



November 2015

# ARCOver

A Community Service Organization Dedicated to Amateur Radio Since 1970

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E-mail: [W6SBA@arrl.net](mailto:W6SBA@arrl.net)



Website: <http://www.w6sba.org>

Hello everyone. We successfully completed our last major activity of the year last month which was the Boy Scouts' Jamboree on the Air (JOTA). This year's event was held at the Cabrillo Youth Center in San Pedro. We, together with the group on the USS Iowa, provided the Boy Scouts with the opportunity to talk on the radio and to satisfy some of the requirements for the radio merit badge. Many people, both at the Youth Center and at home, helped make this event a success. I would like to give particular praise to three club members who worked particularly hard on this project: Chuck Hohn, K6CSH, who led our effort, Joe Lanphen, WB6MYD, who provided all of the needed equipment, and Jerry Cook, KJ6JJ, who set up our Echolink system and then tended it all day during the event.

At this week's Council meeting we began discussing our plans for the coming year. While I don't want to make any promises, we are really going to try to have some sort of club building project next year. The slate of officers for the coming year is Alan Parks, KG6ZPL, president, Bruce Jackson, KK6BJ, vice-president, Joe Lanphen, WB6MYD, secretary-treasurer, Chuck Hohn, K6CSH, and Paul Avery, KK6BY, councilors-at-large. We can use more help. This club does not run itself. If you can help, we could really use another councilor-at-large.

The final tallies for the Hamcon are in. There were 872 paid entries down from 1200, four years ago. Our club's share of the profits is a little over \$1500. A number of reasons for the reduced attendance were made ranging from glitches with the web site to the increased cost of admission.

Next month is the Holliday party. Here's a head's up for the pot luck. If the first letter of your last name is in the range of A-G, bring a salad, H-P, bring a dessert, and Q-Z, bring a side dish.

Finally, this month's meeting is our annual "Show off what you built in the last year" meeting. Quite a few of you raised your hands to indicate that you were bringing something. If you did and don't we will have a very short meeting. Even if your project isn't finished, bring it in and tell us about what you are doing. If you have some really interesting project that you have built that is not related to amateur radio, bring it in and we will let you talk about it on a time available basis. That's it for this month. See you at the meeting and 73,

Alan

## **CLUB OFFICERS FOR 2015**

### **President**

**Alan Parks** - KG6ZPL  
thermic72@sbcglobal.net - 310-558-8718

### **Secretary/Treasurer**

**Joe Lanphen** - WB6MYD  
jmlanphen@gmail.com or w6sba@arrl.net  
310-328-0817

### **Events Council Member**

**Chuck Hohn** - K6SCH  
chohn@socal.rr.com - 310-324-9561

### **Vice-President**

**Bruce Jackson** - KK6BJ  
bjackson@ucla.edu - 310-502-0071

### **Activities Council Member**

**Jerry Cook** - KJ6JJ  
jcookggca@aol.com - 714-898-3983

### **Past President**

**Alex Marko** - KD6LPA  
kd6lpa@socal.rr.com - 310-530-6614



**November 19th - 7:30 p.m.**

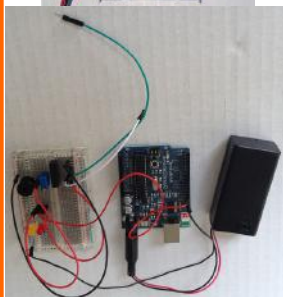
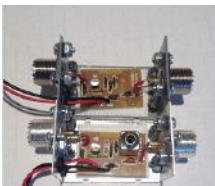
**Torrance Memorial Med Center  
West Tower, 2nd Floor, Room A**

Our November meeting is our annual “Do-It-Yourself” or Home Brew meeting. This is your opportunity to bring any amateur radio related project you have built in the past year and show it off to your fellow club members. The meeting will be moderated by Alan, KG6ZPL. As we have done in the past, there will be two categories to enter: built from scratch and built from a kit. We also encourage software entries. The rules are: (1) the project must have been built in the past year and (2) it must be complete and work. We do, however, encourage you to bring in unfinished projects as well. They won’t be judged but we do like to see what you have been working on. Finally, if you have some other, non-radio project that you would like to show off, bring it as well and, time permitting, you can show it off. Do plan to attend. This is always one of the most anticipated meetings of the year. See you there!

