
**This Month's News:** FIELD DAY 2021 (June 26-27)

Our Field Day committee has been working to organize our 2021 Field Day (June 26-27). We have reserved the Duck Pond at Oxnard College; check our committee's status on our groups.io page. We are asking for volunteers to become Band Captains, set-up and take-down and numerous other activities to help make this coming Field Day one that everyone can enjoy. Mark Vodon KI6PTE has agreed to lend us his RV (with an awning, BBQ and beds), Clem KM6OKZ, Pedro KE6MIL, Tim KN6JGB and Robert KM6RSS have volunteered to be the 40m, 20m, 2m and 1.25m band captains, respectively. Mark Ortega KI6YLH will be coordinating the cooking. Robert and Bob Brodie will also serve as the Safety Officers. Many other members have volunteered to assist. We will be holding a June 5th Field Day Club Get-Together starting at 11AM and running to 4PM at The Dudley House, 197 N Ashwood Ave, Ventura, CA 93003. See K6MEP.groups.io for more details. The next committee meeting is scheduled for June 12 at 20:00; Denney N6HV will send out Zoom invitations using our groups.io website.

The May 14th meeting was held on the air at 19:00 by our club President Denney N6HV, who used the Sulphur Mountain Repeater, on 145.200 MHz with a minus offset and a PL of 127.3 Hz. He conducted a Zoom meeting and discussed old and new club business, as well as welcomed our new (and old) members. Robert KM6RSS discussed "Changes to the FCC RF Exposure Rules 2021". Stu AG6AG provided detailed answers to many questions.

Reese West KQ6TT continues to pen his "Thoughts from the West" column.

Steve Noll WA6EJO has started a new column entitled "Ham Tips de Steve", filled with useable tips and techniques.

## The Inside Story

## Message from the President

**The Prez Sez,**

The good, the bad, the confusing; sunspots

The sun is waking up. We are seeing more and more sunspots, so why is the HF band dead? Radio waves are bent back to earth by regions (more like thin clouds than layers) filled with ions. The more ions the higher the frequency that will be bent back (refracted) to earth. There is an often forgotten exception, if there are too many ions the RF energy (your signal or the signal that you're trying to hear) gets adsorbed (a radio blackout) by the ion region.

First step, what's an ion? An ion is an atom or a molecule that is missing an electron. A photon hits an atom or molecule and an electron flies off. Not just any photo can come along and knock an electron off. The photon must have enough energy to knock the electron off. The energy of a photon is related to the frequency of the photon. The higher the frequency (of the photon) the more the energy it has. This is called the Photoelectric Effect and how it works was proved by Einstein (he won a Nobel Prize for the paper).

So what is the frequency of light (its energy) that is needed to ionize the D, E, and F regions of the ionosphere? Remember, without a steady amount of photons of the right energy (or higher) free electrons recombine with the ions and there's nothing to refract or return the radio waves to earth. Now it starts to get complicated.

In a NOAA website I found that in the E region of the ionosphere, the O2+ (the two means that the oxygen pair where two oxygen atoms stuck together as a molecule, the + means that the molecule has a positive charge) molecules have one electron missing and are the ions that do the refraction of radio waves.

| Club Officers | And Keyer | Contributors |
|---|---|---|
| President | Denney Pistole | N6HV |
| Vice-President | Clem Alberts | KM6OKZ |
| Secretary | Open | |
| Treasurer | John Gartman | W6JPG |
| Board Member* | Dave Schmidt | AI6VX |
| Board Member | Robert Shank | KM6RSS |
| Board Member | Richard Abbey | WB6AEW |
| Photographer | Denney Pistole | N6HV |
| Facilities | Richard Abbey | WB6AEW |
| Keyer Editor | Robert Shank | KM6RSS |
| Webmaster | Robert Shank | KM6RSS |
| Domain | Phil Cohen | WA6BUZ |
| Membership | Open | |
| License Trustee | Dave Schmidt | AI6VX |
| QSL Manager | Ben Holmes | K6QV |
| Safety Officer | Open | |
| Trivia | Dana Wentling | KG6WXE |
| Columnist | Reese West | KQ6TT |
| Columnist | Steve Noll | WA6EJO |
| Local Area Net | Wayne Woodhams | N6WIX |
| ACS/ARES | Rob Hanson | W6RH |
| SB Section | John Kitchens | NS6X |
| PVARC/MESH | Paul/Orv | WD6EBY/W6BI |

The ***KEYER*** is published monthly by K6MEP, the Ventura County Amateur Radio Club, Inc. as a means of providing club members the minutes from K6MEP's monthly general membership meetings, the monthly board of directors' meetings, a calendar of events and articles of interest about amateur radio.  Material submitted for inclusion is encouraged.

Submit material by email to KM6RSS@gmail.com. Our club mailing address is:

K6MEP

PO Box 2103

Oxnard, CA 93034-2103

K6MEP holds general membership meetings at 7:00 PM on the 2nd Friday of each month (except December). Dues are $20 per year.

## Message from the President

**(Continued)**

It takes energy above 12 electron volts to ionize an O2 molecule. That is photon with a frequency above 2,903 THz. That is in the gray area between Ultra Violet (UV) light and visible light.

In the F region O+ ions (ions of atomic oxygen), the atoms have a positive charge. Oxygen forms O2 molecules at sea level and are the main components that refract radio waves back to earth. To ionize atomic oxygen takes 13.62 electron volts or a photon with a frequency above 91 nanometers. This is a photon of Extreme Ultra Violet (EUV) light.

I have not found any paper or other source that tells me what ions do the work of refracting or absorbing RF energy in the D regions.

What's the problem? Very little Extreme Ultra Violet (EUV) light makes it to the surface of the earth. Also the density of the earth's atmosphere changes changing the amount of EUV light that reaches the surface of the earth. Weather also effects how much EUV reaches the surface of the earth. If more EUV reached the surface we would have more cancer.

To measure how much EUV radiation the earth receives from the sun astronomers use 10.7 MHz 2800 MHz radiations for a stand in for the 3,293,829,584 MHz (3,293 THz) ionization that causes F layer ionization. The 10.7 MHz radiation from the sun does not exactly track the EUV emissions from the sun. We now have satellites orbiting outside the atmosphere that can measure solar radiation at 3,293 THz, but to keep the years of data that were collected before satellites they still use 10.7 cm as the solar index of the sun's radiation.

But why are the bands dead? We have lots of sunspots.

Sunspots release more EUV and X-rays than a quite sun surface. Sunspots also can release solar flares. These flares are burst of EUV and X-rays. These EUV and X-ray emissions can ionize the D region of the ionosphere until the D region absorbs most ham radio frequencies. That's a radio blackout. Solar flares may only last an hour or two. The D region is dense compared to the E or F region. This density causes the free electrons to be closer to the ions and the electrons and ions recombine quickly (compared to the E and F region) ending the radio blackout. Free electrons are not as dense in the E and F regions and the ions last longer, so propagation may be very good after a radio black out.

Solar flares are accompanied with geomagnetic storms. EUV light and X-rays travel at the speed of light. The storms are caused by particles. The particles travel much slower and take two to three days to reach earth after a solar flare.

Ions are a charged particle moving in the earth's magnetic field. Magnetic fields can move charged particles. The solar storm messes up the earth's magnetic field and that shoves the ions around and disrupts propagation. On top of that you can have solar flares occurring within hours of one another leading to multiple radio blackouts and solar storms. This can lead to a solar storm arriving at the same time as a much later solar flare. So when propagation should get good it can get bad.

## Message from the President (Continued)

### A bit of history

While cleaning up the garage to make room so I can pack more stuff in the garage I found, under a shelf, an old frequency generator. The generator went up to 1212MHz and it must have been made around WWII. The front plate of the generator was made for a 19 inch relay rack. The face plate was iron not aluminum. That would mean that the generator was made at the beginning of WWII or easier.

When WWII started the government restricted the use of aluminum to air planes. This thing was heavy and not going flying, although, from the frequency, it was made for testing TACANs (Tactical Air Navigation Systems). These navigation systems are used on military ships and airplanes.

Since I now have much lighter and smaller frequency generators that cover frequencies around that range it was time to see how this thing was put together. Pulling it apart I found gears, tuned cavity and other nice things. I pulled out an old, metal enclosed, octal based tube and found it was a 6L6. The metal can instead of glass envelope tube means the tube may have been made before 1940s. In the 1940s they pushed the benefits of metal outsides. One of the benefits was you can't get cut on the tube envelope if it was metal; you can get cut on the broken glass of a tube. On the other hand you can't see if the filament still glows if the tube has a metal outside. Seriously, there was a transistor in the early days of the solid state takeover that had a light in the top of the package to show that it still worked.

A quick glance at the schematic riveted to the lid of the generator (how I miss the days of where a readable schematic was included with most electronic devices) showed that the 6L6 was used to modulate the oscillator tube.

The 6L6 was driven be a pair of 6SN7s in one half of a long tail driver circuit. Bonus point if you know what a long tail driver is. They still use the long tail method in analog transistor audio circuits. 6SN7s and 6L6s were made for each other.

That old metal shelled 6L6 brought back memories. The first transmitter I build was a single tube 6L6 with the crystal driving the grid. I hoped to get 5 watts out. I don't know if I got anything out. I didn't have any RF test equipment at the time. 6L6s were getting rare in the 1960s, but so many had been used in the audio section of old, old radios that they could be easily found and given a new home.

The 6L6 was introduced to the world in July 1936 by RCA. It was the first beam power tube. It was a tetrode with only two grids, but it had beam plates.

The 6L6 is all about power. Triodes came first. A triode has three elements, a cathode, a grid and a plate. Sometimes the cathode is the heater, but in other tubes the cathode is heated by a separate heater. The heater is not considered an element of the tube. Then there is a grid, next is the plate. The big problem in the 1930s was triodes did not put out much power; you could get maybe 2.5 watts of audio from your jukebox or radio.

One of the problems with triodes is that electrons from the cathode would bounce off the plate of the tube and form a space charge inside the tube. This cloud of electrons repelled

## Message from the President (Continued)

electrons coming from the cathode and limited the current or loudness the triode could put out.

They added another grid between the control grid (the first grid) and the plate (called a suppressor grid) to push the bounced electrons back to the plate. They called this arrangement of elements in a tube a tetrode. This worked, but at low drive and low plate voltages the tube had a negative resistance region. This cause feedback oscillation and distortion. Table top radios and battery operated radios (common in the 1930s) used low plate voltages. There are high power RF tetrode amplifiers, but they use 2000 to 6000 volts on the plate. 6000 volts is not something you want in a radio sitting next to the bathtub.

So they added another grid between the suppressor grid and the plate. Hey, if it worked one time it should work again. (This was in the days before computers and a calculator was someone with a pad and a pencil). It did work, and a British company locked up the patents on the Pentode.

To get around the patents RCA bought some patents form another British company and with a lot of work developed the 6L6 or a tetrode with beam forming plates that began a long series of beam power tubes.

From there the 807 was developed. The 807 was an audio tube that hams found they could push to work in the ham bands. An 807 cost a lot less than a power RF tube. They could be found in public address system all over the place. An 807 also looked a lot like a beer bottle, which started the expression "Let's go get a cold 807".

The 6V6 and 6AQ5 are smaller derivatives of the 6L6. Television horizontal output tubes or sweep tubes are direct descendants of the 6L6. Some guitar players still use amplifiers with 6L6 tubes in them for the sound the tubes generate.

**About using a 6L6**. The metal shell of the tube was connected to pin one, which was the ground pin. Pin two was connected to the plate, which had high voltage connected to it. If the tube was used in an audio amplifier, a common use for the tube, and you disconnected the speaker and put a signal into the amplifier, pin 2 would arc over to pin 1. If you used the tube in a transmitter and the SWR was high, pin 2 would arc over to pin1.

If the tube was operating or had been operating and you touched the metal shell you got burned fingers. The metal may not have been glowing red, but it felt like it.

Some hams put the tube upside down in a jar of motor oil (you were supposed to use transformer oil, but where in a farming community was I going to find a quart of transformer oil?). The tube was rated for 19 watts. You could squeeze 150 watts out of one 6L6 soaked in oil for a very short time.

Burnt fingers, arcs, and sparks flying all over the place. Tubes were much more fun than transistors!

73, Denney N6HV

## K6MEP Monday Night Net Denney N6HV

Our 2021 Contest started on January 11 and will end on December 6th. Make sure to set your calendar alarms to remind you to check-in and join the Zoom get-together that follows.

Our Net is held each Monday night at 20:00 hrs. local time (we won't hold the net on Christmas Eve/Day or New Year's Eve/Day if they fall on a Monday). We welcome all Ham operators so please check-in and join the roundtable discussion. The net is on Two Meters on the WD6EBY Repeater of Oxnard on 145.200 MHz with a negative offset and a PL of 127.3. We also have a Zoom meeting following the net at 20:30; see K6MEP.groups.io, YouTube and MeWe for details. Many thanks to PVARC and Paul WD6EBY for hosting our meeting on the repeater.

| Monday Night Net Contest Totals to Date | | |
|---|---|---|
| Date | Total | Visitors |
| 1/11/2021 | 22 | 4 |
| 1/18/2021 | 22 | 3 |
| 1/25/2021 | 22 | 6 |
| 2/1/2021 | 18 | 3 |
| 2/8/2021 | 17 | 2 |
| 2/15/2021 | 18 | 3 |
| 2/22/2021 | 20 | 4 |
| 3/1/2021 | 17 | 3 |
| 3/8/2021 | 26 | 8 |
| 3/15/2021 | 20 | 5 |
| 3/22/2021 | 22 | 7 |
| 3/29/2021 | 17 | 3 |
| 4/5/2021 | 20 | 7 |
| 4/12/2021 | 19 | 4 |
| 4/19/2021 | 18 | 3 |
| 4/26/2021 | 17 | 4 |
| 5/3/2021 | 20 | 4 |
| 5/10/2021 | 13 | 2 |
| 5/17/2021 | 15 | 1 |
| 5/24/2021 | 19 | 5 |
| 5/31/2021 | 16 | 2 |
| Total | 398 | 83 |

As of May 31st, we've held 21 nets and had a total of 398 check-ins including 83 visitor check-ins and an average of 18.95 per night. 5 members including, of course, our net control operator, Denney N6HV, have checked in **every Monday night**.

## Notes from the 2021-5-24 Monday Night Net Contest

We had 19 check-ins on the net; four of which were visitors. The repeater demonstrated a good reach with KN6ESR checking-in from Tarzana, CA. Dave AI6VX has got a Cushman service monitor. It a very hand piece of test equipment for FM VHF radios.

Tim KN6JGB is going to get a device that lets him use the trailer hitch of his pickup truck to hold a pole that he will mount VHF and UHF antennas on during field day.

John KN6JWO a new ham checked in and had some goods questions for the net. We talked about personal Emergency Locator Beacons, APRS system and how someone loss in the wildness could use radio to summon help if the cell phone service did not work.

Ben K6QV has upgraded to a Yaesu FT-60 and a new antenna.

Pedro KE6MIL has gotten two shelters to use during field day.

Robert is busy working on the newsletter and is always seeking articles and pictures.

Burt KA6BJA has built an extension cable for his tuner and he talked to Stu AG6AG. Stu told him that CVARC is going to be able to use the Reagan library for field day.

Mark KI6PTE is busy installing antenna mounting on a camper and his truck.

Clem KM6OKZ is making up cables to make setting up for field day easier.

Paul WD6EBY is busy building sets of equipment for new and existing repeaters. The set will make the repeater the same and make installation and repair easier.

The net closed at 9:09 PM. A bit later than usual, but it was a great net.

## Notes from the 5-24-2021 after net Zoom get together N6HV.

We had another good turnout for the Zoom get-together.

I mentioned that Tamitha Skov, “The Space Weather Woman”, will be presenting a talk at the June 17th CVARC zoom meeting at 7:00. See www.cvarc.org web page for more information.

Robert volunteered to post our field day location and hours on Facebook and MeWe. We are looking into having an article in the local newspapers. Thank you Pedro, and others, for your hard work.

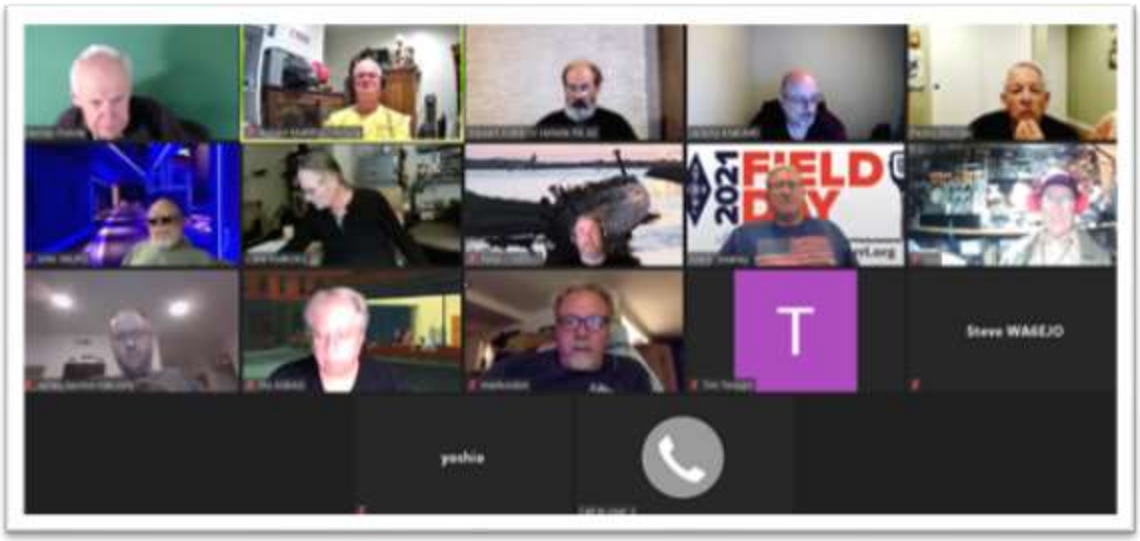
We found a place to borrow chairs for Field Day.

Paul WD6EBY talked about naming the repeaters. There are several VHF and UHF repeaters on the same hill. When you say the South Mountain repeater it could be one of four or five repeaters. He is thinking about using PV-1 and PV-2 for names.

There was a discussion about holding volunteer examinations in Ventura. Someone suggested using the Red Cross building for the exam site. I need to contact John Kitchen about what the club needs to hold an exam.

## Notes from the 5-31-2021 after net Zoom get together.

We had another good turnout for the Zoom get-together; 12 of us got together and had great conversations. The group discussed FCC exposure rules, possible RF field meters to indicate exposure vis-à-vis manual calculations, the Yaesu 991A transceivers and FT-8 settings, the June 5th get-together at the Dudley House, computers and the logging software, generators to power the network, the need for a complete list of the number and power of the generators that will be brought to Field Day, as well as the brief power outage (many reported their lights "flickered twice"); several attendees suddenly exited the Zoom meeting (e.g. Denney, Clem and Pedro). Also discussed was having a board meeting to discuss funding to cover club-needed items. The meeting adjourned at 10:30.




## K6MEP May 7, 2021 Board Meeting Minutes

Ventura County Amateur Radio Club Inc. Club Meeting
Meeting Date: 05/07/21 20:00 hrs.

SPECIAL EXECUTIVE BOARD MEETING MINUTES (action items in **bold**)

MEETING ADDRESS: On line with Zoom

OFFICER ATTENDEES

| OFFICE | LAST | FIRST | CALL SIGN | PRESENT |
|---|---|---|---|---|
| PRESIDENT | Pistole | Denney | N6HV | X |
| VP | Alberts | Clem | KM6OKZ | X |
| TREASURER | Gartman | John | W6JPG | X |
| SECRETARY | VACANT | | | |
| BOARD | Shank | Robert | KM6RSS | X |
| BOARD | Stone | Stewart | KG6BOV | X |
| BOARD | Abbey | Richard | WB6AEW | X |

CALL TO ORDER 20:10 on Friday, May 7th, 2021.

All six board members were present as depicted in the above roll call.

Also present as observers were:
Rod KA6GSU
Dave AI6VX
Burt KA6BJA
Reese KQ6TT
Mark KD6ASL
Pedro KE6MIL

1. Discuss the transfer of the club FCC license trusteeship.
Stewart, the current trustee, has resigned due to moving out of state. Pedro nominated Robert Shank, Richard seconded the nomination and Robert accepted the nomination. Clem suggested that someone younger should be the trustee. Clem nominated Dave, AI6VX, and Robert withdrew for that position. Dave was nominated, seconded, and received a unanimous vote by the board to become the trustee/custodian of the club license, K6MEP. **Robert has sent Dave the application to transfer the trusteeship from Stewart to Dave on 5/9/21. Dave has completed the form and sent it to Denney to be signed and mailed/faxed to ARRL.**

2. Denney said that he was going to present Stewart with a letter of appreciation for all he did for the club but didn't have time to do it. **Denney will get Stewart the letter of appreciation as soon as he can.**

## K6MEP May 7, 2021 Board Meeting Minutes (Continued)

Are there any other club items that Stewart holds? Is there any stuff that the club has of Stewart's? **Stewart has the filters and some ARRL brochures that he will provide. Robert picked up the filters on 5/8/21, another trailer full of donation on 5/10/21 and helped Denney store them in his back yard. Denney will take photos of the donations, price them and send to Robert for inclusion in the June Keyer. There are still at least three trailer loads of donations that will have to be picked up from Stewart's and taken to Denney.**

3. Discuss holding an informal club meeting/field day preparedness meeting/picnic at the Dudley House on Saturday 12 June. Hold on the grass and observe social distancing. This was Clem's idea and Denney opened the topic for discussion Richard checked and that date isn't available but June 5th is and we now have a reservation. **Denney will contact Jeremy to see if he will be available on June 5 for testing the laptops connectivity for Field Day logging.** Burt mentioned if Jeremy isn't attending, we will need his router and laptop so that we can conduct a real test or change the date to when he is available. Jeremy was going to use his SIM card to make the connectivity to the internet. **Richard will find out what the maximum occupancy of the Dudley House is.** Denney wants hot dogs, pizza, coffee, etc. The get-together will run from 11 am to 3 pm. Attendance to this club function isn't mandatory as many members/guests may not have their COVID-19 vaccinations. Everyone attending should follow state and countywide precautions. Burt has asked if we know who has been vaccinated will be getting together on June 5th. John believes that Mark Ortega, our potential, cook a teacher, should have had the shot. **Denney will contact Mark Ortega to see if he is available and will agree to help cook.** Denney asked if the invitation for the June 5th be open to everyone or just club members. Stewart said yes, invite everyone. Richard didn't think that we would have a lot of outsiders. Denney will send the announcement to Robert after he posts it on groups.io. Robert will post it on Facebook and MeWe. Burt asked if we wanted to do this like the last picnic, as a potluck. **A vote was held to fund this picnic and $200 was voted on for hot dogs, pizza and drinks.** We may have as many as 20 people. Richard suggested $200 and Stewart seconded it. It was passed unanimously.

