



## K3VX Pres for '08

Well, here goes my first President's column!

I have several things planned for WASH in the coming year. The first is to have a program or presentation at each meeting. Bob, AB3ED, has volunteered to organize the speakers, videos, etc. The proposed list of topics is in this edition of the WASHRag on Page 6. Please comment to Bob or me about those topics or alternatives you'd rather see/hear. A lot will depend on volunteer presenters. Some will come from WASH, others from clubs where WASH members have give programs. There's also a large catalog of videos on technical topics, DXpeditions, etc.

The second is to involve more members in operating activities. Those with operating experience have to mentor newcomers to "contesting". Our annual 2 Meter Simplex Contest (more a funfest) needs more member stations on the air. Modestly equipped home stations and mobiles can have lots of fun in this one.

Randy N3ZK is the new Field Day chairman. Get involved with planning, equipping, setup, and operating. He can't do it alone.

Can someone take charge of Simulated Emergency Tests? This means planning, organizing and calling out the troops. We may have to respond to real emergencies. Are we ready?

Third, I need someone to organize club participation in the VHF, Mid-Atlantic and Pennsylvania QSO Parties.

Lastly is the formation of "Geek Squads". Got an antenna problem you can't solve? RF in the shack? Networking (my favorite problem area)? Logging Software? QSLing?

The experts in WASH can help only if you know who to ask.

Have a wonderful holiday season!

— 73, Larry Comden K3VX, President 2008  
Wireless Association of South Hills, Inc.  
N3SH / WA3SH / NP2SH/B



### Where Do I Begin?

Final Words...

Not really much more to say than I said last month, but I would like to begin by thanking all of you for the opportunity you gave me this year to be your President.



Overall, we had a good year.

I had a lot of fun and I look forward to 2008!

I only hope that we have more time to do more things that we didn't get to do this year because of everything that we all were involved with.

Larry K3VX will be your fearless leader for 2008. I look forward to working with him!

Until next time...

Thank you for a good year, and until next time...

— 73, Randy George N3ZK, President  
Wireless Association of South Hills, Inc.  
N3SH / WA3SH / NP2SH/b

### Inside this issue:

WASH Club News	3
FCC Admonishes Ambient	5
Proposed 2008 Agenda	6
WASHFest Announcement	7
WPA Field Day Results	8
WASH 2M Simplex Contest	12
DX News Briefs	12
WASH Classified Ads	13



### Next Meeting: December 13<sup>th</sup>, 2007

The next monthly meeting of the WIRELESS ASSOCIATION OF SOUTH HILLS, INC. will be Thursday, December 13<sup>th</sup>, at the Peters Township Library, 616 East McMurray Road, McMurray, starting at 7:00 PM.

Randy's last meeting as President, the 2 Meter Simplex Contest and WASHFest 2008 will be amongst the topics of the evening.

Talk-in on the 146.955(-) N3RNX/R and 443.650(+) N3FB/R Repeaters (131.8 PL). All members, guests and interested parties invited!

# Scenes from a Meeting Night

Photos Courtesy of and ©Copyright 2007 Paul Lusardi NØVLR



## WASH 2008 OFFICERS

### EXECUTIVE COMMITTEE:

President Larry Comden K3VX  
 VP / Secretary Frank Bobro N3FB  
 VP / Treasurer Mark Stabryla N3RDV

### AND WE COULDN'T DO IT WITHOUT:

N3SH / WA3SH Trustee	Steve Lane W3SRL
NP2SH Trustee	Paul Jordan NP2JF
N3SH / WA3SH / NP2SH QSL Manager	Ed Oelschlager N3ZNI
VE Team Liaison	Jacqué Gosselin N3ZEL
Webmaster	Randy George N3ZK
Quartermaster	Harold Rosenberger K3HCR
WASH FM Net Manager	Kevin Smith N3HKQ
WASHFest 2008 Committee	Kevin Smith N3HKQ, Chairman
	Carol Danko KB3GMN
	Bill Hill W3WH
	Kevin Smith N3HKQ
Activities & Operating Events	Larry Comden K3VX
Ways & Means	Carol Danko KB3GMN
Field Day 2008 Coordinator	Randy George N3ZK

### CLUB-AFFILIATED REPEATERS, BEACONS, & DIGIPEATERS:

Mt. Lebanon	N3RNK / R	146.955 MHz (-)	PL 131.8
Mt. Lebanon	W3SRL / R	442.550 MHz (+)	PL 131.8
Canonsburg	N3FB / R	443.650 MHz (+)	PL 131.8
St. Johns, VI	NP2SH / B	28.276 MHz	Propagation Beacon
Canonsburg	N3SH	144.390 MHz	APRS Digipeater

N3SH / WA3SH WASHNet, the weekly on-air net of WASH, meets every Sunday Night, 9:00 PM ET, on the 146.955 & 443.650 repeaters. All radio amateurs, WASH members or not, are welcome to join in!

## THE LEGAL STUFF

"The WASHRag™" (formerly "The Mariner™") is the Official Newsletter of the WIRELESS ASSOCIATION OF SOUTH HILLS, INC. (WASH)

Published Monthly with occasional Special Editions as warranted.

This issue is © Copyright 2007 by the WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

Editor & Publisher: Ron Notarius W3WN

Permission is granted to other Amateur Radio publications to reprint articles in this issue, provided the original author and "The WASHRag™" are given credit. Comments, articles, and requests for copies of or information about "The WASHRag™" should be mailed to the editor:

Ron Notarius W3WN  
 3395 Rosewood Drive  
 Castle Shannon, PA 15234-2546

e-mail: [newsletter at n3sh dot org](mailto:newsletter@n3sh.org) or [w3wn at arri dot net](mailto:w3wn@arri.net)

"The WASHRag", "The Mariner", SHARCfest, South Hills Hamfest, WASHfest, WASHfest 2006, N3SH Net, WA3SH Net and WASHNet are™ trademarks of the WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

The WIRELESS ASSOCIATION OF SOUTH HILLS, INC. was founded on August 23<sup>rd</sup>, 1993, as the original SOUTH HILLS AMATEUR RADIO CLUB, and operated under that name through 1998. WASH was also known briefly in late 1998 as the N3SH AMATEUR RADIO CLUB. It is not in any way affiliated with the "South Hills Amateur Radio Club, Inc." and is not responsible for that group, it's members, or it's actions in any way, shape, or form.

As always, special thanks to the owners of both the N3RNK/R Repeater System and the N3FB/R Repeater System for permitting the WIRELESS ASSOCIATION OF SOUTH HILLS, INC. and it's members to use their repeaters for club purposes. Special thanks also to Glen Roberts KE7FD of The Internet Guild for his assistance in providing space on-line for our website for back issues of "The WASHRag™" which can be found at [www.washrag.info](http://www.washrag.info)

# WASH Amateur Radio Club News Briefs

## Next WASH VE Test January 17<sup>th</sup>

The Next WASH VE exam sessions will be Thursday, January 17<sup>th</sup>, 2008, 6:30 PM, at the **Peters Township Library**, 616 East McMurray Road, McMurray, PA. Talk-in on the 146.955 MHz and 443.650 MHz repeaters. All examiners are ARRL VEC affiliated.

Walk-ins are always welcome, but if you plan on attending the test session, please contact VE Team Liason Jacqué Gosselin N3ZEL:

Telephone (724) 746-9235 or E-Mail: [n3zel@fyi.net](mailto:n3zel@fyi.net)

Please bring the following to your test session:

- Picture ID or other suitable identification (2 forms of ID required)
- Pen / Pencil / Calculator
- Original FCC license plus a copy of license (if upgrading)
- Original CSCE plus a copy of CSCE (if upgrading)
- Check or Cash in the amount of \$14.00 (payable to: ARRL VEC)

Future test dates: Thursday, April 17<sup>th</sup>, 2008  
 Thursday, July 17<sup>th</sup>, 2008  
 Thursday, October 16<sup>th</sup>, 2008  
 Thursday, January 15<sup>th</sup>, 2009

## October 18<sup>th</sup> VE Test Results

We had one candidates at our October 18<sup>th</sup> VEC test session.

Terry Mealy KB3NSG passed Element 3 to become licensed as a General.

Processing was slightly delayed due to a mail delivery problem. Fortunately, the original mailing was found, though I'd faxed copies of the paperwork to the ARRL so that they could process his license! Sorry for the delay, but for whatever reason, the mail went awry.

Many thanks to our VEs who attended the session:

Bill KB3LIX, Joe WA3WMB, Susan KB3JHQ, Rich N1NCZ, Ed N3ZNI, Adam KB3OMH (an observer), and Jacqué, N3ZEL.

— 73, Jacqué Gosselin N3ZEL

## WIRELESS ASSOCIATION'S 15<sup>th</sup> Anniversary 1993 – 2008

Next year marks the 15<sup>th</sup> Anniversary for WASH. Have any favorite stories or tall tales about the early days of the club? Let us know — we hope to run some of those in future newsletters!!

A comfortable post-Thanksgiving morning greeted the **WASH Breakfast Gang** on November 24<sup>th</sup> at **The Beach House** in Finleyville. The few recovered from Turkey Day and Black Friday included AE3DL, W3WH, W3WN, N3HKQ & Peg. Topics of the day included contesting, holiday shopping, PSK & MFSK, 160 meter antennas, KD3KH SK, Pa PRB-1, housing prices, hamfests, living in Florida (\$\$\$), airlines and customer "service," global warming, solar power, fuel cells, wind power, traveling to Europe... it's a wonder sometimes that we ever get around to ordering and eating!

