

# ***Squelch Tales***

A Publication of The San Diego Repeater Association, Inc.  
September/October 2014

## ***Ahead in Squelch Tales***

The July August issue of *Squelch Tales* offered a preview of the **ARRL Southwestern Division Convention** which took place this past September 12 – 14, 2014. This issue offers a followup on the activities at the convention as viewed by the *SQ* staff.

The **November SANDRA membership meeting** features Andre Hansen's, K6AH, presentation on Broad Band Hamnet, a self configuring, RF data network. This was also the subject of two presentations at the ARRL Southwestern Division Convention held last month.

December is time for the **SANDRA Holiday Party**, Mark you calendars for December 4th for another fabulous SANDRA party with food, prizes and good will.

**SANDRA meeting minutes.** SANDRA BOD meeting minutes.

**Errata, mistakes, updates and shorts** to previous issues of *Squelch Tales*.

## **ARRL Southwestern Division Convention**

**San Diego – September 12 -14, 2014**

The July/August issue of *Squelch Tales* offered a preview of the ARRL Southwestern Division Convention held this past September 12-14 at the Four Points Sheraton on Kearny Mesa. This issue takes a look at some of the highlights of the convention and some of the excellent presentations that were given during the three day meeting. Having the convention in our own backyard only comes around every four to five years which is a real benefit because local hams have the opportunity take part without the need of traveling and staying at a hotel to attend more than a single day. The luminaries of amateur radio are present and give their knowledge for the price of admission. The convention was well presented and well attended, with accolades due to the convention committee for a job well done.

This convention had the privileged of having the keynote address delivered by ARRL's Ward Silver (N0AX) at the Saturday night banquet. Ward writes several columns for QST and has written a long list of books on many amateur radio subjects. The Convention Banquet was completely sold out and Ward's address was truly one of the convention highlights. No one in attendance will forget the evening.

Another convention highlight was the Flea Market held between 4:00 am and 12:00 noon on Saturday morning. The Flea market sported a wide range of older equipment, of particular note was an older HP spectrum analyzer for \$150. This flea market event saw a number of vendors from out of the area which exposed local hams to vendors they don't regularly see at local swap meets. The reverse is also true that visitors from out of the area became exposed to our local swap meet participants.

The exhibit area was well stocked with vendors and the opportunity to talk to manufacturers directly. Flex Radio, Elecraft, RF Parts and Diamond Antenna all had very knowledgeable people that would take the time to explain specifications and differences in their products along with the technical details of their designs. The big three manufacturers were there with impressive displays of their equipment offerings. Smaller manufacturers and distributors were present and many hams took advantage of the convention pricing to make purchases.

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The heart of the convention was the technical program containing many fine presentations that ran all through the three day meeting. The theme of the convention was *Diaster Preparedness*, and there were many fine talks aimed at emergency communications. There was another unofficial theme that ran through the three days of talks which was *digital communications*; all aspects of combining digital processing with radio communications. Following are a few of the various presentations that illustrate the many ways amateur radio is being practiced by today's hams:

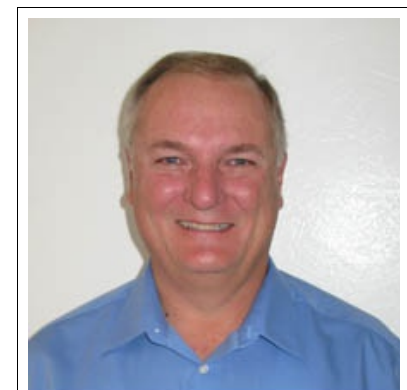
**Bruce Perens, K6BP**, presented two talks on a modular, open source (both hardware and software) system for radio communications. The *HT of the Future* consists of modularly constructed hardware based on field programmable gate arrays (FPGA's) on which can be loaded any number of applications to perform the desired functions. Bruce envisions the HT similar to a cell phone, a basic RF deck with modules for both modulation and digitization of voice (codec's) which are loaded as software applications. To use the system to communicate with DSTAR equipment, load the GMSK modulation application and the AMBE codec to code and decode the analog input. To communicate with a Yeasu Fusion systems, load a C4FM modulation module and again the AMBE codec and be online as Fusion. There are also codec's, such as CODEC2, which are completely open source and available for use without the need to pay for their use.



