



Squelch Tales

A Bi-Monthly Publication By The San Diego Repeater Association, Inc.

March/April 2011

Ahead in Squelch Tales we present the third in a series of articles on SANDRA repeater sites, this month we profile Lyons Peak. Lyons Peak is one of the smaller sites with just one 2 meter repeater, but it is one of the busiest of SANDRA's repeaters and has an interesting history.

Sandra Meetings, the December and March membership meetings are reviewed along with Board of Director minutes for January, February and April. The March meeting featured Robert TODD's (KJ6RET) presentation on solar energy and emergency preparedness. Robert is currently making presentations at clubs in the area, so if you missed this very interesting presentation you should be able to catch it at another venue. The December meeting was SANDRA's annual holiday party and potluck.

This issue of Squelch Tales inaugurates an Errata Section so that Squelch Tales can correct mistakes made in prior issues. Anyone who finds something in Squelch Tales that they think is not correct, please tell us about it at squelchtales@wb6wlv.com. Actually we would like to hear from you with any comments good, bad or indifferent. All comments will be addressed in the next issue of SQ.

Profile: Lyons Peak

This issue of Squelch Tales profiles Lyons Peak, one of the smaller sites with a single 2 meter repeater on the 146.265 (output)/146.865 (input) frequency pair. However, Lyons Peak is one of the most used of SANDRA's repeaters being particularly popular with the morning and afternoon commute crowd. Early in the morning During the commute hours informal groups can be heard chatting and discussing the day's events. This author has seen ham operator's personal (not professional) business cards with the Lyons Peak repeater frequencies and pl listed on it. SANDRA officers can usually be found using the repeater most mornings. Respondents to SANDRA's 2010 survey on repeater use ranked Lyons Peak tied for second place with the Mt. Laguna 2 meter repeater when it came to usage. Lyons Peak is a 3200 foot peak located approximately 6 miles east of Jamul with an excellent view of the San Diego County population centers. The Lyons site was first established in May 1980 as an interim home for the Mt. Otay 146.640 repeater. In March 1980 SANDRA removed the 146.640 repeater from its original Otay site but had not yet completed building the current Otay location. In March 1980 the Otay repeater was placed into a temporary site on Mt Helix until then president Wayne Bamford and Jim Allen (W6OGC) were able to arrange with the California Department of Forestry to locate a repeater on Lyons Peak. The Motorola J53MPY was moved



from its temporary Mt. Helix location to Lyons in May 1980 and operated on the 146.640/146.040 frequency pair until May of 1981 when the new SANDRA Otay site was ready for occupancy. A new G.E Mastr II was installed on Otay and the J53MPY was re-channelled to 146.265/146.865 and remained on Lyons Peak. The original antenna mount was a fence post drilled into rock approximately 100 feet above the repeater building on which was mounted a Station Master. In the early 1990's CDF rebuilt the site with new buildings and a commercial tower. SANDRA retained their rock mounted antenna. The site was upgraded again in 2005 with a new building and a new tower. At

December Holiday Celebration

The December meeting is traditionally SANDRA's largest gathering. The meeting is a pot luck dinner and celebration of the year past in the best winter celebration tradition. The array of pot luck dishes is widely varied with something to satisfy the most finicky of eaters. Most guests make several trips through the line just to be able to taste as much of the epicurean delight as possible. Another of the attractions of the December meeting is the large array of door prizes that are raffled off during the course of the evening, which this year included two handheld transceivers. Other prizes awarded included digital multimeters, a soldering station, LED flashlights, HRO Gift Certificates, Sizzler Gift Certificates, Home Town Buffet Gift Certificate, many ARRL books including the Handbook, Antenna Manual and a Repeater Location Guide and the poinsettia table decorations.

The pictures of this meeting were lost after the camera was dunked into a container of water containing uric acid therefore the story will be illustrated with words not pictures. The Holiday Celebration is held at the County Education Facility on Linda Vista Road in rooms marked 401 and 402 which are really a single large room that can be divided into two by drawing a portable wall across the middle. With the room opened into a single cavernous space it can easily seat one to two hundred people. The room is supplied with eight foot folding tables that were arranged by SANDRA members in transverse rows across the room with one central isle and an isle on both sides. The tables were covered with holiday decorated, paper table cloths and pots poinsettias.

There was a row of tables that extended across the back of the room and along one wall across the side isle at the end of the transverse rows. On these tables is placed the food, both that supplied by SANDRA and the varied pot luck dishes brought by the guests. The guest provided fare covered the gamut from Filipino pansit, lumpia, roast duck over fried rice, all manner of Mexican dishes to the American holiday fare of turkey, beef, ham, mashed potatoes, yams and many different salads. Deserts were arranged along the long wall and were of a similar variety including pies cakes and cookies.

