The Transponder

The monthly newsletter of the Hughes Amateur Radio Club, W6HA
- An ARRL affiliated club -

February 14, 2020 Repeater 445.620 – PL 127.3 Web Site: http://W6HA.com **Vol. XLVII, No. 2**

*** * * CLUB MEETING * * ***

Where: **El Segundo Library - Friends of the Library Conference Room**
Location: **111 Mariposa Ave** (near Main Street) **, El Segundo, CA 90245**

Meeting Notice: **Date: Tuesday, February 18, 2020;**
Time: Gather, 11:30; Meeting: 12 to 1 PM

Featured Presentation:

Nano Vector Analyzer
by Tom, WA6SET

Up Coming Events:

Saturday, February 29th, 2020 – TRW Ham Radio Swap Meet – Sell our Excess Stuff
Saturday, March 28th, 2020 – TRW Ham Radio Swap Meet – Sell our Excess Stuff

Inside: **page**

Lunch: Pizza: 1 Large Veggie; 1 Lrg Pepperoni; 1 Lrg Special; 1 Lrg Sausage, ($3.50/slice)
Prices: 2 slices of Pizza w/salad**,** $8.00; 1 slice of pizza w/salad $5.00; Salad only $4.00
Sodas: Coke, Coke Zero & Ginger Ale ($1.00) - Water (50 cents)

Nets on the Club's Repeater: *(See Last page for details)*

Wednesday Evenings at 7:30 PM – Hughes ARC members net, (then Simplex @ 146.55)
Thursdays about Noon (12:05 PM) Raytheon & other Emergency Communication Teams (ECT)

Other nets: Thursdays at 7:30 PM So Bay ARC Net
First Monday of the month (7:00 PM) – LAFD CERT

Transponder Deadline for Submittal of Articles: Wednesday, before next meeting

This program is not sponsored by the El Segundo Public Library.

Club News:

Storage Container Status - It's Gone!

Business meeting in December was at the Container to empty it of all important items.
Notes consisted of a google Spread sheet showing where the items went for storage or sale.

January: No room Reservation – Meeting held in the park's Gazebo – No business meeting was held.

Notes/Action Items from the W6HA Business Meeting November 19, 2019
Mark to check on condition of emergency power for the club repeater and report what may be needed to ensure it remains up when building power is interrupted.

Brian to send link about nano vector analyzer and link to his ARISS video.

Mike to put the ARISS video link on the club web site as a first step to getting more club participation support in future space station opportunities.

Brian to be the primary speaker at the December club meeting subject being the ARISS experiences. Two additional opportunities for supporting a school are on the horizon.

January meeting topic will be suggested antennas for new Hams HT and continuation of the selection guidance of HT for new hams. The nano vector network analyzer will be part of the discussion of antennas.

January the club will try for another technician class plus a skills day. Mike to arrange for a room.

Judi to confirm the date of the December club meeting and make reservations for the January meeting.

Dale will email the club membership – paid status spreadsheet to Mike and Alice. Mike will update with data provided today by Alice and mail back to Dale and Alice.

Dale will get a few quotes for moving the container from lot T to its new spot.

Club needs to create a MOU for use of the repeater during training and actual emergencies. Actionee is TBD

Mike to further update the HT selection document based on on-going feedback from members.

Mike, N6MDV

TRW Swap Meet notes

Hi All! We had our 1st try at having a space at the TRW swap meet. We had 3 spaces and a nice location!
Lessons learned:

- 3 Tables is perfect
- Arriving at 6 am is perfect!
- Bringing small bills for change is important!
- Some music playing helps brings in customers!
- Need to have plastic bags for customers (we had a few but not quite enough)
- Demonstrating that an item works helps it sell!
    - Dale had a battery and my inverter provided limited A/C power.
    - Next time a Rasberry-Pi hooked to one of our monitors might help them sell too
- People had many questions about the club. We need to have club flyers available!
- Testing the tubes in the "boat anchor" gear would be a big plus to help it sell.
- 8 track player – Would be great! if we get it working . . . **But we need an 8 track tape!**

Overall we did well and took in $120.

I think the folks that participated manning the booth had a good time and had time to do a little shopping too!

Looking forward to next month, Brian, AB6UI

Up Coming Manhattan Beach - Runs
Hello All,
Three Events happen in the next 3, 4 and 5 Weeks.

Last year there was a question as to when the next Manhattan Beach events would be happening and so, I did not have good dates. Well, the calendars have been updated and I can now give you dates.

Saturday, February 29, 2020 American Martyrs 5k Run (This is also Swap Meet Saturday)
Saturday, March 7, 2020 Manhattan Beach Little League Opening Day Parade (which has been rained out the last 2 years)
Saturday, March 14, 2020 Robinson Elementary 5K Fun Run (yeah that is 3 events in 3 weeks)

Let me know, at your earliest convenience, your availability for these events which will happen in 4,

5 and 6 weeks. Note that many hams get sucked into the Swap Meet at NGST (formerly TRW) on that first weekend so, if you are available please volunteer.

Any questions, just drop me an email, jrkeller@ix.netcom.com or jrkeller47@gmail.com.

Thanks,
John Keller, N6JLS

Sean O'Brien 100K/50M –

Sean O'Brien 100K/50M - Hughes & Santa Barbara & So. BayARCs Comm Team, et al
Saturday, February 8th, 2020.

The Sean O'Brien 50/50 Race – Results

General: In general the race went very well. The 100k (60 mile) race started at 5 AM, aka O-Dark '30. The 50 miler started at 6 AM with some very pretty light in the eastern sky. Net Control, John, N6JLS had previously reported that there were a total of 400 runners registered to run; 267 in the 100k and 133 for the 50 miler. The demographic breakdown is as follows: under 30 years old – 43; 30 to 39 – 132; 40 to 49 – 175; 50 to 59 – 55; 60 to 69 – 11; 70 to 79 – 1; 80 to 89 – 1. Curiously, the 80 year old, somehow got started going through the Bull-Dog aid-station, came past the repeater about 10 AM, on his way to Corral Canyon and was therefore running the course backwards.
The first 100k runner arrived at the first aid-station, Corral Canyon (CC), by about 5:30 which is when our Portable Repeater, W6HA, became operational. The last runners cleared the Finish line at about 8 PM.

Net Operation / Plan

The NCS operator, John, N6JLS called up the net at about 4:45 on the Castro Peak (Agoura) repeater, K6DCS, since our portable machine was not planed to be operational until 5:30 or so. He used his base station radio to a J-Pole through 50 feet of RG-213. The operating position was from within the RV. By this time, the Start-Finish operator, Judi, KI6TKT was on site, Dale, WB6MMQ and Howard, KE6MAK, were on their way to the Corral Canyon aid-station. Around 5:30, operation would be transferred to the portable repeater, W6HA. Operation would continue on that machine until about 7 PM, when it would once again be moved back to K6DCS. At this time, the course would be clear except for a few 100k runners arriving at the CC aid-station from the Bull Dog aid-station. At about 8 PM all the runners were accounted for and the net was closed down.