So why not join us for a fun morning of fellowship and pancakes? The next **WASH Breakfast** will be on Saturday, December 29<sup>th</sup>, 8:00 AM at **The Beach House**, Library Road (Route 88) n Finleyville, just south of Trax Farms. See you there!

## WASH Christmas / Holiday Party

For this year's gathering, instead of a formal or semi-formal sit down dinner, the entire Club has been invited to join Bill & Linda Hill at their home in Houston PA on Friday December 28<sup>th</sup>, starting at 7:00 PM. This will be more of a social gathering than we've done in the past, but it should also serve as a nice break between Christmas and New Year's.

Carol KB3GMN is helping Bill & Linda organize the event, and she asks that you RSVP her as soon as possible if you are planning on attending, so that we ensure that there are enough refreshments on hand! Please call Carol at (412) 884-1466.

Bill and Linda are very hopeful that their kind offer is accepted by us. "I just hope everyone will come. We need to have eyeball QSO's with each other, especially at this time of the year!"

**On the mend:** Carol KB3GMN is still undergoing some treatments (which is one of the reasons why we're not having our traditional holiday gathering this year). And Julie (Ye Editor's patient and understanding XYL... is she still looking over my shoulder?) is home recovering from some procedures as well. Keep them in your thoughts.

**The Annual Two Meter Simplex Contest** is coming up in about a month from now. Those who've participated in it in the past know what a blast this local "mini" contest can be! Complete rules are on Page 9 — no changes from last year, but please note that Ed N3ZNI is resuming his role as contest chair after a one year absence.

Now is the time to start talking up the contest on the air, and make sure our friends in other clubs are reminded that the event will be here before they know it! Don't let them miss out... and don't forget to point out the little **WASHFest** bonus they get for participating!

Boy, **this space sure runs out fast** when we have a lot to cover, doesn't it?

## WASHNet 2007/2008 NCS Schedule

- |   |                     |
|---|---------------------|
| 12/02 - Bill W3WH                       | 01/06 - Hank KB3FNM |
| 12/09 - Kevin N3HKQ                     | 01/13 - Paul NØVLR  |
| 12/16 - Harold K3HCR                    | Alternates          |
| 12/23 - Carol KB3GMN or<br>Richie N3SBF | Dave N3IDH          |
| 12/30 - Frank N3FB                      | Ron W3WN            |



Randy N3ZK and Herman N3AWF presenting the Peters Township Library with some ARRL publications on behalf of the club after our November meeting.

Photo courtesy of and ©Copyright 2007 Paul Lusardi NØVLR

**Join WASH or Renew your Membership for 2008 Today! Membership Application on Page 15**

# Minutes, November 8<sup>th</sup> Meeting

Paul Lusardi NØVLR, Acting Secretary, **WASH**

Randy, N3ZK, **called** the meeting **to order** at 19:20 hours, following pizza.

A **moment of silence** was observed for recent silent keys and other deserving persons.

A motion was made to **accept the minutes** of the October meeting as published in the October newsletter. The motion was voted on and passed.

**Committee reports:**

**Treasurer (N3RDV):** Read and accepted.

**Secretary (N3FB):** No report.

**VE Report (N3ZEL):** Next VE Session in January.

**Website (N3ZK):** It is up and running .

**Repeaters (N3RNX, W3SRL & N3FB):** All functioning

**FM Net Report (N3HKQ):** Net schedule is working well. Hank KB3FNM will be reducing his participation.

**Ways and Means (KB3GMN):** 50/50 after the meeting.

**Public Service (N3IDH):** No report.

**Contests (K3VX):** K3VX will be traveling to Montserrat and will be QRV as VP2MVX in the CQ WW CW.

Clean sweep brooms for the Pa QSO Party presented by NØVLR to the N3ZK Venango crew.

Field Day pins available from Mark N3RDV to those who requested them after the meeting. Mark also suggested we read the Soapbox on the ARRL Web Site about the 19A Field Day station!

**Quartermaster (K3HCW):** No report.

**Newsletter (W3WN):** Newsletter is out. Bounced emails are a problem.

**President's Report (N3ZK):** No report.

**Old Business:**

**AMSAT (N3HKQ):** Again, the event was well supported, and very well received by AMSAT. Additional "thank you" plaques handed out to the deserving. Feedback on lessons learned requested to be sent to Patty Sanford.

**Elections:** N3ZK declines nomination for President. K3VX accepts. No other candidates proposed. Bill W3WH moves to close nominations and have the Secretary cast one ballot for K3VX. Ron W3WN seconds. Motion carries unanimously.

N3RDV accepts nomination for Vice President/Secretary. KB3GMN declines nomination. No other candidates proposed. Ed N3ZNI moves to close nominations and have the Secretary cast one ballot for N3RDV. Carol KB3GMN seconds. Motion carries unanimously.

**New Business:** Georgianne KB3LIV of Only Good Stuff displayed a new logo for upcoming club jacket orders. Herman N3AWF displayed some ARRL books that he was donating to the Peters Township Library on behalf of the club.

**Good of the Order:**

- Glen KE7FD will be traveling mobile from AZ to PA next month.
- We will have a regular meeting next month, with the Christmas/Holiday gathering to be hosted by Bill and Linda Hill at W3WH's home on December 28th.
- Larry K3VX as his first official acts appoints Bob AB3ED to schedule monthly discussions and appoints Randy N3ZK as 2007 Field Day Chairman.

Paul NØVLR and Annette NØWPV are expecting their seventh harmonic in March 2008

**Motion to Adjourn:** at 8:13 moved, seconded, voted on, and passed by acclamation.



# WASH Spotlight: KB3NVL/AG



Proud new General Michael Lusardi KB3NVL/AG holding his CSCE after the VE session at the November 2007 WACOM Hamfest. With his are his "support team" of Anthony KB3NVM, Paul NØVLR, and "Aunt Di" KB1KRJ

Photo courtesy of and © Copyright 2007 Paul Lusardi NØVLR

Every month we're going to feature a **WASH** club member, something about them, something they're involved in or a club-related activity that we're involved in, in the **WASH Spotlight**. Submissions for the Spotlight should be sent to Ron W3WN at [newsletter at n3sh dot org](mailto:newsletter@n3sh.org)

## Monthly WASH Breakfast

Please join us for the next **WASH** Breakfast! We usually get together on the LAST Saturday of every month for a chance to informally sit down, shoot the breeze, compare notes, drink lots of coffee, and just have a good time!



Join us this month at **The Beach House**, on Route 88 in Fiinleyville, just south of Trax Farms and adjacent to Mineral Beach. Start time is about 8 AM until ????? Monitor 146.955 & 443.650 for talk-in or any last minute changes.

All are welcome, **WASH** members or not, amateurs or not!

## Wireless Association of South Hills Membership

AB3ED	KB3IVX	N3FB	W3RWS	WASH IMM	Silent Keys
AB3EN	KB3KOT	N3FPF	W3SRL	KA3UPY	
AE3DL	KB3KQY	N3HKQ	W3VFA	WASH GA	
K3DMM	KB3NSG	N3IDH	W3WH	K3OL	
K3EED	KB3NVL	N3PN	W3WN	KB3IJX	K3EED (George)
(Cindy)	KB3NVM	N3QMV	W4ZE	WASH NE	
K3HCR	KB3ORR	N3RDV	W8LEV	NØPEU	KB3ENX
K3LGM	KB3PNE	N3RNX	WA3JPP	WASH NY	KB3FQT
K3SGT	KB3PSB	N3SBF	WA3RVD	KE3XB	N3FZ
K3VX	KC4WTT	N3TXH	WA4ONC	N3YPB	N3KEH
K3WJL	KE7FD	N3ZEL	WB4GCS	WASH OH	N3OBD
KA3RAO	KN3A	N3ZK	WO3Z	N8DPW	N3SKR
KA3TWI	NØVLR	N3ZNI	Heywood	WASH TX	N3SRC
KB3DCO	NØWPV	N9OKM	Eicker	K3LGM	N3XFE
KB3FNM	N2QIV	NU3S	Woody	Jane Wagner	W3ZLK
KB3GMN	N3AWF	W3BC	Eicker	WASH VI	
KB3GMP	N3BPB	W3JJC	Lee Rice	NP2JF	
KB3GMU	N3CZZ	W3LE	Jane Wagner		
KB3HFP	N3DFK	W3RJM			
KB3HVN					
KB3IAC					
KB3IRQ					
KB3IVW					

Through November 30<sup>th</sup>, 2007

List compiled by

Mark Stabryla N3RDV, Vice President/Treasurer

# FCC "Admonishes" Ambient Over BPL Issues

ARRL Web Extra courtesy of the American Radio Relay League



Newington, CT, November 14<sup>th</sup>, 2007 — The FCC, in a letter to Yehuda Cern, Chief Engineer for Ambient Corporation, concluded their investigation into whether Ambient's BPL operation caused "harmful interference" to Amateur Radio stations in Briarcliff Manor, New York. The Commission found that "Ambient's BPL operation has violated the radiated emission limits of Section 15.109" of the FCC Rules "and the terms of its experimental license, call sign WD2XEQ." The FCC's letter went on to say that "we hereby admonish Ambient." No findings were made, however, as to whether or not the system actually caused interference to Amateur Radio, and the Enforcement Bureau left open the issue of future experimental BPL operations at Briarcliff Manor.

Since Ambient's Briarcliff Manor facility is operating under an experimental license, the FCC says Ambient "is subject to the operating conditions contained on its license. Condition 4 of its license requires that Ambient file a progress report six months from the date of the grant. Additionally, Condition 5 provides that the progress report '... should include, but is not limited to, a description of measurements and results demonstrating compliance...' with the radiated emissions limits of Section 15.109."

