February 2016

THE eQRM



The BVARA in Beaver County Pennsylvania

Beaver Valley Amateur Radio Association W3SGJ pl 131.8 Repeater 145.310

February 2016

THE eQRM

On the Cover : February is the month of romance. We know you love radio. Maybe you could get a card and some flowers for the XYL.

3 - 4 Bulletins Hamfests and general announcements

5 & 6 This Month VE testing, Breakfast

7 Propagation Charts Propagation charts for the East Coast

8 VE Test Results New Hams and Upgrades 9 & 10 Who We Are Club officers, meetings and membership information

> 11 Bits and Pieces Interesting extras

> > 12 &13 Radio Sport

14 Interesting Links

And more

CHECK IN TO THE NETS

Wednesday 2 Meter

Wednesday 10 Meter

8:30PM on 145.310 MHz pl 131.8

9:00PM on 28.470 MHz

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Bulletins



WASHfest 2016

The South Hills Hamfest — Now in our **TWENTY FIRST** big year! Sponsored by the WIRELESS ASSOCIATION OF SOUTH HILLS AMATEUR RADIO CLUB, INC.

Breakfast & Lunch will be available! Sunday, February 28th, 2016 8:00 AM until 3:00 PM Rain or Shine (or Snow!) Castle Shannon VFD Memorial Hall 3600 Library Road (State Route 88), Castle Shannon, PA Talk-In on 146.955(-) and 443.650(+) 131.8 PL



(800) 545-8881

DXCC Card Checking Available! Thanks Allen Carpenter W8OP



FREE Coffee for the entire Hamfest courtesy of HAM RADIO INSURANCE ASSOCIATES of Canonsburg, PA

MAIN PRIZES — You've Got to Play to WIN!



1st Prize: Yaesu FT-991 100 W HF/6M Transceiver 2nd Prize: Yaesu FT-2900R 75 W 2M FM Transceiver 3rd Prize: West Mountain Radio ClearSpeech Speaker

Additional Hourly Door Prizes! Special Black Box Prize (Separate Drawing)! Main Prize tickets are \$2.00 each, 3 for \$5.00, 7 for \$10, 15 for \$20 All Prizes Subject to last-minute changes

For Table Reservations, or More Information, Please Contact:

Please Note: Early Table Reservations must be paid in full on or before January 31st, 2016. Reservations received <u>after</u> February 1st, 2016 must include payment in full. Reserve now... we have sold out in advance <u>six</u> years running!

Carol Danko KB3GMN at (412) 884-1466 <u>n3sbf@comcast.net</u> E-mail us directly at <u>washarc@yahoo.com</u> Check out our website too! <u>www.n3sh.org</u>

Hamfest Table Reservation Form—Please PRINT LEGIBLY ALL INFORMATION

Name:		Email:	
Address:		Phone: ()
City:	_ State: Zip:		Please make all checks payable to: WIRELESS ASSOCIATION OF SOUTH HILLS
Call Sign:			PLEASE MAIL RESERVATION TO: WASHFEST 2016
Tables WITH Electricity:	X \$15.00 =		C/O CAROL DANKO KB3GMN 4246 Seton Drive
Tables WITHOUT Electricity:	X \$12.00 =	L	Pittsburgh, PA 15227-1244
5 Or More Tables w/o:	X \$10.00 -	We	reserve the right to resell any tables not occupied by

e reserve the right to resell any tables not occupied by 8 AM, unless prior arrangements have been made!

Bulletins

Hamfests & General Announcements









From State Route 51 (North or South): Take SR 51 to SR 88 South (Library Road at Saw Mill Run Boulevard). Proceed South about 1¹/₂ miles to Grove Road (3rd Traffic Light). Turn Right (North) onto Grove, and an immediate Left into the Castle Shannon VFD Parking Lot.