Please bring any project you have made this last year to the November meeting for our annual DIY-Project meeting.

Any kit, project from scratch, programming application or just about any other creative project related to amateur radio will be welcome. Two prizes of \$25.00 will be awarded and no project is too small.

Please contact Bruce KK6BJ at 310-502-0071; email [bjackson@ucla.edu](mailto:bjackson@ucla.edu) if you have any questions or comments. (pics of some projects shown below)



BY ALAN, KG6ZPL

- 1) If 3 peacocks lay 5 eggs in 8 days, how many peacocks will lay 29 eggs in 76 days?
- 2) A murderer is condemned to death. He has to choose among three rooms. The first is full of raging fires, the second is full of assassins with loaded guns, and the third is full of lions that haven't eaten in 3 years. Which room is safest for him?
- 3) There are three men in a boat with four cigarettes but no matches. How do they manage to smoke?
- 4) A ladder hangs over the side of a ship anchored in a port. The bottom rung touches the water. The distance between rungs is 20” and the length of the ladder is 18’. The tide is rising at the rate of 15” each hour. When will the water reach the seventh rung from the top?

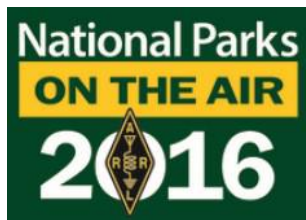
### Answers to October's Quiz

- 1) Four states have their highest point below 1000 feet. What are they? *Florida (345’), Delaware (448’), Louisiana (535’), Mississippi (806’), and Rhode Island (812’)*
  - 2) Five states have their lowest point above 1000 feet. What are they? *Colorado (3350’), Wyoming (3099’), New Mexico (2842’), Utah (2000’), and Montana (1800’).*
  - 3) What state’s name ends with its own postal abbreviation? *Kentucky*
  - 4) Which state’s name is a geographical mistake? *Rhode Island. It’s not an island.*
- Please send answers, questions, and comments to Alan at [thermic72@sbcglobal.net](mailto:thermic72@sbcglobal.net)



## "ARRL National Parks on the Air" Event to Mark National Park Service Centennial

In 2016, the National Park Service (NPS) will celebrate its 100th anniversary, and radio amateurs will be able to help mark the occasion with the ARRL National Parks on the Air (NPOTA) event. The event kicks off at 0000 UTC on January 1, 2016.



"As ARRL just celebrated our own Centennial, and Amateur Radio is often enjoyed in the great outdoors, it seemed fitting to devise a program to help NPS celebrate their own 100th birthday," said ARRL Media and Public Relations Manager Sean Kutzko, KX9X. NPOTA will run throughout 2016, with activity promoted and encouraged from each of the more than 430 official NPS administrative units and affiliated areas across the US. This includes all 59 National Parks as well as National Battlefields, Historic Sites, Memorials, Preserves, Reserves, Rivers, Seashores, National Scenic Trails, and other units.

The program will have two participation tracks -- Chasers and Activators. Chasers will simply attempt to make contact with operators in as many of the NPS units as possible. Activators will attempt to activate as many of the units as possible. NPOTA participants may serve in both roles. Chaser and Activator totals will be tracked via an online Leader Board based on LoTW data, just as was done during the Centennial QSO Party. Access the NPOTA Leader Board directly at <http://npota.arrl.org>.

Modeled after the Mixed DXCC award, only one contact with any given NPS unit will be required, and no tally will be kept of NPS units based on bands or modes. NPOTA will be administered entirely through Logbook of The World (LoTW). No paper logs or QSLs will be accepted for NPOTA credit. Each NPS unit will be added to LoTW as a "location."

Chaser Award and Activator Award certificates will be available to any radio amateur who has at least one confirmed contact with an NPS unit or who activates at least one unit, respectively. A station's total number of confirmed or activated units will be printed on the certificate. The National Parks Honor Roll certificate will be available to any station confirming contact with at least 75 percent of the 59 National Parks activated in 2016.