4. Discuss field day issues including funding. Mark Swaney said that Mark Vodon doesn't have his shots and will provide the motor home. **We will clean Mark Vodon's motor home before using it before Field Day.** Pedro wanted to know if the club has shelters for Field Day. Band captains need to bring their own shelters and ask the club for help if needed. Additional money was discussed for funding of the portable toilet, handwashing station and the Oxnard College required janitorial fees. **Clem will contact the college to set up a time and date to collect the restroom keys. Clem will also ask about the use of the college's Wi-Fi during Field Day for connection to the contest consolidation website that was used last year (FD 2020).** A motion was made by Richard, Denney seconded it and the board approved unanimously, to approve an additional $300.

5. Anything else, any board member can think of? With Stewart moving out-of-state, he was asked if he will be resigning from the board. He will send a formal notification, as required by our bylaws. Stewart mentioned Bob Brodie and a discussion ensued. Mark Swaney worried that

## K6MEP May 7, 2021 Board Meeting Minutes (Continued)

the nominee needed to be attending the Zoom meetings as well as check in on Monday nights. Robert nominated Dave AI6VX, Clem seconded and the board unanimously voted him to temporarily fill Stewart's vacant board position until nominations and voting can be done at our next meeting. Pedro asked if a board member needs to live in the county or state. Stewart said the issue is being physically present for the monthly club meetings. Pedro asked if there was good cellphone reception at the Dudley House. Richard stated there was. Robert bought a MiFi for the club but it is a Verizon unit and Robert is no longer a Verizon customer. Pedro asked if there is good reception at the Duck Pond. Stewart said yes. Stewart said that Oxnard College has campus-wide Wi-Fi. Pedro will go to the college and test the reception. (He later reported that he had "4 bars"). Denney is looking for a secretary and wants everyone to send him there nominations. **Pedro needs the license number for the logging software; Denney will find it in his email and send it out to all band captains.**

6. Denney asked if there was any other business.
Robert asked for some time to raise an issue concerning club procedures. He explained that, due to COVID-19 restrictions, we haven't held a face-to-face meeting since February 14, 2020. However, we continued to meet by holding both over-the-air and virtual (Zoom) meetings to conduct a specific set of club business (general and board meetings to discuss expenditure of funds for club activities, replacing officers and board members, preparing for Field Day, etc.). All minutes and actions have been published in the Keyer. However, there is one major club process that we have not done with the remote/virtual Zoom meetings; hold nominations and an election every November as we have done during the pre-COVID era. In November of 2020, we didn't have an election. Robert suggested that we consider having an election before the second November arrives. A lively discussion ensued among the board members as well as the visitors. Some felt that we should wait until November; others voiced their opinion that we should proceed and use this opportunity to contact all of our paid and not paid members and ask them to nominate the board, as well as provide the form to pay their dues. Additionally, we would invite them to the planned picnic/Field Day preparation event at the Dudley House, where we will provide food, drinks and entertainment in a socially responsible setting. Hopefully, this will "restart" our membership that has waned since we have been unable to hold meetings at the Dudley House.

Denney asked Robert to make a motion and explained to the board that the motion should state that "we want to start the wheels in motion to send out a letter to all members, paid or not, informing them that we are planning to have a vote at the June 5th get together, a written proxy is acceptable if the person cannot make the meeting but to be inclusive, nominations are to be emailed to the club at any time up to and including June 5th". Robert made the motion as Denney described, Clem seconded it and Denney called for the vote. Denney, Clem, Dave, Richard, and Robert voted "aye" and John voted "nay". Denney stated that the motion carried. **Robert is to work with the board to draft the letter to the membership.**

**Denney will announce at May's meeting that we will have an election on June 5th at the Dudley House and that we will be sending a letter out asking for nominations, including a**

## K6MEP May 7, 2021 Board Meeting Minutes (Continued)

**membership renewal.**

No other new or old board business was discussed.
Clem made a motion to close; Richard seconded and the vote was unanimous.

The meeting was closed at 21:56.


**Minutes of the May 14th VCARC Club Meeting Denney N6HV**

The On-The-Air portion of the meeting started at 7:00 PM. There were 9 check-ins with one visitor participating.

The main subject of old and new business was the preparations for Field Day. This year Field Day will be held on June 26 through 27 with part of June 25 as a set up period. The Field Day committee continues to meet every two weeks to plan and coordinate the effort.

Clem KM6OKZ secured the use of the "Duck Pond" at Oxnard College for Field Day. We continue to ask for volunteers to become Band Captains, set-up and take-down antennas and numerous other activities to help make this coming Field Day one that everyone can enjoy. Mark Vodon KI6PTE has agreed to lend us his RV (with an awning, BBQ and bed), Clem KM6OKZ, Pedro KE6MIL, Tim KN6JGB and Robert KM6RSS have volunteered to be the 40m, 20m, 2m and 1.25m band captains, respectively. Robert has also volunteered to be Safety Officer. Mark Ortega KI6YLH will be coordinating the cooking. Many other members have volunteered to assist. The next committee meeting is scheduled for June 12 at 20:00; Denney N6HV will send out Zoom invitations using our groups.io website. We will be holding a June 5th Field Day Club Get-Together starting at 11AM and running to 16:00 at The Dudley House, 197 N Ashwood Ave, Ventura, CA 93003. See K6MEP.groups.io for more details

The On-The-Air portion of the meeting closed at 19:39.

Part of the club meeting is a Zoom meeting that is held after the On-The-Air meeting. During the Zoom portion of the meeting Robert presented "Changes to the FCC RF Exposure Rules 2021". Stu AG6AG provided detailed answers to many questions.

Denney N6HV

## Members Enjoy the Friday May 14th Zoom Club Meeting

## Robert's Notes from the 2021-5-1 VCARC Field Day Committee Meeting

Our meeting started at 20:00 hours and completed at 21:40. The following items were discussed:

1. Oxnard College has been reserved – Clem. There will be a janitorial fee of $95 per day.
2. Keys for restrooms – Outstanding issue.
3. Generators – How many and who will bring?
4. Masts and guy lines and antenna feed lines (coaxial cables and ladder lines) – Who are bringing them?
5. Stewart Stone may not attend as he is moving to Arizona very soon.
6. Chairs – can we borrow them from the Dudley House?
7. Mark Vodon has a Recreational Vehicle, will he lend it to us? Who is bringing tents?
8. Will Ben and Phil attend? Denney and/or Burt will contact.
9. Multi-modes on a given band – what are the consequences?
10. Run a test before FD to determine interference between digital (FT8 or 4) and other modes
11. Pedro tested with two transceivers on both SSB 20 m and FT8; lots of interference
12. An Icom 7300 has three filters; can the bandwidth be narrowed to avoid interference?
13. Band Captain's role vs. Air Traffic Controller – What are the differences?
14. Steve Noll and Rod Austin are not normally at Field Day; how can we include them both in the event?
15. Let's set up as many different stations as possible to ensure contacts if the bands are bad
16. Resolve digital and voice conflicts before Field Day
17. Do different bands
18. Pedro is offering to test filters at his house – contact him for an appointment
19. CVARC made frequency filters with narrow notch filters – someone needs to contact them and ask – Burt?
20. Pedro is testing narrow notch filters
21. We need an interference get-together after mid-May
22. Send Mark Thompson an email invitation
23. Mark Vodon will set up his BBQ, refrigerator, freezer, portable tables, pop-up and canopy with his RV

## Robert's Notes from the 2021-5-15 VCARC Field Day Committee Meeting

The meeting got underway at 20:00 with 11 attendees.

Questions were asked about using a pagoda canopy for station protection from the sun and John thought that Dick's Sporting Goods had good quality and prices. On line they were about $350. Big 5 Sporting Goods prices ranged from $59 to $200. Harbor Freight sells two (10'x10') from $60 to $160 and a portable shed for $170.

Richard KN6NGP at the last Monday Night Net mentioned that someone named Steve with the Channel Islands National Park was giving away solar panels that formerly was used at the park. We weren't able to find Richard's email address and asked Burt KA6BJA since he had some contacts with the park. Burt wasn't aware of anyone by that name as well as a solar panel giveaway.

Denney spoke to Mark Ortega about the June 5th Field Day preparation and club get-together at the Dudley House, as well as our Field Day. Mark appears to be onboard for both outings.

Clem asked about solar panels and Denney said that he would give him two that were donated to the club by Stewart Stone KG6BOV to be used for Field Day.

John mentioned that Windy Nation also sells solar panels and charge controllers. Also mentioned as a great source was Craig's List. A place in Santa Paula had 355 watt, 72 cell panels for $100. There was a discussion about MPPT vs. PWM charge controllers. It appeared that MPPT is a better technology.

Mark Vodon KI6PTE will be allowing the club to use his RV (with an awning, BBQ and bed).

Clem stated that restroom keys have to be requested of security (flagged down and borrowed). Oxnard College declined to lend the keys directly to us. The college Wi-Fi access has been arranged; just login as a guest, provide your email address and make the connection.

**Minutes of the 2021-5-15 VCARC Field Day Committee Meeting** (Continued)

Tim Tenopir KN6JGB has volunteered to be the 2m band captain. A band captain shall be responsible for rounding up operators, equipment (radios, antennas, table and chairs). The band captains would also work with the committee on site selection. Volunteers are still needed for other bands.

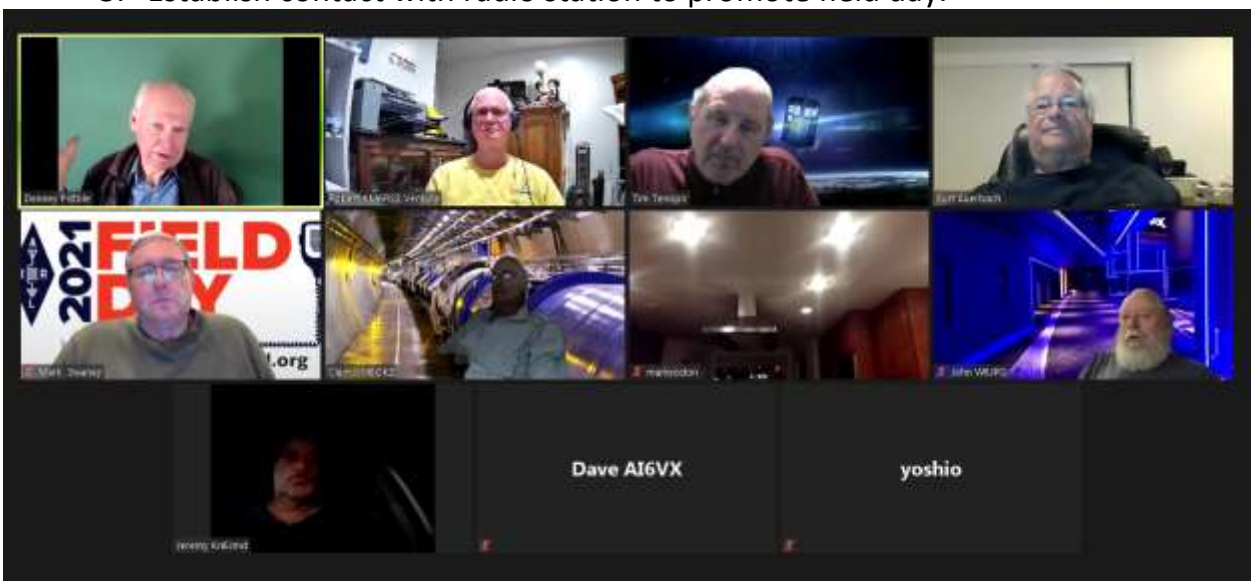
We also need a list of volunteers that will help those bring equipment to the field day site load the equipment up and help sit it up. Let the committee know if you can help

Additionally, we need volunteers to help take down the equipment and load it up at the close of the event. Let the committee know if you can help.

Jeremy KN6JMD gave an update on the status of the computer logging effort. He feels that it has come together. Further testing may to be done before the next field day committee meeting.

Action Items:

1. Generate groups.io email asking if any club members have an RV or trailer that can be used during field day. (Done)
2. Generate a groups.io email asking for Band Captains. Have them sign up to the list. (In Progress)
3. Look into getting a hand washing station. (Done)
4. Need to look into getting hand sanitizer, hand wipes and other supplies that the regulations may require. (Done)
5. Establish contact with radio station to promote field day.




**May 15, 2021 Field Day Committee Meeting**

## Robert's Notes from the 2021-5-29 VCARC Field Day Committee Meeting

Action items from last night's FD committee:

| Action | Assigned to: | Status |
|---|---|---|
| Send request for volunteer PIO in K6MEP.groups.io | Denney | |
| Contact Stu about VCARS and FD location | Denney | |
| Contact Stewart; check on the status of the K6MEP banners | Denney | |
| Ask for a list of members that will overnight at FD on groups.io | Denney | |
| Ask for volunteers who will be bringing generators on groups.io | Denney | |
| Contact Mark Ortega about food and drink for June 5th and FD | Denney | |
| Contact Newspapers and send K6MEP information packet | Pedro | Had lunch with Ventura Star |
| Obtain prices & delivery information from FD banner companies | Pedro | |
| Contact Oxnard officials (city council) & send information packet | Pedro | |
| Contact KVTA | Clem | |
| Contact Rob Hanson to obtain Field Day Visit by Served Agency | Robert | Contacted; awaiting K6MEP FD information packet |
| Radiogram form to be filled in & sent to John Kitchens NS6X on FD | Robert | Attached and sent to John Kitchens & Rick Tate, Section Manager & Section Emergency Coordinator, respectively. |
| Confirm that James accepted the GOTA position | James | Agreed |
| Learn about the process of making a satellite contact | Tim | |

Robert attached files from FD 2019 and updated the parking permit to 2021. He also attached the basic K6MEP QSO card background without the contact details that normally appear on our QSO cards. Additionally, he also attached the GOTA rules for James Norton, if James wants to operate the station under his call sign. Note that he isn't limited to only operate the GOTA station; he can operate other transceivers under a control operator with the appropriate privileges. Also note that The GOTA station uses a callsign different from the call used by the group's main Field Day operation. The GOTA station must use the same, single callsign for the duration of Field Day.

Attached were the ARRL forms that we can use to create signs, etc. http://www.arrl.org/public-service-field-services-forms.

Notice that Oxnard College has a list of general rules and included in them is this:
14. Smoking will be permitted only in designated areas. Intoxicants (alcohol) or narcotics will not be used, nor will profane language, quarreling or gambling be permitted. Violations of this rule or any other rule on this form during occupancy will be sufficient cause for denying further use of college premises to the organization.

.

# "Thought's From the West" Reese West KQ6TT

## ANTENNA THEORY IS QUANTUM THEORY

After taking a brief look at antenna theory last month, I followed up with a look at why the capture area of a quarter wave vertical antenna has about the area as a one-twentieth wavelength vertical. And I think it could be even shorter. It turns out that it is an application of quantum theory to antennas. The physicists are always saying that light is just an electromagnetic wave just like our radio waves. Just reverse that. Our radio waves are just low energy photons. So it is photon interaction from free space with a four-space (three dimensions and time) solid that transforms the radio wave into electron movement in the antenna. Size has very little bearing on it. Now go to the short wavelengths of light. The transfer of photon energy from propagating in space to an atom is the same thing. It is an impedance matching problem. The energy of the photon is transferred to an atom just like a receiving antenna. The problem is that only one atom can receive it since energy comes in quantum packets. And the transfer has to match the propagating photon with the atomic fields around the atom. It has to match the frequency, phase, and instantaneous direction of the field orbits in the receiving antenna, which is one atom, since the photon energy cannot be divided. This is just like the orientation of our antennas must match the same characteristics of the received wave.

I have also written about the two slot experiments, where photons of light are assumed to go through two slits. It does not bother the physicists that the photon cannot do that since it would have to split the energy into two paths. This violates their own rules that the photon is a packet and cannot be divided. They get around this by saying that there is a particle in one of the parts that reacts with the target. And the Heisenberg uncertainty principle says that the particle can be found in various places in the photon. What I am guessing is that this is the same location where the impedance match occurred with the atomic fields and the whole photon is transferred as a change of energy. Their entire incredible math is valid. It just has to be reinterpreted with Ham Radio Antenna Theory. (Long pause here) As I have written elsewhere, the equations for tunneling in semiconductors is identical with impedance matching transmission line equations with only change of variable's names. And transmission line wave propagation has the same properties as free space propagation. The other way to look at all this is that these are energy changes of state, just like molecular changes of state such as water to a gas and visa-versus.

Since engineering is an art where the engineer must solve problems without full definition of the problem, and inadequate data, time, and money, the physicists should have hired some engineers to help them with their theory. The problem I have with this writing is that there is no end to it, and I have to get back to my antenna design project. I may have to go for a continuation of the present patent.

Laurice (Reese) West KQ6TT May 27, 2021

## Ham Tips de Steve, WA6EJO

Cool Ham Locator: https://haminfo.tetranz.com/map
Enter your zip code or grid square (up to 6-digits) to display Hams in your area. Displays map or satellite views. Amazing how many licensees are in an area.

Great Antenna Tester: http://69.27.184.62:8901/
This is an Internet controlled remote receiver located near San Francisco. You can set it to any frequency in 20M, 40M, 80M, and 160M and see the live spectrum and waterfall on your computer. You can set the receive mode to AM, SSB, CW, and you can hear the audio. It has an S-meter and gives signal level readings in dBm. A fantastic tool. There is a directory of other web-based SDR receivers at http://www.websdr.org/

RF Exposure Calculator: For the new FCC requirements this one is easy to use...
http://www.lakewashingtonhamclub.org/resources/rf-exposure-calculator/
But, there's a lot of "yeah, but's..." Like, how high is your Yagi so how much of its beam can actually hit a person? How much RF from your back yard antenna gets through your shack wall to radiate you in your 'controlled environment'? My 'controlled environment' is behind stucco wall, wire mesh, 1/2" OSB plywood, 5/8" drywall, and a RF-blocking double pane e-glass window. And the attenuation of that is??? How much of your rooftop antenna radiates straight down into your shack? Things the calculators don't take into account make this whole thing a joke. The only way to do it right is to measure the fields, and meters under several hundred $ usually don't measure under 50 MHz. The least expensive "pro" meters start at around $300 and range up to several thousand.

Tool Magnetizer/Demagnetizer: Sometimes you want a screwdriver magnetized, sometimes you don't. If you have a soldering gun (not a soldering iron) you're all set. To demagnetize place the screwdriver shaft inside of the loop formed by the soldering gun tip. The loop is the secondary of the transformer of the soldering gun. Energize the gun and slowly withdraw the tool from the loop before turning the soldering gun off. The decaying alternating magnetic field generated will scramble the magnetically oriented field demagnetizing the tool. To magnetize stick the tool in the loop and suddenly turn off the iron while the tool is within the loop. Depending where to alternating field was within the 60 Hz cycle when the iron was de-energized it will magnetize the tool. Replacing the soldering gun tip with a few turns of heavy copper wire will make this even more effective.
73,

Steve Noll WA6EJO

## Selected June Contests & Special Events

The following contests and special events caught your editor's eye. This is by no means a complete listing. Please see QST or the ARRL website (www.arrl.org) for any details and QSL information. There were no May ARRL-sponsored events.

Maty Weinberg, KB1EIB, events@arrl.org; www.arrl.org/special-event-stations

### Special Event Stations

**Working special event stations is an enjoyable way to help commemorate history. Many provide a special QSL card or certificate!**

**Through Dec. 31, 0000Z – 2359Z, all calls**, all areas. VE2GT and VE2NCG. **Quebec Parks on the Air (QCPOTA)**. Certificate. *This is an operating event. See website for details.* **qcpota.ca**

**Mar. 15 – Nov. 30, 0000Z – 2300Z, II3VE**, Venezia, Italy. ARI Venezia. **1,600 Years of the Foundation of Venice**. All bands. Certificate & QSL. Sezione ARI Venezia, S. Croce 1776/B, Venezia 30135, Italy. *Detailed rules on ARI Venezia website and* ***QRZ.com*** *for II3VE call. Both II3VE and club call IQ3VE are valid. QSL via eQSL or bureau.* **www.arivenezia.it**

**May 15 – May 23, 0000Z – 2359Z, W9A**, Junction City, WI. Wood County ARES/RACES. **EMS Week 2021**. AllStar 52770/Echo-Link W9WCA-L 14.250 7.250 3.970. QSL. Wood County ARES/RACES, Attn: EMS Week SES, 3530 Bohn Dr., Wisconsin Rapids, WI 54494. *QSL via W9WCA.* **kb9stb@gmail.com**

**May 16 – May 31, 0000Z – 2359Z, K1A**, Cleburne, TX. Club KC5NX. **Memorial Day 2021**. 14.255 14.045 7.240 7.235. QSL. Jay D. Stanfield, 9200 Summit Ct. W., Cleburne, TX 76033. **www.qrz.com/db/kc5nx**

**May 20, 1400Z – 2000Z, K2CAM**, Garden City, NY. Long Island Mobile Amateur Radio Club. **Celebrating Lindbergh's Transatlantic Flight**. 14.240 72.40. QSL. LIMARC, P.O. Box 392, Levittown, NY 11756. *Held at the Cradle of Aviation Museum.* **https://limarc.org/special-events**

**June 1 – June 8, 0001Z – 2359Z, 5J39FUL/5K48LRB/ 5J85FJR**, Bogota, Colombia. Liga de Radio Aficionados de Bogota. **48th Anniversary of Liga Radio Bogota (HK3LRB) and Dr. Jorge Reynold's 85th Birthday, and 39th Anniversary of Los Libertadores University Foundation**. SSB CW FT8 RTTY; 28 24 21 18 14 10 7 3.5 MHz. Certificate & QSL. LoTW, **QRZ.com**, and eQSL, or via bureau. **www.qrz.com/db/5k48lrb, www.qrz.com/db/5j39ful**, or **www.qrz.com/db/5j85fjr**

**June 3 – June 16, 1300Z – 2200Z, W2W**, Baltimore, MD. Amateur Radio Club of the National Electronics Museum. **D-Day Commemoration**. 14.244 14.044 7.244 7.044. Certificate & QSL. W2W D-Day, P.O. Box 1693, MS 4015, Baltimore, MD 21203. *If the museum is closed, club members will operate from their home stations. Primary operation June 5 – 7; additional operation possible June 3 – 4 and 8 – 16, as operator availability permits. Operation on 80 meters (3.544, 3.844), additional bands, and digital modes possible.* **www.ww-2.us**

**June 4, 1500Z – 2300Z, KØSAL**, Lincoln, NE. SATERN Lincoln, NE. **Salvation Army Donut Day**. 14.318. Certificate & QSL. Charles Bennett, P.O. Box 67181, Lincoln, NE 68506. **kd0ptk@gmail.com**

**June 4 – June 5, 1600Z – 2300Z daily, NI6IW**, San Diego, CA. USS *Midway* (CV-41) Museum Ship. **Museum Ship Weekend**. 7.250 14.320 14.070 (PSK31) D-STAR via PapaSystem repeaters. QSL. USS *Midway* CV-41 COMEDTRA NI6IW, 910 N. Harbor Dr., San Diego, CA 92101. **www.qrz.com/db/ni6iw**

**June 4 – June 5, 1900Z – 1900Z, N3YUG**, Leedstown, VA. The Virginia Fone Net. **87th Anniversary**. 7.220 3.947. QSL. Jason Rearick, P.O. Box 372, Patuxent River, MD 20670. **n3yug@arrl.net** *or* **www.vfn3947.net**