Repeater site/setup

We (NCS, the Repeater operator and a CC op) left for Malibu Creek Campground, Friday, about 12:30 PM in a 1992 Yukon SUV and a rented Cruise America RV* and arrived in Malibu Creek Campground, site #6, Friday afternoon to setup the NCS position and be ready to install the repeater at O-Dark '30. We went out for dinner to Marmalades and then moved the RV into its final position** near the porta-potties and the Start-Finish Line in the "Day Use" parking area.
We proceeded to setup the i2000 Honda Genny, run the extension cord and setup the NCS's J-pole antenna & coax so that NCS was ready to go at 4:45 AM. Then, it being dark and there being not a lot else to do, we went to bed at 8 PM. I expected difficulty falling to sleep, but conked right out. Seven hours later, 3:00 AM, the alarm went off. I fired the Genny to provide power to brew Coffee, and for the NCS's radio.
John made Oatmeal for all seven of us, and I had a little O.J. and added walnuts and dried tart cherries to the Oatmeal.
At 3:45, which came fast, it was time to leave for Corral Canyon and the Repeater site. Meeting time at the gate was 4:30 AM. I allowed 20 minutes to descend Malibu Canyon Rd to the base of Corral Canyon Rd and 20 minutes to drive up Corral Canyon, as it is a winding road – Average speed, 30 mph.
I arrived exactly at 4:30 and the ranger, Shelby, was there within minutes of that. She unlocked the chain but had a little difficulty with the way the chain was wrapped around the post and through a pipe.. She called into the office for instructions – then I saw her on the way back with bolt cutters, so I jumped out of the car to check for myself. True the chain was wrapped a bit complicatedly, but the Ham/Engineer in me found a way, and it was freed up without the bolt cutters.
I was through the gate at 4:40 and on site a ¼ mile up the road at an elevation of 1980 feet at 4:50. I parked next to a hill, the top of which, is almost exactly 2000 feet above Sea level. From that vantage point, you can look down on the Northside of the ridge to see the Bull Dog Ais-Station, Start-Finish, and the NCS locations.

On the south side, You can see Latigo, and about where Kanan-Dume aid-station is. The Zuma Ridge Aid-Station location can be seen, but Bonsall is below two ridgelines, one forming Latigo canyon and the other forming Zuma/ Trancas Canyon. The Bonsall Road parking lot is at the very bottom of Zuma/Trancas Canyon at the Zuma Canyon Trail Head. Even with the Repeater antenna at 2,020 feet, Bonsall aid station is a difficult radio location.

The recent fires and rain made the scramble up the hill, with mast , guys , antenna and 150 ft. of RG-214U coax a little more interesting, than in the past, but it was do-able, in two trips. There were two naturally supplied tie points, up wind, of the desired mast location. So, I tied the 1st two (of three) guys to them. In my haste, assembling the mast and antenna, it was laid out opposite to what I usually would arrange. That is the base was almost exactly on a line between the two tie points, rather than near it's expected final position. I expected this to be a problem and that I would have more than the usual struggle getting the mast up to vertical. Usually, haste makes waste, and I expected I was looking into it. However, as I picked up the mast and moved forward the two tied down guys came taught, picking up some of the weight of the mast, coax and antenna. As I pushed the base forward the guys pulled the mast up into a vertical position with almost no effort on my part. Perhaps it seemed like no effort, because I was expecting a struggle, but I think there needs to be an instructional U-Tube on this single handed mast raising method.

I stopped with the mast about 5 or 10 degrees from vertical and with the breeze and weight of the antenna on the guys. At this point, it self-supports. This allowed me to gather the third guy and tie it off. Then I trued up the mast to 90 degrees with earth.

This was amazingly simple vs. the prior technique of lodging the base of the mast against a rock or the base of a bush, or perhaps even driving a stake or two to hold the base while walking the mast up and hoping the base did not break loose, causing me to start all over. What is it they say about the 'Mother of Invention . . . necessity? . . . was that it? Perhaps it's just a lucky fool stumbling around in the Moon light, … and it happens. But the fools don't notice what they have found.

At this point I scrambled down the hill, very carefully, (it's a bit like walking down hill on slightly out of round ball bearings) in the afore-mentioned Moon light (who needs a skateboard to crack his skull) to the truck and connected the coax to the repeater and turned it on. It ID and the ID came out of my HT. So, I announced, on the K6DCS (Castro peak repeater) that the W6HA portable repeater was up and running. The time was about 5:30 AM, about 30 minutes after the 100K race had started. Race information such as, adds, DNSs and other such information was not yet available and had not been communicated on the K6DCS machine.

Repeater Operations: [Well, at least in the morning, not so great.]

Initial signal reports were very good (NCS, S-F, Corral and Latigo) until about 7 AM, when another repeater became active on this same frequency pair but with a different PL (CTCSS) tone. The PL helped us NOT hear all their transmissions as long as we did not transmit at the same time. When we did transmit, the PL from our radios opens our repeater's tone squelch. Once open the repeater hears everything on the air and, as expected, retransmits it.

Likewise, when our machine comes up, it transmits our PL opening the Tone Squelch on your HT or Mobil unit's receiver and then you will hear both repeaters, if they are both transmitting. (If you did not setup Tone Squelch on your receiver, you would hear both repeaters all the time.)

The discriminator/limiter circuits in an FM receiver, operate such that, usually only the strongest signal is demodulated, but if they are near equal, it may switch back and forth between the two signals. Or, if the undesired signal is stronger you may hear only that signal. Soooo, the morning was rather difficult and some stations resorted to using the backup K6DCS machine on a case by case basis.

Around noon, we were close to switching operations to K6DCS, as many transmissions had to be repeated and some stations were regularly going over to K6DCS to complete traffic. However, Mike, N6MDV, learned that the exercise, on the other machine, was about to be completed. During the afternoon virtually no problems were encountered with the other repeater.

But stations such as Bonsall and Kanan Dume still did not have a 'Full Quieting' signal.

Tear Down:

I did not think it possible to have good Moon light for both setup and tear down, but in fact that was exactly the situation, so I was able to continue repeater operations well after sundown, just because I had good Moon light to aid in tear down. (The head lamp is ok, but it is nice to have a wider view of things on a steep 'Ball Bearing' littered hillside, even if the BBs are a little out of round.) Just the same, after Latigo aid-station shut down, I recommended that NCS transfer remaining operations over to K6DCS. By that time I had cleaned up the area, put the Solar Panel away and had only to pull 'The Big Switch', as they say, and then take down the antenna, Roll up the Coax, Call the Dogs and Go Home,. . . to the RV, where John, N6JLS was cooking the evening meal, Chicken Tortellini, in a wonderful Sauce. There were trimmings to go with it, such as Broccoli, Carrots and a wonderful beverage. We crashed hard after the meal and awoke at 7:30 or 8 AM. After more Oatmeal etc., the Genny, Extension Cord, Antenna and Coax were packed and we left the park in and arrived in the Westchester / Manhattan Beach area about 10:30, relatively well rested.

Repeater Technical Details:

Repeater: The repeater is a YASUE System Fusion Model DR-1XE (The X indicates and integral AC (100 – 240 volt) power supply. The 'E' indicates an extended temperature range of -20 to +55 degrees C).

It will operate as a standard analog FM Repeater and also as a C4FM FDMA/FM machine, Yasue's proprietary digital mode. It can be set to operate only in the Analog mode, or to Auto detect the digital or analog signal.

Besides the repeater itself there is a set of four full sized cavities comprising a Duplexer that allows operation with only one antenna. These are on Loan from Norm, K6UU.

The DR-1 has three power levels: Low: 5 Watts; Medium: 20 Watts and High: 50 Watts. The specifications recommend using the 50 Watt setting only in an environmentally controlled area which is air conditioned. Most mornings and evenings, we have the equivalent of A/C at the repeater site, but at mid day, not so much.

Power: When we started supporting these races back in 2014, both the Repeater and NCS station were powered by Honda i2000 inverter type generators with good spark arrestors. Even then, I had a couple of 100 Ahr SLAs to operate the repeater through a generator outage (refueling or whatever). However, with the extreme fire hazard and fairly cheap solar panels availability, I now use three 100 Ahr SLA batteries connected to a 100W solar panel. On a sunny day that panel provides two to three times the power needed and, on this trip, the batteries came home in higher state of charge (12.8 v) than they left home in (12.6v). On two previous trips there were overcast skies and even rain. Under those conditions the panel supplies about 1.0 amp @ 12 volts or about 12 watts continuous. The repeater, however transmits only intermittently, and is run at 20 watts, which may require 25 - 30 watts of input. So far, the battery voltage has not sagged, even on cloudy days. Of course, I am ready with a jumper to the truck's generator / battery, as a backup, but so far that has not been necessary.

