

DELAWARE LEHIGH AMATEUR RADIO CLUB Inc.
APRIL 2015



W3OK

CORRAL

**Club Meeting April 2nd, 7:30PM At the
Bethlehem Township Community Center**



“Setting Up A Contest Station”

Dave / NB3R

APRIL MEETING PROGRAM

“Digital Communications”

Ken / KB3MDT



MINUTES FROM THE MARCH MEETING

A general membership meeting of the Delaware-Lehigh Amateur Radio Club Inc. (the Club) was held on March 12, 2015, at the Bethlehem Township Community Center located in Bethlehem Township, Pennsylvania.

Call to Order: Jay / N3OW-President, called the meeting to order at 1933 hrs.

Pledge of Allegiance: Led by Jay / N3OW

Member Happenings: Dave / NB3R reported that he and Jon / NJ3I participated in the CQ World Wide WPX RTTY contest in the Multi-Multi and probably have the record. Bill / W0RSK related that he encountered an ice problem with his antenna during January VH contest. Jay / N3OW scored 2.8 million points in the ARRL DX contest.

Approval of the Minutes: Larry / AB3TY asked if there were any additions or corrections to the minutes as they appeared in the last newsletter. None were noted. Jay / N3OW asked for a motion to approve the minutes of the last meeting.

Motion: It was moved by Evelyn / W3DOY, second by Dave / NB3R. **Motion carried.**

Treasurer's Report: Mike / KB3LOD presented the Treasurer's Report for January. Jay / N3OW asked for a motion to accept the report as read.

Motion: It was moved by Bob / KB3ULG, second by Terry / KB3VFB, **Motion carried.**

Membership Report: George / N3SQD announced Steve Levine / KC3CXV with his wife Josie who is in the Tech education class, and Jack O'Connell / KB3HDJ. Jay / N3OW asked for a motion to accept the applicants.

Motion: It was moved by Mark / W2MB, second by Doreen / K3PDL. **Motion carried.**

Education Classes: Bob / KE3AW reported that the Tech and General classes began on 3-10 and will continue for another eight weeks. Both classes are well attended.

Member Dues: Jay / N3OW stressed that those members not being marked as paid at the conclusion of the March meeting will no longer be considered members, will have to re-apply and be voted back in.

CallFire: Jay / N3OW announced that the CallFire system will again be in use after the March meeting with the update of the membership roster.

Club Repeater: Mark / W2MB expressed concern that there was an issue with some of the receiver sites he encountered while contacting Doreen / K3PDL. Al / W3CE noted that the area where Doreen was, Northampton St. in Easton, is a weak coverage area. Other members said that no issues were reported on the Wednesday net.

Website Report: No issues were reported.

Club Station: Dave / NB3R reported the station was working with no problems and is open Wednesday and Saturday mornings.

Club Trip: Doreen / K3PDL announced the trip to the Mt. Holly weather station is scheduled for one o'clock, Saturday May 16. Only one opening remains out of a total of twenty. A standby list is being developed. Doreen said that she was still taking ideas for next year's meetings.

Education Request: Al / W3CE reported that he had received a phone call from a teacher at the Hazleton Institute of Technology, a STEM high school (Science, Technology, Engineering and Math) concerning a high altitude balloon launch. Al noted that the Club has the balloon envelopes and the equipment for the APRS link and would provide the same with a joint venture. This teacher has to gain his board's approval. This event would take place in mid May.

Visitors: Aamire Gaskins

Club Certificates: Jay / N3OW announced that the Club's Public Service Certificate and the ARRL Certificate for the PA QSO Party were available for viewing.

QSO Corner: Pete / NL7EM showed a QSO card from October 1923 belonging to Loren Windom / W8GZ. Mr. Windom was the inventor of the Windom antenna.

Adjournment: There being no further business before the Club, Jay / N3OW adjourned the meeting at 1950 hrs.

Respectfully submitted by Larry / AB3TY, Secretary

APRIL CONTESTING AT THE OK CORRAL

April 4 & 5 – SP DX Contest
-- Mississippi QSO Party

April 11 & 12 – JI DX CW Contest
– Georgia QSO Party

April 18 & 19 – CQ Manchester Mineira Contest
– Michigan QSO Party

April 25 & 26 – SP DX RTTY Contest
– Helvetia Contest



VE TEST SESSION

There will not be a test session this month. The next session will be on May 1st at 7 PM at the Northampton County 911 center. Pretest registration is required. Contact George / N3SQD at george@bioserv.com or Al / W3CE at w3ce@arrl.net.

NEW MEMBERS

The DLARC is continuing to grow, so be sure to greet our new members, shake their hands, and give them a warm welcome to our club. The newest members are Steve Levine / KC3CXV, Josie Levine / In Classes and Jack O'Connell / KB3HDJ..

