



WASHRAGTM

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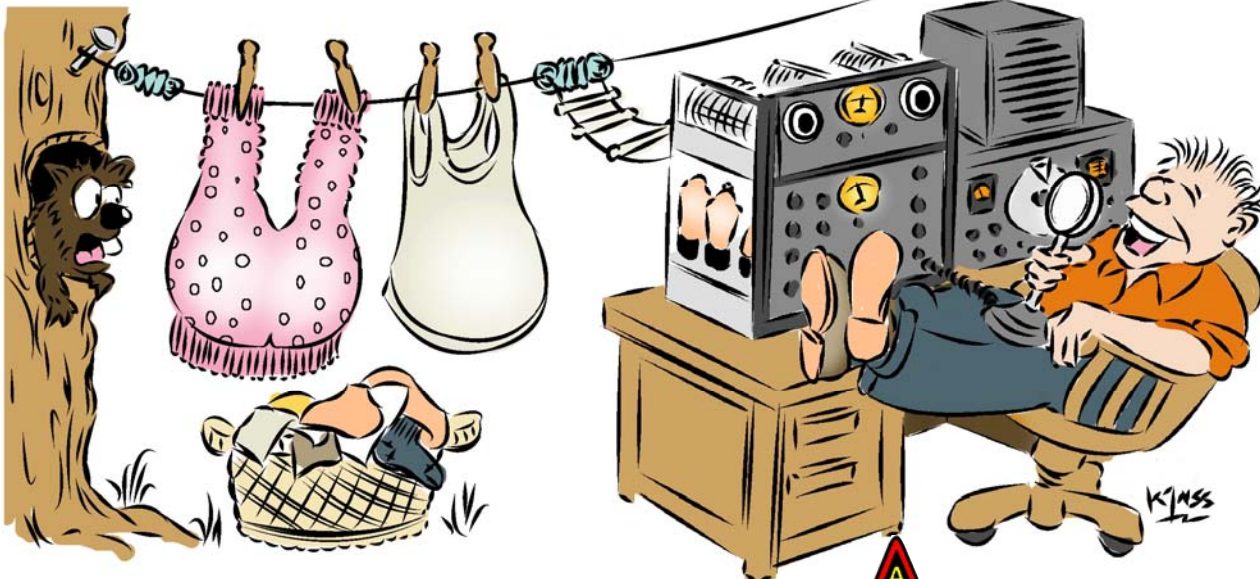


VOLUME 17 ISSUE 04
APRIL 2015

Wireless Association of South Hills



N3SH WA3SH NP2SH/B www.n3sh.org www.washarc.org



WASHRAG™



VOLUME 17 ISSUE 04

APRIL 2015

Next Monthly Meeting: Thursday, April 2nd, 2015

The next meeting of the **WIRELESS ASSOCIATION OF SOUTH HILLS, INC.** will be on **Thursday, April 2nd 2015**, 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.

This month's topics include N3SH Field Day 2015 planning, FLDigi programming and more. See you there!

Cover Photo: A look back into the archives... from the 1999 Pennsylvania QSO Party expeditions by WASH & WACOM members to Clarion and Forest counties, amongst others. The WACOM tower trailer, as it looked then, with a vertical on top and a trap dipole underneath the vertical, Photo courtesy of & © Copyright 1999, 2015 Ron Notarius W3WN

WASH 2015 OFFICERS

EXECUTIVE COMMITTEE:

President	Carol Danko KB3GMN
VP / Secretary	Ben Williams KB3ERQ
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	Glen Roberts KE7FD
WASHFest 2015 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	Ron Notarius W3WN
Field Day 2015 Coordinators	Larry Comden K3VX
	Rick Bell KB3IAC

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 **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.

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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 April 16th

The Next WASH VE exam sessions will be **Thursday**, April 16th, 2015, 7:00 PM, at **WPXI-TV Community Room**, 4145 Evergreen Road, Pittsburgh, PA. Talk-in on the 146.955 MHz and 443.650 MHz repeaters. All examiners are ARRL VEC affiliated.

Walk-ins are accepted. However, 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)

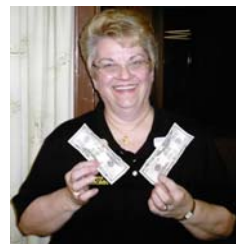
Original CSCE plus a copy of CSCE (if upgrading)

Check or Cash in the amount of **\$15.00** (payable to: ARRL VEC)

Future test dates: Thursday, July 16th, 2015
Thursday, October 15th, 2015

Location: **WPXI Community Room**

Carol's Comments



Time seems to be flying by. April is here, and I think Spring has finally arrived. Not quite the warm temps but they will come soon enough!

I understand that Tim Duffy was named man of the year by the ARRL. Good for him! I also understand he will be attending the up coming Hamfest at Two Rivers on April 12th. Rich and I will also attend this event. We will have a table representing **WASH**. Hope to see some of you there.

Field Day is approaching, so I'm sure plans will be discussed. Such as who plans on attending, Radio's that will be used, as well as antennas. And let's not forget our food menu.

I will not be able to attend the April 2nd meeting. Bill Hill W3WH will take my place.

I would like to wish everyone a very Happy Easter!

— 73, Carol Danko KB3GMN
President, Wireless Association of South Hills, Inc.
N3SH / WA3SH / NP2SH/b

World Amateur Radio Day is April 18th, and this year marks the 90th anniversary of the founding of the International Amateur Radio Union (IARU). Special event stations will be on the air throughout April in celebration of this anniversary. 2015 also marks the 150th anniversary of the founding of the International Telecommunications Union (ITU)

A cool Saturday morning at the end of March brought together many of The Usual Suspects, aka the regular monthly gathering of **the WASH Breakfast Gang** at **Suzie B's**, Route 910 at the intersection of Route 519 at US 19 in Canonsburg. This month's flock included KB3DCO, K3HCR, N3IDH, N3FB, KB3GMU, KB3JHR, N3DFK, KB3YCX, K3SGT, WB4GCS, KC4WTT & W3WN. Morning topics included purchasing a condo in Florida, Grandkids (why didn't we have them first?), building bunk beds, a WVa Portable Carport, Raspberry Pi programming, ice dams in the roof & related re-shingling, "simple" plumbing projects, no more trips to VA (well, maybe one more), babysitting duties, NCAA tournaments, the ladies who watch the Soaps at lunch time, "secret" TV's stashed in the mills, degaussing coils built into TV's, disposable cameras on vacation, drinking V8, diabetic cats, escorting the nuclear reactor for the *Nautilus* across the country, getting good press, the politics of the price of gas at the pump... and that was just from one end of the table.

