the President in his or her absence. Arranges Guest Speakers.

Secretary: Takes minutes at meetings. Looks after official records.

Treasurer: Everything financial. Maintains the Membership roster

Publisher: Web pages and Newsletter.

Education Coordinator: Licensing Classes and other education issues

Technical Coordinator: Technical issues. Interference

Operations Coordinator: Van, Field Day

Public Relations Coordinator: Publicity. ARRL interface

Social Coordinator: Social events

Member at Large I: Miscellaneous
Member at Large II: Miscellaneous

So, I'd like you to think about a few things. Are you able to serve on the board? Can you serve on the nominating committee? Who would you like to see serving on the board? Please consider these questions and contact Ken Larson at (805) 495-9435 or kj6rz@highstream.net.

73, AE6NX

Steve champion, AE6NX

CVARC Meeting: The Sun's Role In Amateur Radio Communications

Ken Larson, KJ6RZ, will present a talk on the structure and dynamics of the Sun at our September meeting. The talk will cover how the Sun is believed to have formed, the changes that will occur as it ages, and features of the Sun, including sunspots, prominences, flares, coronal holes, solar winds, and its twisted tortured magnetic field, that are responsible for creating and disrupting the Earth's Ionosphere. The meeting will begin at 7:30 PM at the Elks Lodge on Conejo School Rd., with a social session prior to the meeting from 7:00 to 7:30. Hope to see you there.

Next Technician License Class

Compiled By Karl Moody, AE6TO

The next Technician License Class is tentatively scheduled to begin Tuesday September 27th.

The Conejo Valley Amateur Radio Club sponsors amateur radio license classes throughout the year. The Technician Class license, which is the entry level license for amateur radio is presented four times a year and classes last for 8 weeks. The classes are held on Tuesday evenings from 7:00 p.m. to 8:45 p.m. and are free. There is a \$20.00 charge for the ARRL "Now You're Talking" text book for those who do not already have the current edition (Fifth Edition).

Classes are open to all ages, and CVARC is proud to report that our graduates include 7 year old children and 84 year old adults. There are no age limits imposed by the FCC on the Amateur Radio license, and both men and women participate in the magic of radio.

Whether you are interested in distant radio contacts with other amateurs around the world, or just want to have the license and a radio for emergency preparedness the Technician license is your entry to the world or your local neighborhood. Call Karl Moody at (805) 523-0622 now for information on the next class. This Instructor will be glad to answer most questions you may have and will be pleased to pre-register

you in the next available class. Act now, before all coming classes are filled.

License Examinations On October 9, 2005

By Jeff Reinhardt, AA6JR

CVARC hosts FCC License Examinations at 8:30 AM on the second Sunday of even numbered months at the Ventura East County Sheriff Station on Olsen Rd. (near the Reagan Library). CVARC conducts exams for all license classes. Exam candidates must bring a form of government issued photo I.D., the original AND a photocopy of any existing license or Certificate of Exam Element Completion, a Social Security (or government issued Taxpayer I.D.) number, and \$14 ARRL VE Exam fee (cash is preferred). No advance reservation is necessary, walk-ins are welcome. Advance notice is needed for special circumstances, such as reading the exam to sight-impaired candidates. If you have any questions, contact CVARC VE Coordinator Jeff Reinhardt at 818-706-3853.

Study Enables HF Net Performance to be Predicted

By Ken Larson, KJ6RZ

The California Emergency Services Net (CESN) is a major element in California's disaster preparedness. The net meets every Wednesday morning at 10 AM on 40 meters (7.230 MHz). 60 emergency communication stations from all over the state regularly check in each week. The stations include Emergency Operation Centers (EOCs), state health facilities, the California Highway Patrol (CHP), numerous Caltrans sites, municipal utility districts, Army, Navy, and Air Force MARS locations, NASA Ames Research, National Weather Service, and the Nevada State Division of Emergency Management. Checking into the net is strictly limited to amateur radio emergency stations located at government and approved agency facilities.

