



April 2017

# ARCOver

A Community Service Organization Dedicated to Amateur Radio Since 1970

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**GREAT TIME  
TO HAM  
IT UP!!!!**



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



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

Hello W6SBA,

I want to thank everyone who came to Joe's QTH for our re-scheduled coax party! We had a really good turn out and I think we made great progress diagnosing some of the bad coax cables. I also think we gained experience and learned which tools are the most effective at identifying/assessing damaged cable. We will need to have another party to finish the job so we're ready for Field Day. We will be announcing the schedule for the next coax party shortly.

I hope all of you will be able to attend this April's club meeting. We have a very special treat for you. Orv Beach, W6BI, will be coming all the way from Simi Valley to give us a presentation on Mesh Networking. Mesh is something I've been particularly interested in learning more about, and I think it is a great attraction point for digital amateur radio, and attracting newer hams in the hobby. Orv has been busy connecting Santa Barbara and Orange County to the Ventura County mesh. He has also started a Linux user group in Simi Valley and is one of the founders of the SoCal Linux Expo – which had a whole section devoted to amateur radio and mesh networking. Apparently it drew quite a crowd! [I hope you will be able to join us Thursday, April 20<sup>th</sup> for this exciting and informative presentation.](#)

Until next time, this is KD6LPA saying 73!



## CLUB OFFICERS FOR 2017

**President:** Alex Marko-KD6LPA. 1843 W. 243rd Place, Torrance, CA 90501 310-530-6614  
kd6lpa@socal.rr.com

**Vice President:** Bruce Jackson-KK6BJ 4020 The Strand, Manhattan Beach, CA 90266 310-502-0071  
bjackson@ucla.edu

**Secretary/ Treasurer:** Joe Lanphen-WB6MYD. 21125 Budlong Ave. Torrance, CA 90502 310-328-0817  
jmlanphen@gmail.com

**Council:** Paul Avery-KK6BY. 15255 Lemoli, Gardena, CA 90249. 310-676-0212 Kk6by@att.net

**Council:** Chuck Hohn-K6CSH. 17203 Atkinson Ave. Torrance, CA 90504 310-941-5679  
chuchohn@gmail.com

**Council:** Heidi Stromburg-KG0GGY. 20622 Vermont Ave #25, Torrance, CA 90502 310-505-8828 hy-  
lieunlikely@gmail.com

**Immediate Past Pres.:** Alan Parks-KG6ZPL. 10746 Francis Pl. #234, LA, CA 90034 310-558-8718 Ther-  
mic72@sbcglobal.net

# The GUEST SPEAKER

April 20th at 7:30 p.m. at Torrance Memorial Medical Health Conference Center, First Floor, Orv Beach, W6Bl, will be giving us a presentation on Mesh Networking.

Orv has been busy connecting Santa Barbara and Orange County to the Ventura County mesh. He has also started a Linux user group in Simi Valley and is one of the founders of the SoCal Linux Expo – which had a whole section devoted to amateur radio and mesh networking.



- 1) If you have a three minute timer and a five minute timer, can you time a four minute egg? If so, how?
- 2) I have coins in my pocket that can pay for any item selling from one cent up to and including one dollar. What is the fewest coins I can have and what are they?
- 3) What is purple and stomps out forest fires?
- 4) What is Alexander the Great's middle name?

### Answers to March's Quiz

- 1) I throw a nickel and a dime in the air. If I am told that at least one of them land as a head, what is the probability that the nickel landed as a head?  $2/3$ . *The possibilities, given that at least one coin lands as a head are: nickel head, dime tail; nickel head, dime head; nickel tail, dime head. The fourth possibility, nickel tail, dime tail is ruled out by the statement of the problem. Of the three possibilities, two have the nickel as a head, hence probability =  $2/3$ .*
- 2) How many ways can four people be seated at a table with two people facing the other two people? *This is the same as asking in how many ways can four people be placed in a line. Let the people be a, b, c, and d. Assume that a is first. Then you can line up (b,c,d) in six ways, bcd, bdc, cbd, cdb, dbc, and dcb. Then since you can do the same with the other three people in the first placed, we have  $4 \times 6 = 24$  ways.*
- 3) What is yellow, weighs 8000 pounds, and goes "chirp, chirp"? *Two 4000 pound canaries.*
- 4) What weighs three tons and has a stick through it? *A hippopopsicle. Hold his nose until he turns blue and then use a blue elephant gun.*

