



WASHRAG

TM

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June 2000



N3SH
WA3SH

www.washarc.org

Wireless Association of South Hills

Field Day 2000: Almost Here!

Field Day 2000 is fast approaching. I would again like to take this opportunity to thank Steve Lane W3SRL and Bill Hill W3WH for all of their help. They were out at Mount Lebanon Park on Memorial Day Weekend, checking out the pavilion, making sure it meets all of our needs and have reduced my workload immeasurably. I couldn't have done it without you guys!

Steve has volunteered to be in charge of the VHF station, setting it up and all that stuff. Now it is time to ask for volunteers to be in charge of our two HF stations. Anybody want to help out? I am looking for people to help set up and take down the HF stations. Also I am looking for volunteers to coordinate purchase of food items; not someone to slave over a hot grill all weekend, but somebody who would be willing to put a list together of items, and who would be willing to go out and buy them (with club funds of course).



How about operators? It is really no use in going through all of this if we have no ops. I would like to put together a list of operators, so I know who is coming and when. So, please, consider pitching in and helping out in any way you can. No help will be refused!

Again, the success of our Field Day soiree depends on you, our Club members. So consider coming out and making our Club event one of the social events of the year.

I am still on the lookout for any equipment you would be willing to loan us for the weekend. Radios, batteries, antennas, cable, computers, clocks (yes, clocks for logging), ANYTHING you think we may need that I might have missed, let me know what you've got, I certainly won't say no!

At this point, I'm just about begging for help and operators! Let me know if you can help out in any way at: KQ3DX@hotmail.com, or KQ3DX@arrl.net. Thanks!!

73, Greg Babin KQ3DX
Field Day 2000 Coordinator
Wireless Association of South Hills, Inc. N3SH/WA3SH

ARRL VEC Processing Status

The ARRL-VEC now has seven fulltime, three temporary, and eight just-added volunteer staff members chipping away at the mountain of applications resulting from the April 15 license restructuring. ARRL-VEC Manager Bart Jahnke, W9JJ, reports his staff now is wrapping up April 24th receipts from VE sessions. [The WASH April 20th session was received on April 25th] The ARRL-VEC received nearly 23,000 applications between April 15th and May 26th.

ARRL-VEC staff was able to submit some 5000 applications to the FCC this week, up significantly from previous weeks. On May 25th alone, 1453 applications were filed with the FCC. Jahnke still estimates it will take approximately six weeks from exam session to the time the paperwork is filed electronically with the FCC, although some grants have been showing up sooner than that. The key is when the session paperwork arrived at ARRL-VEC. The FCC typically grants applications overnight.

Jahnke says there were approximately 4000 applications in the April 24th receipts alone that include sessions as long ago as March 25th and as recent as April 18th. ARRL-VEC processes applications according to the date the package arrives in the mail. "We have staff working over the weekend, and we will have staff working over the holiday weekend," he said.

Inquiries concerning the status of applications

(Continued on page 3)

Next Meeting: June 8th, 2000

The next monthly meeting of the Wireless Association of South Hills, Inc. will be Thursday, June 8th, at the John McMillan Presbyterian Church, 875 Clifton Road in Bethel Park, starting at 7:00. Talk-in on the 146.955 N3RNX/R Repeater.

Paul Lusardi NØVLR will be giving us an APRS demonstration, and we'll be talking about our final Field Day plans, along with our other plans for summer activities.

All radio amateurs & interested guests are, of course, invited! See you there!

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Schedule of Events

June 2000

- N3SH/WA3SH WASH Club Net, 9:00 PM ET Sunday Nights on the 146.955 & 443.650 Repeaters

NCS Schedule:

- ⇒ June 4th: Ron WN3VAW
- ⇒ June 11th: Rich N3SBF
- ⇒ June 18th: TBD
- ⇒ June 25th: TBD

LOOKING AHEAD:

- **North Hills ARC Hamfest** July 9th
- **Pittsburgh Vintage Grand Prix** July 15th & 16th
- **WASH VE Tests** July 20th
- **WASHFest 2001** February 25th, 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 WACOM Meeting RA Erie Meeting	2 Elco RS Meeting	3 RA Erie VE Test NHARC Elmer Net
4 Breezeshooters Hamfest Ellwood City ARA Mtng	5 Greater Pgh VHF Society Breezeshooters Net Beaver Co Public Service 2 Rivers ARC Net	6 Butler Co ARA Meeting SHBP&M Meeting Skyview RS Meeting SATERN Net North Hills ARC Net	7 Uniontown ARC Meeting Allegheny Co ARES Net Westmoreland Co ARES Allegheny Co Skywarn Steel City ARC Social	8 WASH Meeting Horseshoe ARC Meeting Beaver Valley ARA Mtng	9	10 2 Rivers Ham'nEggs Bkfst NHARC Elmer Net
11	12 Bum of the Month Lunch ARL of Lawrence Co. Mtg Breezeshooters Net Beaver Co Public Service 2 Rivers ARC Net	13 Foothills ARC Meeting Nittany ARC Meeting Ft. Venango M&K Mtng. Punxsatawny Area ARC SATERN Net North Hills ARC Net	14 North Hills ARC Meeting Allegheny Co ARES Net Westmoreland Co ARES Steel City ARC Social	15 Triple "A" ARA Meeting Somerset Co ARC Mtng	16 2 Rivers ARC Meeting	17 NHARC Elmer Net
18 Elk County ARC Meeting	19 Breezeshooters Net Beaver Co Public Service 2 Rivers ARC Net	20 Steel City ARC Meeting Skyview RS Meeting McKean Co ARC Meeting Pymatuning ARC Meeting Juniata Valley ARC Mtng SATERN Net	21 So. PA ARC Meeting Huntington Co ARC Mtng Allegheny Co ARES Net Westmoreland Co ARES Allegheny Co Skywarn	22 WACOM Board Meeting	23	24 Field Day NHARC Elmer Net
25 Field Day	26 Breezeshooters Net Beaver Co Public Service 2 Rivers ARC Net	27 Mercer Co ARC Meeting Triangle ARC Meeting SATERN Net North Hills ARC Net	28 Ft. Armstrong WA Mtng North Hills ARC Activity Allegheny Co ARES Net Westmoreland Co ARES Steel City ARC Social	29	30	7/1 RA Erie VE Test NHARC Elmer Net

WASH 2000 OFFICERS

Executive Committee:

President	Ron Notarius WN3VAW
VP/Secretary	Steve Lane W3SRL
VP/Treasurer	Mark Stabryla N3RDV

