THE eQRM

BVARA Beaver County Pennsylvania

October 2015

THE eQRM

On the Cover : This wonderful pen and ink artwork of a beaver by the noted artist Ned Smith appeared in the Pennsylvania Game News many years ago in a special document highlighting the many different birds and game of Pennsylvania. Unfortunately Ned Smith passed away in 1985 but his great works live on.
I include it here as a Beaver County theme.

CHECK IN TO THE NETS

Wednesday 2 Meter	Wednesday 10 Meter
8:30PM on 145.310 MHz	9:00PM on 28.470 MHz

 If you would like to contact the editor of the eQRM, please email David at kc3bxc.73@gmail.com. Please visit us online at www.W3SGJ.org. To subscribe to our newsletter, please visit W3SGJ.org/newsletter.php

WACOM 2015 HAMFEST

Washington Amateur Communications Inc.

SUNDAY, NOVEMBER 1st 2015

WASHINGTON COUNTY FAIRGROUNDS

2151 North Main St.

WASHINGTON, PA 15301

8:00 A.M –3:00 P.M—Admission $5.00

Doors open early for VENDOR SETUP Saturday OCT 31st 6:30 p.m.

Talk in on 146.790 City-147.285 East-147.390 North-145.250 West -147.315 South- All Pl-131.8

MAJOR VENDORS

Over 250 tables

KJI ELECTRONICS- -QUICKSILVER RADIO

MAIN PRIZES:

1ST Ameritron 811H HFAmplifier

2nd Large Screen H D TV

3RD YAESU FT-2900R 2 METER 75 watt FM Radio

4th YAESU FT-2900R 2 METER 75 watt FM Radio

5th YAESU FT-2900R 2 METER 75 watt FM Radio

BLACK BOX PRIZE'S ONLY 50 TICKETS Sold

MAIN DRAWING AT 1:00 P.M. NEED NOT BE PRESENT TO WIN

CONTACT FOR HAMFEST TABLES **N3TIR bud@n3tir.com 724-350-6745**

Vendor Forms located at www.wacomarc.org under Hamfest tab

WE WILL Sell out ALL TABLE SPACE PLEASE CALL EARLY

6Ft TABLES SUPPLIED, cost $12.00 ea. - Discount reserve more than (4) $10.00ea.

ADDMISSION not INCLUDED ON TABLES rentals

VE TESTING TIME 9:00am

BREAKFAST AND LUNCH WILL BE AVAILABLE

DOOR PRIZES--YL PRIZE---DX CARD CHECKER

THE MEADOWS CASINO & Tanger Outlets less than 2 miles

Send all vendor payments to address below for tables

Please include vendor form and make checks payable to

WACOM c/o Norma Plants N3YJJ

236 Chambers Ridge Road, West Alexander, PA 15376

Bulletins

WASHINGTON AMATEUR COMMUNICATIONS

If you are traveling South on I-79 from PITTSBURGH

- I-79 S. to Exit 41
- Right onto Racetrack Rd.
- Left onto Pike St.
- Right onto Country Club Rd.
- Right onto North Main St.
- Left to Stay on North Main St.
- Fairgrounds on the Right

If you are traveling North on I-79 from MORGANTOWN

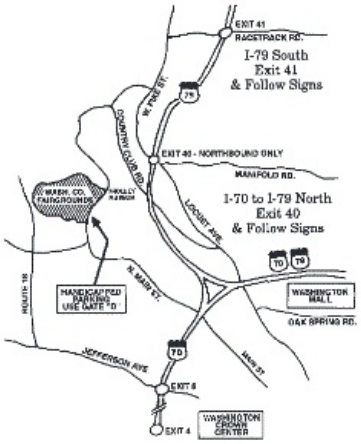
- I-79 N. to Exit 40
- Left onto Pike St.
- Left onto Country Club Rd.
- Right onto North Main St.
- Left to Stay on North Main St.
- Fairgrounds on the Right

If you are traveling East on I-70 From WHEELING

- I-70 E. to I-79 North to Exit 40
- Left onto West Pike St.
- Left onto Country Club Rd.
- Right onto North Main St.
- Left to Stay on North Main St.
- Fairgrounds on the Right

