



August 2019

# ARCOver

A Community Service Organization Dedicated to Amateur Radio Since 1970

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## Sunsets and Amateur Radio Pair Up Nicely

See How Many Long Distance Contacts  
You Can Make at Sunset

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



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

## President's Message

Hi Fellow SBARC Ham's,

It's time for the monthly eating and eyeball QSO. We'll be eating BBQ again and talking about our ham radio vocation. As always it's on the 2nd Saturday of the month, August 10th. SBARC club lunch. We are returning to Joey's Barbeque at 25308 Crenshaw in Torrance. I believe we will be replacing the September lunch with another fine engaging club picnic. Stay tuned for the potential September picnic details. It may even include some burgers! And, we are always open to other South Bay restaurants that will accommodate our monthly lunch group. Please submit your suggestions.

I finally succeeded in making my house have something amateur radio noticeable emanating from the roof line. I installed a SIG-MA Euro-Comm SE-HF-X80 vertical radial free antenna for 80 to 6 meters. It uses a Unun (Unun = "UNbalanced-to-UNbalanced") transformer. This type Balun moves the impedance closer to 50 ohms making it easier for the tuner to match it to the antenna to the radio. This may be a compromise antenna but, its visual profile and weight are minimal making it easier to live with. I will need an antenna tuner to operate across the HF bands. I mounted this on the aluminum military mast adjacent to my garage. I have not had time to really evaluate any of its performance. We'll see if the radio part copes. Meaning still works.



Activities in August include, the club meeting on the 15th, followed by the TRW/NGC swap meet on Saturday the 31st. The swap meet proceeds benefit the club. After the swap meet a few of us head over to Denney's on Artesia and Aviation for your choice of a late breakfast or lunch. And, bring your ideas forward as to what activities you would like to see the club pursue. There's a few opportunities this month to socialize with your fellow club members.

See you at the next SBARC event!

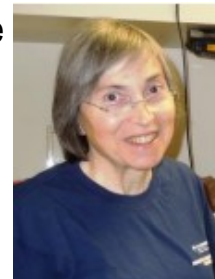
73's...  
Scott N6LEM



**MEETING  
NOTICE!**

**August**

The South Bay Amateur Radio Club will be sponsoring a lecture about "The New Aspects of VHF Propagation". The speaker, ARRL Los Angeles Section Manager, Diana Feinberg, will show how a basic understanding of the principles of electromagnetic radiation to predict long distance communication is possible. This may be used to predict conditions favorable to long distance operations on VHF frequencies with equipment readily available to Amateur Radio operators. This presentation is open to all those interested in amateur radio communications and is free.



Please join us **Thursday August 15, 2019** for this presentation which will be held in the Richard Hoffman Auditorium of Torrance Memorial Medical Center, Room 1, 3300 Lomita Blvd., Torrance, CA at 7:30 PM.

### **Diana Feinberg, AI6DF, Appointed as Los Angeles Section Manager**

*ARRL 06/01/2016*

Diana Feinberg, AI6DF, of Palos Verdes Peninsula, California, has been appointed the ARRL Los Angeles Section Manager, effective on June 1. She assumed the Section reins from David Greenhut, N6HD, who had announced his resignation from the volunteer post due to time constraints, after serving since October 2009.

Feinberg is the president of the Palos Verdes Amateur Radio Club (K6PV), which specializes in public service and emergency communication. She also chairs the Los Angeles Area Council of Amateur Radio Clubs, and she served as the chair of the 2015 HAMCON and the ARRL Southwestern Division Convention. Feinberg is an active DXer and Volunteer Examiner.

## ARES Responds to Early July Earthquakes and Aftershocks in Southern California

ARRL 07/24/2019

On the morning of July 4, a 6.4 magnitude earthquake rocked the California High Desert, with its epicenter near Trona in the Searles Valley, not far from Ridgecrest, population roughly 29,000.



ARES volunteer Jerry Brooks, KK6PA, activated the Eastern Kern County ARES Net, and, as members assessed their own situations and were able to participate, activity grew on the Eastern Kern County ARES Emergency Net. Steve Hendricks, KK6JTB, took over net control duties through most of the first day, and others filled in as the activation progressed.

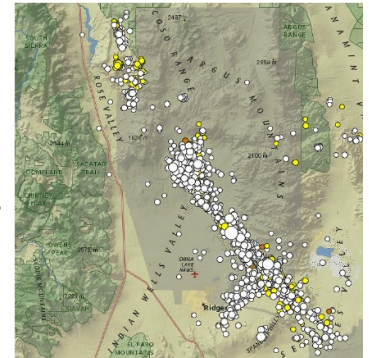
The Logistics Chief with the Ridgecrest Emergency Operations Center (EOC), Robert Oberfeld, contacted Eastern Kern County ARES to ask that a radio operator be assigned to the Ridgecrest Police Department mobile communications van at the EOC.