And We Couldn't Do It Without:

N3SH / WA3SH Trustee	Steve Lane W3SRL
VE Team Liaison	Bob Sanford AA3FI
Club Communications	Bob Sanford AA3FI
Club Quartermaster	Harold Rosenberger KB3CPI
Club Librarian	Paul Lusardi NOVLR
N3SH/WA3SH WASH Net Managers	
2 Meter FM	Greg Babin KQ3DX
10 Meter Digital	John Benitez KE3XB
South Hills Hamfest Co-Chairman	Steve Lane W3SRL
(WASHfest 2001)	Bill Hill W3VWH
Field Day 2000 Chairman	Greg Babin KQ3DX
PA QSO Party Coordinator	(open)

Club-Affiliated Repeaters:

Mt. Lebanon	N3RNX/R	146.955 -	PL 131.8
Mt. Lebanon	W3SRL/R	442.550 +	PL 131.8
Canonsburg	N3FFP/R	443.650 +	PL 131.8

N3SH/WA3SH WASHNet, the weekly on-air net of WASH, meets every Sunday Night, 9:00 PM ET, on the 146.955 repeater, usually followed by the 10 Meter SSB Informal Net on 28.469 MHz. The **10 Meter Digital N3SH/WA3SH WASHNet** meets on 28.105 MHz at 9:30 PM ET, starting with RTTY. (Frequencies are +/- QRM). All radio amateurs, WASH members or not, are welcome to join in!

THE LEGAL STUFF

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As always, special thanks to the owners of both the N3RNX/R Repeater System and the N3FFP/R Repeater System for permitting the **Wireless Association of South Hills, Inc.** and its members to use their repeaters for club purposes.

WASH Amateur Radio Club News Briefs

Next WASH VE Test July 20th!

Our Next VE exam sessions will be **Thursday, July 20th, 2000**, at **7:00 PM**, at the *John McMillan Presbyterian Church*, 875 Clifton Road, Bethel Park, PA. Talk-in on 146.955 MHz. All examiners are ARRL VEC affiliated. Morse code exams are multiple-choice. Walk-ins are always welcome, but if you plan on attending the test session, please contact VE Team Liason Bob Sanford AA3FI, telephone (724)-356-4020 or E-Mail: sanfordb@access.hky.com

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 \$6.65 (payable to: ARRL VEC)

(Continued from page 1)

continue to impair the staff's ability to rapidly process the incoming stacks of applications. "You can't blame people for wanting to know what their status is, but when everyone wants to know, progress slows," Jahnke said. Another thing that slows progress is having to follow up on missing or incomplete information on the NCVEC Form 605 application from a test session.

Jahnke has estimated that the first 30 days of the restructuring surge--April 15th through May 15th--will yield 17,200 new Generals and 13,100 new Extras.

The ARRL-VEC is now posting the status of test session processing at <http://www.arrl.org/arrlvec/status.html>.

— ARRL Letter Vol.19 #21, May 26th.



Photo courtesy of and ©Copyright 2000 Bill Hill W3WH

N3SH QRV Breezeshooters Hamfest : USPS willing, you'll be receiving this prior to the Breezeshooter's Hamfest. If so, look for N3SH on 20 meters, possibly 10 or 15 meters, operating from the flea market/tailgate area. (Look for us in the usual spot, just off the main road... yes, near the outhouse!)We plan to demonstrate (and learn about) our new Hex Beam and have a little fun while enjoying the hamfest!

Speaking of the Breezeshooters hamfest, Don't forget to join us at 11:00 to 1:00 or whenever so for the club picnic — please bring something if possible — and if you think you'll have some time to spare & can lend a hand during the day, let Ed N3UE know.

Club Logo Shirts: With Field Day, the Vintage Grand Prix, and other events all coming up, why not look sharp with a club logo shirt? *TLC Embroidery* can now do the "true" club logo on a shirt for \$20 (see page 11) Now is the time to order... don't delay!

Begging for NCS Help: "I would like to take this opportunity to thank all those operators who have stepped forward to be a Net Controller in the year 2000. While these folks have done an excellent job, I would like to see some new blood, as it were, to step in and consider be a Net Controller in the near future. It really isn't hard, and it is really a lot of fun! I have made up a package containing all of the necessary information you would need from start to finish, including log sheets for jotting down check-ins and I will be glad to drop it in the mail to you. So, at the risk of sounding like a broken record when it comes to asking for some help, please consider becoming a Net Controller for our Sunday Net soon. You will enjoy yourself, and you'll be contributing a service to your Club. (Not to mention; think of all the power you'll wield over your fellow club members for a few minutes! Just kidding.)" — KQ3DX

Adventures in Dayton: Most of the club members who went to Dayton went camping in Urbana, OH, about an hour out of Dayton proper. Weather was not kind Thursday night, as rain pounded on the tents, and two members almost lost their sleeping bags enroute on I-70 when their roof carry-all imploded. Meanwhile, the other contingent stayed at the dorm apartments downtown at the University of Dayton. We were tipped off by the desk staff that next year, try for the newer buildings, as the older ones show definite signs of college student, ah, heavy utilization — nothing that some spackle, a coat of paint, and some new light bulbs won't cure. And while KQ3DX was unfortunately unable to join us at the last moment, some of us sure had fun spending his money for him!

Hex Beam Update: W3WH snapped this shot of the new antenna in use over at KE3XB's QTH over Memorial Day Weekend. Bill advises us that they easily worked a lot of stations in Europe and South America with it.

OK, One Last Breezeshooters Comment: Complete results of the 2000 Groundwave Contest over on Page 10 (thanks N3BPB for compiling it!) If you entered a log, check and see how you did. And yes, that is a familiar call in 3rd place in the Club competition!

It's the last year for Three Rivers Stadium... and it's time for another WASH expedition to a Pirate game! (There's nooooo doubt about it!)

We need 25 or more tickets to get a group discount. A Saturday or Sunday game in August appears to be the most popular dates.

Interested?
 Contact
 WN3VAW for
 more info.

Receive your WASHRag via e-mail! Sign Up at wa3sh-subscribe@egroups.com
 Join the WASH List Server & stay up to date! wa3sh-subscribe@listbot.com

Minutes, May 11th 2000 Meeting

Steve Lane W3SRL Vice President/Secretary WASH

Meeting was called to order by WN3VAW at 19:15 local time. There were 18 members and 3 guests present.

Introductions were made, as is our custom, followed by a moment for Silent Keys and other deserving persons.

The minutes of the April, 2000 meeting were read and approved. N3QMV/Carol Danko.