- From US 19 South (Washington County): Take US 19 (Washington Road) North past South Hills Village to the intersection of Connor Road (by the Galleria). Turn Right onto Connor Road. At the end of the road, turn Left onto SR 88 (Library Road). Proceed North about1 ½ miles to Grove Road (3rd Traffic Light. Turn Left (North) onto Grove, and an immediate Left into the Castle Shannon VFD Parking Lot.
- From the East via US-22, Interstate I-76 (PA Turnpike) or I-376 (Parkway East): Follow the Parkway East inbound towards Pittsburgh, to the Boulevard of the Allies. Follow the Boulevard to the exit ramp (on the left) for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.
- From the North via Interstate I-79 North and I-279 (Parkway North): Follow the Parkway North Southbound to the Veteran's Bridge I-579 exit. Cross the Veteran's Bridge and follow I-579 to the exit ramp for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.
- From State Route 28: Follow the SR-28 inbound to the exit ramp for the Veteran's Bridge I-579. Cross the Veteran's Bridge and follow I-579 to the exit ramp left for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.
- From the West via I-376 (old State Route 60, US 22/30, I-279)(Parkway West): Proceed inbound to the Parkway West. Follow the Parkway inbound to the intersection with SR 51 (exit to the right prior to the Fort Pitt Tunnel). Take SR 51 South and proceed about 4½ miles to the intersection with SR 88 (Library Road), then proceed as above.
- From the South via Interstate I-79: Take I-79 to the intersection with the Parkway West I-279 and proceed as above. If coming from Washington County or further south, exit in Washington Pa to Murtland Avenue North and follow US-19 North.

This Month

BVARA Club feature presentation:

This Month's Speaker : Rich Soltesz K3SOM

Topic : WSPR Kit and Results

Including:

Continuing with our BVARA Presentation Series this year, our topic this month takes a close look at the Ultimate3S QRSS/WSPR transmitter kit from QRP Labs. The assembled kit that will be shown includes a Si5351A frequency synthesizer kit and can transmit a variety of QRSS and WSPR modes on all amateur bands from 2200 meters up to 2 meters. Low Pass Filters (LPF) for six bands together with a relay-switched LPF board have also been assembled and included to ensure that any undesirable harmonics are properly suppressed. The optional GPS Receiver kit was also purchased, assembled and installed for very accurate frequency and time information.



In addition to several WSPR modes, the Ultimate 3S can also support QRSS, FSK/CW, Opera, JT9, Hellshreiber, and about half a dozen more modes of transmission. A two-row LCD display and a two-button user interface can be used to define the user-programmable settings that are stored in EEPROM. As configured, 250 milliwatts RF output on 30 meters is available for these many modes. An attractive black aluminum case houses the primary components.

But wait, there's more! For those of you who are

unfamiliar with this mode, we'll look at some results using WSPR on the HF bands to see where this 'peanut whistle' of a signal can be heard. This is one exciting presentation you won't want to miss!

Rich's Background: Extra Class Ham, Licensed since 1962, VE, B.S. Electrical Engineering

More this Month

VE TEST SESSIONS

Beaver County Emergency Services Center 351 14th Street Ambridge, PA 15003

Tests begin promptly at 5 pm, February 11, 2016. All classes of amateur radio license tests are administered.

ALL candidates MUST bring ALL of the following:

- 1. 2 forms of I.D. one MUST be a photo I.D.
- 2. A pencil AND a pen with blue or black ink.
- 3. The original AND a photocopy of any valid ham license.
- 4. The original AND a photocopy of any C.S.C.E.
- 5. The test fee of \$15 cash, check, or money order.

For more information, contact : Rich Soltesz, K3SOM

(724) 847-0610 k3som@arrl.net



WEEKLY

Thursday Morning Breakfast

The BVARA meets every Thursday at Steak 'n Shake in Center Township, by the Beaver Valley Mall, at 10:00 AM. All radio amateurs are encouraged to come join us at our

Thursday morning breakfast.





See you at

Propagation Charts

From the ARRL



When are the bands open? These charts, generated using CAPman, show probabilities for average HF propagation in the month of February for the paths indicated. The horizontal axes show Coordinated Universal Time (UTC), and the vertical axes frequency in MHz. On 10 % of the days of this period, the highest frequencies propagated will be at least as high as the upper red curves (HPF, highest possible frequency) and on 50 % of the days they will be at least as high as the green curves (MUF, classical maximum usable frequency). The blue curves show the lowest usable frequency (LUF) for a 1500-W CW transmitter. For SSB or a lower transmitter power, the LUF will be somewhat higher than the blue curves indicate. See Oct 1994 *QST*, pp 27-30, and Feb 1995 *QST*, pp 34-36 for more details. The predictions assume an observed 2800-MHz solar flux value of 100. This is a **Medium** level of solar activity. See the detailed propagation tables on *The ARRL Antenna Book CD-ROM*.