Last December we applied for and were granted permission for the East County Sheriff's Station (ECSS) to become a member of the net. We check into the net each week from our ARES/RACES radio room at ECSS. Our tactical call sign on the net is Ventura County EOC. As a condition for becoming a member we were requested to conduct a 4 month study to determine how well we could receive the other stations checking into the net. The net uses a 6 level (0 to 5) Circuit Merit (CM) reporting structure in which CM-5 is perfect reception, CM-3 is the minimal level for acceptable communications, and CM-0 means that the station can not be heard. Bruce Elbert, K6ZB, and I began collecting data in January and are now into our 8th month of what has turned into a long term study of HF Regional Communications.

We have considerably expanded the study beyond its original intent. In addition to recording how well we receive each of the station checking into the net, we also record how well each station reports receiving net control and how well net control receives them. Net control is located at Patton Hospital in San Bernardino. Without this additional information, our records of how well we received each station would be of limited use. What we really want to know is how well we received each station relative to net control. If we receive Caltrans San Diego poorly and net control does as well, then we know that the

problem is most likely poor band conditions. However, if we receive Caltrans San Diego well but net control does not, then perhaps our location and antenna configuration puts us in a favored position to receive San Diego. This information is very valuable to net control during an actual emergency since it allows them to designate key locations as relay stations ensuring that the net is totally connected.

Bruce and I have taken the study a step further by recording the condition of the Ionosphere each week at net time. This information is readily available on the internet. The information that we collect consists of the 10.7cm Solar Flux, Boulder A Index, Boulder K Index, X-ray Flux from the GOES earth satellites, the Ionosphere Critical Frequency over California determined by government radio sounders (in particular for us the one located at Vandenberg AFB), estimated F2 Layer height, solar activity reported by NOAA, geomagnetic field analysis, and any abnormal D Level absorption. In addition, we download the Wednesday image of the Sun showing where the sunspots are located on the Sun's photosphere. This image is needed to understand the NOAA solar activity reports. We also record the signal strengths of WWV (Boulder, CO) and WWVH (Kauai) on 2.5, 5.0, 10.0, 15.0, and 20.0 MHz.

Bruce and I have learned a great deal about regional communications by comparing the Ionospheric data with the Circuit Merit levels reported on the net. Those of us in the California Emergency Services Southern Region (from Bishop and San Luis Obispo south to San Diego) rely on Near Vertical Incident Skywave (NVIS) propagation to communicate with net control in San Bernardino. NVIS is very sensitive to critical frequency. We have learned that a critical frequency of 7.0 MHz and higher, see Figure 1, provides excellent communications among Southern Region stations and with net control. However, communications within the Southern Region and with net control is very difficult, if not impossible, if the critical frequency is below about 6.0 MHz. In contrast, communications between the Southern Region and the Tahoe and Burney relay stations in Northern California is good for critical frequencies down to about 4.5 MHz. So if the critical frequency is too low to communicate directly with net control, we can still communicate via the Tahoe relay station. Through our study we have become quite good at accurately predicting prior to the net when direct communications between Southern Region stations and net control will be possible and when the Tahoe or Burney relay stations will be needed.