Our next gathering will be on Saturday, April 25th, as usual at **Suzie B's**, Route 910 at the intersection of Route 519 at 19, Canonsburg. Our "usual" tables will be reserved, but **please** let Jim WB4GCS know ahead of time, so that Suzie & her crew will have enough space available for us. See you there?

2 Meter Contest Chair Needed: Ron W3WN is currently editing the newsletter, running the VE team, and running the 2 Meter Simplex contest. Between the three, and everything else that goes on, it's getting to be more than he can handle, and this year's contest suffered a bit as a result. So he would like to pass the event on to someone who would have more time available to devote to it. One possible person has already been asked, someone who also is already doing a lot for the club... so if anyone else would be interested, now would be the time to step up. The event needs someone who can concentrate on it, starting in the fall. It's not a lot of work, but it does require someone who can devote the proper amount of time to do it right.

2 Meter Net: Glen KE7FD asks of everyone, "I want us to look ahead at the net schedule so that those assigned will be aware. If an assigned net control operator thinks that he cannot attend then please find a replacement or contact me as soon as possible. Appreciation to those who have stepped in last minute. If YOU would like give running the net a try, contact the scheduled net operator or myself. The script/preamble link is found on the left side of the page at www.n3sh.org. I hope everyone checks the club web site for new stuff Sean puts out there."

Speaking of which, **the NCS schedule** is now being updated from the web site just before the issue goes to press, so it should be reasonably accurate. Still, keep an eye on the web site for any last minute changes or updates.

Hard to believe, in only a few weeks will be the **Dayton Hamvention**... and then the **Breezeshooter's Hamfest**... and before you know it, **Field Day**. N3SH/WA3SH Field Day plans are currently being worked on. We will be in South Park again, but at a different grove (Outlook was already reserved for graduation parties.) If you have any ideas or suggestions, now is the time to talk with Larry K3VX and Rick KB3IAC and let them know. The solar-powered station did extremely well in 2014, so just imagine what we can do with a little more people and activity on that side of the operation!

And yes, we will have the annual **WASH Picnic at the Breezeshooter's Hamfest** this year, it's become a tradition. So now's not a bad time to start thinking about coming to Breezeshooter's as well.

Time to unfurl those Jolly Rogers. (And we don't mean N3MSE)

Finally, all of us want to wish everyone a **Happy Easter and/or Happy Passover** for 2015!

WASHNet 2015 NCS Schedule

04/05/2015	Bob AB3ED	05/31/2015	Larry K3VX
04/12/2015	Carol KB3GMN	06/07/2015	Rick KB3IAC
04/19/2015	Digital Night	06/14/2015	Bill W3WH
04/26/2015	Dave N3DFK	06/21/2015	Digital Night
05/03/2015	Fred KB3DCO	06/28/2015	Bob AB3ED
05/10/2015	Glen KE7FD	07/05/2015	Carol KB3GMN
05/17/2015	Digital Night	07/12/2015	Dave N3DFK
05/24/2015	Harold K3HCR	07/19/2015	Digital Night

Join WASH or Renew your Membership for 2015 Today! Membership Application on Page 11!

Minutes, March 12th Meeting

Ben Williams KB3ERQ, Vice President / Secretary, **WASH**

President Carol KB3GMN called the meeting to order at 19:02 hours. 22 members and guests were in attendance.

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

Motion to waive reading of the minutes based on the minutes printed in the newsletter by Ben KB3ERQ, second by Ron W3WN, passed unanimously.

Committee reports:

Treasurer (N3RDV): A balance on the bank account was read & accepted.

Secretary (KB3ERQ): No report

VE (W3WN): VE session at **WASHFest** ended up with 15 candidates. 12 candidates got new licenses or upgrades. Thanks to all VE's who participated or volunteered to help. Other exam dates for 2015 are April 16th, July 16th, October 15th, at WPXI.

Repeaters (N3FB): Still repeating

WASHNet (KE7FD): Suggesting that we start the next digital net on 2 meters, and then switch to 6 meters.

N3SH.ORG (N3NWR): No report

Contests (K3VX): Major contests are listed in the newsletter.

WASHFest 2015 (KB3GMN):

- We are not sending out post cards next year unless we can make sure the mailing list is correct; too many returned cards for bad addresses or SK's.
- CSVFD Memorial Hall has raised the rental price from \$700 to \$800 next year. We may have to raise table prices by \$2 per table
- Attendance was 265 (paid admissions), most likely due to the poor weather. The club still made money.

Field Day 2015 (K3VX): FD site will be Woodland Grove (location #90 on the map). Cost for the weekend permit will be \$90

Public Service (N3IDH):

- St. Patrick's Day Parade this coming weekend. MS 150 is also coming up. See Mark N3RDV with any questions.
- Jeff Hutzleman N3NHS talked about the need for amateur radio operators for the 2015 Pittsburgh Marathon on May 3rd. Amateurs will support the medical folks and provide communications in the event there is a problem with primary communications methods; we are primarily acting as a safety net. Sign-up can be done on the Pittsburgh Three Rivers Marathon Inc. website.

Ways & Means (KB3GMN): 50/50 tonight

Newsletter (W3WN): No report.

President (KB3GMN): 2 Rivers ARC Hamfest on April 11th. Carol KB3GMN is getting a table for herself, anyone who'd like to join her is welcome.50/50 tonight

Old Business: None

New Business: Motion by Mark N3RDV to spend \$50 to buy prize tickets for the Breezeshooter's hamfest. Second by Ron W3WN. Motion carried unanimously.

Good of the Order:

- Rich N3SBF discussed the ARES net on Wednesdays at 9 PM, on the 147.09 repeater. Club members are encouraged to check in, as N3SH is on the roster
- Magazines and catalogs are at the club table tonight for anyone who'd like one.

Motion to Adjourn by Carol KB3GMN, second by Ron W3WN and carried.

Meeting adjourned 19:41

Pizza arrived and was immediately enjoyed by all present.



WASH Spotlight: One More

Just one more picture from WASHFest 2015...