Bruce Perens, K6BP

Bruce points out the AMBE is a proprietary CODEC of Digital Voice Systems, Inc. (DVSI) and as such falls into a gray area of acceptability for ham radio use which doesn't allow unpublished, proprietary encryption and in fact DSTAR is not legal to be used by ham radio operators in France. One assumes that because The FCC approved both DSTAR and Fusion in the US, that it is legal in the US. AMBE is normally imbedded on a chip, however, the chip does not add speed to coding or decoding and it can also be done in software, the only impediments being the intellectual property held by DVSI. DSD is a software DSTAR decoder that has been developed by an anonymous group and can be found on the internet, however, there are legal reasons not to use it. Bruce's presentation and other presentations on the subject are available at <http://algoram.com>.

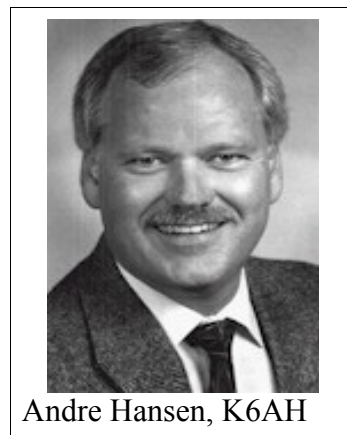
**Gene Swiech, WB9COY**, and **Andre Hansen, K6AH**, gave talks on *Broadband Hamnet a self configuring, RF data network*, presenting the concepts and design of this digital network as a system presentation followed by a how-to with demonstration as the second talk. This approach uses high power WiFi routers and highly directional antennas running on channels that overlap the 2.4 and 5.0 GHz amateur bands to develop a network of nodes that automatically maintain routing tables of what nodes are attached, the services offered by each node and the fastest path between any set of nodes. Small computers are attached at each node that run open source applications such as voip for voice communications, email servers or any other non-encrypted data service. Each service is registered and advertised to all other nodes. Although the network is capable of interoperating with the internet, it is not connected because the majority of internet traffic is encrypted (including email) which would not be legal for amateur operations. All of this equipment is power efficient and could be run from batteries for extended periods and is amenable for emergency communications. [Andre Hansen will make this presentation at the SANDRA meeting on November 6, see announcement elsewhere in this issue –ED].



Gene Swiech, WB9COY

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**Gene Swiech, WB9COY**, gave a presentation that featured the Yeasu Fusion digital repeater, explaining the difference between the Fusion C4FM and the DSTAR GMSK modulation schemes, the difference is system designs and the relative merits of each. The Fusion system allows high speed data to be sent in place of voice communication. DSTAR only uses the high speed data for voice communication but allows data to be sent over a low speed ( 800 bps) stream interleaved with the voice transmission. Fusion allows images and other data files to be sent over the high speed stream. The Fusion system data speed is 9600 baud while the DSTAR is 4800 baud with the consequent difference in bandwidths.



Andre Hansen, K6AH

**Bruce Perens, K6BP**, presented *Boat Anchor 101* with the goal of assembling a complete RF lab, sufficient for generating all the data required by the FCC for type certification for \$10,000, which is not enough to purchase a single new laboratory quality test instrument. Older equipment is heavier, uses more power and runs hotter than modern equipment but they are often more robust and easier to repair. Many companies are unloading equipment from test benches that are no longer staffed.

Bruce's equipment list included two spectrum analyzers capable of measuring occupied bandwidth, adjacent channel interference and phase noise; One scope good to 1GHz with 2 mega samples per second; one signal generator good to 1 GHz with 110 dB dynamic range; and a house frequency standard. He identified pieces of test equipment for each of the specified needs that ran \$500 - \$1,000 on the auction sites like eBay for example an HP 8566A spectrum analyzer available for \$600. At that pace the workstation could be completed well within the target cost. Bruce also detailed the features and use of each instrument which became a mini-primer on the use of test equipment in radio development.