Ambient submitted a progress report on February 5<sup>th</sup>, 2007. The report indicated that Ambient "[h]as notched out its signals on the Amateur Radio bands, demonstrating significant advancements..." but the report did not address Condition 5, according to the FCC.

## FCC Responds to Ambient

The FCC's Spectrum Enforcement Division sent letters to Ambient in March and May 2007, directing Ambient to "provide the results of any measurements made prior to the filing of its February 5, 2007 report to demonstrate compliance with the radiated emission limits of Section 15.109." The Division also directed Ambient to "submit a follow-up report confirming compliance once it had completed any necessary system modifications."

Ambient's attorneys filed responses to the FCC's March and May letters in June. Ambient's response, the FCC said, indicated that Ambient "had made compliance measurements as required by the Division." Ambient's response further stated that they had found "an older, first generation BPL unit in its network was malfunctioning, causing the device to exceed the applicable Section 15.109 emission limits," and that it "immediately took the equipment out of service." Ambient, the FCC said, "indicated that [they] would soon replace the remaining first generation equipment in its network with newer equipment."

In August, Ambient told the FCC that it has replaced all its first generation BPL equipment with second generation equipment. The FCC's letter to Ambient goes on to say that Ambient has completed and submitted results of on-site testing that demonstrates compliance with the Commission's regulations. In the time since Ambient replaced all their equipment, "neither Ambient or the [Spectrum Enforcement] Division has received complaints indicating continuing interference to Amateur operations from Ambient's BPL system," the FCC's letter said. The FCC made no findings about the interference that had been previously reported, however, nor did the Commission undertake any on-site investigation or inspection of the facility at Briarcliff Manor.

The FCC found that Ambient's BPL operation in Briarcliff Manor "has operated in violation of Section 15.109 of the Commission's Rules. Accordingly, we admonish Ambient for violating Section 15.109 of the Commission's Rules and the terms of its experimental license, call sign WD2XEQ." The FCC cautioned Ambient that any violations of future license provisions "may result in additional sanctions."

## ARRL Filed Numerous Complaints with FCC Regarding Ambient's Briarcliff Manor Operation

ARRL first filed a complaint with FCC concerning the radiated emission violations at Briarcliff Manor on October 12<sup>th</sup>, 2004. Subsequent complaints were filed on December 17<sup>th</sup>, 2004; January 7<sup>th</sup>, 2005; March 17<sup>th</sup>, 2005; January 6<sup>th</sup>, 2006; March 29<sup>th</sup>, 2006, and June 1<sup>st</sup>, 2007 each of which reported ongoing harmful interference caused by the unlawful operation of Ambient's BPL system at Briarcliff Manor. The complaints included technical reports on the result of tests conducted by ARRL staff. Each of the complaints requested that the Ambient system be required to cease operation immediately. The FCC took no action on any of these complaints, and it did not address any of them in its letter to Ambient.

Still before the Commission is the question of whether or not Ambient's experimental authorization should be renewed for a further period. Ambient has had an experimental authorization in Westchester County, NY since June of 2002. The most recent experimental authorization expired August 1<sup>st</sup>, 2007. On July 24<sup>th</sup>, Ambient filed an application to extend their authorization for an additional two-year period. ARRL filed an informal objection to that application on July 25<sup>th</sup>, arguing that Ambient should be held to the same standard as the other BPL companies which are subject to the rules governing BPL, such as inclusion of the BPL system in the public database, so that victims of BPL interference can determine the source of it.

ARRL Chief Executive Officer David Sumner, K1ZZ, said, "It is gratifying that the FCC finally has recognized that Ambient's BPL operation in Briarcliff Manor violated both the FCC rules and the terms of its experimental license, has made these violations a matter of public record and has admonished Ambient; however, this action comes three years and one month after the ARRL first brought Ambient's violations to the Commission's attention. This is hardly the speedy resolution that the Commission has promised, and to which its licensees are entitled."

ARRL General Counsel Chris Imlay, W3KD, concurred with Sumner, saying "The FCC's admonishment to Ambient was 'too little, too late' from the FCC's Enforcement Bureau. It continues the disappointing inaction that we have come to expect from FCC in addressing blatant cases of harmful interference. Must Amateur Radio operators wait more than three years for some relief after filing legitimate complaints of harmful interference? The FCC has consistently refused to even acknowledge, much less investigate, the complaints of harmful interference at Briarcliff Manor, because it wants no bad news about BPL."

"The FCC has consistently refused to even acknowledge, much less investigate, the complaints of harmful interference at Briarcliff Manor, because it wants no bad news about BPL"

ARRL  
General  
Counsel  
Chris Imlay  
W3KD

**However you choose to celebrate the season, our best wishes to you & yours for the holiday and the New Year**

# 2008 WASH Meeting Night Program Topics

& Other Significant Club Events on the 2008 Calendar — Subject to Change

January 10 <sup>th</sup>	Digital Modes	<i>To Be Announced</i>
January 12 <sup>th</sup>	WASH 2 Meter Simplex Contest	Ed Oelschlager N3ZNI, Chairman
January 17 <sup>th</sup>	WASH VE Exams	Jacqué Gosselin N3ZEL, VE Team Leader (724) 746-9235
February 14 <sup>th</sup>	DX-Peditions	<i>To Be Announced</i>
February 24 <sup>th</sup>	WASHFest 2008	Kevin Smith N3HKQ, Chairman
March 13 <sup>th</sup>	Pizza Night & Socializing	
April 10 <sup>th</sup>	Out Of Shack Operating: Mobile, Portable, Rover	<i>To Be Announced</i>
April 17 <sup>th</sup>	WASH VE Exams	Jacqué Gosselin N3ZEL, VE Team Leader (724) 746-9235
May 8 <sup>th</sup>	ARRL Section Manager & Section Leadership Talk and Q&A	John Rodgers N3MSE
May 16 <sup>th</sup> - 18 <sup>th</sup>	Dayton Hamvention	
June 1 <sup>st</sup>	Breezeshooter's Hamfest and WASH Picnic	
June 12 <sup>th</sup>	Antennas: Dipoles, Beams, Verticals, Tuners	<i>To Be Announced</i>
July 10 <sup>th</sup>	Swap & Shop: Junqué, Freebies, Good Stuff	<i>To Be Announced</i>
July 17 <sup>th</sup>	WASH VE Exams	Jacqué Gosselin N3ZEL, VE Team Leader (724) 746-9235
August 14 <sup>th</sup>	Antennas: VHF & UHF	<i>To Be Announced</i>
September 11 <sup>th</sup>	Contests: Warm-Up for the Season	<i>To Be Announced</i>
October 9 <sup>th</sup>	Hi-Tech: APRS, ARF, SDR, EchoLink, D-Star	<i>To Be Announced</i>
October 11 <sup>th</sup> & 12 <sup>th</sup>	51 <sup>st</sup> Annual, 2008 Pennsylvania QSO Party	
October 16 <sup>th</sup>	WASH VE Exams	Jacqué Gosselin N3ZEL, VE Team Leader (724) 746-9235
November 13 <sup>th</sup>	Emergency Communications	<i>To Be Announced</i>
December 11 <sup>th</sup>	Boat Anchors & Antique Radios	<i>To Be Announced</i>

Now in our *THIRTEENTH* big year!



# WASHfest 2008

*The South Hills Hamfest*

*Sponsored by the Wireless Association of South Hills Amateur Radio Club, Inc.*

Sunday, February 24<sup>th</sup>, 2008

8:00 AM until 3:00 PM Rain or Shine (or Snow!)

Castle Shannon VFD Memorial Hall

3600 Library Road (State Route 88), Castle Shannon, PA

Talk-In on 146.955(-) and 443.650(+) 131.8 PL



**(800) 545-8881**

Breakfast & Lunch provided  
by *JACK'S CATERING*  
of Peters Township

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

## MAIN PRIZES — *You've Got to play to WIN!*



- 1<sup>st</sup> Prize: Kenwood TS-480SAT
- 2<sup>nd</sup> Prize: Kenwood TH-D7A
- 3<sup>rd</sup> Prize: SGC SG-239 HF Smarttuner

### **Additional Hourly Door Prizes!**

**Main Prize tickets are \$2.00 each, or 3 for \$5.00**

**All Prizes Subject to last-minute changes**

For reservations, or information, Contact:

Kevin Smith N3HKQ at (724) 228-4153 or Bill Hill W3WH at (724) 746-1776

E-mail us directly at [washarc@yahoo.com](mailto:washarc@yahoo.com) Check out our website too! [www.n3sh.org](http://www.n3sh.org)

Hamfest Table Reservation Form—Please PRINT LEGIBLY ALL INFORMATION

Name: \_\_\_\_\_ Email: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: (     ) \_\_\_\_\_ - \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Call Sign: \_\_\_\_\_

Tables WITH Electricity: \_\_\_\_\_ X \$15.00 = \_\_\_\_\_

Tables WITHOUT Electricity: \_\_\_\_\_ X \$10.00 = \_\_\_\_\_

Please make all checks payable to:  
**WIRELESS ASSOCIATION OF SOUTH HILLS**  
111 Watson Drive  
Monongahela, PA 15063-1045

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

# Top of the Hill: QRV QRP

Bill Hill W3WH



After Linda and I moved to our present QTH in 1999 I decided to get interested in QRP since the 60 ft. tower and TH6DXX beam became memories. The "do more with less" school of thought appealed to me for several reasons:

1. By it's nature QRP gear and antennas tend to be simple. For me being the epitome of the non-technical ham this is very appealing.
2. I really didn't need to buy any new gear (although I did) to get involved. You can turn the Output of the typical 100w transceiver down to either 5 or 10 watts for CW or SSB respectively and your in business.
3. There are many reasonably simple kits available. I've only built one and our good friend Larry, K3VX helped me with it but now that I only work 3 days a week I hope other kits will be built soon.
4. With a 5 watt signal you're only about 2 s units down from the typical 100 watt signal. A couple years ago I worked 123 countries QRP. Of course sunspot activity was quite a bit higher then and to do that now would be tougher but not impossible. A couple of weekends ago I worked 48 States in the CW Sweepstakes missing only Alaska and Nebraska.
5. The QRP movement is extensive with lots of Clubs and even magazines devoted to pursuit of "more with less".
6. After 51 years as a licensed ham I still get a bang out of working a rare one or breaking a pile up. When that happens while you're running QRP It's even better!
7. QRP gear is small, light and therefore very portable. Even if you have operating restrictions at home you can easily take your station with you to a park or on vacation.

