



WASHRAG

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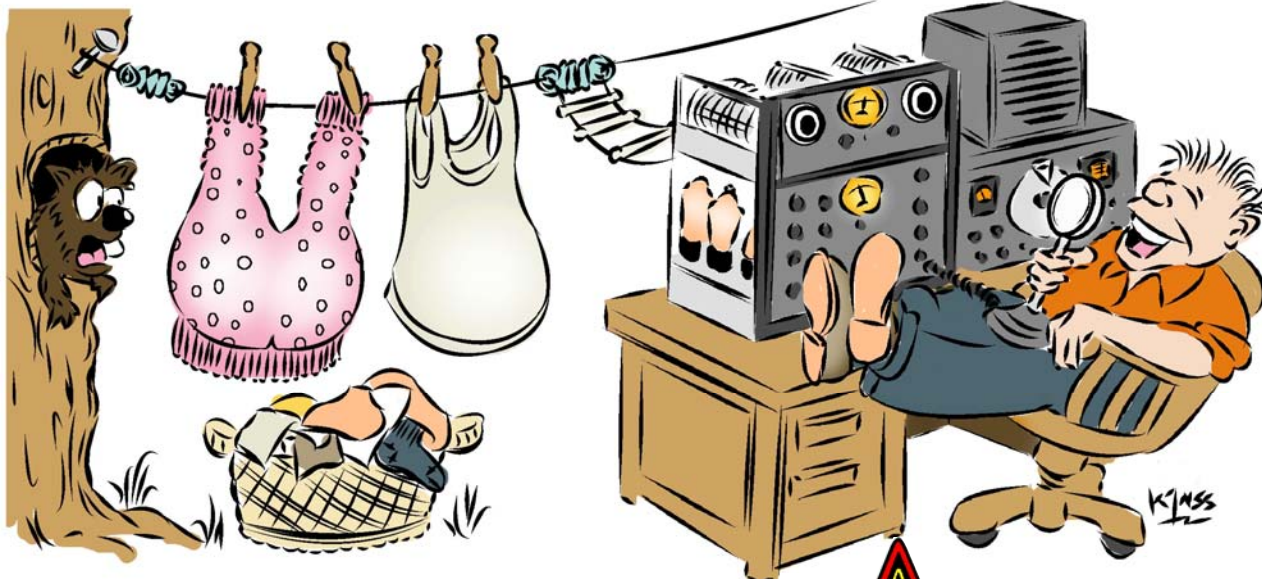


VOLUME 20 ISSUE 12
DECEMBER 2018

Wireless Association of South Hills

N3SH WA3SH NP2SH/B

www.n3sh.org www.washarc.org



WASHRAG™



VOLUME 20 Issue 12

DECEMBER 2018

Next Monthly Meeting: Thursday, December 6th, 2018

The next meeting of the **WIRELESS ASSOCIATION OF SOUTH HILLS, INC.** will be on **Thursday, December 6th 2018**, in the Conference Room at the **St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park, by South Hills Village & Village Square** (map on the back page). The room is available at 6:30 PM. The meeting will be starting at 7:00 PM.

Subjects for the meeting include the **WASH 2 Meter Simplex Contest**, **WASHFest 2019**, and other upcoming plans for 2019. See you there!

Cover Photo: Glen promised last month he'd explain those mystery pictures. Those items are at the base of this!

Cover Photo is courtesy of & © Copyright 2018 Glen Roberts KE7FD

WASH 2019 OFFICERS

EXECUTIVE COMMITTEE:

President	Tony Romano KB3BYA
VP / Secretary	Dan Campbell K3CMU
VP / Treasurer	Mark Stabryla N3RDV

AND WE COULDN'T DO IT WITHOUT:

N3SH Trustee	Larry Comden K3VX
WA3SH Trustee	Rich Danko N3SBF
NP2SH Trustee	Paul Jordan NP2JF
N3SH WA3SH NP2SH/B QSL Manager	Ron Notarius W3WN
NP2SH 2009 QSL Manager	Carl Schroeder K9CS
VE Team Liaison	Ron Notarius W3WN
Webmaster	Sean Sleeman N3NWR
Asst. Webmaster	Ben Williams KB3ERQ
Quartermaster	Harold Rosenberger K3HCR
WASH FM Net Manager	Chuck Bihun KC3ELA
WASHFest 2019 Committee	Carol Danko KB3GMN, Chairman
	Bill Hill W3WH, Co-Chair
Activities & Operating Events	Rick Bell KB3IAC
Ways & Means	Carol Danko KB3GMN
WASH 2M Contest Chair	Chuck Bihun KC3ELA
Field Day 2018 Coordinators	Rick Bell KB3IAC
	Bill Hill W3WH

CLUB-AFFILIATED REPEATERS, BEACONS, & DIGIPEATERS:

Mt. Lebanon	N3SH / R	146.955 MHz (-)	PL 131.8
North Side	N3SH / 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 **Monday** Night, 8:00 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)**, a 501.C.3 not for profit organization.

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Editor & Publisher: Ron Notarius W3WN

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The **WIRELESS ASSOCIATION OF SOUTH HILLS, INC.** was founded on August 23rd, 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 & operators of both the N3SH/R Repeaters 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.

WASH Amateur Radio Club News Briefs

Next WASH VE Test February 24th

The Next WASH VE exam sessions will be **Sunday, February 24th, 2019, 10:00 AM**, at **WASHFest 2019**, South Park Home Economics Building, 3735 Buffalo Drive, South Park, PA 15129. Talk-in on the 146.955 MHz and 443.650 MHz repeaters. All examiners are ARRL VEC affiliated.

Pre-registration is not required. Walk-ins welcome!

But if you plan on attending the test session, please contact VE Team Liason Ron Notarius W3WN:

Telephone (412) 572-6723 or E-Mail: w3wn@n3sh.org

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 **\$15.00** (payable to: ARRL VEC)

Future test dates: **To Be Scheduled**

Glen's Musings



So here I am at the last issue of 2018 and as I make my last comments as president of WASH, I would just like to say what a privilege it has been for me these past two years to be associated with such a fine group of people.

While some groups over the years have failed to remember the two things that keeps any club going; that is be a friend to everyone in the club, and keep it fun.

Kudos to each and every one of you for sustaining WASH as a premier Amateur Radio Club in Pittsburgh!

— 73, Glen Roberts KE7FD
President, Wireless Association of South Hills, Inc.
N3SH / WA3SH / NP2SH/b

SpaceX has announced that the SSO-A SmallSat Express mission, which includes AMSAT's Fox-1Cliff CubeSat, deployed into orbit on December 1st. According to AMSAT, several stations in Brazil reported that the voice beacon "Fox-1Cliff Safe Mode" had been heard at approximately 0030 Z on December 4th. The SSO-A mission carried 64 payloads including several other Amateur Radio cubesats.

First, I'd like to thank Glen KE7FD our outgoing President, and Harold K3HCR our outgoing Vice President/Secretary for doing such a great job! Additionally I'd like to thank Mark N3RDV VP/Treasurer for another year of great service! Congratulations to Dan K3CMU as the new Vice President / Secretary I look forward to working with you.

Thank you to all the club members for putting their trust in me after being a member for such a short time, I will endeavor to do as well as our outgoing President, and with the help of this great team the **WIRELESS ASSOCIATION OF SOUTH HILLS**, I'm sure I will have no problem.

I would like to wish everyone a very Merry Christmas, Happy Hanukkah, and a safe and Happy New Year!

Thanks & 73!

— Tony Romano KB3BYA



The Saturday post-Thanksgiving & post-Black Friday is never a crowded morning for the **WASH Breakfast Gang** to get together, especially when it's cold and wet outside. Nevertheless, we met once again on November 24th at **Eat'n Park**, 3380 Washington Road (US 19), McMurray. This month's group included W3WH, K3HCR, KB3JHR and W3WN. Hot coffee and a breakfast buffet buttressed the morning topics, which covered everyone recovering from a nice Thanksgiving, CQ WW CW propagation, new 160 meter antennas working well to the West, CW filters for the IC-718, snow on Monday for the first day of deer hunting, bucks in season, Bucs not in season, bean counters, rifles for deer hunting, the bear necessities, robocalls, elections, and sleeping in a cold room... and a whole lot more.

Our next gathering of the Gang will be on Saturday, December 29th, returning to the **Eat'n Park**, 3380 Washington Road (US 19) in McMurray (the "new" restaurant that was recently built), officially starting at **8:00 AM**. While we don't need a "head count" to reserve tables as we've previously done, **please** let Jim WB4GCS know ahead of time if you are planning on coming... if you don't, though and decide at the last minute, we'll have plenty of room for you! See you there?

Congratulations once again to our newly elected officers for 2019, Tony KB3BYA as President, Dan K3CMU as Vice President/Secretary!

The annual **WASH 2 Meter Simplex Contest** will be coming up again next month. Can you believe this is the 19th running? Complete rules are in this month's issue... yes, the typo on the mailing address has been fixed!... and the complete "packet" will be available on the club website shortly. For a short little event, only 4 hours tops, it's a lot of fun. Hope to work you!



WASHFest 2019 is about 3 months away. Plenty of time, right? Nope! Carol KB3GMN is already hard at work. The main prizes have been picked, as have the Black Box and door prizes as well. Vendor tables are starting to sell, slowly but this will pick up. Well, you get the idea. Don't forget to mark the days on your calendar... and start thinking about what you can do to give Carol and the 'fest Committee a hand, before and during the event. This is a fun event, but it takes a lot of work and planning — you just can't do it on auto pilot. And it IS our main fund-raiser for the year, which pays for our events and operating activities as well. There will be more on **WASHFest 2019** in the coming months... at meetings, on the email reflector, and in this newsletter.

Can you believe that this issue concludes 20 complete years of the **WASHRag**?

As the holidays approach, a Merry Christmas, Happy Channukah, Happy Kwanza, and Happy New Year to each and everyone of you!