Bill W3WH about to announce an hourly prize winner, as Carol KB3GMN is handing him the ticket

Photo courtesy of & © Copyright 2015 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 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 **Suzy B's**, Route 910 at the intersection of Route 519 at US 19, 1 mile North of Downtown Canonsburg. .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

AB3GM	KB3JHR	N3SBF	WASH FL	WASH OH	Silent Keys
AB3NM	KB3ORO	NU3Q	KA3UPY/M	N8DPW	
AE3DL	KB3PSB	W3RWS	W4ZE	WASH SC	
K3HCR	KC3DOF	W3VFA	WASH GA	N3RNX	
K3LGM	KC4WTT	W3WH	K3OL	WASH TN	
K3SGT	KE7FD	W3WN	KB3IJX	KE3XB	
K3VX	N1NCZ	WA3VSS	WASH NE	N3YPB	
KB3DCO	N2QIV	WB4GCS	NØPEU	WASH TX	
KB3GMN	N3DFK		WASH OR	K3LGM	
KB3GMP	N3FB		NØVLR	Jane Wagner	
KB3GMU	N3IDH		NØWPV	WASH VI	
KB3IAC	N3KFD		KB3NVL	NP2JF	
KB3IVX	N3RHT		KB3NVM		

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

Through March 19th, 2015
List compiled by
Mark Stabryla N3RDV, Vice President/Treasurer

AB3KA
K3EED
K3LIE
KA3NMG
KB3ENX
KB3FNM
KB3FQT
N3FZ
N3HKQ
N3KEH
N3OBD
N3SKR
N3SRC
N3ZEL
N3XFE
W3ZLK
WA3JPP

2015 WASH Upcoming Events Calendar

Meeting Topics & Other Significant Club Events — Subject to Change

April 2 nd	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
April 12 th	2 Rivers ARC Hamfest	http://www.trarc.net
April 18 th	World Amateur Radio Day	http://www.iaru.org/
May 7 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
May 15 th — 17 th	DAYTON HAMVENTION	http://www.hamvention.org/
May 30 th — 31 st	CQ WPX Contest CW	http://www.cqwp.com/
June 7 th	Breezeshooter's Hamfest	http://www.breezeshooters.org
June 7 th	WASH Picnic at the	Butler Farm Show Grounds / Roe Airport, Butler PA
June 8 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
June 13 th — 14 th	ARRL June VHF Contest	http://www.arrl.org
June 27 th — 28 th	ARRL Field Day	http://www.arrl.org
July 2 nd	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park
August 6 th	WASH Meeting	St. Clair Hospital Outpatient Center, 2000 Oxford Drive, Bethel Park

Splatter: Who's At Fault?

The Woodpecker on 40 Meters is splatter on an industrial scale, highly horizontally polarized. But it gave me the clues as to where to start reduction. The Woodpecker sweeps the 40 Meter band from 7032 to 7200 kHz, receivable in California, from about 1000 Z to 1600 Z.

1. I turned the preamp to off, receive filter to 2 KHz, turned on the DSP noise reduction and increased the AF gain. The Woodpecker must have been over-driving my front end since the preamp is just a broadly filtered first stage (no crystals). These settings increased intelligibility but reduced The Woodpecker noise substantially.
2. I tried the same approach to strong adjacent signals (I thought they were splattering) and found that their 'splatter' was greatly reduced although I could still hear the on-frequency signals. Most received signals were from 5 kHz to 2.5 KHz wide.
3. I concluded that much of what I thought was splatter were strong signals over-driving my front end, creating adjacent RF products that passed through to the IF stages.
4. To do my part I set my transmitter's band pass width to 3 kHz. Each radio has some band pass adjustment on the transmit side. Adjusting this BP may go a long way to reducing station generated splatter.
5. I adjusted drive to the amp and found that 75 Watts is the maximum to use for full power. Anything more may produce unwanted RF products with no more output. We noticed that local radio and TVI stopped.
6. It's very possible that some transmitters are truly splattering due to poor design or poor alignment. These may need to be repaired by a service technician.

— 73, Jerry Capodiecici KD6ET

Operators Needed

Amateur Radio Operators are needed to help provide communications for the 23rd Annual Susan G. Komen Race for the Cure on Mother's Day, May 10th, 2015.

Operators are needed for fixed points along the course, and to shadow the race officials.

The race begins at 6:30 AM, and will take place at Flagstaff Hill in Schenley Park.

If you are interested in volunteering for this worth cause, please contact Bob Mente NU3Q at (412) 279-9016, or nu3q@nu3q.us



"Seen" at the March Meeting

Photos courtesy of & © Copyright 2015 Ron Notarius W3WN



KB3IAC, KB3IVX



N3RDV, KB3GMN, KB3ERQ



N3SBF, W3WH



K3SGT



N3DFK, KB3ERQ

In the e-mailed copy of the March 2015 **WASHRag**, due to an error in editing, the photo of Bob KC3DOF was mis-identified as Gary KB3YCX. This has been corrected in the online copy on the N3SH web site. Our apologies to both Bob & Gary for the error.



KB3YCX



N3FB



KE7FD



N3NHS

When Is A Dummy Load... Not?

James A. Sanford WB4GCS, PE wb4gcs@amsat.org

I have recently upgraded my scalar network analyzer to one that will export images and results over a network. This has allowed me to investigate and share some phenomena that I've long suspected.

Silly Chrome Dome, what's a "scalar network analyzer"? Glad you asked! Think about all those filter plots you see in various publications. My original analyzer, with an external sweep generator, generates those plots on an internal oscilloscope. It was very effective, and allowed me to do such things as retune a wideband 12 GHz waveguide filter to 10 GHz, with loss of less than one db, and a 3db bandwidth of less than 100 MHz. Let's see, 100MHz bandwidth at 10 GHz is pretty serious Q! The upgraded unit has the same capabilities, but can save them internally, or to 3.5" floppy (how quaint!) or out on a network. So, I started playing.

Below is a look at transmission loss in db through a popular HF amplifier low pass filter and return loss for the same filter. What is return loss? Return Loss is a measure of how much the incident signal is attenuated before being reflected. Stated another way, if I send 100W out of an amplifier to a filter and the return loss for the 3rd harmonic is 10 db down, that means **ten watts** of the third harmonic is going **back** to your not perfectly linear amplifier, which is really a mixer.

Why not talk in terms of SWR, like most hams? Actually, for RF engineering, return loss in db is an easier term to use. SWR is based on *voltage*, return loss is based on *power*. SWR can be calculated based on power measurements, as in the Bird wattmeter manual and graphs; the calculation is unpleasant. Return loss can be defined as the logarithm, base 10, of reflected power/incident power. Using logarithms (db) makes calculations additive. For example, in some high-performance wideband gear, you may see an attenuator of 3 or 6 db between the mixer and subsequent filter. This attenuates the reflected power by *twice* the value of the attenuator. Think about it – the harmonic is attenuated ONCE going through the attenuator, gets further reduced by the return loss in the filter, then gets attenuated by the attenuator *again*, before getting back into you amplifier/mixer. Since the harmful mixing output is *exponentially* related to the reflected power, this is a big improvement. What, how can you stand the additional attenuation? In a well-designed system, you set the noise floor (minimum detectable signal) with suitable amplification upstream of the mixer to overcome both mixer conversion loss and attenuator/filter loss. Wes Hayward makes a very big deal of *absorbing* all amplifier/mixer outputs and explains it well.^{1,2}

Below (Chart 1) are my measurements of a popular HF low pass filter.