Coincidentally I started writing this article when SSB Sweepstakes came along. I've never really given SSB a chance especially at 10 watts PEP but I decided to try. Well after about 5 hours operating time I've got about 90 q's in 40 sections. It definitely is challenging my patience- not to mention the guy on the other end. My weak signal is tough to copy at times. My goal is to make 100 q's and I think I'll make that; maybe even before the Steeler game starts.

Well I didn't make 100 until halftime but at the end of my day I had 112 Q's in 48 sections with just under 7 hours invested in the effort. I'll take CW any day of the week but if SSB is your thing it can be done with 10 watts PEP and simple antennas.

Finally, it crossed my mind that a couple of weeks ago we hosted the AMSAT Symposium where probably the most complex aspect of our hobby was the order of the day and this weekend I participated in one of the most basic aspects of the Hobby.... And to think we call both of them Ham radio. Wow!

If simple appeals to you give QRP a try. I think you'll like it.

— 72, Bill W3WH

## ARRL Field Day — WPA Clubs

## & Non-Clubs

Call	Score	Category	QSOs	Pwr Mult	GOTA	# Part.	Club	Call	Score	Category	QSOs	Power Mult
W3CG	4638	1A	1405	2		10	Union City Wireless Assn	K3SOM	500	1B1	175	2
N3GC	358	1A	106	2		6	Greene Co ARA	KD3SB	474	1B1	187	2
W3MIE	2494	2A	562	2		11	Crawford ARS	W3RP	358	1B1	129	2
W3WPA	1552	2A	299	2	W3WC	20	North Hills AR Contest Society	KA3KSP	38	1C	19	2
K3WWA	1398	2A	404	2		25	Wattsburg Wireless Assn	KB3GDG	340	1D	120	2
K3DNA	958	2A	210	2		7	JVARC	AD8J	306	1D	73	2
W3LIF	800	2A	74	2		25	Mercer Co ARC	K3VED	220	1D	110	2
N3QC	1988	2F	419	2		18	Quad CO ARC	WA2BSG	192	1D	71	2
N3PC	758	2F	204	2		6	Headwaters ARC	W3YI	176	1D	52	2
W3YA	5689	3A	3891	1		25	Nittany ARC	WO3T	166	1D	83	2
W3CSL	3384	3A	788	2	KA3VEB	35	Monessen ARC	N3KTA	76	1D	13	2
W3ACH	1802	3A	354	2		44	Cumberland Valley ARC	W3HGT	3044	1E	1145	2
K3SMT	1436	3A	297	2		10	Somerset Co ARC	W3AG	1210	1E	96	5
K3TTK	1356	3A	328	2		13	Fort Armstrong Wireless Assn	WB0IWG	625	1E	115	5
W3YXE	1020	3A	127	2		12	Radio Amateurs of Corry					
W3KWH	1992	3E	633	2		18	Steel City ARC					
W3OC	6842	4A	1674	2		33	Two Rivers ARC					
WA3COM	4118	4A	1015	2	KC3HW	30	Washington Amateur Com					
W3GV	2862	4A	798	2		9	RA of Erie					
K3HRC	2220	4A	357	2		40	Horseshoe ARC					
KE3JP	1734	4A	517	2		13	Em Com Assn					
W3ZIC	1488	4A	306	2		15	Ft Venango Mike & Key Club					
W3BMD	906	4A	181	2	KB3JOF	62	Indiana Co ARC					
K3MJW	5652	4E	1549	2		40	Skyview Radio Society					
<b>N3SH</b>	<b>5312</b>	<b>5A</b>	<b>1430</b>	<b>2</b>		<b>60</b>	<b>Wireless Assn of South Hills</b>					
W3UDX	4760	5A	1354	2	AA3YW	21	Butler CO ARA					
AC3J	2304	5A	748	2		20	Triple A ARA					
W3TCW	1874	5A	358	2		25	TRI-County CW ARC					





# Announcing the Eighth Annual WASH 2M Contest!

This January will mark the Eighth Annual **WASH** 2 Meter Contest. We've already had a lot of interest in it, and this year promises to be even more exciting!

Remember: In response to input from our participants, and in view of the growing popularity of radios like the Ten-Tec 6N2, IC-706 & FT-100, the contest will NOT only be an FM contest but also open to SSB, and CW! (Digital? Maybe next year!)

Everyone who participated in it the last four years had a blast, and we hope to continue the tradition again this year!

There may be some additional "tweaking" of the rules between now and January, so keep an eye on this column in the next few newsletters, and we'll look forward to seeing you on the 12<sup>th</sup>!

**Date & Times:** Saturday, January 12<sup>th</sup>, 2007 from 7 to 11 PM EST.  
(That's January 13<sup>th</sup> 0000-0400 UTC to the purists!)

## Objectives:

- To make as many contacts as possible
- To have fun!

**Band, Mode & Frequencies:** The contest will take place solely on 2 meter band.

- **FM** : FM simplex only, no repeater contacts. The FM frequencies are all standard 2 Meter simplex frequencies, as per the ARRL 2 Meter Band Plan, every **15 kHz**, from **146.535 to 146.595 MHz**, and **147.520 to 147.580 MHz**. The National Simplex Frequency, 146.520 is **not** to be used. Use of simplex frequencies in the "FM Experimental Simplex" band of 145.510 to 145.670 are not recommended. See list of recommended simplex channels at the end of the rules.
- **CW**: 144.05 to 144.1 MHz Only. (See ARRL 2 Meter band plan)
- **SSB**: 144.2 to 144.275 MHz Only. (See ARRL 2 Meter band plan)

→ *Note: Listen for CW QSO's around 144.1 MHz 15 minutes after the hour*

→ *Listen for SSB QSO's around 144.2 MHz 30 minutes after the hour*

In the event of accidental QRM with nets and non-contest QSO's in progress, please respect their right to the frequency and QSY.

**Power Limit:** Maximum 50 watts output. No external amplifiers.

**Exchange** : Callsign, contact number, ZIP Code, and whether or not you are a Member of **WASH** or a Club Station.

For the purposes of the contest, the 5 Digit ZIP Code for your location is sufficient — do not use the "Zip +4" code. Mobiles and portables should use the ZIP code of their location as determined to the best of their ability. Canadian stations will use their 6 digit postal code

**Example 1:** "N3ZCG from N3 ZEL, please copy Number 3, 15347, Member."

**Example 2:** "K3VX from K3CM, please copy Number 21, 16801, Non-Member"

**Example 3:** "W3WH from W3OC, please copy Number 7, 15137, Club Station"

**Contacts** : Work as many different calls and locations as possible, giving Exchange as noted above. Work each station **once** per mode, and **once** per ZIP Code — Mobiles can be reworked whenever they change locations. Remember hilltops work best!

**Disqualification:** Remember, this is a friendly "for fun" contest. Stations may be disqualified for infractions of the rules and for unacceptable operating practices. While not an inclusive list, stations may be disqualified for:

- FM signals transmitted on simplex channels 146.52 MHz and below.
- Intentional interference to non-contesters, established nets, and QSO's
- Intentional interference to other contest operators
- The contest committee reserves the right to verify QSO's. QSO's that can not be verified may be removed from the log without penalty, especially if the committee is unable to obtain log information for verification.

**Scoring:** Each Contact, non-**WASH** Member: 1 point

**WASH** Member: 2 points

(\* Club Stations: 3 Points

Multipliers: Number of different ZIP Codes

Power: Stations running 10 watts or less: 2

Stations running over 10 watts: 1

Final Score: Total Points x Locations x Power

(\* "**Club Stations**" for the purposes of the contest are those calls assigned by the FCC or Industry Canada or equivalent to **bona-fide** Amateur Radio Clubs. For example, they include **N3SH, WA3SH, NP2SH, WA3COM, W3KWH, N3GC, W3PIE, K3CR, W3YA, K3HKK, W3YI, W3VC, W3PGH, W3EXW, K3MJW, NY3EC, W8XK, W1AW**, etc. The call **MUST** be assigned as a Club Call to be eligible. [In other words, you can't just claim to be a "club" and pick a call, or use the call of a club member; the call must be assigned as a club call]

**After the Contest:** Fill out all the log information. In the upper left corner check whether "base" or "mobile." In the upper right corner be sure to enter your callsign and club affiliation (or "none" if not a member of any club). Please number all log sheets consecutively. Log sheets can be downloaded from the **WASH** web site, [www.n3sh.org](http://www.n3sh.org), no later than January 1<sup>st</sup>.

