

The OVH ARC Newsletter  
"OLE VIRGINIA HAMS" AMATEUR RADIO CLUB, INC.  
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Port 2: 440.925Mhz 9600 Baud backbone / N3OH (SYSOP--BILL)  
<http://www.w4ovh.net>

# OLE VIRGINIA TIMES

## April 2008

### Next Meeting: April 21, 2008

#### PRESIDENT'S LETTER:

Greetings to all, hope your Spring is in full bloom as is ours.

My focus as president continues to be on OVH's upcoming 2008 Manassas Hamfest which this year will be on the second Sunday in June (06/08/2008) rather than on the first Sunday as in past years. We have had lots of interest and vendor inquiries about the Hamfest on its new date. Butch/W4HJL and Bob/K4HJF attended the Timonium Hamfest at the end of March and made contact with several more prospective vendors; most vendors contacted so far have been very positive, but some have been non-committal. We will have additional covered areas available this year [in case of rainy weather] and are expecting a very good vendor and attendee turn out on the new date which no longer conflicts with the Rochester hamfest date. We should be grateful that the OVH is not needing to confront problems like those experienced by the Shelby, North Carolina hamfest [<http://shelbyhamfest.com/>].

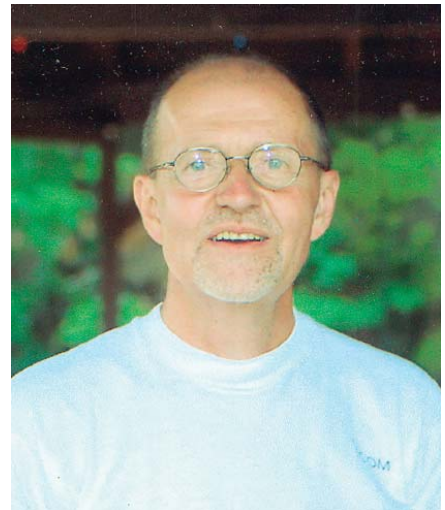
A lot of other events are coming up rapidly. The Armed Forces Crossband Tests will be on Saturday (5/10) this year which is a week before the actual Armed Forces Day this year which occurs during the Dayton Hamvention which will be Friday (5/16) through Sunday (5/18) this year. I expect a number of OVH members will be going to Dayton Hamfest as in past years.

Shortly after the Manassas Hamfest, we will be having another major OVH event - the 2008 ARRL Field Day on Saturday (6/28) and Sunday (6/29). John/KG4NXT is coordinating all arrangements for that and he has already had W4OVH listed on the ARRL web site 2008 Field Day Station Locator web page at the Nokesville Park which has been secured again. The coordinates at the ARRL's FD Station Locator web page puts a crosshairs on the roof of the pavilion from which we will be operating in the satellite image view.

OVH member Chris/KI4POT is participating in the local two day, long distance cycling event for MS and is looking for supporters. Contact Chris directly for more information.

Hope to see everyone at the meeting, 7:30 pm, Monday, April 21st at NOVEC Technical Center in Gainesville.

73 for now — George / K4GVT



# Ole Virginia Hams Amateur Radio Club, Inc.

Post Office Box 1255  
Manassas, Virginia 20108

## OFFICERS

President:	George Tarnovsky	K4GVT	791-5956
Vice Pres:	Wayne Kline	AG4ZZ	791-2100
Secretary:	Wayne Phillips	N7QLK	393-8447
Treasurer:	Joe Dobes	KI4OHR	369-2639

## DIRECTORS

Don (Butch) Blasdell	W4HJL	369-2877
Art Whittum	W1CRO	791-4330
Charlie Dale	WA4YGI	361-3091

## WEEKLY NETS

Thursdays - 8:00 PM	JOHN H	257-3566
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## HAMFEST 2008

Chris	KI4POT	361-3257
Bruce	AB8CI	361-8873

## FIELD DAY 2008

John H.	KG4NXT	257-3566
Butch.	W4HJL	369-2877

## CLUB ROSTER

Blaine	KB4RKL	369-2877
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## EDUCATION

Mark	WA4KFZ	818-8033
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## CLUB EMERGENCY COORDINATOR

David Meola	KI4AZX	393-6681
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## ARES AREA EMERGENCY COORDINATOR

David Lane	KG4GIY	361-3042
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## F.A.R. REPS.