As guests filed into the room through the door at one end, they lined up to receive a raffle ticket. Each guest was presented with one raffle ticket and could purchase as many additional tickets as they liked for a dollar each. Simultaneously, other guests were placing their pot luck fare on the food tables and yet others were rearranging food to make space for the new arrivals.

Once the commotion ceased and people found seats, President Jason Lansky, NF6E, welcomed everyone and invited them to begin eating. The meal proceeded as would be expected for a large group of people who were simultaneously eating and talking, there was a pervasive din punctuated with laughter as people talked and ate. The meal took longer than normal as many went through the food line more than once to try as many of the dishes as possible. At the end, almost every dish was empty, certainly a testimony to quality of the cooks and the tastiness of the fare.

As most people were having desert, or maybe a fourth trip to taste whatever dish might have something left on the plate, President Jason Lansky began the meeting. Since this meeting marks the end of the term for officers and the Board of Directors, Jason introduced each of the sitting BOD followed by each of the incoming BOD, thanking all of them for their service. Jason was finishing his term as president and passing the gavel to John Austen, K6RLV. He expressed his gratification at being able to serve SANDRA and his regret at having to leave the position.

The last event of the evening was the drawing for the array of prizes to be given away. There were truly a large number of prizes, as was mentioned above, and it took the better part of an hour to draw the tickets and award the prizes. The raffle, as all raffles, became boisterous at times as groups of people in the room amassed multiple prizes. The evening ended at nearly 10 pm, everyone had a good time, good fellowship and good food. What more could be asked of a celebration. {SQ}.



Lyons Peak continued:

this time the repeater was connected to a common DB220 receive antenna that served the entire site and a DB224 on the tower was used for transmitting. The J53MPY was eventually replaced with a Motorola MSR 2000. Currently Lyons has two MSR 2000's in failover



mode so that if one goes down the other can be substituted. This is important because there is very limited access to the site to make repairs and alterations. The failover installation is the latest upgrade to Lyons Peak and was made necessary by several failures last year that had the repeater down for extended periods while arrangements were being made to access the site. As with most mountain tops, it is subject to both weather and fire. Lyons has survived several fires, the most notable being the fire of 2007 that burned right through the site destroying coax feed lines. Attached are photos that show the site before and after the fire past through. The Lyons Peak repeater is currently as robust as any repeater site in the county which is welcome news to the many users. As is true with all SANDRA repeaters, this site is maintained by SANDRA volunteers and there is always space for additional volunteers, please consider volunteering your time to help maintain this valuable community resource. {SQ}.

March 2011 Membership Meeting

The March SANDRA membership meeting featured Robert Todd's (KJ6RET) presentation Solar Energy & Emergency Preparedness. Robert is an aerospace software engineer that has become heavily involved in solar energy powered radio and emergency preparedness. In typical aerospace engineer fashion, Robert did a through investigation of the state of solar energy, the state of the current components and manufactures and began designing a series of Ham Radio systems. He also provides solar equipment and solar powered radios to other hams via sales through his web site <http://www.sleepindarkness.com/>.



Robert Todd K6RET discussing solar panel design.

fabricated from high quality silicon, making them the most expensive. On a bright day, the sun delivers approximately 1,000 watts per square meter, therefore, a one meter array of mono-crystalline cells will deliver 140 – 180 watts. Polycrystalline silicon panels are fabricated from cells composed of multiple pieces of silicon, can be manufactured from less expensive silicon and are therefore correspondingly cheaper than mono-crystalline arrays.

Robert discussed the calculations that go into estimating the size of solar panels required to support the current demand for a system based on the available sunlight (full sun, cloudy day), sun angle, power requirements and the time it takes to recharge a battery. Robert identified the various types of Solar cells, Mono-crystalline, Polycrystalline, Amorphous and String Ribbon. Mono-crystalline cells have an efficiency of 14-18% and are fabricated from a single pieces of silicone piece and therefore must be

Polycrystalline panels deliver 12% - 14% efficiency (120-140 watts/meter in full sun) thus making them more cost effective than mono-crystalline panels. Amorphous panels are the least efficient, returning approximately 4%-6% efficiency but they are cheap to produce and can be made in very large sizes. However, because it take three to four times the surface area of amorphous panels to produce an amount equivalent to a mono-crystalline panel, they require very large installations to be effective. The bigger short coming of amorphous panels is that because they are produced in large sizes, a failure requires the replacement of the

March Meeting Continued

entire panel. String Ribbon Panels were mentioned as a little cheaper variant of poly-crystalline panels.