Please send answers and comments to Alan at [thermic72@sbcglobal.net](mailto:thermic72@sbcglobal.net)

## NVIS Research Paper Available

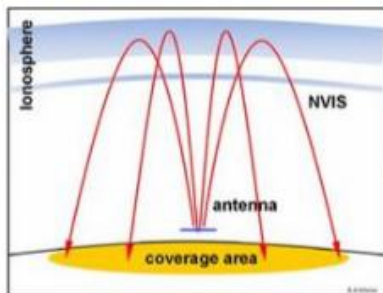
A thorough and fully annotated discussion of Near Vertical Incidence Skywave (NVIS) is available in the research paper, "Radio Communication via Near Vertical Incidence Skywave Propagation: An Overview," by Ben A. Witvliet, PE5B/5R8DS, and Rosa Ma Alsina-Pagès.

First investigated in the 1920s, NVIS propagation was rediscovered during World War II as "an essential means to establish communications in large war zones such as the D-Day invasion in Normandy," the paper notes, adding that the US Army subsequently sponsored a lot of NVIS field research, especially between 1966 and 1973. More recently, NVIS has become a popular means to enable close-in communication on Amateur Radio HF bands between 3 and 10 MHz. NVIS can be used for radio communication in a large area (200-kilometer radius) without any intermediate manmade infrastructure, and it has been found to be especially suited for disaster relief communication, among other applications, according to the paper.

"A comprehensive overview of NVIS research is given, covering propagation, antennas, diversity, modulation, and coding," the Abstract explains. "Both the bigger picture and the important details are given, as well as the relation between them." As the paper describes it, in NVIS propagation, electromagnetic waves are sent nearly vertically toward the ionosphere, and, with appropriate frequency selection, these waves are reflected back to Earth.

"The great reflection height of 80 to 350 kilometers results in a large footprint and homogeneous field strength across that footprint," the paper says. "Due to the steep radiation angles large objects such as mountain slopes or high buildings cannot block the radio path."

As for NVIS antennas, the paper stipulates that important parameters are antenna diagram, polarization, and bandwidth. "As only high elevation angles contribute to NVIS propagation, optimizing the antenna diagram for these elevation angles will increase the effectively transmitted power and improve the signal-to-interference ratio at reception." ARRL Letter, 3/30,2017



## New Bands! FCC Issues Amateur Radio Service Rules for 630 Meters and 2,200 Meters



The Amateur Service will officially get two new bands in the near future. The FCC has adopted rules that will allow Amateur Radio access to the 630 and 2,200-meter bands, with minor conditions. A Report and Order (R&O) was released on March 29. The new rules become effective 30 days following publication in The Federal Register. The R&O, which also addresses several non-Amateur Radio issues, allocates the 472-479 kHz band (630 meters) to the Amateur Service on a secondary basis and amends Part 97 to provide for Amateur Service use of that band as well as of the previously allocated 135.7-137.8 kHz band (2,200 meters). The R&O also amends Part 80 rules to authorize radio buoy operations in the 1900-2000 kHz band under a ship station license.

"It's a big win for the Amateur community and the ARRL," ARRL CEO Tom Gallagher, NY2RF, said. "We are excited by the FCC's action to authorize Amateur Radio access for the first time on the MF and LF spectrum."

The FCC said the Amateur Radio service rules it has adopted for 630 meters and 2,200 meters allow "for co-existence with Power Line Carrier (PLC) systems that use these bands." Utilities have opposed Amateur Radio use of the MF and LF spectrum, fearing interference to unlicensed Part 15 PLC systems used to manage the power grid.

Amateurs operating on 472-479 kHz would be permitted a maximum equivalent isotropically radiated power (EIRP) of 5 W, except in parts of Alaska within 800 kilometers (approximately 496 miles) of Russia, where the maximum would be 1 W EIRP. Amateurs operating in the 135.7-137.8 kHz band could run up to 1 W EIRP.

The FCC is requiring a 1-kilometer separation distance between radio amateurs using the two new bands and electric power transmission lines with PLC systems on those bands. Amateur Radio operators will have to notify UTC of station location prior to commencing operations.

The FCC also placed a 60-meter (approximately 197 feet) above-ground-level (AGL) height limit on transmitting antennas used on 630 meters and 2,200 meters. The bands would be available to General class and higher licensees, and permissible modes would include CW, RTTY, data, phone, and image. Automatically controlled stations would be permitted to operate in the bands. More details soon, on the ARRL website. ARRL Letter, 3/30,2017

## Odd Call Signs on the Loose -- Be on the Lookout!



Special event stations sporting unusual call signs are -- or will be -- on the air this spring and later in the year.