Join WASH or Renew your Membership Today! Membership Application on Page 21

Minutes, November 1st Meeting

Harold Rosenberger K3HCR, Vice President/Secretary, WASH

Glen KE7FD called the meeting to order at 19:00 hours. There were 17 members present, 2 guests.

The Pledge of Allegiance was recited, followed by a moment of silence was observed for recent Silent Keys & others deserving, and then introductions.

Motion to waive reading of the minutes based on the minutes printed in the newsletter by Bill W3WH, second by Larry K3VX, passed unanimously.

Committee reports:

Treasurer (N3RDV): Read. Motion to accept by Ron W3WN, second by Bill W3WH, and passed unanimously.

Secretary (K3HCR): Read a letter to the club received from Barbara.

VE (W3WN): We had three candidates at the October exam session. Art KA3RWP upgraded to General. New Technicians Alec KC3MGO and Paul KC3MGP. Congratulations to all! Thanks to the VE Team. Next exam session will be October 18th, followed by **WASHFest 2019**. Thanks as always to N3FB & WPXI for providing us with a testing site.

Repeaters (WB4GCS for N3FB): Still working!

WASHNet (KC3ELA): Generic Positive Report. All check-ins appear to be having fun!

N3SH.ORG (N3NWR): No report.

Contests (W3WH for K3VX): Team K3HCR reports 503 QSOs, 64 counties, 23 multipliers for an 88K score in the Pa QSO Party. Team N3ZK had a clean sweep. Reminder that Babcock Grove has been reserved for Field Day 2019..

Public Service (AB3ED): No Report.

WASHFest (KB3GMN): We have flyers for distribution at the WACOM Hamfest on Sunday. 3 tables already reserved.

Membership Contributions (KB3GMN): Gratefully being accepted.

Newsletter (W3WN): Out. Thanks to all of the contributors!

President (KE7FD): Request for suggestions for December's program. How do people feel about "how to build a small antenna"?

Elections for 2019 Officers:

Floor opened for additional nominations for President and Vice President/Secretary. No nominations. Motion to close by Larry K3VX, second by Carol KB3GMN, passed unanimously.

Motion by Bill W3WH to have the Secretary cast one vote for Tony KB3BYA for President, and one vote for Dan K3CMU for Vice President/Secretary. Second by Carol KB3GMN. Passed unanimously.

Tony KB3BYA elected President for 2019. Dan K3CMU elected Vice President/Secretary for 2019 – 2020. Congratulations and applause.

Old Business: Short discussion on the ongoing issue of a generator purchase. Glen KE7FD spotted a comparable generator at Tractor Supply, about \$100 less than the one at Harbor Freight.

New Business: None

Good of the Order: Paul NØVLR thanked everyone on behalf of Team N3ZK for the use of the Tower Trailer.

Reminder that the WACOM Hamfest on Sunday is at a new location (Printscape Arena at Soutpointe, formerly the Iceoplex). Carol has arranged a club table.

Motion to Adjourn by Carol KB3GMN, second by Bill W3WH, and carried unanimously.

Meeting adjourned at 19:22

Presentation by Paul NØVLR and Team N3ZK about the Pa QSO Party 2018 operation from Warren County followed.

WASH Spotlight: 2019



KB3BYA



N3RDV



K3CMU

Our **WASH** 2019 Club Officers:

Tony KB3BYA, President

Dan K3CMU, Vice President/Secretary

Mark N3RDV, Vice President/Treasurer

Photos courtesy of and © Copyright 2018
Ron Notarius W3WN

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](#)

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 **Eat'nPark**, 3380 Washington Road (US 19), McMurray. Start time is about 8 AM until ????. Monitor 146.955 & 443.659 for talk-in or any last minute changes.

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

Wireless Association of South Hills Membership

2019	KB3GMU	N3RDV	WASH FL	WASH TN	Silent Keys
KB3DCO	KB3IAC	N3SBF	KA3UPY/M	K3OL	
N3ZK	KB3IVX	N7TDX	W4ZE	KE3XB	AB3KA
	KB3JHR	NU3Q	WASH NE	N3YBP	K3EED
AA3GM	KB3ORO	NY9H	NØPEU	WASH TX	K3LIE
AA3XY	KB3SQZ	W3BBX	WASH OR	NB3C	KA3NMG
AB3ED	KB3YCX	W3WH	NØWPV	K3LGM	KB3ENX
AB3NM	KC3ELA	W3WN	KB3NVL	KB3IJX	KB3FNM
AE3DL	KC3GMM	WA3JFL	KB3NVM	Jane Wagner	KB3FQT
K3CMU	KC3KMY	WA3PYU	WASH OH	WASH VI	KB3JHQ
K3HCR	KC4WTT	WA3VSS	N8DPW	NP2JF	N3CZZ
K3JDS	KE7FD	WB3CAI			N3FZ
K3SGT	NØVLR	WB4GCS			N3HKQ
K3VX	N1NCZ	WO3Z			N3KEH
K3WJL	N2QIV	Barbara			N3OBD
KA3VXM	N3BPB	Udren			N3RNX
KB3BYA	N3DFK				N3SKR
KB3CMT	N3FB				N3SRC
KB3ERQ	N3KFD				N3ZEL
KB3GMN	N3RDG				N3XFE

If your call should be listed here & isn't, please contact Mark N3RDV

Through November 1st, 2018
List compiled by
Mark Stabryla N3RDV, Vice President/Treasurer



2018 / 19 WASH Upcoming Events Calendar



Club Meetings & Other Significant Events — Subject to Change



December 6 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
December 8 th - 9 th	ARRL 10 Meter Contest	http://www.arrl.org
December 16 th	ARRL Rookie Roundup	http://www.arrl.org
December 29 th - 30 th	Stew Perry Topband Challenge	https://www.kkn.net/stew/
January 1 st	Straight Key Night	http://www.arrl.org
January 3 rd	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
January 12 th	WASH 2 Meter Simplex Contest	See Page 14
January 19 th	Breezeshooter's Groundwave Contest PSK-31	http://www.breezeshooters.org
February 7 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
February 16 th	Breezeshooter's Groundwave Contest CW	http://www.breezeshooters.org
February 16 th -17 th	ARRL International DX CW	http://www.arrl.org
February 24 th	WASHFest 2018 WASH VE Exams at WASHFest	Home Economics Building, 3735 Buffalo Drive, South Park 
March 2 nd -3 rd	ARRL International DX SSB	http://www.arrl.org
March 7 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
March 16 th	Breezeshooter's Groundwave Contest Phone	http://www.breezeshooters.org
March 30 th — 31 st	CQ WPX Contest SSB	http://www.cqwpix.com
April 4 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park

"Seen" at the November Meeting

Photos Courtesy of and © Copyright 2018 Ron Notarius W3WN



N3ZK, NØVLR



KB3GMN, N3SBF



K3VX, KC3ELA



K3CMU, KB3CMT, W3WH



KE7FD, K3HCR



KB3BYA



WB4CCS

N3FB



K3SGT

K3CMU

My Search for the Holy Grail (of Receiving Antennas)

Bill Hill W3WH



Chartiers Township, PA, November 18th, 2018 -- About 10 years ago Larry K3VX told me about a failed attempt to build a 160 meter receiving antenna out of scrounged parts while he and several others were on Montserrat for a Dxpedition. They built a pennant antenna which requires a transformer to convert its feedpoint impedance from about 900 ohms to 50ohms. The design also requires a 910 ohm terminating resistor. Well, all was well until they blew up their ¼ watt terminating resistor with about 500 watts of RF.

After I heard the story I forgot about pennant antennas. A couple of years ago after achieving 8 band DXCC I got interested in completing 9 band DXCC by getting 100 countries confirmed on 160. At the time I had 50 or 60 worked and some of them confirmed. Here in the eastern USA the logical places to finish DXCC on 160 are Europe and the Caribbean. Hence since that time I have tried several antenna designs for both transmitting and receiving. Receiving antennas were new to me since they aren't as useful(sort of) on the HF bands above 160.

I have tried commercial receiving loops(both Pixel and Wellbrook), Delta loop wires, BOG which is short for Beverage on Ground, a short horizontal dipole from DX Engineering, a K9AY loop, a DX Engineering 4 Square Array which was too big for my available space and finally a couple of DX Engineering receiving verticals. All of these have worked to some degree and now that I'm writing this I hate to think of all I've "invested" to achieve mediocre results. I still struggle to hear Europe.

Earlier this year Larry K3VX and I and a couple of others decided to go to Bermuda for the 160 contest which is the 30th of November and 1st of December. Somewhere along the way we talked about a receiving antenna for the trip since the station we're renting in Bermuda has everything else and we decided that since we're limited to 100 watts of output we'll need to hear as well as possible.

Larry had the necessary parts and pieces on hand and built a pennant which we recently installed to Beta test it in

my backyard. Well I'm amazed. I'm now regularly and relatively easier hearing Europeans on 160 and have worked most of those I've heard. Best DX with this antenna is Cyprus which counts as Asia.

The pennant is extremely quiet, to the point you sometimes think that the AF gain is off. On Sunday's I regularly check in to the RACES net on 75 meters. During the most recent one the band was quite noisy. I switched in the pennant and until someone spoke I thought the receiver was off. The audio became very comfortable copy. Many times band noise is very tiring after a short while. This antenna goes a long way toward solving this difficulty. Since multiple beverage antennas are not an option for my 40x120 lot the pennant has become the best thing since sliced bread.

Even if you're not interested in 160 you may want to consider investing \$25 for a transformer and resistor. Pair them up with 4 insulators and 75 feet of wire and that's all you need. For instructions and diagrams, just google Pennant antenna and you'll be all set.

By the time you read this we'll likely be back from Bermuda. I hope we worked you.



The annual [Santa's Radio Club Special Event](#) from 200 kilometers above the Arctic Circle will be on the air December 1st – 8th as **OH9S** [OH9Santa]. Activity will be mainly on 160 – 6 meters using all modes, including FT8. QSL via Club Log's OQRS (preferred) or LoTW. Contacts will be automatically confirmed via the bureau. Operating from Finnish Lapland, OH9S will not employ any remote stations and will let propagation decide when and where contacts are possible.