Secretary Report: N3SH has been reissued to us! W3SRL displayed the new FCC license. Commendation letters were presented to everyone that participated in the Y2K event in Mt. Lebanon. Great job guys, it was recognized by Allegheny County EMA.

Treasurer's Report: Read & Accepted.

VE Team: KE3XB – Session on July 20. Last session was a rousing success. Exact numbers were unknown, but it was well attended. Expect 4-6 weeks for processing the new calls. The ARRL-VEC and the FCC are both being crushed with filings.

Repeater: The move is still pending, but some details still need to be nailed down. We need to obtain a couple of final pieces of hardware.

FM Net: Need Net Control Stations, as usual. KQ3DX apologizes for his work-related absence.

Digital Net: KE3XB reported little activity. He suggested that the active members together to discuss where we are going with it.

Contests/Field Day: General discussion. N3UE offered the use of 3 100-Amp-Hour gel cells. W3WH proposed that the club purchase a portable Hex-Beam antenna. They are very light, and have had excellent reviews. \$799 for the entire kit, with 30' mast. W3WH / KE3XB One dissenting vote, and carried. W3WH will obtain it and coordinate payment with Mark, N3RDV. W3SRL proposed that a single person should volunteer to coordinate a single station for FD. Consensus agreed. He volunteered to chair the VHF/UHF station. No volunteers for the two HF stations.

Newsletter: WN3VAW asked that folks that get the newsletter electronically and want off the mailing list, to please tell him. This will save a bit on postage.

Old Business: W3WH asked if we had any justification to have two club call signs. General discussion followed. W3SRL offered to put N3SH on the 440 machine again.

New Business: KE3XB said he reserved a special call sign for the **REAL** millenium. NØVLR gave out some repeater info for Dayton, and that we will be on 146.955 simplex out there. PL of 131.8 if conditions warrant. Also, he has a volunteer to come out and do a demo of APRS for us at the June meeting. N3RDV motioned that we allot \$60.00 for Breezeshooter's tickets, Seconded by W3SRL and carried unanimously. W3WH proposed that we could dispense with the reading of the minutes at the meetings. Seconded by N3SBF. KB3CPI stated that we could just approve the minutes as published in the newsletter.

Good of the Order: Breezeshooters Hamfest is June 4. WASH cookout in the fleamarket area. W3SRL to do a little program on the MFJ-259 Antenna Analyzer tonight. Also, he will be the featured speaker at the North Hills ARC on May 24. The topic is PSK-31.

Motion to Adjourn: NØVLR/N3BSQ and carried unanimously.

Presentation on the MFJ-259 Antenna Analyzer by Steve, W3SRL.

Silent Keys



Keizo Obuchi JI1KIT, Prime Minister of Japan, May 14th

Dayton Hamvention 2000 Wrap-Up

The Gang of Nine

What can you say about Hamvention 2000 that you haven't heard already?

Well, despite DARA's announcements of record attendance and the Hamvention doubling as the ARRL National Convention, the crowd seemed down for the third or fourth consecutive year. The days of elbowing your way through the Kenwood, ICOM, Yaesu, TenTec and ARRL exhibits amongst many others were a distant memory. On the other hand, most of the industry reps who were there were easily accessible and very eager to answer questions or provide advise — since there wasn't a crowd of shouting, pushing and shoving people behind you.

The flea market was as packed as ever, even with some spaces left vacant by vendors who either didn't show or left early; usually the rest of the crowd spread out to fill the gaps. Loads of Drake, Collins, Heath, Hallicrafters, Hammurlund and other vintage gear was available, though often at commanding prices. Loads of rare and unusual items, including "new" Hallicrafters SR-400 and SR-150 transceivers (never used, still in the original box), and GoatCam — yes, a billy goat equipped with a camera and a 420 MHz QRP ATV transmitter strapped to it (AA3FI please take note).

Kenwood showed off the prototype of it's new computer controlled transceiver. Yaesu had it's new FT-1000MP Model V. TenTec displayed their new Pegasus FP — the Pegasus with a front panel — and their upcoming 6 & 2 meter dual band rig. And a new company, Mobat Communication (a Motorola & Bartal partnership) introduced it's new computer controlled rig.

WASH was well represented, with W3SRL, W3WH, N3IDH, KA3UPY, NØVLR, N3KFD, N3RNX & brother Gary, N3ZEN & WN3VAW. And we all ran into a lot of friends from other WPA area clubs, way too many to mention here.

Bottom line: No one got a hernia from the boat anchors purchased; we all probably spent a few more dollars than we should have and carted home more literature than we needed; and most importantly, a great time was had by all.

If you can join us next year, don't miss out on the fun!

WASH 2000 New & Returning Members

K3LIE	N3KEH	N3WPT	WN3BOJ
K3VX	N3KFD	N3XFE	WN3VAW
KA3JZR	N3MJQ	N3YPB	
KA3WZO	N3OBD	N3YQY	Carol Danko
KB3CPI	N3QMV	N3ZEG	Dan Mohr
KB3DCO	N3RDV	N3ZEH	JoAnn Cottrill
KB3DSD	N3RHT	N3ZEL	Marilyn Nizinski
KB3ECD	N3RNX	N3ZNI	
KE3XB	N3SBF	N4MIS	2000 Annual Dues Paid Through
KQ3DX	N3TBK	NP2JF	May 29 th
NOVLR	N3TES	W3RJM	
N2QIV	N3UE	W3SRL	List compiled by
N3BSQ	N3UIW	W3VFA	Mark Stabryla N3RDV
N3CCC	N3VVL	W3WH	Vice President/Treasurer
N3IDH	N3VWF	WB3BPH	

eBay, Internet Auctions & Radio Collecting

Will White KD7BFX [via the Drake Reflector drake@qth.net]

eBay is only 5 years old, really only 3 years since the thing really took off as a marketplace. As much as we hear about Internet auctions, the concept is still new, and it is my opinion that the concept is flawed--it is a corruption of the live auction tradition. Collecting, especially in a subject area where considerable prior technical and historical knowledge and interest are prerequisites (like keys, or ham items generally) is a pursuit that is at cross-purposes with the frantic, impulse-driven world of auctions.