**Grant Hays, WB6OTS**, and **Kate Hutton, K6HTN**, each gave presentations on the National Traffic System (NTS) which is alive and well. NTS is no longer the haven of CW operators it once was, CW is still available and used as an adjunct to long distance communication but most traffic is passed using other modes such as voice, RTTY, AMTOR and the digital modes. The dual goals of NTS are to provide a structure that allows for efficient traffic movement and to provide training of amateur operators to handle written traffic and to participate in network communications. NTS provides both an effective communications network for use in times of emergencies and as an alternative message system when usual systems are overloaded. The modern NTS relies more on store and forward packet communications, particularly for longer distances.



Kate Hutton, K6HTN

NTS is organized into local, section, regional and area nets.

Transcontinental traffic is handled by special station that carry messages between areas. The local nets are predominately VHF nets and collect traffic from a geographic or metropolitan area. The local net traffic is passed to the section level, again frequently consisting of VHF nets, however, larger section may include CW, SSB or digital modes. Section traffic is collected within a region and then forwarded to an area net. Area traffic may be passed to a Transcontinental station or delivered directly to another region within the area as appropriate. This is also true of traffic that is destined for stations within a region or section, if it does not need to be



Grant Hays, WB6OTS

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passed to the next level for delivery. Transcontinental traffic is passed between areas primarily using store-and-forward digital stations.

NTS is always looking for more amateur operators to participate in nets. Interested hams should make themselves known to any local or section net by checking in at the end net. Interested operators may also contact their section NTS traffic manager about becoming part of the organization.

This years ARRL Southwestern Divisional Convention had many more fine presentations covering the entire spectrum of amateur operations. The convention was well attended and successful by any measure that can be applied. *Squelch Tales* salutes the convention committee for a job well done. -  
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## **November Membership Meeting**

**Andre Hansen K6AH**

### **Broadband Hamnet - a self-configuring, RF data network**

**7:00 pm, November 6, 2014**

**County Office of Education**

**6401 Linda Vista Road, Room 306**

**San Diego, CA 92111**

This presentation will provide an overview of the Broadband Hamnet (BBHN, formerly HSMM-Mesh) project, featured in the July 2013 issue of QST. Andre will highlight the technology concepts, network designs and implementation, as well as the recent, significant advances local hams have contributed toward this fast-growing emergency communications technology.

Andre Hansen, K6AH, has been a ham for forty-five years and is a frequent speaker at many of the Northern San Diego County radio clubs. A compliance project manager for Abbott Laboratories by day, he holds an Extra Class license and is a member of the ARRL. He is also a member of the BBHN Core Team, which last year received the International Association of Emergency Managers' (IAEM) Innovation and Technology Award in both US and International categories. Andre spends much of his spare time working on this project, but also enjoys VHF & HF mobile as well as contesting. Last year Andre took first-place overall rover in the ARRL June VHF contest.