While there is no formal partnership between NPS and ARRL for this event, the League has been in discussions with the NPS over the past year, and the National Park Service is aware that increased Amateur Radio activity in their parks is likely during 2016. ARRL Letter, 10/15/2015

## BLITZORTUNG AND WHISTLERS

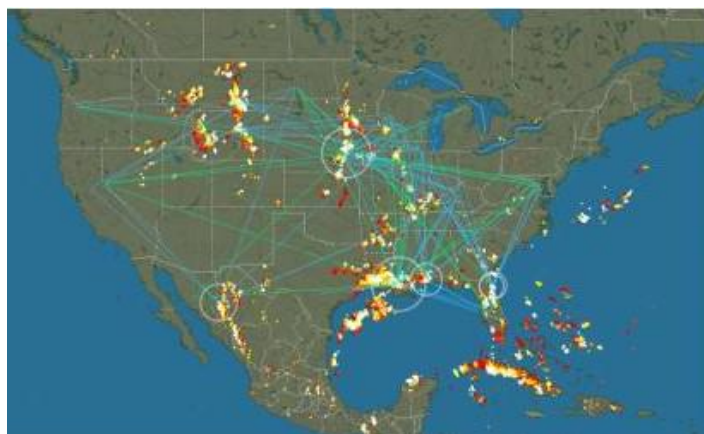
By Bruce Jackson, KK6BJ

Growing up in the 50s I became fascinated with science in general, and electronics in particular and was therefore very taken with the adventures of Carl and Jerry as presented in Popular Electronics Magazine. A recurring theme was that of the recording of whistlers, which are eerie down scale whistling sounds on the VLF bands caused by lightning strikes and are often heard circling the entire globe using long path propagation. These are the same lightning strikes that create annoying QRN during the summer months on the low bands.

More than 50 years later, a creative Commons organization that began in Germany started asking for individual operators to use their stations to record lightning strikes near their locations. The organization is named Blitzortung and has been recording lightning since its inception in January 2012 and has grown in popularity since then. A recent QSL article featured the development of this organization.

Briefly, VLF detectors of 10-100 km wavelengths are analyzed between TOA, time of arrival, and TOGA, time of group arrival, for analysis and the creation of a truly mesmerizing live map of expanding circles with delayed tags representing lightning strikes. Full details of downloading the program and obtaining relatively inexpensive hardware together with information on how to participate in this program may be obtained from [Blitzortung.org](http://Blitzortung.org).

Since I live very close to salt water, I have been in the habit of disconnecting my outdoor HF antennas at the first sign of thunder and lightning as we experience several thunder storms per year. Because of this, I have found this program to be of great interest.

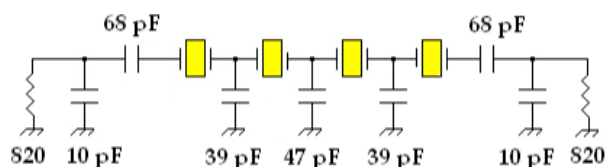


## RF FILTERS, PART 9

Last month, we completed our discussion of LC circuits and RF filters. There are other common filtering elements used in modern radios, in particular crystal and mechanical filters. The crystals used in crystal filters work due to Piezoelectricity which is the electric charge that accumulates in certain solid materials (such as crystals, certain ceramics, and biological matter such as bone, DNA and various proteins) in response to applied mechanical stress. The word piezoelectricity means electricity resulting from pressure. Piezoelectricity was discovered in 1880 by French physicists Jacques and Pierre Curie (yes, Marie's husband). It was soon discovered that the reverse also happened: an applied voltage caused the crystal to deform. If the voltage was AC, then the crystal vibrated. By cutting the crystal into slices the crystal can be caused to vibrate only at specific frequencies.