So, yes it is a good message to receive that much of the key world has yet to get online, and maybe never will. I see an even better trend developing on eBay and other auction sites: prices are falling. I have been observing and browsing, and occasionally buying, on eBay since March of 1997. Yes, you will still see something like a S-38/B/C close at \$150+, but it is rarer, and the median prices seem to have come down to not very much more than what you would see asked on USENET groups at the same time. I am a real Drake-head. I bought a G--VG TR-4/AC-3/MS-4 outfit for \$260 plus UPS in March of 1997. I bought a *very* nice, fully-crystalled 2-B/BQ combo with calibrator there in July of 1998 for just under \$250. Prices on similar lots peaked around February of '99. At that time it was common to see the aforementioned 4-line at around \$350, and the 2-line for nearly \$400. A review of closed lots on Drake items since last Thanksgiving will reveal that today you can find both items for significantly less than what I paid for them several years ago.

It has a lot to do with simple supply and demand. Most weekends these days a search under "Drake" will yield close to 100 items. If you want a TR-4 this week, you probably can choose from 6 or more. Some weeks there will be a dozen to pick from, in all conditions. Once, I counted 22 TR-4/TR-4C/TR-4Cw/TR-4CwRIT's up at the same time! And that's not counting the B- and C-lines, TR-3s, TR-7s, 2-line stuff, and all the accessories and enhancements. Right around the time I counted the 22 TR-4(x) lots, there was a day when there were *two* TR-6s, a TR-5(!), a 1-A, 3 UV-3s, 2 FS-4 synthesizers, a CC-1 console, and a set of 6/2 trans/rec. converters (only one had the complete set of cabinets).

I believe that prices on eBay are moderating for the additional reason that buyers are becoming more savvy about bidding and buying online. Obviously, no one except someone with far more money than brains, can look at eBay for long and believe a lot description for any of the above mentioned gear that claims rarity. Yes, sellers still put "rare" in bold, underlined, italic caps, but how silly is that when looking down the list page there are 6, or 8, or 10, or more of the same item? Similarly, claims about condition (especially where the adjective "rare" is applied to the word "mint" {sic} or excellent) hold less sway than they did even a year ago. Buyers are learning, after the initial flush of kid-in-a-candy-store excitement that we all felt when first discovering eBay wears off, that patience is a virtue. This isn't just eBay, or internet buying of antiques and collectibles, but general healthy skepticism and caution as the internet becomes truly mainstream and a real mass-medium. If you don't get this one, another one will soon come up for auction. And then another, and another, and another. There are many millions of attics and basements in America that are yet to be mined for their treasures. This awareness is putting the brakes on wildly escalating eBay bids.

(Continued on page 7)

What Does an "Elite Fluid" Crew Do?

Paul Lusardi NØVLR

This was my first year as a ham volunteer in the City of Pittsburgh Marathon. It was a pretty wild ride with the crew of the Elite Fluid group. Being a volunteer on this team meant you were a:

- ◆ BELL HOP — because you had to wheel 50 to 60 cases of water from the hotel on bell hop carts. From the 17th floor.
- ◆ A MATERIAL HANDLER — because you were lifting and hoisting cartons of fluids into a van
- ◆ A DRIVER for a VIP — as you could fly through the empty streets of Pittsburgh with a POLICE ESCORT (now I know how the President feels when he comes to town)
- ◆ An ON-TIME, PACKAGE DELIVERY service — because if you didn't get to your appointed station on time, an elite runner would be without his/her fluids for the race.
- ◆ A WAITER — setting up tables and lining up containers in JUST the right places.




One of the water volunteers didn't show up and I ended up driving the van as well, so I was dual-hatted for the day. The whole thing was exciting and fascinating - the time flew by!

A word on the communications: Everything seemed to work flawlessly, I was able to hit the 147.09 machine everywhere on a dinky HT (except the Westin elevator). You have to listen and observe to see what is needed. You do not always get a direct request from your Shadow. Update him/her even when they did not ask to be updated - it sometimes made a difference.

I was VERY impressed and proud to be apart of such a professional group of radio volunteers. Everyone I came in contact with was really glad that we hams were there. My Shadow depended on me on a couple of occasions to find out where the lead Elite Runners were.

Notes for next year's Elite Fluid Radio Op: Make sure the fluid guy has a strong back, can be "on the move" (you get my drift), has a jack-knife for opening boxes, wear tennis shoes, eat before you get there — you won't have time to putz around once you get going.

Oh yeah... a motorcycle cop can turn through the streets a LOT easier than a 1-ton van loaded with bottled water. And thank goodness for PLASTIC bottles!



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The Hollow State: BoatAnchor Magazines

Don Merz N3RHT

Let's talk about old ham radio magazines and other useful reference materials for the boatanchor collector. Useful? Here's an example: At last year's Breezeshooter's hamfest, for the princely sum of \$5, I picked up a small, homebrew thing that looked like a transmitter. While nicely made, there were no markings on it anywhere—even the knobs had no labels or scales. Most people look at these old homeless home-made ham rigs as a source of parts. But I collect old homebrew, so my interest is getting it back on the air. But where can you even start finding out about a nameless, unmarked project like this?

Well, actually, it's much easier than it seems at first. Nearly all boatanchor projects start with a search for a schematic. If you know the make and model number of the commercially-made radio, then finding the schematic or even the original manual is often not a problem. But with home-made gear, there is no make and model and there certainly is no manual. So you must become a detective. And like all detectives, you need good sources of information. This is where your library of old ham magazines and boatanchor reference literature will prove invaluable.

Going back to the \$5 homebrew, here is what I did. When I opened up this otherwise doggy-looking radio, inside I found wiring and component quality easily the equal of any manufactured gear. The parts used were nothing but the best and the wiring and layout showed careful planning. It also had no missing parts or loose wires or "add-ons" grafted into it. That often happens with homebrew stuff as time passes and the builder tires of it. But not in this case. Clearly, this transmitter was worth saving.

How did I know it was a transmitter? The final output tube was a 2E26—a VHF transmitting tube that I am familiar with. All 5 of the other tubes were of a single type that I had never heard of—2E30. Identifying the tube types is always the most important step. Now, how to use that information...

Once you know the tube types, you can find out a LOT about the gear. In this case, I knew from the 2E26 that this unit is a VHF transmitter because the 2E26 was designed for VHF final amplifier service. Now to look up the 2E30. To do this, I didn't use a tube manual because they don't tell me when the tube was first introduced and when it was most used in commercial radio designs. I need that information to figure out which year to begin my magazine search. So I dug out Ludwell Sibley's *Tube Lore* book. I could have used Tyne's *Saga of the Vacuum Tube* or any one of several others. But Sibley's book is organized for fast information access where the others are more historical narratives.