APRIL QUICK CHECK CALENDAR

SUNDAY		TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 DLARC Net (K3PDL)	2 DL ARC MEETING 7:30 PM	3 NO VE SESSION	4
5 	6 QCWA Net 8:30 PM	7 D-Star Mid – Atlantic 7:30 PM	8 DLARC Net (KB3WYJ)	9	10	11
12	13 QCWA Net 8:30 PM	14 D-Star Mid – Atlantic 7:30 PM	15 DLARC Net (KC3AHT)	16 DLARC BOARD MEETING	17	18
19	20 QCWA Net 8:30 PM	21 D-Star Mid – Atlantic 7:30 PM	22 DLARC Net (NB3R)	23	24	25
26	27 QCWA Net 8:30 PM	28 D-Star Mid – Atlantic 7:30 PM	29 DLARC Net (W3CE)	30		

MONTHLY BRAIN TEASER

"A special prize awaits the first Club Member to submit the correct answer to this month's Brainteaser to the Pete / NL7XM, *only*, at nl7xm@arrl.net The winner must be present at the next Meeting to receive it, or it goes unrewarded. Officers, Board members, Newsletter staff, and Brain Teaser Authors are not eligible to win."

de Pete / NL7XM

MARCH BRAINTEASER ANSWER

$$1 + 2 - 3 + 4 \quad 5 + 6 - 7 + 8 + 9 = 25$$

$$1 + 2 + 34 - 5 + 67 - 8 + 9 = 100$$

Winner – Bob / KA3JAV

APRIL BRAINTEASER

Martha was in a big hurry and mistakenly multiplied by 5 when she should have divided by 5.
The incorrect answer was 150. What should the correct answer have been

MARCH MEETING REPORT

The March 5 meeting was postponed due to a snowstorm. Because of this postponement Jon / NJ3I was unable to present this program. However Dave / NB3R due to his familiarity with Jon's station, was able present the program "Setting Up A Contest Station".

Using slides which included photos of Jon's station alignment, Dave presented Jon's program. Dave began with a list of the necessary elements for a good contest station, which included transceiver with good filtering, a good antenna, a computer with good software and some other hints for a good contest.

A good transceiver and antenna system is self-explanatory, but the computer is an important part of a contest station. The computer and used to control your transceiver, making it easier with less effort to do any of the operations needed at the time. Also it can be used to record your contacts, check for duplicate entries, depending upon the software track frequencies of high activity and keep a running tally of your score.

Dave also included some other items which would aid in having a successful contest weekend. He emphasized having a comfortable operating position, and proper equipment location for convenient use. Also included was thoughts on proper diet during a contest. Proper diet will aid in keeping the desire to continue in the contest. Ending with hints on how to stay sharp over the normal 48-hour contest, that being catching a nap during periods of low activity.

IMPORTANT NOTICE

Please check the web page roster listing. It is important that your telephone number and email address are correct. This is the only way we can contact members. If you do not receive the newsletter in your email and are registered for the phone tree and do receive the notices by phone, your email address is incorrect on the roster, and the same for your telephone number.

FCC "PAPERLESS" AMATEUR RADIO LICENSE POLICY IN EFFECT

Starting today, February 17, the FCC no longer routinely issues paper license documents to Amateur Radio applicants and licensees. The Commission maintains that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS), although the FCC had routinely continued to print and mail hard copy licenses until this week.

In mid-December, the FCC adopted final procedures to provide access to official electronic authorizations, as it had proposed in WT Docket 14-161 as part of its "process reform" initiatives. Under the new procedures, licensees will access their current official authorization ("Active" status only) via the ULS License Manager. The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one. Licensees will also be able to print out an official authorization -as well as an unofficial "reference copy" - from the ULS License Manager.

"We find this electronic process will improve efficiency by simplifying access to official authorizations in ULS, shortening the time period between grant of an application and access to the official authorization, and reducing regulatory costs," the FCC Wireless Telecommunications Bureau (WTB) said. According to the WTB, the new procedures will save at least \$304,000 a year, including staff expenses.

NONLINEAR EFFECTS ON ANTENNAS

Igor Grigorov / RK3ZK

TVI and RFI appeared suddenly when my transceiver worked on amateur ranges of 10-20 meters. Earlier the transceiver worked everywhere without TV and FM radio interference. I did not do anything either to the transceiver or the antennas.

For search of the cause of interference the transceiver was switched off from the outside antenna and loaded to a dummy load. No interference! The transceiver was switched on to the indoor magnetic loop. Again, no interference! Interference appeared when the transceiver was switched on to the outside antenna. An additional low-pass filter at transceiver output did not influence the level of arising interference **So, located on a roof antenna was the source of interference.** But how can the antenna create TV and FM radio interference? Why did the interference disappear some days later and the antenna worked well again?

The heart of the effect

Let's examine the things that take place if a transmitting antenna or metal objects which are placed near this antenna have parts causing the nonlinear effect. When the antenna works at transmitting mode, RF currents flow through these semi-conductor sites, and these RF currents can be significant. The antenna or metal objects placed near an antenna, that have sites keeping nonlinear conductivity through which RF currents flow, will work like a mixer or a multiplier of radio signals. In this case, radio signals emitted by a ham's transceiver, can be mixed in different combinations with radio signals from a television center or from VHF broadcast or service stations, with main buzz of 50 (60) Hz, or multiplied by each other.

The secondary signals, obtained as a result of it, with frequencies formed by different linear combinations of frequencies of original signals, can be radiated back in the ether. It will cause different electronic equipment interference at the activity of a ham transmitter. The nonlinear effect of mixing signals can appear at a power going to an antenna starting from several watts. the antenna will be needed for forming secondary signals.