"Yes, we know it is not easy to contact us while we are mostly operating from above the Arctic Circle, but that's part of the game!" the [announcement](#) said. "This is the most northernmost Santa station in Finland." Multiple stations will be on the air.

Due to anticipated poor radio conditions, OH9S will focus activity on FT8.

— courtesy of the American Radio Relay League

JOTA Reports 36% Growth In Scout Participation

American Radio Relay League

Newington, CT, November 30th, 2018 -- Scouting's Jamboree on the Air (JOTA) 2018 [reports](#) that total Scout participation in the annual fall event jumped by 36% from 2017. Each year more than 1 million Scouts and Guides get together over the airwaves for JOTA, which takes place on the third weekend of October. Since the first JOTA in 1958, millions of Scouts have become acquainted via Amateur Radio, and contacts sometimes result in relationships that extend for many years.

This year, 10,703 Scouts took part in the event, compared with 7,872 last year. Participating Amateur Radio operators topped 1,000 for the first time since 2016. At 610, the number of registered JOTA locations was way up, as was the number of JOTA stations registered, with 314. Participating JOTA stations reported contacts with stations in 99 countries, also up over 2017.

JOTA Coordinator Jim Wilson K5ND, said he was pleased with this year's numbers and hopes that 2019's event will show a continued increase, despite a lack of sunspots.

"Looking over the numbers, a big part of the increase in JOTA Scout participation came from the World JOTA-JOTI (Jamboree on the Internet) Team's registration and reporting system," Wilson told ARRL. "We had 233 stations report results on the US system, which is comparable to last year's 226. In addition to that, 90 stations reported their results on the World system. After eliminating duplicates, this added 33 to our total of 266 station reports. That, chiefly, accounts for the increase in total Scout participation. In summary, perhaps this nice increase is due primarily to more accurate reporting."

Wilson said he's also looking forward to the final tally on US participation in JOTI. "Location registration in the US jumped from 274 last year to 610 this year," he said. "Several Amateur Radio operations reported using JOTI chat and Skype to greatly improve their ability to generate Scout-to-Scout conversations between the US and the rest of the world. Of course, VoIP modes like D-Star, DMR, and EchoLink also helped in our solar minimum."

World JOTA-JOTI numbers are not expected until early 2019, as each country reports its results by mid-December followed by number crunching and compiling of the report, Wilson explained.

"Thanks to everyone who set up a JOTA station and helped Scouts experience the technology, fun, and magic of Amateur Radio. Let's do it again next year," he concluded.



The Harbor Freight 80 Meter Vertical

Glen Roberts KE7FD

Clairton, PA, December 2nd 2018 -- I have been accused of spending more time tinkering than I spend on the air. I don't wish to disappoint the expectations held by some... Hence, an initial view of [The Harbor Freight 80 Meter Vertical](#).

Last month you saw a couple of photos of what would become the support for a new quarter wave 80 meter vertical. Note the use of expanding foam in place of concrete. The two components of the foam is very minimal but when mixed for only 20 seconds, expands to fill the cavity not occupied by the 4x4. Still though, a steel spike goes down into the earth another two feet below the one foot of buried treated lumber. Side note: some utility companies are using this type of foam instead of concrete to anchor telephone poles. It's not a suitable replacement for tower bases, IMHO.

I relied on various websites to calculate the parameters of the coil, discussions on loaded vertical antennas, all of which I have noted in the appendix at the end of this article.

The core of this vertical antenna is the Harbor Freight telescopic 20-foot flagpole. I've needed an antenna to cover the portion of the 80M band which my dipole does not cover without extensive fiddling or excessive tuning. If such an antenna operates on other bands, I would consider that a bonus, but it is not a requirement. I think most hams have an easy time of putting up dipoles for the higher bands, but sometimes struggle getting something to radiate on 80M or lower. There is a commercially made vertical antenna (\$120 MSRP) that will work all of the HF bands from 80M on up. However, that antenna has a matching coil at the base which is their answer to providing multiband operations, but suffers from a very high feed point impedance, and manual intervention every time you want to change bands. By changing a jumper at the base feed point one can operate multiple bands. However, I really don't want to be wading out into the snow or the rain to change jumpers on an antenna coil. I have adequate coverage on every other band except 80. For that reason I focused on a quarter wave 80M antenna with a loading coil high above the ground followed by a capacity hat. My hope is to achieve better efficiency (than what a base loaded antenna offers) while still getting acceptable bandwidth using a higher-mounted loading coil and the hat in these specific configurations.

Why not place the loading coil even higher one might ask? Because the higher the coil is placed in the antenna or closer to the end of the antenna in the case of a dipole, the inductance required becomes very large. This is why the coils used for base loading an antenna compared to loading halfway up a radiator are very different in size. You will see this looking at the loading coil of the vertical in the picture below. The higher the coil, the larger the coil. Obviously, a compromise is needed to achieve the same electrical length while getting a reasonable feed point impedance be (and not scraping the paint off of the clouds above). Ideally in time I hope to achieve usability of this antenna without any tuner at all, but with winter upon us, such tinkering will have to wait for spring. Until then, a remote tuner at the base of the vertical will have to do the heavy lifting. [As a rule of thumb it's best to tune the antenna. Next best is to tune the antenna **AT** the antenna using a remote tuner. Less desirable is to tune the antenna **AND** the coax, which implies that the coax has become part of the antenna (and a poor radiator at that).]

I was able to pick up the flagpole for \$50. The remaining parts probably brought the total cost closer to \$100.

Those parts include:

- * 24" of 6" PVC drainage pipe (Home Depot)
- * wire for the coil: 45.453 feet. I used enameled solid
- * A 2 inch x 24 inch UHMW rod (eBay, Amazon)
- * 5 of typical 1/4 x 3ft aluminum rods (Home Depot, Lowe's)
- * Aluminum disc 3/4" x 4" (eBay)
- * 3/4" Aluminum Ball (eBay)

I tend to use stainless steel hardware so what little I bought, I used what I had on hand.

The capacity hat is made with 8 spokes of four 3ft rods cut in half) anchored in the aluminum disc. 8 x18inch rods. Also, at some point, drill a 1/4 inch pilot hole dead center of the disc. I first determined the hat would go on the very top of the pole, but the 5th aluminum rod would become a 3ft stinger affixed atop the hat, the aluminum ball being mounted to act as a static ball, like the cherry topping a dessert. Somewhere along this effort, I accurately measured the locations for the spokes, drilled 1/4 inch holes 3/4 inch deep. I was going to anchor the spokes with stainless sheet metal screws but opted to use aluminum rivets instead.

Another note about the capacity that is connecting the spokes enhances the efficiency of the hat. I have connected the ends of mine with aluminum wire.

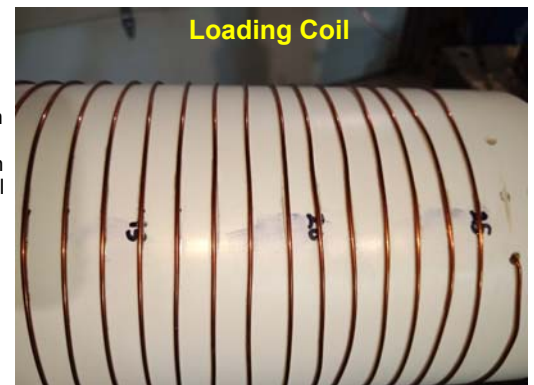
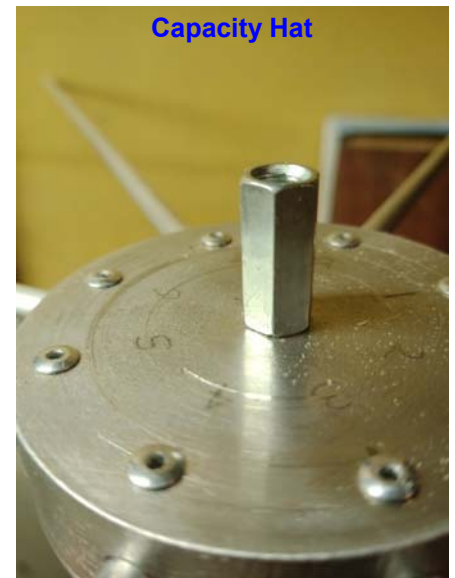
To make sure the aluminum disc stays put, I measured the diameter of the very top section of pole, then using a hole saw, I countersunk a ring into the disc for it to fit the pole. I made it about 1/4 inch deep. The disc is anchored to the pole by using an eye bolt set in the disc, then held tight to the pole by passing a bolt through the pole, through the eye bolt. Draw the eye bolt tight using two stainless nuts. At this point you can add the DIY stinger (with the static ball), a commercially made one, or none at all.

Winding the loading coil.

This was probably the most tedious part of the entire build. If I had the tools to do so, I would have engraved into the PVC pipe, a spiral notch to lay the coil wire in. What I did instead was to cut notches every half inch, on opposite sides of the pipe. Obviously, the notches on one side of the pipe had to be a quarter inch higher or further advanced than the notches on the opposite side of the pipe. This way as a winding was laid into one notch on the pipe as the wire wound around to the other side it would be 1/4 inch further along the pipe and as the wire progressed back to the front side of the pipe it was again at the next marked half inch. This way I obtained the proper spacing for the coil as I progressed up the pipe. You can see from the pictures how I notched the pipe using a grinding tool but you can use almost anything that will allow the wire to sit snugly in place. Keep the wire as tight as possible while winding. You can make final adjustments once the wire is secured to the pipe. Some dabs of super glue helped hold the windings in place until I was able to spray paint the large coil using a non-metallic spray paint [avoid metallic paint: doing so is akin to feeding a Mogwai after midnight]. Unfortunately, I had no gray paint to spray my coil with to help it blend into the flagpole better. I hope you enjoy the fine camouflage job I did painting the coil.