If you are traveling West on I-70 from NEW STANTON

- I-70 W. to I-79 North to Exit 40
- Left onto West Pike St.
- Left onto Country Club Rd.
- Right onto North Main St.
- Left to Stay on North Main St.
- Fairgrounds on the Right



This Month

This month's BVARA Club feature presentation:

This Month: a little detour

Speaker: K3SOM Rich Soltesz

Topic: Spectacular Scandinavia

We will take a little detour from our normal Ham Radio topic of discussion to hear K3SOM's presentation on his 2015 September trip to the Scandinavian countries. BVARA will be providing Police Station Pizza. Anyone coming please bring your own non-alcoholic beverage, coffee will be provided by the Club.

Continuing with our BVARA Presentation Series this year, our topic this month is one that will visually transport you to the land of the Vikings with its breathtaking beauty. We'll first explore Denmark's Copenhagen followed by the museum in Odense honoring Hans Christian Andersen. Next, our travel will take us across the Kattegat Sea via ferry to Gothenberg and then on to Stockholm, Sweden. Finally we'll explore the fjords of Norway as well as the cities of Lillihamer, Lom, Geiranger, Bergen, and Oslo. National Geographic Society has rated the Norwegian fjords as the world's top tourist attraction – and we'll find out why! Along the way we'll take a ride on the Flam Railroad and take a trip up and down the Troll's Road. But wait, there's more: a special visit to the world famous painter, Carl Larsson (Sweden's Norman Rockwell) and his Farm as well as the summer home of Norway's national classical music composer, Edvard Grieg are on the agenda. Be sure to watch out for all of the Trolls along the way because this is one 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 SESSION

Beaver County Emergency Services Center

351 14th Street

Ambridge, PA 15003

Tests begin 5PM Thursday, October 8th (walk-ins allowed).

All classes of amateur radio license tests will be 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