In 30 seconds I found out that the 2E30 is a fast-heating tube introduced in 1946 specifically for mobile transmitter service. It was designed to be fast-heating so the TX filaments could be left off until the mike was keyed. Only then would the tubes light—thus conserving power. Putting *Tube Lore* lovingly back on the shelf, I turn to the old standby, QST. I have the complete year for 1946, so that's where I start. From past experience, I know that QST preferred to publish projects using tube types that were the latest and greatest. So since the 2E30 was new in 1946, I figure I have my best shot starting right there. About halfway through the year, no luck. Then, in the June issue—pay dirt. There it is—an Ed Tilton article on a VHF transmitter using 5 2E30 tubes. A quick comparison of the 1946 article and the TX on my desk shows that they are one and the same. Mystery solved.

Why did I turn to QST? Why not CQ, 73, Ham Radio, or RADIO? Finally,

we are at the purpose of this column! I have been fooling around with boatanchors so long that I know this stuff off-hand. All these magazines are very useful and just plain FUN to read. But it helps to know some background about them.

So here is a quick guide to the old ham radio magazines that I am familiar with. Note that these are HAM RADIO-specific magazines. In some cases, they are for boatanchor collectors only. This list is not an attempt to catalog all the radio magazines because that would be a monstrous list way outside the scope of this article. While it is true that RADIO NEWS, Communications, S-9, Short Wave Craft, etc. sometimes published good ham radio articles, they were not ham-radio-specific magazines and so have been excluded from this list. With that disclaimer, here be de list:

QST: The grand-daddy of U.S. ham radio magazines, started as a club newsletter in the 19-teens. QST hit it's stride in the late 1920's through 1935 with some of the first published information on basic radio stuff like push-pull transmitter designs and the famous Collins articles on the Pi-network for antenna tuning. QST attracted the best authorship including Collins, Halligan, Millen, Kruse, Grammar and many, many other famous names in hamdom. Reading the 1930's and 1950's QSTs, you can FEEL the excitement that these folks felt about radio. QST is not rare at all until you get back into 1924 and earlier.

CQ: Toward the end of the war, Cowan Publishing purchased the old RADIO (see below) mailing list and started CQ Magazine in January, 1945. The first three



issues are rare because they were newsstand-only issues—there were no subscribers. CQ was good enough to make it into the 50's when the editorship passed to a ham named Wayne Green. Wayne transformed CQ into a premier ham radio magazine. He latched onto surplus conversion and RTTY and delivered some of the most entertaining and useful boatanchor reading ever printed. He was forced out with some hard feelings in 1959-60 and formed his own ham radio magazine, 73 (see below). CQ from the 1960's is good reading but not up to the level of the 50's issues. By the 70's, CQ had become an ordinary ham magazine. 1945 issues are rare. All others are common.

Ham Radio: I know only a little about this magazine. It had a relatively short life through the 60's and 70's. HR was more of a technical journal than a hobby magazine and some of its amplifier construction projects are classics still widely copied. HR is less common than CQ or QST but it is also less useful to collectors.

73: Wayne Green's answer to being cut loose by CQ magazine in late 1960. 73 was an instant hit. Excellent coverage of military surplus and RTTY. Well-edited and entertaining. One year, Wayne had so much to say that he arbitrarily decided to publish a 13th issue and sent it to all subscribers gratis. From 1960 through 1973, this magazine is hard to beat. Still in publication and still owned by Wayne, but a shadow of its former self.

R/9: A west-coast publication started in 1930 and merged into RADIO 1/36. Superior content for its day. Some of the earliest ham articles on SSB are in R/9. Valuable reference to 1930's ham

(Continued on page 9)

Skyhooks: HF Antennas on a Shoestring [Or, The Animated Ramblings of a Cheapskate Ham]

Steve Lane W3SRL

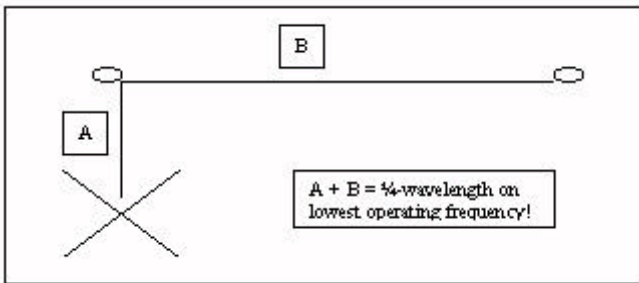
Part V: The Inverted "L"

While researching potential antennas for our impending move, I walked past our new home about twice a day to get some ideas about landscaping where to put the swingset, etc. At least that's what I told my wife.

Since we were only moving seven houses away and around the corner, the walks were fairly short. For almost a month, I thought I was getting away with it until the day she flat out asked me "Don't you have those antennas figured out by now?" So much for subtlety.

No matter how I measured it, there just wasn't any way I was going to get a decent-sized dipole up on this dinky lot. The backyard was too small to meet the zoning requirements for a tower, leaving either a modest vertical that could be chimney-mounted, or an end-fed wire as my choices. I chose the wire, constructed in an Inverted-L configuration. I researched everything that I could find on the subject, and was encouraged by the reviews I had seen.

Essentially, the Inverted-L antenna is a longwire antenna that is bent into an "L" shape, with the bottom of the "L" pointed toward the ground and the top of the "L" pointed toward the tree, pole or other support.



The vertical portion of the "L" is made as long as possible with the supports available, and the horizontal portion makes up the balance of the radiator. The total length of the radiator should be $\frac{1}{4}$ -wave length on the lowest band you intend to use it on. The feedpoint is kept near the ground, and a series of $\frac{1}{4}$ wave radials can be run out from the feedpoint and the ground-side of the feedline attached to those, with a single radial cut for each band desired. The radials can either be buried, or simply lain upon the ground. Insulated copper wire works best, as it resists corrosion longer than other types. The radials can be bend to fit conditions, as long as they do not loop themselves or cross one another.

This antenna can be fed one of several ways, with good results. The first is with 450-ohm ladder-line, but this has some drawbacks. It cannot be run near ANY metal, such as towers, siding or support poles. It also will not work if it is buried. The second method is by using 50-ohm coaxial cable and a 4:1 balun out at the feedpoint. This keeps the stray RF at bay, and still works reasonably well since the feedline mismatch is addressed. Both of these solutions will require an antenna tuner in the shack. The third method is to use an antenna coupler, such as the Icom AH-4, Alinco wire-tuner or SGC smart-tuner outside at the feedpoint, with coax run back into the shack. The manufacturers of these tuners all claim superior performance due to the fact that the tuner is located at the antenna

feedpoint, and not back at the rig.