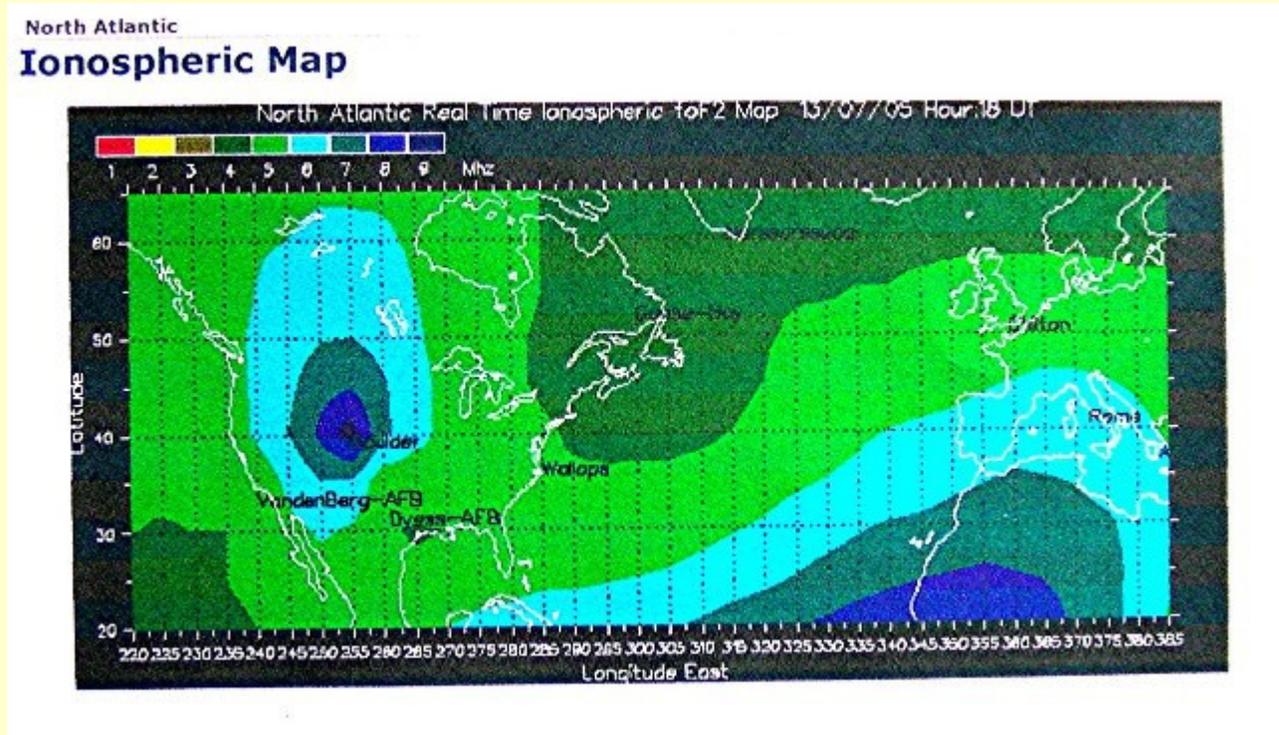
Communications between the Northern California stations and net control in San Bernardino can be severely impacted if heavy D Layer absorption occurs. Predicting D Layer absorption is more difficult than the critical frequency analysis. We have found that one good indicator of D Layer absorption is the 5.0 MHz WWV signal from Boulder, CO. If we can clearly hear WWV prior to the net then we know that all is well and net control should be able to communicate with the Northern California Stations. However, if we can not hear WWV on 5.0 MHz then D Layer absorption is probably high meaning that net control may have trouble communicating with Northern California.

One cause of severe D Layer absorption is a solar flare. The X-ray Flux measured by the GOES satellites provides a direct indication of solar flare activity. The normal X-ray Flux has been running in the A and B bands of the chart shown in Figure 2. A sharp spike into the C, M, or X bands means that a solar flare is occurring. A large flare, Figure 2, occurred on July 13 at about 1430 UTC and was still at a level of C9.0 at net time (1700 UTC). Most flares last for 30 minutes or less. This one lasted considerably longer. Figure 3 shows that the flare caused severe D Layer absorption over most of North and Central America with the "epicenter" over Mexico. The epicenter, the point on the Earth where the effects of the flare are most strongly felt, is the location where the Sun is directly overhead at the time of the flare. The flare produced a major disruption of the net. Circuit Merit reports from all over California were mostly in the 0 to 2 range, unacceptable for reliable communications. The comment from Tahoe Relay was "Very unusual morning, best range is 100 miles". While it was unusual, it was not a mystery. We were being hit with a solar flare. Armed with the GOES X-ray Flux data, Bruce and I knew what was happening and had an idea of how long it would last. In an emergency situation this type of information would be critical.

The web sites for the Ionospheric data that we are using are listed in the links section of the CVARC web site. To access the Ionospheric data go to www.cvarc.org, click on the Links tab and scan down the links