PROPAGATION

The East Coast propagation chart listed above is for February 2016. If you would like more information on how to read these charts, or for more information on propagation in general, please visit http://arrl.org/propagation

RACES / ARES

eQRM Urges All County Hams to Participate

As a matter of editorial opinion, the eQRM urges all Beaver County licensed amateurs to participate in the County's RACES and ARES programs.

Any Beaver County Amateur that is interested in participating in the RACES/ARES programs can do so by checking into the Beaver County Public Service Net which meets every Monday evening at 8:30 PM local time on the N3TN 146.850 MHz repeater (131.8 PL)



New License and Upgrades BVARA VE Testing



Congratulations!

In January one candidate passed his Technician exam. Rob Blake from Canonsburg, PA is now licensed as KC3GHO.





Who We Are

Membership Information and Club Officers







2015 BVARA OFFICERS

President: Jack Spencer, KZ3Z Vice President: Dick Hanna, K3VYY 2nd Vice Pres.: Rob Miller, N3OJL Treasurer: Pam Spencer, W3PMS Secretary: Norm Trunick, K3NJT Director: Bob Winkle, N3AZZ Director: Bob Croft, KB3RHN Trustee: Rich Soltesz, K3SOM

MONTHLY MEETINGS

E-Board meetings are now held the Saturday before the monthly club meeting.

VE testing begins at 5:00.

Regular meetings are at 6:30.

All meetings are held at

Beaver County Emergency Services Center 351 14th Street Ambridge, PA 15003 on the second Thursday of every month (unless otherwise stated).

MEETING DATES 2016

Feb 11 Mar 10 Apr 14 May 12 Jun 09 Jul 14 Aug no meeting Corn Roast Aug 20th Sep 08 Oct 13 Nov 10 Dec no meeting Christmas Party (TBA)

Membership Information

By becoming a Member of the BVARA, You can help secure the future of Amateur Radio in Beaver County. Additionally, the BVARA receives a portion of each ARRL Membership you purchase!

Join the BVARA and ARRL

Sign up for:	Price	Quantity
BVARA FULL MEMBERSHIP	20.00	
BVARA STUDENT MEMBERSHIP	15.00	
BVARA ASSOSIATE MEMBERSHIP	10.00	(
CHILD UNDER 21 IN HOME	5.00	
	49.00	* ARRL driven increase
	DONATION	0
ARRL MEMBER ? YES NO	TOTAL	. <u></u>
Your license class (If you have one)		
Technician	Name	
General	Address	
Advanced	<u>25</u>	
DExtra	Email	
	Phone	
Your Call sign		Exp.date
Your Signature		
Make The Beaver Va	e check or money order pay lley Amateur Radio Associa South Heights, Pa 15081	vable to: tion, P.O. Box 424 L

Radio Frequency Interference – A Different Perspective for the Ham

Chapter 4 – But I Need a PC in the Shack Except for the RFI it Causes!

Introduction

Chapter 1 gave us an introduction to Radio Frequency Interference (RFI) along with some basic definitions and terminology while Chapters 2 and 3 gave some suggestions for finding and alleviating some specific, pesky reception spoilers. A PC in the shack really adds to your capabilities and ability for automation except that we've found that sometimes the PC is a major source of RFI that masks most weak signals on the bands. It's time to take action at the source!

Background Information

Computers are digital devices which the FCC refers to as "unintentional radiators". That is, they must generate and use RF energy in order to function, but they do not need to radiate it. The FCC Rules impose limits on the magnitude of these interfering signals and these limits are designed to provide a reasonable level of protection against harmful interference. These limits imply a separation distance between the PC and a receiver. However, when the PC is physically next to your ham equipment or antenna, you may have problems.

Fortunately, for the past number of years, new PCs must conform to the limits for Class B devices. Although not completely bulletproof, that new PC is much less likely to cause severe, multi-band buzzing and birdies when power is applied. Should you have an older PC or one where the manufacturer took some 'cost-saving' steps in the switching power supply, there may still be hope for you. Keep reading!

Digital signals in a computer are created by clocks at a number of frequencies, so emissions from them can occur at harmonics of each of them. A typical motherboard contains clocks beginning around 32.7 KHz and other clock frequencies extending up to the GHz range with each one generating emissions at each harmonic frequency of the fundamental.