If the nonlinear sites are placed on the metal objects that have resonances at the operating frequencies of a ham's transmitter, a small power going to the antenna will be enough for creating secondary signals. If the metal objects keeping the nonlinear sites have resonances on the frequencies of the secondary signals, the radiation of the secondary signals will be especially great.

The causes of sudden occurrence of the nonlinear effect

Let's examine the effects that can cause sudden occurrence of the effect of nonlinear conductivity. I think that acid rains and dust containing particles of metals can cause these effects.

Acid rains cause a strengthened corrosion of metal, and, hence, occurrence of an oxide film keeping the effect of nonlinear conductivity. Many hams observed that sometimes after rains the transceiver that worked before without interference suddenly started to create interference. The dust, containing particles of metal and suddenly brought with a strong wind, can create sites keeping the effect of nonlinear conductivity.

Metal dust covers the metal objects placed on and near the antenna, acid rains cause some chemical reactions between the metal dust and metal that this dust covers. As a result of it, after a strong wind which contains particles of the metal dust and acid rains, a transceiver starts to create TV and FM radio interference.

As a rule, suddenly created sites, keeping the effect of nonlinear conductivity, suddenly disappear. Some time after the rain and dusty storm, the sun dries up the oxidized surfaces, and (in my opinion) destroys the film of oxide formed by acid rains. The effect of nonlinear conductivity disappears, and a ham's transceiver does not create interference in its work. Dangerous nonlinear sites

The sites, keeping the effect of nonlinear conductivity, that are created for a long time, are the most dangerous, because, as a rule, they do not lose the properties under effect of the sun. The sites, keeping the effect of nonlinear conductivity, that are created for a long time, at first create weak interference. In the course of time the sites produce still stronger interference.

For example, if a drop of water gets under paint cover of an antenna, the drop can create a site keeping the effect of nonlinear conductivity. To find the site is rather difficult! Copper and brass antenna parts, and copper and brass objects placed near the antenna, which are unprotected by paint, in the course of time are oxidized. Aluminum antenna parts with scratches are also subjected to oxidation. This oxide can have the effect of nonlinear conductivity.

It was noticed by me, the sites, keeping the effect of nonlinear conductivity, which were created during long time, demand some "additional charging" so as not to lose the nonlinear effect. That is, if an antenna, that has the sites, keeping the effect of nonlinear conductivity, is not used to transfer, the sites lose the qualities. But as soon as the antenna starts to work to transfer, the sites, keeping the effect of nonlinear conductivity, restore the nonlinear qualities for a short while. Thus, external atmospheric conditions influence a little the restoration of these nonlinear qualities, work of the antenna to transfer influences much. Nonlinear qualities can be restored both in dry and rainy weather, both in heat in the summer, and in a frost in the winter.

Searching of sites keeping the effect of nonlinear conductivity

Let's examine how it is possible to find out the sites keeping the effect of nonlinear conductivity. The first method is a visual method, I used two methods for search of the sites. The first method is a visual method, the second one is a tool method.

The visual method consists of a visual inspection of the antenna design and places located near the antenna. By using this method we visually find suspicious oxidized places and suspicious pressing junctions of one metal to another. We also find metal objects located near the antenna that should have resonances within the antenna operation ranges.

After that a tool method is used. This method confirms or denies whether the visually found places can create interference, or, that is the same, they have the effect of nonlinear conductivity or not.

Nonlinear effects in resonant objects

Using the tool method we can measure resonances of metal objects that are near the antenna or used in the design of the antenna (for example, masts, guys, etc.). It is possible to find resonances with the help of a GDO. This method of measuring resonances of masts and guys with the help of a GDO is described in reference [1].

If metal objects have resonances within operational ranges of a ham's transceiver, significant RF currents can flow on surfaces of these metal objects when the transceiver works to transfer. When significant RF currents flow on surfaces of objects that have sites keeping nonlinear conductivity, these objects will work like a mixer or a multiplier of radio signals. In this case, radio signals emitted by ham's transceiver, can be in different combinations mixed with radio signals from a television center or from VHF broadcast or service stations, with main buzz of 50 (60) Hz, or multiplied by each other. My experience shows that a pressing junction of such resonance objects produces a very high level of interference. If to change the resonance frequencies of these objects, a level of the RF currents, caused by work of the antenna to transfer, will be sharply decreased. In this case the level of the interference will be considerably decreased too, or the interference will disappear entirely. It is possible very simply to change a resonance frequency of a metal mast (to shift it downwards), if at its base to install a ferrite ring from a deflection system of a TV.

Unfortunately, when the ferrite ring was installed, a resonance on a range of 15-M appeared at the mast. TV interference appeared too. For elimination of this resonance I used a magnetic tape from an old videocassette. When I wound the center of the mast with the tape, my GDO did not fix any resonance on amateur ranges. By means of an old magnetic tape from old videocassettes it is possible to eliminate easily parasitic resonances of masts and guys on high-frequency amateur ranges of 15-6 meters

There is one more way of eliminating parasitic resonances of metal objects. It consists in painting these objects in graphite paint. This way, and also manufacturing of the graphite or coal paint, is described in reference [1]. It is the most effective way of struggle against this phenomenon.