Antenna

The antenna is a Tram 1470 (we think) Omni Directional dual band vertical antenna, mounted on a 20 foot pushup mast. The mast is erected on top of a hill about 20 feet higher than the parking area. The Tram 1480 specifications indicates that it is 98.5 inch long, but the antenna I mounted is only **80 inches** long, from the top of the metal base to it's tip.

The 1480 spec. indicates 6 dB gain at 2M. I have checked the specifications of several different brands, trying to find a vertical dual band antenna that is 80 inches long. So far, I have not found one. I am just trying to verify the specs on what we have so I can see what it takes to improve on them.

Coax

The Coax used is RG-214/U. Loss at 150 Mhz is 2 dB/ 100 feet. The run from the truck to the top of the hill and up the mast is near 130 to 150 ft. So, about 3 dB loss. At 150 mHz, LMR 400 has a loss of 1.5 dB at 150 feet. So we could gain 1.5 dB with better coax. It is a lighter coax, but a bit more fragile (kinks easier).

Corral Canyon - From Bruce, KK6BJ:

Howard, KE6MAK; Mark, KD6TJU and I (Bruce, KK6BJ) all arrived about 0455, a bit after Dale,

WB6MMQ, ascended on Castro Motor Way with the repeater.
Howard and I both used Kenwood TH-6A HTs with triband antennas with great reception on our nearby repeater, and the Castro Repeater, K6DCS, which was active on our arrival and activated again after the last runner cleared Corral about 1900 hrs. We had predictably superb reception, given our location, on repeaters and simplex, as well. Mark tried to use a digital logging network and was thwarted by lack of reliable network connection. He took command of paper logging and manually transferred this to the Corral Canyon aid station site runner check list.

This was extremely helpful in documenting who had made the first, second, and third pass and was very helpful, especially toward the end when we were coordinating with the race sweepers to confirm that the trail was clear.
Sean was the aid station captain at our station and was very experienced and knowledgeable. His coordination with Keira was excellent. We did notice some QRM from a station on the repeater frequency, but fortunately, due to a different PL, we were not having direct interference with our transmissions [most likely due to very close proximity to the repeater – mmq]. The interfering station seemed to be in support of some PD/CERT activity. Mark, KJ6TJU, is a retired sheriff. He shrugged and correctly noted it was not interfering with our operation in any way, whatsoever.
The simplified two race format made logging much easier this year. The standard challenges of monitoring, who dropped from the 100K to 50 mile race was much less of a difficulty than I would've predicted. We were likewise given prompt information on who dropped out, when they dropped out and how they were getting back to the start-finish line. Thanks again, and looking forward to next year. - Bruce, KK6BJ

Corral Canyon - From Howard, KE6MAK
Equipment: I was using a Kenwood TH-F6 at 5W with a ¼ wave and had no problems with the repeater (when other repeater was not in use). My Verizon cell could receive text but not send and definitely no connection for internet. - 73, Howard, KE6MAK

Latigo Aid Station– Tom, KJ6CLV
Equipment: Handheld radios: Main radio: Baofeng UV-5RV2+ at 4 watts, with a Nagoya NA-771 15.6"; 1/4 wavelength VHF, 1/2 wavelength UHF - Claims 2.15dBi gain.
Secondary radio: Baofeng UV-3R+ at 2 watts, connected to Nagoya UT-72 19" mag mount,1/4 wavelength VHF, +1.7dBi; 5/8 wavelength UHF, +3.5dBi.

For what it's worth, I had good reception in my car with the small Baofeng in El Segundo on the way in, Saturday morning. It got a bit sketchier when I was on PCH in Malibu, much nearer the mountains.
Maybe we should try to use the Cypress? repeater that the CERT exercise was using down Long Beach way. ;-p

I also had a homemade dual band flexible j-pole, but didn't need it at Latigo. There really aren't any trees there and I don't yet have a mast. Well, I followed the suggested philosophy on the creature comforts. I had a chair, a table, a gas lantern, food, cooler and some other stuff I didn't set up. I just wish I had thought to take a picture. - Tom

Kanan-Dume: Ralph, AI6GP, Brian, AB6UI, Alice, Lynn Dee Johnson.
Brian, AB6UI writes,

I had 4 volunteers Ralph Yoon AI6GP, Alice (call sign?) , Lynn Dee Johnson (signed up for next tech class) and I, along with the help of a couple of "BIB CATCHERS" from the aid station were able to do a good job of tracking the runners...

This area is difficult from a radio perspective because it is completely surrounded by hills. The only thing that worked was finding a "sweet spot" and setting up the antenna there. It was at the north end of the parking lot (see photo) I tried 50 watts on the mobile radio into the Diamond mag-mount antenna mounted on my SUV with no success... But a DIY "Fong J-Pole" hung from the tip of a 30' bream pole connected to my Baofeng HT (in the sweet spot) did the trick. The reality is that if you don't have a good spot even 10 times the power will NOT help!
The runners came in so fast in the morning that it was impossible to get the times but they were much more "strung out" on the way back, so that we were able to record the times, as well as, the bib number. *[Note: The time of each individual runner is NOT required. The time at the beginning of a group or the end of a group is just fine. Give*

all of them in that same group the same time. – mmq]

Other than the spotty radio communications there were no real problems. That said it was a very long day we started setting up at 6am and didn't leave until 5pm. The aid station workers did TWO SHIFTS! Maybe if we had more volunteers we could consider two shifts as well.

73 de AB6UI

Zuma Ridge – Wayne, AF6GX and Chris, KM6HVO

The aid station team met the ranger at 6am. He opened the gate and escorted them up the forest service road. In dry weather, a typically sedan can make the drive up the ridge. High clearance is nice, but both Wayne and Chris had 4 wheel drive vehicles.

Zuma ridge is a great radio location. Near (if not actual) line of sight to the repeater. Simplex operation is possible to both Bonsall and the Kanan Dume aid stations. Since the simplex frequency is usually not being monitored, a good procedure is to put your HT into Reverse on the repeater pair and then call the adjacent aid station. Upon contact, ask him to move to the Simplex Frequency. If possible, NCS should be informed first, or perhaps by the called station, so that he and the net knows what is going on.

Bonsall – Zuma Canyon Trail Head - 2020

Mike, N6MDV and Karen, K6VHY

The most important fact is that pointing the antenna at **300 degrees magnetic** provided the best signal, despite the repeater being nearly 90 degrees off that angle.

From our observation everyone did an awesome job. Actually monitoring the radio traffic after Bonsall closed was very impressive at the professionalism of messaging by all. Truly extraordinary skill and dedication was exhibited by all of our participants. Thanks for the opportunity and awesome support of club activities!

Bonsall Rd - Zuma Canyon Trail head

Summary: Support of the Bonsall aid station started at 7AM and continued until 2:00PM. Routine traffic was passed regarding runners dropping out of the race and arranging transportation for them. **Radio reception from the repeater was poor with much noise as well as interference from another repeater**, W6CYP, that was using the same frequency from Cypress CA, but with a different PL code.

Details: We, K6VHY and N6MDV, left Manhattan Beach at 5:32 AM. When we arrived at Bonsall **at 6:26,** twilight was just starting.