**Submit Log Sheets:** Check your log sheets carefully for dupes. Verify that all information is entered.

Send the logs to: WASH 2 Meter Simplex Contest  
c/o Ed Oelschlager, N3ZNI  
60 Carl Avenue B2  
Eighty Four, PA 15330-2829

Enclose a SASE #10 for return of results.

Entry Deadline: February 7<sup>th</sup>, 2008

Each log submitted with SASE on or before the deadline will receive a raffle ticket to **WASHFest 2008** on February 24<sup>th</sup>

## Recommended FM Simplex Frequencies:

After the first year of the contest, we found that the limited number of frequencies suggested in the rules were insufficient for the activity level. In subsequent years, we permitted use of any recognized simplex frequency, as per the ARRL recommended guidelines published in the annual ARRL Repeater Directory and other sources, above 146.520 MHz.

You will note that many of these frequencies are listed as potential dual use, with a "local option" for them to be used for repeater inputs and outputs.

We have been notified that the Western Pennsylvania Repeater Council (WPRC) has issued their own "local" band plan for the 2 meter band, and has elected to withdraw most or all of these dual-use or optional-use frequencies in favor of their being assigned to FM repeaters, primarily those on 1 MHz splits. Although we have not heard of interference problems with any repeater (with ONE exception — the contest participant was notified of interference and immediately moved), good amateur practice requires us to take note of the situation and the potential for interference problems in some parts of Western Pennsylvania where these repeaters exist.

The following list of recommended frequencies are recognized as standard simplex channels and should not suffer from co-channel problems with any existing repeaters:

146.535 MHz	147.525 MHz
146.550 MHz	147.540 MHz
146.565 MHz	147.555 MHz
146.580 MHz	147.570 MHz
146.595 MHz	

The National Simplex Frequency, 146.520, may not be used. To avoid interference to other contestants and other users of the bands, please do not operate on 5 or 10 kHz "offsets" from these recognized FM channels.

To be clear, we have no objection to contest participants operating on additional recognized FM "optional" simplex frequencies above 146.520 MHz. Participants who do so run the risk of potential interference with repeaters sharing these frequencies, and therefore do so at their own risk. Again, as per the rules of the contest, if you operate on these frequencies and are notified of actual interference, please exercise good amateur practice and QSY.

We also recognize that the WPRC may continue to be less than happy with this stance. We point out to them that the amateur spectrum is a shared resource. And frankly, if push came to shove, the legality of their "withdrawing" of the frequencies from use by the general amateur population of WPA might be an interesting question before the FCC. (To say nothing of the fact that this change in band plan is probably something most WPA amateurs are unaware of, but that's another story).

Bottom line: Enjoy the contest, but do so responsibly.

# *Something Out There is Beeping*

©Copyright 2007 Brandon Shoemake N5JYK courtesy of [www.eham.net](http://www.eham.net)

Winter starts a little earlier above nine thousand feet in the Rocky Mountains of Colorado than it does in the flat lands of Mississippi. It was the middle of September and already snow had fallen; accumulating in shadows where the sun didn't touch. Every night seemed just a little colder, and on the north side of every tree and outcrop was a white band of snow pointing north-northwest. Each dusting snowfall would make the bands a little longer, and soon the ground under the trees would be completely white.

The summer of 1969 had been eventful for us. Hurricane Camille obliterated our home in Pass Christian in August. And it was pretty bad in Hattiesburg where we stayed during the storm too. F.B. Woodley Elementary was heavily damaged by the storm so I couldn't start school there. So, we gathered what we had left and headed for our cabin in the mountains not far from Colorado Springs.

Uncle Tommy came home from Vietnam right after we settled into our Colorado cabin. He was my favorite uncle because he always had the neatest gadgets, the coolest cars, the best knives, money from all over the world, and a large collection of stamps from places I never knew existed. He had moved into my older brother's room so now we bunked together. But since we both idolized him it didn't bother either of us.

It was about ten minutes after Dad came in and said goodnight. My brother noticed the sound first. "Hush!" he said waving his arm at me. "Do you year that?" "I hear it. What did you do?" I said in my most accusing tone. He said, "It must be something squeaking in the wind, like a limb on the slate roof." "We don't have a slate roof," I told him. He thought some more with his chin propped on his fist like a scene from *The King and I*. "Then it must be the windmill," he said confidently. "We don't have a windmill either," I said frustrated. "Besides that, it's more like beeping than squeaking," I whispered. Then the beeping got louder and sometimes would rapidly change pitch, first going up in pitch, and then a few moments later down in pitch. So we slowly opened the door and stuck our heads out into the darkened hallway.

It isn't that we weren't afraid of the dark as we most certainly were, but turning on the lights when you're supposed to be in bed is a short path to some horrid tasting medicine. Besides that, there was light coming from under Uncle Tommy's door. We crept closer. The beeping was coming from Uncle Tommy's room! My mind raced and my heart pounded. Jon looked at me with that don't make any noise look. We argued in silence with facial expressions and hand gestures for a minute or two. But I guess it wasn't silent enough because Uncle Tommy opened his door with that knowing grin of his. "Keep it quiet and you can listen for a few minutes," he said with a laugh.

I thought for sure we were listening to some super secret encoded military stuff. The radio was huge. I got so excited I forgot to breathe till Jon poked me in the ribs. Uncle Tommy would listen with his headphones covering only one ear while writing very fast. Sometimes, he would keep writing after the beeping stopped, it was all very official looking. Then he would beep back to whoever it was with this strange motorized thing that kept moving even when he wasn't touching it. I must have fallen asleep watching and listening because that's all I can remember of that night. The next morning I awoke in my own bed still excited from the night before. It must have been torture for Uncle Tommy, trying to teach a couple of hyper-active boys Morse code. But he didn't seem to mind even though we didn't learn any of it. But it sure was a lot of fun listening to Uncle Tommy beep on his big radio. For Christmas that year he gave us walkie-talkies complete with orange CW buttons and Morse code on the front. Pure heaven for this kid.

Every since then, at the beginning of cold weather, I get this uncontrollable urge to test my code skills and make some CW contacts. I'm still no good at it, but it helps me remember being six years old. Uncle Tommy always claimed he wasn't good at it either, but we both knew better.

Whenever you have the opportunity to make great memories for children, take the time to do so. Those great memories will outlive you, and it might give you something good to talk about in your old age.

## *"Stealth" Antenna Made of Gas Impervious to Jamming*

T. R. Anderson and I. Alexeff, 2007 APS Division of Plasma Physics Annual Meeting  
courtesy of Scientific Blogging Science 2.0 Web Site [www.scientificblogging.com](http://www.scientificblogging.com)

A new antenna made of **plasma** (a gas heated to the point that the electrons are ripped free of atoms and molecules) works just like conventional metal antennas, except that it vanishes when you turn it off.

That's important on the battlefield and in other applications where antennas need to be kept out of sight. In addition, unlike metal antennas, the electrical characteristics of a plasma antenna can be rapidly adjusted to counteract signal jamming attempts.

Plasma antennas behave much like solid metal antennas because electrons flow freely in the hot gas, just as they do in metal conductors. But plasmas only exist when the gasses they're made of are very hot. The moment the energy source heating a plasma antenna is shut off, the plasma turns back into a plain old (non conductive) gas.

As far as radio signals and antenna detectors go, the antenna effectively disappears when the plasma cools down.

The antenna design being presented at next week's APS Division of Plasma Physics meeting in Orlando consists of gas-filled tubes reminiscent of neon bulbs. The physicists presenting the design propose that an array of many small plasma elements could lead to a highly versatile antenna that could be reconfigured simply by turning on or off various elements.

You can read more on this at the Scientific Blogging website:

[http://www.scientificblogging.com/news\\_account/stealth\\_antenna\\_made\\_of\\_gas\\_impervious\\_to\\_jamming](http://www.scientificblogging.com/news_account/stealth_antenna_made_of_gas_impervious_to_jamming)

# 160 Meter Antennas

Nelson Moyer KUØA courtesy of the dx-news email reflector

This is long, but it illustrates that you can work 160 meter DX and probably DXCC with limited resources if you're determined enough.

An inverted L has been called "the poor man's vertical", but you may wish to consider it above a base loaded short vertical like the HF2V with 160 meter coil. Besides, if you're using the 30 meter coil on the HF2V, you are advised NOT to add the 160 meter coil (it's either or, not both).

I'm also in the mode of trying to work the first 100 with serious real estate limitations, as in a 60x70 foot back yard in town. I can't use neighbor's trees, so I fabricated T-posts out of 20 foot 2x4s with another 8 foot 2x4 bolted to the top to make the total length 26 feet. I installed three of these posts along the back fence line using the 4x4 fence posts as support (the fence is horizontal wooden slats supported by 5 foot 4x4 posts every 8 feet, and one on the side of the deck in back of the house. The back section of the fence runs East/West and the back fence is on the North side of the lot. The inverted-L is more like a distorted Z.

My tower is a Heights 48 feet free-standing aluminum tower with a TH-11 on top and the tower is located against the house in the middle of the back yard. Using the available supports, I built an inverted-L attached to the tower at 46 feet, then extended to the NW corner fence post and 26 feet, then bending East to another 26 post in the middle of the back yard. The L has an 8 foot ground rod at the feed point, but NO radials.

In addition to the TH-11 and the inverted-L, I have a HF2V for 30, 40 and 80 meters, and it's mounted on the West side of the lot parallel to the tower up against the house (about 4 feet from the house and 2 feet from the West property line. For low band receive antennas, I use a mag loop located parallel to the tower and HF2V, but on the East side of the lot. Right now the mag loop is tied to a tree pointing NE/SW with the bottom about 2 feet above the ground. I have an 80 meter dipole mounted with the balun on top of the fence in the middle of back yard and the legs extending E/W to the corners of the lot, then South.