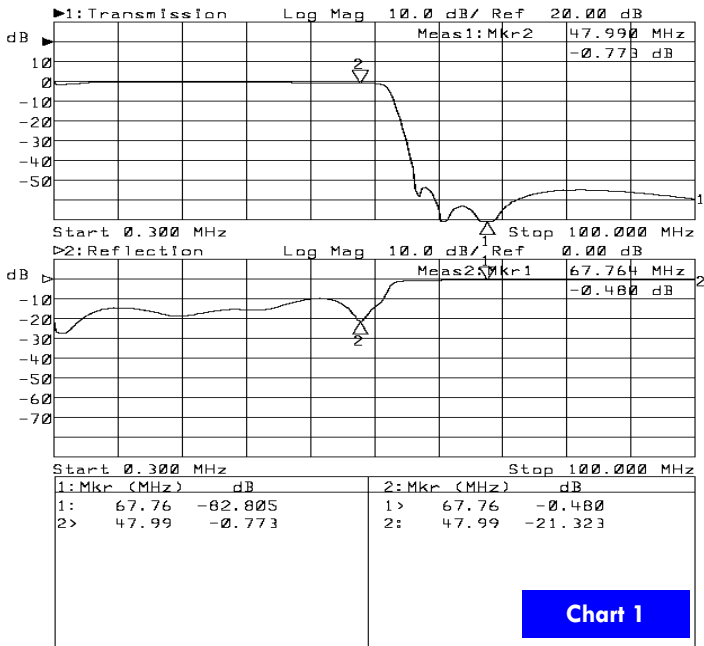


Chart 1

We would expect that *passed* signals would be not reflected at all, but this is obviously not the case. Why do we care? Maybe we don't, but I think we do. I have long thought (based on experience with FM repeater intermod) that reflected harmonics from a low pass filter go back into the (non-linear) power amplifier and contribute to mixing products, otherwise known as Inter-Modulation Distortion, IMD. This filter is pretty good, but I worry a bit about the high harmonics being attenuated by <1db before being sent back to the *killowatt* power amp.

So, then I started looking at dummy loads. Below (Chart 2) is the plot of return loss for a microwave (good to 18 GHz) low power (5 watt) dummy load.

Transmission and Return Loss for Drake 2KW Low Pass Filter

Narda DC to 18 GHz 5 Watt Dummy Load

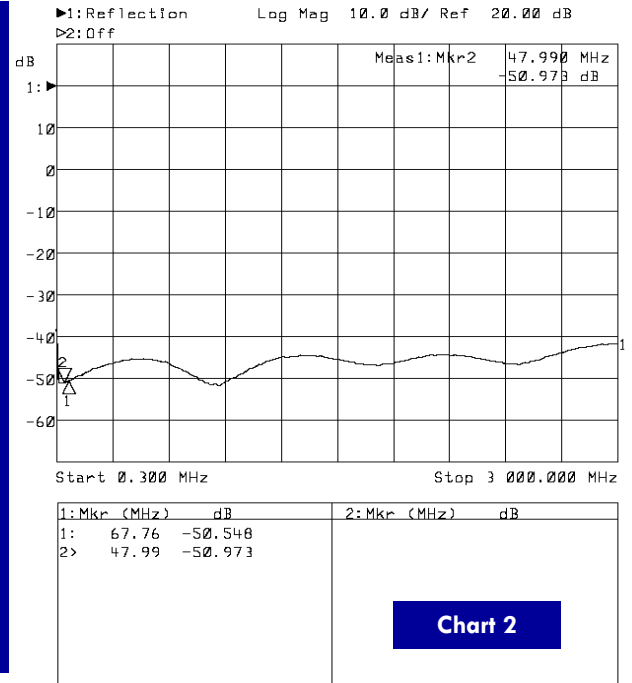


Chart 2

Return loss of 50 db corresponds to SWR <1.01 – I can live with that. At 3 GHz, return loss of 42 db corresponds to a SWR of between 1.02 and 1.02 – I can live with that, too!

Let's look (Chart 3) at another popular dummy load from Radio Shack.

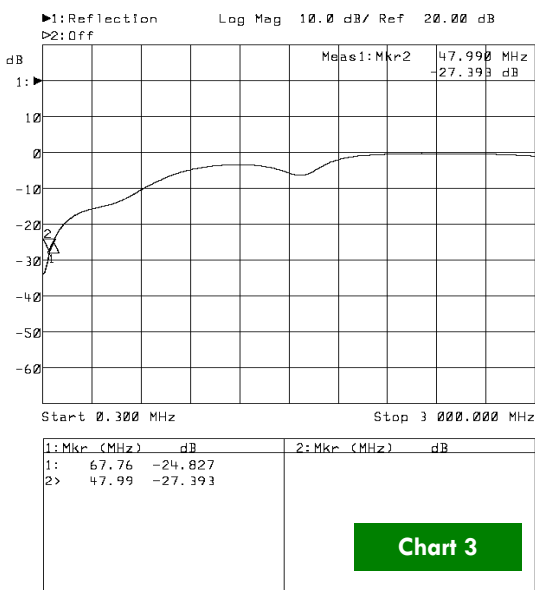


Chart 3

Radio Shack "1-500 MHz" Dummy Load

This is a plot of the return loss for an old standby dummy load, supposedly good to 500 MHz. The first thing to note is that a return loss of near zero is nearly an infinite VSWR.

This is clearly not a microwave dummy load, so let's look at it over rated frequencies.

Here's the same load swept over it's rated bandwidth. (chart 4 shown on next page)

Continued on Page 10

ARISS is now accepting proposals for US schools wishing to schedule contacts between their students and the International Space Station for the next cycle. The deadline to submit a proposal is April 15th, 2015. Details on submitting proposals can be found at www.arrl.org/hosting-an-ariss-contact.