So what about radiating pattern? Well, that depends largely on the frequency you choose. Any horizontally-polarized antenna is going to be somewhat directional IF you can get it a minimum of $\frac{1}{4}$ -wavelength above the ground; Anything less than this and the pattern get distorted and eventually the antenna becomes omni-directional. For example: With the vertical portion of the wire at 35', and a design frequency of 1.8 Mhz, this antenna would be around 130 feet in length. But since it is only 35 feet off the ground, it is going to be really omnidirectional on any band lower than 20 meters, with the directivity decreasing in correlation with the lowering of the operating frequency. On 20 meters however, the antenna IS $\frac{1}{4}$ -wavelength off the ground and thus it will exhibit excellent directivity in the direction of the end of the wire, and some significant gain as well!

I have been tied up with painting and a myriad of fixer-upper type jobs this past month, but I intend to shop for a wire-tuner out at the Dayton Hamvention. If I am successful in finding one, you can be sure that it will get tried out about fifteen minutes after I get home. I'll fill you in with the results!

(Continued from page 5)

Last and not least, eBay has become much more proactive and effective in dealing with shill-bidding and welshing. It is *much* harder to manipulate your own lots than it once was, and getting caught is virtually (no pun intended) certain if you maintain the practice for a few auctions, even one closely watched/fought auction can catch a seller shilling (eBay keeps time-stamped records of the dynamic IP addresses of all bidders [as well as the seller] for 48 hours past the close of every auction), and then you are banned, and it is hard to get back on as a banned seller now that eBay requires a credit card number up front from all sellers. Welshing drives up prices simply because such bidders often enter their bids with absolutely no intention of ever honoring it. Sometimes this burns the seller, but more often it has the same effect on the legitimate bidders as does shill-bidding; a bidder enters a high proxy bid out of spite, or boredom, or vanity, or mischief, and the result is to raise the closing cost to the winning bidder unnecessarily. Welshers can be banned permanently for backing out of even *one* deal, depending on the circumstances, and one *will* certainly be kicked off at the third such offense. eBay realized that their integrity, and thus their bottom-line, was on the line, and continues to pursue more aggressive and sophisticated means of ensuring honesty, fairness, and accountability.

I have a lot more on my mind about eBay, but (more than) enough for now, hi. Marshall McLuhan would be fascinated by all this. Noam Chomsky is writing a book on the internet right now. For myself, I see eBay as a useful tool in finding good values now and then, in learning about the history of amateur and telegraphy gear, and sometimes it is outrageously funny, when something like an Ameco AC-1 transmitter ends up at like \$483.79 (always love those weird, non-round numbers!)



Pittsburgh Vintage Grand Prix
 July 9 – 16 Schenley Park
 Will You Be Part of It?

QSL.NET Needs Your Help

Al Waller K3TKJ

As you may have noticed <http://www.qsl.net> has been very sluggish since Wednesday, May 3rd due to relocating the server. The relocation was unavoidable as a contract renewal for T1 service was not completed due to a 500% rate increase and other unacceptable terms. Once you are established on a providers backbone it is very difficult and disruptive to move, not to mention expensive. It was expected that I would swallow these rate increase's because I had no other choice... well I didn't.

To fix the immediate problem the server will be moved again, and use will be impacted due to DNS cache latency. To fix the long term problem I have ordered a new dedicated T1 for www.qsl.net to be installed on or before 6/15....yes it means we get to move the server IP address again in about 60 days.

THIS DOES NOT IMPACT Mail, Reflectors at QTH.NET, SWL.NET or DX.QSL.NET. It also does not bother hosted domains or the QSL.NET Dialup ISP system. All these servers live on other circuits.

Now QSL.NET needs your help financially. I hate to ask this but at times it becomes more than I can do by myself. This unexpected relocation has caused us to have to buy some high ticket equipment this week. (2) Cisco 2524 routers at \$1500, (1) Cisco 2924 Switch at \$925, (1) APC 1400 watt rackmount UPS @ \$400. All the cash reserves for all the servers has been spent so if we have a major break down it will probably stay down for a while. This equipment is used for nothing else but the providing of WWW.QSL.NET web pages.

Please contribute to the preservation of Amateur Radio by supporting QSL.NET. The suggested contribution is \$10. Your immediate support will assure the continued quality site that WWW.QSL.NET has become. Please contribute by Credit Card at our secure server <https://proxy.qsl.net/donation>. Or by mail at QSL.NET, RT3 Box 314B, Road 497, Laurel, Delaware 19956.

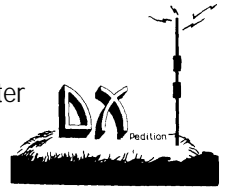
Let me take a minute to explain how DNS works and how it interrupts your use when the server has to move locations.

On the Internet there is a sort of sub-network whose only job is to help your computer find the computer you are looking for. This is DNS or Domain Name Service to be exact. Every computer in the world has a unique number assigned to it called the IP (Internet Protocol) number. This number is assigned by the provider of your Internet connection. Most computers also have a name called a "hostname", WWW is a hostname, QSL.NET is a Domain name. Hostnames and Domain names are for humans, computers want IP numbers so there is a system that translates names to numbers and numbers to names. InterNIC (commercial company now, used to be a government funded entity) owns the "ROOT" DNS servers. When you register a domain name you specify what server IP you will use to be the authority for your domain to IP translation. The ROOT servers don't know where your domain is they only know who does know....Your DNS server.

Your DNS server contains a database that maps all your hostnames to IP addresses and vice versa. Every computer that has ever looked at WWW.QSL.NET came to the DNS server for QSL to find the information on how to communicate with the server(s). OK so now to the problem at hand. Why does WWW.QSL.NET

(Continued on page 9)

DX News Briefs



KH0AS has shut down and is leaving Saipan after thirteen years on the island. He and his family are moving to G-land where he expects to reactivate his **M0ALW** call this fall. **WB4UBD** holds copies of his logs starting with September 1997. Confirmations of any contacts prior to that date will have to wait until Mike gets unpacked and settled in. — **WB4UBD**

The **FR/T** Tromelin Island Dxpediton by the Lyon DX Gang has "fixed its dates and all administrative papers have been granted to us." They are currently seeking additional financial support from individuals and associations to help with rising transportation and other costs. They state that the weather station there "will soon be automated and no more human beings will be allowed to go on the island. This island is already a total natural reserve. This clearly means that our Dxpediton could be the last one before a long time, and another Dxpediton could be impossible due to a new ambiguous administrative status over the island." Donations can be made care of NCDXF via **W6OSP**. — **F6JJX**