From Canada's Yukon Territory, keep an ear open for XO1X, now on the air for the remainder of 2017, with plans to be active March 25-27 for the CQ World Wide WPX (SSB) contest. The special call sign prefix is permitted as part of Canada's sesquicentennial celebration, as is XK150YUKON, another Yukon Canam Contest Club call sign for the sesquicentennial, operating VY1JA remotely. Operators will include Gerry Hull, W1VE/VE1RM, Cary Rubinfeld, VE4EA, and others.

"The XO1 prefix has not been on the air in 35 years," Hull told ARRL. "My friend Andy, VE9DX, last put it on the air as XO1ASJ." That prefix block was subsequently moved to Yukon Territory, he explained. OE17ATOM will be active from Austria starting at 2200 UTC on April 21 until 2200 UTC on April 22, operating on HF, VHF, and UHF from the only nuclear power plant that never was. The station will be set up inside the reactor hall and control room, and there will be a live video stream. Lower Austria radio clubs, the Icom Radio Club and Johanniter Unfall Hilfe-Austria organized the event.

The Zwentendorf Nuclear Power Plant was never run, owing to the outcome of a national referendum. Today, the plant produces electricity from some 2,300 photovoltaic panels, which can generate 450 kW peak.



The solar array at the Zwentendorf Nuclear Power Plant.

From Croatia, 9A21RBM, on the air April 1-15, will commemorate the 21st anniversary of the plane crash near Dubrovnik in 1996 that claimed the lives of US Commerce Secretary Ron Brown and 34 others. Presumably the suffix stands for "RonBrown Memorial." Members of Radio Club Libertas (9A4J) will helm the operation. Another pending special event with an atomic connection is VISANTLER, operating from Maralinga Village in South Australia, is planned for September 14-October 9. That area of northwest and south Australia is where the British carried out atomic tests in 1957 under the code name "Project Antler." Organizers say that this may be the first ham radio activity from the Maralinga Section 200 Restricted Area since that era. They are awaiting authorizations. -- Thanks to The Daily DX, Gerry Hull, W1VE/VE1RM, and others

## ARRL Reiterates its Case for New Band at 5 MHz



In comments filed on March 20 with the FCC on its own January Petition for Rule Making (RM-11785), ARRL reiterated its case for a contiguous secondary 15-kHz wide, 60-meter band of 5,351.5 to 5,366.5 kHz in addition to the four existing discrete 60-meter channels that fall outside the requested band, with a permitted power level of 100 W EIRP and retention of current operating rules. More than 5 dozen comments, all supporting the proposed allocation, were filed on the League's petition. While some suggested more spectrum or higher power, or a combination, ARRL said in its comments that it does not at this time favor any changes in its initial request for a new band. The League proposal would implement a portion of the Final Acts of World Radiocommunication Conference 2015 (WRC-15) that provided for a secondary international amateur allocation of 5,351.5 to 5,366.5 kHz at a maximum of 15 W EIRP.

"Each component of this proposal is intended to maximize spectral efficiency by permitting amateurs to operate throughout a band as conditions and availability warrant; to give primary service operations certainty as to where radio amateurs will be located within the broader fixed and mobile service band between 5.250-5.450 MHz; and it protects those primary users with the same successful interference avoidance techniques and protocols that have been used for the past 15 years domestically, with which radio amateurs have the technical training and experience to comply," ARRL asserted in its comments.

The League said the WRC-15 power limit of 15 W EIRP "would render the band unsuitable for emergency communication, especially between the US mainland and the Caribbean Basin during summer storms and hurricane season, when atmospheric noise can be severe.

ARRL said there were good reasons for hewing to the proposal it initially crafted and filed with the FCC, most relating to the fact that the spectrum is shared with federal government users, and radio amateurs must avoid interfering with them. ARRL also pointed out that there is no "European Model" for 5 MHz, noting that the vast majority of European countries have held to the 15 kHz agreed to at WRC-15, and some even to the 15 W EIRP power limit. The National Telecommunications and Information Administration (NTIA), which regulates government spectrum, would have to sign off on any proposal, and, ARRL noted, it has twice expressed concern about a contiguous allocation at 5 MHz and did not favor the plan agreed to at WRC-15. ARRL Letter, 3/23, 2017

## ARISS Moves Closer to Launching New Radio System to Space Station

Amateur Radio on the International Space Station (ARISS) reports it has met a major milestone and now is "one giant step" closer to flying its new interoperable radio system to the International Space Station. Eventual plans call for installing a new JVC Kenwood TM-D710GA-based radio system on the station as part of an overall approach that will allow greater interoperability between the Columbus module and the Russian Service Module.