Ruth	KU4WH	331-1234
Mary Lu	KB4EFP	369-2877

## FINANCE

Mary Lu	KB4EFP	369-2877
Joe	KI4OHR	369-2639
Ruth	KU4WH	331-1234

## GENERATORS

Steve	N4OGR	361-0008
Keith	KM4AA	909-1512
Al	KB4BHB	368-4794

## HISTORIAN

Theresa	KG4TVM	257-3566
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## WEBMASTER — W4OVH.NET

Bill	N3OH	590-9562
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## JOTA

John H.	KG4NXT	257-3566
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## LEGAL

Pete	KB4RME	369-2436
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## MEMBERSHIP CHAIRMAN

Joe Dobes	KI4OHR	369-2639
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## NEWSLETTER

Paul	W4ZB	754-0910
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## NEWSLINE

John H.	KG4NXT	257-3566
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## PACKET

Alan	KD4KBX	330-8844
Bill	N3OH	590-9562

## PROGRAMS

TBA

## PUBLICITY

Trisha Wells	KI4PCM	335-1096
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## QUARTERMASTER

Steve	N4OGR	361-0008
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## REPEATER CONTROLLERS

Art	W1CRO	791-4330
Butch	W4HJL	369-2877
Milt	N4SN	369-7265
Steve	N4OGR	361-0008
David	KG4GIY	361-3042
George	K4GVT	791-5956
Alan	KD4KBX	330-8844

## W4OVH / W4PVA — TRUSTEE

Art	W1CRO	791-4330
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## SCHOLARSHIP

Jim	W4JTP	392-0150
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## SUNSHINE

Theresa	KG4TVM	257-3556
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## TECHNICAL COMMITTEE

Art	W1CRO	791-4330
Alan	KD4KBX	330-8844
Bill	N3OH	590-9562
Butch	W4HJL	369-2877
George	K4GVT	791-5956
Karl	W4KRL	802-1527
David	KG4GIY	361-3042
Bob	K4HJF	335-1939

All telephone numbers listed above are for Area Code 703 unless otherwise noted.

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The OVH ARC meets at 7:30 p.m. local time every third Monday of the month at the NOVEC Tech Center, 5399 Wellington Branch Road, Gainesville, Virginia 20155. Members, prospective members and all other interested persons are invited to attend. Local information can also always be obtained through the OVH's FM repeaters on 146.97 & 224.660 Mhz. Up to date information about OVH activities and meetings is also available on the OVH web site at <http://www.w4ovh.net>.

Articles and quotations in the OVH Times newsletter may be reprinted if credit is given to the OVH ARC and any other noted source. Proposed materials for publication including pictures, articles, letters to the editor, classified ads, notes about specific errors, complaints or the like are solicited from all readers. Forward such items to the OVH Times Newsletter Editor: PAUL@W4ZB.COM as soon as available at any time, but the cutoff deadline for the OVH Times each month (usually the second Monday of the month) may preclude publication/correction until the following month.

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## Sunshine Corner:

April Birthdays – Paul / N2PJ, Paul / N4PD, Joe / KI4OHR, Chris / KU4FT, David / KI4AZX, Paul / W4ZB and Brian WC4J. Hope you all have a great day!

Congrats to Wayne AG4ZZ for running his first OVH meeting in March as Vice President; sorry I missed it, but I heard you did a great job!

Congratulations are also due to Karl / W4KRL who gave a presentation to the IEEE/ASME National Capital Land Transportation Committee on March 20th in Washington, D.C.