**June 5, 1500Z – 2100Z, WØERH/KSØKS**, Edgerton, KS. Santa Fe Trail Amateur Radio Club and Johnson County Amateur Radio Club. **80th Anniversary of Paley Award Presented to Marshall Ensor**. 14.250 14.025 7.250 7.020; 30 meters as conditions change. QSL. KSØKS, Santa Fe Trail Amateur Radio Club, P.O. Box 3144, Olathe, KS 66063. *We will be spotting as well.* **www.w0erh.org** *and* **www.sftarc.org**

**June 5 – June 6, 0000Z – 2359Z, N1S**, Groton, CT. Generations Amateur Radio Club. **USS *Nautilus* — First Nuclear Submarine**. 50.5 14.275 7.225 3.850. QSL. N1S Generations Amateur Radio Club, 110 Vinegar Hill Rd., Gales Ferry, CT 06335, or via bureau to K3LBD. Nautilus *information:* **www.ussnautilus.org**. *Event information:* **www.qrz.com/db/k3lbd** *or* **www.qrz.com/db/n1s**

**June 5 – June 6, 0000Z – 2359Z, WA5DTK**, Houston, TX. USS *Houston* Special Operation Group. **USS *Houston* Memorial**. 14.260 14.040 7.250 7.030. QSL. Barry Brewer, 601 Wagon Wheel Tr., Pflugerville, TX 78660-3824. *Operating during Museum Ships Weekend.*

**June 5 – June 6, 0001Z – 2359Z, NJ2BB**, Camden, NJ. Battleship *New Jersey* Amateur Radio Station. **Museum Ships Weekend Event**. 14.262 14.044 7.262 7.044. QSL. Margaret Burgess, 150 Schooner Ave., Barnegat, NJ 08005. *Check website for updates and a list of participating ships. No certificates this year due to COVID-19.* **nj2bb.org**

**June 5 – June 6, 1421Z – 1621Z, K8E**, Toledo, OH. Toledo Mobile Radio Association. **Museum Ships Weekend**. 14.260 14.039 7.260 7.039. QSL. K8E Col. James M. Schoonmaker Team, P.O. Box 9673, Toledo, OH 43697. **www.tmrahamradio.org**

**June 5 – June 12, 0000Z – 2359Z, W1AGR**, various cities, MA. Norfolk County Radio Association. **100 Year Anniversary**. 21.285 14.235 7.225 3.825. QSL. Dick Bean, 422 Everett St., Westwood, MA 02090. *Members will operate their own stations using the club call, W1AGR.* **www.qrz.com/db/w1agr**

**June 7 – June 18, 0001Z – 2359Z, K4D**, Dog Island, FL. K5TEN. **Dog Island DXpedition**. 40 through 6 meters, SSB, CW, and digital; 50.130 28.310 21.285 14.260 10.110 7.188. QSL. K5TEN, Dog Island DXpedition, 208 Mount Tabor Rd., Hot Springs National Park, AR 71913. *IOTA Island NA-085, FL005S.* **www.qrz.com/db/k4d**

**June 11, 0000Z – 2359Z, K6K**, Kaneohe, HI. KH6ML. 14.268 7.188 146.505. **King Kamehameha Celebration**. Certificate. Michael, 44-096 Keaalau Pl., Kaneohe, HI 96744-2531. **https://sites.google.com/view/k6khawaii**

**June 12, 0100Z – 0500Z, N2B, N2H, N2U, N2D, N2S, N2O, N2N, and N2V**, Beacon, NY. Hudson Valley Digital Network. **Hudson River Radio Relay Featuring Bannerman's Island**. 50.130 18.128 14.250 7.200. Certificate. Hudson Valley Digital Network, 106 Cedar Ave., C/O HR3 2021 Special Event, Poughkeepsie, NY 12603. **www.hudsonriverradiorelay.com/ for-radio-amateurs.html**

**June 12, 1300Z – 1900Z, W1M**, Russell, MA. Western Massachusetts Council BSA. **Woronoko Heights Outdoor Adventure**. 14.290 14.060 10.115 7.190. QSL. Tom Barker, 329 Faraway Rd., Whitefield, NH 03598. *Operating from Moses Scout Reservation.*

**June 12, 1400Z – 2200Z, NØG**, Topeka, KS. Kaw Valley Amateur Radio Club. **Kansas Heartland Military Day**. 14.250 7.250. QSL.* KVARC NØG Special Event, P.O. Box 750016, Topeka, KS 66675-0016. **www.kvarc.org/specialevent.html**

## Selected June Contests & Special Events (Continued.)

**June 12 – June 20, 1200Z – 2100Z, K3USI**, Fredericksburg, VA. US Island Awards Program. **1st Annual US Island Special Event Week**. 28.460 21.260 14.260 7.260. Certificate. Jay Chamberlain, 27 Fox Run Ln., Fredericksburg, VA 22405. *(US Island Chasers/Activators.) See website for information. This is an operating event.* **w4ybv@yahoo.com** *or* **www.usislands.org**

**June 15 – June 20, 1400Z – 2100Z, N5A**, Springdale, AR. Razorback Contest Club. **185th Anniversary of Arkansas Statehood**. 14.260 14.040 7.220 7.040. QSL. Razorback Contest Club, 3407 Diana St., Springdale, AR 72764. **rccw5yo@cox.net**

**June 25 – June 28, 0000Z – 2359Z, N6R**, Simi Valley, CA. Ventura County Amateur Radio Society. **Field Day 2021**. 21.320 14.255 7.260 3.810. QSL. Peter Heins, N6ZE, 1559 Norwich Ave., Thousand Oaks, CA 91360. *Commemorating the lives of President Ronald and Mrs. Nancy Reagan. N6R is hoping to operate from the Reagan Presidential Library. Please check website for updated information.* **www.qrz.com/db/n6r**

**June 26 – July 2, 1800Z – 1800Z, K6V**, Weed, CA. National Speleological Society. **NSS Annual Convention**. 14.285 14.050 7.195. Certificate & QSL. Sam Rowe, 2749 Commercial Ave., Madison, WI 53704. *Slow CW Saturday only.* **www.caves.org**

**June 27 – July 11, 1200Z – 2359, K9U**, Liberty, IN. Union County Indiana Bicentennial Board. **Union County Indiana Bicentennial**. 14.040 3.540 7.185 7.035. QSL. Howie Huntington, K9KM, 25350 N. Marilyn Ln., Hawthorn Woods, IL 60047. *Visitors are welcome to participate.* **k9km@arrl.net**

**Certificates and QSL cards**: To obtain a certificate from any of the special event stations offering them, send your QSO information along with a 9 × 12 inch self-addressed, stamped envelope (three units of postage) to the address listed in the announcement. To receive a special event QSL card (when offered), be sure to include a self-addressed, stamped business envelope along with your QSL card and QSO information. *Note: Some clubs may ask for a nominal fee to cover the cost of the certificate or QSL. Request will be made on air during the event or on the club's website.

**Special Events Announcements**: For items to be listed in this column, use the ARRL Special Events Listing Form at **www.arrl.org/special-events-application**. A plain-text version of the form is available at that site. You may also request a copy by mail or email. Off-line completed forms can be mailed, faxed (Attn: Special Events), or emailed.

Submissions must be received by ARRL HQ no later than the 1st of the second month preceding the publication date; a special event listing for **September** *QST* would have to be received by **July 1**. In addition to being listed in *QST*, your event will be listed on the ARRL Web Special Events page. Note: All received events are acknowledged. If you do not receive an acknowledgement within a few days, please contact us. ARRL reserves the right to exclude events of a commercial or political nature.

You can view all received Special Events at **www.arrl.org/special-event-stations**.


May 1 Field Day Committee Meeting

# Contest Corral

Bruce Draper, AA5B, aa5b.corral@gmail.com

## Contest Corral — June 2021

Check for updates and a downloadable PDF version online at **www.arrl.org/contest-calendar**.
Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

| Start - Finish Date-Time | | Date-Time | | Bands | Contest Name | Mode | Exchange | Sponsor's Website |
|---|---|---|---|---|---|---|---|---|
| 1 | 0100 | 1 | 0159 | 1.8-50 | Worldwide Sideband Activity Contest | Ph | RS, age group (OM, YL, or youth) | wwsac.com/rules.html |
| 1 | 1700 | 1 | 1900 | 3.5-14 | RTTYops Weeksprint | Dig | Other's call, your call, serial, name | rttyops.wordpress.com |
| 2 | 1300 | 2 | 1400 | 1.8-28 | CWops Mini-CWT Test | CW | Name, mbr or SPC | cwops.org/cwops-tests |
| 2 | 1700 | 2 | 2000 | 144 | VHF-UHF FT8 Activity Contest | Dig | 4-char grid square | ft8activity.eu/index.php/en |
| 2 | 1900 | 2 | 2000 | 1.8-28 | CWops Mini-CWT Test | CW | Name, mbr or SPC | cwops.org/cwops-tests |
| 3 | 0300 | 3 | 0400 | 1.8-28 | CWops Mini-CWT Test | CW | Name, mbr or SPC | cwops.org/cwops-tests |
| 3 | 1700 | 3 | 2100 | 28 | NRAU 10-Meter Activity Contest | CW Ph Dig | RS(T), 6-char grid square | nrrlcontest.no |
| 3 | 1900 | 3 | 2100 | 1.8-50 | SKCC Sprint Europe | CW | RST, SPC, name, mbr or "none" | www.skccgroup.com |
| 4 | 0000 | 6 | 2359 | 1.8-50 | PODXS 070 Club 3-Day Weekend Test | Dig | Name, RST, SPC | www.podxs070.com |
| 4 | 0145 | 4 | 0215 | 1.8-21 | NCCC RTTY Sprint | Dig | Serial, name, QTH | www.ncccsprint.com |
| 4 | 0230 | 4 | 0300 | 1.8-21 | NCCC Sprint | CW | Serial, name, QTH | www.ncccsprint.com |
| 4 | 2000 | 4 | 2100 | 1.8-14 | K1USN Slow Speed Test | CW | 20 WPM max. Name, SPC | k1usn.com/sst.html |
| 5 | 0000 | 5 | 2359 | 3.5-28 | VK Shires Contest | CW Ph | RS(T), VK Shire or CQ zone | wia.org.au/members/contests |
| 5 | 0000 | 6 | 2359 | 28 | 10-10 International Open Season PSK Contest | Dig | Name, SPC, mbr | www.ten-ten.org |
| 5 | 0400 | 6 | 2000 | 3.5-28 | DigiFest | Dig | RST, 4-char grid square | rigexpert.com/digifest |
| 5 | 0600 | 5 | 0800 | 7, 14 | Wake-Up! QRP Sprint | CW | RST, serial, suffix of previous QSO | qrp.ru/contest/wakeup |
| 5 | 0600 | 6 | 0600 | 1.8-UHF | KANHAM Contest | CW Ph | RST, prefecture (if JA) | jarl.gr.jp/kanhamcontest/en |
| 5 | 1200 | 6 | 1159 | 1.8-28 | Tisza Cup CW Contest | CW | RST, CQ zone | tiszacup.eu/index.php/en |
| 5 | 1300 | 6 | 1300 | 50 | UKSMG Summer Contest | CW Ph | RST, serial, 6-char grid | uksmg.org |
| 5 | 1400 | 6 | 0200 | 1.8-144 | Kentucky QSO Party | CW Ph Dig | RS(T), KY county or SPC | www.kyqsoparty.org/rules |
| 5 | 1500 | 6 | 1500 | 1.8-28 | RSGB National Field Day | CW | RST, serial | www.rsgbcc.org/hf |
| 6 | 1700 | 6 | 2200 | All | Cookie Crumble QRP Contest | CW Ph Dig | RS(T), SPC, cookie #, name | w3atb.com/cookie-crumble |
| 7 | 1900 | 7 | 2030 | 3.5 | RSGB 80-Meter Club Championship, Data | Dig | RST, serial | www.rsgbcc.org/hf |
| 8 | 0100 | 8 | 0300 | 3.5-28 | ARS Spartan Sprint | CW | RST, SPC, power | arsqrp.blogspot.com |
| 9 | 0030 | 9 | 0230 | 3.5-14 | NAQCC CW Sprint | CW | RST, SPC, mbr or power | naqcc.info |
| 9 | 1700 | 9 | 2000 | 432 | VHF-UHF FT8 Activity Contest | Dig | 4-char grid square | ft8activity.eu/index.php/en |
| 12 | 0000 | 13 | 1559 | 3.5-28 | DRCG WW RTTY Contest | Dig | RST, CQ zone | www.drcg.de/drcgww |
| 12 | 0000 | 13 | 2359 | 50 | SMIRK Contest | CW Ph | 4-char grid square, mbr | smirk.org/contest.html |
| 12 | 1100 | 12 | 1300 | 14, 21 | Asia-Pacific Sprint, SSB | Ph | RS, serial | jsfc.org/apsprint/aprule.txt |
| 12 | 1200 | 13 | 1200 | 3.5-28 | Portugal Day Contest | CW Ph | RS(T), CT district or serial | portugaldaycontest.rep.pt |
| 12 | 1200 | 13 | 2359 | 1.8-50 | SKCC Weekend Sprintathon | CW | RST, SPC, name, mbr or "none" | www.skccgroup.com |
| 12 | 1400 | 12 | 1800 | 144, 432 | AGCW VHF/UHF Contest | CW | RST, serial, power, 6-char grid | alt.agcw.de/index.php/en |
| 12 | 1500 | 13 | 1500 | 3.5-28 | GACW WWSA CW DX Contest | CW | RST, CQ zone | contest.com.ar/gacw-wwsa |
| 12 | 1600 | 13 | 1600 | 50 | REF DDFM 6-Meter Contest | CW Ph | RS(T), serial, 4-char grid | concours.r-e-f.org |
| 12 | 1800 | 14 | 0259 | 50 and up | ARRL June VHF Contest | CW Ph Dig | 4-char grid square | www.arrl.org/june-vhf |
| 14 | 0000 | 14 | 0200 | 1.8-28 | 4 States QRP Group 2nd Sunday Sprint | CW Ph | RS(T), SPC, mbr or power | www.4sqrp.com |
| 16 | 0030 | 16 | 0230 | 3.5-14 | NAQCC CW Sprint | CW | RST, SPC, mbr or power | naqcc.info |
| 16 | 1200 | 16 | 1400 | 7 | SARL Youth Sprint | Ph | RS, age | www.sarl.org.za |
| 16 | 1900 | 16 | 2030 | 3.5 | RSGB 80-Meter Club Championship, CW | CW | RST, serial | www.rsgbcc.org/hf |
| 19 | 0000 | 20 | 2359 | 1.8-28 | All Asian DX Contest, CW | CW | RST, age | www.jarl.org/English |
| 19 | 1200 | 20 | 1159 | 3.5-28 | Ukrainian DX Classic RTTY Contest | Dig | RST, 2-letter oblast or serial | urdxc.org/rtty/eng.htm |
| 19 | 1400 | 20 | 1400 | 50, 70 | IARU Region 1 50/70 MHz Contest | CW Ph Dig | RS(T), serial, 6-char grid | www.iaru-r1.org |
| 19 | 1500 | 20 | 1500 | 1.8 | Stew Perry Topband Challenge | CW | 4-char grid square | www.kkn.net/stew |
| 19 | 1600 | 20 | 0400 | 3.5-28 | West Virginia QSO Party | CW Ph Dig | RS(T), WV county or SPC | www.qsl.net/wvsarc |
| 19 | 1800 | 19 | 1959 | 1.8-50 | Feld Hell Sprint | Dig | RST, mbr SPC, grid | sites.google.com/site/feldhellclub |
| 19 | 1800 | 19 | 2359 | 3.5-14, 18, 21, 24, 28, 144 repeaters | ARRL Kids Day | Ph | Name, age, QTH, favorite color | www.arrl.org/kids-day |
| 20 | 0800 | 20 | 1400 | 50 | WAB 50 MHz Phone | Ph | RS, serial, WAB square or country | wab.intermip.net |
| 20 | 2300 | 21 | 0100 | 1.8-28 | Run for the Bacon QRP Contest | CW | RST, SPC, mbr or power | qrpcontest.com/pigrun |
| 23 | 0000 | 23 | 0200 | 1.8-50 | SKCC Sprint | CW | RST, SPC, name, mbr or "none" | www.skccgroup.com |
| 24 | 1900 | 24 | 2030 | 3.5 | RSGB 80-Meter Club Championship, SSB | Ph | RS, serial | www.rsgbcc.org/hf |
| 26 | 0600 | 26 | 1700 | 3.5-28 | UFT QRP Contest | CW | RST/ QRP/QRO, mbr, or "NM" | uft.net/concours-qrp-uft |
| 26 | 1200 | 27 | 1200 | 3.5-28 | Ukrainian DX DIGI Contest | Dig | RST, oblast or serial | www.izmail-dx.com |
| 26 | 1200 | 27 | 1200 | 1.8-28 | His Majesty King of Spain Contest, SSB | Ph | RS, EA province or serial | concursos.ure.es/en |
| 26 | 1800 | 27 | 2059 | All, no WARC | ARRL Field Day | CW Ph Dig | Number of xmtrs, operating class, ARRL/RAC section or "DX" | www.arrl.org/field-day |
| 28 | 1900 | 28 | 2030 | 3.5-14 | RSGB FT4 Contest Series | Dig | 4-char grid square | www.rsgbcc.org/hf |

There are a number of weekly contests not included in the table above. For more info, visit: **www.qrpfoxhunt.org**, **www.ncccsprint.com**, and **www.cwops.org**.
All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands.
Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at* **www.contestcalendar.com** *and is extracted for publication in* QST *2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*

## Upcoming FCC Exam Session Preparation Sites

**(Virtual; it seems that due to COVID-19 rules, physical classes are unavailable in June within 100 miles of Ventura)**


### May 3rd Monday Night Net Zoom Get-together

### May 10th Monday Night Net Zoom Get-together

**Upcoming FCC Exam Test** (Due to the Coronavirus outbreak, please **verify** with your **VE** team that the exam session is being held.**)**

**GLAARG is offering remote testing; see https://glaarg.org/remote-sessions/ for details)**

Ridgecrest CA 93555

06/12/2021
Sponsor: Sierra ARC
Date: Jun 12 2021
Time: 9:00 AM (No Walk-ins / Register or Call ahead)
Contact: Michael D. Herr
Email: wa6ara@gmail.com
VEC: ARRL/VEC
Location: Due to COVID TBD
Pre-Register Required
Ridgecrest CA 93555
Huntington Beach CA 92647-4359

06/17/2021
Sponsor: West Coast ARC
Date: Jun 17 2021
Time: 5:30 PM (No Walk-ins / Register or Call ahead)
Contact: Kenneth O. Simpson
(714) 651-6535
Email: w6kos@arrl.net
VEC: ARRL/VEC
Location: Community United Methodist Church
6652 Heil Ave
Huntington Beach CA 92647-4359


Robert's May 14th Presentation to the Club

# On Exam Day Bring the Following Items:

1. One legal photo ID (identification):
   a. State Driver's License, b. Government issued Passport, c. Military or Law Enforcement Officer Photo ID card, d. Student School Photo ID card, e. State Photo ID card.
2. If no photo ID is available, two forms of identification:
   a. Non-photo State ID card (some states still have them), b. Birth certificate (must have the appropriate seal), c. Social security card, d. Employer's wage statement or Minor's work permit, e. School ID card, f. School or Public Library card, g. Utility bill, bank statement or other business correspondence that specifically names the person; or a postmarked envelope addressed to the person at his or her current mailing address as it appears on the Form 605.
3. Students/minors without a photo ID need to bring only one of the above items if a legal guardian presents their photo ID; otherwise two non-photo IDs are required. Minor children (under the age of 18) may be accompanied in the room by an adult during the test.
4. FCC Registration Number (FRN): VECs are required by the FCC to submit your FRN with your license application form. New license applicants must create an FCC user account and register their Social Security Number (SSN) in the FCC Commission Registration System (CORES) before attending exam sessions. Registrants will be assigned an FRN which will be used in all license transactions with the FCC. For instructions on how to register your SSN and receive an FRN from the FCC, visit the FCC's Registration page and the FCC's Registration instructions page. Per FCC rules, a valid email address is also mandatory on the application form.
5. If applicable, bring a printed copy of your Amateur Radio license. Acceptable copies or printouts of licenses are available from the following sources: the official license or reference license printed from the FCC website or license data printed from the ARRL website or QRZ website. The original(s) and photocopy(s) of any Certificates of Successful Completion of Examination (CSCE) you may hold from previous exam sessions. If your license has already been issued by the FCC, the CSCE showing license credit is not needed. The candidate is required to show proof of the current license to the team but the team is no longer required to submit the proof to the VEC. Expired license proof must be submitted to the team and to the VEC for processing to FCC. These photocopies will not be returned. Instructions on how to obtain an official FCC license copy are on our Obtain License Copy web page.
6. Two number two pencils with erasers and a pen for in-person sessions.
7. A calculator with the memory erased and formulas cleared is allowed. You may not bring any written notes or calculations into the exam session. Slide rules and logarithmic tables are acceptable, as long as they're free of notes and formulas. Cell phone must be silenced or turned off during the exam session and the phones' calculator function may not be used. In addition, iPhones, iPads, Androids, smartphones, Blackberry devices and all similar electronic devices with a calculator capability, may NOT be used.
8. Bring a check, a money order or cash to cover the exam session fee(s). Check the ARRL VEC's current exam fees. The FCC hasn't started to accept the $35 fee, which will be paid directly to the FCC.
9. Be aware that some information about you will be made publicly available on the FCC's website.

## Trivia for June 2021

Did you know???
In the early 20th century, automobiles were made from wood. Henry Ford so hated the waste he generated, he began making charcoal briquettes and gave a bag away when he sold a car. And sold them under the Ford name and logo. Later a small partner bought out Mr. Ford's charcoal that became Kingsford Charcoal "briquets", after James Kingsford.
73s, Dana KG6WXE

## Calendar June 2021

**1: ACS/ARES Tuesday Night Net and Simplex**
**5: K6MEP Field Day Get-together at 11 AM at the Dudley House, voting starts for officers; CVARC Radio School**
**7: K6MEP Monday Night Net and Zoom Meeting**
**8: ACS/ARES Tuesday Night Net**
**11: K6MEP Monthly Club Meeting and Vote for Officers (could be at the Dudley House)**
**12: CVARC Radio School**
**14:K6MEP Monday Night Net and Zoom Meeting**
**15: ACS/ARES Tuesday Night Net**
**19: CVARC Radio School**
**20: Father's Day**
**21: K6MEP Monday Night Net and Zoom Meeting**
**22: ACS/ARES Tuesday Night Net**
**25: Field Day Setup at Oxnard College after noon**
**26: Field Day starts at 11 AM**
**27: Field Day ends at 11 AM; cleanup starts**
**28: K6MEP Monday Night Net and Zoom Meeting**
**29: ACS/ARES Tuesday Night Net**

(Repeated from the CVARC website). The wildly successful "Auxiliary Bored Meetings" will continue on a new schedule beginning Monday, June 29, 2020. The informal nets have been running four times daily on the Bozo repeater. Over 7,500 calls from 275 unique hams have been logged on the nets. Under the new schedule, the net will be called to order at 9 A.M. Monday through Saturday. The Saturday morning net will run 9 A.M. to noon with a swap and the repeater will linked with Paul Strauss' (WD6EBY) repeater network for full Ventura County coverage. Starting July 11, 2020, there will be a second Saturday net at 9 P.M.
The Bozo Repeater operates with the following settings:
Frequency: 147.885 MHz
Offset: –
PL: 127.3
Stu AG6AG
http://www.cvarc.org/event/auxiliary-bored-meetings-on-bozo-2/all/

# K6MEP Monday Night Net Script

QST- QST- QST. This is _____(Name)_____(Call Sign), with the Ventura County Amateur Radio Club Net. If there is any station with EMERGENCY or PRIORITY Traffic that needs the immediate use of this frequency, please come now.