Direct detection of sites keeping the effect of nonlinear conductivity

When the parasitic resonances of metal objects placed near the antenna are eliminated, start a further search of the places creating interference. For that a transceiver is turned on to a small RF power, when the effect of nonlinear conductivity begins only to appear in the antenna system and objects placed near the antenna. Try to find places where the interference are formed by an indicator of interference.

Indicator of interference

It is possible to use either a portable TV-set or a hand-held receiver working on a wide range of frequencies as an indicator of interference. A TV - set quickly and reliably helps to find a place where interference are formed and shows the influence of TV interference. It is very simple to find interference with the help of a broadband receiver. The receiver hisses and rattles and receives imaginary stations near the places keeping the effect of nonlinear conductivity.

I prefer to use a broadband receiver for finding places keeping the effect of nonlinear conductivity. A hand – held receiver has smaller sizes than a portable TV, but a receiver, as well as a portable TV, allows quickly to find interference and places where the interference are formed. For example, for a long time I have used a broadband radio receiver "Tecsun-R1012" for finding interference. This receiver works at MW, SW (5-22 MHz), VHF- FM (60-110 MHz) and VHF – TV (1 - 12 TV channels). This receiver allows to search for the interference on a wide range of frequencies.

Finding the interference

Smoothly moving a TV set or a receiver around an antenna, try to find places where the level of interference is maximum (see Fig. 1). Try to find the interference near the already visually found oxidized sites, places of pressing junctions of metals, near metal parts that have parasitic resonances. Usually in this case the pattern of interference is very spread. It is clear, combination frequencies are created on small nonlinear segments, where there are conditions for their appearance, and they are radiated through sizable parts - guys, metal enclosure of a roof, antenna, etc. However, the maximum of intensity of interference will be near the places where they are created. After that proceed with searching of the exact places where interference are formed.

Localization of the interference

To determine the placement of a site keeping the effect of nonlinear conductivity the suspicious place is irradiated by RF energy.

Figure 1 Search of sites keeping the effect of nonlinear conductivity

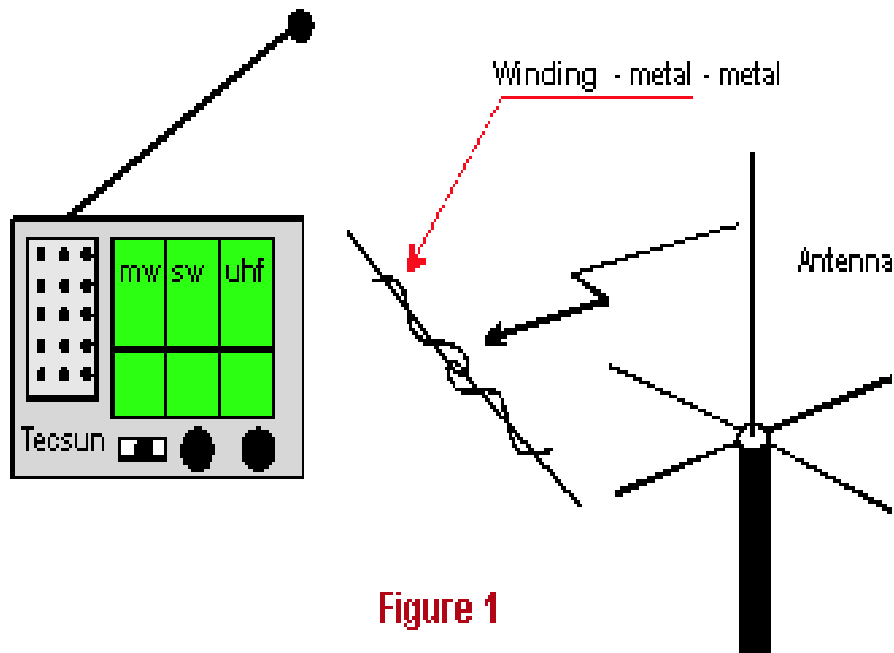


Figure 1

An RF Lantern is used for this purpose. The design of the RF Lantern is simple.
RF Lantern

A dummy load that is connected to the end of the feeder going from a ham's transceiver can serve as a RF Lantern. The dummy load must be unshielded. 10- 40 watt going to the dummy load will be enough for the RF Lantern to work. It is possible to use an incandescent bulb that has a resistance equal to the wave resistance of the feeder and a proper power as a dummy load.

A dummy load has a small field of radiation at immediate proximity near it. It allows to irradiate a suspicious site placed near the dummy load and check the site to keeping the effect of nonlinear conductivity. **Fig. 2** shows the method. A TV set or a radio receiver should be near that place where occurrence of nonlinear effect is supposed to be.