The minimum bandwidth of LC tuned circuits is effectively limited by the circuit's  $Q$ . Beginning in the 1930's, crystal filters began to be used as RF filters, first in high end receivers, and now in virtually all. Their high  $Q$  enabled the design of very

### 5.0 MHz Lower Sideband Filter



-3 dB Bandwidth = 2.185 KHz  
 $C_{\text{par}} = 4.65 \text{ F}$   
 $L_m = 0.0578 \text{ H}$

Figure 1: A 5 MHz Crystal Ladder Filter

narrow filters. Figure 1 shows a typical design. While many configurations have been used, at this time the "ladder" is the most popular. For many years, the most coveted filters were mechanical, particularly the Collins mechanical filters. Less expensive crystal filters have led to a greatly reduced demand for these filters and it was announced that the Collins filters would cease taking orders on January 1, 2016. A mechanical filter's

purpose is the same as that of a normal electronic filter: to pass a range of signal frequencies, but to block others. The filter acts on mechanical vibrations which are the analog of the electrical signal. At the input and output of the filter, transducers convert the electrical signal into, and then back from, these mechanical vibrations. The components of a mechanical filter are all directly analogous to the various elements found in electrical circuits. The mechanical elements obey mathematical functions which are identical to their corresponding electrical elements. This makes it possible to apply electrical network analysis and filter design methods to mechanical filters. Electrical theory has developed a large library of mathematical forms that produce useful filter frequency responses and the mechanical filter designer is able to make direct use of these. It is only necessary to set the mechanical components to appropriate values to produce a filter with an identical response to the electrical counterpart. Figure 2 shows the internals of a mechanical filter.



Figure 2: A Mechanical Filter

A transducer converts electrical energy to mechanical energy. A common example is a speaker. In the filter, the mechanical energy is then applied to resonators which vibrate at specific frequencies much as do the plates in an xylophone when struck. A series of resonators are used to further refine the frequency which is then transformed back into electrical energy by another transducer. An example of this is a microphone. Mechanical resonators typically have a  $Q$  of 10,000 or so, and 25,000 can be achieved by a careful selection of the materials used in the filter. Figure 3 shows a lumped LC filter that can be replaced by one mechanical filter.

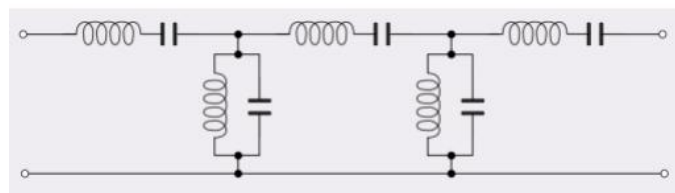


Figure 3: An LC filter equivalent of a mechanical filter.

Alan, KG6ZPL

## ARRL Asks FCC to Clarify that Hams May Modify Non-Amateur Gear for Amateur Use

The ARRL has asked the FCC to make clear that Amateur Radio licensees may modify non-amateur equipment for use on Amateur Radio frequencies. Some hams have expressed concerns



that recently proposed rules would inhibit post-sale modification of Wi-Fi equipment, now sometimes altered for use on Amateur Radio frequencies. The ARRL made its point in comments filed on October 8 on a Notice of Proposed Rule Making (NPRM) in ET Docket 15-170 and RM-11673. The proceeding mostly addresses proposed amendments to FCC rules regarding authorization of RF equipment.

"The Commission should clarify...that the ability of licensed radio amateurs to modify and adapt non-amateur equipment for use in the Amateur Service is beneficial, is permitted, and is not restricted by any rule of general applicability adopted in this proceeding," the League said in its comments. The ARRL said proposed rules requiring manufacturers to include security features to prevent network devices from being modified were "problematic," to the extent that they would preclude hams from adapting network equipment for ham radio applications.

"The Amateur Radio Service has a very long tradition of modification and adaptation of commercial communications equipment," the ARRL pointed out in its comments, asserting that amateur licensees should be permitted to modify any previously authorized equipment for use under Amateur Service rules. The proceeding attracted many comments regarding this aspect of the proceeding, although the proposed rules differ only slightly from the current rules.