RF energy is put on the power cord from a variety of sources within the computer, but the main source is the switching power supply. This type of power supply generates an RF voltage that is conducted directly through the power cord to your house wiring. Once it reaches your house wiring, it can create an RF field which is picked up by nearby radio antennas, or the RFI can be conducted directly from the computer to the receiver via the wiring. A combination of conducted and radiated paths is also possible.

A computer system consists of many components outside of the computer case itself (primarily in the case of a desktop configuration rather than a laptop configuration). The LCD/LED display, the mouse, the keyboard, the printer, external optical and hard drives, and the connection to the network must be considered an integral part of this system and a potential path for RF energy to be released through various paths. The path from the source (PC system) to the victim (your ham equipment) will involve one or more of three possibilities – radiation, conduction, and inductive or capacitive coupling. Breaking the path of an RFI problem can require analysis and experimentation in some cases. Understanding what mechanisms are in effect to create the path will provide the key to develop an approach to RFI mitigation.

Laptop configurations still require an external power supply and a network connection (if not operated wirelessly). Some of the laptop power supplies can be difficult to suppress RFI. Does your radio equipment require USB devices to operate automatically? Then your ancillary radio equipment becomes part of the computer system!

What's in your Toolbox?

Shields and filters are our primary tools for reducing or eliminating the RFI path to our radio equipment. Shields are used to set boundaries for radiated energy and to contain electric and magnetic fields. Physically surrounding a radiated source is effective against electric fields but is ineffective against magnetic coupling. Replacing parallel-conductor cables (such as zip cord) with twisted-pair is quite effective against magnetic coupling and also reduces electromagnetic coupling.



capacitors for differential-mode RFI problems, and AC-line filters. Ferrites are your friend. But know which type of ferrite to use for a specific application.

Identify the RFI Sources and Take Remedial Action

In a previous chapter, establishing a baseline for reference purposes is a useful concept when attempting to identify RFI sources and levels of improvement. PC-generated RFI is a reliable, repeatable source of annoyance that can readily be turned on and off by cycling the AC power to the PC. Try to make a list of offending types of signals that your radio receives, their frequencies within the ham bands, their signal strength, and any audible characteristics. With the PC powered up, unplug the mouse and keyboard to see if they are contributing to any of the identified RFI signals. These are usually not an issue, but eliminating possible causes can be helpful later.

Next, turn the display off and then unplug it from the AC line and from the computer. Can you identify any RFI signals that disappeared? If so, you will need to apply torroids to the signal lead and possibly the AC line to the display. Snap-on ferrites (Mix 31 at HF) are convenient to apply but severe cases may require the larger, donut-shaped ferrites with 5 to 10 turns of AC line wrapped on the ferrite. Chapter 3 had a picture of such a ferrite choke. The diagram from the 2015 ARRL Handbook illustrates where ferrites should be applied under difficult RFI conditions. Be aware that sometimes these interfering signals may drift around a bit near the frequency given in your list. Here is where a good panadapter on your radio really comes in handy. You may wish to repeat this testing with an alternate display on the screen. For example, if the previous example had a mostly white background, you may wish to display a darker screen content to see if the interference changes. No one said that this would be quick and easy!

Finally, with all peripherals disconnected (mouse, keyboard, display, printer, Ethernet cable if used, and any other serial or USB devices) confirm that the PC is still causing considerable interference. The culprit may be your PC's switching power supply or construction practices that would never pass Class B certification by the FCC. A number of reported cases of PC power supplies with internal AC power choke and capacitors that were never installed have been documented (to save a few pennies on each PC sold). Perhaps you picked up an industrial PC that satisfied the less-stringent Class A certification. Providing better internal shielding can require considerable work where a positive outcome is not assured.

If your cheap PC power supply has finally failed (note that 'you get what you paid for' applies here) and

perhaps you wish to upgrade your graphics board performance at the same time, then a new switching power supply would be a good decision to make. Power supplies from FirePower OCZ, Corsair, and Antec are quality products with



well regulated outputs that include the required RFI filtering. In addition, many of these power supplies offer modular wiring, better cooling, 5- and 7-year warrantees, and long life. They are not cheap products but are cost-effective products offering lasting value. Several years ago an inferior PC power supply that caused a good deal of RFI failed. I replaced it with an Antec unit that is still in service. The newer lines of these products have come a long way from those earlier units but the message to me was clear – no more hash from the PC. There may be other quality power supplies out there as well, so use these three product lines as a baseline for comparison when you shop for one.