Figure 2 Localization of a suspicious place

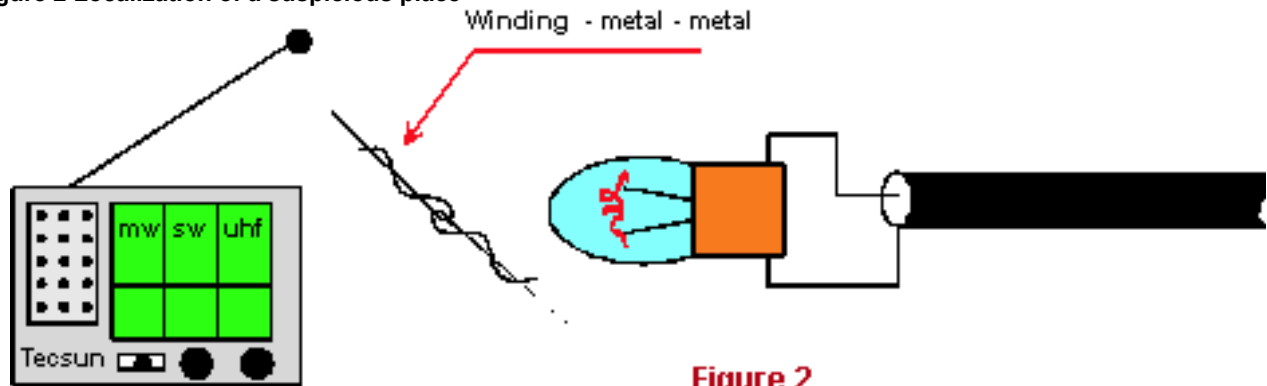


Figure 2

"Shining" by the radio field of the RF Lantern the suspicious places, such as the oxidized surfaces of metals and pressing junctions of metals, it is possible very precisely to define whether interference are created there. The coaxial cable that feed the RF Lantern should provide free moving around the places that are suspected of keeping the effect of nonlinear conductivity. RF Lantern on the base of an incandescent bulb is especially convenient to search for such places. In this case, "shining" a suspicious place by the light of the bulb, we check this place on the creation of secondary frequencies.

When the places keeping the effect of nonlinear conductivity are found, start to eliminate the effect of nonlinear conductivity. Ways of liquidating nonlinear effects depend on the reasons for their occurrence. Let's examine the ways of eliminating interference arising at a place of pressing junction of metals.

Touching metals

The effect of nonlinear conductivity arising at places of pressing junctions of metal, for example, at places of winding of metal guys or at a touch of a metal guy to a metal mast, could be eliminated by isolating metals from each other. Metal guys are broken by insulators, a touching place of a metal guy to a metal mast is broken by an insulator plate or tape.

However, in some cases it is not possible to eliminate the touch of metals to an antenna mast or an antenna guy. Some samples of antenna metal masts have designed pressure junctions of metals among themselves. That is why the elimination of these pressing junctions of metals will entail alteration of the mast.

For elimination of the effect of nonlinear conductivity arising at places of pressing junctions of metals that are impossible to break by insulators, use food foil or graphite paint. For this wrap up this place in a food foil or paint it in graphite or coal paint.

Graphite paint

The universal way of eliminating the effect of nonlinear conductivity consists in covering the places keeping the nonlinear effect with graphite or coal paint. The way of manufacturing graphite or coal paint is described in reference [1]. It is possible to rub the places with graphite or coal if a ham has no graphite or coal paint. What is the effect of rubbing metal objects or parts of these objects, keeping the effect of nonlinear conductivity, with graphite or coal paint?

Firstly, by covering metal objects or parts of these objects with graphite paint we will essentially reduce Q- factor of these objects on high frequencies that results in significant decrease of a level of high-frequency currents which are induced at work of a closely located transmitting antenna. Elimination of resonances in the field of frequencies of work of the transmitter considerably will lower the efficiency to create secondary frequencies. Elimination of resonances in the field of the secondary frequencies, produced at places keeping the effect of nonlinear conductivity, will lower the efficiency to radiate the interference.

Secondly, the layer of graphite, located atop of a site keeping the effect of nonlinear conductivity, provides additional absorption of a high-frequency energy in a wide spectrum of radio frequencies. The graphite layer provides absorption of the signal radiated by the ham's transmitter, affecting the site keeping the effect of nonlinear conductivity and being the reason for creating secondary frequencies. The same graphite layer provides additional absorption of the secondary frequencies created on sites keeping the effect of nonlinear conductivity. It will considerably reduce an overall performance of the sites keeping the effect of nonlinear conductivity to create secondary frequencies.

Thirdly, the layer of graphite located atop of a film of oxide or atop of pressing junctions of metals creates an equalized effect of an RF- potential on the surface where this graphite layer is allocated. It considerably lowers an overall performance of sites keeping the effect of nonlinear conductivity as a mixer of radio signals.

Thirdly, the layer of graphite located atop of a film of oxide or atop of pressing junctions of metals creates an equalized effect of an RF- potential on the surface where this graphite layer is allocated. It considerably lowers an overall performance of sites keeping the effect of nonlinear conductivity as a mixer of radio signals. It was repeatedly noticed by me that painting of pressing junctions of metals or oxidized places of metals usually reduces to full elimination nonlinear effects arising on these sites.