4W6MM is now accepting QSL's: Thorvaldur Stefansson, PO Box 3699, Darwin NT 0801, Australia. Remember, his address in Iceland is no longer valid! — **KOCA**

"I've just received QSL info, and am now the QSL manager for, **AJ2U/VP9**, **N2MZH/VP9** and **T94TU**. If you sent a card direct, I'll be sending those cards within the next week. All cards received from the buro will be processed and sent out via buro within the next month. My address is good in any callbook going back to 1990, and maybe 1989." — **KQ3F**

"A new book on DXpeditioning has recently been published. Called *DXpeditioning - Behind the Scenes*, it has been written by members of the **9MOC** Spratly team. It is not a story of the DXpedition but draws heavily on the experiences at 9MOC and many other Dxpeditons. Surpluses from sales of this book will be used as part of the funding for a major DXpedition probably in March 2001." — **G3NUG**

Special Event Prefix changes: **CQ9 = CT3**; **CS8 = CT1** — **IN3NJB**

Don't sending your QSL cards to the **OD bureau**. Lebanese hams claim their bureau is too expensive. "We have to pay 150 Lebanese pound = \$0.10 for each QSL card, yesterday I have received from the Buro 3200 QSL cards that's mean 320 USD or 480000 Lebanese Pounds, then I have to work one month to be able to send these cards. I know that they don't know, but I believe the stations are ignoring what I say always on the air (Negative via Bureau) because each card cost me \$0.10" — **OD5NJ** via **W8KNH**

"QSL **EP2MKO** via **UA6HCW**. Turnaround time was about 3 months. I used registered mail (cost \$6) and enclosed 2 IRCs" — **W6KX**

LZ1VP/AM is travelling a lot due to his profession, radio operator onboard an Antonov AN-12 cargo aircraft. **LZ1PJ** is in possession of his logs for 27 July – October 24 1999. QSL via **LZ1PJ** — **LZ1PJ**

Waiting for a card from **ZF2RV/ZF8** (1994), **ZF2RV** (1997), **VP2V/WJ7R** (1998) or **WJ7R/C6A** (1999)? QSL via **WJ7R**. He will be **QRV** as **ZF2RV** from Little Cayman this coming October — **WJ7R**

Thanks to the *KH2D DX Reflector*, *425 DX News*, *OPDX News*, & *ARRL DX Bulletins* for our **DX News** information. Thanks also to *W3UR/The Daily DX* for confirmations & additional information.

(Continued from page 6)

gear and circuits. Fewer construction projects than QST, but better theory discussions and more coverage of commercial ham gear. All issues of R/9 are very rare.

RADIO: The best in the business from 1936-1941. Started out as a general radio magazine covering broadcast radio in the 1920s. New owner in 1931 changed it to a ham magazine. Great articles and construction projects. Great authors including Frank Jones, Robert Kruse and Faust Gosset. Excellent reference. 1931-34 issues are extremely rare. 1936-42 issues are relatively common.

Western Radio Amateur, VHF Radio Amateur, VHF News, FM: I don't know much about these. The few issues that I have of WRA are quite well done with good construction projects and interesting content. The interview that WRA did with the owner of Swan is a classic piece of BA history. The VHF magazines and FM must be rare because I almost never see any of them offered for sale.

Electric Radio: Started in the early 90's, this magazine caters to the boatanchor collector. If you like WWII military radios, then the first 2 years of ER are indispensable resources. But ER is uniformly excellent. It is a marvelous boatanchor resource. An index to ER is available on the web on several popular BA web sites. All back issues are still available from the publisher for about \$3 each.

Hollow State News: A quarterly newsletter, HSN was started by a group of radio collectors with a common interest in the Collins-designed R390 and R390A receivers. If you have either of these radios, then you probably want to get the back issues of HSN, which are all available inexpensively as reprints. Otherwise, HSN is very spotty in terms of content and quality.

Whew! That's it for this month. Next month, we'll wander around the boatanchor hardware scene a bit.

SX-25 Photo courtesy of & ©2000 Hallicrafters Collectors Association

(Continued from page 8)

suddenly disappear if it changes networks (and gets a new IP number) Every request to the QSL.NET DNS server is answered and the requesting system is told how long the data will be valid (usually 4-7 days) this is called the TTL (Total Time to Live). The server that requested the data stores it for that long and gives the same answer until it's "Cache" expires and it asks again for the info. Any answers it gives after the WWW.QSL.NET server changed IP's is wrong and results in the "404 error" page not found. This is not an error in your DNS server, it just means it's doing as it was instructed but the game changed with out it knowing or being able to find out.

This caching of DNS is why the server goes away when moved. To help correct this problem before scheduled moves I lower the TTL to 1 hour for about a week. The DNS servers get pounded hard because of this but a move only means you have to wait 1 hour at most to have the correct information again. When you do an emergency move as I did and the TTL was at 4 days it could take from 1 minute to 4 days to get the correct information depending on where the timer on your DNS cache was at that moment. Hence people in different domains get the updated info at different times.

So this is more than you wanted to know about this entertaining subject....would you believe books have been written on this, better than Chloroform for sleeping <grin>

FCC News

ARRLWeb Extra courtesy American Radio Relay League

NEWINGTON, CT, May 15, 2000--The FCC has affirmed \$8000 fines levied on two Texas hams for allegedly causing malicious interference with communications on a local repeater and with failing to identify. General licensee Paul E. Holcombe, K4TOF, and Technician licensee Robert L. Meyers, N5WLY, both of Houston, each received a *Forfeiture Order* earlier this month from the FCC's Houston office. The fines followed an FCC investigation last year that involved the use of direction-finding equipment.



Both operators were cited for violating §97.101 (d) and §97.119 of the FCC's Amateur Service rules. The FCC has said the interference "was allegedly caused by stations transmitting unidentified tones, inflammatory or derogatory remarks, and unmodulated signals, none of which were identified with an FCC-assigned call sign."

The FCC noted that an FCC agent on more than one occasion used direction-finding equipment to track interfering signals to Holcombe's and Meyers' vehicles. In both cases, the FCC reaffirmed its findings that Meyers and Holcombe did "willfully and maliciously interfere" with communications in progress and failed to identify. The FCC said both violations were willful because transmissions were timed to coincide with those of other repeater users and each operator "sought to conceal his identity by altering the sound of his normal voice and omitting the required identification."