Hearing none, the following is a QST. This is _____(Name) _____ (Call Sign), tonight's net control station for the Ventura County Amateur Radio Club Net. If, at any time, during tonight's net, anyone needs this frequency for emergency or priority traffic, please call net control, and we will respond appropriately.

This is a directed net, open to all amateur radio operators and is sponsored by K6MEP, the call sign for VCARC. This net begins each Monday evening at 20:00 local time on the WD6EBY linked repeater system.

The primary frequency of this net is 145.200 MHz with a minus offset and a PL of 127.3 Hz. If the repeater should fail for any reason, we can use South Mtn. repeater on 146.385 MHz with a positive offset and a PL of 127.3 Hz as backup.
All amateurs are welcome to check in after the following announcements.
A roundtable will follow the check-ins. A rag chew session may follow the formal net. We will have a Zoom meeting following the net.

K6MEP, the Ventura County Amateur Radio Club, meets at 19:30 hours on the second Friday of each month at The Dudley House, 197 N Ashwood Ave, Ventura, CA. However, due to government health restrictions, we will hold the meeting "virtually" on 145.200 MHz with a minus offset and a PL of 127.3 Hz. The club meeting will be followed by a Zoom get-together. Our next virtual meeting will be on Friday _____ (insert date). We urge any non-members interested in the VCARC to contact us at K6MEP@qsl.net. Non-members interested in amateur radio are welcome to attend our meetings.
When you check-in, please give your call sign, name and if you are a VCARC member. If you are not a member of the club, please include your QTH or location.

(Check-ins completed): Hearing no other check-ins, we will now begin with our Roundtable
********

Any last comments? ******** Any late, missed, or visitor check-ins?
Please check-in now.

Hearing no new check-ins does anyone have anything else they would like to add to tonight's net? Hearing none;
(Closing): This concludes the VCARC weekly net at _____hours. Thank you for your interest and participation. Also thanks to Paul Strauss, WD6EBY, for the use of the repeater for our K6MEP net. 73, this is _____ call sign), tonight's VCARC net control, signing off and returning the repeater to its normal use.

## Convention and Hamfest Calendar

Steve Ewald, WV1X, sewald@arrl.org; www.arrl.org/hamfests-and-conventions-calendar

# Convention and Hamfest Calendar

A = AUCTION
D = DEALERS / VENDORS
F = FLEA MARKET
H = HANDICAP ACCESS
Q = FIELD CHECKING OF QSL CARDS
R = REFRESHMENTS
S = SEMINARS / PRESENTATIONS
T = TAILGATING
V = VE SESSIONS

**Abbreviations**
*Spr* = Sponsor
*Tl* = Talk-in frequency
*Adm* = Admission

**Alabama (Northport) — June 19 D F H Q R S T V**
8:30 AM – 2 PM. *Spr:* Black Warrior Hamfest. Tuscaloosa County High School, 12500 Wildcat Dr. *Tl:* 145.35 (91.5 Hz). *Adm:* $10. **www.blackwarriorhamfest.org**

**Colorado (Montrose) — June 5 T**
8 AM – noon. *Spr:* Montrose ARC. Lions Club Pavilion, 510 Palmer St. *Tl:* 147.195 (107.2 Hz). *Adm:* free. **www.montrosehamradio.org**

**Florida (Pinellas Park) — May 29 D F H R T**
8 AM – noon. *Spr:* The Glorious Society of the Wormhole ARC. Freedom Lake Park, 9990 46th St. N. *Tl:* 146.850 (146.2 Hz). *Adm:* free. **www.w4orm.org**

**Florida (Dade City) — June 12 D F H R T V**
8 AM – noon. *Spr:* Dade City Masonic Lodge. Dade City Masonic Lodge #48, F & AM of Florida, 13642 21st St. S. *Tl:* 147.135, 146.20, 146.52. *Adm:* $6 general admission, $5 with a COVID-19 vaccination card. **www.dadecitymasoniclodge.com**

**Florida (Orlando) — June 12 F H T**
6 AM – noon. *Spr:* South Conway Baptist Church. South Conway Baptist Church, 6099 S. Conway Rd. *Tl:* none. *Adm:* free.

**Illinois (Mendota) — June 6 D F R T V**
8 AM – 3 PM. *Spr:* Mendota Tri-County Fairgrounds, 503 First Ave. *Tl:* 147.120 (103.5 Hz). *Adm:* $7 advance with two stubs, $8 door with one stub. **www.w9mks.org**

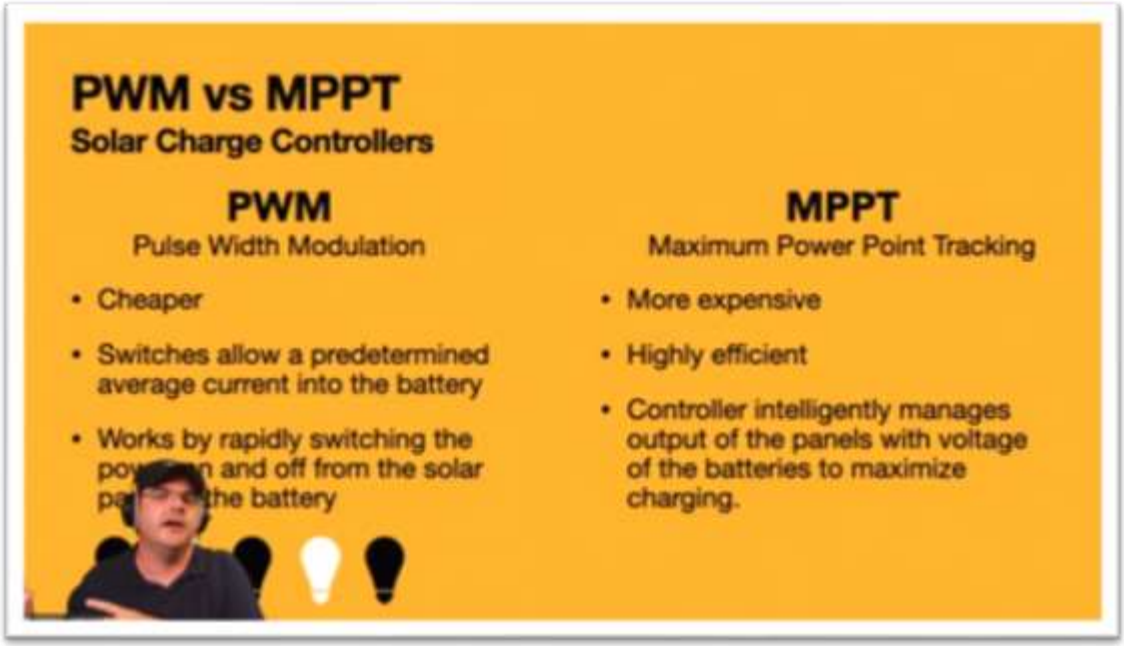
**ARRL INDIANA STATE CONVENTION**
**July 9 – 10, Indianapolis, IN**
**D F H Q R S T**
Fri. 2 PM – 7 PM, Sat. 6 AM – 2 PM. *Spr:* Indianapolis ARA. Marion County Fairgrounds, 7300 E. Troy Ave. *Tl:* 146.76, no tone. *Adm:* $8. **www.indyhamfest.com**

**Indiana (Auburn) — July 10 D H T**
9 AM – 2 PM. *Spr:* Northeastern Indiana ARA. Auburn Cord Duesenberg Museum,1600 S. Wayne St. *Tl:* 147.015, no tone. *Adm:* $5 raffle ticket purchase. **www.w9ou.org**

**Iowa (Creston) — June 12 D F H R T V**
8 AM – noon. *Spr:* SWIARA. Union County Emergency Management, 705 E. Taylor St. *Tl:* 146.790 (136.5 Hz). *Adm:* free. **www.facebook.com/groups/327085807349791**

**Kentucky (Cave City) — July 10 D F T**
8 AM. *Spr:* MCARC. Cave City Convention Center, 502 Mammoth Cave St. *Tl:* 146.94. *Adm:* $5. **www.ky4x.org**

Slide below from Chris Mattia's W6AH presentation to the ACS/ARES May District Meeting



# Convention and Hamfest Calendar (Continued)

**Louisiana (West Monroe) — June 5** D F H Q R S T V
8 AM – 1 PM. *Spr:* Louisiana Delta Radio Club. Cheniere Lake Area 1, 104 Cheniere Lake Dr. *Tl:* 147.135 (127.3 Hz). *Adm:* $5. **www.kc5dr.com**

**Maine (Hermon) — June 5** F H R T V
8 AM – 1 PM. *Spr:* Pine State ARC. Hermon Mountain, 441 Newburgh Rd. *Tl:* 146.94 (136.5 Hz). *Adm:* $5, kids 12 and under free. **www.n1me.com**

**Maryland (West Friendship) — May 30** F H T
6 AM – 2 PM. *Spr:* Maryland FM Association. Howard County Fairgrounds, 2210 Fairgrounds Rd. *Tl:* 146.76, 224.76, 444.0 (107.2 Hz). *Adm:* $10. **www.marylandfm.org**

**Maryland (Upperco) — June 20** D F H Q R T
7 AM – 2 PM. *Spr:* Baltimore ARC. Arcadia Fairgrounds, 16920 Carnival Ave. *Tl:* 146.67 (107.2 Hz). *Adm:* $5. **www.w3ft.com**

**Michigan (Chelsea) — June 6** D F H Q R T V
8 AM – noon. *Spr:* Chelsea ARC. Chelsea Community Fairgrounds, 20501 W. Old US Highway 12. *Tl:* 145.450, 146.980 (100 Hz). *Adm:* $5. **www.wd8iel.com**

**Michigan (Newberry) — June 12** D F H R V
9 AM – noon. *Spr:* Luce ARS. Pentland Township Hall. 15474 Highway M-28. *Tl:* 146.61 (114.8 Hz). *Adm:* $5. **www.w8nby.org**

**Michigan (Shelby Township) — June 19** D F
8 AM – noon. *Spr:* General Motors ARC. Packard Proving Grounds, 49965 Van Dyke Ave. *Tl:* 443.075 MHz (123 Hz). *Adm:* $5 per carload buying or selling. **www.gmarc.org**

**Michigan (Monroe) — June 20** D F H Q R T
7 AM – 1 PM. *Spr:* Monroe County Radio Communications Association. Monroe County Fairgrounds, 3775 S. Custer Rd. *Tl:* 146.72 (100 Hz). *Adm:* $6. **www.mcrca.org**

**Minnesota (Plymouth) — June 19** F H R T
8 AM – noon. *Spr:* Twin City FM Club. West Medicine Lake Community Club, 1705 Forestview Ln. N. *Tl:* 146.76 (114.8 Hz). *Adm:* $5. **www.tcfmc.org**

**Minnesota (Roseville) — July 10** H R T V
8 AM – noon. *Spr:* Magic Repeater Group. Galilee Lutheran Church, 145 N. McCarrons Blvd. *Tl:* 145.170 (100 Hz). *Adm:* free. **www.magicrepeater.net/fest.htm**

## ARRL NEBRASKA STATE CONVENTION

**June 19, Lincoln, NE**
D F H R S V
8 AM – 3 PM. *Spr:* Lincoln ARC. Lancaster Event Center, 4100 N. 84th St. *Tl:* 146.760. *Adm:* $8 for 16 and over, $5 for LARC members. **www.lincolnhamfest.org**

**New Jersey (Fair Lawn) — June 5** D F H R T
8 AM. *Spr:* Fair Lawn ARC. Fair Lawn Recycling Center, 19-25 Saddle River Rd. *Tl:* 145.470 (167.9 Hz). *Adm:* $5. **www.fairlawnarc.org**

**New Jersey (Piscataway) — July 10** D F H Q R T V
8 AM – noon. *Spr:* Raritan Valley Radio Club, W2QW. Piscataway High School, 110 Behmer Rd. *Tl:* 146.625 (141.3 Hz). *Adm:* $7. **www.w2qw.org**

**New York (Bethpage) — June 6** D F H Q R
8 AM – noon. *Spr:* Long Island Mobile ARC. 1055 Stewart Ave. *Tl:* 146.850 (136.5 Hz). *Adm:* $6. **www.limarc.org**

**New York (Cortland) — June 12** F H R T
7 AM – noon. *Spr:* Skyline ARC of Cortland. Cortland County Fairgrounds, 4301 Fairgrounds Dr. *Tl:* 147.180 (71.9). *Adm:* $5. **www.skylineradioclub.org**

**Ohio (Mansfield) — July 10** F H R T V
8 AM – 3 PM. *Spr:* Intercity ARC. Richland County Fairgrounds, 750 N. Home Rd. *Tl:* 444.700, DMR313920/ 443.100 (110.9 Hz), 146.460 simplex. *Adm:* $15 per space. **www.iarc.club**

## ARRL PENNSYLVANIA STATE CONVENTION

**July 3, Harrisburg, PA**
D F H Q R S T
6 AM – 2 PM. *Spr:* Harrisburg Radio Amateurs Club. Harrisburg Postal Picnic Grounds, 1500 Roberts Valley Rd. *Tl:* 147.075 (123 Hz). *Adm:* $5. **www.w3uu.org**

**Pennsylvania (Plains) — July 4** D F H R T V
8 AM – noon. *Spr:* Murgas ARC. Polish American Veterans Club, 2 South Oak St. *Tl:* 146.61 (82.5 Hz). *Adm:* $7. **www.hamfest.murgasarc.org**

## ARRL TENNESSEE STATE CONVENTION

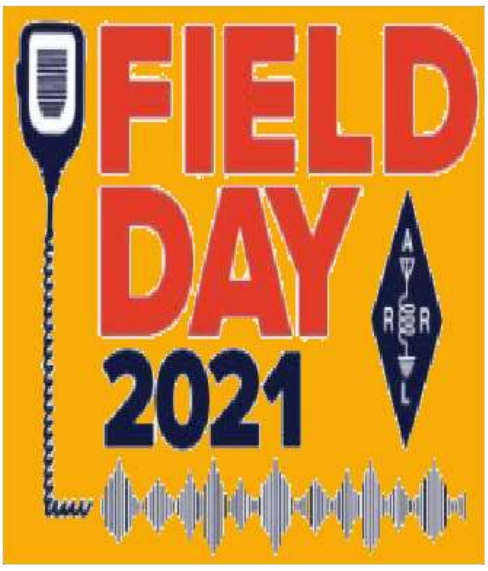
**June 19, Knoxville, TN**
D F H Q R S T V
8:30 AM – 3 PM. *Spr:* Radio Amateur Club of Knoxville. Kerbela Temple, 315 Mimosa Ave. *Tl:* 147.300 (100 Hz). *Adm:* $8. **www.w4bbb.org**

**Texas (Texas City) — July 10** D F H Q R S T V
9 AM – 1 PM. *Spr:* Tidelands ARS. Doyle Convention Center, 2010 5th Ave. N. *Tl:* 147.14 (167.9 Hz), 442.025 (103.5 Hz). *Adm:* $4. **www.tidelands.org**

**Virginia (Manassas) — June 12** T
9 AM – 1 PM. *Spr:* Ole Virginia Hams ARC. Field across from Signal Hill Park, 9300 Signal View Rd. *Tl:* 147.960. *Adm:* $5. **www.w4ovh.net**

**Wisconsin (Kaukauna) — June 19** D F H R T
7 AM – noon. *Spr:* Fox Cities ARC. Starlite Club, W2091 County Rd. JJ. *Tl:* 146.760 (100 Hz). *Adm:* $6. **www.fcarc.club/sunshineswap.php**

**Wisconsin (Oak Creek) — July 10** F H R
6:30 AM – 3:30 PM. *Spr:* South Milwaukee ARC. American Legion Post 434, 9327 S. Sheppard Ave. *Tl:* 146.91 (127.3 Hz). *Adm:* $5. **www.wi9sm.org**



# Emergency and Volunteer Training

Some excellent emergency and volunteer training is available through the American Red Cross of Ventura County, FEMA and the American Radio Relay League.

## Red Cross Courses

The following is a list of locally available Red Cross courses and a current schedule of classes over the next two months. Enroll by calling the Red Cross Chapter House at 805-987-1514 Ext 320 leaving your name, course code and telephone number. If you are interested in a class not currently scheduled call to be placed on a waiting list for the next scheduled date.

Note: The classes **Fulfilling Our Mission** and **Introduction to Disaster Services** are required for all Red Cross classes if you are not currently registered as a Red Cross Volunteer.

For training class registration, call: 805-987-1514 Ext 320.

Course schedule and descriptions:

http://www.arcventura.org/DSCourseDescriptions.html

http://www.arcventura.org/contact_us.html

*COLLABORATING TO ENSURE EFFECTIVE SERVICE DELIVERY(ARC3089-4)*
*COMMUNITY SERVICES OVERVIEW (ARC 3068-1)*
*DISASTER ASSESSMENT (ARC 3067-1)*
*DISASTER HEALTH SERVICES: OVERVIEW (3076-1F)*
*DISASTER HEALTH SERVICES SIMULATION (ARC 3076-2F)*
*DISASTER MENTAL HEALTH SERVICES (ARC 3077-1F)*
*DISASTER MENTAL HEALTH: AN OVERVIEW (ARC 3077-2)*
*DISASTER WELFARE INQ.:CONNECTING YOUR COMMUNITY(ARC 3085-1)*
*DISASTER WELFARE INQUIRY SIMULATION (ARC 3085-2)*
*EMERGENCY OPS CENTER/INCIDENT COMMAND LIAISON (ARC 3089-5)*
*ERVs: READY, SET, ROLL (ARC 3068-4)*
*FAMILY SERVICES: PROVIDING EMERGENCY ASSISTANCE (ARC 3072-1)*
*FINANCIAL STATISTICAL INFORMATION MANAGEMENT (ARC 3078-2)*
*HUMAN RESOURCES IN DISASTER (ARC 3087-3F)*
*LOGISTICS: AN OVERVIEW (ARC 3087-1)*
*LOGISTICS SIMULATION (ARC 3071-2)*
*MANAGING TOTAL DIVERSITY*
*MASS CASUALTY DISASTER (ARC 3079 1F)*
*PUBLIC AFFAIRS IN DISASTER 1 (ARC 3080 1F)*
*SAFE FOOD HANDLING WORKSHOP*
*SHELTER OPERATIONS (ARC 3068-11)*
*SHELTER SIMULATIONS (ARC 3068-12)*
*WORKING WITH TOTAL DIVERSITY*

## Scheduled Red Cross Classes

For training class registration, call: 805-987-1514
Please try to register for classes a week before the class is being offered



# FEMA Courses

The following free **FEMA Independent Study Courses** are recommended. There are several other FEMA courses available; see the other courses at http://training.fema.gov/is

IS-5.a An Introduction to Hazardous Materials - (10/31/2013)
IS-10.a Animals in Disasters: Awareness and Preparedness - (10/2/2015)
IS-11.a Animals in Disasters: Community Planning - (10/2/2015)
IS-15.b Special Events Contingency Planning for Public Safety Agencies - (10/31/2013)
IS-20.19 Diversity Awareness Course 2019 - (1/30/2019)
IS-21.17 Civil Rights and FEMA Disaster Assistance - (1/25/2017))
IS-26 Guide to Points of Distribution - (8/11/2010)
IS-27 Orientation to FEMA Logistics - (10/31/2013)
IS-29 Public Information Officer Awareness - (10/31/2013)
IS-33.19 FEMA Initial Ethics Orientation 2019 - (1/30/2019)
IS-35.19 FEMA Safety Orientation 2019 - (1/30/2019)IS-36 Multi-hazard Planning for Childcare - (10/31/2013)
IS-42 Social Media in Emergency Management - (10/31/2013)
IS-75 Military Resources in Emergency Management - (2/25/2011)
IS-100.b Introduction to Incident Command System, ICS-100 - (10/31/2013)
IS-111.a Livestock in Disasters - (10/31/2013)
IS-144 Telecommunicators Emergency Response Taskforce (TERT) Basic Course - (10/31/2013)
IS-162 Hazard Mitigation Floodplain Management in Disaster Operations - (11/16/2016)
IS-200.b ICS for Single Resources and Initial Action Incidents - (10/31/2013)
IS-230.d Fundamentals of Emergency Management - (12/16/2013)
IS-235.c Emergency Planning - (12/15/2015)
IS-240.b Leadership and Influence - (6/16/2014)
IS-241.b Decision Making and Problem Solving - (3/31/2014)
IS-242.b Effective Communication - (3/31/2014)
IS-244.b Developing and Managing Volunteers - (3/29/2013)
IS-250.a Emergency Support Function 15 (ESF15) External Affairs: A New Approach to Emergency Communication and Information Distribution - (5/7/2012)
IS-271.a Anticipating Hazardous Weather & Community Risk, 2nd Edition - (10/31/2013)
IS-288.a The Role of Voluntary Organizations in Emergency Management - (2/12/2015)
IS-315 CERT Supplemental Training: The Incident Command System - (8/13/2013)
IS-317 Introduction to Community Emergency Response Teams - (6/26/2014)
IS-320 Wildfire Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-322 Flood Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-323 Earthquake Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-325 Earthquake Basics: Science, Risk, and Mitigation - (10/31/2013)
IS-326 Community Tsunami Preparedness - (10/31/2013)
IS-366.a Planning for the Needs of Children in Disasters - (12/9/2015)
IS-368 Including People With Disabilities & Others With Access & Functional Needs in Disaster Operations - (2/20/2014)
IS-393.a Introduction to Hazard Mitigation - (10/31/2013)
IS-405 Overview of Mass Care/Emergency Assistance - (12/10/2013)
IS-454 Fundamentals of Risk Management - (10/31/2013)
IS-546.a Continuity of Operations Awareness Course - (10/31/2013)
IS-547.a Introduction to Continuity of Operations - (10/31/2013)
IS-559 Local Damage Assessment - (10/31/2013)
IS-700.b An Introduction to the National Incident Management System - (6/25/2018)
IS-775 EOC Management and Operations - (8/6/2008)
IS-800.b National Response Framework, An Introduction - (1/20/2017)
IS-815 ABCs of Temporary Emergency Power - (12/27/2016)
IS-906 Workplace Security Awareness - (10/31/2013)
IS-907 Active Shooter: What You Can Do - (12/28/2015)
IS-909 Community Preparedness: Implementing Simple Activities for Everyone - (10/31/2013)
IS-910.a Emergency Management Preparedness Fundamentals - (10/19/2012)
IS-915 Protecting Critical Infrastructure Against Insider Threats - (7/10/2013)
IS-916 Critical Infrastructure Security: Theft and Diversion – What You Can Do - (10/31/2013)
IS-922 Applications of GIS for Emergency Management - (10/31/2013)
IS-951 DHS Radio Interoperability - (9/22/2016)
IS-2200: Basic Emergency Operations Center Functions - (5/17/2019)
IS-2500 National Prevention Framework, an Introduction - (3/27/2018)
IS-2600 National Protection Framework, An Introduction - (3/27/2018)
IS-2700 National Mitigation Framework, an Introduction - (3/27/2018)
IS-2900.a National Disaster Recovery Framework (NDRF) Overview - (7/11/2018)

---

The **ARRL** offers several on-line courses. The courses listed here are recommended for those involved in disaster and emergency service. See these and other courses at the ARRL web site.