**Refreshments Provided**

# **Annual Holiday Party and Potluck**

**Join SANDRA and Filamars**

**Thursday December 4, 2014**

**AT**

**San Diego County Office of Education**

**6401 Linda Vista Road, San Diego CA 92111**

**Rooms 401 & 402**

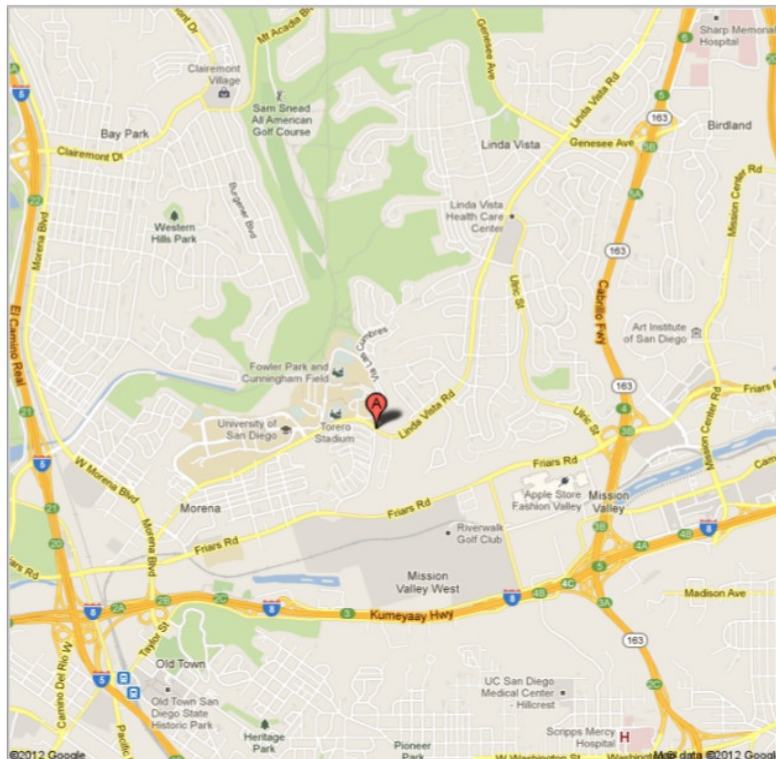
**Fabulous Prizes**

**Great Food**

**Great Company**

**Prizes include Transceivers, Test equipment, Books and More**

**Bring a favorite Holiday dish to share with others**



**San Diego Repeater Association**

## Board of Directors Minutes

### San Diego Repeater Association, Inc.

General Membership Meeting Minutes  
 September 4, 2014 (Thursday) 7:00 PM  
 San Diego County Office of Education  
 6401 Linda Vista Road, Room 306  
 San Diego, CA 92111

Director	Present	Excused
President Barbie Flinn, WA6URS	X	
Vice President Stogie Panger, AJ6AX	X	
Treasurer Ken Decker, WA6OSB		X
Secretary Alex Groza, WB6DTR	X	
Membership Chair Bob Boehme, W2IRI	X	
Meeting Chair Ben Concepcion, N6VVY	X	
MAL-1 Year Bayard Rehkopf, K6GAO	X	
MAL-2 Year Chuck Wood, WD6APP	X	
MAL-3 Year David Andreoli, KI6VIA	X	
Past President John Austin, K6RLV	X	

**Call to Order:** The meeting convened at 7:00 PM, President Barbie Flinn presiding.

**Attendance:** Attendance Roster attached. (22 sign-ins)

**Announcements to Membership:** Welcome and introduction by WA6URS.

**Business Items:**

- Barbie WA6URS opened nominations for SANDRA Officers and MAL-3 Board positions. Election to be held at November meeting for SANDRA 2015 Board. MAL-3, MAL-2 and Past President are on Election Committee.
- Herb KF6ROX is preparing to publish the current edition of Squelch Tales.
- Bob W2IRI discussed the SANDARC Hospitality Suite. Bob made a motion for SANDRA to fund up to \$500.00 for refreshments. Second by Chuck WD6APP. Discussion took place-Jason NF6E (not present) has not made a funding request. Motion passed 7 – 1. NF6E to be notified via email of approved funding.

**Presentation:** San Diego County Amateur Radio Council Convention Committee Chairman Michael Maston, N6OPH, gave a very informative presentation regarding the upcoming SANDARC/ARRL Southwestern Division Convention. This was followed up with a question and answer session.

**Other:** John K6RLV, Yaesu UHF repeater is at Yaesu for repairs. Analog repeater is currently on the air. Bruce KG6IYN, ARES meeting on Saturday September 13 to discuss Air Show and other pending topics. Discussed ARRL VHF contest.