Eastern Kern County ARES was able to relay information from mobile operators to the EOC regarding roadway conditions in the area, as several main highways — including Highway 178, the only route between Ridgecrest and Trona — had been rendered impassable. CalTrans was alerted, and repair crews had the route opened for limited traffic within a short time. As the aftershocks lessened and the extent of the damage by the first temblor had been assessed, the EOC requested that ARES stand down but remain on standby.

Everyone's worst fears were realized the next day — Friday, July 5 — when a 7.1 magnitude earthquake struck in the early evening. This was followed over the next 2 hours by 19 aftershocks, ranging in magnitude from 4.5 to 5.5. The epicenter of the 7.1 temblor was some 11 miles north of Ridgecrest in Indian Wells Valley, within the boundaries of the China Lake Naval Air Weapons Station (NAWS).

When Eastern Kern County ARES reactivated, significantly more damage had occurred, with the result that fewer operators were immediately

available as many residents dealt with serious issues within their own homes. Additional operators eventually become available to provide their observations to the EOC, however. With sufficient depth of resources, the communications van was now being staffed by two operators working in 4-hour shifts, some of them husband-and-wife teams. In all, 57 operators were active at various times on the emergency net, providing status and updates. Eastern Kern County ARES stood down from active status at 9 PM on Sunday.



California earthquakes on July 4 plus aftershocks greater than magnitude 2.5. [US Geological Survey graphic]

“The ensuing days have brought thousands of aftershocks of generally small magnitude, but the threat of larger aftershocks remains, so Eastern Kern County ARES remains on stand by for now,” said Dennis Kidder, W6DQ. He said few injuries were reported as a result of the two earthquakes. “A number of homes were either destroyed or severely damaged, and a number of businesses sustained damage and some were red tagged. Some 150 residents are in shelter at this time,” Kidder added. Water service and electrical power have been restored to most areas.

Kidder said that while most of the thousands of aftershocks were inconsequential, several have been as high as magnitude 5.5, “which gets everyone's attention.” Aftershocks are expected to continue for a long time, he said. — *Thanks to Dennis Kidder, W6DQ, Eastern Kern County ARES*

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## IEEE Symposium Exhibit Displays the Breadth of Amateur Radio

ARRL 07/24/2019

Amateur Radio received excellent exposure during the **IEEE International Symposium on Antennas and Propagation** July 7 – 12 in Atlanta, Georgia. Some 1,400 delegates from 23 countries attended, and many visited ARRL's exhibit to learn more about Amateur Radio. Three active Amateur Radio stations were available via remote Internet connections.



"I wanted the booth to be inviting and get people's attention," said Wes Lamboley, W3WL, of the North Fulton Amateur Radio League, who headed up the team of booth volunteers. "The main objective was to engage people and find out what their interests were and then make them aware of aspects of ham radio that may be of interest." That included Amateur Radio in space activities, including the Amateur Radio on the International Space Station (**ARISS**) program and ham radio satellites.

"We had very favorable position in the commercial hall, and managed to get an extra booth for our team," Lamboley said. "We really needed the space!" He estimated that up to 400 attendees visited the ARRL exhibit, and all received an "Ask Me About Amateur Radio" pin designed by Ward Silver, N0AX.

"As this Symposium was about antennas, propagation and radio science, the most interest on the part of non-hams seemed to be the frequency allocations we have," Lamboley observed. "It seemed that over 50% of the attendees were working in the 10 to 100 GHz range and engaged in many experimental/research endeavors in that range. This is being driven by 5G. There was much interest in Arduinos as well."

Several attendees sat for Amateur Radio examinations offered at the conference. One grateful individual was Artem Roev, RN6HBZ, who now also holds a US Amateur Extra class ticket and the call sign AJ6KM. Another was Eric Eveleigh, KN4VRW — a conference attendee and graduate student from Canada who passed the Technician and General exams and plans to get his Canadian license when he returns home.

## ARISS Next Generation Radio System Completes Critical Flight Certification Tests

ARRL 07/31/2019



The Amateur Radio on the International Space Station (**ARISS**) next-generation Interoperable Radio System (IORS) successfully completed a battery of stress tests, required as part of the final certification of the hardware for launch to and operation on the International Space Station (ISS). The IORS consists of a JVC Kenwood D710GA transceiver and the AMSAT-developed Multi-Voltage Power Supply (MVPS). In early July, the equipment successfully completed a series of electromagnetic interference/electro-magnetic compatibility (EMC) tests to ensure that the ARISS hardware will not interfere with ISS systems or other payloads.