The TriNow Mini Tri was held on Sunday, March 30th at the Freedom Center with David / KI4AZX as the chairman and also the net control; I attended too and it was great to see so many OVH club members show up to help. It was a terrific event and I think the only problem was one broken bicycle chain! Thanks for chairing this event David, and I hope everybody else that was there has thawed out!

Congrats to Brian / WC4J for receiving his certificate (3rd Place in Virginia) in the CQWW WPX SSB 2007 Contest.

OVH Club support is needed for Chris Allen /KI4POT who will be riding his bicycle 140 miles to raise money for MS. To help, donate online at <http://www.nationalmssociety.org/goto/allencb>.

Elizabeth / KG4NXV has been inducted into the Kappa Kappa Gamma fraternity.

Hamfest and Field Day are coming up fast in June, but there are several opportunities to help out via Ham Radio in April and May: April 5th – the MS Walk in Manassas; April 26th & 27th – 24 hour Endurance Marathon event in Prince William County Forest Park; and May 1st– the MS 150 Bike Race, & MMT 100. Contact David / KG4GIY at [kg4giy@verizon.net](mailto:kg4giy@verizon.net) for more information or to volunteer.

I'm now a Grandmom for the 2nd time! My daughter, Amy, and her husband, Tom, are the proud parents of Hannah born on April 1st in Martinsburg, West Virginia.

Don't forget to send me your news, good or bad so we know what is going on with our members, especially about students about to graduate, email [kg4tvm@hotmail.com](mailto:kg4tvm@hotmail.com) or call 257-3566.

73 Theresa/KG4TVM

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## Minutes of the Ole Virginia Hams Amateur Radio Club Meeting March 17, 2008:

Vice President, Wayne / AG4ZZ called meeting to order at 19:38 ET. (George / K4GVT was out of town.)

Following the Pledge of Allegiance, all present stated their names and callsigns. There were 23 OVH members present.

### BUSINESS MEETING

The minutes of the February 2008 meeting were approved.

Treasury report: Balance is in good standing. Report approved.

### COMMITTEE REPORTS

Membership: Joe / KI4OHR - No new member applications. The membership package needs to be updated.

ARES: Dave / KG4GIY - Check out [http:// pwcares.org](http://pwcares.org) for upcoming training events. Tomorrow (March 18th) – is tornado awareness day - activate / test alarm systems. The MS Walk will be at the Harris Pavilion in Old Town on April 5th. The 24 Hour Endurance Marathon in the Prince William Forest Park will be on April 26th - 27th of April; a preliminary meeting will be held at the Prince William Forest Park, Visitor's Center at 3:00 pm on April 5th. Contact Brian / WC4J for more details.

Volunteers are needed and requested for the George Mason Freedom Center Mini-Triathlon to be held on March 30th - contact John / KG4NXT.

Repeaters: Art / W1CRO – Art attended the T-MARC membership meeting as OVH's representative in February, 2008 at the Historic Electronics Museum near Baltimore, Maryland. Visit the Mid-Atlantic FM & Repeater Council website at <http://tmarc.org> to see the minutes of that meeting and to learn more about coordination of 6 meter, 2 meter and 440 Mhz repeater frequency pairs in this area and throughout the mid-Atlantic region.

W4OVH Repeater Courtesy Tones: the W4OVH 2 meter repeater uses several different courtesy tones. "N" during net operations, "M" preceding the meetings, a triple tone during normal daylight hours and a "bumblebee" tone from 23:00 – 06:00 local time. The 220 Mhz repeater courtesy tone starts low and goes high, the 440 Mhz repeater courtesy tone starts high and goes low.

Training: Mark / WA4KFZ – The General Class license course began March 8th at the Manassas Red Cross starting with five students; one has dropped. Brian / WC4J has his proposed Technician Class license course on hold.

Scholarships: Letters have been prepared and sent out to guidance counselors; a scholarship of \$500 will be awarded to a deserving recipient.