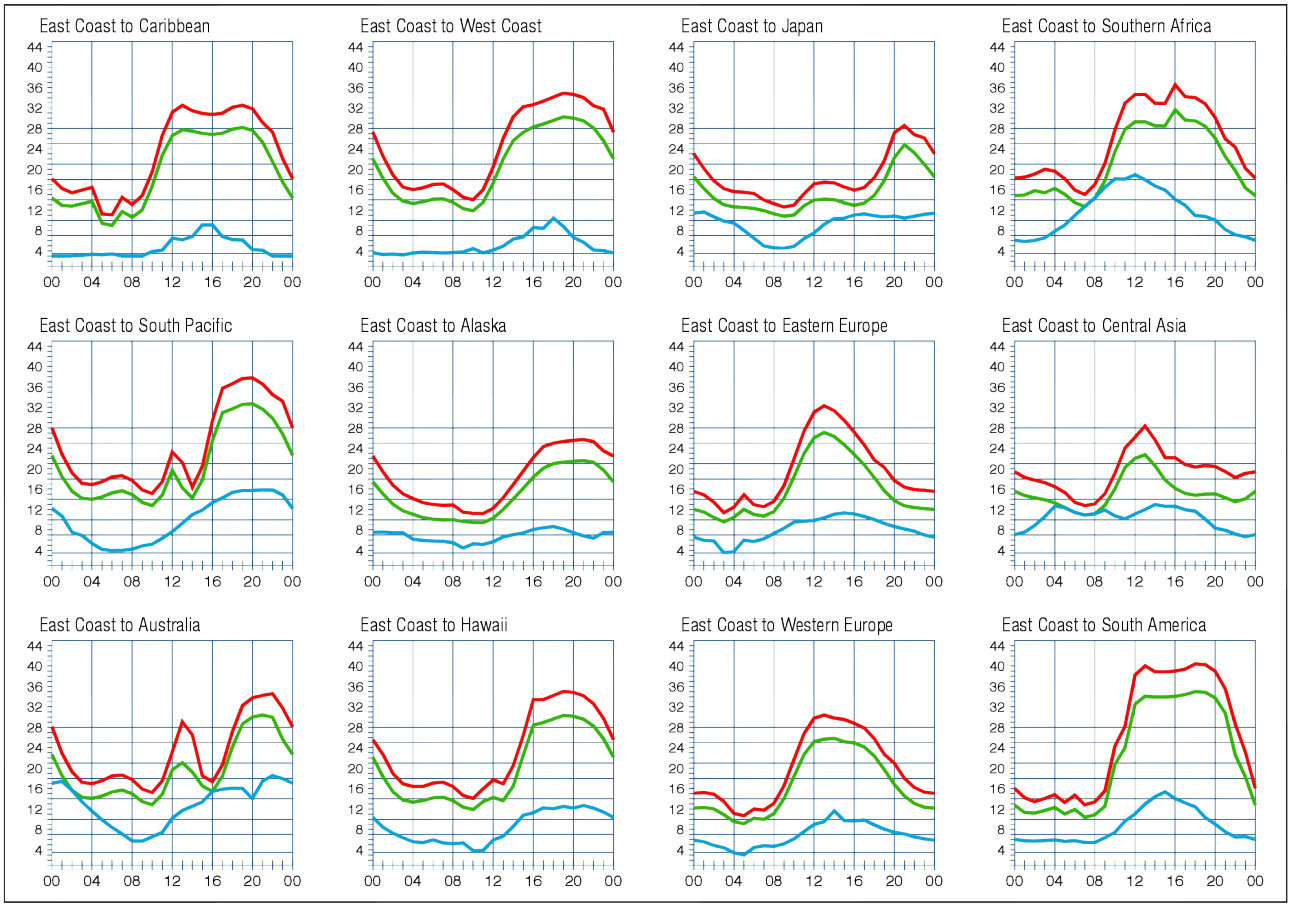
Thursday Morning Breakfast

The BVARA meets every Thursday at Steak 'n Shake in Center Township, by the Beaver Valley Mall, at 10:00 AM. All area 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 **October**. 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. The horizontal axes show Coordinated Universal Time (UTC), and the vertical axes frequency in MHz The predictions assume an observed 2800-MHz solar flux value of **98**.

PROPAGATION

The East Coast propagation chart listed above is for October 2015. 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

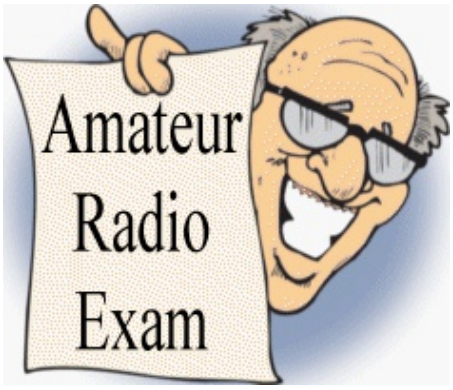
RACES / ARES

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)

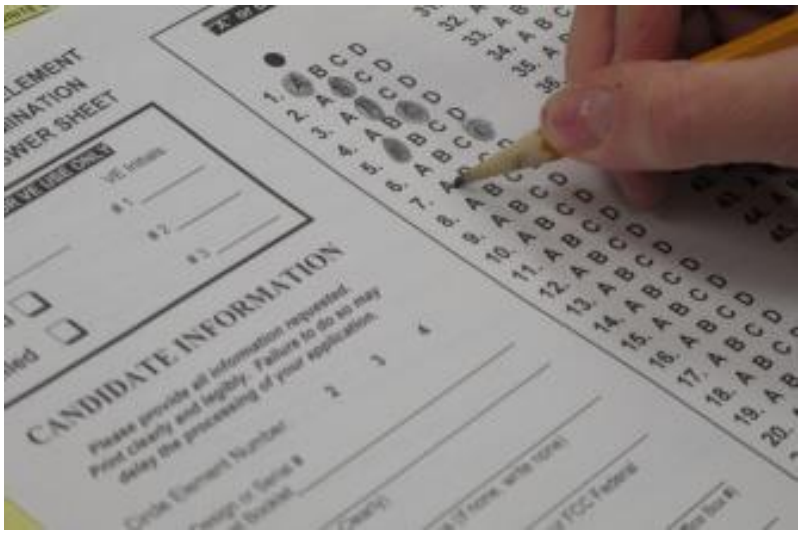
New License and Upgrades BVARA VE Testing



The BVARA would like to congratulate and acknowledge:

Tim Barr - KC3AZH from Imperial, PA passed the Extra Class exam.