Vibroplex Buys Bencher Paddles

Bencher Press Release

Bencher, Inc. of Antioch Illinois announced the sale on March 18th of the Bencher Amateur Radio product lines to Vibroplex LLC of Knoxville, TN. This sale ends Bencher's presence in the amateur radio field, thus allowing the principals, Jere Benedict, President, and Bob Locher W9KNI to move towards retirement.



The product lines sold include the Bencher BY series of Iambic Paddles, (the world's best selling iambic paddle, with over 150,000 sold) as well as the ST series of single lever paddles, the Bencher Hex Paddle, the N2DAN Mercury Paddle, and the Bencher RJ series Hand Keys. Also included in the sale are the HK-1 Universal Hook-up kit and the YA-1 Low Pass Filter.



Vibroplex has agreed to honor the manufacturer's warranties of all covered products, and to offer parts and support for these products as well.

Vibroplex will continue to offer the Bencher products through existing marketing channels.

Vibroplex may be contacted at <http://www.vibroplex.com>, or at (865) 309-5073.

Jere Benedict and Bob Locher wish to express their gratitude to the amateur radio community for its interest and support since the sale of the first Bencher amateur radio products in the early 1970's.

March 30th, 2015 — We are pleased to announce that the Government of South Georgia and South Sandwich Islands has issued our Dxpediton call signs. We will use **VP8STI** from South Thule Island (South Sandwich). We will use **VP8SGI** from South Georgia Island.

In addition, the team will use **VP8IDX** (Intrepid DX Group) from Stanley and during our voyage to South Sandwich and South Georgia. We will be passing through rare grid squares on the way to and from these islands.

The DXpedition will take place in January/February 2016. We will be on each island for ten days.

We are pleased to announce that Force 12 Antennas will provide complete sponsorship of our Dxpediton antennas including three element Yagi antennas for the high bands including WARC bands as well as a custom set of low band vertical antennas for 30, 40, 80 & 160 meters. All of these antennas are being designed to sustain high winds that we anticipate having on South Sandwich and South Georgia.

Our plans are moving forward in all aspects including our team's first \$54,000 installment to the RV Braveheart being paid on April 1, 2015. We would welcome additional support from the many DX Clubs around the globe, particularly those in Europe and Asia who have not yet supported our efforts.

At the time of our activations, South Sandwich will be the #3 most wanted entity, while South Georgia will be the #7 most wanted DXCC entity. You can view our website here: <http://www.intrepid-dx.com/vp8/>

— Intrepid DX Group, Press Release #5

It is with considerable pleasure that we announce the award of a \$50,000 grant from the Northern California DX Foundation for the Heard Island Project.

For years the NCDXF has enabled major DXpeditions by ensuring that the extraordinary costs, particularly transportation, can be met. NCDXF support probably represents the most accurate indicator of eventual project success, and we are very grateful for the implied endorsement.

The grant is contingent on completing the contract with the vessel, but this is considered a relatively straightforward process, probably complete by mid-April. With that, the expedition has obtained its major components (team, transportation, finances), so preparations of facilities, equipment, and logistics will move forward.

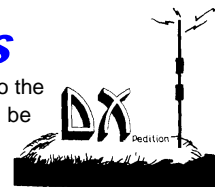
— 73, Bob Schmiieder KK6EK, Cordell Expeditions

Silent Keys



Marie F. Robbins, 62, wife of Gary Robbins KB3YCX,
Finleyville, February 19th, 2015

DX News Briefs



JAØRQV has postponed his planned **YJØMT** trip due to the devastation caused by Tropical Cyclone PAM. He will be concentrating on supporting restoration activities. He hopes to reschedule the DXPedition for later in the summer — JAØRQV

The **XV7BM** activity for March & April has been cancelled due to poor low band conditions — JA8BMK

DU7ET has been based on Diego Garcia AF-005 for three months. He plans to be QRV as **VQ9ET** starting in April. QSL via DU7ET — VQ9ET

AF1Y will be QRV as **T88MZ** 3 - 10 April, as timer permits. QSL via DU1CKF — DX World

TO9ØIARU will be a special call from **FM Martinique** to celebrate the 90th Anniversary of the IARU 4 - 18 April, on HF bands. They will QSL automatically via the bureau — DX World

G3ZVW will return as **ZD8N** 9 - 21 April, CW. QSL via G3ZVW -- G3ZVW

ZL3TE will be QRV as **3D2SE** 10 - 13 April. He will be in the JIDX CW contest, otherwise look for him mainly on CW with some Digi modes. QSL via ZL3TE — ZL3TE

P4/VE7NX will be QRV 12 - 24 April, holiday style, mainly CW with some SSB. QSL via VE7NX — VE7NX

DXØP will be QRV from Pagasa Island AS-Ø51 in the **Spratly Islands**, 14—20 April. More at <http://www.dxØp.org> QSL via WA6LOS — AE6WR

D44TDK will be activated by HB3FDT 16 - 24 April, 10 - 20 meters. QSL via HB9FDT — HB9FDT

JA7HMZ will be QRV as **V63DX** 17—25 April, 80—6 meters. QSL via JA7HMZ — JA7HMZ

W6HB and WØVFT will be QRV as **E51DLD** and **E51VFT** 17 - 23 May, 160 - 10 meters. QSL via their home calls — DX World

S79OWZ will be EI6DX, 7 - 18 July, holiday style. QSL via RX3RC - EI6DX

I2ZDPX will be QRV from the Seychelles 9—23 August. Call is pending, he is hoping for **S79DPX**. QRV 80—6, "all" modes. More information at <http://iz2dpx.jimdo.com> . QSL via I2ZDPX — I2ZDPX

The "Dipper DXers" from Norway plan to be QRV as **VK9CK** from **Cocos Keeling Islands** 14 - 26 March 2016. They will be QRV 160 - 10, CW SSB & RTTY, focusing on ATNO's, 80 & 160. More information at <http://dipperdx.com/cocos2016/> QSL via LA6OP —VK9CK

