

KERN COUNTY - CENTRAL VALLEY AMATEUR RADIO CLUB

THE COMMUNICATOR

AUGUST 2017

Editor N6SWR

August 21st, 2017

Solar Eclipse

QSO Party

On August 21, 2017, a total solar eclipse will Cause the shadow of the moon to traverse the U.S. from Oregon to South Carolina in just over 90 minutes causing dramatic changes in both the ionosphere and HF propagation. The Solar Eclipse QSO Party (SEQP) is a HamSCI-ARRL sponsored operating event to generate data to study ionospheric changes during the eclipse. **See All Information on Page two of this Newsletter**

ECLIPSE

WARNING

It's the sight of a lifetime, but a solar eclipse can cause permanent damage to your eyes if you don't protect them. Do not look directly at the sun at any time during a partial eclipse. Visit this website at <https://eclipse2017.nasa.gov/safety> - for help viewing safely.



Club President Larry Callahan KF6JOQ

Hello Friends,
Start planning on your Solar Eclipse activities and the coming Sept. VHF contest and the "CQP "California QSO Party". Oct 7th is the date so make plans to join us at location (TBA). This months program is

about SDR Internet Radios and using them in conjunction with your existing HF Radio Station. Ben N6SWR will make his club program debut with this program at Thursday meeting. Hope to see everyone there.

Larry Callahan
KF6JOQ 661-834-3204

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ARRL SEPT. 9-11 VHF CONTEST

Objective: For amateurs in the US and Canada (and their possessions) to work as many amateur stations in as many different 2 degrees x 1 degree Maiden-head grid squares as possible using authorized frequencies above 50 MHz.

Dates- (September 9-11, 2017)

The second full weekend of September. Begins 1800 UTC Saturday and runs through 0259 UTC Monday



SEPT. 9-11 VHF CONTEST

Bands-

All authorized frequencies above 50 MHz (6 Meters). SSB/CW or digital operators will find most activity at the bottom few hundred kilohertz of the VHF+ bands. On 6 meters, most CW is operated between 50.080 and 50.100 MHz, SSB between 50.125 and 50.250 MHz, and digital modes from 50.250 to 50.300 MHz. The frequencies between 50.100 MHz and 50.125 MHz are considered a "DX window," so avoid US-to-US contacts in that part of the band). On 2 meters, look for FM stations in the 146.40 to 146.57 MHz region (all FM simplex calling frequency restrictions were removed in 2015), or look for SSB around 144.200 MHz, with CW intermixed. Digital stations congregate around 144.140 MHz.



Power Limits by Category-

Single Operator, High Power: 1500 Watts PEP.

Single Operator, Low Power:

50 MHz and 144 MHz--200 W PEP.

222 MHz and 432 MHz--100 W PEP.

902 MHz and above--50 W PEP.

Single Operator, 3 Band:

50 Mhz and 144 MHz: 100 W PEP or less.

432 MHz: 50 W PEP or less.

Single Operator, FM Only:

50 144, 222 and 446 MHz: 100 W or less.

Rover:(Mobile)

1500 Watts PEP or the maximum allowable power level established by the national licensing authority of your country, whichever is lower.

Limited Rover:

50 MHz and 144 MHz--200 W PEP.

222 MHz and 432 MHz--100 W PEP.

902 MHz and above--50 W PEP.

Unlimited Rover:

1500 Watts PEP or the maximum allowable power level established by the national licensing authority of your country, whichever is lower.

More related VHF article continued on page 3.



*SILENT KEY KG6OPR
HARRY M. THOMAS*

Harry Thomas KG6OPR passed away in late July after a long battle with cancer, the above picture is of a commerical radio station audio board that he lovinig restored. The picture to the left is of his early days with KLYD Radio. Harry was active with both Amatuer Radio and Broadcast Radio Stations working for many local stations over his long career. A memorial Service was held August 4, 2017.

SWAP-MEET

Club Meeting & Lunch Saturday September 24th 8:00 am - 11:00pm

Annual Club Swap-Meet Saturday September 24th at 8:00 am, the location is Jastro Park located at 2900 Truxtun Avenue. The park founded in 1917 occupies two city blocks and is a wonderful place to have a morning swap-meet followed by Club officer nominations for club officers for 2018. If you are wanting to run for a club office you need to be here to be nominated so you can run. Please consider entering your name for a board or office position many currently on the board have been serving for a few years and would love to see what you could do for the club, bring a new perspective to the club. This nomination process is just a few minutes long followed by a pot lunch in the park. The Swap-Meet is for you to bring your used radios or other ham radio or computer equipment for sale or trade to other club members. It's very casual event with many members arriving before the 8:00 am start time and staying til well after lunch. See you all there!