Panoramic Spectrum Analyzer in search of nonlinear sites

If a ham has a possibility to use a **Panoramic Spectrum Analyzer**, he is capable not only of finding interference, radiated from the sites keeping the effect of nonlinear conductivity, but also in defining parameters of the interference. Hence, it will be possible to assume what equipment will be affected by the interference. A Panoramic Spectrum Analyzer allows to see the effect of painting in graphite paint the places, where there are nonlinear phenomena or to see the effect from separation pressing junctions of metals from each other.

A source of nonlinear effects can be most unexpected. In one of my cases, a bay of a bimetallic wire (copper cover above iron wire) placed on a roof near my transmitting antenna caused TV interference. After the bay was removed to the other side of the roof, the interference were stopped.

I wish successes in struggle against nonlinear effects!

Reference:

Grigorov I.N.: Antennas: Adjustment and Tuning. Moscow, RadioSoft, 2002, ISBN: 5- 93037-087-7 (in Russian)

RETARDED GRANDPARENTS

(this was actually reported by a teacher) After Christmas, a teacher asked her young pupils how they spent their holiday away from school.

One child wrote the following:

We always used to spend the holidays with Grandma and Grandpa. They used to live in a big brick house but Grandpa got retarded and they moved to Batemans Bay where everyone lives in nice little houses, and so they don't have to mow the grass anymore! They ride around on their bicycles and scooters and wear name tags because they don't know who they are anymore. They go to a building called a wreck center, but they must have got it fixed because it is all okay now. They do exercises there, but they don't do them very well. There is a swimming pool too, but they all jump up and down in it with hats on. At their gate, there is a doll house with a little old man sitting in it. He watches all day so nobody can escape. Sometimes they sneak out, and go cruising in their golf carts! Nobody there cooks, they just eat out. And, they eat the same thing every night --- early birds. Some of the people can't get out past the man in the doll house. The ones who do get out, bring food back to the wrecked center for pot luck. My Grandma says that Grandpa worked all his life to earn his retardment and says I should work hard so I can be retarded someday too. When I earn my retardment, I want to be the man in the doll house. Then I will let people out, so they can visit their grandchildren.

HARDLINE FOR SALE

For ham radio: Prodelin 7/8" 50 ohm coaxial transmission hardline. Over six thousand feet. Are you building an antenna farm? DXing or active on UHF? Great for serious low loss feed-lines to yagis. I ran it at my DX and contest station to all antennas, including 160 meters through 70 centimeters. Impervious to wet weather and rodents' teeth! Very tough. It has solid aluminum center conductor, coated with copper. Shield is corrugated aluminum covered by vinyl jacket. Insulation is solid. It can be rolled into 8 foot diameter coils. \$2.00 per foot or best offer. Compare that to fragile soft RG-8, RG-213, and 9913 coax with greater loss and susceptible to rodents' teeth. Because it is balky, I recommend that you pick it up with a truck or trailer. Packing, handling, and shipping would be extra. I have local ham truckers willing to deliver for a price. Also custom machined connectors, from Prodelin hardline to N connectors, for sale to buyers of the hardline, \$40.00 apiece. Buy one to use as model for your local machine shop to make more. I have several cut lengths about 450 feet and 300 feet, ready to go with connectors. Call Bill Goodman, CPA, K3ANS, for details; telephones office 610-770-9236 extension 1010, home 610-258-5063, and cell 484-241-6176. Easton, PA

Bill / K3ANS

ARRL WARNS EXPERIMENTAL LICENSE TO AVOID INTERFERENCE TO HF HAM ACTIVITY

The ARRL has asked a Massachusetts company that plans to conduct experimental transmissions over wide portions of the HF spectrum either to avoid Amateur Radio allocations or to announce the times and frequencies of their transmissions in advance. The FCC last fall granted MITRE Corporation of Bedford, Massachusetts, a 2-year Part 5 Experimental License, WH2XCI, to operate 21 transmitters at 10 fixed New York and Massachusetts sites. MITRE plans to test wideband HF communication techniques on a variety of bands between 2.5 MHz and 16 MHz.

It will not be possible for MITRE to operate these transmitters within the Amateur Radio Service allocations...without causing harmful interference to a large number of Amateur Radio operators on an ongoing basis," ARRL Chief Counsel Chris Imlay, W3KD, said in a February 12 letter to MITRE.

Imlay said that if MITRE does not agree to avoid ham radio bands or to announce times and frequencies of transmissions ahead of time, it will ask the FCC to rescind the company's Experimental License or to impose a prior notification requirement "in real time for each and every use of the transmitters authorized at each site."

The WH2XCI Experimental License authorizes maximum bandwidths of 5 kHz, 500 kHz, and 1 MHz at effective radiated power levels of 6 W, 24 W, or 122 W. MITRE has indicated that most bandwidths would be between 100 and 300 kHz.

"At these power levels with the operating parameters proposed, it will be impossible to conduct your tests at any time within the Amateur Radio allocations and, at the same time, avoid harmful interference," Imlay said. He noted that MITRE already conceded this point in a technical exhibit submitted to the FCC with respect to its 1 MHz bandwidth mode.