Lou McFadin, W5DID, and Kerry Banke, N6IZW, travelled to NASA Johnson Space Center (JSC) in Houston in mid-February for preliminary testing of Banke's "breadboard" version of the ARISS multi-voltage power supply that's essential to the upgrade. They worked with JSC engineers and Electromagnetic Compatibility (EMC) Lab personnel to put the specially built power supply through its paces, checking against US and Russian space specifications for preliminary power quality and EMC tests.

With positive test results in hand, ARISS now can move on to the next step -- fabrication of prototype and flight units. The JSC engineers said the ARISS breadboard power supply was the first hardware to have passed all of the space agency's tests and complimented the ARISS Team on its

professional-level hardware development and design.



Now that testing of the breadboard unit has been completed, McFadin can purchase the necessary

-- and pricey -- space-certified parts, to fabricate the final prototype and flight power supplies. He and Banke expressed confidence that the prototype and flight units will pass the even more rigorous final testing with flying colors.

The ARISS radio gear on board the ISS is aging. A February supply vehicle carried a new Ericsson 2-meter handheld radio to replace one that failed a few months ago, disrupting

ARISS activities. The VHF radio in the Columbus module was used for school group contacts and for Amateur Radio packet, temporarily shifted to UHF after the VHF radio failure. The newly arrived Ericsson radio will replace the Ericsson UHF radio supporting APRS packet and some school contacts, but Bauer made it clear last month that the new Ericsson transceiver is an interim measure.

To help support final fabrication and flight tests of the ARISS interoperable radio system, visit the ARISS website. Contributions are tax deductible. Those contributing at least \$100 will receive an ARISS Challenge Coin. ARRL Letter, 3/16/2017

## Dr. DX Is In

You have DXing Questions? Dr. DX has Answers! The Southern California DX Club (SCDXC) has announced that "Dr. DX" is on call and ready to



answer questions via e-mail from fledgling DXers. A team of experienced DXers will offer helpful replies to any and all DXing-related questions. The club has also distributed a brochure to southern California Amateur Radio clubs to entice hams who are not yet DXers into that area of the hobby. Ham clubs outside of Southern California may request a PDF. The SCDXC says its efforts to promote DXing in general are not limited to southern California, and Dr. DX will take questions from anywhere. Through the Dr. DX program, new DXers may ask about equipment, operating techniques, antennas, QSLing, and related topics, and SCDXC Dr. DX team members will respond to every question. -- Thanks to SCDXC

**THURSDAY  
NIGHT  
NET**

Please join us on W6SBA 224.38 minus offset and the PLat 192.8 hz  
You can share your experiences or just say hello!



## News From

# Joe

1. Attendance Drawing: Such luck or more appropriately bad luck. The lucky name drawn at our March meeting was Heidi-KG0GGY. Unfortunately she wasn't feeling to well and was not present. The kitty for our April meeting now will be \$ 50.00. I'll bring the check book with me for sure to pay the lucky member present and in good standing. Sorry Heidi.

2. Thank you: We wish to thank Richard-KJ6CBA for his excellent and most enjoyable presentation on how to use solar mirrors to signal from Mountain top to Mountain top. Yes it is possible to use this across 75 or better miles for signaling. The beauty of it was of course the use of amateur radio to make it known. You'd be surprised how well an HT will work at that height and also distance. Wow, fascinating how this can be used. Thanks Richard for this informative and excellent presentation.

3. New members: I wish for us to welcome 5, yes 5 new members for this year at this point:

a. Mark Berube-KM6HQG, Tech from Harbor City. Interest; HF, VHF,UHF, CW, Computers, Antenna's and swap meet. Activities; W6SBA FD, Contest, Public events, Club meeting, Socials and Antenna parties.