Robert discussed the performance of various battery designs and their relative utility in conjunction solar systems. Batteries meant for starting cars and engines give high current for short times but will overheat and fail when used for longer periods. Deep cycle batteries are fabricated with thicker plates and conductors and can deliver a design current load for sustained periods.



Back pack solar panel

Batteries for all but the smallest of systems use lead acid battery technology which may come as gel cell designs, flooded cell designs or Absorbed Glass Mat (AGM) designs. AGM batteries have low internal resistance, producing little heat during charge-discharge cycles and have very little internal drain during storage. Because these batteries have no liquid electrolyte they are considered non-hazardous, safe and can be easily transported in the fully charged state, even by airplane.

Robert gave the example of how his solar powered cross band repeater came to the rescue during communication support of a 100 mile foot race in the Santa Ana Mountains. Robert had volunteered to provide radio support and was assigned to an aid station in Silverado Canyon. He determined very quickly after



Portable 80 watt polycrystalline panel.

arriving at the site that he could not hit any of the race designated repeaters or other aid stations from his assigned location.

The entire vicinity around the aid station was similarly isolated.

Robert had with him a solar powered 50 watt

cross band repeater which he hauled up a 10% grade to a point where it had access to the Heaps peak repeater. He set his repeater to cross-band with the repeater on one side and to simplex with a tone squelch of PL107.2 on the other. He then used a handheld to contact his repeater (the repeater repeater?) where it connected to Heaps Peak and ran all of his net communications through the setup. The repeater ran on solar power all

day and used about half of the 100 AH battery during the night, recharging the next day.

Robert has committed to a solar power life for a one year experiment that has him living in a totally solar powered trailer, complete with ham radio (HF and VHF), refrigeration, light and air heating/cooling. Now if only he could get his truck to run on solar power.

Robert gave an extremely interesting presentation with a lot of meat for SANDRA members to think about. This is certainly one way to get the 100 point emergency power bonus this Field Day. {SQ}.



50 watt solar powered repeater deployed and working.

Errata

This is a new section of Squelch Tales so we can address mistakes, errors and omissions in articles presented in previous issues as well as provide updates to previous stories. If anyone notices an error or omission in a Squelch Tales article please tell us about it so that it can be addressed. If you would like to send us any comment at all, our email address is squelchtales@wb6wlv.com and our snail mail address is SANDRA, Inc., P.O. Box 81103, San Diego, CA 92138.

The September/October issue of Squelch Tales profiled the Mount Otay repeater site. The article was largely based on the collective memory of long time SANDRA members that participated in establishing and running the site. Memory being what it is, not everything in the article was accurate. Since that article, Ed Flinn, WA6YVX, found an earlier article written by him on the Otay site that appeared in the November 1981 issue of Squelch Tales which both added additional history to the site and provided better dates than were held in memory.

The history of Otay really goes back to the early days of SANDRA's existence and nearly 14 years before the current SANDRA Otay site was built. In early 1967 a repeater consisting of a Motorola Sensicon A receiver and 60 watt Motorola 140D transmitter was set up on 146.34 (in) and 146.84 (out). The repeater was sited on Mt. Otay but the article is unclear as to where on Mt. Otay. At the time there were no cavity duplexers to isolate the transmitter from the receiver so separate antennas were installed some 1700 feet apart to prevent receiver overload. An RCA CMU-15 450 MHz repeater was also installed at this time. In the summer

of 1968 the Sensicon A receiver was replaced with a Sensicon G model. In June 1969 the output frequency was changed to 146.85 to conform with band plans. In 1972 the Southern California Repeater Association, which is the repeater coordinating group, assigned the frequency pair that is the current Otay frequencies of 146.64 (out)/ 146.04 (in). Also in 1972 the 2 meter repeater was upgraded to a Motorola B53AKB and the 450 MHz repeater to a Motorola B44AAB. Again in December 1973 the 2 meter repeater was upgraded to a Motorola J53MPY. In September 1975 both repeaters were moved to Jim Smith's Otay facility. The 450 MHz repeater was upgraded to a G.E. Mastr Pro in 1976 and the input was change to the current input of 444.5 MHz to conform to the band plan. In June 1978 a 220 MHz repeater built by JBY Electronics was added using the 224.2 (out) / 222.60 (in) frequency pair.