Cable routing between devices adds another variable to the mix. Cables that are excessively long offer an opportunity to 'shorten' that RF antenna disguised as a connecting cable. Shielded cable may resolve your problem. Is your PC grounded to your station ground? Did it make a difference when you finally grounded it? Or did it make the problem worse because you created a ground loop? Moving the PC two feet to the left or right might make things better. Powering the PC from another outlet on a different circuit could also help significantly. Have you tried moving your coax to a different route? Are you now ready to run high power? You bought an amplifier and now you are having problems? Go back to step one!

Wrap up

By now you should have begun to develop an understanding of how difficult it can be to solve RFI issues when there are so many variables involved with so many interactions. You have arrived at your 'destination' when you can turn on your PC or PCs and the only difference that you can tell is that the fan noise went up just a little bit. You know your enjoyment of ham radio would be immensely more enjoyable with a noise level that is as much as four S-units lower. You may finally be able to hear that rare DX from Neville Island!

Much of the introductory material is contained within Chapter 27 of the 2015 ARRL Handbook for Radio Communications and thanks are gratefully expressed to the ARRL for publishing this great reference handbook.

The ARRL RFI Book, 3rd Edition, Mike Gruber – W1MG, 2010 provides a detailed perspective on various sources of EMI or RFI including computer and power line issues.

I would recommend A Ham's Guide to RFI, Ferrites, Baluns, and Audio Interfacing by Jim Brown – K9YC that is available as a pdf file at http://audiosystemsgroup.com/RFI-Ham.pdf for your enlightenment. He does a very nice job on the available ferrite materials available and when and where to use them.

Another favorite document that is entitled Common Mode Chokes by Jim Counselman – W1HIS that is also available as a pdf file can be found at:

http://www.yccc.org/Articles/W1HIS/CommonModeChokesW1HIS2006Apr06.pdf for your use.

Rich-K3SOM

Bits and Pieces



I am relatively a new Ham. Come March this year, I have been licensed for two years. I have had a lot of fun with my Ham Club. I have met some outstanding quality radio friends through the local BVARA & TAARA Ham Radio Clubs, on the air as well as Hamfests. I have enjoyed field day, monthly Club meetings, Thursday BVARA Ham breakfasts, radio nets, Hamfests and so much more. My personal radio experience has mostly been rag chewing on HF SSB radio making contacts over phone communication. I have studied many books, web sites, magazines and attended Club forums learning as much as I am

able to understand when it comes to Amateur Radio. My priority is to be a professional operator and a gentleman Ham of the highest degree in all my radio pursuits. I always try to instill this "Gentlemanly & Professionalism" Ham spirit in all amateur radio enthusiasts I come in contact with on air or during face to face QSOs.

I got interested in Amateur Radio by listening to a shortwave radio my children got me for Christmas one year. That Grundig radio also picked up Ham bands. I was listening one day and heard three Hams talking. There were two experienced hams talking to a young ham. They were telling him how to do so many things to have a great station. After listening for a while it seemed to me (I think the young ham also thought it) these old duffers were so pushy, a bit too



bossy! Then one of the experience hams said "wait" it may seem we are telling you what to do in a mean way. Please understand if there is a mistake one could make we have made them all. We are encouraging you to learn from our mistakes. You will save yourself aggravation, time and money. We may come across as know it all's. We don't mean it that way. We want you to enjoy amateur radio as much as we do. These two men were very gracious and kind, as the QSO went on. They spoke of their ages, they were both over 80. It was that gentlemanly spirit that got me interesting in finding out what Ham Radio is about and how could I get into it.

I wrote down their call signs. Someday I am going to find them on the air again or maybe I will just look them up and make a phone call. I would like to thank them for their kindness in arousing my interest in amateur radio.

As always my motto

is...

Safety! Safety!Safety!

Radio Sport

- February 2016 Contests -

School Club Roundup

February 8-12, 2016

5-day event runs Monday through Friday from 1300 UTC Monday through 2359 UTC Friday. A station may operate no more than 6 hours in a 24-hour period, and a maximum of 24 hours of the 107 hour event.