Some of the aid station workers were already there. About 6 cars were in the parking lot mostly from a Bird Banding group who had camped there overnight. (**Don't arrive much later;** the parking lot filled fast, arriving earlier provides more choices for setup.) The aid station captain was new to this site and we told her, Tam, where the EZups, food, and drop bags are normally placed. We were able to park along the fence on the east side of the parking lot, as in past years and started setting up the antenna after we talked to the aid station workers. Note Kiera's new assistant is named Mary replacing Sarah who had been at many races in the past.

The antenna was mounted on a PVC pipe approximately 15 feet high with a standoff to hold the coax away from the vertically polarized antenna. We put an Elk log periodic antenna (8.9dBi) at the top connected to 50 feet of LMR 400 coax to a Kenwood D710G radio. Two 90AH batteries provided power through an Anderson Powerpole connection. All transmissions were at full power which likely was about 40W or possibly less given the 12.6V battery source. Total current for the day was 7.5AH.

We were on the air by 7AM. The antenna was placed on a small bluff east of the parking lot. Interestingly and amazingly Net Control reported full quieting when we pointed the antenna at 300 degrees magnetic nearly 90 degrees away from the repeater location bouncing the signal off a hill northwest of the parking lot. Pointing north or east did not create a readable signal.

Net Control via the repeater had considerable hiss and fuzz throughout the day. The repeater was using only 20W [*same power used at every other 50/50 race-mmq*]. Net Control's report of our signal quality was much better than what we were getting from the repeater. Possibly the 40W we were using vs. the 20W on the repeater made a big difference. Signals from other stations via the repeater were of various readability. Some were barely readable. Others were fairly clear. Zuma ridge had good signal. Start line signal was often

unreadable. Bull Dog was good. Kanan Dume was great – on reverse.

The Bonsall transmission quality was initially described as good and late in the day described that we dropped out during transmissions. The poor signal near the end of the day may be related to a very large horse trailer that was moved into the parking lot around noon in-line with our antenna pointing direction or possibly that the two 90AH batteries which used 7.5AH during the day were sagging to 12.24 Volts during transmission.

The W6CYP repeater had 4-6 bars of 'S' meter. The club repeater was 1 or sometimes 2 bars. At one point we tried reverse on the repeater frequency. Kanan Dume comes through full quieting with a very clear, strong signal. Later we did some simplex with AB6UI at Kanan Dume. [Zuma Ridge should have been solid copy as well. – ed]

Operation: Karen, K6VHY, took up a position where the runners came into and left the aid station so she could record bib numbers and times. Mike, N6MDV, was about 100 feet away in the jeep next to the antenna which was in a field east of the parking lot. Karen wrote bib numbers in chronological order as they arrived on note book paper. When there was a break in the runners arriving, she relayed bib numbers on a simplex hand held radio (220MHz) to Mike who recorded the bib numbers arrival times, drops, and relevant info on the provided bib number sheets. Or occasionally Karen would provide the paper copy of recorded numbers as it was easier than listening to Cypress and our Net Control and Karen on simplex. Karen also tracked down potential drops with the station people and runners ensuring that we had a record of those leaving the race.

Operationally this had the benefit of having both a time ordered and a bib ordered set of data. The aid station workers did provide some bib recording this year as well. One of them did a great job. Others not so much. None the less when we scrubbed the recorded list of who had come through the station, the combination of Karen's and the aid station's list together helped immensely.

Another benefit is that Mike could monitor all the other repeater traffic and relay to Karen relevant information that she gave to the station captain.

Other note for fun: The aid station crew dressed up as Bananas had Banana hats and blow up Bananas to provide a festive, fun stop for the runners. Not to mention the Banana Dance! *Going Bananas!!*

Many activities at this station today – very busy parking lot. Bird Banding group. Painting club had 20 painters and horseback ridders.

Note: weak Sprint cell phone coverage is available in the lot, not so for ATT or Verizon. **There are two portapotty restrooms**.

Improvements/Comments:

For the Bonsall station, it might be interesting to try an antenna with a higher gain than 9.8dBi pointed at 300 degrees; as this may make the repeater signal stronger.

Also for Bonsall having a battery booster circuit to bump up the voltage to the radio to 13.8V would allow the transmitter to run closer to a full 50W throughout the day, albeit at the need for more AH in the battery. [Try a Solar Panel – mmq]

For the repeater site we should consider being able to go with more than 20W. Possibly that would only help Bonsall. Or it may help provide a stronger signal when others 40 miles away are on the same frequency. Possibly get a VHF amplifier on the output of the repeater?

Timing: The first runner came in **at 8:18AM.** The last runner came in at **12:40.**

Given that two runners were unaccounted for, 402 and 440, Kiera's person, Mary, and some of the aid station workers stayed around until nearly 1:30.

We started taking down the antenna around 1:30 and were out of the lot by 2PM and arrived home around 4PM – much more traffic coming home than going out in the morning.

More Than 1 Million Contacts Logged During 2019 ARRL Field Day

[Abteviated from Dec, but updates for W6HA & other in LAX-ed]

. . . nearly 1.1 million contacts were made during the 2019 ARRL Field Day – the most popular operating event in North America. … 2019 ARRL Field Day results, … in the December 2019 issue of *QST*. … more than 36,000 Hams took part in 2019 Field Day across all 83 ARRL/RAC Sections, up slightly from 35,250 reported in 2019.

"This year, 3,113 entries were received from local clubs and EOCs, as well as individual portable, mobile, and home stations," … . Most entries were in Class A -- club or non-club groups of three or more. … approximately 46% were phone, 456,000 (42%) were CW, … 138,000+ (12%) were digital modes, such as FT8 and RTTY. … up from just over 56,000," in 2018.

Top 10 scores ranged between W3AO's Class 14A entry from Maryland-DC, with 32,356 points, to W1NVT's 14,876-point Class 2A entry from Vermont. . . .

LAX Section: So how did we do in the LAX section. (Not all LAX entries are listed, but here is a sample. All listed below ran 150 watts or less.) - ed

Clubs/Grps	Call	Class	QSOs	Prts	Score	PPP
S.P, Pasadna, JPL & CaTch	W6KA	3A	1975	117	7978	68
United	K6AA	4A	1272	30	6182	206
W6TRW	W6TRW	7A	1096	35	5486	157
PV ARC	K6PV	2A	1295	38	5284	139
Hughes	**W6HA**	**3A**	**869**	**28**	**3674**	**131**
Sn.Frndo	W6SD	3A	367	12	1616	135
LAFD	N6ACS	2A	518	15	2180	145
W.Side	W6RC	3A	144	3	1362	454
Scan/Rd Ant Aniltrs	AD6HK	1A	435	5	1300	260
S.P, P, JPL & CaTch Rngds	W6SPR	1A	175	117	1000	9
So.Bay	W6SBA	1A	90	17	970	57
AE Assn	W6AGO	1A	18	6	686	114

As usual, United RAC, K6AA, in 4A was near the top scorer across all classes with 1272 QSOs (Qs), 30 participants (Prts) and Scored 6182 points (pts), that's 209 Points Per Participant (PPP).

But four clubs in the Pasadena area (South Pasadena, Pasadena, JPL and CalTech, W6KA) ganged up on us all to make the top score in LAX of 7978 Points. However if you want to know who the **top operators** were, check the last column for **P**oints **P**er **P**articipant and scan down to, Yes, the Westside ARC where each of the three (3) participant averaged 454 points. -ed

Soapbox comments for Field Day 2019 are available on the ARRL website. ARRL Field Day 2020 will take place June 27 - 28.

Amplitude Modulation QSO Party

The AWA Amplitude Modulation QSO party brings awareness to the AM mode by hearing lots of AM stations on the bands. For many, this is the first time they have operated AM. You do not need to be an AWA member to operate this or any other AWA "On Air" events. Please send in your logs even if you work a single station!