[Note: if you have a lathe or know someone who does, this would be a good time to bribe them to turn down the insulating rod at one end just enough to fit inside the next flagpole section. If you don't have a lathe or know someone who does, you could very carefully use other tools to shave down insulating rod just enough the fit inside the flagpole for 5 in. You could use wood to insulate the two sections, just make sure you weather proof the wood so that it does not swell up at some point in the antennas lifetime.] *[Editor's note: Don't use wood dowels. Get fiberglass rod from a vendor, for example, MGS/ Max Gain Systems. Wood won't take the stress for long.]*

After the third flagpole section, I interrupted the next joint to insert the insulating UHMW piece. The PVC coil form needs to be 14-15 inches long to accommodate the 13 inches of coil. The insulating piece between the 3rd & 4th section needs to insert into the aluminum flagpole enough to be sturdy. I kept 5 inches of insulating rod in both the connecting pole sections. You can see from the pictures where I



'Twas The Night...

'Twas the night before Christmas, when all through the town,
The snowstorm was raging, the phone lines were down;
The wind it did howl, the tree limbs did crack,
I hope that St. Nick isn't forced to turn back.

The wife making cookies, the kids making noise,
While away in the shack, by my rig I was poised.
The finals were glowing, the mike gain was set,
I was chasing DX to see what I could get.

The bands were all empty, the frequencies clear,
Except one lone station that sounded quite near.
He was calling CQ and my interest did pique,
When he ended transmission with the words, "Old St. Nick".

I answered back quickly, I used great dispatch,
If this were St. Nicholas, good God, what a catch!
We exchanged information, it was really quite graphic,
Then he came back and said "I've emergency traffic!"

His reindeer were tired, his elves in a grump,
If he didn't land soon, then his sleigh he would dump.
I thought very carefully, I thought very hard,
Then I gave him directions to my snow covered yard.

As he flew past my window, his hair like a mane,
He reined in his chargers and called them by name:
"Whoa, Anode! Whoa, Cathode! Whoa, Zener! Whoa, Diode!
Stop, Heater! Stop, Grid leak! Stop, Bias! Stop, Triode! You're
flying too low! you're flying too fast!
Look out, you dumb reindeer, his antenna mast!"

So into the backyard the reindeer did drop,
St. Nick, the elves, and the sleigh went kerplop!
Then at the back door, I heard this loud knocking,
"Open up in there, or I won't fill your stocking!"

Author Unknown. Posted by Fred Hogaboom N1KWW

As I turned off the light and was leaving the shack,
Into the house Saint Nicholas came from the back--
His two-meter rig held to his hip with a strap,
"Hams do it in the shack" on the front of his cap.
The sack that he carried made his aged brow furrow,
And he handed me a card that read,
"QSL Via Bureau".

His clothes were all sooty, from his shoes to his vest;
I felt like a novice taking his test.
His fingers were calloused and from what I could tell,
This came from a straight key that I'll bet he used well.

I offered him coffee, I offered him smokes,
I tried easing the tension by telling ham jokes.
Then he nodded his head and raised up his thumb,
He smiled like an Elmer, did I ever feel dumb.

He grabbed up his sack and went straight for the tree,
And placed in it a large present for me.
When he finished his work, he stood up, took a bow,
Then out the back door to his team he did plow.

But I heard him exclaim as he flew o'er the land,
"Beware the FCC, friend, we were both out of band!"



The Antenna, Installed



The Sheet Metal screws holding the sections together, with the braid spanning the joints.



The Harbor Freight 80 Meter Vertical

continued from Page 8

connected the coil in two places, at each end of the coil. [Note: I opted here to mount the coil directly onto the insulating rod. Looking at it is a little peculiar because the coil is shifted to one side of the antenna: the coil is not centered. But I felt that the strength of the insulating material would accommodate the coil being mounted in this fashion.]

I also joined each of the other sections using braid. The stainless sheet metal screws serve to make the electrical and mechanical connections. I painted these points to provide some degree of weather protection. We'll see if that works. Weather permitting, I will lay out some radials very soon.

Sections connected, coil mounted, top two sections with capacity hat in place. Time to get it strapped to the support and fired up!

Next month: How does it play?

Appendix:

<http://www.66pacific.com/calculators/coil-inductance-calculator.aspx>

<http://www.66pacific.com/calculators/quarter-wave-vertical-antenna-calculator.aspx>

<http://www.k7mem.com>

UHMW (Ultra High Molecular Weight Polyethylene) Round Rod

Photos are courtesy of and © Copyright 2018 Glen Roberts KE7FD

Item 16

Eric Nichols KL7AJ

North Pole, AK, November 30th, 2018 – “Hey, El Joe....whatcha got up your sleeve besides stale Right Guard?” I ventured. I should have known better than to ask. Joel Ballek WL7AI always had these things he called “ideas” rattling around in his cranium, usually to my abject horror.

“Funny you should mention that, E! As a matter of fact, I’ve been working on my next invention for the past three weeks. It’s going to make me rich!”

“Do tell,” I said. “No, on second thought, *don’t* tell.”

“O ye of little faith. Have any of my inventions ever failed to perform precisely to specifications?”

“How about Scrapscatter, for starters.”

“That was an exception, E! You have to admit it was based on good sound science. It was the bureaucrats that killed that one.”

“O-o-o-kay...; I guess I’ll give you the benefit of the doubt on that one. So, what is this Earth-shattering invention you’ve got percolating?”

“It’s a ham radio idea.”

“Of course. What other kinds of ideas are there?” I sighed with resignation.

“Run over to that Army green cabinet that says “Item 16” on it and grab the oscilloscope off the top of it, will ya?”

I wended my way through the minefield of mysterious science projects in El Joe’s garage toward the cabinet in question. I retrieved a rather large, decrepit-looking oscilloscope of unknown pedigree from the roof of the cabinet and lugged it back to the shell-shocked workbench.

“Thanks, E.”

“You know, you can get a twenty-first century oscilloscope that does a lot more than this thing...and they’re really cheap too! If your invention is so spectacular, you should at least have an oscilloscope that will do it justice. So, where’s your invention?”

“That *is* the invention, E!”

“What? You invented a decrepit 17th century oscilloscope? What *ever* will they think of next?”

“You’re a man of limited vision, E. What makes you think this is an oscilloscope?”

“Uh....because you told me to ‘grab that oscilloscope off the top of it, will ya?’ Which I did.”

“I only said that because I *knew* you were a man of limited vision and that I had to convey my desires using a vocabulary consistent with a person bound by such a restrictive paradigm.”

“Uh....right. That statement is really....um...er...what is the word I’m groping for...ah, yes....*stupid!*”

“Now now, E. No need to get testy. Open your mind and learn a thing or three from the master.”

“Mea culpa. Consider it opened.”

“Excellent. Now, before proceeding, answer this question. What is the most annoying feature of modern amateur radio equipment?”

It didn’t take me long to answer. “That’s a pretty easy one. Menu driven, multi-purpose controls. I’d give anything for a real radio with real knobs and switches.”

“As would we all!” El Joe exclaimed. “Tis a no-brainer indeed. And....drum roll, please.... what you see before you is the exclusive WL7AI universal de-menuizer. Behold.”

“Uh....what?”

“Yes, you heard me right. A universal de-menuizer Take your most annoying ricebox, jam-packed with annoying, menu driven keypads. Place the de-menuizer next to said annoying ricebox. Allow a moment for some simple handshaking to take place, and lo. You have a “de-virtualized” front panel to work with. Each jumbo sized knob and switch now has one and only one function.”

“Aha,” I said. “But what about the CRT display?”

“That’s just a decoy,” El Joe said. He removed the graticule from the front of the screen to reveal a rotary telephone dial.

“What the.....” I began.

“This is just a bonus. We know how annoying those minuscule cell phone keypads can be, as well. We can de-virtualize those too. Just place your cell phone next to the de-menuizer, give it a few seconds to handshake, and you have a *real official genuine telephone dial* to work with. No groping in the dark or fat-fingering those gnat-sized keypads. People will love it.”

I stroked my chin for a moment. “Well, I don’t know if *people* will love it....but I have to admit a lot of hams will. I think you may be on to something here, El Joe. So, when are you going to subject the public at large to this?”

El Joe shrugged. “Well, there’s still a few bugs to work out. I hope to have it ready by Dayton. Would you like to be my beta tester?”

“El Joe, you’ve made me an offer I can’t refuse.”

“Now, aren’t you sorry you doubted me?”

“Well, I’ll let you know in a few weeks.”

I lugged the creation out to my car and plopped it in the back seat, amongst a growing collection of El Joe’s creative triumphs. I’m either a sucker or a genius. I haven’t figure out which yet.

Middletown, NJ, November 24th, 2018 — I’d like to share with you an interesting new “small scam” that I was the target of recently.

It’s not every day that a W2 gets a QSL request from a DX station with a SASE enclosed, but this was for an operation I made from IOTA NA-055 last summer. A DX station in Europe (I will not specify further) sent such a request with the SASE shown in the picture.

Something about the old-timey stamps didn’t look right so I took the envelope down to my local USPS office and determined that the blue 5-cent Lincoln stamp and the brown 90-cent Lincoln stamps were fakes: you can find images of these on the Internet, and you can download and print them, which is what my correspondent did.

I am not the morals police, and it’s not my place to call this guy out for bad behavior, but had I tried to use this envelope I would have been on the hook for whatever the USPS wanted to do to me. Too bad, because if the 90-cent Lincoln stamp was real, it would be worth somewhere north of \$400,000.

— Michael Tortorella W2IY

(Note: The images have been altered slightly to keep the counterfeit stamps from being easily used from this article.)



"Seen" At the 2018 WACOM Hamfest

Photos courtesy of and © Courtesy of Ron Notarius W3WN



"Seen" At the 2018 WACOM Hamfest

Photos courtesy of and © Courtesy of Ron Notarius W3WN



AMSAT-DL Phase 4A Transponder Launched

AMSAT News Service

Washington, DC, November 17th, 2018 -- The Es'hail-2 satellite with AMSAT-DL's Phase-4A transponder was launched successfully on Thursday, November 15th from Launch Complex 39A (LC-39A) at NASA's Kennedy Space Center in Florida.