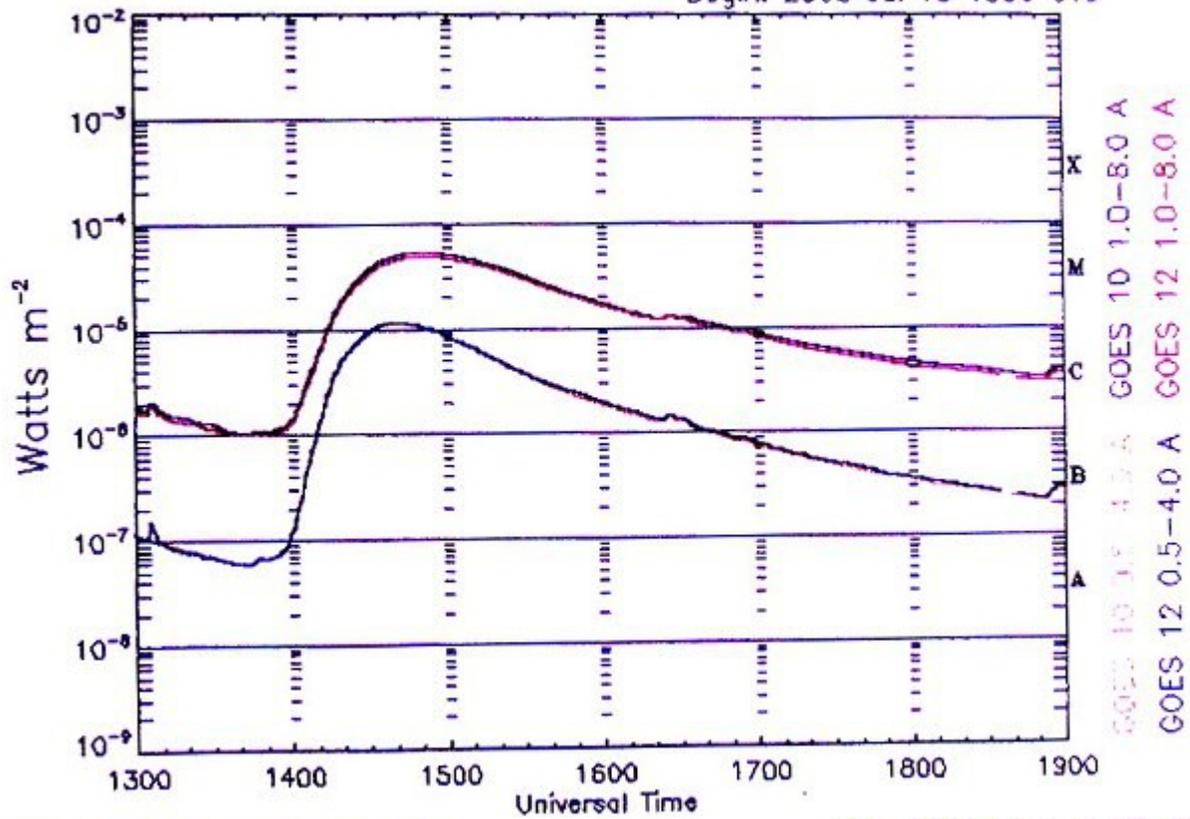
list to the Ionosphere section.

This has been a very exciting project which we plan to continue well into the future. Understanding what the Ionospheric conditions are, why they are that way, and what to do about it to achieve successful HF communication is a very gratifying feeling. We would like to get more radio operators involved in the project. If you have an interest in learning more about HF Ionospheric communications, and are available Wednesday mornings from 9:30 to 10:30 AM, talk to either Bruce or myself at the CVARC club meeting. We would love to have you join us Wednesday mornings at the East County Sheriff's Station.



GOES Xray Flux (1 minute data)