Objective: To exchange QSO information with club stations that are part of an elementary, middle, high school or college. Non-school clubs and individuals are encouraged to participate.

Sponsored by the ARRL, its Hudson Division Education Task Force and and the Long Island Mobile Amateur Radio Club (LIMARC) to foster contacts with and among school radio clubs.

Award certificates will be issued for the following US and DX categories:

Schools: Elementary, Middle/Intermediate/Junior High School, High School and College/University

International DX – CW

February 20-21, 2016

Contest Period: 48 hours

Starts 0000 UTC Saturday; ends 2359 UTC Sunday.

Objective: To encourage W/VE stations to expand knowledge of DX propagation on the HF and MF bands, improve operating skills, and improve station capability by creating a competition in which DX stations may only contact W/VE stations.

W/VE amateurs work as many DX stations in as many DXCC entities as possible on the 160, 80, 40, 20, 15, and 10 meter bands.

DX stations work as many W/VE stations in as many of the 48 contiguous states and provinces as possible.

For more information go to the ARRL web site with the Keywords: "contest calendar"

http://www.arrl.org/contest-calendar

Radio Sport

Contest Corral – February 2016

Check for updates and a downloadable PDF version online at www.arrl.org/contests.

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Date	Start - Finish e-Time Date-Time		Bands	Contest name	Mode	Exchange	Sponsor's Website	
1	2000	1	2130	3.5	RSGB 80 Meter Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org/hf/
2	0200	2	0400	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
3	2000	3	2100	3.5	UKEICC 80 Meter Contest	Ph	4-ch grid square	www.ukeicc.com
5	1400	7	0200	All	YLRL YL-OM Contest	CW Ph Dig	Serial, RS(T), SPC	ylrl.org/index.php
6	0000	6	2359	3.5-28	Triathlon DX Contest	CW Ph Dig	RS(T), serial	triathlon-dx-contest.gr
6	0000	7	2359	1.8-UHF	Vermont QSO Party	CW Ph Dig	RS(T), county or SPC	www.ranv.org/vtqso.html
6	0001	7	2359	28	10-10 International Winter Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
6	1200	7	1200	3.5-28, 144	F9AA Cup, CW	CW	RST, serial, license, country or dept	www.site.urc.asso.fr
6	1200	7	1159	1.8-28	Black Sea Cup International	CW Ph	RS(T), club or org or ITU zone	bscc.ucoz.ru/index/0-21
6	1400	6	2359	1.8-28	FYBO Winter QRP Sprint	CW Ph Dig	RS(T), SPC, name, power, temperature	www.azscqrpions.com
6	1400	6	2359	1.8-28	Minnesota QSO Party	CW Ph Dig	Name, county or SPC	www.w0aa.org
6	1600	6	1900	3.5	AGCW Straight Key Party	CW	RST, serial, class, name, age	www.agcw.org/index.php/en
6	1600	7	0400	1.8-28	British Columbia QSO Party	CW Ph Dig	RS(T), district or SPC	www.orcadxcc.org
6	1700	6	2100	3.5-28	FISTS Winter Slow Speed Sprint	CW	RST, SPC, name, mbr or power	fistsna.org
6	1800	7	1759	3.5-28	Mexico RTTY International Contest	Dig	XE: RST, State. Others: RST, serial	www.rtty.fmre.mx
7	0000	7	0400	3.5-14	North American Sprint, CW	CW	Other's call, your call, serial, name, SPC	ncjweb.com/Sprint-Rules.pdf
8	1300	12	2359	All	ARRL School Club Roundup	CW Ph Dig	RS(T), Class (I/C/S), SPC	www.arrl.org/school-club-roundup
10	0130	10	0330	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info/sprint201602.html
10	2000	10	2130	3.5	RSGB 80 Meter Club Championship, Data	Dig	RST, serial	www.rsgbcc.org/hf/
13	0000	14	2359	3.5-28	CQ WW RTTY WPX Contest	Dig	RST, serial	www.cqwpxrtty.com/rules.htm