QSL Routes

3A9ØIARU via EA2ARM -- KB8NW	HH5/KCØW via KCØW -- JA1HGY
4K6FO via DC9RI -- DBØSDX	HVØA via IKØFVC -- JA1HGY
4L8A via K1BV -- KB8NW	J79KL via K12L -- K12L
5E5E via W7EJ -- MØDXR	KH8/AHØCO via JAØJHQ -- JA1HGY
6Y4DX via VA3EGG -- VA3EGG	LX71 via LX2A -- JA1HGY
6Y4W via 5B4WN -- GØWWWW	M5E via GØCKV -- DBØSDX
6Y6N via DK9PY -- JA1HGY	OHØB via OH2BH -- OH2BH
8P5A via NN1N -- W2SC	RI1ANT via RW1AI -- JA1HGY
8P6DR via G3RWL -- G3RWL	S79LCA via HB9LCA -- K9MM
AHØYL via JP3AYQ -- KB8NW	TCØMI via TA1ED -- W3AWU
B5A via BA5AG -- AA5AM	TO4C via MØOXO -- DBØSDX
B9/BY9GA via BA1DU -- WC6DX	TX5W via KE8G -- JA1HGY
C21EU via DL2AWG -- DL2AWG	V73TM via K8NA -- JA1HGY
E2X via E2ØGMY -- HSDXA	VK9DLX via DJ2MX -- W4DN
EF8S via OH2BYS -- EF8S	VK9LC via OH2YY -- JA1HGY
E11Y via EI5JQ -- EI5JQ	VP2MQT via N7QT -- DBØSDX
EP6T via MØURX -- LU2EMH	XU7AEZ via RX3F -- K4UTE
GPØSTH via G4DIY -- JA1HGY	XW4ZW via K4ZW -- JA1HGY

Thanks to the NJDXA DX News & DX Chat Reflectors, the DX-QSL Reflector, 425 DX News, OPDX News, DX World.Net, 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.



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Antenna Zoning or PRB-1 Issues?

Contact: **Michael S. Lazaroff K3AIR, Attorney at Law**

The Cingolani Building
300 North McKean Street, Butler PA 16001
Phone: 724-283-0653

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KG5GNP New Astronaut Ham

AMSAT News Service & Ken Ransom N5VHO

Mark T. Vande Hei attended license classes on March 11th & 12th, and passed the Technician exam on March 13th. His callsign, KG5GNP, appeared in the FCC database on March 24th.

Vande Hei was selected in June 2009 as a member of the 20th NASA astronaut class. He completed astronaut candidate training in June

2011 and is now qualified for future flight assignment. From June 2012 to May 2013, he served as the Astronaut Office's Director of Operations in Russia. He currently works in the Astronaut Office's CAPCOM Branch.

He reported to the Johnson Space Center in July 2006 to serve as a Capsule Communicator (CAPCOM) in the Mission Control Center, Houston.

He served as an International Space Station CAPCOM for Expeditions 15 to 20 and STS-122, 123, 124, 126 and 127.

Vande Hei was a member of the 18th NASA Extreme Environment Mission Operations (NEEMO) expedition that spent nine days living and conducting research 62 feet below the surface in Florida International University's Aquarius Reef Base undersea research habitat off the coast of Key Largo, Fla. They investigated tools, techniques and technologies that will benefit spacefarers aboard future International Space Station and long-duration exploration missions.

"NEEMO 18 was a fantastic opportunity for me to participate in the development of technologies and techniques for future exploration," said Vande Hei. "That by itself would have been plenty, but on top of that I got to experience life in an environment that most of us don't get to experience as well as enjoy the company of some fantastic teammates, both on the crew and in the ground control and support team."

Has Roadway found the tower yet?

FCC FCC News

Courtesy of the American Radio Relay League

Newington, CT, March 11th, 2015 — According to an internal FCC Enforcement Bureau (EB) memorandum, the Bureau plans to ask the full Commission to cut two-thirds of its field offices and eliminate nearly one-half of its field agents. At the same time, the Bureau would develop a so-called "Tiger Team" of field agents as a flexible strike force it could deploy as needed. In the March 10 memorandum to Enforcement Bureau field staff — obtained by ARRL and others — EB Chief Travis LeBlanc and FCC Managing Director Jon Wilkins cited the need to take "a fresh look" at the Bureau's 20-year-old operating model in light of technology changes and tighter budgets. ARRL CEO David Sumner, K1ZZ, expressed dismay at the proposals.

"The ARRL is concerned that there is already no sense of urgency in the FCC's enforcement activities targeting spectrum polluters, such as utilities with noisy power lines, or the few violators in our own ranks," Sumner said. "It is troubling to see recommendations for such drastic reductions in the Commission's geographic footprint and the number of field agents at a time when the Field staff is facing ever-increasing challenges."

The EB and the Office of the Managing Director initiated an effort last fall to modernize the Bureau's field operations, the memorandum said.

"This project sought to ensure that the Field's structure, operations, expenses, and equipment were properly aligned with the Commission's overall mission and resources," LeBlanc and Wilkins said. The Commission hired outside consultants to analyze the EB's current "operating model," gathering input from employees, outside experts, and internal and external stakeholders.

Under its "Phase 1" field modernization scheme, the Bureau will recommend to the full Commission that it adjust the primary focus of its reduced field office complement to RF spectrum enforcement. The EB also will recommend "adjusting" the number of field agents from 63 to 33. To compensate, part of that field staff complement would include what the EB called a "Tiger Team" of agents "flexible enough to support other high-priority initiatives." Under the plan, all field agents would have to have electrical engineering backgrounds "to support the primary focus on RF spectrum enforcement." The Bureau also will propose standardizing its investigatory and sanctioning processes.

Management would not be spared. Under the recommendations, the EB field organization chart would shrink from 21 to 5 director positions, and from 10 to 3 administrative support positions.

Under the proposals, the field office would reduce its "geographic footprint," from 24 sites to 8 sites and would "pre-position" equipment in several other strategic locations. Offices slated to stay under the plan would be New York City; Columbia, Maryland — the site of the Bureau's HF Direction-Finding Center; Chicago; Atlanta; Miami; Dallas; Los Angeles, and San Francisco. The EB would deploy equipment in or near several other cities, initially to include Kansas City, Salt Lake City, Phoenix, Seattle, San Juan, Anchorage, Honolulu, and Billings, Montana.

Part of the plan calls for the EB to establish "beneficial partnerships between the Field and other organizations that may support increasing our effectiveness."

During a March 4th US House Subcommittee on Communications and Technology Committee hearing on the FCC's FY2016 budget, Rep Michael Pompeo (R-KS) pressed Wilkins on whether the FCC intended to close any field offices and eliminate any personnel. Wilkins attempted to dodge offering a direct answer and hedged on whether any cuts were planned. He also said the Bureau had not yet received a final report from the outside consultant it had worked with. US Rep Greg Walden, W7EQI (R-OR), chairs the subcommittee.

The inaugural transmission of the "Radio DARC" Amateur Radio program aired over the March 21-22 weekend via [Channel 292](#) at 6070 kHz. The German-language program was produced in cooperation with Germany's national Amateur Radio society — the Deutscher Amateur Radio Club ([DARC](#)).