b. Tom Essenpreis-KB9ENS, Extra from Hawthorne. Interest; HF, QRP, Elmering, JOTA and digital modes. Activities; FD, Public events, VE, Club meetings and Social activities. c. Thomas Wilson-KM6ICV Gen from El Segundo. Interest; HF and CW. Activities; FD, 220 repeater net, 10m net, VHF net, VE, Club meetings, social events, QSL card sorting, Antenna parties. d. Jeff Wolfe-KM6GYB Extra from Hermosa Beach. Interest; HF, VHF and UHF, DCS , Antenna's and club repeater. Activities; FD, Contest, Public events, club meetings, Socials and antenna parties. e. Steven Barryte-KI6GUY Tech from Rancho PV. Interest; Computers, Club repeater and autopatch. Activities; Club meetings and Social activities. This is a very interesting group as you can see, new as well as older ham's which are all unique in their own right. Please help us by making them welcome to the SBARC and the amateur radio community. Please note one of the main problems amateur radio has all over that we don't welcome new members. Let's make sure we welcome each and every one of them and help them integrate themselves with the South Bay ARC. To our new members we welcome you with open arms and we wish to help

you. Let us know what you're having trouble with and we will see that you get the help you need.

4. Membership update: We thank the following members for renewing their membership for 2017. Howard KF6NOR 3281909 John AE6LK 3281910 Donna Wilson 3281912 Steve KI6GUY 3281913 Yoshio KE6ACH 3281914 Jeff KM6GYB 3281915 Melody KI6SPA 3281916 Richard KJ6CBA 3281917 Neal N6YFM 3281918 Bob WB6RHF 3281920 Glendee KJ6EBS 3281921 Greg WQ9P 3281922 Scott KM6FAX 3281923 Thank you so much for your continued support. We do look forward to your continued support and participation in all or some of our activities. Remember this is your club and you can help us by participating in as many or few as possible. Thanks again for joining the SBARC.

5. Ballooning: I am sure you all have heard now about the successful and recovery of the balloon from Joanne KM6BWB with a payload of projects from 4 different Elementary schools. It managed to get off with a rocky start from the ground at Mira Costa HS in Manhattan Beach Saturday morning. It achieved a height of about 110,000 feet in altitude before returning to the ground with its payload intact. It landed in the Salton Sea and Joanne had to wade into it to recover it. We will hear more about the success and the projects from the kids. Congratulations Joanne and the team including the launch guys. The 2nd balloon was launched on Sunday from the surf in Manhattan Beach by Bruce-KK6BY and Tom-KI6RC about 10:30AM. It got a good start and was designed to travel long distance to what was not predictable. We saw it achieve a height of about 41,000 feet in altitude traveling in a South Eastern direction before it disappeared or stopped transmitting the APRS signals. It too headed for the Salton Sea but it has not been recovered. Tom checked to see if it had gotten back to life on Monday since it was solar powered and it did not. Valuable lesson were learned and the next one in the planning stages will do better. Both balloon were tracked from APRS transmissions from the balloon itself and could be seen on your laptop in you checked it on aprs.fi. Sorry guys better luck next time.

6. Weekly SBARC net: The format has changed somewhat to posing a question and have all the participants voice their opinions. Last week on 3/23 we rehashed our FD operation for this year. Short or long. Please join us and voice your support or not.

## CALENDAR

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

**Club Meeting** - 3rd Thursday of the month  
**April 20, 2017- 7:30 p.m.**  
Torrance Memorial Med Center  
Health Conference Center, Room 1

**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,  
**April 29, 2017** , 7-11 a.m.

**VE Session** - Contact: Joe WB6MYD  
Phone: (310) 328-0817  
jmlanphen@gmail.com or w6sba@arrl.net  
(All VE sessions are scheduled for Room 4 in the Health  
Conference Center for 2017)

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

## CLUB SERVICES

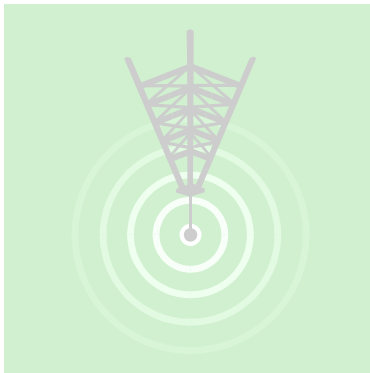
Awards Manager (HF/VHF)	Cliff - K6LH
Health & Welfare	Joe - WB6MYD
Swap Meet Chair	Tom-KI6RC, Chuck- K6CSH., Bill-KQ6Z
VE Test Liaison	Betty Barch-N6VZF
VE Test Sessions	Betty Barch-N6VZF
Webmaster	Scott - N6LEM
Editor	Glenda - KF6QFE Glenda.simpson@hotmail.com
Proofreader	Alex - KD6LPA

**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

South Bay Amateur Radio Club  
Post Office Box 536  
Torrance, CA 90508-0536