Imlay said that when interference from MITRE's wide-bandwidth transmitters "inevitably occurs in the narrow-bandwidth, sensitive receivers" hams use, amateur licensees will have no way to determine the source of the interference or know to whom they might complain. "Thus, your assurance of operation on a 'non-interference basis' is meaningless under the circumstances, and yet that is both a special condition of operation" of the WH2XCI license and under FCC Part 5 regulations, Imlay told MITRE.

"It is ARRL's intention to ensure that this experimental authorization, improvidently granted to the extent that it includes heavily used Amateur Radio allocations, is not permitted to cause interference to ongoing Amateur Radio HF communications," Imlay concluded.

MITRE obtained the Experimental License to investigate high data rate wideband HF communication systems that exploit polarization diversity multiple input, multiple output concepts to expand the bandwidth of the communication channel.

ARRL SEEKS MEMBER INPUT ON DRAFT HF BAND PLAN PROPOSALS

The ARRL is asking members to comment by April 19 on possible changes to the League's HF Band Plans suggested by the HF Band Planning Committee. The survey is part of the committee's efforts to tweak the band plans for the RTTY/data/CW portions of 80 through 10 meters - excepting 60 meters. The committee developed its suggested revisions to the voluntary band plans after reviewing some 400 member comments in response to a March 2014 solicitation that sought suggestions for using the spectrum more efficiently so that data modes may coexist compatibly.

"The committee concluded that most of the concerns voiced by members could be addressed by modest adjustments to the existing band plans, and mainly by confining data modes with bandwidths greater than 500 Hz to the FCC-designated segments for automatically controlled digital stations (ACDS) and to parts of the RTTY/data sub-bands above those segments," ARRL CEO David Sumner, K1ZZ said. His article detailing the committee's suggestions will appear in the April edition of QST.

The proposed changes differentiate among ACDS, narrow RTTY/data modes having a bandwidth no greater than 500 Hz, and wider data modes having a bandwidth up to 2700 Hz.

Band by Band Draft Recommendations

The committee suggests several modifications to the 80 meter band plan. FCC action in 2006 reduced the 80 meter RTTY/data sub band to 100 kHz and limited access to the 3600-3700 kHz segment to Amateur Extra class licensees. "Unless and until the FCC Rules are modified, changes in the band plan for 3500-3600 kHz will not improve the situation," Sumner said.

The HF Band Planning Committee recommends that the League petition the FCC to move the boundary between the 80 meter RTTY/data band and the 75 meter phone/image band from 3600 to 3650 kHz and restoring that segment to General and Advanced class licensees. Members are asked to comment on this proposal, as well as on whether or not the ARRL should petition the FCC for these other changes:

* Shift the ACDS band segment from 3585-3600 to 3600-3615 kHz, consistent with the IARU Region 1 and 2 band plans.

* Extend the current Novice/Technician CW segment of 3525-3600 kHz to 3650 kHz.

* Add 80 meter RTTY/data privileges for Novices and Technicians.

On 40 meters, the committee concluded that it would be unrealistic to try to bring the ARRL band plan into alignment with the rest of the world, particularly with Regions 1 and 3 where operating patterns developed when the entire band, including phone, was just 100 kHz wide and is still only 200 kHz. While 7040 kHz is a recognized RTTY/data DX frequency in the band plan, the best place for other RTTY/data activity in the US is above 7070 kHz.

The committee proposes aligning the band plan with the "Considerate Operator's Frequency Guide," with wide data modes - outside of ACDS - at 7115-7125 kHz. The "Guide" shows 7070-7125 kHz for RTTY/data, while the ARRL band plan shows 7080-7125 kHz. The FCC mandates that ACDS be confined to the 7100-7105 kHz segment.

On 30 meters, the committee recommends confining wide data modes to 10.140-10.150 MHz, separated from other RTTY/data at 10.130-10.140 MHz.

On 20 meters, the committee recommends using the 1 kHz IARU/NCDXF beacon network frequency (14.0995-14.1005 MHz) as a line in the sand between wide ACDS in the 14.1005-14.112 MHz segment, and narrow ACDS in the 14.095-14.0995 MHz segment.

The committee recommends 14.070-14.095 MHz for RTTY and narrow band data, noting that so-called "weak-signal" data modes often are used between 14.070 and 14.078 MHz.

On 17 meters, the committee recommends confining wide data modes to the FCC-mandated ACDS segment of 18.105-18.110 MHz, separated from narrow RTTY/data at 18.100-18.105 MHz. FCC rules do not permit RTTY/data above 18.110 MHz, limiting options for this band.

On 15 meters, the committee recommends that 21.070-21.090 MHz for narrow RTTY/data modes, the FCC-mandated ACDS segment of 21.090-21.100 MHz for both narrow and wide automatically controlled data station activity, and above 21.100 MHz for any additional wide data activity. The ARRL Board also wants members to comment on the desirability of adding RTTY/data privileges for Novices and Technicians in their existing 15 meter segment, where they're now limited to CW.

On 12 meters, the committee recommends confining wide data to the FCC-mandated ACDS segment, 24.925-24.930 MHz, separated from narrow RTTY/data operation at 24.920-24.925 MHz. FCC rules do not permit RTTY/data operation above 24.930 MHz, limiting options for this band.