AMSAT President, Joe Spier K6WAO said, "I applaud the Qatar Amateur Radio Society (QARS) and AMSAT-DL's achievement, the result of six years of work. To be a first at something in space is indeed a rare, rare honor. It is this type of honor that AMSATs around the world work on every day."

A replay of the launch and deployment is available on-line: <https://www.youtube.com/watch?v=PhTbzc-BqKs&feature=youtu.be>

AMSAT-DL describes their commissioning procedures at: <https://amsat-dl.org/p4-a-eshail-2-launches-in-a-few-days>

Phase-4A operating frequencies and modes are documented at: <https://amsat-dl.org/eshail-2-amsat-phase-4-a>

The satellite has a two bandwidth segments, a 250 kHz narrow band for modes like SSB, FreeDV, CW, RTTY etc., and an 8 MHz wide band for digital amateur TV (DATV) modes like DVB-S and DVB-T.

The downlink frequencies are at 10 GHz so a low cost TV LNB could be used as the antenna. For receiving the narrowband modes, an RTL-SDR or similar SDR could be used, and for the 8 MHz DATV modes a standard DVB-S2 set top box can be used to receive and decode the video. For uplink, the transmission frequency is at 2.4 GHz.

According to the commissioning order of the satellite, it is expected that the AMSAT transponders will be activated only after all tests have been passed, and after other higher priority commercial telecommunications systems have been activated. This is expected to take about 1-2 months.

In co-operation with AMSAT Deutschland, the British Amateur Television Club will be operating a WebSDR for the narrowband segment, and a Spectrum Viewer for the wideband (DATV) segment.

Goonhilly Earth Station is supporting the project, providing hosting for the Ground Station facility at their world-famous site in Cornwall, UK.

Watch <https://eshail.batc.org.uk/> for latest WebSDR status.

Mitsubishi (MELCO) and Es'hailSat will begin the In Orbit Testing (IOT) program once the satellite has been positioned in a test orbital slot - the positioning should be achieved in the next few days.

The IOT phase will take a few months, during which time the amateur radio payload will not be turned on.

AMSAT-DL will be commissioning the Amateur transponder ground station in Doha with the Es'hailSat control team.

Once IOT is complete, the satellite will be moved to the final orbital slot at 26 degrees and there will be an announcement by AMSAT-DL when the transponders are available for use. Before this announcement, no attempt should be made to use the transponders as any interference to the test program will delay the release and if excessive interference is seen may cause the satellite owners not to make the facility available for amateur use.

More information is available at: <https://amsat-dl.org/p4a-positioning-and-iot>



Es'hail 2 image courtesy of [Gunter's Space Page](#)

FCC Tells LED Sign Marketers to Abide By Rules

American Radio Relay League

Newington, CT., December 3rd, 2018 -- The FCC Enforcement Bureau [has called on](#) marketers of light-emitting diode (LED) signs to ensure that these lights comply with FCC rules. Since March of this year, the agency has entered into 21 settlement agreements with companies that marketed noncompliant LED signs in violation of the Communications Act and FCC rules. The settlements yielded approximately \$850,000 in penalties, and commitments to ensure compliance with the law going forward. Adherence to the FCC's equipment authorization and marketing rules is critical because radio frequency emissions from the signs may cause harmful interference to licensed communications, such as wireless services, the FCC said.

"In light of these recent settlements, we remind LED sign marketers of their obligations under the law," said Enforcement Bureau Chief Rosemary Harold. "The FCC takes seriously its responsibility in ensuring that energy-emitting devices like LED lights do not interfere with authorized transmissions."

LED lights are often used in digital billboards and other commercial and industrial applications, including billboards and large video displays in sports arenas. Given the electrical design of these lights, they may emit RF energy. Prior to being marketed in the US, LED sign models must be tested and comply with FCC technical standards and must include the proper labeling, identification, and user information disclosures. The FCC Office of Engineering and Technology (OET) oversees the equipment authorization [process](#) for RF devices, including LED signs.

The Enforcement Bureau investigated hundreds of indoor and outdoor LED sign models and discovered repeated FCC rule violations concerning the failure to market the models with the required equipment authorizations, labeling, and user information disclosures. To settle its respective investigation, each company verified that the models at issue were brought into compliance with FCC rules, agreed to pay a monetary penalty, and committed to abide by a compliance plan to improve internal procedures to avoid future violations.

The Bureau has settled 21 investigations to date, with penalties as high as \$115,000. [Each settlement](#) is available on the FCC Enforcement Bureau home page.



Montenegro and Lithuania are the latest countries to announce adoption of a new Amateur Radio band at 5 MHz. Both countries have authorized amateur operation on a secondary allocation of 5,351.5 – 5,366.5 kHz at up to 15 W EIRP, per the *Final Acts of World Radiocommunication Conference 2015*.

Montenegro's International Amateur Radio Union member-society, the Montenegrin Amateur Radio Pool ([MARP](#)), confirmed the new allocation. Lithuania's IARU member-society LRMD President Tadas Vysniauskas LY2BAW said the news was "enthusiastically received" there.

—Paul Gaskel, G4MWO, Editor, The 5 MHz Newsletter



19th Annual WASH Two Meter Simplex Contest

This January will mark the Nineteenth Annual **WASH** 2 Meter Simplex Contest. We've already had a lot of interest in it, and this year promises to be even more exciting! Everyone who participated in it the last eighteen years had a blast, & we hope to continue the tradition again this year!

Rules were been revised before the 2013 event, following feedback from participants, and we have an updated address for mailing your logs from years past — **please** make certain that you use this year's address!

Date & Times: Saturday, January 12th, 2018 from 7 to 11 PM EST. (That's January 13th 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 **146.505 to 146.595 MHz**, and **147.450 to 147.585 MHz**. 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 & AM**: 144.2 to 144.275 MHz Only. (See ARRL 2 Meter band plan).
- **Digital (including RTTY)**: 144.51 to 144.55 MHz. (See ARRL 2 Meter band plan) Multiple digital modes may be used, and participants are free to use any generally accepted Digital mode, but only ONE Digital QSO with a given station regardless of mode

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

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

→ *Listen for Digital QSO's around 144.51 MHz 45 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 100 watts output.

Exchange : Callsign, contact number, ZIP Code.

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 W8XK, please copy Number 3, 15347."

Example 2: "K3VX from K3CM, please copy Number 21, 16801"

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

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 below 146.505 MHz.
- Intentional interference to non-contesters, nets, & QSO's
- Intentional interference to other contest operators
- The committee reserves the right to verify QSO's. QSO's that can not be verified may be removed from the log without penalty.

Scoring: Each Contact:

Phone (FM, SSB, AM): 1 point
CW: 2 points
Digital (any mode): 2 points

Multipliers:

Locations:
Power:

Number of different ZIP Codes
X 3 Stations running 10 Watts or Less
X 2 Stations running 10—30 Watts
X 1 Stations running over 30 Watts

Final Score: Total Points x Locations x Power

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 are now available for download from the **WASH** web site, www.n3sh.org, no later than January 1st.

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

Send the logs to: **** UPDATED ADDRESS FOR 2019 ****

WASH 2 Meter Simplex Contest
c/o Charles Bihun KC3ELA
1918 Woodward Avenue, Apartment 2
Pittsburgh, PA 15226

Enclose a #10 SASE for return of results.

Entry Deadline: February 1st, 2019

Each log submitted on or before the deadline will receive one (1) main prize ticket to **WASHFest 2019 on February 24th**

Logs submitted with an SASE will have their ticket mailed to them, otherwise, the tickets will be available at the **WASH** Club table

Recommended FM Simplex Frequencies:

146.505 MHz	146.520 MHz (*)	146.535 MHz	146.550 MHz	146.565 MHz	146.580 MHz
147.450 MHz	147.465 MHz	147.480 MHz	147.495 MHz	147.510 MHz	147.525 MHz
147.540 MHz	147.555 MHz	147.570 MHz	147.585 MHz		

Simplex channels below 146.505 MHz are not to be used, as many of these are in use in WPA as repeater input frequencies.

(*) The National Simplex Frequency, 146.520 MHz, may be used. However, many stations use 52 for casual conversation or as a calling frequency. If the frequency is in use or becomes used by non-participants, please permit them to use the frequency unimpeded. 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.



ARRL Fall Election Results

American Radio Relay League

Newington, CT, November 16th, 2018 -- ARRL has announced the results of contested elections for Director and Vice Director. Ballots were opened and counted on November 16th in seven contests within five ARRL Divisions. Here are the final tabulations:

Central Division Director:

Kermit Carlson W9XA 1,898
Valerie Hotzfeld NV9L 1,755
Mr. Carlson was declared elected.

Hudson Division Director:

Ria Jairam N2RJ 1,292
Mike Lisenco N2YBB 1,239
Ms. Jairam was declared elected.

New England Division Director:

Fred Hopengarten K1VR 1,432
Tom Frenaye K1KI 1,383
Mr. Hopengarten was declared elected.

Northwestern Division Director:

Mike Ritz W7VO 1,589
Bonnie Altus AB7ZQ 1,308
Horace Hamby, N7DRW 495
Mr. Ritz was declared elected.

Northwestern Division Vice Director:

Mark Tharp KB7HDX 1,368
Daniel Stevens KL7WM 1,228
Delvin Bunton NS7U 767
Mr. Tharp was declared elected.

Roanoke Division Director:

George Hippisley W2RU 1,891
Dr. James Boehner N2ZZ 1,365
Mr. Hippisley was declared elected.

Roanoke Division Vice Director:

William Morine N2COP 1,742
John Humphry W4IM 1,505
Mr. Morine was declared elected.

All newly elected officials will take office at noon on January 1st, 2019.