Charles Kulbacki, Jr. - KC3FNG from Sewickley, PA passed his Technician Class exam.



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: Jeff Waite, K3SLK
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 2015

Oct 08
Nov 12
Dec 06 Sunday 5-9 PM
Club Christmas Party
(no club meeting)
Jan 14 2016
Feb 11
Mar 10
Apr 14
May 12
Jun 09
Jul 14
Aug 11

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	_____
☐ ONE YEAR ARRL MEMBERSHIP	39.00	_____
	DONATION	_____
ARRL MEMBER ? YES NO	TOTAL	_____

Your license class (If you have one)

☐ Technician
☐ General
☐ Advanced
☐ Extra

Name _____

Address _____

_____

Email _____

Phone _____

Your Call sign _____ Exp.date_____

Your Signature _____

Make check or money order payable to:
The Beaver Valley Amateur Radio Association, P.O. Box 424
South Heights, Pa 15081

Radio Frequency Interference – A Different Perspective for the Ham

Introduction and Basic Definitions

Introduction :

Radio Frequency Interference (RFI) is a topic very near to many hams. As a ham radio operator, you can be a source of interference to others and their gadgets, or you can be a victim of a host of various devices in your home and in your neighbor's homes that can spoil your enjoyment of the hobby. Opinions about RFI are like elbows: everyone has at least two of them! A considerable amount of good information is available in ARRL publications, books, and within the many Internet articles that knowledgeable hams have created. This article is the first of several articles for our club members about this very complex topic. Over the coming months, different aspects of RFI will be presented. Several initial references will be given later for you to begin gathering information. Let's get started!

You as the source of RF interference :

Your transmitter generates an RF signal that can be the source of interference to others in your home or to your neighbor's devices. Some examples of devices that can be affected include telephones, TV sets, computers, automatic garage door openers, music systems, and dog collars. If you really 'crank up' the speech processing or overdrive an amplifier, considerably more energy can be radiated. Higher power levels can make the problem even worse. You may find that you are causing interference to your speakers in your own radio shack. In subsequent articles we'll look at the setup of a minimally invasive RFI-generating ham radio station.

You as the victim of RF interference :

Many devices in your home can make listening for signals on your ham radio very unpleasant. The closer these sources of RFI are to you, the more effective they become in spoiling your listening experience. Touch lamps, light dimmers, cable and internet modems are among some of the worst offenders. Those 'wall warts' or wall transformer switching supplies that frequently provide 5 or 12 VDC at up to 2 Amps are next in order for their ability to create havoc for the ham. Other sources of RF interference may include night lights, automatic lights, low voltage lamps, digital temperature displays, computers and displays, UPS units, plasma TVs, devices containing embedded computers, etc. For some very unusual devices/situations, look at http://www.on4ww.be/emi-rfi.html to gain some insight into some bizarre situations. Subsequent articles will examine many of these offensive RFI sources with suggestions for mitigation of the interference.

Basic Definitions (See ARRL Handbook Chapter 27) :

RFI can travel from the source to the victim by radiation, conduction, inductive coupling and capacitive coupling. As one might guess, radiation from electromagnetic waves travels from the source through space (or air) to the victim. Conducted RFI travels over a physical conducting path between the source and the victim. Inductive RFI occurs when two circuits are magnetically coupled. Capacitive coupling occurs when two circuits are coupled electrically through capacitance. Frequently several methods of travel are combined to cause the observed havoc. For example, a radiated RFI source