The IORS also successfully passed power quality and acoustics testing, which verified that the ARISS IORS will not introduce harmful signals back into the ISS power system and is quiet enough to meet ISS acoustic requirements. ARISS Hardware Team members Lou McFadin, W5DID, and Kerry Banke, N6IZW, were at NASA's Johnson Space Center to support the 2-week battery of tests in concert with the NASA test and certification team.

"Since the IORS is being qualified to operate on 120 V dc, 28 V dc, and Russian 28 V dc as well as transmit on VHF or UHF, a lot of test combinations were required to cover all cases," Banke said. "Each input voltage type was also tested at low, medium, and high line voltage. Moreover, additional permutations were required to test the IORS under no load, medium load, and full load at each voltage level. So it should not be surprising why the tests took 2 weeks to complete."

Successful completion of these tests represents a key milestone in preparing the IORS for launch. ARISS says it now can begin final assembly of the flight units and prepare for their safety certification before launch. ARISS is working toward launch-ready status by year's end.

## New Raspberry Pi 4 Problem Reported with Certain USB-C Cables

ARRL 07/25/2019



*TechRepublic* **reports** that the Raspberry Pi Foundation has confirmed that the recently released Raspberry Pi 4 will not work when powered using *certain* USB-C cables. The economical, single-board computer is the first Pi board to use a USB-C power connection. Pi co-creator Eben Upton has confirmed that not every USB-C cable will work. “The Pi 4 doesn’t receive power when used with electronically marked or e-marked USB-C cables — the type used by Apple MacBooks and other laptops,” the article quotes Upton as saying. “A smart charger with an e-marked cable will incorrectly identify the Raspberry Pi 4 as an audio adapter accessory, and refuse to provide power.”

Upton said he anticipates the issue will be fixed in future board revisions, but until then, Raspberry Pi 4 owners will need to use non e-marked USB-C cables — the type many smartphone chargers use — with a power supply that can deliver the 5.1 V at 3A the board needs. Another option is to purchase the official Raspberry Pi 4 power supply, which costs around \$8. Older chargers with A-C cables or micro B-to-C adaptors will also work if they provide enough power.

“The Raspberry Pi 4 marks a significant upgrade for the Pi, introducing a new CPU and GPU, upping the Pi’s memory to 4 GB, introducing USB 3.0 for fast storage, and adding support for dual 4K displays,” the *TechRepublic* article noted.

## Scouts Attending World Scout Jamboree Set to Talk with Space Station via Ham Radio

ARRL 07/19/2019

Thousands of Scouts from some 160 countries who will attend the 24th World Scout Jamboree this summer in West Virginia will have the chance to witness an Amateur Radio on the International Space Station (**ARISS**) contact during their stay. The theme of the World Scout Jamboree, which opens on Monday, July 22, is “Unlock a new world.” If all goes according to schedule, a selected group of Scouts at Jamboree station NA1WJ will pose questions to astronaut Drew Morgan, KI5AAA, at the helm of OR4ISS on the ISS on Saturday, July 27 at around 2:30 PM. Morgan is an assistant scoutmaster. The contact will be enabled via a “telebridge” between NA1SS and ON4ISS at AMSAT-Belgium. The event will be streamed live via Facebook. Work already is under way to assemble NA1WJ for the 11-day Jamboree.



“The station is coming together pretty well, we have most of our advance team here working on antennas, radios, rotators, and all that fun stuff,” NA1WJ Trustee Bill Stearns, NE4RD, told ARRL. He also said that the launch of the first of three APRS-carrying balloons likely would take place today (July 19), with beams for NA1WJ also scheduled for mounting to on-site utility poles, “which means we’ll be into full testing mode for HF starting then,” Stearns said. The balloons are expected to reach 40,000 feet altitude and continue across the Atlantic and perhaps around the world, with tracking via APRS and WSPR.

In its proposal for the ARISS contact, Jamboree officials said they wanted the ARISS contact to serve as “the pinnacle experience during the World Jamboree,” demonstrating to the nearly some 38,000 Scouts anticipated that “technology is a fascinating vocation as well as avocation and is a suitable area of pursuit within their Scouting program as well as at home when selecting an educational path for their lives and careers.”

The Scouting program embraces a wide range of science, technology, engineering, and mathematics (STEM) activities leading to merit badges in specific fields, including radio.