At this point we pick up the story as told in the September/October 2010 Squelch Tales. In June 1979 SANDRA applied to the BLM for a site lease on Mt. Otay, not in 1978 as stated in the September 2010 article. The lease came through in February 1980, not in 1979 as the September article stated. The rest of the Otay story follows as presented in the Lyons Peak article in this issue and the September/October 2010 Otay article.

In the November/December Squelch Tales we presented a picture of Meeting Chairman Ben Concepcion, N6VVV which was incorrect. A correct picture and a bio will be presented in the next issue.

SANDRA Board of Director's Meeting Minutes
Thursday, January 6, 2011

President John Austin, K6RLV called meeting to order at 7pm.

Treasurer Ken Decker, WA6OSB, gave a detailed explanation to the board of the yearly expenses and income. A discussion followed for the proposed 2011 budget.

SANDARC – There was no meeting in Dec. 2010. President K6RLV appointed Chuck Wood, WD6APP and Bob Boehme, W2IRI as SANDRA delegates for 2011.

Membership Chairman Bob Boehme, W2IRI reported that SANDRA has 269 members.

No report from Meeting Chairman, Ben Concepcion, N6VVY.

Technical Committee Chairman, John, K6RLV stated there were no hill trips in Dec. 2010.

The new antenna for Mt. Laguna has arrived. The technical committee will install it when the weather permits.

The autopatch on Sharp Hospital has new guidelines. They are on our webpage.

Unfinished Buisness – Jason Lansky reported he is currently working on the changes to the Policy & Procedure. He will advise the board when he is done.

New Business - Treasurer Ken Decker, WA6OSB is working on the insurance for the club. He is to report back to the board at the Feb. 2011 board meeting.

President, K6RLV named the following committees.

Membership Committee – Bob Boehme, W2IRI

Meeting Chairman – Ben Concepcion, N6VVY

Technical Committee – John Austin, K6RLV

Election Committee - 3 year MAL Tom Myrick, N6JOJ

2 year MAL Chuck Wood, WD6APP – co-chair

Corporate Compliance Committee – Barbie Flinn, WA6URS

Ken Decker, WA6OSB – co-chair

Advisory Director – Alex Groza, WB6DTR - Administrative and Logistics Support

Motion **#010611-1** was made by WD6APP to adjourn the meeting at 8pm. WA6OSB seconded the motion. The motion carried.

Respectfully submitted,

Barbie Flinn, WA6URS

SANDRA Secretary

SANDRA Board of Director's Meeting Minutes Thursday, February 3, 2011

President John Austin, K6RLV called meeting to order at 7pm.

All board members were present with the exception of Barbie, WA6URS (excused) and Ben, N6VVY. No visitors attended this meeting.

The Board Meeting Minutes – from January 6, 2011, as submitted by Secretary Barbie, WA6URS, were accepted as submitted.

The Treasurers' Report – was accepted as submitted by Ken WA6OSB, with no changes: Account Balances – Checking \$4,159.22, Savings \$13,956.27. No correspondence or bills.

SANDARC – The SANDARC meeting had no business that was of any significance to SANDRA. The three year audit was about to begin.

Membership Committee – Chairman Bob Boehme, W2IRI reported that SANDRA has a total of 268 members.

Meeting Chair – No report

Technical Committee Chairman, John, K6RLV stated there were no changes to the technical committee report except that the Solar (Kearny Mesa) repeater seems to be off the air.

Unfinished Buisness – Ken, WA6OSB reported that he has still had no success finding liability insurance for SANDRA meetings that the club can afford.

Bayard, K6GAO agreed to re-contact the San Diego County Board of Education and see if the club can get a waiver for the insurance requirement.

New Business – President, John K6RLV named Jason, NF6E as an Advisory Director in charge of IT / Webmaster and Club Historian.

Secretary Barbie Flynn, WA6URS will be excused from her duties as she recovers from a medical procedure

The membership meeting on March 3, 2011 is to include a presentation on Solar Power.

Motion **#020311-1** was made by N6JOJ to adjourn the meeting at 740 pm. WD6APP seconded the motion. The motion carried.

Respectfully submitted,

John Austin, K6RLV

Acting SANDRA Secretary

SANDRA Board of Director's Meeting Minutes

Thursday, February 7, 2011

President John Austin, K6RLV called meeting to order at 7pm.

All board members were present with the exception of Barbie, WA6URS (excused) and Ben, N6VVY. Herb, KF6ROX was also present.

The Board Meeting Minutes – The last meeting was a membership meeting and there were no minutes nor was there any club business handled.