**Introduction to Emergency Communication EC-001**
**HF Digital Communications EC-005**
**PR-101: ARRL Public Relations (EC-015)**
**Public Service and Emergency Communications Management for Radio Amateurs- EC-016**

There are some costs with the ARRL courses but discounts and occasional scholarships are available to ARRL members. See ***www.ARRL.org*** for details and enrollment.

## ACS/ARES Frequency Updates

The Tuesday night Ventura County ARES/ACS Net is held on the WD6EBY Sulphur Mt. Repeater. Local nets are 7:00 to 7:30 PM; County Net starts at 7:30 on WD6EBY Sulphur Mt. Repeater 145.200 (-) PL 127.3 / 445.560 Mhz(-) PL 141.3

**Good Frequencies** to have pre-programmed into your radios...

**Area 1 Simi Valley** – K6ERN 146.805 Mhz (-) PL 100.0
**Area 2 Conejo Valley, T. Oaks, Newbury Park** – N6JMI 147.885 Mhz (-) PL127.3 BOZO
**Area 3 Camarillo, Somis**,– K6ERN 147.915 Mhz (-) PL 127.3
**Area 4 Oxnard, Port Hueneme, NBVC** – WB6YQN 146.970 Mhz (-) PL 127.3
**Area 5 Ojai Valley** – N6FL 145.400 Mhz (-) PL 114.8
**Area 6 Ventura City** – WA6ZSN 146.385 Mhz (+) PL 127.3
**Area 7 Santa Paula, Fillmore, Piru** – WA6ZSN 146.385 Mhz (+) PL 127.3
**Area 8 Moorpark, Santa Rosa Valley** – K6ERN 145.460 Mhz (-) PL 127.3
**County-Wide** – WD6EBY 145.200 (-) PL 127.3
**ACS Portable** – VCACS/p 144.930/147.585 Mhz PL 127.3

**WD6EBY SP 145.420 Mhz (-) PL 127.3**
**WD6EBY 447.480 (-) PL 156.7 Hz South Mtn.**
**K4NGL 145.360 Mnz (-) PL 156.7 Kimberly Peak**

**Other Good Area Frequencies ...**

AA6DP 147.090 Mhz (+) No PL Catalina
K0AKS 147.150 Mhz(-) PL127.3 TOaks
K6CPT DCS 145.300 Mhz (-) PL100.0 LA DCS
K6CPT DCS 147.270 Mhz (-) PL100.0 LA DCS
K6DCS DCS22 147.225 Mhz (+) PL 94.8 LA DCS
K6ERN 146.880 Mhz (-) PL 127.3 SMRA Red Mt.
K6ERN 147.765 Mhz (-) PL 127.3 Olivas Park / SMRA
K6TZ 146.790 Mhz (-)PL131.8 SBARC
KB6C 147.735 Mhz (-) PL 100.0 Oat Mt / MMRA
N6EVC 146.850 Mhz (-) PL 94.8 Rasnow
N6FDR 145.260 Mhz (-) PL 100.0 Malibu
W6AAX 147.180 Mhz (+) PL 186.2 Verdugo Peak
W6GRG 146.940 Mhz (-) PL 127.3 Simi DSW Repeater
W6YJO 145.180 Mhz (-) PL 131.8 Sta Ynez
WA6FGK 146.640 Mhz (-) PL 127.3 Simi Valley
WA6PPS 147.300 Mhz (-) PL 110.9 L.A.City ACS
WB6OBB 147.000 Mhz (+) PL 131.8 Sta Barbara
WD6EBY 145.240 MHz (-) PL 127.3 Chatsworth Pk

Due to assignment and coordination of several D-Star Repeaters, TASMA, the southern California Two meter amateur frequency coordination body, has had to re-align several frequencies. Among these changes are the channelization (15 KHz spacing) of the 145.5 - 145.6 simplex allocation and reassignment of several frequencies from simplex to other uses.

None of the local Ventura County repeaters are directly affected; however several previous simplex frequencies are now in use either as repeater inputs or outputs. **New County ARES Packet frequency is 145.050 Mhz**;

**Ventura County ARES-ACS simplex frequencies** have been re-assigned as follows:

**Area 1 Simi Valley – 145.510 Mhz (S)**
Area 2 Conejo Valley, T.O., Newbury Pk – 146.445 Mhz (S)
Area 3 Camarillo, Somis – 146.550Mhz (S)
Area 4 Oxnard, Port Hueneme, NBVC – 146.595Mhz (S)
Area 5 Ojai Valley – 145.555Mhz (S)
Area 6 Ventura City – 147.510Mhz (S)
**Area 7 Santa Paula, Fillmore, Piru – 145.540 Mhz (S)**
Area 8 Moorpark – 146.535Mhz (S)
**County ARES Simplex – 145.615 Mhz (S)**
National Simplex – 146.520Mhz(S)

---

**Ventura County ARES / ACS Emergency Coordinators**

**ACS RO/ARES DEC**: Rob Hanson, W6RH, Email: w6rh@arrl.net
**Assist ACS RO/Deputy DEC**: Rick Tate, KQ6NO Email: kq6no@arrl.net

**Area 1 Simi Valley EC**: Steve King, KE6WEZ Email: ke6wez@gmail.com
**Area 2 TO, Conejo Valley EC**: Zack Cohen, N6PK , Email: n6pk@arrl.net
**Area 3 Camarillo, Somis EC**: Avi Carmi, K6AVI Email: avi@carmi.us
**Area 4 Oxnard, Hueneme, Mugu EC**:Hovan Salibian, KI6BQL Email: ki6bql@arrl.net
**Area 5 Ojai EC: Wayne Francis**, W6OEU Email: w6oeu@arrl.net
**Area 6 City of Ventura EC (acting)**: James (Jim) Aguirre KM6GUE Email: KM6GUE@gmail.com
**Area 7 Santa Paula, Fillmore, Piru EC**: James (Jim) Aguirre KM6GUE Email: KM6GUE@gmail.com
**Area 8 Moorpark, Santa Rosa Valley EC**: Marc Hanley KM6B, Email: km6b@arrl.net

# ACS/ARES Training and News Rob Hanson W6RH

Rob Hanson W6RH Ventura County ACS Radio Officer, Ventura County ARES District Emergency Coordinator

## Congress seeks to designate National Amateur Radio Operators Day

The U.S. Congress is reportedly taking steps to officially recognize the important contributions made by amateur radio operators.

According to an article on the website of the ARRL, Congresswoman Debbie Lesko (AZ) has introduced a bipartisan resolution to designate April 18, 2022 as National Amateur Radio Operators Day. April 18th is the anniversary of the founding of the International Amateur Radio Union (IARU) which was established in 1925.

The resolution cites the Amateur Radio Emergency Service for providing "invaluable emergency communications services following recent natural disasters, including, but not limited to, helping coordinate disaster relief efforts following Hurricanes Katrina, Wilma, and Maria and other extreme weather disasters."

Lesko had introduced a similar bill last year at the request of Raymond Anderson, a 12-year-old radio amateur from Peoria, AZ.

https://incompliancemag.com/congress-seeks-to-designate-national-amateur-radio-operators-day/

## Successful Red Cross Emergency Communications Spring 2021 Drill Summary

The Red Cross Emergency Communications Training Group held its third nationwide drill on Saturday, May 8. The results are still being compiled and checked as this is written, but it appears that approximately 800 radio amateurs took part in sending traffic via Winlink to one of eight Red Cross Divisional Clearinghouses around the nation.

The Training Group has two overarching goals: to attract and train a large number of radio amateurs in the basic use of Winlink; and then to incrementally raise the bar to higher levels of proficiency. To accomplish this, Winlink Thursday training ops were held all winter.

For the May 8 nationwide drill, participants were asked to send two Winlink messages - a Winlink check-in form providing GPS coordinates of the station, and a second message containing a Red Cross Shelter Requisition Form 6409. The valid GPS coordinates were mapped and displayed in real time during the drill. A challenge for the second message was that the sample Form 6409 had been filled in by hand, to provide a more realistic scenario than a neatly typed one. Operators had to transcribe/type in the requisition items.

## ACS/ARES Training and News (Continued)

The use of RF, rather than telnet (internet), to send Winlink messages was encouraged, and more than 80 percent of participants used their radios -- either via HF or VHF/UHF. This percentage number and message accuracy rate have continually risen during the Winlink Thursday drills.

Because the May 8 date was also World Red Cross and Red Crescent Day, international hams were invited to participate, and more than 50 checked in from Central and South America, Canada, Germany, and South Africa.

For more information about the Red Cross Emergency Communications Training Group, visit the group's website and sign up for its group email service to receive announcements of future activities. -- Red Cross Emergency Communications Training Group

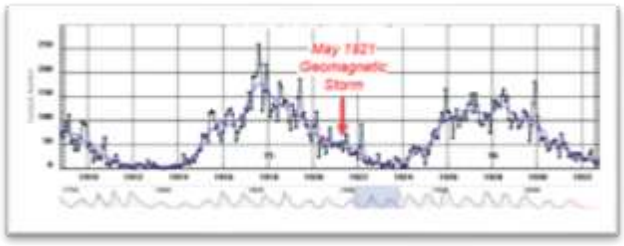
## HF radios make a comeback and enable global command and control

New advancements in HF radio and digital signal processing technology for terrestrial-based, long-range communications offers a cost-effective alternative to SATCOM

Ron Broden W9TNG is interviewed for this Collins Aerospace article which can be read at https://modernbattlespace.com/2020/03/05/hf-radios-make-a-comeback-and-enable-global-command-and-control/

## THE GREAT GEOMAGNETIC STORM OF MAY 1921 (Released after the May edition of the Keyer):

Spaceweather.com.
100 Years Later: The Great Geomagnetic Storm of May 1921
May 15, 2021: You know a solar storm is serious when buildings burst into flame. Sounds crazy? It really happened 100 years ago today.
On May 15, 1921, the biggest solar storm of the 20th century hit Earth. Around 02:00 GMT that Sunday morning a telegraph exchange in Sweden burst into flames. Across the Atlantic, the same thing was going on in New York. Flames engulfed the switch-board at the Brewster station of the Central New England Railroad and quickly spread to destroy the whole building. During the conflagration, long distance telephone lines burned out in New Brunswick; voltages on telegraph lines in the USA spiked as high as 1000 V; and auroras were sighted by ships at sea crossing the equator. It was a Big. Solar. Storm.




## ACS/ARES Training and News (Continued)

The outburst happened during the lazy tail end of Solar Cycle 15, an unremarkable cycle that was almost over in 1921. Sunspot numbers were low–but it only took one. Giant sunspot AR1842 appeared in mid-May and started flaring, hurling multiple coronal mass ejections (CMEs) toward Earth. In those days scientists had never heard of "CMEs," so they were completely surprised when the clouds of plasma struck Earth. Around the world, magnetometers suddenly went offscale, pens in strip chart recorders pegged uselessly to the tops of their papers.

In response to the pummeling, Earth's magnetic field swayed back and forth, rippling with energy. Fires were a direct result. Physics 101: When a magnetic field changes rapidly, electricity flows through conductors in the area. It's called "magnetic induction." Early 20th century telegraph lines suddenly found themselves buzzing with induced currents. In Sweden and New York, wires grew so hot they ignited telegraph papers and other combustibles.


Newspaper Headlines
May 15, 1921

SUNSPOT CREDITED WITH RAIL TIE-UP

New York Central Signal System Put Out of Service by Play of Northern Lights.

SUNSPOT AURORA PARALYZES WIRES

Aurora Borealis Plays Tricks on Telegraph Wires

Electrical Experts Baffled by Extra Voltage from Air—Visible in Pennsylvania.

WIRES HIT BY THE AURORA BOREALIS

Telegraph Service Throughout United States Badly Crippled by Northern Lights—West and South Feel Effects Most—Reported as Brilliantly Visible Between Scranton and Pittsburgh.

What would happen if the same storm struck today? A 2013 Royal Academy of Engineering report summarizes the possibilities. Suffice it to say, fire would be the least of our worries. Modern technology is far more sensitive to solar activity than the simple copper wires of 1921. The same solar storm today could black out regional power grids, expose air travelers to radiation, knock out satellites, and disable radio-based technologies such as GPS.

## ACS/ARES Training and News (Continued)

Loss of electricity is often cited as the worst likely side-effect of a solar superstorm, but power systems are more resilient than they used to be. Thanks to improvements made after the Great Quebec Blackout of 1989, many modern grids would bounce back quickly. A more worrisome loss might be GPS. We think of GPS as our main way of finding things: ambulances finding accidents, pilots finding runways, and so on. But there's more to it than that. GPS tells us what time it is, a service of atomic clocks onboard the satellites. In fact, GPS time is woven into the fabric of modern society.

Consider the following paragraph from a report in the Atlantic entitled "What Happens if GPS Fails?"

"Telecom networks rely on GPS clocks to keep cell towers synchronized so calls can be passed between them. Many electrical power grids use the clocks in equipment that fine-tunes current flow in overloaded networks. The finance sector uses GPS-derived timing systems to timestamp ATM, credit card, and high-speed market transactions. Computer network synchronization, digital television and radio, Doppler radar weather reporting, seismic monitoring, even multi-camera sequencing for film production—GPS clocks have a hand in all."

"What if all these flying clock radios were wiped out, and everything on the ground started blinking 12:00?" asks the author, Dan Glass. Answer: "Nobody knows."

Space weather scholars routinely call the May 1921 event a "100 year storm." However, recent research (both historical and statistical) suggests that such storms come along more often–every 40 to 60 years. Either way, we're overdue.


Happy 100th anniversary, May 1921!

73, Rob W6RH

## ARES Training and News (Continued)

**ARRL offers online training for hams who want to participate in the Amateur Radio Emergency Service.**

***The time for training is before a disaster...not during one.***

The former Amateur Radio Emergency Communications (AREC) series of three training courses has been reconfigured into two courses: An introductory course and a course for leaders and managers.

### Introduction to Emergency Communication (#EC-001)

Revised in 2018, this is an update of the former Level 1 course. It is designed to provide basic knowledge and tools for hams who want to serve as a Public Service volunteer. It provides an opportunity for non-hams who rely on communications in emergency situations to learn about Amateur Radio and its unique role in emergencies.

For start dates, registration deadlines and more visit www.arrl.org/online-course-catalog


### Public Service and Emergency Communications Management for Radio Amateurs (#EC-016)

Launched in 2010, this course is designed for Amateur Radio operators who will be in leadership and managerial roles, organizing other volunteers to support public service activities and communications emergencies. Participants will learn how radio amateurs prepare to support local community events and, when working in coordination with governmental and emergency response organizations, how to deploy their services. This is a self-study course. For more information and to register visit www.arrl.org/online-course-catalog.


### PR-101: ARRL Public Relations (EC-015)

This is a basic training course for PIOs and anyone interacting with the media and promoting Amateur Radio.

This course is designed to give hams a quick overview in public relations activities. It uses the skills of experts in various aspects of public relations to provide volunteer Public Information Officers with the basic skills and expectations that a PIO needs to know to be effective in their home region.

PR-101 covers everything from the basic news release to Web sites and video work.

This course is available--free! – on-line, or can be purchased in CD format from the ARRL store.

---

# Local Area Radio Weekly Nets Wayne Woodhams N6WIX

**Monday**

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

Auxiliary Bored Meeting: MTWThF at 09:00 and on Saturday at 21:00 Hrs : Bozo Repeater Frequency: 147.885 MHz Offset: -PL: 127.3

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

Santa Barbara South County ARES net 19:30 Hrs on 146.79 MHz (-) PL 131.8.

Southwest ACS Nets Every Monday at 18:30 Hrs, on a local station on the Cactus Intertye Network. Check-in by roll call. 4th Monday "grid test" 20:30 Hrs.

LA DCS-22 Net – 19:30 Hrs - K6DCS - 147.225 MHz (+) then on 7.2353 MHz LSB

K6MEP Net -20:00 Hrs 145.200 MHz (-) 127.3 PL

CESN (California Emergency Services Net) at 20:00 Hrs Primary frequency - 3992 kHz, Backup frequency - 3960 kHz. All free to listen, check-in by membership only.

LA Section ARES Net - HF Every Monday following the VHF/UHF net (21:30 Hrs) 1st. 3rd and 4th Monday - 75 meters 3.995 MHz (± 45 kHz) / 2nd Monday -10 meters 28.495 MHz

**Tuesday**

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.250 MHz MTWThF 08:30 Hrs

Ventura County ARES-ACS 6 Meter Net - between 18:45 Hrs to 19:00 Hrs K6SMR 52.980 MHz (-) PL 82.5 SMRA Red Mt

Ventura County ARES-ACS Simplex Net - 18:30 Hrs on 147.510 MHz Simplex ORT schedule only!

Ventura County ARES-ACS HF Net - between 18:30 Hrs to 19:00 Hrs 40M on 7.235 MHz LSB +/-

Ventura County ARES/ACS Nets between 19:00 and 20:00 Hrs. The County-wide net starts at 19:30 Hrs and normally finishes by 20:00 Hrs on WD6EBY 145.200 MHz (-) /127.3 PL

SBARC Swap Net 146.790 MHz (-) / 131.8 Hz PL and 145.180 MHz (-) / 131.8 Hz PL 19:30-20:00 Hrs

West SB ARES HF Net (1" Tuesday, Monthly) 3822 kHz LSB 20:30 Hrs

6-Meter Roundtable - 50.125 MHz USB First Tuesday of each month 20:00 Hrs

ATV Net 20:30 Hrs 148.790 MHz (-) / 131.8 Hz PL RITZ repeater

SBARC Digital Communications Net 146.790 MHz (-) / 131.8 Hz PL and 145.180 MHz (-) / 131.8 Hz PI 8:00 - 10:00 PM

**Wednesday**

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

CESN (California Emergency Services Net 10:00 Hours, Primary frequency 7192 kHz, Backup frequency - 7230 kHz All free to listen, check-in by membership only.

SMRA Tech Net 146.880 MHz (-) / 127.3 PL (SMRA Red Mt) 20:00 Hrs

SBARC Swap Net 146.790 MHz (-) / 131.8 Hz PL K872 20:00 Hrs

Teamtalk Voice Net.20:00 Hrs k6pvr-svr.local.mesh server http://www.pvarc.club/mesh/mesh-applications/

**Thursday**

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

So Cal 6 meter net. 51.940 MHz - pl 82.5. 19:00-20:00 Hrs

Southern Calif 6M SSB Technical Roundtable Net 20:00 Hrs on 50.2 MHz USB SSB

SBARC / K6TZ Technical Mentoring Net 20:00-21:00 Hrs 146.790 MHz (-) / 131.8 Hz PL and 224.08 MHz (-) 131.8 PL (linked)

**Friday**

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.250 MHz MTWThF 08:30 Hrs

**Saturday**

Military Radio Collector Net 18:00 Hrs 3985 kHz AM vavw.mrcuwestord/mrca-radio-nets/

**Sunday**

ARRL Southwestern Division Net 08:00 Hrs 3965 MHz. ARRL Officers check in first. All visitors welcome at end of that net

Newbie Net 19:00-19:30 Hrs Bozo Repeater 147.885 MHz (-) PL127.3

Rabbit Net 19:00 Hrs Linked Rabbit repeater.

## ARRL Santa Barbara Section John Kitchens NS6X

**(Will be repeated until John contacts me that the positions are filled)**

Hello all,

I have been trying to fill Section volunteer positions for a while. I am giving another push. I am pleased to let you know that our Section Emergency Coordinator is Richard Tate, KQ6NO from Santa Paula. (Congratulations and thanks to Rick for taking on this position in addition to his ACS/ARES assignment as Assistant ACS Radio Officer/ARES Assistant DEC.

Richard will be contacting you to see how each county operates emergency communications, and to see how the ARES SEC role will be able to assist and coordinate between the 3 counties in the Section. I have been the SEC for about 3 years. I should not be both the Section Manager and SEC. We need to have more focus on each position.

I am looking forward to spending more time on being SM. One of the tasks that I have passed off to Rick, among others, is the EmComm and volunteer hours reporting to ARRL headquarters.

Additionally, Andy Ludlum, K6AGL, member of the Conejo Valley Amateur Radio Club, has been appointed as the first Assistant Section Manager in the Santa Barbara Section. The SM position will be a club liaison for me, the Section Manager, to have a person in the know hopefully at each club. I really have little to no secret ARRL information, but when I am aware of issues, successes, opportunities, we can work together to accomplish our goals.

There are many volunteer positions to fill in the Section. The one that I am focusing on right now is the Section Traffic Manager. The STM will manage the Section's involvement in the National Traffic System. We need to work on and develop the NTS in the Section. There is quite a bit of work to do, but there are several dedicated volunteers in the Section, working within the NTS, who will make the system work.

Let me know if you would like to volunteer for the STM position, or any volunteer position. I'll be talking about specific positions in the coming months.

## Santa Barbara Section Volunteers

Right now, we have 2 Section email systems. That is partly why we need volunteers to help rectify (electrical term) this issue. To make sure that everyone is getting the information, I will be sending emails through both systems. This email is for hams registered at the ARRL website as being in the Santa Barbara Section.

So, what do you get for being a volunteer? A special name/callsign badge and a certificate. And the satisfaction of helping ham radio in many aspects. I am still looking for volunteers to fill the remaining Section Leadership positions. The jobs are:

## ARRL Santa Barbara Section (Continued)

**Assistant Section Manager** (essentially a club liaison - one from each club, preferably)
**Local Government Liaison** (a person to be the contact for the local government, could be a city or county - to understand the local issues. Not to be a political operative or community organizer, but to be a positive contact for the local government, answer the government leader's questions, be aware of whom the players are)
**Traffic manager** - (the traffic system in the Section runs well, but needs a bit of coordination throughout the Section, and most importantly, finding new bodies to join the traffic system. Maybe the various Morse groups could provide people to be trained as traffic messengers).
**Public Information Coordinators** - (We have an excellent PIO, but each club should have someone who handles public information contacts, such as social media, print media, video (television, cable, YouTube etc.) media and more.)
**Section Youth Coordinator** (Doesn't need to be a teenager, but it could be. Someone who will focus ham radio toward the youth - schools, makers etc. Someone to help clubs do so, if they are so inclined.)
**Club Coordinator** (help get clubs active, motivated and working in the general support for ham radio. Some other type of groups will bring in a speaker to talk at all clubs for a reduced cost. We would like to have a Santa Barbara Section conference again. Need someone to help make it happen - just a small conference/Hamfest - look at the Yuma Arizona Hamfest.
**Technical Specialist** (working with the Technical Coordinator, maybe have experts "Elmers" for various aspects and specialties. How to get on FT8 (why won't my computer key my KX3; I can decode signals, just not key the radio), contesting, setting up a station, RFI solutions, use of chokes and why, homebrewing, how to solder - or crimping - how to install a coax connector, what is DMR/etc. and how to make my radio work - what is a hotspot, and more. We could use a dozen or more people.
**Webmaster** (I am not a web guy. Who is, or what groups of people are, who could help us? We need a Section website)
**Special Event** coordinator (We have a small Section budget that can cover some costs such as website hosting). The following clubs are ARRL affiliated:
Conejo Valley ARC (Andy Ludlum, K6AGL Assistant Section Manager)
Ventura County ARC (K6MEP)
Ventura County ARS
Simi Settlers ARC
Santa Barbara ARC
UC Santa Barbara ARC
Paso Robles ARC
Cal Poly San Luis Obispo ARC
Satellite ARC
And hopefully Pleasant Valley ARC soon.