Scouts will start arriving over the July 20 – 21 weekend. The Jamboree will offer demonstrations of Amateur Radio on HF, VHF, UHF as well as multiple satellite contacts. The Jamboree also will offer Amateur Radio Direction Finding (ARDF) — hidden-transmitter hunts (foxhunting) — on 80 meters and 2 meters. More than 3,000 Scouts are expected to take part in the Amateur Radio demonstrations over the 11 days of the Jamboree, Scout officials said.

## Which HF bands are best during the day and which are better at night?

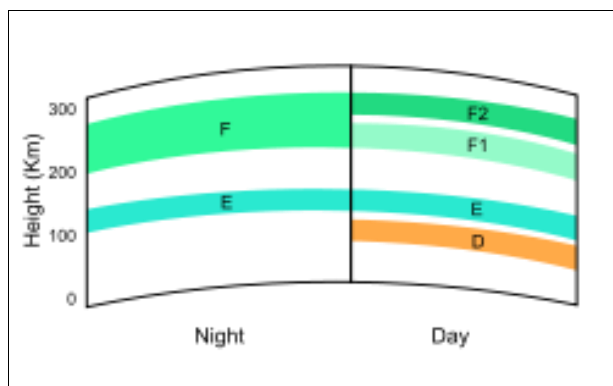
### Question:

I am rather new to HF operation and have recently purchased my first HF rig. I have read about bands being "open" and "closed" based on various conditions including time of day. As I have been listening, I have been bouncing around all the bands from 80 meters through 6 meters, but I am not sure which are better for me to try to make contacts on. I have heard that certain bands are more appropriate for daylight operation and others are better at night, but which are which?

### Answer:

HF propagation over long distances is by skywave propagation, the reflection and refraction of radio waves between Earth's surface and the ionosphere. The ionosphere is a consequence of radiation from the sun ionizing Earth's atmosphere, so it changes significantly with time of day and sunspot activity.

Although time of day is just one of many variables, here is a simplified model of the ionosphere:



The F layer is mostly responsible for the refraction of radio waves back to Earth, preventing them from escaping to space. The other layers interact in other ways. During the day, the D layer forms, and the F layer splits into F1 and F2 layers.

The D layer is present during the day and is a good absorber of radio waves, increasing losses. Higher frequencies are absorbed less, so higher bands (20m to 10m or so) tend to perform better. Above the critical frequency, the ionosphere is unable to refract the signal back to Earth and it escapes to space. The critical frequency during the day is in the neighborhood of 6m: depending on the space weather, 6m may work for skywave, or it may not.

During the night we need not contend with D layer absorption, but the critical frequency is lower, so higher frequencies can not support skywave propagation. This can be observed on a map of critical frequency: see that the critical frequency is typically lowest around dawn, when the ionosphere has been in the dark the longest.

So, very rough rule of thumb:

- 20m, being in the middle, works to some extent day or night.
- Lower frequency bands work best at night.
- Higher frequency bands work best during the day.
- The farther from 20m you get in either direction, the more pronounced these effects are.

Of course, given that space weather is just as variable as Earth weather, there are exceptions to these rules every day.

Question and answer was found at <https://ham.stackexchange.com>. Try using as a resource for some of your ham questions.

## Popular Bands

So what are the bands that most Radio Amateurs use? The table below shows bands that are relatively common and how and when they are in use. Again your license will determine which bands and what portions you are eligible to use.



Info found at [www.eham.net](http://www.eham.net)

	Band (meter)	MHz	Use*
HF	160	1.8 - 2.0	night
	80	3.5 - 4.0	night and local day
	40	7.0 - 7.3	night and local day
	30	10.1 - 10.15	CW and digital
	20	14.0 - 14.350	world wide day and night
	17	18.068 - 18.168	world wide day and night
	15	21.0 - 21.450	primarily a daytime band
	12	24.890 - 24.990	primarily a daytime band
	10	28.0 - 29.70	daytime during sunspot highs
VHF	6	50 - 54	local to world-wide
	2	144 - 148	local and medium distance
UHF	70 cm	430 - 440	local

# SPOT the T INFORMATION

Joe, WB6MYD



1. **Attendance drawing:** The name drawn was John-AF6DF, not present. I am sorry, 2 ways to look at this of course. A. if not present, we get a bigger pot next time or b. member missed out on the kitty. Either way, the kitty for the Aug meeting will \$25.00.

2. **Thank you:** Arnie-N6HC was welcomed back to the SBARC with his DXpedition to Ducie Island, 2018 presentation. Wow what a place to be. Well worth the effort having logged better than 112,000 QSO's which is fantastic of course. Thank you Arnie for a delightful showing of this DXpedition. Interesting to also note that 28 QSO's were made using the EME mode. I'll bet no noise at this absolutely deserted Island. If you missed it, sorry.