Begin: 2005 Jul 13 1300 UTC



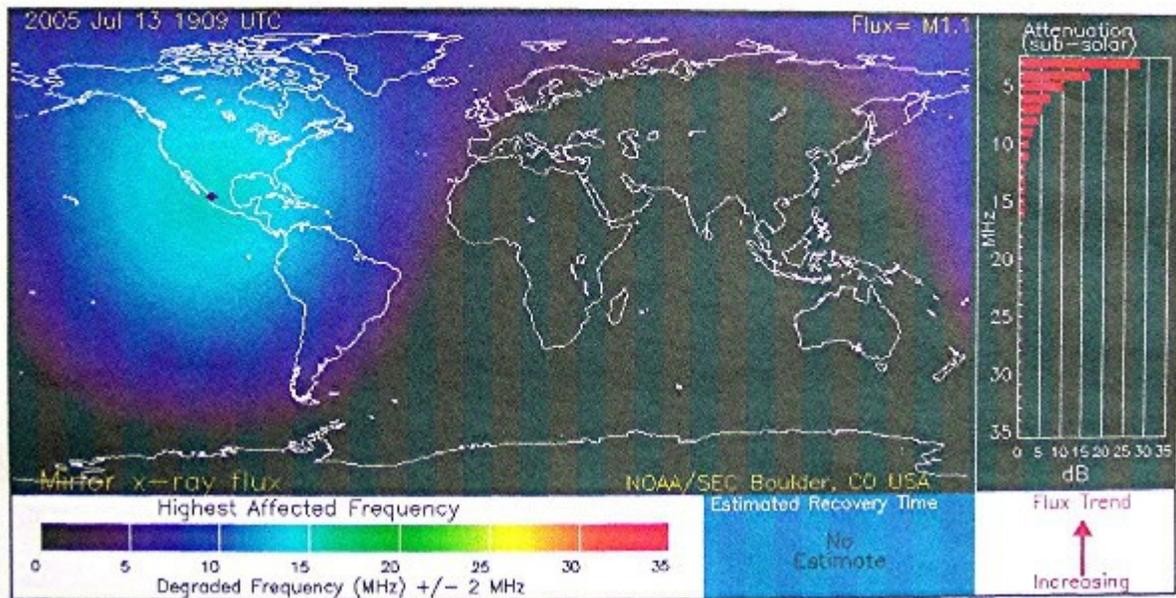
Updated 2005 Jul 13 1900 UTC

NOAA/SEC Boulder, CO USA

D-Region Absorption Prediction

Presented by the NOAA/Space Environment Center

Updated: 2005 Jul 13 1909 UTC Current Xray Flux: M1.1



Radio Awards: The CQ IDX Award for VOIP Contacts

From Rob Hanson, W6RH

CQ Amateur Radio magazine has announced the introduction of the first ever award program for contacts made using Voice Over IP technology. Called the CQ IDX Award, the program recognizes confirmed contacts with 25 to 100 different countries made using remote bases or repeaters linked with Voice over Internet Protocol networks, such as IRLP or Echolink.

According to CQ, the award is aimed at developing a DX'ing mindset among newer hams. CQ DX Awards Manager Billy Williams, N4UF, notes that there is now a blurring of the line between wired and wireless technology. Also, that this has already reached amateur radio in several ways.

Williams points out the use of the Internet to collect and distribute DX spotting reports, propagation data and location information as three of the most popular. He also notes the rising interest in using the web to link existing VHF and UHF repeaters over great distances, and using the Internet to access an High Frequency remote base stations away from an operators current location. It is these last two on which the CQ IDX Award will focus on.

CQ does say that at least one end of each contact must be made using radio to count for the I-D-X award. Computer-to-computer contacts, while possible on such systems as Echolink, will not be considered as valid for this award program.

CQ adds that this is the third and final piece of its three-part "Waking Up DXing" program designed to encourage more DX activity among ham radio operators. More information will soon be on-line at www.cq-amateur-radio.com .

VE Exam News

From Greg Lane, K7SDW

Congratulations to the following people who took the VE exams on Sunday August 14, 2005

Hugh Bosma	KF6HHS	CSCE Element 3
Christopher Elliott	KG6YZP	Upgrade to General
Todd Starks	KG6TEG	Upgrade to Extra

Welcome to all the following new hams who will soon receive their Technician Call Signs:

Anthony Giles

Jason T. Holland

Randy Pixley

Hilde Oliver

Brett Oliver

Thanks to my VE Staff

Ken, KJ6RZ

Frank, KA6BPA

Noel, K6NVS

Thanks to Jeff, AA6JR, for letting me host the August VE session. As a reminder in October, I will need VE volunteers. Our next exams will be held at the East County Sheriff's Station on October 9th.

CVARC Trailer For Sale

The CVARC Board has decided to sell the small CVARC € Camping Trailer † and focus attention on maintaining the CVARC Comm Van since the trailer is rarely used. Sealed bids for the trailer will be accepted from CVARC members through August 11th. Minimum bid is \$150. All bids will be opened at the August 11 CVARC Club Meeting. If no bids are received from the general membership, then verbal bids will be accepted. If no bids are received then hopefully we will find a home for the trailer in the recycler, or if all else fails, at the home for old trailers. The condition of the trailer is posted on the web site. It was used as the 20 CW station this year for Field Day.