The whole dipole is 4.5 feet above ground on top of the wooden fence. I've used a flag, strung between the 26 foot poles pointed at either the Caribbean or Europe, but I build a Waller flag this fall, and it's on a mast in the middle of the back yard almost under the inverted-L. As you may imagine, the amount of interaction when I'm running a KW is challenging to model, much less keep RF out of the shack, which is on the North side of the house in the basement about 8 feet from the HF2V and 20 feet from the tower.

Along with the Waller flag, I built two W7IUV preamps to use with the receive antennas. I haven't used preamps up until this season. My rig is an FT-100 and my amp is an Alpha 78. I live in East Central Iowa, not exactly the Mecca of low band DX'ing.

So, how does all this work on 160 meters? Well, serious DX'ers wouldn't prefer to be limited to an FT-100, but that's life. My first real radio, a K3, is ordered.

Meanwhile, I have confirmed 63 entities on 160 using this setup minus the preamps and Waller flag, in 4 low band seasons. This season, I've worked 12 new entities so far. A preamp helps a lot! If you have a decent support, use an inverted-L over a base-loaded vertical. Short verticals are OK if they are top loaded, but I couldn't do that in a 60x70 foot back yard with all the other antennas around and under it. Shunt loaded towers present lots of interaction problems with lots of wire and aluminum in close proximity, besides 48 feet is too short to shunt load on 160 and expect good results.

My inverted-L is supposed to favor the Caribbean (SE), but I'm heard in Europe and Africa. I haven't worked into Asia, but I have worked into the Pacific.

It is possible to work DX on 160 from compromise locations with compromise antennas and radios, and it should be possible to make DXCC, after all, I only need 25 more and there are still a lot of NA, SA, and EU entities that should be relatively easy for me to work, now that I'm committed to loosing some sleep to make it happen.

I don't recommend short verticals on 160, and I've shown that it is possible, and perhaps desirable to find another alternative for a 160 transmit antenna. When I make 160 meter DXCC, I may write an article about DXing from a postage stamp sized back yard.

Oh yes, I also have #1 Honor Roll from this QTH!

## Peter W. Dahl Company QRT

The Peter W. Dahl Company in El Paso, Texas, will be closing its doors as of December 31<sup>st</sup>, 2007, according to Peter Dahl KØBIT, owner and founder of the company that has made custom transformers for more than 40 years. Dahl, 67, is suffering from Parkinson's Disease. The company manufactured a wide variety of transformers and reactors for Amateur Radio and commercial radio and television applications. According to Dahl, many are direct replacements for original equipment components that are no longer available from the manufacturer, while others have general-purpose applications in any number of different transmitters. He said that they had more than 4000 individual transformer designs on file. QST columnist John Dilks, K2TQN said the closing of the Dahl Company was "sad news for those of us who restore the big iron." Dahl told the ARRL, "I want to thank everyone for their business throughout the years. I have enjoyed making each Amateur Radio transformer." — ARRL Web Extra courtesy of the American Radio Relay League

## Got a Sweet Tooth? Try "The Dangerous Stuff"™

My name is Michael Lusardi. As a fundraising event, I am currently selling boxes of almond-English toffee made locally by The Toffee House. Proceeds go towards a trip to World Youth Day, in Australia – July, 2008.

**They make great gifts too!**

**To order, please contact Paul Lusardi** [pjlusardi@comcast.net](mailto:pjlusardi@comcast.net) 724.809.1463 (cell)

Orders are being accepted through Friday, December 14<sup>th</sup>

Toffee can be hand-delivered to these areas in time for Christmas!

(Pittsburgh, Monroeville, Canonsburg, Washington)

\*shipping available for those outside the area

Thank you for your support!

### Almond English Toffee

6 oz Box — \$8.00

9.6 oz Box — \$12.00

13.4 oz Box — \$15.00

18 oz Box — \$20

Featured in the "Goody Bags"  
at the AMSAT Symposium!



KB3LIV showing off our New Jacket Logo!



The N3ZK Venango operators displaying their Clean Sweep brooms for working all 67 Counties in the 2007 Pennsylvania QSO Party. L—R: Kevin N3KFD, Kevin N3HKQ, Paul NØVLR, Randy N3ZK.

Photo (and brooms) courtesy of and ©Copyright 2007 Paul Lusardi NØVLR



Old/New WPA SM John Rodgers N3MSE enjoying a laugh at the WACOM Hamfest, along with ARRL Atlantic Division Director Bill Edgar N3LLR. (We're looking forward to seeing you two at WASHFest!)

Photo courtesy of and ©Copyright 2007 Paul Lusardi

## DX News Briefs



"Effective November 24, 2007 **Spanish Amateur Radio operators were authorized use of 7100-7200 kHz** on a secondary basis, using a total radiated power not exceeding 24 dBW. **EA ops also gained access to the 51-52 MHz** band giving them use of 50-52 MHz with a maximum power of 100 watts, except in the center of the country where the power is limit is 10 watts" — UBA HF News

Look for 13 year old JE1PGS to be QRV as **T88GS** from 17—22 December 2007. He will be joined by his parents, JQ2GYU/**T88YU** and JJ2VLY/**T88LY**. Activity on 80—6 meters SSB & CW during local mornings & evenings. QSL via home calls — JQ2GYU

All logs from **BS7H** are now uploaded to Logbook of the World. Any questions about missing QSO's should be directed to KU9C at [BS7H2007@yahoo.com](mailto:BS7H2007@yahoo.com) — N4XP & N1DG

**8J1TFD** will be QRV through 31 March 2007 celebrating the 60<sup>th</sup> anniversary of the Tokyo Fire Department. QSL via JARL — JJ1WTL

The Gambia should see two operations in early 2008. ON7YK should be QRV as **C56YK** from 11 February thru 6 March, 160—6 meters. QSL as per QRZ.COM. ON4LAC will be QRV from 12 February thru 5 March as **C56JC**, focusing on PSK & RTTY. QSL via home call — F5NQL

Look for VK4TI, VK3TZ, and VK4VCC during the 2008 CQ WPX SSB as **YJØAX**. QSL route TBA — NG3K

425 DX News reports that **OH9SCL** from Santa Claus Land is now QRV. QSL via OH9UV... if you're nice, not naughty — 425DXN

Trinidad & Tobago no longer permit Amateurs to hold both a "regular" and a "contest" call. 9Y4ZC has announced that he has given that call up and is now retaining the **9Y4W** call only. QSL via DL4MDO — 9Y4ZC/9Y4W

**The Sir Francis Drake Report:** GUØSUP reports that the **MUØA** call, which was extremely active in the CQ WW CW contest, has never been issued. UK licensing authorities confirm this — GUØSUP

N1UR and KB1PQN will be QRV from **9MØ Spratly Islands** on 22—30 March. Call TBA. QSL via K2RET — N1UR <http://www.n1urspratly.com>

Look for F8EN to be QRV from Gabon through 12 January as **TR8CR**. He will be QRV concentrating on 20 meters CW & SSB. QSL via F6AJA or F8EN — F6AJA & LNDX

**INDEXA** has completely revised their web site at <http://www.indexa.org>. The organization is dedicated to providing financial support to Dxpeditions to entities on the "most wanted list" and other needed entities. More information on the organization, including membership info and how to make donations if desired, is available on the web site — K4MQG

## QSL Routes

3B7C via G3NUG — W4DN	CO8LY via EA7ADH — N2ZN
3B7SP via SP9SX — K7ACZ	D88S via DS4CNB — DO1DXX
3DAØVM via ZS6AVM — DO1DXX	EL2DX via K8SJP — W2IRT
3GØY via DK7YY — W4DN	FWØMO via OM2SA — EU7SA
4K9W via DL6KVA — JA1HGY	HQ2A via N6AA — T93Y
4L4WW via EA7FTR — W2IRT	J88DR via G3TBX — F1JKJ
4S7HIG via OH4HIL — VU2NKS	P29NI via G3KHZ — DO1DXX
5N8NDP via IK5JAN — VU2NKS	SD7ME via DL5ME — JJ1BDX
5R8RJ via DJ7RJ — JA1HGY	T93J via OE1EMS — JA1HGY
6Y3R via OH3RB — K6GEP	TCØDX via OK2GZ — DO1DXX
7P8JF via DL7JAN — VU2NKS	TY5ZR via IK2IQD — W2IRT
7Q7CE via IN3VZE — W2IRT	UK8OM via IK2QPR — VU2NKS
6W1SJ via T93Y — T93Y	UT7QF via UA9AB — DO1DXX
9M6XRO via M5AAV — EA4ZK	V31TP via WCØW — K6GEP
9UØA via DL7DF — EU7SA	V73RY via N7RO — K6GEP
9UØA via DL7UFR — W2IRT	V73ZZ via K7ZZ — K6GEP
A25OOK via M5AAV — EA4ZK	VO1J via VO1AU — W3AWU
A52AM via JAØJHO — JA1HGY	VYØ/KHØPR via JJ8DEN — JA1HGY
A92HB via GM6TVR — W2IRT	XX9TJS via JM1LJS — VU2NKS
C98BWW via CT1BWW — DO1DXX	YW5AS via DM4TI — DO1DXX

Thanks to the NJDXA DX News & DX Chat Reflectors, the DX-QSL Reflector, 425 DX News, OPDX News, Diamond DX Club News, ICPO Bulletin, & ARRL DX Bulletin for our DX News information. Thanks also to Bill Moore NC1L / ARRL DXCC Desk, & Bernie McClenny W3UR / The Daily DX for confirmations & additional information.