could be combined with conductive RFI to induce the interference on a cable.
When the noise signal is travelling along the conducted portion of the path, the mechanism for movement of the noise signal can include differential mode or common mode. Differential-mode circuits typically have two easily identified conductors. For example, when ladder line is carrying equal but opposite direction signals as in a balanced antenna, it is said to be in differential mode. Because the two signals are of the same amplitude but exactly opposite in direction (or phase) there is no radiation from the ladder line. Each side of the antenna that the ladder line feeds is also balanced but is designed to radiate the signal. On the other hand, an off-center-fed dipole is not a balanced system and will result in different amplitudes and phase angles between each side of the ladder line. As a result, there can be significant radiation from that ladder line. That condition could result in RFI travelling into the ham radio station to cause havoc, RFI on your audio and possibly undesirable 'tingling' sensations during transmit.
Common-mode circuits generally have multiple conductors or an unbalanced configuration with one conductor surrounding a second conductor. Coax cable is an unbalanced circuit for which radiated RFI can easily be conveyed into the ham radio station by conduction along the outside of the coax cable.
Four basic types of RFI apply to amateur radio operations. The first two types can be directly caused by amateur radio operations. They include fundamental overload that causes another device to operate improperly because of the presence of a strong fundamental signal from the ham's transmitter. An example of this situation could be your garage door opening whenever you transmit with 1.5 KW with your beam antenna pointed towards the garage door opener. Spurious emissions involve reception that is interfered with by spurious emissions from the transmitter that are not within Part 97 definitions for such signals. An example could be from the experimental transmitter that you just built without any low-pass filter on the output for which your third harmonic falls right within the frequency range of various police or aircraft communications. Go to jail, go directly to jail, and do not collect $200 if you pass GO!

The last two types of RFI are experienced when your reception of a desired signal, you know, that rare DXPedition to Neville Island where their operations schedule and propagation conditions appear favorable for your part of the world is interfered with by undesirable RF energy received along with the desired signal. The first type is an external noise source like one of the ones described above under 'you as the victim'. It doesn't feel good, does it? "Honey, do you have to make that bun cake right now?" You get the idea! Your house or apartment could be full of these pesky noise sources. Generally, they do not go away unless you take some action to either remove them or mitigate their impact on your reception. The last type is categorized as intermodulation which can be generated internally by your receiver circuits to create intermodulation products (IMD) or can be stimulated by external signals and sources. Now you know why receivers are evaluated for levels of IMD in the product reviews.

Is it worth the effort to improve reception?

How many times have you heard people on the air complaining about their high local noise level? Perhaps you know that their location is much better than yours, but, at least for the moment, you are having no trouble copying the station that is covered up at their location. Congratulations, this time. But what about the next time or up five KHz where that crazy moving buzz is creating havoc for you? The external noise sources offer the potential for some significant improvements in your ability to hear weak stations.

Technical Info

Let's look at one example. *Figure 1* shows a portion of the 80 meter band at around 2:30 pm local time