Above picture is of a recent board meeting, and reminding you that you are welcome to attend our board meeting which preceed our club meeting at 5:45 pm this Thursday August 24th.

AUG 24th Club Meeting 7:00pm
AUG 24th Board Meeting 5:45pm
2101 Ridge Road
East Bakersfield Veterans Hall
Bakersfield, CA. 93306

The Solar Eclipse QSO Party — Are You Ready?

From 1400 – 2200 UTC on August 21, 2017, hams will have the Sun's shadow in their sights.

Ward Silver, NØAX

The objective of the Solar Eclipse QSO Party (SEQP) is to flood the airwaves with contacts, all measured by the automated receiver networks of the Reverse Beacon Network, PSKReporter, and WSPRNet. When those observations are combined with the logs from individual stations, the result will be one of the largest ionospheric experiments ever performed. Here's how hams can have a starring role.

Start by taking the day off on Monday, August 21. The SEQP starts well before the eclipse begins on the western coast of Oregon. Begin making contacts right away to establish what the bands are like before the shadow starts digging a trench through the ionization "up there." As the penumbra starts cutting into the solar disc, operate on lots of bands (multioperator, anyone?) or focus on a favorite. Even if the higher bands aren't too lively, be sure to cast some CQs there, because the network receivers will be looking for signals, and you can get bonus points for being spotted. That's certainly a first!

Be sure you have the latest version of



your logging software and that it can accept the signal report and grid locator. Hopefully, your software will support the SEQP — check before the big day. In a pinch,

you may be able to use software that supports the ARRL VHF+ contests.

Bonus Points

The SEQP features a long list of bonuses similar to Field Day.

- Operate during totality at your location: 100 points
- Operate outdoors: 100 points
- Operate in a public place: 100 points
- Provide detailed station information: 50 points each for antenna information, HFTA terrain profile, ground conductivity, and station ERP/DP on each band
- Operate a wide-band automated receiver at your station: 50 points
- One point for being spotted in a grid outside your own during each hour, and on each band and mode — CQ SEQP!

What Happens Next

After we finish creating data, be sure to submit your log as described in the SEQP rules at www.hamsci.org/seqp. A group of researchers at Virginia Tech will process the data from each log and from all of the automated receiving networks. This will create the largest set of measurements from any amateur event ever.

The work begins in earnest once the data is in. The research community will go to work to validate their existing propagation models while looking for unexplained behaviors. As Isaac Asimov is reputed to have said, "The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka' but 'That's funny...'"

Hams have been supporting scientific efforts since the earliest days of radio by doing things like keeping in touch with expeditions and making on-the-air measurements. The coming solar eclipse is the latest opportunity to participate in advancing our understanding of the world in which we live, and make a few contacts, too.

Eclipse Mob

The eclipse won't just affect the MF and HF bands, but the VLF bands, too. The Eclipse Mob group (www.hamsci.org/article/eclipsemob-low-frequency-effort) has a low-cost, easy-to-build receiver and smartphone app, so anyone can participate. No license is required, and observing can take place all year long.

How to Participate

The Solar Eclipse QSO Party runs from 1400 – 2200 UTC on August 21. Exchange a signal report and your six-character grid locator on 160 – 6 meters (not on 60, 30, 17, and 12 meters, please). You can work stations again after 10 minutes to make as many "observations" (contacts) as possible. CW, RTTY, and PSK31 are preferred because automated receiving networks will record the contacts, but contacts on any digital mode and phone are fine too. See www.hamsci.org/seqp for scoring information, bonus points, operating guidelines, and complete rules.

"You'll Put Your Eye Out!"

Sure, it's amazing, but don't look at the Sun directly, or through any kind of magnifying device — whether during an eclipse or not. You can find out how to watch safely at www.skyandtelescope.com/astronomy-news/observing-news/view-the-sun-safely. Solar observing is great at any time — why not try to spot a sunspot?

Learn more!

www.arrl.org/what-is-ham-radio

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www.arrl.org



A Basic Introduction to VHF Contesting

By Bob Witte, KØNR, Edited for space full articals and more at <http://www.k0nr.com/>

This is a brief introduction into how to operate during a VHF contest. The main contests, roughly in order of popularity, are the ARRL June VHF Contest, the ARRL January VHF Contest, the **ARRL September VHF Contest** and the CQ Worldwide VHF Contest in July.