## ARRL Santa Barbara Section (Continued)

There are more groups and clubs, which should not be ignored, but these are the "affiliated" clubs. The Section includes the counties of San Luis Obispo, Santa Barbara and Ventura. More schools, middle, high, community college and college/university should have a radio club.

Let me know if you would like to help, or get more information. Get one of those pretty, special color ARRL badges. No membership is required.
SB QST @ ARL $ARLB016
ARLB016 Amateurs' Email Addresses Will Continue to Be Kept Private, FCC Says

ZCZC AG16
QST de W1AW
ARRL Bulletin 16 ARLB016
From ARRL Headquarters
Newington CT May 20, 2021
To all radio amateurs

SB QST ARL ARLB016

### ARLB016 Amateurs' Email Addresses Will Continue to Be Kept Private, FCC Says

Starting on June 29, all applications filed with the FCC must include an email address for FCC correspondence. After receipt of the initial announcement that all future applications would require an email address, ARRL was concerned for the privacy of its members and requested that amateurs' email addresses not be made public.
This week, the FCC agreed, stating in an email to ARRL counsel that it will continue to "mask" amateurs' email addresses from public view in the Universal Licensing System (ULS). The FCC will use the email address supplied by amateurs to correspond with applicants, including to send a link to the official electronic copy of the license when an application is granted.

The FCC is transitioning to fully electronic correspondence and no longer mails hard-copy licenses. Amateurs are able to view, download, and print their official license grant, using the ULS.
When a license is first granted, each applicant will receive an email with a direct link to the license. Although the link expires in 30 days, the license itself will remain available in the ULS and may be downloaded at any time by signing into the licensee's account using their FCC Registration Number (FRN) and password.

On or after June 29, a valid email address must be provided with each application, and must be kept current by filing a modification application as necessary. Under the amended Section 97.23, "The email address must be an address where the grantee can receive electronic

## ARRL Santa Barbara Section (Continued)

correspondence. Revocation of the station license or suspension of the operator license may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct email address."

Applicants lacking an email address should consider using the email address of a friend or family member on their FCC applications.

Reminder: Due to changes the FCC has made to its licensing system, starting today, Thursday, May 20, all amateur exam applicants must provide their FRN to the Volunteer Examiners (VEs) before taking an amateur exam. Prospective new FCC licensees will be required to obtain an FRN before the examination and provide that number to the VEs on the Form 605 license application. An FCC instructional video provides step-by-step instructions on how to obtain an FRN through the FCC's COmmission REgistration System (CORES) can be found at, https://www.fcc.gov/rofrn .

The FRN is used afterward by the applicant to download the official license document from the FCC's Universal Licensing System (ULS), to upgrade a license, apply for a vanity call sign, and to submit administrative updates (such as address and email changes) and renewal applications.
NNNN
/EX

### First-Time Exam Applicants Must Obtain FCC Registration Number Before Taking Exam

Beginning May 20, 2021, all amateur examination applicants will be required to provide an FCC Registration Number (FRN) to the Volunteer Examiners (VEs) before taking an amateur exam. This is necessary due to changes the FCC has made to its licensing system.
Amateur candidates who already have an FCC license, whether for amateur radio or another service, and already have an FRN may use the same number. All prospective new FCC licensees, however, will be required to obtain an FRN before the examination and provide that number to the volunteer examiners on the Form 605 license application. An FCC instructional video provides step-by-step instructions on how to obtain an FRN through the FCC's COmmission REgistration System (CORES).
The FRN is required for all new applicants to take an amateur exam and is used afterward by the applicant to download the license document from the FCC Universal Licensing System (ULS), upgrade the license, apply for a vanity call sign, and to submit administrative updates (such as address and email changes) and renewal applications.
In addition, after June 29, all applications will be required to contain an email address for FCC correspondence. Applicants will receive an email directly from the FCC with a link to the official electronic copy of their license whenever a license is issued or changed. ARRL VEC suggests that

## ARRL Santa Barbara Section (Continued)

those without access to email should use the email address of a family member or friend. Licensees will be able to log in to the ULS using their FRN and password to download the latest version of their license at any time. The FCC no longer provides paper license documents.

### Upcoming ARRL Section, State, and Division Conventions

Many conventions and hamfests have been canceled or postponed due to the coronavirus pandemic. Check the calendar of canceled events on the ARRL website.

- May 15 - 16 -- The International DX Convention (online)
- May 20 - 22 -- Dayton Hamvention (online)
- June 5 -- ARRL Northwestern Division Convention (SEA-PAC; online)
- August 14 - 15 -- QSO Today Virtual Ham Expo (online)
- August 21 - 22 -- ARRL Southeastern Division Convention (Huntsville Hamfest), Huntsville, Alabama

Find conventions and hamfests in your area.

--


72/73

John Kitchens, NS6X
PO Box 178
Somis, CA 93066
805.216.2569
NS6X@ARRL.org
NS6X@ARRL.net

## Meeting Location Maps (meetings may be on-the-air, please check K6MEP.org)


## K6MEP Membership Application/Renewal. Please pay your 2021 Dues. Please mail the completed form (see below) or the one on K6MEP.org. Dues are now $10 (Apr-Jun).

To join the Ventura County Amateur Radio Club, Inc. (also known as VCARC or K6MEP), complete and send form, along with $20 annual dues, to VCARC P.O. Box 2103 Oxnard CA 93034-2103

Checks can be written to either Ventura County Amateur Radio Club, Inc. or VCARC

Pro-rate dues as follows based on our calendar year ending October 31 (Oct-Dec = $20, Jan-Mar = $15, Apr-Jun=$10, Jul-Sep=$5). Existing members should renew every October =$20.

Name (Last, First)_____Call sign_____License Type_____

Address Street_____City, State Zip_____

Email_____Telephone_____Date of Application_____

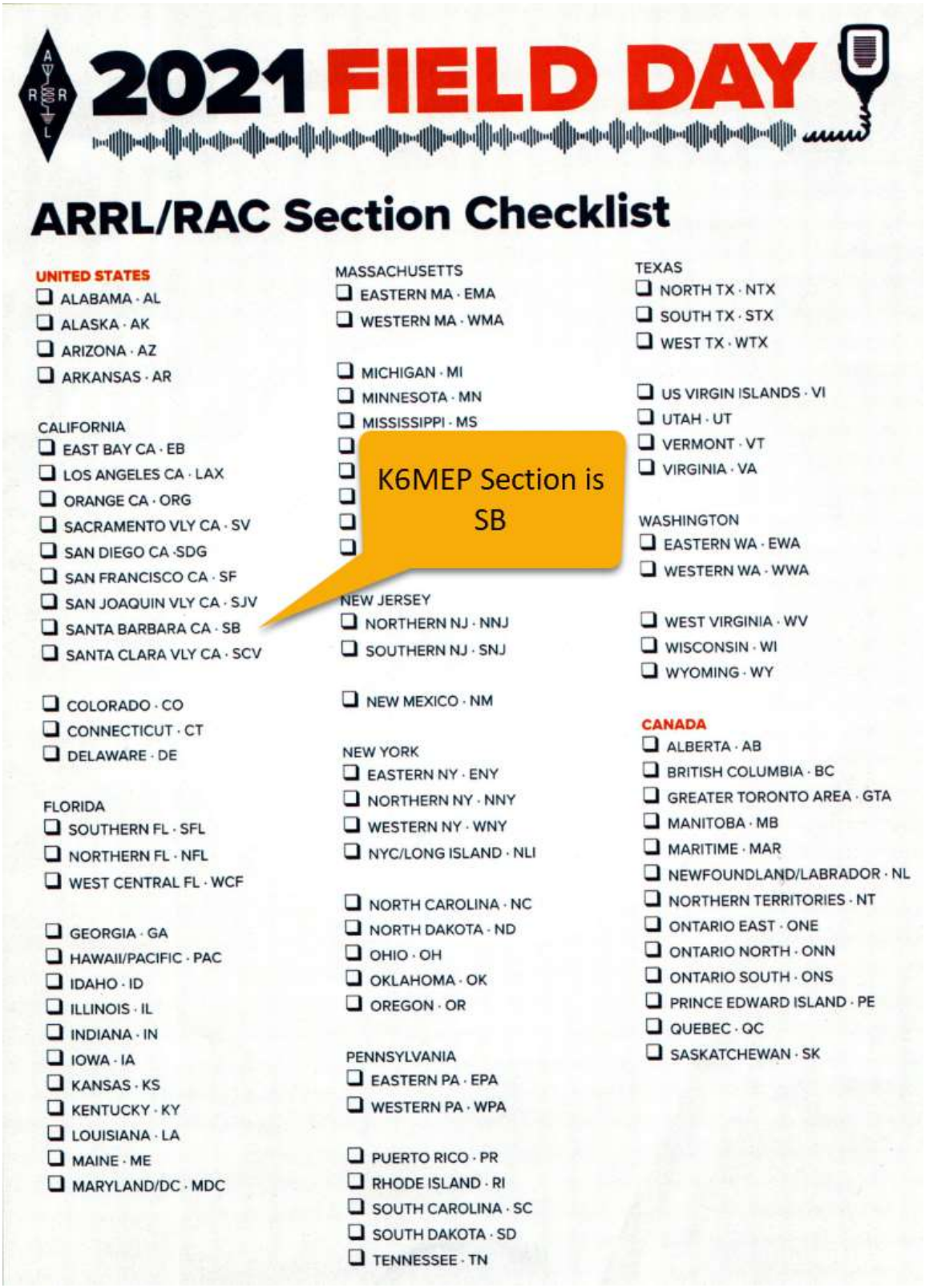
Y/N for the following: New Member _____ Renewing _____ Member of ARRL?_____

*I'd Like To See/Do....*

| TOPIC | YOUR INTEREST LEVEL | | | COMMENTS |
|---|---|---|---|---|
| | Meh | Ok | Yayy! | |
| All about coax cables | | | | |
| Amateur Radio Satellites | | | | |
| Antenna construction project | | | | |
| Antenna ordinances | | | | |
| ARES, ACS, CERT, RACES, MARS, SkyWarn | | | | |
| Assembling a Go-Box | | | | |
| Assembling a test lab | | | | |
| Best bands to get on & what to expect | | | | |
| Construction projects, like_____ | | | | |
| Ferrites, and demonstrations of. | | | | |
| Field Day – Strategies, Tactics and Techniques | | | | |
| FRS & GMRS - what are those? | | | | |
| Ham Radio projects for Arduinos & Raspberry Pi | | | | |
| VHF Digital Modes: D-Star, Packet, APRS | | | | |
| HF Digital Modes: RTTY,JT65,WSPR,PSK31,PACTOR,FT8 | | | | |
| How to use an oscilloscope | | | | |
| Local Repeaters You Can Hit | | | | |
| MESH | | | | |
| Moonbounce | | | | |
| More social events, picnics, etc. | | | | |
| NVIS for regional HF communications | | | | |
| QSLs, QSL cards, ARRL LOTW, eQSL | | | | |
| SDR - Software Defined Radios | | | | |
| Compact HF antennas | | | | |
| Soldering | | | | |
| Sulphur Mountain Repeater Association | | | | |
| SWR, Meaning and Measurement. | | | | |
| Troubleshooting | | | | |
| Vacuum Tubes | | | | |
| VHF and Above Contesting | | | | |
| What's DTMF, CTCSS, and PL? | | | | |
| Power amplifiers and receiver preamplifiers | | | | |
| Assembling Emergency Supplies | | | | |
| The Love of Morse Code. Keys, Paddles & Bugs. | | | | |
| The HF Reverse Beacon Network | | | | |
| ARRL American Radio Relay League topics | | | | |

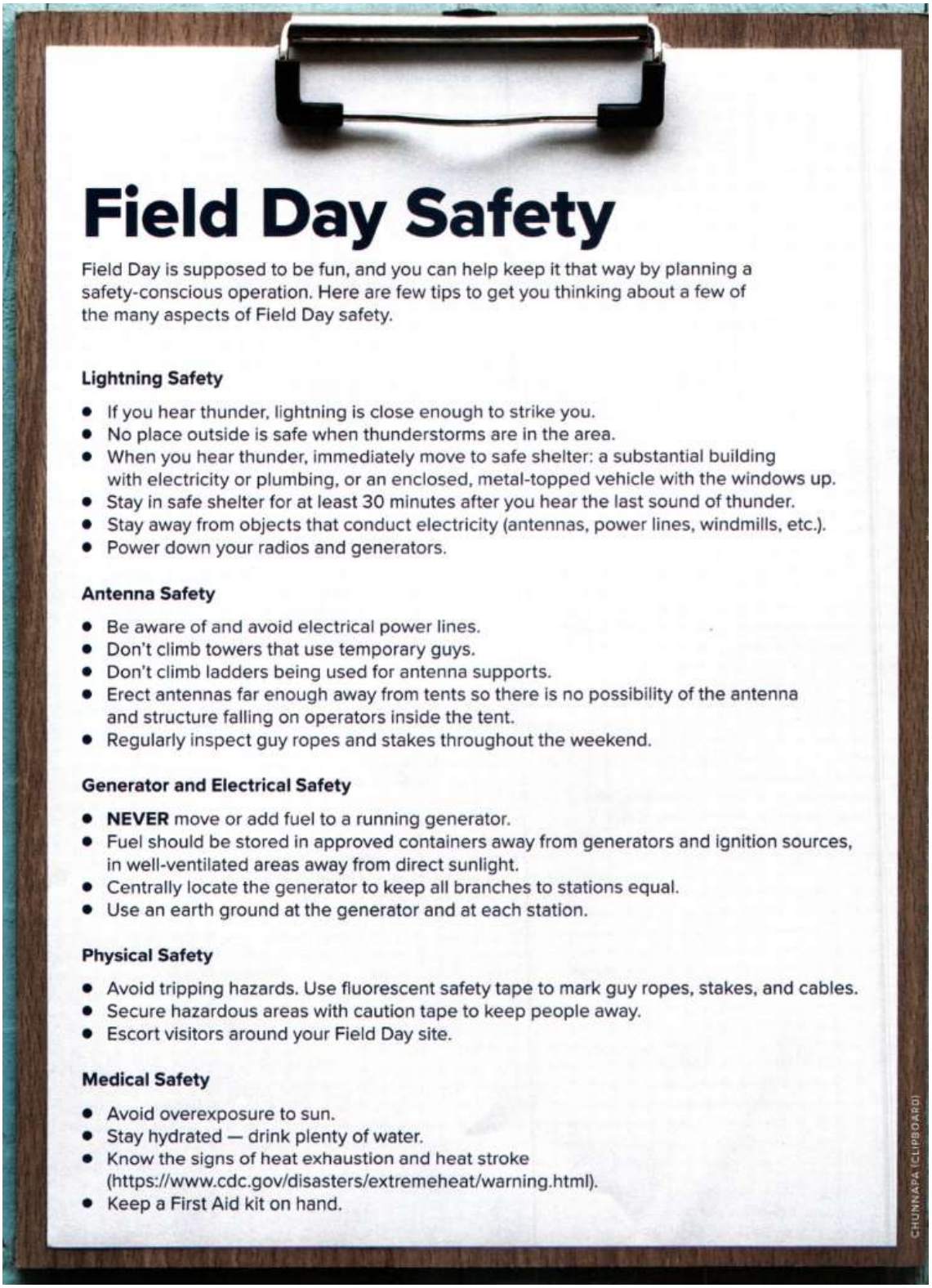
| | |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| I can give a presentation on: | |
| | |

**ARRL News**(all photos and icons from ARRL.org or other specified sources)



## ARRL News (Continued)

## ARRL News (Continued)



# Field Day Safety

Field Day is supposed to be fun, and you can help keep it that way by planning a safety-conscious operation. Here are few tips to get you thinking about a few of the many aspects of Field Day safety.

### Lightning Safety

- If you hear thunder, lightning is close enough to strike you.
- No place outside is safe when thunderstorms are in the area.
- When you hear thunder, immediately move to safe shelter: a substantial building with electricity or plumbing, or an enclosed, metal-topped vehicle with the windows up.
- Stay in safe shelter for at least 30 minutes after you hear the last sound of thunder.
- Stay away from objects that conduct electricity (antennas, power lines, windmills, etc.).
- Power down your radios and generators.

### Antenna Safety

- Be aware of and avoid electrical power lines.
- Don't climb towers that use temporary guys.
- Don't climb ladders being used for antenna supports.
- Erect antennas far enough away from tents so there is no possibility of the antenna and structure falling on operators inside the tent.
- Regularly inspect guy ropes and stakes throughout the weekend.

### Generator and Electrical Safety

- **NEVER** move or add fuel to a running generator.
- Fuel should be stored in approved containers away from generators and ignition sources, in well-ventilated areas away from direct sunlight.
- Centrally locate the generator to keep all branches to stations equal.
- Use an earth ground at the generator and at each station.

### Physical Safety

- Avoid tripping hazards. Use fluorescent safety tape to mark guy ropes, stakes, and cables.
- Secure hazardous areas with caution tape to keep people away.
- Escort visitors around your Field Day site.

### Medical Safety

- Avoid overexposure to sun.
- Stay hydrated — drink plenty of water.
- Know the signs of heat exhaustion and heat stroke (https://www.cdc.gov/disasters/extremeheat/warning.html).
- Keep a First Aid kit on hand.

CHUNNAPA (CLIPBOARD)

## ARRL News (Continued)

# BONUS POINTS ADD UP!

*Use this Bonus Points Calculator to keep track of your Field Day Bonus Points (see Rule 7.3 for details). All bonus points require submission of proof and will be verified before being added to your score. Maximum bonus points are listed unless otherwise noted.*

| POINTS | ACTIVITY | AVAILABLE CLASSES |
|---|---|---|
| | **100% Emergency Power.** *100 bonus points per transmitter; max. 20 transmitters, max. 2,000 points.* Bonus stations (such as the GOTA station and satellite station) do not count toward determining the number of transmitters for the class and do not qualify for transmitter bonus points. | A, B, C, E, and F |
| | **Media Publicity.** *100 bonus points.* A copy of a press release, or a copy of the actual media publicity received (newspaper article, news website post, etc.) must be submitted to claim the points. | All |
| | **Set Up in Public Place.** *100 bonus points.* | A, B, and F |
| | **Public Information Table.** *100 bonus points.* A copy of a visitor log, copies of club handouts, or photos are sufficient evidence for claiming this bonus. | A, B, and F |
| | **Message to ARRL Section Manager or Section Emergency Coordinator.** *100 bonus points.* See Rule 7.3.5 for message format. This message is separate from the messages handled in Rule 7.3.6 and may not be claimed for bonus points under that rule. | All |
| | **W1AW Field Day Message.** *100 bonus points.* Copy, via amateur radio, the special Field Day bulletin transmitted by W1AW or K6KPH and include an accurate copy of the message with your Field Day entry. | All |
| | **Message Handling NTS/ICS-213.** *0 to 100 points maximum, calculated by taking the Number of Messages (max. 10 messages): ____ × 10 bonus points for each formal message originated, relayed, or received and delivered during the Field Day period.* Copies of each message must be included with the Field Day entry. The message under Rule 7.3.5 does not count. All messages claimed for bonus points must leave or enter the Field Day operation via amateur radio RF. | All |
| | **A Satellite QSO.** *100 bonus points.* Satellite QSOs also count for regular QSO credit. List these contacts separately on the summary sheet as a separate "band." The QSO must be between two Earth stations through a satellite. Stations are limited to one (1) completed QSO on any single channel FM satellite. | A, B, and F |
| | **Natural Power QSOs.** *100 bonus points.* Complete at least five QSOs without using power from commercial mains or petroleum-driven generator. A separate list of natural power QSOs should be submitted with your entry. | A, B, E, and F |
| | **Site Visit by Invited Elected Official.** *100 bonus points.* | All |
| | **Site Visit by Invited Served Agency Official.** *100 bonus points.* Visits from ARRL officials (SM, SEC, DEC, EC, etc.) do not qualify for this bonus. | All |
| | **Educational Activity.** *100 bonus points.* | A, D, E & F. See website for D & E rules |
| | **Youth Participation.**<br>❑ For Class A, C, D, E, or F groups: *20 bonus points per participant age 18 or younger that completes at least one QSO; max. 100 points.*<br>❑ For a one-person Class B station: *20 bonus points if the operator is age 18 or younger; max. 20 points.*<br>❑ For a two-person Class B station: *20 bonus points for each operator age 18 or younger; max. 40 points.* | All (see specific points per class) |
| | **GOTA Bonus.** *See Rule 7.3.13 for the bonus point breakdown.* | A and F |
| | **Use the Field Day Entry Web App.** *50 bonus points. Submit the entry using the web app at https://field-day.arrl.org/fdentry.php.* | All |
| | **Safety Officer Bonus.** *100 bonus points.* Include a statement with the supporting documentation for your entry, verifying that a designated Safety Officer completed the ARRL Field Day Safety Check List. | A |
| | **Social Media Bonus.** 100 bonus points. Promote your Field Day activation to the general public via social media (Facebook, Twitter, Instagram, etc.). Individual participants do not qualify for this bonus. Club websites do not qualify as social media. Available to all classes who welcome visitors to their operation. | All |
| | **TOTAL BONUS POINTS CLAIMED** | |

## ARRL News (Continued)

# Tips for Satellite Success

*Making one contact via satellite is a 100-point bonus for your Field Day effort. If you've never operated the ham radio satellites before, it will take effort to be successful! Here are some helpful tips.*

**1** Learn all you can in advance of Field Day. There's a lot to learn about the exciting world of ham radio satellites. We recommend starting with the video by Tom Schuessler, N5HYP, at www.youtube.com/watch?v=yqch-Dt9V0c&t=1501s.

**2** Know your grid square. Satellite operators expect to hear your Maidenhead grid square in your exchange. This information is usually given as two letters and two numbers, and is an indicator of your location. For example, ARRL Headquarters is in grid square FN31. Learn more about grid squares at www.arrl.org/grid-squares.

**3** Get the apps. Smartphone apps are available for satellite scheduling and tracking, as well as grid square location. iPhone users can try *SatSat* or *GoSatWatch* for satellites, and *Maidenhead Converter* for location. Android users can try *Satellites* or *W1ANT Pro Satellite Tracker*, and *Grid Square Locator*.