Hamfest: Chris / KI4POT - Planning activities are moving along full speed. Keith Johnson at the Fairgrounds is the point of contact for tables. Vendor KJI from New Jersey will be attending. Additional volunteers to help with security on Saturday night are needed - contact Brian / WC4J. George / K4GVT is continuing to work on additional commercial vendors. Lists of other volunteers for Saturday set up, Sunday afternoon take down and for tasks during the Hamfest itself are still being prepared. Everyone is needed and expected to help out!

Field Day: John / KG4NXT - plans are ongoing; those planning to bring radios, let him know the specifics. Wayne / N7QLK will bring an HF rig for GOTA work. Need coaches, station operators, invite visitors, and plan bring any youngsters who might be interested, especially those under age 18. It was proposed that letters go out across the county for inviting elected officials.

Sunshine: Theresa / KG4TVM - no report.

W4OVH Web Site: Bill / N3OH – the <http://w4ovh.net> website and all of its pages are working well except when there are local power outages.

## OLD BUSINESS

Winner of the Direct TV drawing on 29 February 2008 was John / KG4NXT. The Club netted \$267.

## NEW BUSINESS

Club meeting for the Board of Directors and Officers will be held at Butch's / W4HJL's QTH on March 27th at 19:30 ET.

The attendance at the Vienna Winterfest in February was much improved over last year.

Brian / WC4J): The 24 hour endurance event in Prince William County Forest Park will be held

on April 26th – 27th. The NCS will be in the cabin. Operators are needed for three other sites which will need manning; contact Brian directly if you are able to assist.

Dave / KG4GIY – The filters at the W4OVH email reflector hosted by QTH.NET have been tightened somewhat due to increasing spam attacks; Google Groups which, unlike QTH.NET, allows html and file attachments, is now being considered as a possible replacement option for the QTH.NET email reflector. It was unanimously approved that a move be made to Google Groups if / when potential new issues relating to Google Groups can be satisfactorily resolved. It was also suggested that the membership packet [when revised] for new members include the option for new members to be added automatically to the OVH email reflector mailing list.

50/50 for \$13: Winner was Butch/W4HJL who donated all back to the Club.

Mystery box generated \$8.00. Bill/WA4FIC was the winner.

Meeting adjourned at 20:45 ET.

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## Reminders about some upcoming events / calendar dates:

### OPERATING EVENTS:

May 10, 2008, Armed Forces Day Crossband Test. This is being scheduled a week early this year in order not to conflict with the Dayton Hamvention. It is always an excellent opportunity to work military stations operation outside of the HF ham bands. The final schedules and frequencies for the military stations have not yet been posted. Check <http://www.arrl.org> for more information and also <http://www.netcom.army.mil/MARS> for the final schedules.

June 28 - 29, 2008, OVH Annual Field Day event at the Nokesville Park. Be sure to mark this on your calendar; it is always a major OVH event and will be so again this year. ARRL 2008 Field Rules and early info is online through <http://www.arrl.org/news/stories/2008/02/08/101/?nc=1>. John/KG4NXT is chairman. Check out <http://www.arrl.org/contests/announcements/fd/locator.php> and be sure to look at a zoomed in, close up satellite aerial view of the W4OVH Field Day location near Nokesville, Virginia. More information will be posted at <http://w4ovh.net>.

### UPCOMING HAMFESTS

May 16 - 18, 2008. Dayton Hamvention, Dayton Ohio. This is the biggest hamfest in the world and everyone should go to it at least a few times. Go to <http://hamvention.org> for more info. Check with other OVH members for possible rides to / from Dayton, Ohio.

June 8, 2008. OVH Manassas Hamfest, Prince William County Fairgrounds, 10624 Dumfries Road, Manassas, Virginia. More information at <http://w4ovh.net> and at the upcoming OVH meetings. Volunteers and helpers are needed, contact Chris/KI4POT or Bruce/AB8CI.