## WASH Classifieds

Information shown here is as supplied to the **WASHRag**. Condition as stated, and all sales should be considered "as-is" unless otherwise noted. All subject to prior sale or withdrawal from sale at the owner's discretion. All responsibility for this information lies with the source and not the **WASHRag** or the **WIRELESS ASSOCIATION OF SOUTH HILLS, INC.**

**HAM RADIO INSURANCE ASSOCIATES, INC.**  
 P.O. Box 201  
 Canonsburg, PA 15317-0201  
 Toll-Free 1-800-545-8881



Fax: (412) 746-5944  
[gallina@usaor.net](mailto:gallina@usaor.net)

"All-Risk" Amateur Radio Equipment Insurance Plan for:  
 Radio Equipment                      Computer Equipment  
 Antennas Rotors & Towers          Computer Media & Software  
 Cellular Telephones  
 Mechanical Breakdown & Electrical Damage Coverage

**OGS Distributing** — Embroidered Apparel, Printed Apparel, Dash Plaques, Award Plaques, Vinyl Graphics, Cyclo Polisher, Car Detailing Supplies. Dan KB3HVN, 6571



Zupancic Drive, Pittsburgh PA 15236, Phone (412) 655-8787, Fax (503) 218-1441, or visit the on-line catalog at <http://www.onlygoodstuff.com>

**Precision Reproductions & Supply Company** — Reprographics, Equipment & Supplies for the Architect, Draftsman, Engineer, Contractor & Surveyor. Hank Marzina KB3FNM, 339 Regis Avenue, Pittsburgh PA 15236, Phone (412) 655-3700, Fax (412) 655-3702

**Nelson Nemes N3PN**

**Keller Williams Real Estate Professionals**

190 Gallery Drive, McMurray, PA 15317  
 724-941-9400 x121  
 412 443 7010 Cell  
 724 941 4969 Fax  
[nelson4u@kw.com](mailto:nelson4u@kw.com)



**The Internet Guild**

Put your station on the web. Show off the new gear or that home brew beam or APRS setup. Whatever you choose to do let your contacts see YOUR website!

Contact Glen KE7FD at The Internet Guild for your new virtual QTH. The Internet Guild, LLC [glen@theinternetguild.com](mailto:glen@theinternetguild.com)

For more details and to sign up, please visit [www.theinternetguild.com](http://www.theinternetguild.com)  
 The Internet Guild, LLC  
 dba 2EzHosting.com  
 P.O. Box 113283  
 Pittsburgh, PA, 15241

Host for the **WASHRag** archive website <http://www.washrag.info>



- Database & IT Consulting
  - Business Intelligence
  - Short & Long Term Contract Positions
  - Permanent Placement
- Serving Pittsburgh for 13 Years!

Contact Paul Lusardi NØVLR  
 (724) 809-1463  
[Paul.Lusardi@IQ-Inc.com](mailto:Paul.Lusardi@IQ-Inc.com)  
 Visit [www.IQ-Inc.com](http://www.IQ-Inc.com) for Career Postings

Has Roadway found the tower yet?

## FCC News

Federal Communications Commission Consumer News

Washington, DC, December 4<sup>th</sup>, 2007 — As of February 18<sup>th</sup>, 2008, cellular telephone companies will not be required to provide analog service. Some users of OnStar in-vehicle communications service will be affected as OnStar has indicated it will not support analog systems after December 31<sup>st</sup>, 2007.



OnStar-equipped vehicles have one of three types of equipment: analog-only, analog/digital-ready, and dual-mode (analog and digital). OnStar advises that analog-only equipped vehicles (generally, cars older than 2003 models) cannot be upgraded and that OnStar service in such vehicles will not work after December 31<sup>st</sup>, 2007. Analog/digital-ready equipped vehicles must be upgraded in order to work after December 31<sup>st</sup>, 2007. (Dual-mode equipped vehicles will continue to work after December 31<sup>st</sup>, 2007.)

To determine the type of OnStar equipment in your vehicle and whether your OnStar service will work after December 31<sup>st</sup>, 2007, contact OnStar. You can contact OnStar by pressing the blue OnStar button in your vehicle, calling OnStar toll-free at 1-866-579-7726 (have your OnStar account number or your vehicle identification number available), or visiting OnStar's Web site at <https://myonstar.com/adt.os>. Enter your vehicle identification number to determine if the transition affects your vehicle.

President George W. Bush has announced his intention to re-nominate Jonathan S. Adelstein for a third term on the Federal Communications Commission; this will be his second full five-year term. Adelstein was first sworn in as Commissioner in 2002, filling the unexpired term of Gloria Tristani.

Before joining the FCC, Adelstein served for 15 years as a staff member in the US Senate. For the last seven years, he was a senior legislative aide to Senate Majority Leader Tom Daschle (D-SD), advising Daschle on telecommunications, financial services, transportation and other key issues. Previously, he served as Professional Staff Member to Senate Special Committee on Aging Chairman David Pryor (D-AR), including an assignment as a special liaison to Senator Harry Reid (D-NV), and as a Legislative Assistant to Senator Donald W. Riegle, Jr (D-MI).

Prior to his service in the Senate, Adelstein held a number of academic positions, including: Teaching Fellow in the Department of History, Harvard University; Teaching Assistant in the Department of History, Stanford University, and Communications Consultant to the Stanford University Graduate School of Business. Adelstein received a BA with Distinction in Political Science from Stanford University, an MA in History from Stanford University, studied at the Kennedy School of Government at Harvard University and is a graduate of Phillips Academy in Andover, Massachusetts. He is a member of the National Academy of Social Insurance, the Phi Kappa Phi National Honor Society and the Pi Sigma Alpha Political Science Honor Society.

Adelstein said he was "deeply honored that the President has announced his intention to nominate me to serve another term as Commissioner of the Federal Communications Commission. I would also like to express my deep appreciation to Majority Leader Harry Reid for his support and faith in me. If confirmed by the Senate, it would be a privilege to continue working to ensure that the American public has access to the best possible communications opportunities in the world."

FCC Chairman Kevin Martin said, "I congratulate my good friend and colleague, Jonathan Adelstein, on the news that the President intends to re-nominate him to the Commission. Jonathan and I have traveled the country together to learn directly from the American people about how the FCC's communications policies are serving them. I know him to be a smart, dedicated and courageous advocate for bringing communications technologies to all Americans. I look forward to continuing to work with Jonathan on the many important issues before the Commission in the coming months and years."

A new Digital Voice mode, FDMDV, has been announced on the N1SU website. It claims to be able to require a bandwidth of only 1.1 kHz. The website says: "FDMDV is the latest digital voice mode on HF - it caters to high quality digital voice under poor band conditions, in only 1100 Hz bandwidth !"

Details available at <http://www.n1su.com/fdmdv>

— Trevor M5AKA

# Paint Formulas for Boat Anchors Glen Zook K9STH <http://k9sth.com>

Every so often I get repeat requests for the formulas of the paints that I use on boat anchor cabinets. Here are the formulas from Sherwin-Williams of the cabinet colors that I have had matched to date. Note that these are for 1 quart unless otherwise noted.

Also, all but 2 of these I now have in acrylic (which dries MUCH harder than normal enamel) and all are water-based except for the Johnson maroon which also has an oil base formula. The 2 that I have not yet acquired in acrylic are for latex enamel but acrylic is available and your local Sherwin-Williams store (and any other paint store that has paint mixing capabilities) can provide acrylic paint using the same color formulation.

I always prime the cabinet before painting and what I use is the "el cheapo" primer from Wal-Mart which costs 97 cents for a 10 ounce spray can. It is ColorPlace Gray Primer #20010.

For a medium "crinkle" I overspray the primer with Rustoleum "Stone Creations". This comes in several colors but I have found that the gray color seems to work best. You have to hold the can between 14 inches and 18 inches away from the surface and spray in very short "bursts" while moving the can slightly. It takes a little bit of practice (try spraying on a piece of cardboard) to "get the hang of it".

A paint that generally furnishes a light wrinkle is Krylon 3370 Jet Black. However, you need to apply heat to get it to really wrinkle correctly and then it may not work correctly every time. Therefore, I usually use the Stone Creations paint.

After the "crinkle" or "wrinkle" pain has dried you then need to overspray with the correct color.

Now the paints that I am giving the formulas for require some type of spray paint rig (unless your paint store is one of the relatively few that can load spray cans). There are all sorts of possible solutions ranging from simple arrays that consist of a can that may be pressurized using a bicycle pump all the way to compressors and "real" paint guns. I use a compressor and paint gun but for occasional use those cans that can be pressurized do work (they are available from Harbor Freight and many paint stores).