3. **New members:** We are happy to report that we now have 4 new members joining us. The 1st 2 were reported in the July Arc Over. 1. Jill-KN6COV, Tech got her license at our Jun VE session in time for FD. Jill and husband Ron have worked with us on Field Days for a good number of years. Both son's Scott and Andrew are also licensed. 2. Brian-KIERR, Extra has returned after having had to take care of a family member for a while. 3. Dale-KN6CHH is a new ham and is looking for our help. Please introduce yourself to them next time you see them. 4. Donald-KI6PIN, Gen has also signed up is a retired person. We certainly welcome each and every one, we are happy to work with you in any way we can. Thank you for joining the SBARC.

4. **W6SBA Repeater:** As you've noticed by now, we are back in full operation. The electrical power to the site underwent a major upgrade and consequentially commercial power to the repeater was disconnected. The repeater, due to its back up feature, was allowed to continue. Scott, able to monitor the battery voltage remotely, noticed after the 4th day on battery power it had dropped to a point where we wanted to make sure not to lose power to the system. So during

the last day, Friday were unable to activate the repeater in even low power. Friday around 5:00pm power was restored and again Scott returned the W6SBA repeater to full operation. We thank everyone for being discreet in using it during that time. We carried on a lot of time simplex on the output frequency which as we know has pretty good coverage as well depending on your location. This was suggested by Gary-WD9DUI for use. You have to realize that it was depending on your location, no big antenna for one thing nor elevation of course. All and all, it stood its operation for 4 days, never had been tested that long and this is what this is all about. So thanks again for your patience, Scott for his part and myself for allowing this to be checked. Joe, WB6MYD

5. **Field Day 2019:** By now we all know as to how we did this past FD. To recap for a moment we logged 90 QSO's which with the power multiplier turned into 180 points. Add another 770 bonus points claimed turns into 950 FD 2019 score. I was able to turn this into the ARRL well before the deadline electronically as well as the confirmation of bonus points claimed. The report was with the help from Scott-N6LEM and Ray-WA6OWM made possible submitted to the ARRL for a listing in QST usually in the Nov issue. We had 16 QSO's on 40m, 32 on 20m, and 4 on 15m. We also logged 24 on 2m and 14 on the 70cm band. As always, the job is never done till all the paperwork is completed. In this case ARRL requires a number of things to record the QSO's. Scott, myself and finally Ray having been able to finalize all the scores allowed me to mail the package both electronically as well as the old fashioned way of pony express to the ARRL well before the July 23rd deadline. We had 17 members sign in for FD and 12 guest. We thank all our members, those participating with us. It was with you all supporting this making it one of the better FD as was expressed by so many of you. Thank you.

JOE

## 2019 CLUB OFFICERS

**President:** Scott –N6LEM, 310-530-9889 scottsimpson126@gmail.com

**Vice President:** Alex – KD6LPA, 310.530.6614 kd6lpa@socal.rr.com

**Secretary:** Joe -WB6MYD, 310-328-0817 jmlanphen@gmail.com

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**Council:** Chuck – K6CSH, 310-941-5679 chuchohn@gmail.com

**Council:** Paul – KK6BY, 310-676-0212 kk6by@arrl.net

**Council:** Mark – KM6HQG, 310-612-0835 markvverbue@gmail.com

**Past Pres:** Ray – WA6OWM, 310-370-1913 wa6owm@arrl.net

## CALENDAR

**Council Meeting** - 4th Tuesday of the month  
Call Joe - WB6MYD (310) 328-0817

**Club Meeting** - 3rd Thursday of the month  
**August 15, 2019 - 7:30 p.m.**  
Room 1 in the Richard Hoffman  
Educational Center at Torrance  
Memorial Medical Center

**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,  
**August 31, 2019**, 7-11 a.m.

**VE Sessions** - Scheduled on Saturday of even months  
Contact Joe, WB6MYD with questions  
(All VE sessions are scheduled for Room 4 in the Health  
Conference Center)

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

## CLUB SERVICES

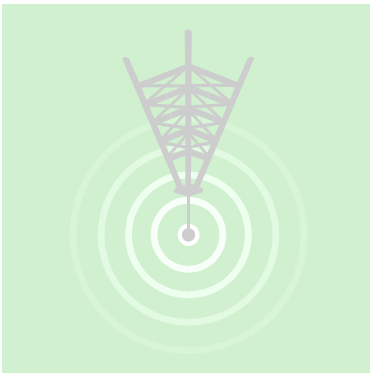
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Proofreader	Scott - N6LEM

**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  
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