A group of amateurs in Germany obtained a license to broadcast on the 49 meter shortwave broadcast channel after German national broadcaster the Deutsche Welle closed down a 500 kW shortwave broadcast transmitter near Munich.

Rainer Ebeling DB8QC, owns the official licensee — Intermedicom GmbH (LLC). He repurposed parts from the driver stages as well as a few transformers from the former Deutsche Welle transmitter for the 10 kW transmitter.

"Radio DARC" airs on Sundays, 0900-1000 UTC, and is rebroadcast on Mondays, 1500-1600 UTC.

When Is A Dummy Load... Not?

WB4GCS Continued from Page 7

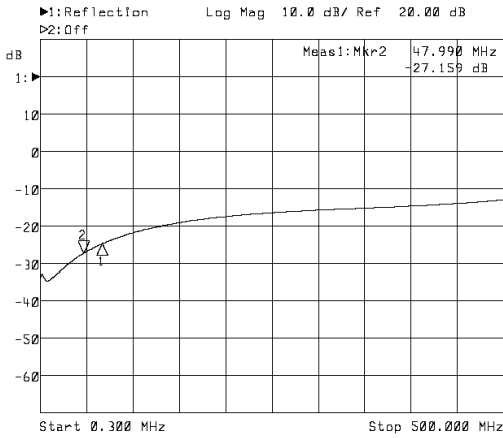


Chart 4

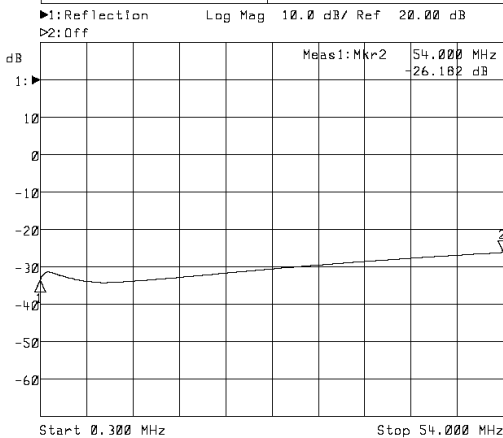


Chart 6

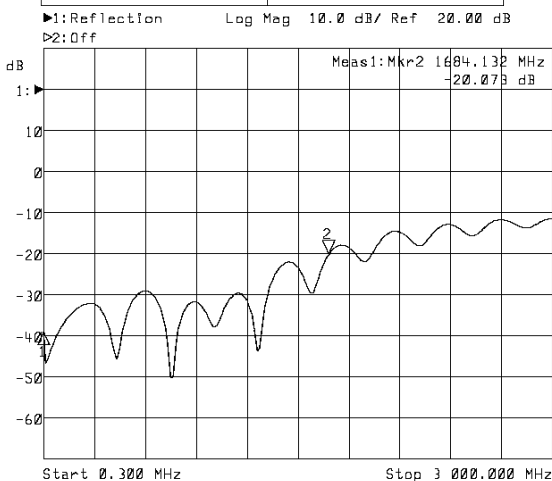


Chart 8

At 500 MHz, the return loss is about 12db, representing a VSWR of about 1.7 – not what I want in a piece of test equipment.

SO, let's take some different measurements. (Chart 5 top right)

At two meters, this thing has 19 db of return loss, or a VSWR or about 1.2. Tolerable, but....

How about HF and 6 meters?

(See chart 6 center left)

At 10 meters, it barely has 30 db of return loss, a VSWR of 1.06. I'd use it, but not my first choice.

At 6 meters, the return loss has deteriorated to 26 db, VSWR of 1.10 – probably useable. So, how about the HF bands? (Chart 7 Center Right)

At HF, this load has 30db or more of return loss, VSWR of 1.06 – clearly useable. I have labeled it, "HF ONLY".

So, now, let's look at another load. This one is a 100 watt load from a UHF combiner/duplexer. (Chart 8 lower left)

Usable as a load at 1296, marginal but acceptable above that. Note the periodic variations in return loss versus frequency.

Now, let's look at another load. (Chart 9 lower right). This plot shows greater than 30 db return loss, SWR about 1.06, all the way to 1296 – clearly acceptable.

Notice the periodic variations in these plots. The difference between this load and the previous is that it is connected to the analyzer by a 11.5-inch length of coax. Recall that coax affect on impedances is related to length and wavelength. The Bird wattmeter manual is extremely vocal about making sure the coax between what you're measuring and the wattmeter is an odd-multiple of a half wavelength, taking into account its velocity factor. A half-wavelength of coax provides an exact replica of the load impedance at its input. The minima are at 447.32, 797.16, and 1140.52 MHz – almost harmonically related, but remember the velocity factor of the cable comes into play.

Assuming that the return loss minima are harmonically related, which means the wavelengths in coax are integral submultiples, leads to a conclusion that the velocity factor of this cable is between 0.84 and 0.89. Why the

variance? Well, velocity factor is also a bit frequency dependent.

Now, it is possible to calculate out the effect of the cable by making measurements of the reflected open circuit and short circuit impedance at two different frequencies and doing a bunch of calculations. Best done with a spreadsheet and this has been documented. With a modern analyzer, there is an easier way using a short circuit, an open circuit and a matched load impedance.

Tune in next month for details on this technique.

References:

- (1) Hayward, Wes, *Introduction to Radio Frequency Design*, ARRL.
- (2) Hayward, Wes, Campell, Rick, *Experimental Methods in RF Design*, ARRL.