Amateur Radio Issues Under Discussion in Geneva in Advance of WRC-19

American Radio Relay League

Newington, CT, November 13th, 2018 -- As part of the run up to World Radiocommunication Conference 2019 (WRC-19), three International Telecommunication Union Radiocommunication Sector ([ITU-R](#)) Study Group 5 (SG 5) Working Groups have been meeting this week in Geneva. ITU-R Study Groups develop the technical bases for decisions taken at WRCs and develop global standards, reports, and handbooks on radiocommunication matters. Working Group 5A1 (WG 5A-1), chaired by Dale Hughes VK1DSH, is responsible for Amateur Radio issues. Its primary task is to develop a technical report to support the work for WRC-19 Agenda Item 1.1, considering an allocation of the band 50 – 54 MHz to the Amateur Service in ITU Region 1 (Europe and Africa) that would be in line with the 6-meter band in Regions 2 and 3. Other services, including broadcasters, utilize the 50 – 54 MHz band in Region 1. The work is in response to WRC-15 Resolution 658 to study spectrum needs in Region 1 for the Amateur Service in the 50 – 54 MHz band, and to study sharing among the Amateur Service and the mobile, fixed, radiolocation, and broadcasting services, in order to ensure protection of these services.



While a number of Region 1 countries in Africa have primary Amateur Service allocations at 50 – 54 MHz, other Region 1 countries have authorized amateur use of all or parts of 50 – 52 MHz, mostly on a secondary basis.

In addition to WG 5A-1 Chairman Hughes, the larger Working Party 5A includes IARU Vice President Ole Garpestad LA2RR; IARU Representative Dave Court EI3IO; [CEPT](#) Coordinator Hans Blondeel Timmerman PB2T; ARRL Representative Jonathan Siverling WB3ERA, DARC representatives Ulrich Mueller DK4VW, and Bernd Mischlewski DF2ZC, and JARL representative Ken Yamamoto JA1CJP. Jose Costa (Canada/Ericsson Canada) chairs WP 5A. Siverling is the WP 5A rapporteur for ITU Region 2 (the Americas). His report, *Liaison Rapporteur's Report on Relevant Activities in Certain Countries in Region 2*, emphasized the emergency communications provided by radio amateurs during this past hurricane season — including Hurricane Willa (Mexico), Hurricane Michael (Florida), the ARRL Atlantic Hurricane Season Webinar, and the link to information and news summarizing the preparations and response by the Amateur Radio Service.

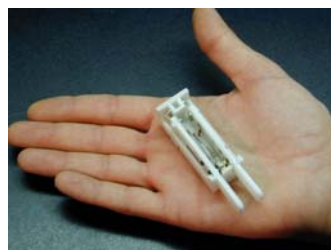
The National Telecommunications and Information Administration's ([NTIA](#)) Amy Sanders of the US delegation shared portions of Siverling's report in her contribution concerning Public Protection and Disaster Relief.

While much of the work of WP 5A and of Working Group 5A-1 in particular has been on the working document covering Amateur Service spectrum needs and sharing studies with incumbent services in the 50 – 54 MHz band, WG 5A-1 also completed a liaison statement to Working Party 1A (spectrum engineering techniques) and Working Party 3L (ionospheric propagation and radio noise) highlighting Amateur Radio concerns with respect to Wireless Power Transfer (WPT) systems, outlined in the *Preliminary Draft New Report* addressing issues affecting 100 – 148.5 kHz. The primary unease involves spurious and harmonic emissions — which require additional study, attenuation due to walls and building penetration levels, and separation distance between WPT devices and Amateur Radio antennas. Fears have been expressed that WPT charging for electric vehicles might cause substantial interference on the amateur bands.

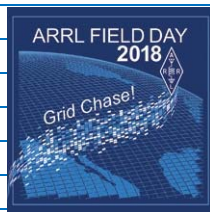
A Conference Preparatory Meeting for WRC-19 is set for February. WRC-19 will take place October 28 – November 22 in Sharm el-Sheikh, Egypt.

Key and paddle maker Palm Radio is going out of business, Dieter Engels DJ6TE, [announced](#) on the company's website. "For health reasons and after the passing of Brunhilde DK7SN; Uli DL2BAT, and Klaus DL9SKE, I am not able to continue Palm Radio in its current form," Engels wrote. "I will only deliver remaining stock," and he invited inquiries via [email](#).

Marshall Emm N1FN, of Morse Express — a carrier of Palm Radio products — said that Engels "has been unwell for some time," but added that Morse Express would continue to service them for as long as it can. Palm Radio products have been popular among portable operators.



Call	Score	Category	QSOs	Power	GOTA Call	Participants	Club
K3UA	1,328	1A	323	2		3	
KD8ZUY	1,020	1A	435	2		4	Kreuter Family FD
W3BMD	466	1A	85	2		9	Indiana Co. ARC
KF3CG	406	1B1	128	2		1	
W3RA	378	1B1	76	2		1	
KN3O	990	1B1B	84	5		1	
KA3KSP	106	1C	28	2		1	
K3RWN	804	1D	377	2		1	
AK3G	386	1D	168	2		1	
WO3T	352	1D	101	2		1	
K3JZD	170	1D	30	2		1	
K3VED	139	1D	89	1		1	
KC3GYU	90	1D	20	2		1	
KC3KDK	84	1D	17	2		2	
KB3ZVH	76	1D	38	2		1	
WX2DX	60	1D	3	2		1	
K3CSF	614	1E	187	2		2	
KC3EYS	90	1EB	8	5		1	
W3MIE	3,930	2A	928	2	N3QQH	25	Crawford ARS
K8RSO	1,934	2A	603	2	KE8BQV	5	Radio Soc. of OH
N3A	5,070	2B2B	482	5		2	
W3TCA	824	2F	76	2		11	Tri-County (PA) ARC
W3PIE	3,388	3A	927	2		15	Uniontown ARC
KA3PMW	3,374	3A	1,203	2		4	Redneck Hams
W3OC	2,272	3A	641	2	N3JHB	22	Two Rivers ARC of McKeesport PA
W3CSL	2,102	3A	390	2		21	Monessen ARC
K3GT	1,688	3A	355	2		10	North Hills ARC
W3SGJ	1,410	3A	280	2		25	Beaver Valley ARA
W3VV	1,040	3A	195	2		12	
W3KWH	1,184	3E	276	2		15	
W3YA	8,681	4A	5,430	1		30	Nittany ARC
W3B	4,876	4A	1,418	2		30	Wireless Association of South Hills
WA3COM	3,050	4A	800	2		22	Washington Amateur Comms
W3ACH	2,578	4A	604	2	KB3PCA	48	Cumberland Valley ARC
K3MJW	5,596	4E	1,550	2		17	
W3GV	4,084	4E	1,086	2		18	
K3NQT	1,330	4F	172	2	KB3DFZ	9	Bedford Co. ARS
N3NIA	1,602	5A	234	2		15	Elk Co. ARA
W3GH	1,036	5A	312	2		14	Skyview Radio Soc.
W3ZIC	3,034	6A	565	2		25	Fort Venango Mike and Key Club
W3UDX	6,658	7A	1,663	2	AA3YW	15	Butler Co. ARA
W3LIF	8,270	7F	2,654	2		50	Mercer Co. ARC



WPA Section Results, ARRL Field Day 2018



Hamvention® will host the 2019 ARRL National Convention May 17th – 19th in Xenia, Ohio. Hamvention, the largest annual Amateur Radio gathering in the US, and the ARRL National Convention will share the joint theme of “Mentoring the Next Generation” of Amateur Radio operators.

As host of the 2019 ARRL National Convention, Hamvention will feature dozens of forums covering a variety of Amateur Radio topics in the areas of technology, public service, on-air operating, training, and learning. A track of presentations will be organized to build on the mentorship theme, encouraging more individuals and radio clubs to lead new and inexperienced radio amateurs to become more active, involved, and engaged.

Special event station W8BI will operate from the fairgrounds, and conventioners will have an opportunity to get on the air from Hamvention.

The National Convention will feature ARRL EXPO — a large assembly of exhibits, activities, and representatives for ARRL programs and services. Details will be posted as these become available.

Hamvention2019 will be the third held at the Greene County Fairgrounds and Expo Center in Xenia since the event relocated from Dayton. In 2018, Hamvention recorded its third-largest attendance ever with 28,417. Hamvention is a traditional meeting place for radio amateurs from all over, and the event attracts many international attendees each spring.

The Hamvention [website](#) will include details on how to obtain convention tickets as well as information about forums, exhibits (including vendor and flea market accommodations), travel, and preferred hotels with special rates. Convention tickets are \$22 in advance or \$27 at the gate.

Since 1952, Hamvention has been sponsored by the Dayton Amateur Radio Association® ([DARA](#)), an ARRL-affiliated club, and is supported by volunteers from radio clubs throughout the country. In past years, Hamvention has regularly served as the ARRL Great Lakes Division Convention. Hamvention hosted the ARRL National Convention most recently in 2005 and 2009.

— American Radio Relay League

WPA Section News

Joe Shupienis W3BC, ARRL Western Pennsylvania Section Manager



Falls Creek, PA, November 10th, 2018 — **Submission Deadline for 2018 WPA Yearbook:** What a year it has been! 2018 will go down in the record books as a banner year for Amateur Radio in our Western Pennsylvania Section.

Activity is up, and our hamfests were better than ever! Reports from everywhere are coming in about Field Day, Youth Activities, Club activities, Public Service and so much more!

Once again, we are going to document this in the 2018 edition of the WPA Yearbook — and you can help! Please send your photos, write-ups, press releases, etc to: yearbook@wpa-arrrl.org

Please try to make sure everybody in the photo is working safely and using proper safety equipment as needed (safety glasses when soldering, hard-hats under a tower, etc.) For every photo, please try to identify all the hams in the photo, and tell us what they're doing (and don't forget, where, when and why!)

If minor children under 18 are identifiable in the photo, please make sure you have a model release form signed by their Parent or Guardian on file, and indicate this—by name— with your submission. The standard ARRL form is available at <http://www.arrrl.org/files/file/Model%20Release%20ModelReleaseForm.pdf> (but please don't send it to

Newington, since the photo is not going to be published in QST. Instead please keep the form on file in your records.)