13	1000	14	1000	1.8-28	SARL Field Day Contest	CW Ph Dig	RS(T), # of xmtrs, category, Province	www.sarl.org.za
13	1100	13	1300	7, 14	Asia-Pacific Spring Sprint, CW	CW	RST, serial	jsfc.org/apsprint/aprule.txt
13	1200	14	1200	1.8-28	Dutch PACC Contest	CW Ph	RS(T), province or serial	pacc.veron.nl
13	1200	14	1200	1.8	KCJ Topband Contest	CW	RST, Prefecture or Continent Code	www.kcj-cw.com
13	1200	14	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
13	1500	14	1500	1.8-28	OMISS QSO Party	Ph	RS, SPC, mbr (if any)	omiss.net/Facelift/qsoparty.php
13	1600	14	2200	All	New Hampshire QSO Party	CW Ph Dig	RS(T), county or SPC	www.w1wqm.org/nhqso
13	1700	13	2100	3.5-28	FISTS Winter Unlimited Sprint	CW	RST, SPC, name, mbr or power	fistsna.org
13	1900	13	2300	1.8	RSGB 1st 1.8 MHz Contest	CW	RST, serial, District Code (for UK)	www.rsgbcc.org/nt/
14	0000	14	2359	1.8-7	PODXS 070 Club Valentine Sprint	Dig	Name, "OM" or "YL," SPC	www.podxs0/0.com
14	1400	17	0800	1.8-144	Classic Exchange, Phone	Pn	Name, RS, SPC, radio manuf/model	www.classicexchange.org
17	1900	17	2030	3.5	AGCW Semi-Automatic Key Evening	CW	RST, serial, year first used a bug	www.agcw.org/index.php/en
18	2000	18	2130	3.5	Championship, CW	CW	RST, serial	www.rsgbcc.org/hf/
20	0000	21	2359	1.8-28	DX Contest, CW	CW	W/VE: RST, SP. Non-W/VE: RST, power	www.arrl.org/arrl-dx
20	1000	20	1150	/	SARL Youth Day Sprint	Pn	RS, age	www.sari.org.za
20	1200	21	1159	1.8-28	Russian PSK WW Contest	Dig	RS1, 2-letter oblast or serial	www.rarciub.ru
20	2000	20	2159	1.0-20	Amplitude Medulation OSO Partu	Dig	Name, CDC	sites.google.com/site/leidneiiclub
20	2300	21	2300	3.5-14	Amplitude Modulation QSO Party	Ph	Name, SPC	www.antiquewireless.org
22	0100	22	0259	3.5-14	CQC Winter QSO Sprint	CW	RSI, SPC, name, mbr or power	www.cqc.org/contests
22	0200	22	0400	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	ipqrp.org/pigrun
24	0000	24	0200	1.0-20	SKCC Sprint	CW	A sharester and square	www.skccgroup.com
24	2000	24	2100	3.5	OKEICC 80 Meter Contest	Dh	4-character grid square	www.ukeicc.com
20	2200	28	1000	1.8	DEF Contest, SSB	PN Dh	W/VE: HO, SP. DX: HO, CQ ZONE	www.cq160.com/rules.ntm
27	0600	28	1800	3.5-28	REF Contest, SSB	Pn	RS, French department or serial	concours.r-e-t.org/contest
27	1300	28	1300	3.5-28	UBA DX Contest, CW	CW CW	HS I, serial, province (if UN)	www.uba.be/en/nt/contest-rules
27	1400	28	0059	1.8-50	South Carolina QSO Party	CW Ph Dig	RS(1), county or SPC	scqso.com/rules
27	1800	28	0559	3.5-28	North American QSO Party, RTTY	Dig	NA: Name, SPC. Non-NA: Name	www.ncjweb.com/NAQP-Rules.pdf
28	0900	28	1700	3.5-28	High Speed Club CW Contest	CW	RST, mbr or "NM"	www.highspeedclub.org
28	1300	28	1600	3.5-14	SARL Digital Contest	Dig	RST, serial	www.sarl.org.za
28	1500	29	0059	3.5-144	North Carolina QSO Party	CW Ph Dig	County or SPC	rars.org/ncqsoparty

All dates refer to UTC and may be different from calendar dates in North America. Times given as AM or PM are local times and dates. No contest activity occurs on the 60, 30, 17, and 12 meter bands. Mbr = Membership number. Serial = Sequential number of the contact. S/P/C = State, Province, DXCC Entity. XE = Mexican state. Data for Contest Corral is maintained on the WA7BNM Contest Calendar at **www.hornucopia.com/contestcal** and is extracted for publication in QST 2 months prior to the month of the contest. The ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service. Listings in blue indicate contests sponsored by ARRL or NCI. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column.