Although Vintage gear is encouraged, you will hear modern gear on during this event. Whatever generates an AM signal may be used. This event has some of the friendliest people you will hear on the air. Your will notice a nice relaxed format where people often chat between QSO's. In addition, there are some pretty good multipliers based on the power of your transmitter. If you have a great antenna, it pays to turn down the power! For those with 20M AM capability, there is a great multiplier for operating 20M.

AM is enjoying a robust recovery using a variety of methods, including both traditional and modern technologies. Let's show the amateur community that AM is alive and well.

http://www.antiquewireless.org/amplitude-modulation-qso-party.html

ARRL Letter – Excerpts of possible interest

QRZ.com Ends Identity Verified Program

The popular QRZ.com amateur radio website has dropped its verified member program, which the site instituted last year in an effort to combat fraud and password phishers. Termination of the program was due to "a number of factors," the site's founder and president Fred Lloyd, AA7BQ, explained in a post. Lloyd said the change will "transition our online swapmeet rules to reflect more open policies." The site had offered the option of establishing two-factor authentication (2FA) for its registered users, which would secure a user's password on the site. The site introduced two-factor authentication last June, and the verified member program later.

"While two-factor authentication has worked very well, the identity verified program hasn't worked as well as we'd hoped. There has been a net decrease in swapmeet traffic, primarily due to members not wishing to take the extra steps to get verified. The swapmeet did seem to get safer, but also notably quieter. The forum has lost some of the excitement that it used to be known for."

Lloyd said the identity verified program was designed to provide an extra level of confidence to swapmeet participants, but "in practical terms, its validation methods were not sustainable." Not only was it an administrative burden, Lloyd explained, but the majority of its participants were only complying reluctantly. "The bottom line is that it's been unpopular," he said.

Lloyd said that by dropping the identity verified requirement, QRZ expects to see an increase in equipment listings and greater participation.

Individuals listing equipment will still need to provide photos of actual items for sale, and photos must include the seller's call sign. Only ham members -- those having a listed call sign page -- may sell in the swapmeet. Those perusing the listings will generally be allowed to post comments or questions about any listing, Lloyd said. Read more.

A 600 W Broadband HF Amplifier Using Economically Priced LDMOS Devices

Razvan Fatu, M0HZH/YO9IRF, has designed and built a 600 W broadband HF amateur radio amplifier that uses a pair of low-cost MRF300 LDMOS (laterally diffused metal-oxide semiconductor) MOSFET devices. LDMOS devices are widely used in RF power amplifiers. Fatu's model A600, now at version 1.2, was designed to demonstrate the capabilities of MRF300s as linear broadband devices in the 2 - 50 MHz range.

"This is a homebrew project, so the test setup is pretty typical of a hobbyist's test bench," Fatu said. "Most of the equipment is not of lab-grade precision, but still accurate enough for amateur radio."

"The announcement of the MRF300 and MRF101 transistors by NXP in 2018 has generated quite a spark of interest in the amateur radio community, and as soon as I learned about them, I wanted to get some on my workbench," Fatu said. He has entered his project in the NXP Homebrew RF Design Challenge 2019.

"To achieve the target of 600 W output while also minimizing the level of even-number harmonics, a push-pull configuration of two transistors is used," he explains. "Luckily, there are two versions -- the MRF300AN and MRF300BN -- that have mirrored pinouts." The individual transistors are specified at 330 W output and come in a TO-247 package, with the source connected to the tab. The recommended supply range is 30 - 50 V dc. "By studying the specifications… we can get close to 600 W output at a voltage of around 45 V with a large bandwidth; 1.8 to 54 MHz," Fatu said. … As the TO-247 is not a package specifically designed for high-power RF, there are some challenges with thermal design and PCB layout as well."

The circuit uses a 4:1 transformer at the input. He used surface-mount devices wherever possible, to minimize stray inductance, and designed the circuit board power traces to be thick enough to support the high current. …

During testing, he found that the amplifier will put out about 580 W at 3.7 MHz and works most efficiently in the higher bands. "The highest output power I've measured was 840 W in the 10-meter band, but the wave was distorted and the harmonic levels were high," Fatu said.

He has posted a video in addition to an online article.

The ARRL International DX Contest (CW) Is Just Ahead. *[& Phone is on March 7 – 8 – ed]*

The CW weekend of the always-exciting ARRL International DX Contest kicks off this weekend, February 15 - 16 (UTC). This event is a huge opportunity for new, casual, and seasoned radiosport enthusiasts to enjoy the thrill of working some new DX entities.

The terrific part is that DX stations work *only* US and Canada and not each other. So, the DX operators need your contact for points.

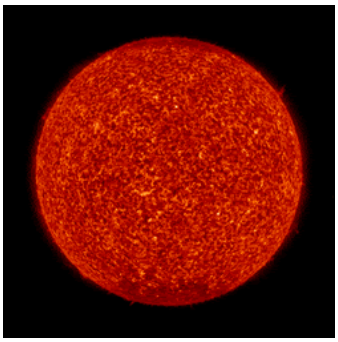
You **don't** need a powerhouse contest station to join in the fun. It's possible to work DX with simple wire dipole antennas and 100 W.

Participating in the ARRL International DX Contest is a whole lot of fun and can really help build your DXCC totals and QSL collections.

Complete details are available via the ARRL Contests web page. **The ARRL International DX Contest phone weekend is March 7 - 8 (UTC).**

The K7RA Solar Update

Tad Cook, K7RA, Seattle, reports: No sunspots appeared during the reporting week, February 6 - 12. Average daily solar flux declined by more than 1 point to 71.1. Average planetary A index increased from 6.7 to 8.3.



Predicted solar flux for the next 45 days is 72 on February 13 - 20; 73 on February 21 - 22; 74 on February 23 - 29; 72 on March 1 - 3; 71 on March 4 - 11; 72 on March 12 - 18; 73 on March 19 - 20; 74 on March 21 - 27, and 72 on March 28.

Predicted planetary A index is 5 on February 13 - 16; 8 on February 17 - 20; 5 on February 21 - 24; 10 on February 25 - 26; 5 on February 27 - 29; 8 on March 1 - 3; 5 on March 4 - 22; 10 on March 23 - 24; 5 on March 25 - 27, and 8 on March 28.

Sunspot numbers for February 6 - 12 were 0, 0, 0, 0, 0, 0, and 0, with a mean of 0. The 10.7-centimeter flux was 71.3, 70.8, 72, 70.6, 70.2, 71.1, and 71.6, with a mean of 71.1. Estimated planetary A indices were 15, 15, 6, 7, 5, 6, and 4, with a mean of 8.3. Middle latitude A index was 13, 11, 4, 5, 4, 6, and 4, with a mean of 6.7.

A comprehensive K7RA Solar Update is posted Fridays on the ARRL website. For more information concerning radio propagation, visit the ARRL Technical Information Service, read "What the Numbers Mean...," and check out K9LA's Propagation Page.

A propagation bulletin archive is available. Monthly charts offer propagation projections between the US and a dozen DX locations. Share your reports and observations.

ARRL Section, State and Division Conventions / Hamfest in the West or near members everywhere:

February 14 - 15 -- Southwest Division Convention, Yuma, Arizona
May 15 – 17 **Dayton Hamvention**, Xenia, Ohio

Find conventions and hamfests in your area.