**4** Practice before Field Day! Practice scheduling a satellite pass, tracking the satellite during the pass, and copying stations. Once you've done that, try to make contacts on subsequent passes. Try late-night passes, as the satellite will not be busy and you can experiment.

**5** Wear headphones. If you are using a full duplex radio (which you should), you'll need headphones to keep feedback out of the microphone. They will also help you stay focused if your Field Day site is busy with other activities.

**6** Don't transmit if you can't hear the satellite. The satellite may be hearing much better than you! Transmitting "in the blind" may cause interference to other stations trying to make a contact.

**7** Find open space. When trying to make your contact, stay clear of buildings, trees, and other obstructions, if possible. Ideally, put yourself somewhere where you can see from horizon to horizon. If that's not possible, find a spot where you can see as much of the sky as possible.

**8** Move on once you've made your contact. There will be many stations trying to get their one contact too, so don't get in the way.

### ACTIVE FM SATELLITES

**SO-50: 2 meters up/70 centimeters down, 67 Hz CTCSS tone.**

**AO-27: 2 meters up/70 centimeters down, no tone. Each pass is only 4 minutes long!**

**PO-101: 70 centimeters up/2 meters down, 141.3 Hz CTCSS tone. Turned on by a schedule, which is posted at http://phl-microsat.upd.edu.ph/diwata2.**

**ISS: The cross-band repeater on the International Space Station (ISS) may be active on Field Day. 2 meters up/70 centimeters down, 67 Hz tone.**

**CAS-7A (expected launch May 2021)**

**CAS-7C (expected launch May 2021)**

**CAS-5A (expected launch June 2021)**

3DSCULPTOR/ADOBE STOCK (SATELLITE)

# ARRL News (Continued)

## FCC Agrees with ARRL and Allows Partial Reprieve on 3.5 GHz

Pending future FCC action, amateur radio secondary use of the 3.3 – 3.45 GHz band segment may continue indefinitely. The FCC, as part of a lengthy *Second Report and Order* (*R&O*) for commercial licensing of 3.45 – 3.55 GHz adopted on March 17, agreed with ARRL that continued access by amateur radio to 3.3 – 3.45 GHz should be allowed until consideration of the 3.1 – 3.45 GHz spectrum in a later proceeding. The FCC action in WT Docket 19-348 represents a partial — and temporary — reprieve from the FCC's December 2019 proposal to remove amateur radio from the entire band, and it makes available an additional 50 MHz than an FCC proposal last fall to allow amateur temporary use of 3.3 – 3.4 GHz.

Amateur secondary operation in the 3.45 – 3.50 GHz band must cease 90 days after public notice that the spectrum auction has closed and licensing has begun. That is expected to happen early in 2022. The FCC opened the auction of 3.45 – 3.55 GHz to commercial 5G interests on March 17.

The FCC adjusted its proposal to bifurcate the band and set 3450 MHz as the frequency at which it will be split. This allows amateur operations to continue in the lower portion of the band while the FCC and federal government users continue to analyze whether that spectrum can be reallocated for flexible use.

"There is no expectation that such operations will be accommodated in future planning for commercial wireless operations in this spectrum, or that amateur operators will receive more than a short period of notice before their operations must cease," the FCC said.


## Cooperative Effort Under Way to Resolve Potential 70-Centimeter Interference Issue

ARRL, the FCC, and the US Department of Defense are cooperating in an effort to eliminate the possibility of amateur radio interference on 70 centimeters to a future missile control system at White Sands Missile Range (WSMR) in New Mexico. The Defense Department's Regional Spectrum Coordinator contacted the FCC in March, seeking information on whom to contact regarding amateur transmissions operational on 70-centimeter frequencies slotted for use on the new control system. The FCC, in turn, asked ARRL to oversee the coordination efforts. It is to be noted that the Amateur Radio Service is a secondary service on the band.

Investigation revealed that the potential problem was not with individual operators or repeaters, but with RF control links at 420 – 430 MHz used to establish a linked repeater system within New Mexico. "Based on the investigation, and with the support of the FCC, the owners of the RF control links being used in the 420 – 430 MHz portion of the amateur allocation within a certain proximity to WSMR are being asked to re-coordinate the link frequency to a new one above 430 MHz," explained ARRL Regulatory Information Manager Dan Henderson, N1ND.

ARRL enlisted the assistance of the state's designated repeater frequency coordinator for information on specific links in that part of the band. New Mexico Repeater Frequency Coordinator Bill Kauffman, W5YEJ, agreed to work with the control link operators to find new frequencies that will meet the needs of the link operators.

"Time is a factor in this request," Henderson said. "The new WSMR systems are in advanced testing and will become fully operational by early summer 2021." The negotiated deadline for the affected control links to change frequencies was set for May 31, 2021.

Letters have gone out to 32 affected RF control link operators to advise them of the DoD's request. Links unable to be relocated by May 31 will have to be shut down until the situation can be resolved. Henderson said the changes should have no direct impact on the use of any local repeater, but certain links may be temporarily inoperative.

# ARRL News (Continued)

## FT8 Accounts for Nearly Two-Thirds of HF Activity

Since zooming to prominence after its debut in mid-2017, the FT8 digital protocol has become the mode of choice for some 60% of HF operators, according to Club Log's latest activity report, compiled by Michael Wells, G7VJR. FT8 is one of the protocols in the *WSJT-X* suite of programs. Wells says FT8 activity level sits at nearly 85% on 6 meters. The dramatic FT8 upswing has come at the expense of other modes. Over the same period, the number of FT8 contacts logged each year per active call sign has continued to climb to about 60% between 2015 and 2021, with the most dramatic increase being nearly 29% in the past year. FT8 occupies vastly less spectrum than the more traditional ham radio operating modes.


The FT8 protocol in the *WSJT-X* suite of programs.

## FCC Not Yet Collecting $35 Application Fee

The majority of the FCC's revised Part 97 rules (adopted in December 2020) establishing new application fees become effective on April 19, but the new amateur radio application fees likely will not become effective until summer. The FCC announced on March 19 that the amateur radio application fees, including those associated with Form 605 filings, would not become effective until the "requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the *Federal Register* announcing the effective date of such rules."

The $35 fee, when it becomes effective, would apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications, as well as applications for a special temporary authority (STA) or a rule waiver. All fees will be per application. Administrative updates — such as a change of mailing address, email address, or name — are exempt.

ARRL Volunteer Examiner Coordinator (VEC) Manager Maria Somma, AB1FM, said VECs and Volunteer Examiner (VE) teams will not have to collect the $35 fee at exam sessions, once it takes effect. New and upgrade applicants will pay the $15 exam session fee to the VE team as usual, and pay the $35 application fee directly to the FCC via the Fee Filer System or License Manager System.

Rick Lindquist, WW1ME, ww1me@arrl.org

## Happenings

# ARRL to Extend Field Day Rule Waivers from 2020, Add Class D and E Power Limit

The COVID-19 pandemic-modified ARRL Field Day rules from 2020 will continue this June with a power limit imposed on Class D (Home Stations) and Class E (Home Stations — Emergency Power) participants. February's news from the ARRL Board's Programs and Services Committee came as many clubs and groups were starting preparations for Field Day in earnest. Field Day 2021 takes place June 26 – 27.

"This early decision should alleviate any hesitancy that radio clubs and individual Field Day participants may have with their planning for the event," said ARRL Contest Program Manager Paul Bourque, N1SFE.

For Field Day 2021, Class D stations may work all other Field Day stations, including other Class D stations, for points. This year, however, Class D and Class E stations will be limited to 150 W PEP output.

For Field Day 2021, an aggregate club score will be published, as was done last year. The aggregate score will be a sum of all individual entries who attributed their score to that of a specific club.

ARRL Field Day is one of the biggest events on the amateur radio calendar. Last summer, a record 10,213 entries were received.

"With the greater flexibility afforded by the rules waivers, individuals and groups will still be able to participate in Field Day, while still staying within any public health recommendations or requirements," Bourque said.

The preferred method of submitting entries after Field Day is via the web applet. The ARRL Field Day rules, found elsewhere in this issue, include instructions on how to submit entries, which must be submitted or postmarked by Tuesday, July 27, 2021.

## ARRL News (Continued)

Rick Lindquist, WW1ME, ww1me@arrl.org

### Happenings

# Updated Radio Frequency Exposure Rules in Effect

**Amateur radio licensees will have to determine whether any existing facilities previously excluded under the old rules now qualify for an exemption under the new rules. Most will, but some may not.**

Rule changes detailed in a lengthy 2019 *Report and Order* governing RF exposure standards went into effect on May 3, 2021. The new rules do not change existing RF exposure (RFE) limits but do require that stations in all services, including amateur radio, be evaluated against existing limits, unless they are exempted. For stations already in place, that evaluation must be completed by May 3, 2023. After May 3 of this year, any new station, or any existing station modified in a way that's likely to change its RFE profile — such as different antennas or placement or greater power — will need to conduct an evaluation by the date of activation or change.

"In the RF *Report and Order*, the Commission anticipated that few parties would have to conduct reevaluations under the new rules and that such evaluations will be relatively straightforward," the FCC said in an April 2 *Public Notice*. "It nevertheless adopted a 2-year period for parties to verify and ensure compliance under the new rules."

The Amateur Service is no longer categorically excluded from certain aspects of the rules, as amended, and licensees can no longer avoid performing an exposure assessment simply because they are transmitting below a given power level.

"For most amateurs, the major difference is the removal of the categorical exclusion for amateur radio, which means that ham station owners must determine if they either qualify for an exemption or must perform a routine environmental evaluation," said Greg Lapin, N9GL, chair of the ARRL RF Safety Committee and a member of the FCC Technological Advisory Council (TAC).

"Ham stations previously excluded from performing environmental evaluations will have until May 3, 2023, to perform these. After May 3, 2021, any new stations or those modified in a way that affects RF exposure must comply before being put into service," Lapin said.

The December 2019 RF *Report and Order* changes the methods that many radio services use to determine and achieve compliance with FCC limits on human exposure to RF electromagnetic fields. The FCC also modified the process for determining whether a particular device or deployment is exempt from a more thorough analysis by replacing a service-specific list of transmitters, facilities, and operations for which evaluation is required with new streamlined formula-based criteria. In addition, the *R&O* addressed how to perform evaluations where the exemption does not apply, and how to mitigate exposure.

Amateur radio licensees will have to determine whether any existing facilities previously excluded under the old rules now qualify for an exemption under the new rules. Most will, but some may not.

The ARRL Laboratory staff is available to help amateurs to make these determinations and, if needed, perform the necessary calculations to ensure their stations comply.

## ARRL News (Continued)


**John Stanley, K4ERO**

The amateur radio community is getting excited about the start of Solar Cycle 25. Hams are operating on the higher frequency bands and getting some results, as well as talking about better conditions on the 20- through 10-meter bands. Higher sunspot numbers will bring the return of more signals on the higher frequency shortwave bands, however, higher solar activity also affects the lower frequency bands (and not always for the better). The worst effects occur during the day, so I'll focus on daytime paths in the mid-latitudes. The figures I've included were made for March conditions in the center of the US using data generated by the Voice of America Coverage Analysis Program (VOACAP) propagation predictions (**www.voacap.com**).

Any propagation tutorial will mention the three layers of the ionosphere: D, E, and F. As the solar activity rises, all three layers get "thicker," having more electrons per unit volume. The extra electrons in the F layer bend higher frequencies back to Earth, allowing long-distance contacts. This may seem positive, but we need to look at the whole picture, including the other two layers.

### Daytime Radio Signals

The lowest region of the ionosphere is the D layer, and its effect on radio waves is not very good. When it gets thicker, the waves passing through to the E and F layers become weaker. This layer has more neutral atoms than electrons. As a wave passes through it, electrons are moved back and forth by the E field of the wave. The electrons collide with the neutral atoms and lose energy. The more electrons there are, the more lossy collisions occur, making signals weaker. The D layer mainly goes away at night, no longer weakening the low-band signals. Distant AM broadcasts and 160- and 80-meter signals get stronger.

A sunspot number (SSN) of 100 means the thicker D layer weakens the daytime signals more than when sunspots are low. Figure 1 is a plot of the total loss on a 200-mile path on 80 meters for high and low SSNs. The loss at 12 PM is 30 dB (1,000 times) more with an SSN of 100 than with an SSN of 10. If you've been operating 80 meters between 10 AM and 2 PM for the last 5 years, you'll be in for a shock when the SSN rises. You can blame the D layer for the major loss of daytime signals. Some weakening even continues into the evening, when many nets are active. The thicker D layer can weaken signals on other bands, but it's most serious on the 160-, 80-, and 60-meter bands, and still significant on 40 and 30 meters.

### Effects of a Thicker E Layer

The E layer also gets thicker as sunspots rise. This causes another problem that adds to the D-layer loss. Figure 2 is a plot of signal-to-noise versus distance for 40 meters with high and low solar activity. For distances between 300 and 500 miles, the signal with an SSN of 10 (blue line) is about 10 dB stronger than the signal with an SSN of 100 (red line). This is that ugly D layer absorption again. In addition, both curves show a distance where a steep drop occurs. With an SSN of 10, this is at about 600 miles. With an SSN of 100, the steep drop-off point moves to about 460 miles. This represents a loss of nearly half the coverage area.

# ARRL News (Continued)

## 6 Meters Shines During Solar Cycle Peaks

*Jon Jones, NØJK*

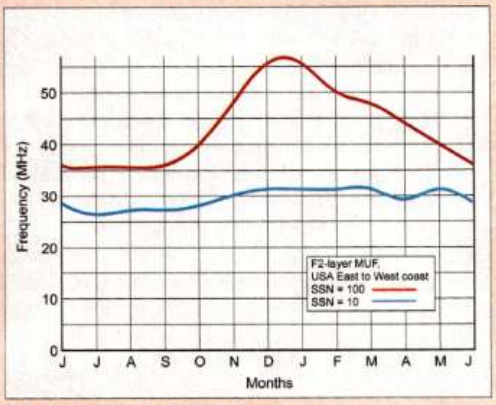
High sunspot numbers (SSNs) help VHF operators with F2 ionospheric propagation (F2 skip) on 6 meters. This type of propagation involves the refraction of radio signals off of the F2 layer of the ionosphere, which is about 200 miles (330 kilometers) above the Earth's surface. UV radiation from the sun can intensely ionize this layer, and signals can be refracted up to 2,000 – 3,000 miles (3,200 – 5,000 kilometers) from one refraction, or "hop." Multiple hops can occur under the right conditions, enabling signals to go over 12,000 miles (19,000 kilometers) with low loss. It's one of amateur radio's most exciting modes.

But there are downsides to VHF during a solar cycle peak. D-, E-, and F-layer ionospheric absorption, as well as Faraday rotation (polarization rotation of signals through ionospheric layers), increases. Solar flares can cause ionospheric radio "blackouts." The absorption decreases the already weak signals from Earth-moon-Earth (EME) communication, and Faraday rotation of radio signals can cause "lockout" with total loss of reception.

If Solar Cycle 25 is similar in magnitude to Cycle 24, some interesting propagation will occur on 6 meters, including F2 and transequatorial propagation (TEP). TEP involves refraction signals off highly ionized "bulges" located about 15 degrees north and south of the geomagnetic equator. This allows HF and VHF radio signals to cross the geomagnetic equator with low loss.

It'll be a couple of years before people can start expecting any F-layer propagation on 50 MHz. In the meantime, rare propagation is occurring now on 6 meters. Sporadic-E/TEP occurs when sporadic-E hops can link to TEP, potentially covering thousands of miles.

The high maximum usable frequency (MUF) in the F2 layer critical for 6-meter propagation occurs during the fall, winter, and early spring months in the Northern Hemisphere. Six meters will not open for F2 during the summer, even at solar cycle peak. This is called the winter anomaly. The graph shows a path from the east to west coast in the US with both lines representing the F2 layer. The red line is the MUF for an SSN of 100 and the blue line is the MUF for an SSN of 10. The generally accepted explanation for the anomaly is increased ionized oxygen relative to nitrogen in the F layer, due to seasonal circulation in the ionosphere.




The winter anomaly in the F2 layer.

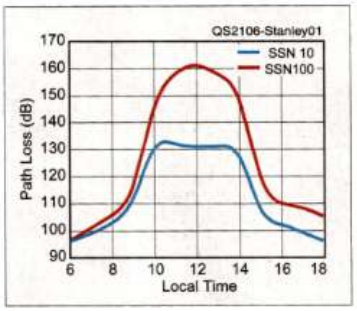



**Figure 1** — Path loss versus time of day for the 75- and 80-meter bands.

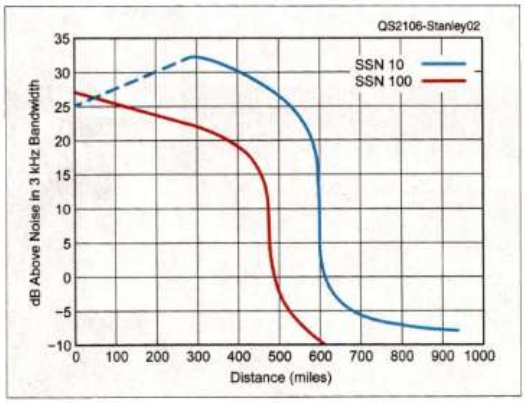



**Figure 2** — Distance versus signal strength on 40 meters during the day.

# ARRL News (Continued)

For shorter paths, the curve representing SSN 10 drops (dotted line). This is because there isn't enough ionization in the F layer to give a solid return to high-angle signals. This can cause a close in a zone where signals aren't heard, even though distant signals are heard. This is called a "skip zone." With an SSN of 100, the daytime skip zone is gone on 40 meters, but overall the signals are weaker, and the maximum range is less. Nearby coverage is better, but distant stations are lost.

This sharp drop-off in signal at 460 and 600 miles is caused by the E layer, as shown in Figure 3. A 60° or 45° signal (near vertical incidence skywave) from the transmitter point (point T in the figure) goes through the D and E layers, bounces off the F layer, and comes down at points A or B. Signals sent out at 30° would arrive at point E if the E layer wasn't thick enough to reflect them. All lower-angle signals are also blocked. We can't reach point E via one hop from the F layer, and to reach point D or E, the E layer must be used. This passes through the lossy D layer via a longer, slanted path. For the distance where a critical angle at the E layer reflects rather than passes the wave, the signal strength drops drastically. Using two E or F hops would mean four trips through the D layer with double the loss.

While sporadic E can sometimes give unusual DX on 10 and 6 meters, a thicker E layer normally does more harm than good to shortwave propagation. By blocking signals from reaching the F layer, it limits the maximum distance covered. Forty-meter daytime nets may have to do some adjusting as the sunspots go from near 0 to maximum. This may mean changing the hours of operation or going to a higher band.

## Choosing the Best Band for Daytime Operation

As the higher bands open up, the lower bands will get worse overall (especially in the daytime), due to higher D-layer losses and the greater blocking effect of the E layer. Anticipating these changes, operators can plan for and use the most appropriate band for a given activity. In propagation planning, FOT (frequency of optimum transmission) is used. This is the frequency predicted to be the most reliable between two points. It varies based on time of day, latitude, season, sunspot activity, and distance.

Figure 4 shows that the daytime FOT changes as the sunspots rise. It shows that with an SSN of 10, 5 MHz is optimum up to 250 miles, moving to 7 MHz for 400 miles, and 14 MHz for 1,000 miles. With an SSN of 100, 7 MHz is best up to 250 miles, 10 MHz for 470 miles, and 14 MHz at 800 miles. When the SSN goes from 10 to 100, the FOT rises by about the difference between one band and the next. Thus, by moving up one band during the high sunspot years, one should have similar coverage.

The problem with moving to the next higher band is that 60 and 30 meters have their limitations. One would ideally move from 75 to 60 meters, 60 to 40 meters, and 40 to 30 meters. However, SSB nets on 40 meters can't move to 30 meters, and there would be congestion if the 75-meter nets all tried to go to 60 meters. Moving from 75 to 40 meters is possible in some cases, and some nets have done that in the past. It's not ideal, as the frequency increase is more than what's needed to stay with similar coverage. A 40-meter CW net moving to 30 meters would work well.

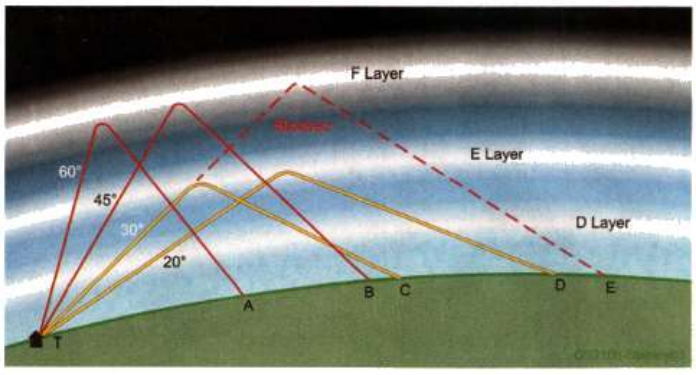



**Figure 3** — The ionosphere's E layer blocks low-angle signals.

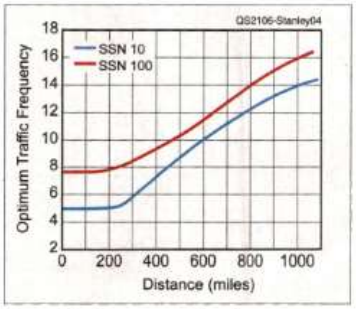



**Figure 4** — Frequency of optimum transmission (FOT) versus distance, daytime, and mid-latitudes.

## ARRL News (Continued)

When going to a higher band is impractical, the next best option is to change the time of day. Operation on 160 meters will have to move toward the evening hours, because daytime propagation dies quickly with sunlight. Morning nets on 75 and 40 meters or longer-lasting contacts may have to move to earlier hours and early evening nets to later hours.