The Treasurers' Report – was accepted as submitted by Ken WA6OSB, with no changes: Account Balances – Checking \$5,358.11, Savings \$13,959.66. No correspondence or bills.

SANDARC – The SANDARC delegates presented that SANDARC is about to have elections. The contested positions are Secretary and Vice Chair. After discussion, the delegates were directed to vote for the incumbents.

Membership Committee – Chairman Bob Boehme, W2IRI reported that SANDRA has a total of 264 members.

Meeting Chair – No report

Technical Committee Chairman, John, K6RLV stated there were no changes to the technical committee report.

Unfinished Business – Bayard, K6GAO announced that he was able to book rooms at the County Board of Education for meetings through December, 2011.

New Business – Chuck, WD6APP made a presentation for changes to the Otay alarm.

Motion 2011-04-01 by Tom, N6JOJ, 2nd by Stogie, AJ6AX – to allow Sentry Alarm to make changes to Otay alarm system. Discussed. Motion passed.

John, K6RLV made a presentation for changes to the membership drive contest. After discussion the contest rules were changed to:

Member that signs up 20 new members by December 2011 gets a prize of a new dual band radio.

Member that signs up 10 new members by December 2011 gets a \$50 gift certificate from HRO.

Contest to start immediately and run through December 1, 2011

A new member can be an expired member for two or more years

Discussion for ideas for Squelch Tails

John, K6RLV brought up comments made by users of the Otay 146.64 repeater, complaining of reduced transmitter coverage lately. Discussion by the board as to causes and remedies.

Motion 2011-04-02 by Tom, N6JOJ, 2nd by Stogie, AJ6AX to allow the purchase of a new 2M antenna for the Otay 146.64 repeater for an amount not to exceed \$250.00. Discussed. Motion passed

The next board meeting is set for May 5, 2011.

Motion #2011-04-03 was made by Chuck, WD6APP, 2nd by Bayard, K6GAO to adjourn the meeting at 750 pm. No discussion. Motion passed.

Respectfully submitted,
John Austin, K6RLV
Acting SANDRA Secretary



Squelch Tales

SANDRA, Incorporated
San Diego Repeater Association
P.O. Box 81103
San Diego, CA 92138

SANDRA NETS

Sunday 8:00 P.M. Mt. Otay Repeater
Wednesday 7:30 P.M. Mt. Laguna Repeater

GUIDELINES SUMMARY

SANDRA, Inc. operates their repeaters for service in the San Diego area. The policy of the organization is that the repeaters are available for all licensed amateur radio operators to use so long as applicable rules and regulations are observed, whether members of SANDRA or not.

SQUELCH TALES

SQUELCH TALES is published bi-monthly by the San Diego Repeater Association (SANDRA, Inc.), a corporation dedicated to the promotion of amateur radio. Distribution is free to members.

Newsletter exchanges are desired and solicited. The right to edit material with regard to format, suitability and style is reserved. Ads are \$50 per full

page, \$27 per half page and \$15 per quarter page. Business cards are \$8. Artwork is due by the first week of the month to the P.O. box. Liability for errors in copy is limited to the printing of a correction in the subsequent issue. Permission is hereby granted to reprint items from SQUELCH TALES in other amateur radio newsletters, provided credit is given to SQUELCH TALES. Opinions or editorials are not necessarily the position of the Board or the organization of SANDRA, Inc.

SANDRA MEMBERSHIP & BOARD MEETING

The SANDRA membership meets the first Thursday in the Months of March, June, September and December. Meetings start at 7:00 P.M. and are located at the San Diego County Education Center, 6401 Linda Vista Road, San Diego. Board meetings take place immediately following each membership meeting and additional Board meetings take place in January, February, May, July, October and November. All SANDRA members are encouraged to attend.

SANDRA Repeaters

Callsign	Location	Input	Output	Callsign	Location	Input	Output
WB6WLV	Mt. Otay	146.040	146.640	WB6WLV	Mt. Laguna	444.200	449.200
WB6WLV	Mt. Otay	222.600	224.200	K6GAO	Hi-Pass	144.680	145.280
WB6WLV	Mt. Otay	444.500	449.500	W6SS	Lyon's Peak	146.865	146.265
WB6WLV	Mt. Otay	1270.300	1282.300	K6AIL	Sharp Hospital	147.285	147.885
WB6WLV	Mt. Laguna	147.750	147.150	WB6WLV	San Diego	442.320	447.320
WB6WLV	Mt. Laguna	222.460	224.060				

All SANDRA repeaters use PL 107.2