The trailer does not have any 12 VDC batteries installed and the generator has been removed. There are two additional spare tires, making 3 total, with one attached to the trailer. The propane tank will remain unless the owner does not want the tank.

The trailer make is a 1976 EVELA, License no. 1GL4669, issued in December with a license cost of approximately \$33.00 per year.

The new owner will be responsible for the cost of title transfer.



Event Calendar 2005

Date	Event	Comments
July 3	Moorpark Fireworks	Support for Moorpark's 3rd of July Fireworks
July 12	Technician Class	CVARC Technician License Class Begins
July 14	CVARC Club Meeting	General CVARC Club meeting
Aug. 11	CVARC Club Meeting	General CVARC Club meeting
Aug. 14	FCC License Exam	Begins at 8:30 am at East County Sheriff's Station
Sept. 8	CVARC Club Meeting	General CVARC Club meeting
Sept. 27	Technician Class	CVARC Technician License Class (TENTATIVE)
Oct 9	FCC License Exam	Begins at 8:30 am at East County Sheriff's Station

Oct. 13	CVARC Club Meeting	General CVARC Club meeting
Nov 10	CVARC Club Meeting	General CVARC Club meeting

Radio Amateur Civil Emergency Service

Ventura County Area 2 R.A.C.E.S. members are encouraged to check in every Tuesday night at 7:00 pm on the Area 2 Check-in Net. Specific ARES/RACES times and frequencies are as follows:

ARES/RACES Times And Frequencies

Area	Time	Mode	Frequency	PI	Repeater
County	7:30-8 pm	Voice	146.880 -	127.3	WA6ZTT
County	7:30-8 pm	Voice	224.020 -	127.3	WB6ZTR
County	Before 6:30 pm	Packet	145.710	No pl	Hospital Net
County	RACES Simplex	Voice	147.570	No pl	_____
Area 1	7:00-7:30 pm	Voice	147.930 -	127.3	WB6WEY
Area 2	7:00-7:30 pm	Voice	147.885 -	127.3	Bozo - N6JMI
Area 2	Simplex	Voice	147.555	No pl	_____
Area 2	Backup Repeater	Voice	146.850 -	94.8	Grissom - K6AER
Area 2	Amgen Repeater	Voice	449.440 -	131.8	KE6SWS
Area 3	7:15-7:30 pm	Voice	147.915 -	127.3	WB6ZTQ
Area 4	7:15-7:30 pm	Voice	146.970 -	127.3	WB6YQN
Area 5	7:00-7:30 pm	Voice	145.400 -	No pl	N6FL
Area 6	7:00-7:30 pm	Voice	147.975 -	127.3	N6AHI
Area 7	7:00-7:30 pm	Voice	146.985 -	127.3	WB6ZTX

Area 8	7:00-7:30 pm	Voice	145.280 -	100	KN6OK
6 Meter	6:45-7:00 pm	Voice	052.980 -	082.5	K6SMR

Net Control operations for the weekly ARES/RACES Area 2 check-in is run from the ARES/RACES communications center at East County Sheriff Station on Olsen Road each Tuesday at 7:00 PM. Visitors are welcome and have the opportunity to operate the station equipment. Contact Jerry Goldman KC6SO (805) 241-9187 if you plan to attend. RACES members, should remember that their RACES card is issued for only two years. When your card is due to expire call Jackie (805) 646-2551 at the Office of Emergency Services in Ventura to renew your card. For questions concerning ARES/RACES call Area 2 Emergency Coordinator Ken Larson KJ6RZ (805) 495-9435 or go to the ARES/RACES section of the CVARC website at <http://www.cvarc.org>.

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ARRL Southwestern Division Vice Director:	Ned Stearns, AA7A	
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ARRL VUCC (VHF/UHF Century Club) Certification:	Peter Heins, N6ZE	(805)496-1315 n6ze@aol.com

The Conejo Valley Amateur Radio Club is an ARRL affiliated Special Service Club. Meetings are held on the second Thursday of each month, unless otherwise noted. Meeting location is at the Elks Lodge, 158 Conejo School Rd., Thousand Oaks, CA. Meetings start at 7:30 pm. with a pre-meeting social and technical assistance session, for those who are interested at 7:15 pm. Meetings are open to the public, and members are encouraged to bring their friends.

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Editors: Ken and Paula Larson