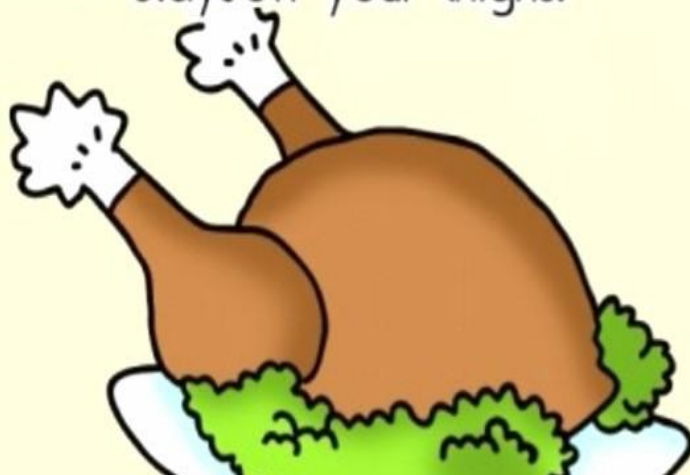
The ARRL also urged the FCC not to apply any limitations proposed for software defined radios to SDRs intended for use exclusively in the Amateur Radio Service, "as has been the policy for the past 10 years." ARRL Letter, 10/15/2105

## AMSAT'S FOX-1A CUBESAT IS NOW AO-85!

In what may have been record speed, AMSAT's new Fox-1A satellite received its OSCAR designation on the day of its launch. Although its FM transponder is not yet routinely active while the CubeSat undergoes commissioning, it has been operational on many passes. Right on schedule at 1249 UTC on October 8, the Atlas rocket carrying Fox-1A and 12 others lifted off from Vandenberg Air Force Base in California. AMSAT OSCAR Number Administrator Bill Tynan, W3XO, announced later that day that going forward Fox-1A would be known as AO-85. Fox-1A has been dedicated to the individual who had been at the helm of AMSAT's CubeSat projects until his death last year. ARRL Letter, 10.15.2015

## A THANKSGIVING POEM

May your stuffing be tasty,  
 May your turkey plump,  
 May your potatoes and gravy  
 have nary a lump.  
 May your yams be delicious  
 and your pies take the prize,  
 and may your  
 Thanksgiving dinner  
 stay off your thighs!







1. **Attendance drawing:** Our Attendance drawing winner for October was Bill-N6ES. Unfortunately Bill was not present missed out on the \$ 35.00 kitty which now will go to \$40.00. Just think you would have the money to renew for 2 years !!! or you and your spouse or family member. Remember you must be present to win. Thank you for being an valued SBARC member.

2. **Thank you:** We wish to thank Alan-KG6ZPL for the excellent presentation on " Specifications on receiver specifications". We all know the present equipment being offered has become so technical that in order to make the proper decisions on any piece of equipment the need to understand what we are being given about it. Understanding the significance of the specifications being given may make the difference between your happiness or failure to enjoy this purchase. Let's face it because that is what it is all about. Thank you Alan for putting some light on this subject.

3. **JOTA:** As many of you know we participated in JOTA from the Cabrillo Youth Center on October 17th. This was 2 days after our October General meeting and this should be called a very successful event for us this year. Joe had set up with some help both the VHF and UHF stations, James set up the buddy pole for HF and all stations were on the air at the requested time. Bill-AF700 set up his QRP rig separately and boy did we all have fun providing the opportunity to the boy scouts to get on the air. Due to the newly set up arrangements we had our group of Boy Scouts for their RMB in the morning just as the USS Iowa crew had. With a mix of cub scouts and other BSA people we had a good time doing that all morning. After lunch things had settled down some more and we provided more air time opportunities for those needing airtime for their RMB. After 3:30pm the boys went into an Radio Merit Badge class by others and several of our members assisted with this as well. We continued to provide air time till about 7:00pm and shut down our equipment for transport home before dark. This was truly a great event while we could have done for more help managed quite well and had a lot of fun doing what we do best. Thank you to Jerry-KJ6JJ and Ray-WA6OWM for the Echo link set up we used, HF operations By Alan- KG6ZPL and Bruce-KK6BJ and of course especially Bill-AF700. This was a good team work event and provided the right opportunity for us to work as a team. The right effort to encourage the boy scouts to get on the air and engage with that what we want them to hopefully be involved with in the future. Thank you one and all for all your hard work in making this successful. Thank you Joe-WB6MYD

4. **New member:** Neal-N6YFM from Torrance has given us his application for membership and paid dues for

the 2016 SBARC club year. Neal is an Engineering Manager and we certainly look forward to working with him in our future projects. Please welcome him and introduce yourself at our next meeting. His interest are: HF, VHF, UHF, RTTY, Computers, Antenna propagation, Elmering and Club Repeater. Club activities he will participate with are repeater W6SBA, Technical discussions, Club meetings, Social activities and Antenna parties. Welcome to the SBARC family and we hope you will enjoy our club as well as we will you. Thank you for joining us.