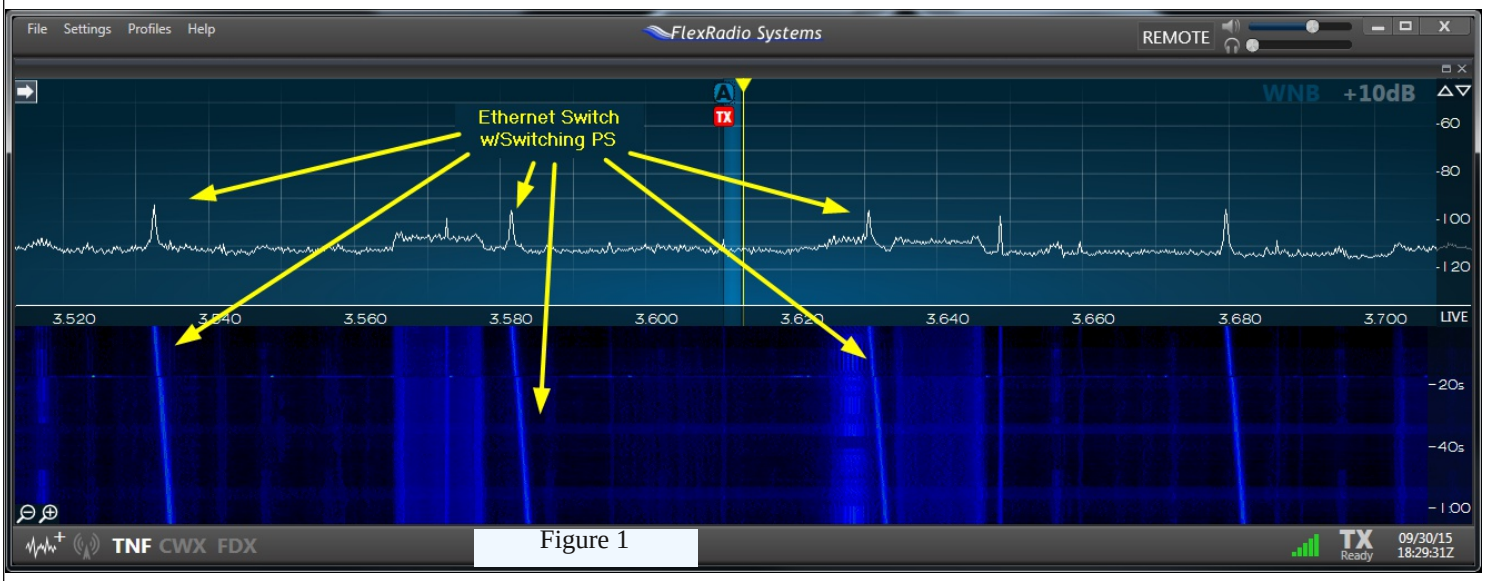


Figure 1

today. Among other signals, I've plugged in a power supply switching transformer that is powering an Ethernet switch (one in – four out). The 'wall wart' provides 5 VDC at up to 2 Amps to the switch. The top part of the figure contains the instantaneous panadapter image from about 3.520 to 3.700 MHz. The lower part of the figure contains a waterfall image of the last minute of reception with the most current reading at the top of the lower figure (that matches the instantaneous image above). At least four recurring RFI signals from the wall wart are visible as the three vertical lines that are labeled in each image are gradually moving lower in frequency as the power supply warms up. It also appears as if there may be other candidates for remedial action as well!