I prefer to think of these “contests” as “activity weekends” because the word “contest” often makes people think of the fast-paced, chaotic, band-crushing experience of HF contests. VHF contests usually have a much different feel. The problem with the VHF bands is that they are often underutilized. You put out a call on simplex and nobody is there. Dead silence. But on VHF contest weekend, you are sure someone is going to be on the air, so the event tends to increase the activity, bringing people out of the woodwork. A VHF contest is more like a friendly reunion of local VHF enthusiasts.

(Sometimes a VHF contest can get pretty intense, especially if there is a significant band opening on 6 Meters. Then things start to sound like the HF bands with signals coming in from across the country.)

Frequencies above 50 MHz (6m and higher) are used during the contest. Most of the operation will be on 6 meters, 2 meters and less on higher bands. Most of the operation will be on the SSB portion of the band, so if you have an all-mode VHF rig, you’ll want to use it. Perhaps you have one of those HF rigs that also does VHF, such as the ICOM IC-706 ICOM-9100 or the Yaesu FT-817, FT-857 or others. This will be a great time to try it out.

**The standard SSB calling frequencies are: 50.125 MHz 144.200 MHz 432.100 MHz
The FM calling frequencies are: 146.520 MHz 52.525 MHz 446.000 MHz**

Most SSB operation on VHF is done using horizontal antenna polarization. A yagi or dipole antenna with radiating elements parallel to the ground produces a horizontally-polarized signal. A vertical whip antenna, commonly used for FM, produces a vertically-polarized signal. Working a station with opposite antenna polarity causes a substantial signal loss, so it is best to maintain the same polarity. For serious SSB operators, this means horizontal polarization.

CW (Morse Code) is used on the weak-signal VHF bands, often intermingled with SSB operation. It is fairly common to have a station switch from SSB to CW when signals are very weak, since CW will get through at lower signal levels. You don’t need to be able to work CW to enjoy a VHF contest but it does have advantages. If you only have FM gear, you will be at a disadvantage but you may still be able to work a bunch of stations.

Starting in 2016 the ARRL contests allow the use of the 2m FM calling frequency, 146.52 MHz. Don’t monopolize this frequency. If it gets busy, move off to any of the other standard simplex frequencies.

Getting Started on 2m SSB Try the “Other Mode” on 2 Meters

By Bob Witte, KØNR,
Edited for space full articals and more at <http://www.k0nr.com/>



In the past decade, a new breed of amateur radio transceiver has hit the marketplace — radios that cover from HF through VHF/UHF frequencies. These radios include the ICOM IC-706, the ICOM IC-9100, the Yaesu FT-100 and the Yaesu FT-991 and many others. This is not an exhaustive list since there are new radios being introduced every year with additional capability.

These radios include “**all-mode capability**” which means that they can operate **FM, CW and SSB on the VHF bands**. Clearly, FM is the most commonly used mode on VHF and UHF but having SSB opens up a whole new range of operating fun.

Why SSB?

FM is the most popular mode primarily due to the wide availability of FM repeaters. These repeaters extend the operating range on VHF and enable low power handheld transceivers to communicate over 100 miles. FM is also used on simplex to make contacts directly without repeaters. The main disadvantage of FM is relatively poor performance when signals are weak, which is where SSB really shines. A weak FM signal can disappear completely into the noise while a comparable SSB signal is still quite readable. How big of a difference does this really make? Perhaps 10 dB or more, which corresponds to one or two S-units. Put a different way, using SSB instead of FM can be equivalent to having a beam antenna with 10 dB of gain, just by changing modulation types. So this is a big deal and radio amateurs interested in serious VHF work have naturally chosen SSB as the preferred voice mode. (You will also hear them using Morse code or CW transmissions, which is even more efficient than SSB.)

When and Where to Operate

The SSB portion of the band runs from 144.100 MHz to 144.275 MHz and Upper Sideband (USB) is used. The 2M SSB calling frequency is 144.200 MHz, so that is the first place to look for activity or to call CQ. One of the realities of 2m SSB operation is that many times, no one is on the air. There is just not that much activity out there, compared to 2m FM. Some amateurs get discouraged, turn off the radio and miss the thrill of working distant stations during a band opening. To get started on 2m SSB, the trick is to get on the air at times when you know there will be activity— during VHF nets and VHF contests.

VHF Contests

Think of VHF contests as “VHF activity weekend” since they are a great opportunity to just get on the air and work most of the local 2m SSB enthusiasts. The main contests are the ARRL June VHF Contest, the ARRL January VHF Contest, the **ARRL September VHF Contest**.