### UP-TO-DATE INFO ABOUT OTHER CONTESTS / OPERATING EVENTS

WA7BNM maintains an excellent Contest Calendar website at <http://www.hornucopia.com/contestcal/>. The ARRL's operating events / contest calendar web page is at <http://www.arrl.org/contests/> This includes a link to ARRL's Special Event activities listings at <http://www.arrl.org/contests/spev.html>

“Mystery” operator in the picture at the bottom of page 7 of the March 2008 OVH Newsletter

All respondents had the correct answer: the mystery operator is Art / W1CRO who still can be identified from the picture which was taken 51 years ago while Art was operating the HF club station at the North Quincy High School near Boston, Massachusetts. The receiver is a Hallicrafters S-38 and the transmitter is a homebrew design of that era.

OVH assisted Prince William County ARES in providing communications during the 20th Annual MS Walk in Manassas, Virginia - April 5, 2008 ( using Packet Radio links and FM Voice )



The starting pavilion before the MS walk started.



The Finish Line at the Loy E. Harris Pavilion.



Prince William County ARES Incident Command Center, L to R: Trish/KI4PCM, David/KG4GIY, Craig/WA3UFY, Darala/WB4USA, Brian/WC4J and Ron/AE4RD.



PWC ARES Incident Command Center, L to R: Trish/KI4PCM, David/KG4GIY and Bob/KC4TNC. Not shown: Zack/K4RSU and Art/W1CRO.

## Remotely Control Your Station Over An Internet Computer Link

The ARRL recently published a detailed, up to date, hands-on, how to do article by WA2EHI about how to set up a remotely controlled PSK31 system: <http://www.arrl.org/news/features/2008/03/28/10033/> WA2EHI's approach which uses the Skype Internet system for the audio connections is easily extended to SSB or other voice modes. Inexpensive remote control software allowing one computer to control another via a direct wire or telephone modem connection or over an Internet connection has long been available and much of the commercial equipment made since the 1980s has allowed at least partial remote control over at least an RS-232 port. This excellent web site article shows you how to do it. Highly recommended reading!

# It Seems to Us: Imaginary Numbers

By David Sumner, K1ZZ

Just as generations of bankers have known that it's a bad idea to lend money to people who can't pay it back, generations of electrical engineers have known that -- unless you want it to radiate -- it's a bad idea to put radio frequency energy on an unshielded, unbalanced conductor. Financial experts will

be arguing for years about whether the federal government inadvertently contributed to the subprime mortgage crisis and whether

it should have acted earlier to head off a credit meltdown, but at least the government wasn't blatantly cheerleading on behalf of unsound lending practices.

Unfortunately, the same cannot be said with respect to BPL. On the basis of wagonloads of wishful thinking and precious little else, the current Administration -- through the Commerce Department's National Telecommunications and Information Administration (NTIA), the Federal Communications Commission (FCC) and even the Federal Energy Regulatory Commission -- has devoted considerable effort to touting BPL as the "third wire" that would bring affordable broadband into American homes. Despite the rhetoric, it hasn't happened. According to the latest FCC figures -- which come from reports that service providers are required to file -- fewer than 5,000 broadband customers received service via BPL as of December 31, 2006.

Everyone makes mistakes. If today the Administration simply admitted that BPL has not lived up to its expectations and announced a shift in focus to other, more promising broadband technologies, we would be the first to applaud. An opportunity to do so came on January 31 with the release of the NTIA report *Networked Nation: Broadband in America 2007*. This report sets out to demonstrate that Administration policy has contributed to substantial achievement of the vision of universal, affordable access to broadband.

The report's Executive Summary notes that according to FCC data, the total number of fiber and power line connections grew by 789 percent over a three-year period but then states, "Fiber optic lines, however, appear to be

almost entirely responsible for this expansion." So much for BPL, one might think. However, the term "BPL" is mentioned 45 times in the 60-page report. While the report acknowledges that "BPL has yet to make significant inroads in the broadband marketplace," it goes

on to claim that "it holds promise for the future."

A couple of sentences later, a description of the Manassas, Virginia BPL system is given -- but you have to read the

endnotes to learn that the May 2006 article from which the description is taken was entitled "Powerline Promises Broken on Broadband." The NTIA report chose not to dwell on the fact that the article painted a dismal picture of BPL's future. (Speaking of Manassas, the BPL provider there recently announced that it has cut its office hours to just two hours per day.)