We would like to have the finished Yearbook available for the Holidays, so everyone can share it with their friends and families. Therefore, we are making the deadline for all articles and photos Tuesday, November 20th.

It took a lot of work to put the 2017 Yearbook together, and with all the activities this year, our 2018 WPA Yearbook might be even bigger and better! So please send your contributions as early as you can!

Thanks to Hamfest Sponsors: Many thanks to all the WPA Hamfest sponsors for supporting our WPA Section activities, which are open to all radio amateurs. The eleventh and final WPA hamfest of the year was the WACOM Hamfest and South-1 District Meeting, last Sunday, November 4th at the Printscape Center at Southpointe near Cannonsburg. It was a very nice indoor venue, and very well-attended! The district Meeting was very well received, and also well attended. All the presentation hand-outs are available on the Section Website. <http://wpa-arrrl.org/Files/>



60 Meter Tests: Every Saturday morning, following the 9:00 am WPA ARES Voice Net on 3.983 MHz, we have been meeting on the 60 meter band to make signal strength comparisons across our WPA Section, and to try different antenna configurations to determine what works best to cover or 25,000 square-mile Section.

We meet on 60 meters on 5403.5 kHz upper sideband immediately after the 80 meter net. If that channel is in use, we will use 5371.5 USB. Even if your equipment cannot transmit on the 60 meter band, please tune in and listen, then send me a report of the stations you heard, and your signal report for each. This information is very useful, and the more reports we get the more meaningful the information becomes.

That's all for now. THANK YOU one and all for everything you are doing to make Amateur Radio the best hobby in the world!

73 and Press On!

Photos of the ARRL WPA Section & Atlantic Division staff "in action" at the 2018 WACOM Hamfest



RAAG 60th Anniversary

Radio Amateur Association of Greece

Athens, Greece, November 29th, 2018 -- Special event station **SX6ØRAAG** will be on air, from 1 to 31 December 2018, in all HF bands & modes (IARU HQ operation style), celebrating the 60th anniversary of Radio Amateur Association of Greece – RAAG. A dedicated award program will support this operation. The award program will be hosted at sx60raag.hamlogs.net.

All contacts will be uploaded in a daily basis, so participants can easily check if they are eligible for any awards.

The awards will be issued electronically, in PDF format. There is no need for the participants to send QSL cards or GCR lists. Awards shall be issued in 4 classes (Bronze, Silver, Gold & Diamond) for MIXED mode contacts. There will be also 3 classes for single mode contacts (PHONE, CW, DIGI).

A special plate will be awarded to the 1st Greek participant (all call areas, including SV5, SV9 & SV/A) and also the 1st participant from each continent (Europe, North America, South America, Asia, Africa, Oceania). The "1st participant" is defined as the operator that will manage to make first as many QSOs as possible within the 26 available band slots in the 9 HF bands (160, 80, 40, 30, 20, 17, 15, 12 10m). Only one QSO per mode-band (slot) count for the award.

All QSOs will be uploaded also in LoTW, eQSL & ClubLog. There is no need to send us your QSL card, an OQRS link will be available soon. All OQRS requests will be replied by bureau. For direct QSLing, an SASE is required.



According to ClubLog, the "Top Ten" Wanted DXCC Entities as of November 28th, 2018, are:

1. P5 DPRK (North Korea)
2. 3Y/B Bouvet Island
3. FT5/W Crozet Island
4. BS7H Scarborough Reef
5. CEØX San Felix Islands
6. BV9P Pratas Island
7. KH7K Kure Island
8. KH3 Johnston Island
9. VKØM Macquarie Island
10. FT5/X Kerguelen Island

During the entire month of December several youngsters will become active with the "YOTA" suffix in the callsign. The idea for this is to show the amateur radio hobby to the youth and to encourage youngsters to be active on ham radio.

As of December 1st, here are the participating stations known so far:

4O18YOTA	HA6YOTA	R18YOTA
5H3YOTA	HB9YOTA	SH9YOTA
6V1YOTA	HGØYOTA	TF3YOTA
9AØYOTA	II3YOTA	TM18YOTA
9A18YOTA	II5YOTA	WK1DS/YOTA
AO1YOTA	JH1YDT/YOTA	YOØYOTA
AO5YOTA	LY5YOTA	YT18YOTA
AP3YOTA	LZØYOTA	YU18YOTA
DFØYOTA	OEØYOTA	Z3ØYOTA
E71YOTA	OH2YOTA	Z39YOTA
EG2YOTA	OL18YOTA	Z6ØYOTA
EIØYOTA	OM18YOTA	ZL6YOTA
ES9YOTA	ON4YOTA	ZS9YOTA
ET3AA	PA6YOTA	
GB18YOTA	PD6YOTA	

Complete details about the event and the available awards can be found at <https://events.ham-yota.com/>. QSLs are via ClubLog's OQRS (direct or Bureau ONLY) or direct to MØSDV.

DX News Briefs



The **3YØI** "Rebel Team" Bouvet Island Expedition has been in Cape Town, South Africa since mid-November. They report that they have been "very busy" with preparations and safety training, including cold water rescue training.. They have been testing the Spherical dome tents that they will be using while on the island. The team indicates that they are forgoing the cost of a helicopter to ferry them on & off the island, but will use Zodiacs to land. They also report that they currently have two openings for two additional operators to join them. Exact dates for the trip have not been announced, other than being planned for the southern hemisphere's summer, but will be released as they approach the departure date. They expect the trip to take 12 days each way, with 2 weeks on Bouvet to operate. More information available at <https://bouvetoya.org/blog/>

The story of the ill-fated **TT8KO** DXpedition by LA7GIA can now be found online at <https://dx-world.net/wp-content/uploads/2018/11/TT8KO-story.pdf> KK4AOS is currently QRV from **KC4AAC** Palmer Station, AN-012 Anvers Island, 17 & 20 SSB as time permits. Please note that K1IED is no longer the QSL manager, a new one is being sought.

N9EAW is now QRV as **HQ9T** from NA-057 Roatan Island through 18 December, CW & SSB. QSL via N9EAW

5B4ALX is currently QRV as **C4XMAS** through December, 160 – 6, CW SSB & Digital. QSL via IZ4AMS or ClubLog.

ON7YK is currently QRV as C5YK through 9 March 2019, 60 – 6, using mailing FT8 as well as CW SSB JT65 JT9 and RTTY. More information at <http://www.on7yk.eu/index.html>. QSL via ON7YK, but please do NOT QSL prior to 15 March 2019.

PP1CZ will be QRV as **PYØFW** from SA-003 3 – 8 December. He will focus on 60 meters, since the band is now available in Brazil, along with tower maintenance for PUØFNI. QSL via OQRS.

VE3LYC and KO8SCA will be QRV as **TXØA** from OC-113 Maria Est Atoll, and **TXØM** from OC-297P Morane Atoll, 4 – 18 December. More information at <https://tx0a-tx0m.weebly.com/> QSL via VE3LYC

JG7PSJ will be QRV as **JD1BMH** 17 December – 2 January 2019, 80 – 10, CW SSB & RTTY. More information at <http://sapphire.es.tohoku.ac.jp/jd1bmh/> QSL via JG7PSJ

F8EN will again be QRV as **TR8CR** 18 December until mid-March 2019, 40 – 17, CW & SSB. QSL via F6AJA

Team F6KOP will be QRV as **9LY1JM** from AF-037 Banana Island 9 -- 21 January 2019. They will be on 160 – 10, up to four stations simultaneously, CW SSB RTTY PSK and FT-8. More information now available at <https://9l2019dx.wordpress.com/> QSL via F5GSJ

MØKRI will be QRV as **9U4RI** 15 – 25 February 2019, 40 – 10 CW & SSB. QSL via MØKRI

AA9A will again be QRV as **PJ7AA** 2 – 30 March 2019, 80 – 10, CW SSB & Digital. QSL via AA9A

QSL Routes

4O1HQ via 4O1HQ	H7/RMØF via RMØF	SP85NISCO via SQ7FPD
C6AQQ via EA5GL	HA7A via HA5MK	TM420CCAE via F6FMT
CO2RQ via EC6DX	HC7AE via EA5GL	UK7AL via EA5GL
CR5E via CT1ILT	HF6FIRAC via SP6IEQ	UPØL via DL8KAC
CR5O via CT7AJL	HK7AAG via EA5GL	VP2MSK via NS7K
CT9/DJ2YA via DJ2YA	J8NY via VE7NY	VR2FUN via VR2FUN
CT9/DL1CW via DL1CW	LO5D via LU8EOT	XV2D via EA5GL
CT9/DL8JJ via DL8JJ	OP5MA via ON5MA	XV9D via EA5GL
DFØYOTA via MØSDV	OR2M via ON4IA	YBØECT via W2FB
EP4MMM via WA3FRP	PB18XMAS via PD2RKG	YT1R via YT1EA
H7/RC5A via RC5A	SP3Ø7PAF via SP9KAO	
	SP315PAF via SP5KCR	
	SP317PAF via SP5KCR	
	SN6O via SP6PAZ	

Thanks to the NJDXA DX News Reflector, the DX-QSL Reflector, 425 DX News, OPDX News, DX Coffee, DX World.Net, ICPO Bulletin, & ARRL DX Bulletin for our DX News information. Thanks also to the ARRL DXCC Desk, & Bernie McClenny W3UR /The Daily DX for confirmations & additional information.

Has Roadway found the tower yet?



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.**

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The **WASHRag** Masthead is courtesy of Jeff Murray K1NSS, creator of DASHToons & Dash the Dog Faced Ham!!

Find the online cartoons and stories of Dash the Dogfaced Ham & more at <https://www.jeffk1nss.com> !

Shop for Dash items at his online store on Café Press, www.cafepress.com/shopdash



For the 13th consecutive year, [The 3916 Nets](#) will be presenting The Santa Net on 3.916 MHz. Good girls and boys can talk to Santa Claus, via amateur radio, nightly at 7:30 PM (Central) starting Friday, November 23rd, 2018. The Santa Net will run nightly at 7:30 PM Central through Christmas Eve, December 24th, 2018.