The theme for the 2020 Dayton Hamvention® will be "Amateur Radio, The Future." [held over Dec. '19 - ed]

Hamvention General Chair Jack Gerbs, WB8SCT, invited Hamvention attendees to celebrate amateur radio's past, present, and future. "As amateur radio operators, we enjoy many modes of operating," Gerbs said. "We also enjoy challenges such as satellite communications, moonbounce, meteor scatter, and more. What truly excites me about our hobby is the diversity of these modes and the fact that, as we move to the future, we still enjoy the technologies of the past." . . . Ham-vention 2020 takes place May 15 - 17 at the Greene County Fairgrounds and Expo Center in Xenia, Ohio.

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Just Ahead in Radiosports

Feb. 14 -- PODXS 070 Club Valentine Sprint (dig)
Feb.15 -- Feld Hell Sprint
Feb. 15-16-ARRL International DX Contest (CW)
Feb. 15 - 16 -- Russian PSK WW Contest
Feb. 15-16 -- AWA **AM** QSO Party
Feb. 17 -- Run for the Bacon QRP Contest (CW)
Feb. 19 -- AGCW Semi-Automatic Key Evening
Mar. 8-9-ARRL International DX Contest (Ph)

See the ARRL Contest Calendar for more information. For in-depth reporting on Amateur Radio contesting, subscribe to *The ARRL Contest Update* via your ARRL member profile email preferences.
All dates & times are UTC.

In Brief...

Successful 47 GHz Amateur Radio Moonbounce Test Reported.

Mitsuo Kasai, JA1WQF, successfully decoded a 47 GHz signal bounced off the moon on February 10 by Al Ward, W5LUA. More tests are planned. Ward posted

news of the achievement on the Moon-Net email reflector. "These were one-way tests, with only me transmitting," he said in his post. "I started out by sending single tones to Mitsuo, which he copied well, and then sent several sequences of calls and grid. Mitsuo was able to decode calls and my grid at 1146 UTC and 1234 UTC. Signal levels were -23 dB and -25 dB." Ward noted that the first EME (Earth-moon-Earth) contact on 47 GHz took place in early 2005. "More 47 GHz tests are being run in the next few days with Manfred Ploetz, DL7YC," he said. "We hope for similar success."

An international team of 10 operators will be active as W8S from Swains Island from March 10 to March 25.

The DXpedtion team will be active on all HF bands on CW, SSB, FT8, and RTTY. Operation will be from two separate camps on the island -- a Red Camp and a Blue Camp -- each with two stations. The four stations will be on the air 24/7. The station equipment complements are identical. Two stations will be dedicated for 160 and 80 meters. A WiFi network will link the Red and Blue camps to network all logging laptops. Hans Griessl, DL6JGN, and Ronald Stuy, PA3EWP, are co-leaders. Swains Island (Olohega) is an atoll in the Tokelau chain. Swains is a US territory and considered part of American Samoa. Swains Island is the 34th most-wanted DXCC entity.

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Selected DX News (QRV = Ready! or Are you Ready?)

ARLD007 DX news

This week's bulletin was made possible with information provided by AA4NC, HK6O, N3BNA, W1UE, W2GD, The Daily DX, the OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

MALDIVES, 8Q. Juan, HK4A is QRV as 8Q7AR **until February 17**. Activity is on FM Satellites AO-91, AO-92, IO-86, and with APRS via the ISS from Grid Square MJ64. QSL via LoTW.

PHILIPPINES, DU. Pres, N6SS will be QRV as DU6/N6SS in the **ARRL International DX CW** contest as a Single Op/Single Band on 80 meters entry. QSL via LoTW.

PALESTINE, E4. Members of the Radio Club de Provins are QRV as E44CC **until Feb. 17,** on 160 to 10M using CW, SSB, RTTY, PSK, FT8 and FT4. QSL via F5GSJ.

FRENCH POLYNESIA, FO. Will, AA4NC and Ron, AA4VK are QRV as TX4N and TX4VK, from Tahiti until **February 17,** on all HF bands using CW, SSB, FT8 and FT4. This includes operating as TX4N in the **ARRL International DX CW contest**. QSL TX4N via EA5GL & TX4VK direct to home call.

US VIRGIN ISLANDS, KP2. Brian, ND3F is QRV as KP2/ND3F from St. Croix, IOTA NA-106, **until Feb. 18,** including entry in **ARRL International DX CW contest.** QSL via EA5GL.

ARUBA, P4. John, W2GD is QRV as P44W **until February 17**, on 160 to 10 M. This includes being an entry in **ARRL International DX CW Contest.** QSL direct to N2MM.

CURACAO, PJ2. Thilo, DL9NBJ is QRV as PJ2/DL9NBJ **until February 19**, on the HF bands using CW, SSB and FT8. QSL via Club Log.

CONGO, TN. Konstantin, UA9FGR is QRV as TN/UA9FGR from Brazzaville until **February 29**. Activity is on 40 to 17 meters, and possibly 6 meters, using CW, SSB and FT8, all with low power. QSL#1

MALI, TZ. Ulmar, DK1CE is QRV as TZ1CE from Bamako **until Feb. 20**. Activity is on the HF bands using CW, SSB and some FT8. QSL#1.

TURKS AND CAICOS ISLANDS, VP5. Bill, AC0W and Pat, K0PC are QRV as VP5/AC0W and VP5/K0PC, respectively, from Providenciales, IOTA NA-002, **until Feb. 17**. Activity is on 160 to 10M using mostly CW, using VP5K in **ARRL International DX CW contest.** QSL VP5K via K0PC and others to home calls.

NEW ZEALAND, ZL. Mark, ZL3AB, Geoff, ZL3GA & Phil, ZL3PAH will be QRV as ZL3X in **ARRL International DX CW contest**. QSL #4

PARAGUAY, ZP. Dale, N3BNA, Bud, N7CW and Edgar, KC2RG will be QRV as ZP0R in the **ARRL International DX CW contest.** Look for ZP/KC2RG and ZP/N3BNA to be active using CW and various digital modes. QSL #2

ANTARCTICA. Roman, HB9HCF will be QRV as DP0GVN from the Neumayer III station until **February 29, 2020**. Activity will be on 160 to 10 meters. QSL via DL5EBE.

KENYA. 5Z. Scott, WA5A is QRV as 5Z4/WA5A from Ruaka until **late March.** Activity is holiday style on 40, 20 and 15 meters, and possibly 160 and 80M, using mainly SSB. QSL #1

JAMAICA, 6Y. Rob, N1TRK will be QRV as N1TRK/6Y from Negril, IOTA NA-097, **from February 8 to 20.** Activity will be on 40, 20, 17 and 10 meters using FT8 & some SSB. QSL #4

SOLOMON ISLANDS, H4. Bernhard, DL2GAC is QRV as H44MS from Malaita Island, IOTA OC-047, **until April 20**. Activity is on 80 to 6 meters using SSB and possibly FT8. QSL #1

THAILAND, HS. Lory, HB9DUS is QRV as HS0ZKE from Bangkok **until Feb. 29** Activity is on the HF bands using CW & FT8. QSL#1

HONDURAS, HR. Dave, VE3VSM will be QRV as VE3VSM/HR9 from Roatan Island, IOTA NA-057, **from February 11 to 23**. Activity will be on 40, 20 and 15 meters using mainly CW, and possibly some SSB and RTTY. This includes being an entry in the upcoming **ARRL Inter-national DX CW contest**. QSL #1.

ST. VINCENT, J8. David, WJ2O will be QRV as J8/WJ2O **from February 9 to 20**. Activity will be on the HF bands, with a focus on the newer bands, using CW and FT8. This includes being an entry in the upcoming **ARRL International DX CW contest.** QSL via N2ZN.

FERNANDO DE NORONHA, PY0F. Andre, PP6ZZ is QRV as PY0FF **until Feb. 18.** Activity is in his spare time on the HF bands using all modes, including FT8 and FT4. This includes being an entry in the upcoming **ARRL Inter-national DX CW contest**. QSL via W9VA.