Equipment

The required equipment for getting started on 2m SSB is pretty basic – a transceiver capable of 2m SSB and a 2m antenna. If you own one of the rigs mentioned above then you are probably ready to go. The 2m antenna you already have is probably vertically polarized since that is what we use for 2m FM, both mobile and base stations. All of the 1/4-wave and 5/8-wave antennas that are commonly used for 2m mobile work are vertically polarized. Most omni-directional base station antennas such as those made by Cushcraft, Diamond, Comet, etc. are vertical, too. These antennas will work for SSB but most of the really active 2m SSB stations use horizontally-polarized antennas. Vertically-polarized stations can work horizontally-polarized stations but there will be a substantial signal loss (about 20dB?). If vertical is all you have, then give it a try. If you can get a horizontal antenna, then your results will be much better. The most common horizontally-polarized antenna on 2m is a Yagi mounted so that its elements are parallel to the ground. There are a variety of horizontally-polarized, omni-directional mobile antennas, such as the HO antenna made by M2 (see <http://www.m2inc.com>).

Get on the Air

This information is intended to get you started on your way to operating 2m on the SSB portion of the band. You will learn more as you get into it and you will find that most of the people hanging out down on sideband are friendly, knowledgeable and helpful. They are always happy to see new call signs on the band.



KENWOOD

Listen to the Future

Study with the best! Gordon West, WB6NOA & The W5YI Group - www.w5yi.org

VHF/UHF MICROWAVE Band Plan

EXTRA • ADVANCED • GENERAL • TECHNICIAN

NOVICE RESTRICTED AS INDICATED

"24GHz" BAND



1.0
CENTIMETERS

"10GHz" X-BAND



3
CENTIMETERS



5
CENTIMETERS

"3456" BAND



9
CENTIMETERS



13
CENTIMETERS

"1270" BAND



23
CENTIMETERS



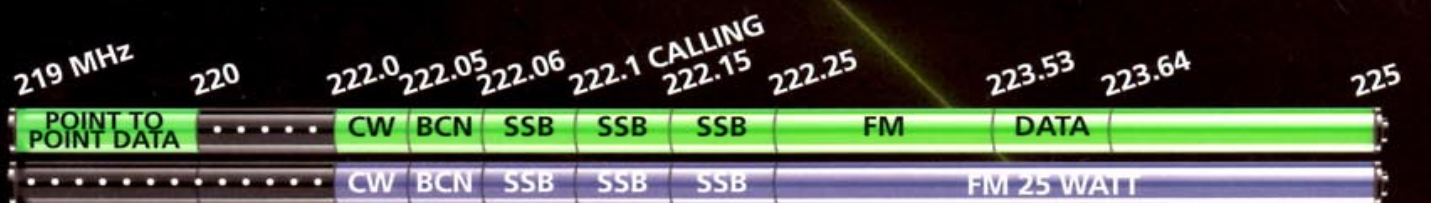
33
CENTIMETERS

"440" BAND



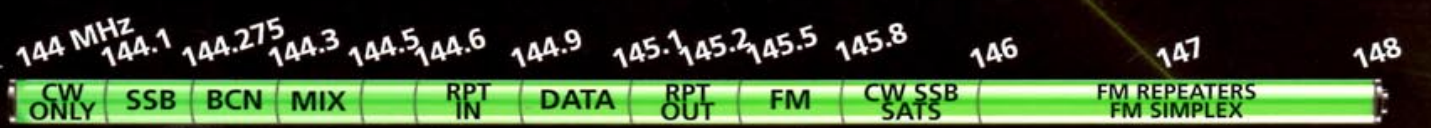
70
CENTIMETERS

"220" BAND



1.2
METERS

"2" METERS



2
METERS

"THE DX" BAND



6
METERS

BANDWIDTH
XW = 6MHz + BW
W = 1MHz BW
M = 100kHz BW
N = 50kHz BW

AM - Amplitude Modulation
ATV - Amateur Television
BCNS - Automatic Propagation Transmitter (Beacon)
CW - Morse Code
Data - packet, RTTY, AmTOR
DX - Distant station contacts (longer range than usual)
FM - Frequency Modulation
FM Links - FM relay from one repeater to another
FM Repeaters - FM relay stations

FM Simplex - FM direct contacts
Link - relay stations for data & voice
Phone DX - long distance voice transmission
Point to Point Data - automatic packet radio transfer stations
*R/C - radio control models
RPT/IN - your transmit frequency to a repeater
RPT/OUT - output side of FM repeaters
SATS - Satellite & Space Shuttle Communication
Space - Satellite Operation

Space Telecommand - uplinks to control satellites
SS - Spread Spectrum
SSB - Single Sideband Weak-Signal Work
SSB/CW - both Sideband & Morse Code
SSTV - slow scan TV
Wide Band FM - television audio
Wide Band - FM, AM, Spread Spectrum, Television