Collins:

St. James Gray (used on the "A" Line equipment):

Colorant	oz	32	64	128
B1 Black	2	-	-	-
Y3 Deep Gold	-	13	-	-

Acrylic: Ultra Deep Base 6403-25981

S-Line Cabinet (formula is for 1 gallon but store can reduce this for 1 quart):

Colorant	oz	32	64	128
B1 Black	4	-	-	-
Y3 Deep Gold	-	62	-	-
N1 Raw Umber	2	6	-	-

Acrylic: Extra White B20 W 51 6403-36442

S-Line Trim Ring:

BAC Colorant	oz	32	64	128
N1 Raw Umber	-	17	-	-
G2 New Green	-	1	-	-
B1 Black	-	2	1	-
Y1 Yellow	-	1	-	-

Acrylic: Extra White B20 W 51 6403-36434

Hallicrafters

Cabinet gray (HT-37, etc.):

BAC Colorant	oz	32	64	128
B1 Black	-	21	-	1
N1 Raw Umber	-	21	-	-
Y3 Deep Gold	-	5	-	1
W1 White	-	12	-	-

Latex Enamel: Deep Base 6405-13974 (available in acrylic, store can use proper base)

Heath

Apache Green

Colorant	oz	32	64	128
B1 Black	-	32	-	-
G2 New Green	-	16	-	-
Y1 Yellow	-	12	-	-
L1 Blue	-	12	-	-
W1 White	-	8	-	-

Acrylic: Ultra Deep Base 6403-25981

Heath (cont'd)

SB-Line Cabinet (this is one of the 5 different colors that Heath used and is, in my opinion, the best looking of them)

Colorant	oz	32	64	128
B1 Black	-	7	1	1
L1 Blue	6	1	-	-
N1 Raw Umber	-	62	-	-
Y3 Deep Gold	-	-	1	1

Acrylic: Extra White B20 W 51 6403-36434

DX Cabinet (DX-20, DX-35, DX-40, DX-100):

Colorant	oz	32	64	128
B1 Black	-	24	-	-
N1 Raw Umber	-	40	-	-
R3 Magenta	-	3	-	-

Latex Enamel: Deep Base 6405-13974 (available in acrylic, store can use proper base)

Johnson:

Maroon (Ranger, Valiant, Pacemaker, etc.):

BAC Colorant	oz	32	64	128
B1 Black	-	22	-	-
R3 Magenta	-	6	-	-
R4 New Red	-	8	-	-

Acrylic: Ultradeep Base 6403-25981  
Oil: Ultradeep Base 6403-25775

National

Cabinet gray (i.e. NC-2-40DT):

Colorant	oz	32	64	128
B1 Black	-	41	1	-
R2 Maroon	-	-	-	1
Y3 Deep Gold	-	6	-	-
W1 White	-	18	-	-
R4 New Red	-	-	1	1

Acrylic: Ultradeep Base 6403-25981

"Off the Shelf" or "standard formula paints for those who do not want to get their paints specially mixed.

Collins:

KWM-1: Standard formula paint ASA 61 Gray. This is a "standard" industry formula and should be available at just about any paint store. ASA 61 is an "exact" color match to the KWM-1.

S-Line cabinets (not trim ring): Real close (but not a cigar) "off the shelf" is Rustoleum 1982 Winter Gray.

RME: Cabinets from the late 1930s to the 1950s. Really close "off the shelf" is Krylon 1608 Smoke Gray.

I do not have any other paint "matched" at the present time. The formulas are presented for those who are wanting to repaint their equipment the original color.

Most of the radio manufacturers did NOT prime their cabinets before painting.

I do NOT recommend painting over the original paint because this will often cause the original paint to "flake off". You need to completely strip the original paint (sanding where necessary) and then prime the cabinet. Then paint it with the desired color.

**More Scenes from a Meeting Night**

Photos Courtesy of and ©Copyright 2007 Paul Lusardi NØVLR





# WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

## Membership Application/Renewal for 2008



I would like to join WASH!. I am interested in the following type of membership:  **New Membership**  **Membership Renewal**

(check quarter  $\longrightarrow$ )  
(check one  $\downarrow$ )

<input type="checkbox"/> (F1) Full Membership:	<input type="checkbox"/> <b>1st Qtr</b> Jan-Mar	<input type="checkbox"/> <b>2nd Qtr</b> Apr-Jun	<input type="checkbox"/> <b>3rd Qtr</b> Jul-Sept	<input type="checkbox"/> <b>4th Qtr</b> Oct-Dec
<input type="checkbox"/> (F2) Full Membership < 18 or > 65 yrs of age:	\$20.00	\$15.00	\$10.00	\$5.00
<input type="checkbox"/> (A1) Associate Membership:	\$10.00	\$7.50	\$5.00	\$2.50
<input type="checkbox"/> (A1) Associate Membership:	\$10.00	\$7.50	\$5.00	\$2.50

(FM1) Family Membership (\$3.00 x No. of household family members): \$ \_\_\_\_\_

Name(s): \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Email Address: \_\_\_\_\_

New Members Only:

I do NOT want to be added to the Club E-Mail Reflector

I do NOT want to be added to the Electronic Newsletter Mailing List

[If you have an Email address, you Will be added to both lists UNLESS you choose to Opt-Out]

Signature: \_\_\_\_\_

Call Sign: \_\_\_\_\_

License Class: \_\_\_\_\_

Expires On: \_\_\_\_\_

Work Phone: \_\_\_\_\_

Birthday: \_\_\_\_\_

ARRL Member?  Yes  No Family ARRL Member?  Yes  No

Date: \_\_\_\_\_

Amount Enclosed: \$ \_\_\_\_\_

Please make your check or money order payable to the club treasurer, Mark Stabryla. The Wireless Association of South Hills, Inc. reserves the right to accept or reject new memberships or renewals. Please return completed membership form along with check/money order to the club treasurer or mail to:

WIRELESS ASSOCIATION OF SOUTH HILLS, INC.  
c/o Mark Stabryla N3RDV, VP/Treasurer  
1120 McKnight Drive  
Bethel Park, PA 15102-2456



## Join the American Radio Relay League or Renew Your Membership through the WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

Members of the WIRELESS ASSOCIATION OF SOUTH HILLS can start a new membership or renew an existing membership in the American Radio Relay League, the National Organization of Radio Amateurs, through the club. Benefits for you: Joining and participating in everything the League has to offer, including a QST subscription. Benefits for the club: A few more shekels for our coffers.

Just fill out the form below, include a check or money order made out to WASH/ARRL, and return all to the club treasurer or mail to:

WIRELESS ASSOCIATION OF SOUTH HILLS, INC.  
c/o Mark Stabryla N3RDV, VP/Treasurer  
1120 McKnight Drive  
Bethel Park, PA 15102-2456



Name: \_\_\_\_\_

Call Sign: \_\_\_\_\_

Address: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

City, State, ZIP: \_\_\_\_\_

Total Enclosed: \$ \_\_\_\_\_

Please Check the Appropriate One-Year Rate:

- \$39 in US
- Age 65 or older, \$36 in US
- Age 21 or younger, \$20 in US (only if you are the oldest licensed amateur in your household)
- Canada \$49
- Elsewhere \$62
- Other (including Blind, Life, QST by First Class Postage — please contact ARRL for rate)

Additional Family Members at the same address (\$8 per family member)

Name & Call Sign: \_\_\_\_\_

Name & Call Sign: \_\_\_\_\_

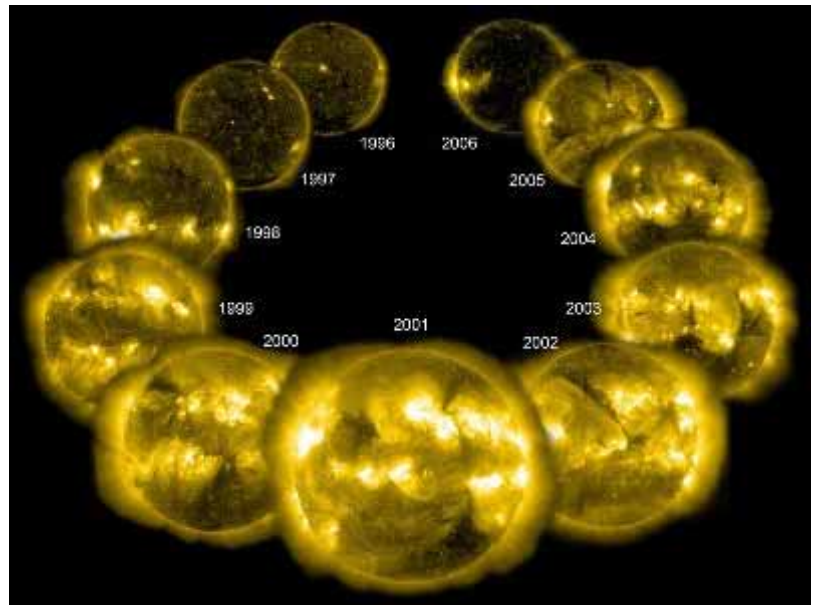
Name & Call Sign: \_\_\_\_\_

Dues subject to change without notice

# Inside This Issue:

- FCC Slaps Ambient's BPL Wrist!
- How did YOU do last Field Day!
- 2 Meter Contest Rules!
- WASHFest 2008 Prizes Now In Place!
- Christmas/Holiday Gathering News!

All this & much more... waiting for you right inside... these pages!!



## *A Complete Solar Cycle*

"Every eleven years, our Sun goes through a solar cycle. A complete solar cycle has now been imaged by the sun-orbiting SOHO spacecraft, celebrating the 12th anniversary of its launch yesterday. A solar cycle is caused by the changing magnetic field of the Sun, and varies from solar maximum, when sunspot, coronal mass ejection, and flare phenomena are most frequent, to solar minimum, when such activity is relatively infrequent. Solar minimums occurred in 1996 and 2007, while the last solar maximum occurred in 2001. This picture is composed of a SOHO image of the Sun in extreme ultraviolet light for each year of the last solar cycle, with images picked to illustrate the relative activity of the Sun."

Photo courtesy of and ©Copyright 2007 SOHO - EIT Consortium, ESA, NASA

## The WASHRag

Wireless Association of South Hills, Inc.  
Ron Notarius W3WN, Editor  
3395 Rosewood Drive  
Castle Shannon, PA 15234-2546



N3SH / WA3SH  
NP2SH/B

[www.n3sh.org](http://www.n3sh.org)  
[www.washarc.org](http://www.washarc.org)  
[www.washrag.info](http://www.washrag.info)