 92
 February 2016
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 17 THE eQRM
 Contest Corral courtesy of ARRL - QST Magazine

Some Interesting Links

Space Weather Prediction Center http://www.swpc.noaa.gov/communities/space-weather-enthusiasts Radio Communications Dashboard http://www.swpc.noaa.gov/communities/radio-communications An interesting hams web site http://kv5r.com/ham-radio/ Antennas from a fellow ham http://w1jks.com/antenna.php Stealth antenna link http://www.hamuniverse.com/hfmobilevideo.html Amateur Radio Newsline Report http://www.arnewsline.org/ Dr. Tamitha Skov Space Weather http://spaceweather.tv/category/amateur-radio-resources/ for Radio Amateurs



The Amateur's Code

CONSIDERATE ...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL ...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE ...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY ...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED ...radio is an avocation, never interfering with duties owed to family, job, school or community.

PATRIOTIC ...station and skill always ready for service to country and community.

Some Solar Information

An Introduction to Space Weather and Propagation, in Plain Language

From the April 27, 2001 ARRL Propagation Newsletter, by Tad Cook K7VVV:

Amateur Radio operators who use HF generally like increased sunspots because they correlate with better worldwide radio propagation. When there are more sunspots, the sun puts out radiation that charges particles in the earth's ionosphere. Radio waves bounce off of (refract from) these charged particles, and the

denser these clouds of ions. the better the HF propagation.

When the ionosphere is denser, higher frequencies will refract off it rather than passing through to outer space. This is why every 11 years or so when this activity is higher, 10 meters gets exciting. 10 meters is at a high enough frequency, right near the top of the HF spectrum, that radio waves propagate very efficiently



- Product Valid At : 2016-02-02 18:48 UTC
- Normal Proton Background NOAA/SWPC Boulder, CO USA

when the sunspot count is high. Because of the shorter wavelength, smaller antennas are very efficient on



this band, so mobile stations running low power on 10 meters can communicate world wide on a daily basis when the sunspot cycle is at its peak. There are also seasonal variations, and 10 meters tends to be best near the spring or fall equinox. If the ionosphere is not so dense, the Maximum Usable Frequency may be below 10 meters, and perhaps only signals with frequencies as high as 15 meters or below will propagate. The sunspot numbers used in this bulletin are calculated by counting the spots on the visible solar surface and also measuring their area.

Solar flux is another value reported in this bulletin, and it is measured at an observatory in Penticton, British Columbia using an antenna pointed toward the sun hooked to a receiver tuned to 2.8 GHz, which is at

Some Solar Information



a wavelength of 10.7 cm. Energy detected seems to correlate somewhat with sunspots and with the density of the ionosphere.

Other solar activity of concern to HF operators are solar flares and coronal holes, which emit protons. Since the charged ions in the ionosphere are negative, a blast of protons from the sun can neutralize the charge and make the ionosphere less refractive. These waves of protons can be so intense that they may trigger an event called a geomagnetic storm. In addition, energy from a solar flare may energize the D-layer of the

ionosphere, which absorbs radio waves.

The Planetary A index relates to geomagnetic stability. Magnetometers around the world are used to generate a number called the Planetary K index.

A one-point change in the K index is quite significant. K index readings below 3 generally mean good stable conditions, and above 3 can mean high absorption of radio waves. Each point change reflects a big change in conditions.

Every 24 hours the K index is summarized in a number called the A index. A one-point change in the A value is not very significant. A full day with the K index at 3 will produce an A index of 15, K of 4 means A of 27, K of 5 means A of 48, and K of 6 means A of 80. You can find an explanation of these numbers on the web at

http://www.ngdc.noaa.gov/stp/GEOMAG/kp_ap.html.

The geomagnetic number reported here is the Planetary A index, which is a worldwide average based on the K index readings from a number of magnetometers. The numbers reported on WWV are the Boulder K and A index, measured in Colorado. Generally the higher the latitude of the measuring station, the higher the K and A indices reported. This is because the effects of geomagnetic instability tend to concentrate toward the polar regions of the globe. You can hear the Boulder K index updated every three hours on WWV, or by calling 303-497-3235.

For an interesting web page on the earth's magnetosphere, check http://science.nasa.gov/