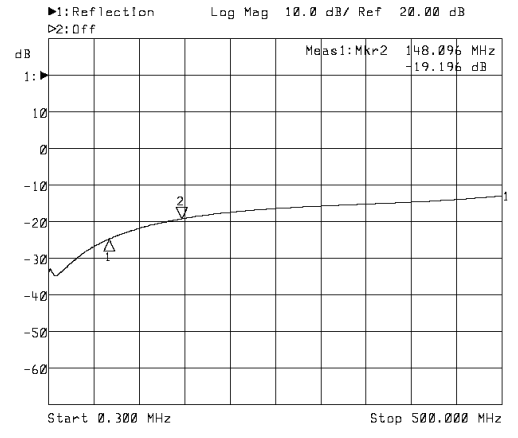


Chart 5

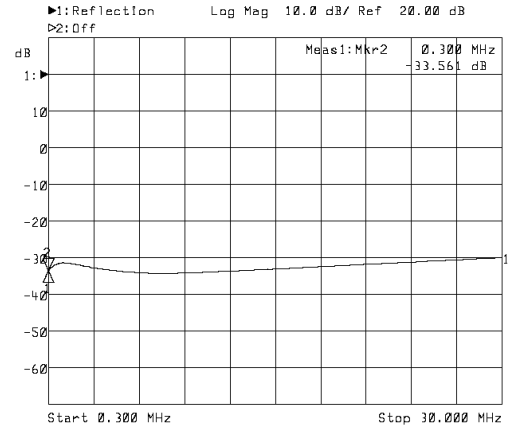


Chart 7

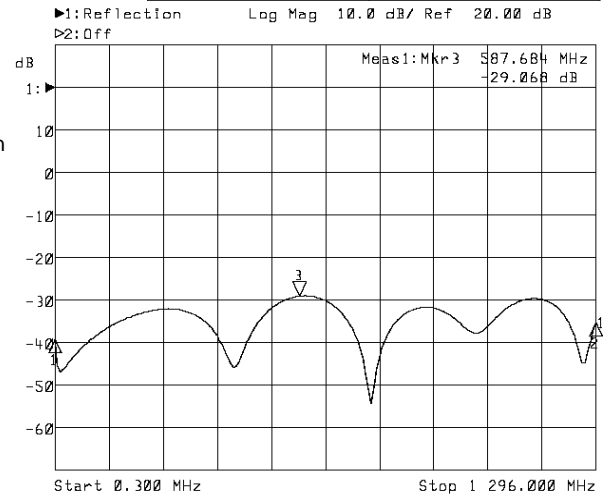


Chart 9



WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

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(check quarter _____ →)
(check one)

1st Qtr **2nd Qtr** **3rd Qtr** **4th Qtr**
Jan-Mar **Apr-Jun** **Jul-Sept** **Oct-Dec**

- | | | | | |
|--|---------|---------|---------|--------|
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| <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): \$ _____

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Name: _____

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City, State: _____

Home Phone: _____

Email Address: _____

Call Sign: _____

License Class: _____

Expires On: _____

Work Phone: _____

Birthday: _____

ARRL Member? Yes No Family ARRL Member? Yes No

Date: _____

Amount Enclosed: \$ _____

New Members Only:

- I do NOT want to be added to the Club E-Mail Reflector
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[If you have an Email address, you Will be added to both lists UNLESS you choose to Opt-Out]

Signature: _____

N3RDV has requested that 2015 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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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:

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c/o Mark Stabryla N3RDV, VP/Treasurer
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| <input type="checkbox"/> \$39 in US | <input type="checkbox"/> Additional Family Members at the same address (\$8 per family member) |
| <input type="checkbox"/> Age 21 or younger, \$20 in US (only if you are the oldest licensed amateur in your household) | Name & Call Sign: _____ |
| <input type="checkbox"/> Canada \$49 | Name & Call Sign: _____ |
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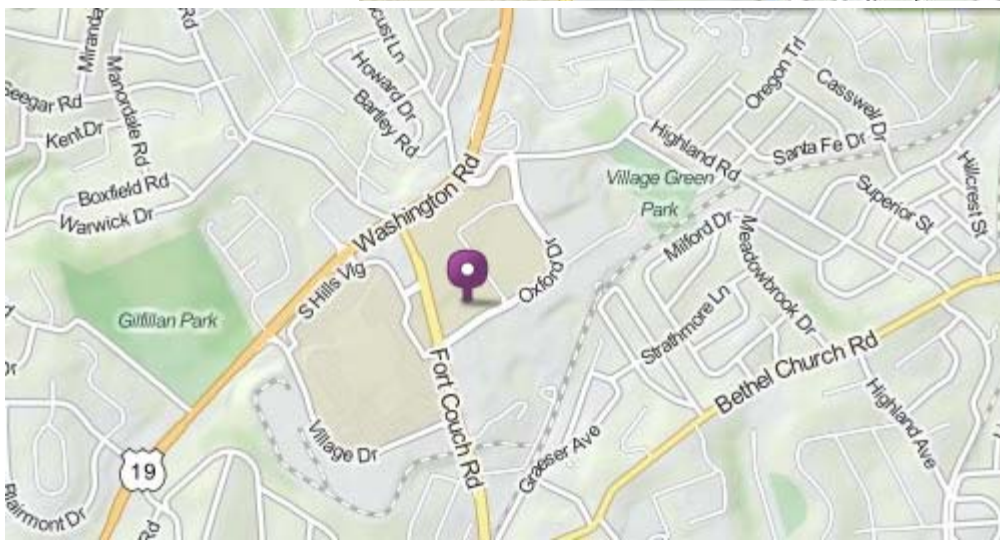
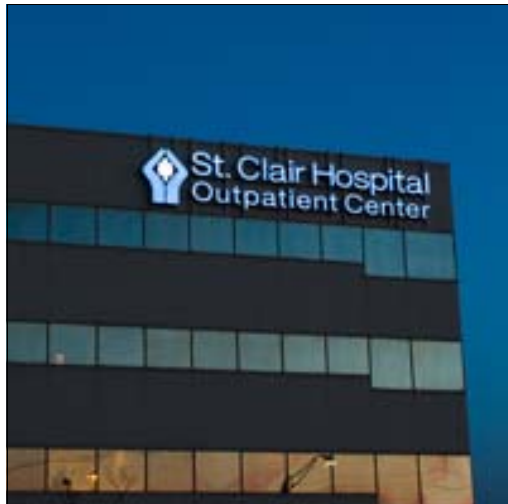
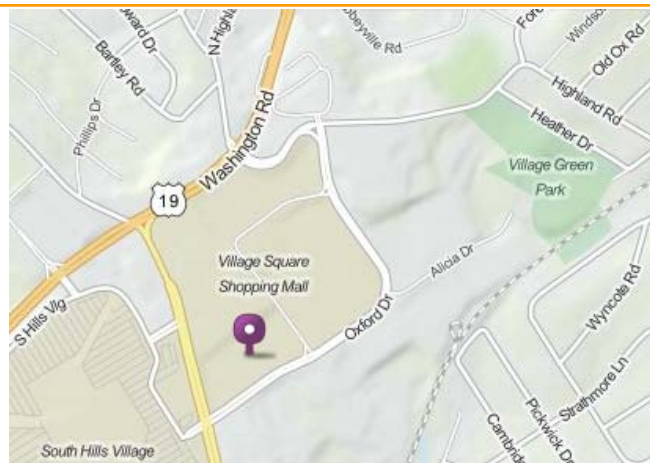
Dues subject to change without notice

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



The WASHRag

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