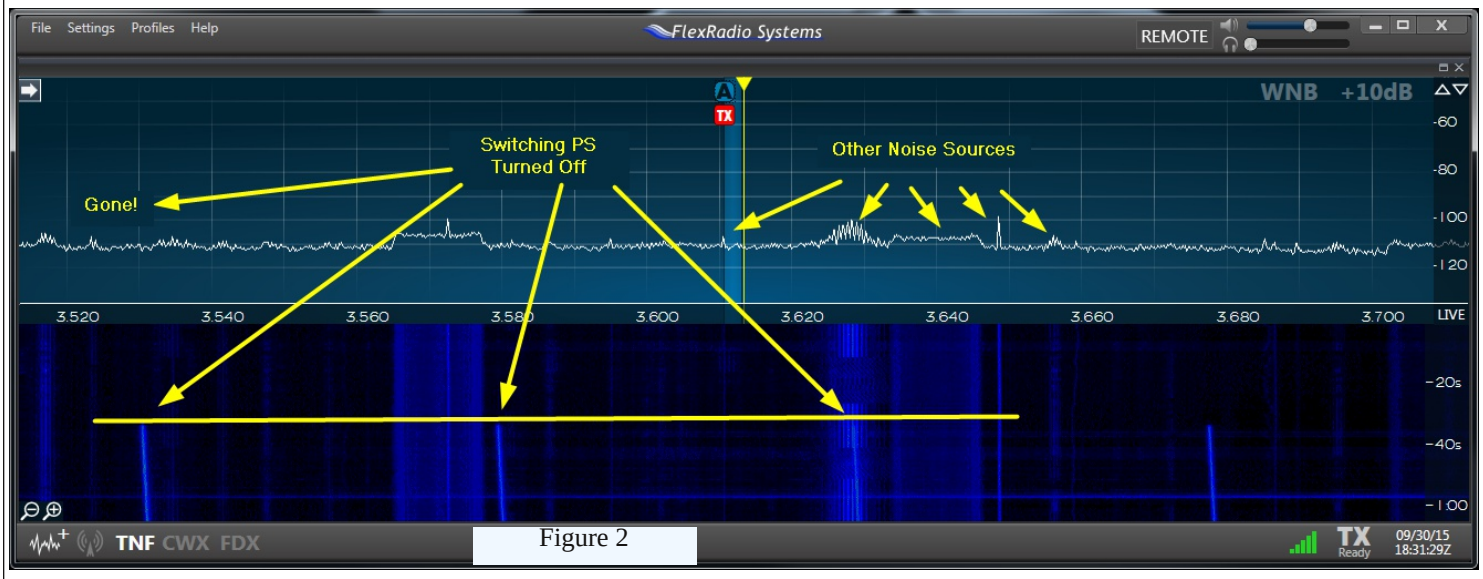


Figure 2

In *Figure 2* the wall wart has been unplugged after about thirty seconds have elapsed on the display. The instantaneous panadapter shows that the wall wart 'signature' has disappeared while the waterfall shows

the effects of ‘before’ and ‘after’. Other noise sources have been labeled, lest you think that only one RFI noise source problem exists! There’s more work to be done.

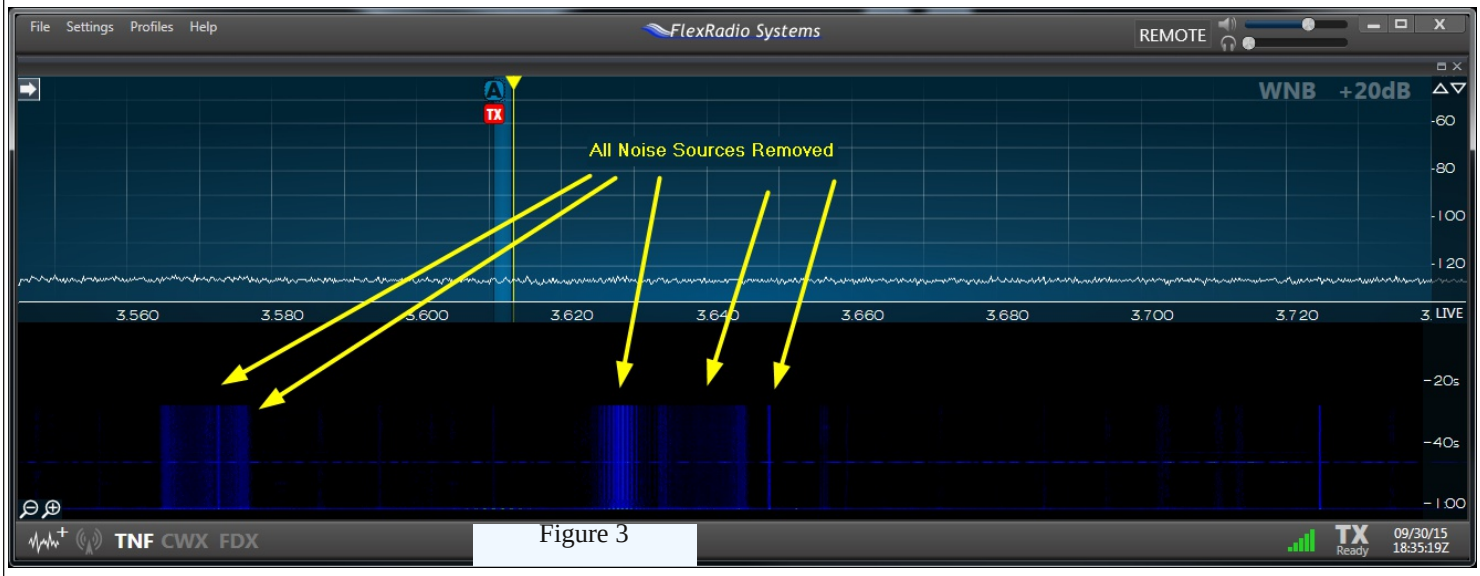


Figure 3

Figure 3 shows what can be done when all significant sources of noise have been removed from the 80 meter band. Remember the time? Its 18:35 UTC or 2:35 pm local time and 80 meters is dead at that time!