[Pete Thomson KE5GGY](#), of The 3916 Nets, commented on [The 3916 Santa Net](#). He said, "Christmastime is our favorite time of the year on 3.916 MHz. Our group thoroughly enjoys helping young people and their families have a shared Christmas experience that they'll always remember. In addition, Santa Net has introduced a lot of young people to the magic of amateur radio."



Youngsters can talk to "Santa at The North Pole" via strategically placed operators who relay the voice of Santa. Thomson said that [The Santa Net](#) is a team effort that involves the efforts of a number of 3916 Net members. He said, "In our first year, we connected 10 kids to Santa on Ham Radio and it's grown steadily since. For 2018, we're expecting between 600-700 children to participate."

For more information on The Santa Net, email KE5GGY@gmail.com

— Pete Thompson KE5GGY

If you've downloaded the **WASHRag** from the N3SH web site, or picked up a copy from a friend... you can sign up to have the PDF copy sent directly to your email. You **do NOT** have to be a member of **WASH**!

Just send an email to wa3sh-subscribe@yahoogroups.com and the automation should take care of the rest!



FCC News

Courtesy of the American Radio Relay League

Newington, CT, November 21st, 2018 -- The FCC has rejected a *Petition for Reconsideration* that AMSAT filed 14 years ago, seeking to exempt Amateur Radio satellites from the FCC's satellite orbital debris mitigation requirements. The Commission took the opportunity in a [Notice of Proposed Rulemaking and Order on Reconsideration](#), released on November 19th, that revisits its orbital debris rules for the first time since their adoption in 2004. Among other things, AMSAT had argued at the time of its *Petition* that applying the orbital debris requirements to Amateur Radio satellites would be cost prohibitive, and that the FCC had not indicated what constitutes an acceptable orbital debris mitigation plan.

Acknowledging that time has made some of AMSAT's arguments moot, the FCC said the costs involved with modifications to comply with post-mission disposal requirements "are justified when balanced against the public interest in mitigating orbital debris." The FCC said it determined that closer adherence to the disposal methods described in the rules was "warranted in order to limit the growth of orbital debris" in low-Earth orbit (LEO).

"In any event, in the years since the debris mitigation rules were adopted, and notwithstanding any costs imposed by FCC regulations, well over 150 small satellites have been authorized, with at least 20 of those considered amateur satellites," the FCC said in its November 15th *Order on Reconsideration*. "It appears that, to the extent that any costs have been incurred, the main contributor to costs for amateur and similar LEO missions has to do with the availability of launches to appropriate orbits."

The FCC also said that in the years since the FCC issued its *Orbital Debris Order*, "numerous licensees, including amateur satellites operating in LEO, have successfully satisfied our orbital debris mitigation requirements."

AMSAT released a statement on the dismissal of its reconsideration petition.

"For nearly 60 years, Amateur Radio hobbyists, experimenters, and researchers from AMSAT, other Amateur Radio organizations, and universities worldwide have pioneered numerous satellite technologies, including inter-satellite communication links, search-and-rescue satellite systems (SARSAT), reception of GPS signals at altitudes above the GPS constellation, and the use of commercial off-the-shelf components in space while accomplishing this with smaller and smaller satellites. We look forward to working with the FCC to craft a regulatory framework that addresses the growing concerns regarding orbital debris while preserving the flexibility for hobbyists, experimenters, and researchers to access a variety of orbits."

The FCC [has granted](#), in part, the European Commission's request for a waiver of Commission rules so that non-federal devices in the US may access specific signals transmitted from the Global Navigation Satellite System (GNSS) known as Galileo.

The action means that consumers and industry in the US may access certain satellite signals from the Galileo system to augment the US Global Positioning System (GPS). The *Order* approved finds that the Galileo GNSS is uniquely situated with respect to the US GPS, since the two systems are interoperable and RF compatible pursuant to the 2004 European Union/United States Galileo-GPS Agreement.

Specifically, the *Order* permits access to two of the Galileo system's satellite signals — the E1 signal transmitted in the 1559 – 1591 MHz portion of the 1559 – 1610 MHz Radionavigation-Satellite Service (RNSS) band, and the E5 signal transmitted in the 1164 – 1219 MHz portion of the 1164 – 1215 MHz and 1215 – 1240 MHz RNSS bands.

The *Order* does *not* grant access to the Galileo E6 signal, which is transmitted over the 1260 – 1300 MHz frequency band, since this band is not allocated for RNSS in the US or used by the US GPS to provide position/navigation/timing (PNT) services. The FCC pointed out that granting access to the Galileo E6 signal could constrain US spectrum management in the future in spectrum above 1300 MHz, where potential allocation changes are under consideration.

The omission of the E6 signal also means that radio amateurs would not have to protect Galileo receivers from interference on 23 centimeters, which has been a significant issue in Europe.

Silent Keys



Sally Bobro, 78, Kennedy Township, mother of Frank Bobro N3FB, November 26th



WASHfest 2019

The South Hills Hamfest — Now in our **TWENTY FOURTH** big year!
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Sunday, February 24th, 2019
8:00 AM until 3:00 PM Rain or Shine (or Snow!)

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3735 Buffalo Drive, South Park Township, PA 15129

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Donation \$5



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Second Prize: Comet Antennas CAA-500 Mark II Antenna Analyzer
Third Prize: Buddipole Whip

Additional Hourly Door Prizes! 2 Special Black Box Prizes (Separate Drawing)!

Main Prize tickets are \$2.00 each, 3 for \$5.00, 7 for \$10, 15 for \$20

All Prizes Subject to last-minute changes

For Table Reservations, or More Information, Please Contact:

Carol Danko KB3GMN at (412) 884-1466 n3sbf@comcast.net

E-mail us directly at washarc@yahoo.com Check out our website too! www.n3sh.org

Please Note: Early Table Reservations must be paid in full on or before January 31st, 2019. Reservations received after February 1st, 2019 must include payment in full. Reserve now... we have sold out in advance nine years running!

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 \$12.00 = _____

5 Or More Tables w/o: _____ X \$10.00 = _____

Please make all checks payable to:
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We reserve the right to resell any tables not occupied by 8 AM, unless prior arrangements have been made!



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(check quarter
(check one)) →

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

N3RDV has requested that all membership requests and renewals include an application so that his information is up to date

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



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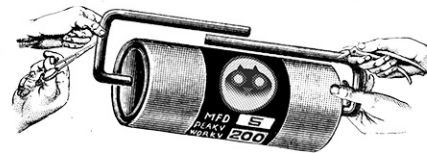
The Daily DX, 3025 Hobbs Road,
Glenwood, MD 21738 Phone: 301-854-5650



Arghh!
What Mightst We Draw For Ye, Matey?



HANDMADE BY GNOMES.

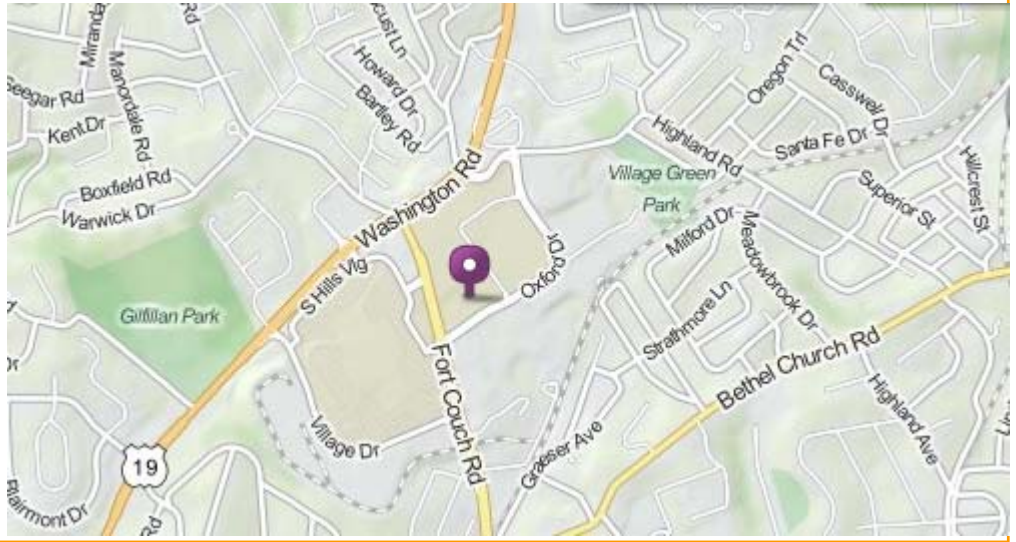
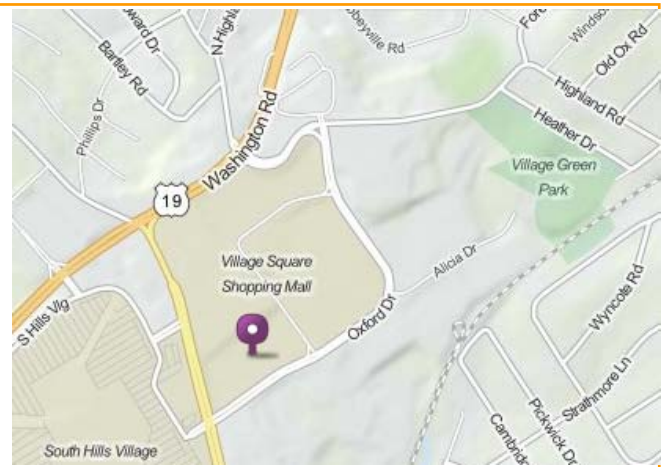


2018 WASH Meeting Location

St. Clair Hospital Outpatient Center Conference Room

2000 Oxford Drive, Bethel Park PA 15102

Adjacent to Village Square Mall, across Ft. Couch Road from
South Hills Village Mall, just off of US Route 19



The WASHRag

Wireless Association of South Hills, Inc.

Ron Notarius W3WN, Editor

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