GUADELOUPE, FG. Jean-Pierre, F6ITD is QRV as FG/F6ITD from Desirade Island, IOTA NA-102, **until March 9**. Activity is on the HF bands using SSB and various digital modes. QSL #1

CANARY ISLANDS, EA8. Erich, HB9FIH is QRV as EA8/HB9FIH from El Hierro, IOTA AF-004, until the end **of March 2020**. Activity is on the HF bands using CW, SSB and various digital modes. This includes various SOTA and IOTA activations. QSL to home call.

NETHERLANDS, PA. Spcl event station PA75LIMBURG is QRV until **March 2020** to commemorate the liberation of the province Limburg 75 years ago. QSL via PC8DB.

SRI LANKA, 4S. Peter, DC0KK is QRV as 4S7KKG **until March 30**. Activity is on the HF bands using CW and various digital modes. QSL to home call.

Long Term: (longer than 1 month)

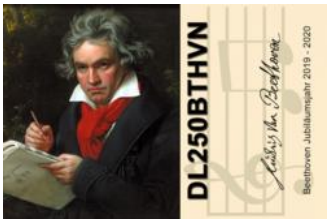
NORFOLK ISLAND, VK9N. Janusz, SP9FIH is QRV as VK9NK **until April 12.** Activity is on 160 to 10 meters using SSB, RTTY and FT8. QSL#1

QATAR, A7. Rasto, OM6AA is QRV as A75GR **until April 2020**. Activity has been on 80 meters. QSL via M0OXO.

MYANMAR, XZ. Martti, OH2BH is QRV as XZ2D **until April 17, 2020**. Activity is generally on 15 and 10 meters. QSL #1

CHATHAM ISLANDS, ZL7. Chris, ZL7DX is currently QRV on 20 and 6 meters using mostly digital modes. He plans to be active on other bands soon. [**Listed Jan 2020** – mmq] QSL #1

ZAMBIA, 9J. Mario, IK1MYT is QRV as 9J2MYT from Lusaka until **June 2020**. Activity is on 40, 20, 15 and 10 meters. QSL #1



Until 2021

A year-long special event will honor Beethoven. German special event station DL250BTHVN will be active between **December 16, 2019, and December 17, 2020**, to honor the 250th anniversary of the birth of famed composer Ludwig van Beethoven. The Beethoven anniversary year will take place under the auspices of Germany's Federal President Frank-Walter Steinmeier. Beethoven was born in December 1770 in Bonn, Germany, and lived there for the first 22 years of his life. QSL via direct or by the bureau.

FEDERAL REPUBLIC OF GERMANY, DA. Members of the DARC club of Pulheim are QRV with special event call sign DL40PUL **during 2020** to celebrate the club's 40th anniversary. QSL via bureau.

SOUTH SUDAN, Z8. James, Z81C is QRV from Juba while working for a non-governmental organization for the **next 18 months. [until March 2021-ed]** Activity is mostly on SSB. QSL #2

Notes:

1. QSL direct to home call.
2. QSL via operators' instructions.
3. QSL via bureau
4. QSL via LoTW
5. QSL via Instruction on QRZ.com

Lunch Financials – for Dec., 2019
Attendance: 23

	Starting Lunch Kitty:	$ 160.75
Expenses: Pizza(1) & Salads	$102.00	
Drinks: Soda: 10 @ 0.35 =	$3.50	
Water 2 @ 0.25 =	$0.50	
Food Total:	$106.00	$ 54.75
Income: Lunch:	$103.25	$158.00
Room Rent-To General Funds:	$00.00	$158.00

Starting - Kitty for Nov. 19, 2019 Mtg: $158.00
[Loss of $2.75 - $20.00 for room rent = Loss of 22.75]

Lunch Financials – for Jan. 21, 2020
Attendance: guessing 20 in park

	Starting Lunch Kitty:	$158.00
Expenses: Pizza(4) & Salads	$102.00	
Drinks: Soda: 14 @ 0.34 =	$ 4.75	
Water 0 @ 0.25 =	$ 0.00	
Food Total:	$106.75	$ 51.25
Income: Lunch:	$ 99.50	$ 150.75
Room Rent-To General Funds:	$0.00	$ 150.75

Starting - Kitty for Dec 17, 2019 Mtg: $ 150.75
[Gain of $6.75 - $20.00 for room rent = Loss of $13.25]

AMATEUR RADIO LICENSING EXAMS:
TRW Swap meet at the corner of Aviation Blvd and Marine Avenue in Redondo Beach. 10AM in the Northrop cafeteria. Always the last Saturday of the month – no reservation is required. (www.W6TRW.com)

ARRL Announces Free Exam Review Website
The ARRL has launched a web site that allows users to take randomly generated practice exams using questions from the actual examination question pool. ARRL Exam Review for Ham Radio™ is *free*, and users do *not* need to be ARRL members. The only requirement is that users must first set up a site login (this is a different and separate login from your ARRL website user registration).

Other Free Exam Practice Sites:
http://aa9pw.com/radio/technician/
http://www.eham.net/exams/
This Practice Exam site Requires Registration
https://www.qrz.com/hamtest/

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818 790 2832

LAX Section Traffic Mngr: Kate Hutton, K6HTN
For Radiogram formatting instructions go to www.ARRLLAX.org .

RF Safety – Power Density Web site:
http://hintlink.com/power_density.htm

Links: TRW license test
http://w6trw.com/index.php/amateur-radio-license-testing/

PodCast – Amateur Radio News
(The above is a link to an MP3 audio feed)

On-Line Stores / suppliers:
http://www.impulseelectronics.com/ PowerPole
https://elkantennas.com - LPA VHF/UHF Ant.
http://hamcity.com - Local – Conn, cables, ants.
http://www.aesham.com/ - Ham Radio Outlet
http://www.dxengineering.com
http://www.gigaparts.com/
http://www.AllElectronics.com – Parts
http://TheWireman.com – Ant. Coax, UV Dacron
ARRL http://arrl.org
CQ Mag http://store.cq-amateur-radio.com/product-category/books/
BGMicro https://www.bgmicro.com/

HARC Past & Current Presidents
1973 Doug Erny, AK7E (former W6NPD)
1974 Orson Just, K6JGV, sk
1975, 76 Tom Rothwell, K6ZT, sk
1977 Tom McInnis, WB6ZEB, sk
1978,79 Sam Weise, W6LXR
1980 Bob Poole, AJ6F
1981 Russ Sanford, WA6NQO, sk
1982, 83 Chuck, KN6H
1984 John Bennett,WD6BAI
1985 Scott Fraser, KN6F
1986, 87 Ed, K6GQV
1988 John, WA6LOD
1989, 90 John, KJ6AW
1992 Bruce, WB6ARE
1993 Rick, KD6DYN
1994
1995,6,7,8,9 Brian, AB6UI
2000,1,2 Bruce, W6BLS
2004,5,6 Ed, N6EG
2007 - 2014 Barry, KG6NWJ
2015, 16, 17 – Dale Birmingham, WB6MMQ
2018-19 Mike, N6MDV (Current President)

Southern California Band Plans:
Tasma – 2 Meters
http://www.tasma.org/TASMA-2m-Band-Plan.pdf

220 MHz Spectrum Mngmnt Assoc. of So. Ca
220SMA BAND PLAN
http://www.220sma.org/bandplan.htm

SCRRBA (Southern California Repeater and Remote Base Assoc.) – 440 mHz (70 cm) and up
http://www.scrrba.org/BandPlans/BandPlans.htm

W1AW Operating Schedule(Edited – Note: Local time stays the same, UTC varies w/DST)

Morning Schedule:

Winter	Summer	Local	Mode	Days
1400 UTC	1300 UTC	(6 AM PDT)	CWs	Wed, Fri
1400 "	1300 UTC	(6 AM PDT)	CWf	Tue, Thu

Afternoon/Evening Schedule:

2100 UTC	2000 UTC	(1 PM PDT)	CWf	Mon, Wed, Fri
2100 "	2000 "	"	CWs	Tue, Thu
2200 "	2100 "	(2 PM PDT)	CWb	Daily, CW Bulletin,18 WPM
2300 "	2200 "	(3 PM PDT)	DIGITAL	Daily, Digital Bulletin
0000 "	2300 "	(4 PM PDT)	CWs	Mon, Wed, Fri
0000 "	2300 "	"	CWf	Tue, Thu
0100 "	0000 "	(5 PM PDT)	CWb	Daily, CW Bulletin,18 WPM
0200 "	0100 "	(6 PM PDT)	DIGITAL	Daily, Digital Bulletin
0245 "	0145 "	(6:45 PM PDT)	VOICE	Daily, Voice Bulletin
0300 "	0200 "	(7 PM PDT)	CWf	Mon, Wed, Fri
0300 "	0200 "	"	CWs	Tue, Thu
0400 "	0300 "	(8 PM PDT)	CWb	Daily, CW Bulletin,18 WPM

Frequencies (MHz)

CW:	1.8025	3.5815	7.0475	14.0475	18.0975	21.0675	28.0675	50.350	147.555
DIGITAL:	-	3.5975	7.095	14.095	18.1025	21.095	28.095	50.350	147.555
VOICE:	1.855	3.990	7.290	14.290	18.160	21.390	28.590	50.350	147.555

Notes:

CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 & 15 WPM
CWf = Morse Code practice (fast) = 35,30,25,20,15,13 &10 WPM
CWb = Morse Code Bulletins = 18 WPM

CW frequencies include code practices, Qualifying Runs and CW bulletins.
DIGITAL = BAUDOT (45.45 baud) BPSK31 and MFSK16 in a revolving Schedule.
Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and alternate speeds.

W1AW Qualifying Runs: [for more info: www.arrl.org/qualifying-run-schedule]
Starting in Dec. W1AW will transmit Qualifying Runs up to 16 times per month.
For Feb. & Mar.- Time is PST: [10 – 35 wpm – **Bold 35 – 10 wpm]** – on CW Frequencies listed above

Month	6am	1PM	4PM	7PM	6am	1PM	4PM	7PM	6am	1PM	4PM	7PM	6am
Feb.	**2/13**	2/11	2/12	2/24	2/18	2/21	2/20	2/14	**2/26**	**2/27**	2/28	**2/19**	
Mar.		3/2	**3/3**	3/5*	3/6	3/10	3/11*	**3/18**	**3/12**			3/13	
Mar.	3/17	3/27		3/23*	**3/25**	**3/26**	3/19			3/20*			

West Coast Qualifying Runs:
Wed.Feb 26 @ 8 PM PST (0400 UTC Feb. 27) on 7047.5 & 14047.5 kHz by KH6TU, 10-40 wpm
Sat. Mar. 21 @ 2 PM PDT (2100 UTC Jan. 30) on 3581.5, 7047.5, 1407.5 & 18097.5 kHz by K6KPH; 10-35 wpm

Earn your Code Proficiency certificate by legibly coping at least 1 minute of text by hand and mailing the sheet to: W1AW Qualifiying Runs, 225 Main St., Newington, CT 06111. Include $10 (check or money order) if this is a submission for your initial Code Proficiency certificate; $7.50 if you are applying for an endorsement (available for speeds up to 40 wpm). Your test will be checked against the actual transmissions to determine if you have qualified.

Audio from W1AW's CW code practices, CW/digital bulletins and phone bulletin is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The monthly W1AW Qualifying Runs are presented here, also. The audio (real-time) runs concurrently with W1AW's regular transmission schedule.

The Straight Key Century Club (SKCC): http://www.skccgroup.com/member_services/beginners_corner/
SKCC Beginner's Corner **(Headings from the above Web site)**
Monthly Straight Key Night (SKN**) is on the 1st of each month. It is not a contest. No logs are submitted. The event, was inspired by the ARRL's annual SKN. The SKCC's founders wanted to have SKN monthly. The tradition continues! The Elmer frequency** is **7114 KHz**. It's a safe haven for CW newcomers. Elmers are encouraged to monitor the frequency and work the CW beginners, some of whom may have had a license for many years.

2018 – 2019 CLUB OFFICERS

Elected Officers:

PRESIDENT:	Mike, N6MDV	President at W6HA.com
VICE PRESIDENT:	Raul, KM6NRL	W6HA_VicePresident at W6HA.com
SECRETARY:	Judi, KI6TKT	W6HA at W6HA.com
TREASURER:	Alice, KK6MFL	Treasurer at W6HA.com
STATION MANAGER:	Brian, AB6UI	W6HAStationMgr at W6HA.com
Immediate PAST PRES.:	Dale, WB6MMQ	W6HA at W6HA.com

Committees:

NEWSLETTER EDITOR:	Dale, WB6MMQ	W6HA_Editor at W6HA.com
WEB MASTER:	Mike, N6MDV	W6HA at W6HA.com
MEMBERSHIP:	Dale, WB6MMQ	W6HA at W6HA.com
SCRRBA REP:	Ray, WA6NVL	WA6NVL at ARRL.net
MEETING HOST:	Dale, WB6MMQ	W6HA at W6HA
Asst. Host:	Howard, KE6MAK	W6HA at W6HA
FIELD DAY :	Mike, Dale, Raul, Richard	Fieldday at W6HA.com
MEMBERSHIP:	Dale, WB6MMQ	W6HA at W6HA.com
NET COORDINATOR:	Raul, KM6NRL	W6HA at W6HA.com
YAHOO GROUPS MOD:	Richard KM6FP	W6HA at W6HA.com (http://groups.yahoo.com/w6ha)
CLASS MODERATOR:	Mike, N6MDV	W6HAClass at W6HA.com
RAYTHEON SAS ECT:	Ken, KI6YDN,	KSIMP1022 at AOL.com

CLUB REPEATER: W6HA/R 445.620 MHz (-) PL 127.3 Hz Location: Bldg. R1 roof
Packet (node :hughes) 145.61s W6HA

HARC Repeater Nets: Wednesdays, 7:30 PM (0200 UTC Thursdays) (Just Started Sept. 2018)
Thursdays, 12:05PM (1900 UTC) RTN ECT – All are welcome
South Bay ARC Net: Thursdays at 7:30 PM on W6SBA/R, 224.38, PL 192.8
LAFD CERT Net: 1st Monday of the month, 7:00 PM (0200 UTC Tuesday)

HAC HF NET: HARC & Retired 14.233 Mhz, Tuesdays, 13:00 PDT – Currently Inactive

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Club Shack: The club shack is in E1, Lobby D. There is a Kenwood TS-520 HF radio connected to an 40 –10 meter antenna. This station is open to all club members. (I would be happy to give a tour of the HF station in "Lobby D" to club members. Brian, AB6UI, Station Manager)

Club Newsletter: If you have items that would be of interest to the club, any comments, letters, or items for sale or trade please email it to Dale, WB6MMQ W6HA at W6HA.com. If anyone needs a club application, please contact Dale, WB6MMQ and one will be sent to you.

Club Roster: Hardcopy available at meeting or contact the club membership chairman Dale, WB6MMQ

Web Site: http://W6HA.com or W6HA.com

The Hughes Amateur Radio Club is an ARRL affiliated club for FCC-licensed amateur radio operators and their family members. Membership is open to all Amateur Radio Operators and those who are aspiring Amateur Radio operators.
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