5. **Holiday party:** The December 17, 2015 meeting is our annual Holiday party. Please help us with suggestions and support to make this a successful as in the past. The purpose is twofold if you will 1. The installation of our officers for the 2016 club year and 2. our annual social event for the year. Those of you having been part of this in the past know all this too well but our new members do not and so let me make this opportunity to clarify some of the things we do. a. This is a bit of a pot luck affair. You are asked to provide your favorite dish for about 5 people. ASs to what you're asked to bring will be according to a schedule which will be give to you via email in December. b. We are asking for you to donate an poinsettia for first of all our enjoyment during the dinner and afterwards to be enjoyed by the hospital staff at the various wards during the holiday season. Artificial poinsettias are encouraged since it fits easier in some of the patient locations. It also shows our appreciation to the hospital staff for the use of the TMMC facility in so many different ways. c. The club provides the drinks and of course all the utensils to make this a truly enjoyable event for one and all. This is your club showing its appreciation to each and everyone for being part of our SBARC family. You are encouraged to invite family members and friends (be reasonable of course) to enjoy this for the holiday season as well. d. O yes, we also install the newly elected officers for the 2016 year and provide acknowledgement of our special appreciation for so many members for another great year for the SBARC.

6. **Slate of officers for 2016:** The following members have asked to be put on our slate of officers for the 2016 year: Alan-KG6ZPL, President. Bruce-KK6BJ, Vice President. Joe-WB6MYD, Sec/Treasurer, Chuck-K6CSH and Paul-KK6BY as Council members. We would love to have other to add to this list and of course the floor will be open for nomination prior to the election. By all means let us know if you would like to join this team for 2016.



## CALENDAR

**Council Meeting** - 1st week of the month (day varies)  
Call Joe - WB6MYD (310) 328-0817

**Club Meeting** - 3rd Thursday of the month  
**November 19, 2015 - 7:30 p.m.**  
Torrance Memorial Med Center  
West Tower, 2nd Floor, Room A

**Club Nets** - **W6SBA WEEKLY NET**  
Every Thursday @7:30pm  
(except the night of club meetings)  
**PVUSD EMERGENCY NET**  
1st Tuesday of the month  
09:30 Hours on the W6SBA repeater

**TRW Swap Meet** Saturday,  
**November 28, 2015 , 7-11 a.m.**

**VE Session** - Contact: Joe WB6MYD  
Phone: (310) 328-0817  
jmlanphen@gmail.com or w6sba@arrl.net

**Social Event** - Contact: Joe WB6MYD  
Phone: (310) 328-0817  
jmlanphen@gmail.com or w6sba@arrl.net

## CLUB SERVICES

Awards Manager (HF/VHF)	Cliff - K6LH
Health & Welfare	Joe - WB6MYD
Swap Meet Chair	Joe - WB6MYD
VE Test Liaison	Joe - WB6MYD
VE Test Sessions	Joe - WB6MYD
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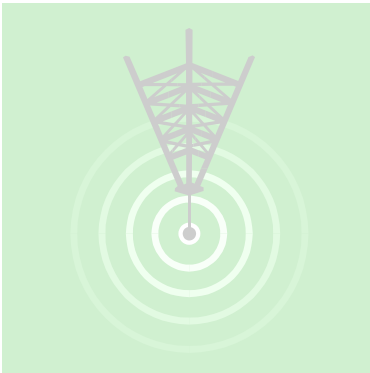
### South Bay Amateur Radio Club Repeater

224.38 MHz · PL - 192.8 Hz Offset -1.6 MHz  
(See Calendar for Weekly Net Times)

### NEWSLETTER SUBMISSION

South Bay Amateur Radio Club  
P.O. Box 536  
Torrance, CA 90508  
W6SBA@arrl.net  
Website: <http://www.w6sba.org>

TO:



Address Correction Requested

A COMMUNITY SERVICE ORGANIZATION

W6SBA

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