Wrap up :

By now I hope that you know a lot more about RFI than when you started this article. RFI issues are frequently addressed by going after the biggest problem and then going after the next biggest one. If we assume that you really want to eliminate all of those external noise sources, then that will be where we will begin next time.

Much of this 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.

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

October is here! Time flies when you are having fun. It was a great summer.

Safety! Safety! Safety!

October got here too fast! This makes me think about replacing that iffy transmission line I was looking at this summer. Safety. I think about checking all the connections. Safety. I ask myself if all the guy connections are in good repair.

Safety. I think to myself, it is time to inspect all the hardware on all my antennas too. Hum? how are all my grounds? Safety. I have aspirations of putting up just one more antenna before the snow flies. Safety. Maybe I will do that mobile install I was thinking about. Safety. This seems like the last month to get all that antenna checking completed before the weather makes it not as inviting. Safety. How about you? Are there any outside radio tasks you need to complete before winter? Safety. Now is the time to get these things done. Safety. I don't want to be on the air this winter and have an antenna failure in the midst of a contact I need to complete my (insert your important contact here)… It will pay off to do all the inspections and repairs now. The next time the weather cooperates may not be till spring. That is a long time to be without your antenna. Yes! it is a good time to do that needed repair or replacement antenna related item. Safety. As always, please keep safety as the first thing on your mind when it comes to your radio endeavors.

In our area, there is at least one more hamfest to get something you need or just want since you did your prewinter inspections.

Safety, safety, safety.

photos from Yahoo images

Radio Sport

- October 2015 Contest -

School Club Roundup October 19-23

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

EME - 50 to 1296 MHz Oct 31-Nov 1

Objective: To work as many amateur stations as possible via the earth-moon-earth path on any authorized amateur frequency above 50 MHz.

Three full weekend 48-hour periods (0000 UTC on Saturday through 2359 UTC Sunday).

Radio Sport

The 2015 PA QSO Party is October 10 and 11, 2015

A new Plaque for Out - of -State Ops who operate in-State Mobile or Rover in the Party.

The CarpetBagger Award

For the Out of Stater in either class with the highest score in their PAQSO Party effort.

2015 Bonus Station

The KQX Group will be doing a MM effort from Wyoming County using the Callsign W3C. More details will be forthcoming, and you can check on them on their Facebook page search for their URL there under "The KQX Group"

For more information go to: http://www.nittany-arc.net/PAQSO.html

Last year we had at least 7 or 8 club members who participated and six actually submitted logs. (2014 scores below – note that Al WA3GFM and Rob N3OJL both worked all 67 counties)

Beaver Valley Amateur Radio Assoc. (BVARA 2014)

Call	CW	SSB	QSOS	Counties	Sections	SCORE	Class	Location
W3SGJ		568	568	65	40	62,040	1	HOME
N3OJL		316	316	67	27	33,220	1	HOME
N3AZZ		259	259	60	32	26,428	1	HOME
K3GTX		184	184	60	19	16,536	1	HOME
K3VYY	3	134	137	64	10	11,160	1	HOME
WA3GFM		89	89	67	2	7,541	1	HOME
Total Entries 6	3	1550				Club Total 156,925		

Some Interesting Links

PVC Antenna Launcher http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=31250

DIY 10 Meter Loop http://www.amateurradio.bz/10_meter_loop_antenna.html

DIY Feed Point Connector http://www.amateurradio.bz/feedpoint.html

Ham Radio Classified Ads http://swap.qth.com/

How to Become a Ham https://www.qrz.com/page/ham-radio-howto.html

Amateur Radio Newsline Report http://www.arnewsline.org/

The RAIN Report http://www.therainreport.com/index.shtml

Media Network Vintage Vault http://jonathanmarks.libsyn.com/

Dr. Tamitha Skov Space Weather for Radio Amateurs http://spaceweather.tv/category/amateur-radio-resources/

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.