**Adjournment:** The meeting was adjourned at 7:55 PM by Unanimous Consent.

\_\_\_\_\_  
 Secretary Signature

\_\_\_\_\_  
 Date of Approval

**Errata, Corrections, Amplifications and Shorts:** This sections acknowledges errors and omissions or allows additions to previous *SQ* issues. We rely on feedback from the readers – please write.

***SQ*** received email from SANDRA's Treasurer Ken Decker, WA6OSB, reporting the passing of James Holloway, W6LFL/W5TOT. Ken writes:

*I recently received the attached notice from the family of an old radio friend. James Walter Holloway, known to us as 'Walt', passed away on September 20, 2014.*

*Walt was in the Navy when he and his family lived in San Diego in the 1960s and '70s. Many of us active on the VHF bands in the mid '60s and into the '70s will remember Walt. His call then was K4AFS/6, and in the late '60s he became W6LFL.*

*Walt was active in the San Diego VHF Club and the San Diego Amateur FM Radio Relay Association. (SDAFMRRA)*

*The San Diego VHF Club and the SDAFMRRA formed the roots of SANDRA.*

*Walt was President of the San Diego VHF Club in 1967 and Chairman of the SDAFMRRA in 1969.*

*He was involved in working on the first FM repeater in San Diego County, WB6WLV.*

*A copy of the WB6WLV license dated April 1971 lists control stations as WA6OSB, W6LFL and K6GAO.*

*He retired from the US Navy as A Master Chief Radioman in 1971.*

*I don't recall when he and his family moved to Texas, but it wasn't until 2008 that he got a '5' call, W5TOT.*

*He was preceded in death by his wife of 60 years, Louise Holloway.*

*Rest in Peace Old Friend.*

## **Ken Decker**

### **Repeater Status:**

**Otay UHF 449.200 repeater** – Yaesu took SANDRA's repeater in for repair and sent a replacement repeater. On Sept 21, Alex, WB6DTR, and John, K6RLV, made a trip to the site and installed it. They noticed the duplexer was not tuned correctly and the receive preamp had little or no gain. John took the duplexer and tuned it on the bench and Alex bought a new receive preamp. On Sept 28, the duplexer and preamp were reinstalled. The repeater seems to be working well now. The receive sensitivity was measured at 0.2 microvolts with the transmitter on.

**Lyons:** SANDRA received a complaint that some users of the 146.265 repeater have excessive modulation deviation and this is causing interference to the Escondido ARC 146.28/.88 repeater. Several QSO's on the repeater were monitored with a service monitor and measured the deviation. The repeater output is hitting 5 KHz deviation and will be turned down to about 4 KHz on the next trip to this site. Several of the users monitored are running excessive deviation

**Sharp:** John, K6RLV, is writing a program for an RLC-1 to replace the controller at the repeater. It will be installed at a later time, as schedules permit.

**Laguna:** No change.

**HiPass:** Baird, K6GAO reports that the building will be needing a paint job soon.

**San Diego:** The repeater appears to be working normally.

<b>Callsign</b>	<b>Location</b>	<b>Input</b>	<b>Output</b>	<b>Callsign</b>	<b>Location</b>	<b>Input</b>	<b>Output</b>
WB6WLV	Mt. Otay	146.040	146.640	WB6WLV	Mt. Laguna	444.500	449.500
WB6WLV	Mt. Otay	222.460	224.060	K6GAO	Hi-Pass	144.680	145.280
WB6WLV	Mt. Otay	444.200	449.200	W6SS	Lyon's Peak	146.865	146.265
WB6WLV	Mt. Otay	1270.300	1282.300	WA6AIL	Sharp Hospital	147.285	147.885
WB6WLV	Mt. Laguna	147.750	147.150	WB6WLV	San Diego	442.320	447.320
WB6WLV	Mt. Laguna	222.600	224.200				

**All SANDRA repeaters use PL 107.2**

**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 regulation are observed, whether members of SANDRA or not.

**SQUELCH TALES**

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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 on the first Thursday of January, February, April, May, July, October and November. All SANDRA members are encouraged to attend.

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