On 10 meters, the committee recommends that wide data be confined to the FCC-mandated ACDS segment, 28.120-28.189 MHz, separated from narrow RTTY/data modes at 28.070-28.120 MHz.

How to Comment

The League has set up a web page to record members' preferences and comments at <http://www.arrl.org/bandplan>. Those wishing to offer more detailed comments may e-mail ARRL at bandplan@arrl.org. The comment deadline is April 19. The HF Band Planning Committee will deliver its final report at the ARRL Board of Directors' July meeting.

RETIREMENT PLAN

About 2 years ago my wife and I were on a cruise through the western Mediterranean aboard a Princess ship. At dinner we noticed an elderly lady sitting alone along the rail of the grand stairway in the main dining room. I also noticed that all the staff, ships officers, waiters, busboys, etc., all seemed very familiar with this lady. I asked our waiter who the lady was, expecting to be told she owned the line, but he said he only knew that she had been on board for the last four cruises, back to back.

As we left the dining room one evening I caught her eye and stopped to say hello. We chatted and I said, "I understand you've been on this ship for the last four cruises." She replied, "Yes, that's true." I stated, "I don't understand" and she replied, without a pause, "It's cheaper than a nursing home."

So, there will be no nursing home in my future. When I get old and feeble, I am going to get on a Princess Cruise Ship. The average cost for a nursing home is \$200 per day. I have checked on reservations at Princess and I can get a long term discount and senior discount price of \$135 per day. That leaves \$65 a day for:

1. Gratuities which will only be \$10 per day.
2. I will have as many as 10 meals a day if I can waddle to the restaurant, or I can have room service (which means I can have breakfast in bed every day of the week).
3. Princess has as many as three swimming pools, a workout room, free washers and dryers, and shows every night.
4. They have free toothpaste and razors, and free soap and shampoo.
5. They will even treat you like a customer, not a patient. An extra \$5 worth of tips will have the entire staff scrambling to help you.
6. I will get to meet new people every 7 or 14 days.
7. T.V. broken? Light bulb need changing? Need to have the mattress replaced? No Problem! They will fix everything and apologize for your inconvenience.
8. Clean sheets and towels every day, and you don't even have to ask for them.
9. If you fall in the nursing home and break a hip you are on Medicare; if you fall and break a hip on the Princess ship they will upgrade you to a suite for the rest of your life.

Now hold on for the best! Do you want to see South America, the Panama Canal, Tahiti, Australia, New Zealand, Asia, or name where you want to go? Princess will have a ship ready to go. So don't look for me in a nursing home, just call shore to ship.

P.S. And don't forget, when you die, they just dump you over the side at no charge.

F.Y.I.

The May Program will be "Old Transmissions & Voices From The Past" – John / K2TQN

The D.L.A.R.C. meets the "FIRST" Thursday of each month. Membership, friends and interested persons meet at the Bethlehem Township Community Center, 2900 Farmersville Road, Bethlehem, Pa. 18020) at 7:30 PM. Committee reports and announcements of all present and future activities will be presented at that time. Followed by that month's program.

ARES, RACES AND DLARC NET

All Radio Amateurs are welcome to participate in the ARES, RACES and DLARC net. This net meets Wednesday at 1900 hours local time, on the W3OK Repeater 51.76, 146.70 and 444.90 (pl 151.4). With an alternate frequency of 147.370 (DCS 315) W3OI Repeater.

The EASTERN PENNSYLVANIA District 2 ARES Net meets every Wednesday at 1930 hours local time. (Just after the DLARC Net) On 147.255 (pl 162.2). And linked to 449.375 on Blue Mountain, 443.350 in Allentown and 147.180 in Berks County.

QCWA Chapter 17 holds a net Monday evenings at 8:30 PM on 3960 +/- depending on conditions.

Mid-Atlantic D-Star Net meets each Tuesday at 7:30 PM. The following repeaters Dstar repeaters are available in the Lehigh Valley. W3OK -145.11000MHz -0.600 Port C – W3OI -147.16500MHz +0.600 Port C, – W3OI - 445.02500MHz -5.000 Port B All repeaters on the net are linked through **Reflector 020 port A**, so all stations checking into the net should make sure that they have *their local repeater call sign followed by the letter "G" in the eight position of the RPT2 field*. Otherwise, you will only be heard locally and not over the Reflector. Dongle users wishing to check into the net should Log On by connecting directly to Reflector 20, port A, rather than through your local repeater in order to conserve local bandwidth.

The OK Corral is an organization publication for the purpose of informing members of the D.L.A.R.C. of educational and training opportunities, club events, relevant news articles and a monthly calendar of daily activities, meetings and dates.

The Clubhouse telephone number is 484-895-7038.

EXECUTIVE COMMITTEE 2014– 2015 OFFICERS

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PHONE NUMBERS FOR THE EXECUTIVE COMMITTEE OF THE DLARC CAN BE FOUND ON THE WEBSITE / MEMBERSHIP LISTING CLUB MEETINGS

All regular meetings of the D.L.A.R.C. Are held on the first Thursday of each month at 7:30 PM at the Bethlehem Township Community Center
TALK IN ON 146.700 (PL 151.4)

THE W3OK TRUSTEE --- Barry Vogt / N3NVA

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