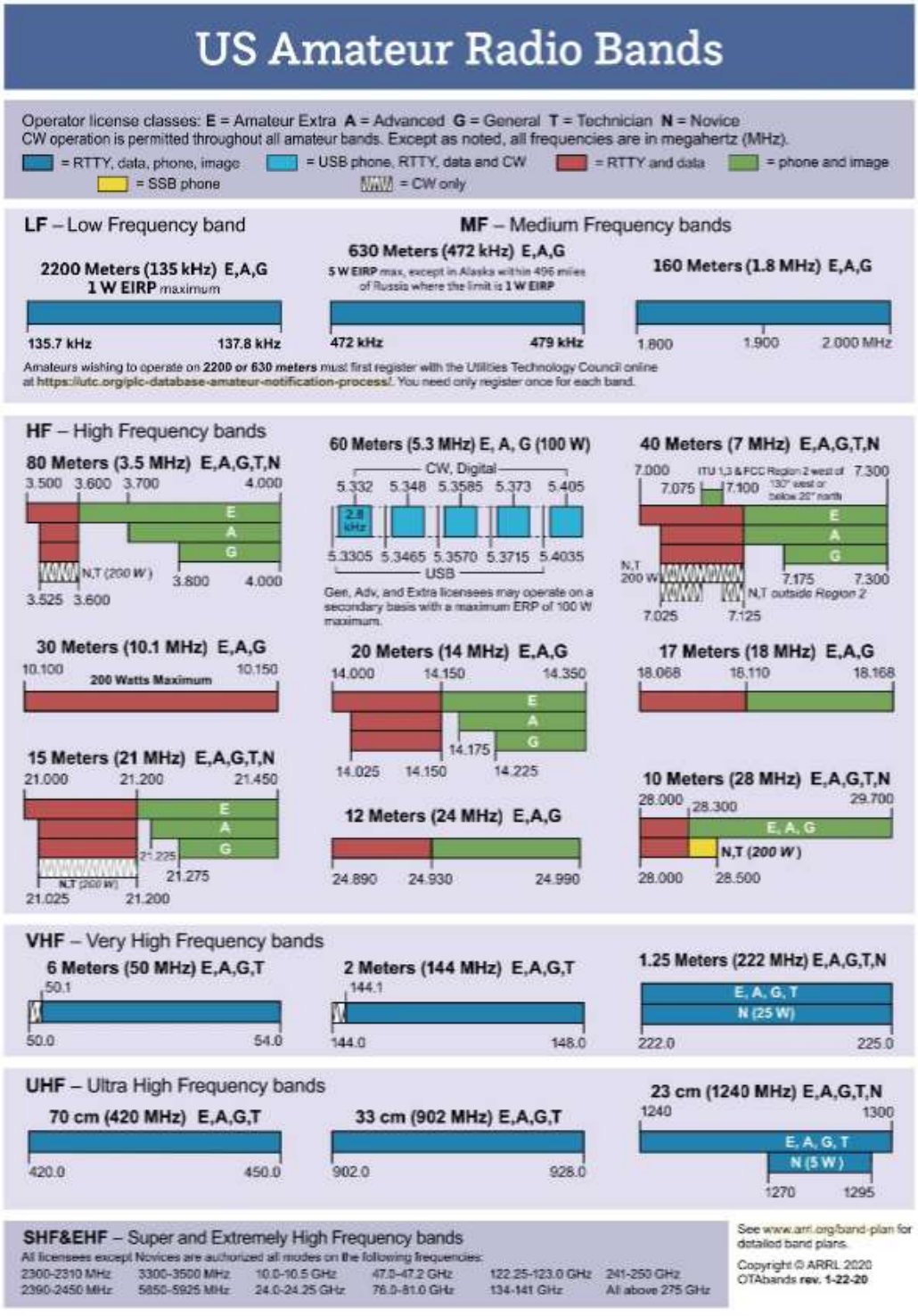
### Conclusion

Whether the sunspots are high or low, we can work with propagation as opposed to waiting for it to improve. As we begin Solar Cycle 25, the lower bands will still be good at night. In the daytime and early evening, paths on the higher bands will be very exciting.

With the prediction and monitoring tools we have, we should be able to anticipate and keep track of what's going on. Doing what we can now will help us use the new conditions to our best advantage.

John Stanley, K4ERO, and Ruth Stanley, WB4LUA, did broadcast engineering for 45 years, performed ionospheric research, taught, and helped radio stations around the world find the best frequencies for their shortwave broadcasts. John and Ruth have held many call signs in some of the dozens of countries in which they've worked. As an ARRL Technical Advisor, John has contributed to many ARRL publications. Now retired in their off-grid, self-built home on Lookout Mountain in northwest Georgia, they're involved in church work, writing, and consulting. John keeps up with old friends on 75 meters and plays with digital modes on many bands. He can be reached at **jnrstanley@alum.mit.edu**.

## US Amateur Radio Bands



## W1AW Schedule

# W1AW Schedule

| PAC | MTN | CENT | EAST | UTC | MON | TUE | WED | THU | FRI |
|---|---|---|---|---|---|---|---|---|---|
| 6 AM | 7 AM | 8 AM | 9 AM | 1400 | | FAST CODE | SLOW CODE | FAST CODE | SLOW CODE |
| 7 AM-1 PM | 8 AM-2 PM | 9 AM-3 PM | 10 AM-4 PM | 1500-1700 1800-2045 | VISITING OPERATOR TIME (12 PM-1 PM CLOSED FOR LUNCH) | | | | |
| 1 PM | 2 PM | 3 PM | 4 PM | 2100 | FAST CODE | SLOW CODE | FAST CODE | SLOW CODE | FAST CODE |
| 2 PM | 3 PM | 4 PM | 5 PM | 2200 | CODE BULLETIN | | | | |
| 3 PM | 4 PM | 5 PM | 6 PM | 2300 | DIGITAL BULLETIN | | | | |
| 4 PM | 5 PM | 6 PM | 7 PM | 0000 | SLOW CODE | FAST CODE | SLOW CODE | FAST CODE | SLOW CODE |
| 5 PM | 6 PM | 7 PM | 8 PM | 0100 | CODE BULLETIN | | | | |
| 6 PM | 7 PM | 8 PM | 9 PM | 0200 | DIGITAL BULLETIN | | | | |
| 6:45 PM | 7:45 PM | 8:45 PM | 9:45 PM | 0245 | VOICE BULLETIN | | | | |
| 7 PM | 8 PM | 9 PM | 10 PM | 0300 | FAST CODE | SLOW CODE | FAST CODE | SLOW CODE | FAST CODE |
| 8 PM | 9 PM | 10 PM | 11 PM | 0400 | CODE BULLETIN | | | | |

W1AW's schedule is at the same local time throughout the year. From the second Sunday in March to the first Sunday in November, UTC = Eastern US time + 4 hours. For the rest of the year, UTC = Eastern US time + 5 hours.

♦ Morse code transmissions: Frequencies are 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 50.350, and 147.555 MHz.

Slow Code = practice sent at 5, 7½, 10, 13, and 15 WPM.

Fast Code = practice sent at 35, 30, 25, 20, 15, 13, and 10 WPM.

Code bulletins are sent at 18 WPM.

For more information, visit us at
**www.arrl.org/w1aw**

♦ W1AW Qualifying Runs are sent on the same frequencies as the Morse code transmissions. West Coast qualifying runs are transmitted by various West Coast stations on CW frequencies that are normally used by W1AW, in addition to 3590 kHz, at various times. Underline 1 minute of the highest speed you copied, certify that your copy was made without aid, and send it to ARRL for grading. Please include your name, call sign (if any), and complete mailing address. Fees: $10 for a certificate, $7.50 for endorsements.

♦ Digital transmissions: Frequencies are 3.5975, 7.095, 14.095, 18.1025, 21.095, 28.095, 50.350, and 147.555 MHz.

Bulletins are sent using 45.45-baud Baudot, PSK31 in BPSK mode, and MFSK16 on a daily revolving schedule.

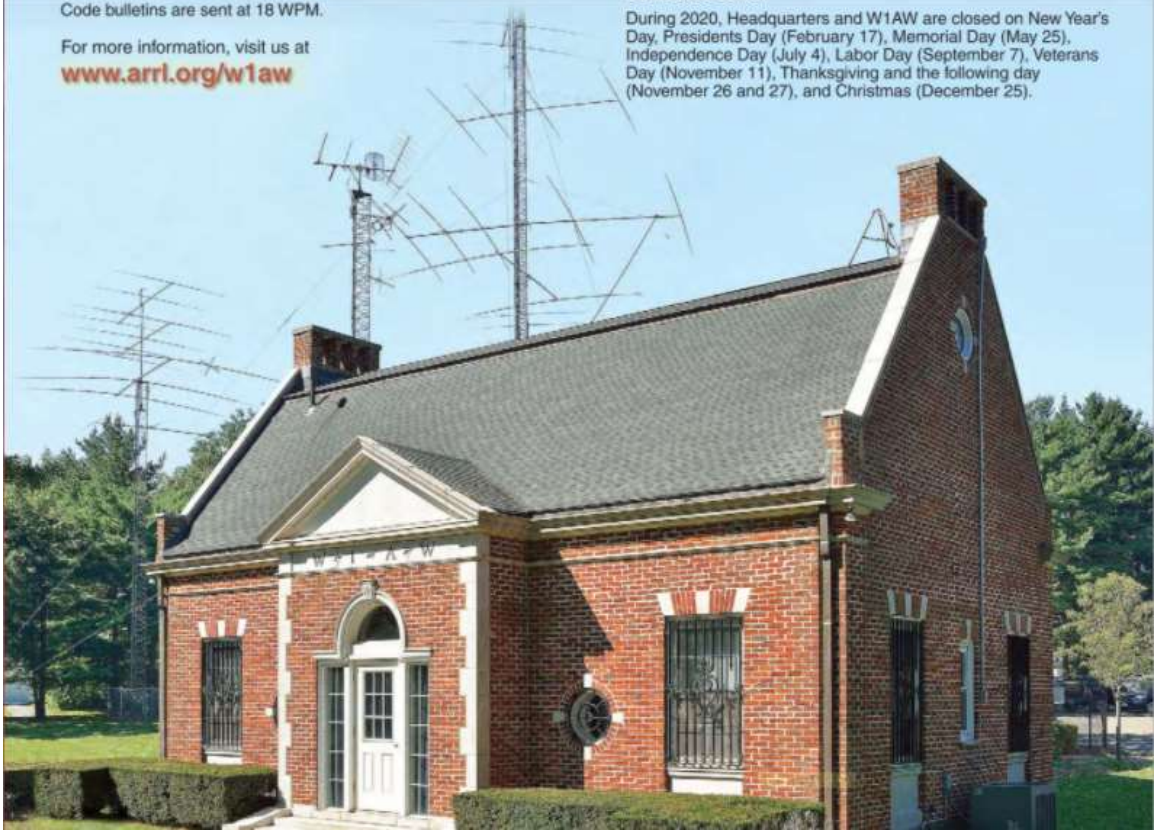
Keplerian elements for many amateur satellites will be sent on the regular digital frequencies on Tuesdays and Fridays at 6:30 PM Eastern time using Baudot and PSK31.

♦ Voice transmissions: Frequencies are 1.855, 3.99, 7.29, 14.29, 18.16, 21.39, 28.59, 50.350, and 147.555 MHz. Voice transmissions on 7.290 MHz are in AM double sideband, full carrier.

♦ Notes: On Fridays, UTC, a DX bulletin replaces the regular bulletins. W1AW is open to visitors 10 AM to noon and 1 PM to 3:45 PM Monday through Friday. FCC-licensed amateurs may operate the station during that time. Be sure to bring your current FCC amateur license or a photocopy. In a communication emergency, monitor W1AW for special bulletins as follows: voice on the hour, teleprinter at 15 minutes past the hour, and CW on the half hour.

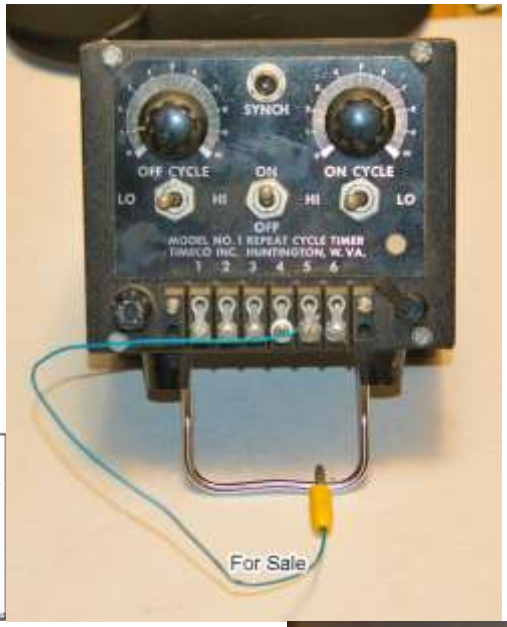
W1AW code practice and CW/digital/phone bulletin transmission audio is also available real-time via the *EchoLink Conference Server* W1AWBDCT. The conference server runs concurrently with the regularly scheduled station transmissions. The W1AW Qualifying Run texts can also be copied via the EchoLink Conference Server.

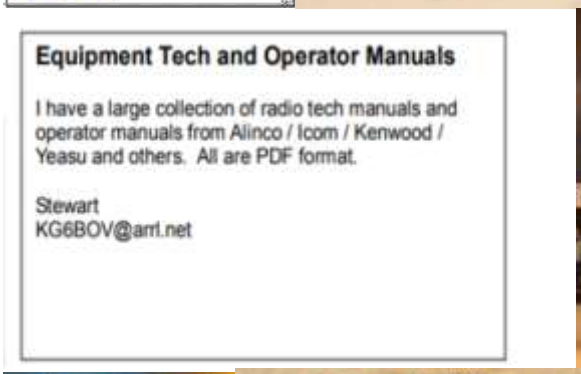
During 2020, Headquarters and W1AW are closed on New Year's Day, Presidents Day (February 17), Memorial Day (May 25), Independence Day (July 4), Labor Day (September 7), Veterans Day (November 11), Thanksgiving and the following day (November 26 and 27), and Christmas (December 25).



## Wanted and For Sale Ads

**Denney N6HV**: One roll, 250 feet 14/2 clear speaker wire $30.00, [new, still in wrapper, old stock]. Various rolls of wire, big rolls; 8 gauge, shielded single pair and other gauges, good prices. Three-quarter-inch wide, flat, heavy, copper-braid, $1.00/ft.; great for grounding.
**Items Given to the Club for Donations**: Multimeter, Micronta brand $5.00. HP 1706A oscilloscope, as is, $50. Various lengths of Ethernet cables, $0.25 each. Radio Shack Power Supply, 13.8 volt at 3 amps, $3.00. Swing arm desk lamp includes light bulb and other various items; $5.00 to $25.00. Kenwood TL-922A Linear Amplifier AS IS: All items as shown below: Contact Denney for price.


## Wanted and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (note: all Items have been donated to the club)


## Wanted and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (note: all Items have been donated to the club)



## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (note: all Items except the IC-251A have been donated to the club)

Asking for $75 (It's an all mode 2 meter rig.)

Asking for a $150 donation


Asking for a $100 donation

## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (all the items below have been donated to the club)


Asking for a $10 donation


Asking for a $35 donation

## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (all the items below have been donated to the club)
12 drawer part bin $5.00.

Multimeter $5.00

## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (all the items below have been donated to the club)

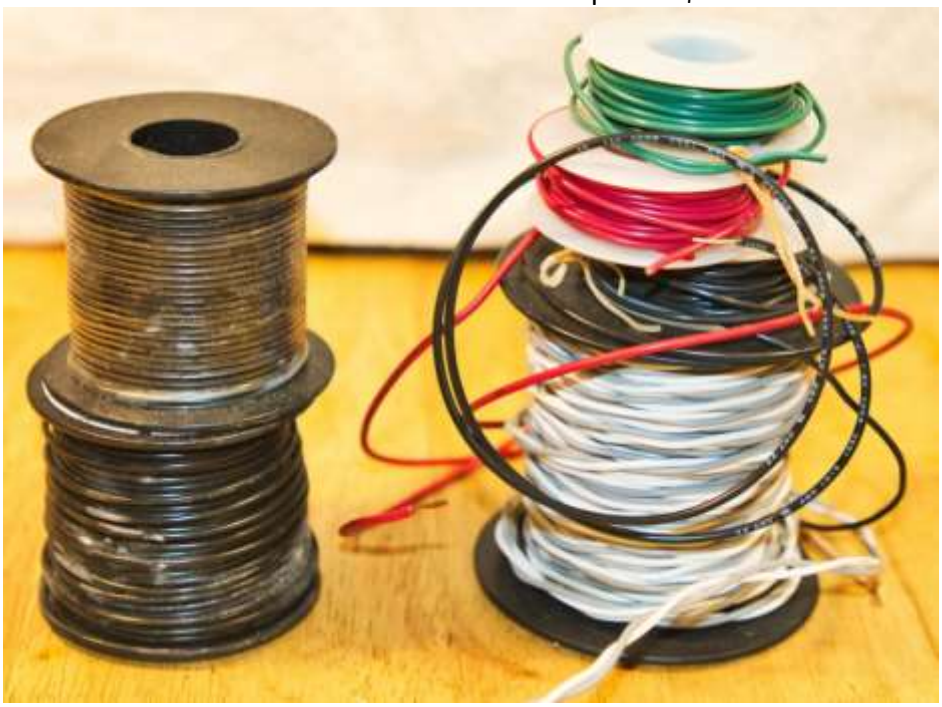
Speaker wire new old stock $5.00 or offer;


Speaker wire 18 gauge $2.00

## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (all the items below have been donated to the club)

Hook up wire $5.00

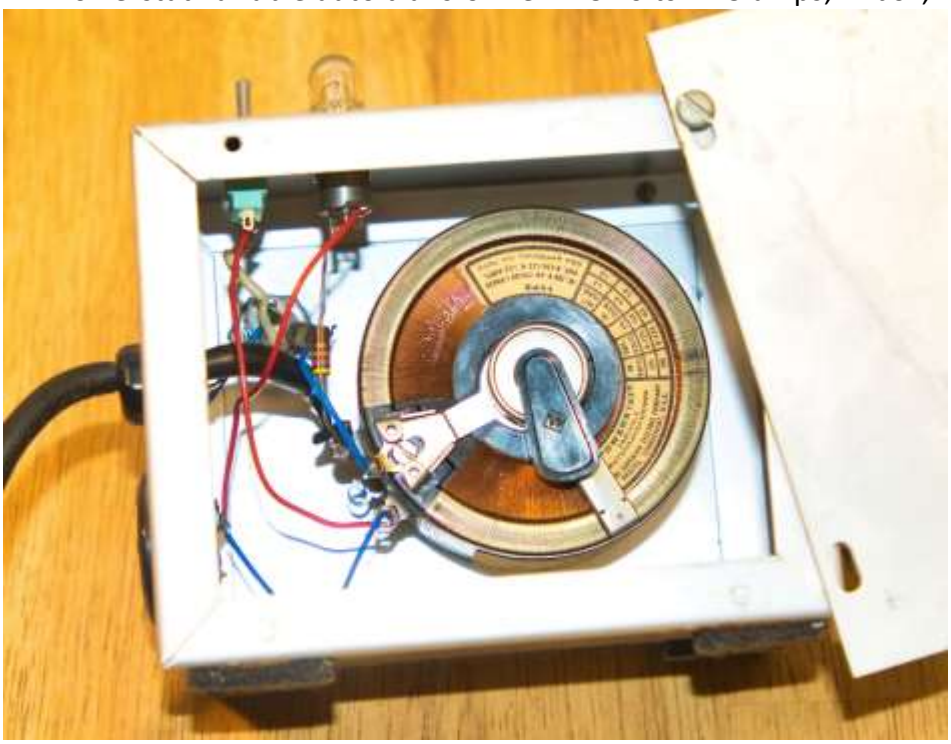


Switching power supply for parts, lots of three terminal regulars, heavy aluminum base $5.00 or offer

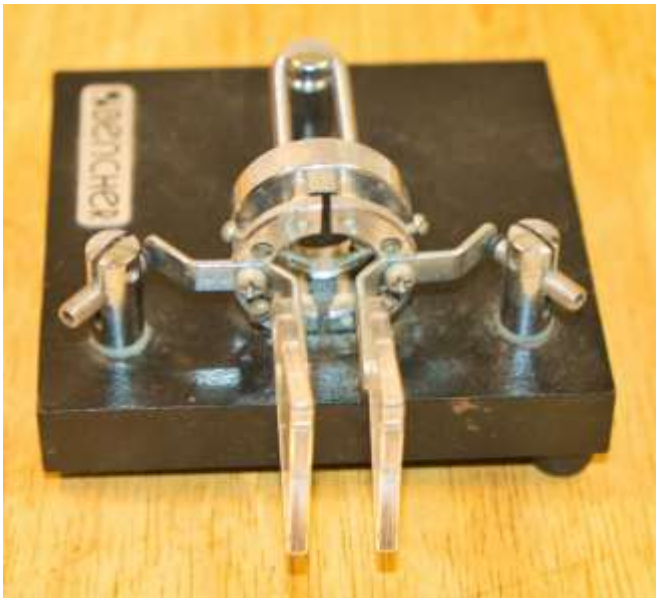
## Want and For Sale Ads (Continued)

**See Denney N6HV** for the following items: (all the items below have been donated to the club)

Powerstat variable auto transformer 115 volts 1.25 amps, in box, nice $5.00 or offer;



Bencher keyer paddles. $45.00;



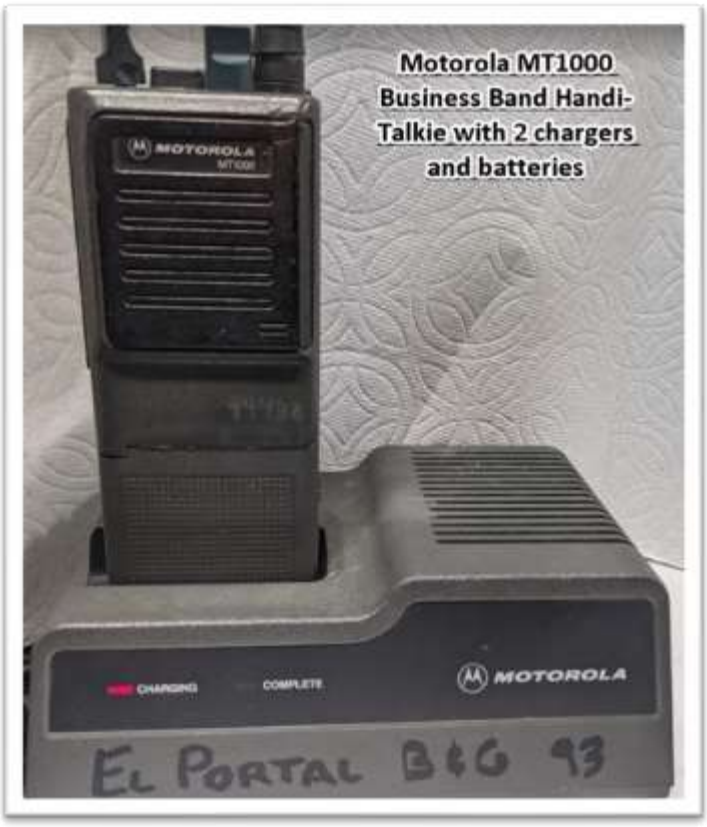
## Wanted and For Sale Ads (Continued)

**Orv – W6BI – orv.beach@gmail.com**

TenTec Omni VI Plus HF Transceiver 160 through 10 with 1.8 kHz, 500 and 250 Hz filters – works fine, receiver recently aligned. With power cable, TenTec microphone and original manual - $450

## Wanted and For Sale Ads (Continued)

**For Sale Wayne Woodhams (w.wixman@yahoo.com)**




## Wanted and For Sale Ads (Continued) Wayne Woodhams (w.wixman@yahoo.com)



## Wanted and For Sale Ads (Continued)

## Five Hammarlund SP-600 Receivers Robert KM6RSS@gmail.com


Stu's AG6AG FD Exposure Calculations NOT FOR SALE BUT FREE TO WATCH (from https://www.youtube.com/watch?v=RsM0nz8gkG0)

| Band (100 watts into a dipole) | Minimum Distance in Feet |
|---|---|
| 10M | 14 |
| 15M | 10 |
| 20M | 7 |
| 40M | 4 |
| 80M | 2 |
| 160M | 1 |