The inspiration for this month's title, "Imaginary Numbers," is the following quotation from the NTIA's report:

Reliable BPL subscribership figures are difficult to find. The FCC's most recent data identify fewer than 5,000 BPL customers as of yearend 2006. That figure appears low, however. TIA [The Telecommunications Industry Association] estimates 200,000 current BPL subscribers...

Five years of experience in dealing with BPL systems as a radio interference source has given the ARRL considerable insight into the BPL industry. Based on that experience the FCC's figure of fewer than 5,000 BPL customers is entirely credible, so we were curious where the "estimate" of 200,000 current BPL subscribers came from.

We contacted TIA and learned that the figure came from a market study prepared by a telecommunications research consultant, based on research conducted by a second firm. We contacted the second firm and asked how the figure was derived. They responded: "The 200,000 number for BPL subs did not come from [us]. In our US broadband forecast, we estimate about 231,000 broadband subscribers in the 'other' category besides DSL, cable, satellite. Other includes BPL, but is not solely BPL."

We then contacted the consultant. They responded,

Continued on next page

“Our source for the BPL figures was [the second firm].” When that firm’s denial was shared with them they responded, “It was our understanding that BPL was the principal component as it was the first item listed.”

In other words, the figure of 200,000 -- a figure cited by NTIA because they regarded the FCC figure as too low -- came out of thin air. We immediately called this to the attention of the Acting Administrator of the NTIA and requested a correction. Two weeks later there has been no response.

Our quarrel is not with TIA, which was invited to comment but declined to do so. Their telecommunications market study was comprehensive and mentioned BPL only in passing; surely they neither intended nor expected that it would be cited as an authoritative source of BPL data. The fault we find is with the NTIA, for giving credibility to this fictitious figure. The NTIA compounded its error

by citing yet another “forecast” of 400,000 BPL customers by the end of 2007 -- a figure that is drawn from a year-old Web promotion for a \$3,000 “industry report.”

We would really like to know why the NTIA chose to dig around for sources of inflated BPL figures rather than to acknowledge the simple truth that the marketplace has opted for better solutions than BPL. What interest remains in BPL is largely in utility applications, not in consumer broadband service.

To be fair to the surviving BPL manufacturers, in closing we must note that they now generally acknowledge the potential severity of our interference problem and have made considerable progress in engineering their devices to avoid the amateur bands. We just wish that the Administration was as interested in addressing the interference problem as it is in cheerleading for a technology after the fans have left the stadium.

### Ham Radio Web Sites — Old RTTY Machines

Landline based teleprinters were in widespread commercial, government and military service from the early 1900s to the mid-1980s; those services became obsolete when private email networks appeared; radio link based teleprinter services (RTTY) developed rapidly in 1930s but hams were not permitted to use RTTY modes until about 1954. Up through the mid-1980s virtually every ham using RTTY had a large, electromechanical teletype machine which which he or she had obtained as surplus after it had been retired from commercial service. Software which could emulate electromechanical RTTY machines and generate and decode the audio tones needed for RTTY operation became readily available during the personal computer revolution of the 1980s and made electromechanical teletype machines obsolete. Computer based RTTY is still used in ham radio, but now almost exclusively in a very popular contesting niche; the much superior, computer based PSK31 modes developed in the late 1990s have replaced RTTY operation for casual ham QSOs.

Few hams still have electromechanical teletype machines and even fewer still use them. If you’ve never seen or heard an old electromechanical RTTY machines in operation, go to the web site of the North America Data Communications Museum in San Diego [ <http://nadcomm.com/> ] and take a look at the video (with sound). This quite authentic, except that you can’t smell the warm oil which was needed to keep those machines lubricated while running. Additional images of old RTTY machines can be found at <http://www.rtty.com/TTYSTORY/ttsindex.htm>.

**Karl/W4KRL  
driving a  
steam  
locomotive  
in Poland:**



In September, OVH member Karl/W4KRL ran steam locomotives in scheduled service out of Wolsztyn, Poland and traveled in central Europe to survey other rail transportation systems, all relating to his business. Last month he made a presentation to the IEEE/ASME National Capital Land Transportation Committee about his trip. Go to <http://www.ieee.org/dc-ltc> to find Karl’s March Powerpoint presentation and many more trip photographs.

Karl reports he “forgot” to take a HT or portable HF rig with him so, unfortunately, he has no report on local ham activities in the places he visited. Amateur Extra Class licensees have automatic reciprocal operating privileges in the CEPT countries he visited.



## More Notes About Lightning Protection / Detection / Surveillance

In his president's letter last month George/K4GVT remarked about a recent lightning strike incident at his QTH and the need for good grounds and lightning protection for antennas, lead in wires and cables. This is a very important subject. Even though the likelihood of having a nearby, problem causing, lightning strike or being directly struck by lightning may seem quite improbable, the consequences can be disastrous or deadly. Not making an effort to understand the problem and not paying careful attention to means to mitigate the risks is tantamount to playing Russian roulette. Fortunately, lots of helpful resources are readily available, no one needs to read all of the materials suggested below but a better technical understanding is usually better and the resources listed below are worth consulting to learn more.

First, the ARRL provides an excellent Lightning Protection web page with links to downloadable PDF versions of prior QST articles and other resources at <http://www.arrl.org/tis/info/lightning.html>. This site is highly recommended for practical, hands-on information which is immediately usable.

Second, the ARRL's Technical Information Service (TIS) Database Search Engine lists hundreds of pertinent references which may be located using the following search terms: Lightning, Electromagnetic Pulse (EMP) and Grounding. All of these references are either to QST Magazine, published monthly since 1915, or to Ham Radio Magazine, which was published monthly from 1968 - 1990 and concentrated on providing technically related but practical articles. All of the back references are now available on CD.

Third, DOD publishes many Technical Manuals, some very extensive, which address various aspects of Lightning Protection, Grounding, Bonding and closely related topics. Most of those can be located by Internet Google search and downloaded in PDF format for free. The following specific Technical Manuals (and others too) provide lots of good reading material on these subjects: MIL-Handbook 419A (Grounding, Bonding and Shielding for Electronic Equipment and Facilities), TM 5-811-3 (Electrical Design, Lightning and Static Electricity Protection), TM 5-690 (Grounding and Bonding in C4ISR Facilities), TM 5-811-7 (Electrical Design, Cathodic Protection), TM 5-684 (Facilities Engineering - Electrical Exterior Engineering), TM 5-683 (Facilities Engineering - Electrical Interior Engineering) and MIL-Handbook-1004-6 (Lightning Protection). The DOD materials usually are very practically oriented, and only infrequently require math knowledge beyond basic algebra.

Fourth, the National Lightning Detection Network [ <http://thunderstorm.vaisala.com/explorer.html> ] relies upon a variety of sensors and detection systems to provide nearly real time data about actual lightning strike locations throughout the USA. Of course, the risk of lightning is usually related to local weather conditions and is also provided in local weather forecasts.

Fifth, take a look at <http://members.home.nl/fkooiman/lightning/> for detailed information about making a "homebrew" lightning detection system. Such systems appear to be popular in Europe and have been linked together via the Internet. See <http://www.blitzortung.org/> which, despite its name [ blitzortung = lightning location ] provides its information in English.

## Still More Web Sites Of Note!

Mobile Ham Radio - installation and operation - info about almost everything is at <http://k0bg.com>  
Technical Info and Resources — <http://www.prc68.com/> This site by Brooke Clarke N6GCE has a wealth of technical information with a build it / make it yourself / homebrewer orientation.

The Computer History Museum in Silicon Valley — <http://www.computerhistory.org>. Also check out: <http://www.youtube.com/watch?v=z6zeq-dD5dI> for one of many professionally produced videos on youtube.com by this group. You'll want to visit this place on your next trip to Northern California!