The FCC has said it determined the fine amounts by using the its forfeiture policy, which sets a base fine of \$7000 for intentional interference and \$1000 for failure to identify. In assessing such fines, the FCC said it takes into account the "nature, circumstances, extent, and gravity" of the violations as well as "the degree of culpability, any history of prior offenses, ability to pay, and other such matters as justice may require."

Both men were given 30 days from the May 3 release of each *Order* to pay.

Home Depot stamps the heads of all of their bulk-item nuts, bolts, lag screws, etc. with a two letter code. This enables the cashier to look up the bar code instead of affixing labels to each one.

My new deck has a large number of 4" lag screws. It's comforting to know that it's held together with a lot of BS. — WN3VAW



FYI Networks, an Internet Service Provider in Pittsburgh and surrounding areas since 1995, is offering all members of WASH their Basic Internet account, normally \$20/month, for only \$15/month. This includes one e-mail box, 3 MB of disk space, web page hosting, Telnet & FTP access. Call FYI toll-free at 1-877-FYI-4NET, or e-mail them at sales@fyi.net, for more details or to sign up. You must mention that you are a member of the Wireless Association of South Hills to get the discount rate.

Many thanks to FYI Networks for making this special offer available to us for the past year!

46th Annual Breezeshooter's Hamfest

Sunday, June 4th 2000, 8 AM – 4 PM, Butler Farm Show Grounds

Radio Prizes to be Given Away:

- 1st Prize: ICOM IC-775
 2nd Prize: ICOM IC-756
 3rd Prize: ICOM IC-746
 4th Prize: ICOM IC-706
 5th Prize: ICOM IC-718
 6th Prize: ICOM IC-2800H
 7th Prize: ICOM IC-T81A
 8th Prize: ICOM IC-207H
 9th Prize: ICOM IC-W32A
 10th Prize: ICOM IC-T7H

Eleven Half-Hour Prizes: ICOM IC-T81A

- 1st Computer: 533 MHz Notebook
 2nd Computer: 500 MHz Pentium III Desktop

\$5.00 Per Person Admission Donation

Includes Small Prize Drawings during the Hamfest
 Children Under 12 Admitted Free

Tailgate / Flea Market Spaces available
 at \$5.00 Per Section

Direction & Talk-In 147.96/36 W3UDX Repeater
 Fly-In at Roe Airport

Early-Bird Mobile Check-In 146.520 Simplex

For More Information, Contact

Chairman: Ed Wolf N3UE wolfie@breezeshooters.net

For Inside Tables: Rey Whanger W3BIS

412-826-8006 w3bis@freewwwweb.com

Or Check the Breezeshooter's Web Site

www.breezeshooters.net

The Wireless Association of South Hills, Inc. N3SH / WA3SH announces & invites you to

The 2nd Annual WASH Cookout at the Breezeshooter's Hamfest

Starting at about 11:00 AM until about 1:00 PM or until the food is gone!!

Look in the morning in the Flea Market for (usually) KA3UPY, W3SRL, NØVLR, W3WH, WN3BOJ, WN3VAW and/or other WASH club members set up together, usually not too far off the main entrance road.

It's a "pot luck" cookout; we're asking everyone to bring something (contact WN3VAW for details).

The cookout is open *only to club members & invited guests*, and there's no cost to join in.

Why stand in line to pay \$\$\$ for a luke-warm hot dog and a flat warm Pepsi,
 when you can sit down with us, relax, and trade flea-market battle stories of the day?

Contact WN3VAW for more information wn3vaw@fyi.net

Breezeshooter's Groundwave Contest 2000 Results

Compiled by Bill Kristoff N3BPB
 courtesy of www.Breezeshooters.net

Call	Score	QSO's	W3OSK	39	27	K3GT	191	88	W8DYF	28	15	N3XCY	77	30	F - Multi-Op / Club
			N3KEH	38	23	AD8RL	187	78	W3KBC	24	11	KA3IFX	65	20	KA3NEW 292 93
A - Zone One			WB3FYP	37	27	N3NXA	179	83	WB8BQW	1	1	N3BAT	55	21	K3MJW 255 114
K3QK	227	123	KA3TQG	36	26	KD3CA	148	68				N3VJU	49	18	WA3SH 81 56
KB3KP	189	112	W3JQJ	35	28	N3VEF	139	66				KB3AQA	37	15	WN8N 14 7
N3FXW	186	106	KB3DMT	34	26	N3JAL	134	62	C - Zone 3			KA3LVG	100	40	
W3ZA	147	83	WA3JXX	33	26	WA3GFM	130	59	KB8UNJ	89	33	KB8MFB	83	37	KA3CDH 31 12
W3SDV	136	91	N3UE	27	24	N3LIQ	128	63	N8IIT	65	29	KA3PKZ	22	10	G - Mobile
KA3TYO	133	86	WA3VXJ	23	19	W8WIF	126	58	AA3NH	60	28	WB3AEV	10	6	KA3SDP 82 46
KC3ET	132	77	N3JYF	22	15	W3UVG	111	50	WA3ESH	60	25	KA3TXR	4	2	K3QYR 77 48
N3TXH	111	74	AA3RZ	21	15	WB3JFS	106	43	AA3OI	58	30	WA3NSM	1	1	N3OIA 39 25
W3BIS	109	74	N3YQY	19	14	NA3H	92	48	N3QM	56	22				N3QVI 17 13
N3LWP	98	60	KB3XS	19	11	K3JDC	91	44	KA3MBC	51	21	E - Low Power			
W03X	95	62	W3AIC	18	12	KB3KV	90	48	N8RAK	47	19	N3WJM	169	95	H - CW Only
W3SVJ	85	56	WA3FWA	18	12	N3FLR	81	44	KE3ZE	76	44	KC3HW	118	48	W8ELL 46 21
N3SBF	81	60	WB3KOL	16	16	N3ALS	73	39	NO3PU	71	38	WA3KFS	96	48	K9VKY 43 21
N3UEV	70	48	N3XFE	12	10	WB3DVD	69	33	N3TVB	46	21	KE3ZE	76	44	AA3V 41 28
KA3AVB	68	68	NK3C	12	8	N3ZEL	61	28	K3ZYK	46	17	NO3PU	71	38	WA3BKD 41 19
W3RIK	63	43	W3SYR	12	7	K3GW	58	27	N3ZZS	45	18	WB3LUF	53	29	W3LUS 36 22
W3TAM	58	40	WW3C	8	7	K3JZD	56	30	KB8YBE	41	21	WB3LXB	44	30	WA3CHC 33 21
K3HIR	57	35	WN3VAW	7	5	N8FFH	52	27	W8FAU	29	12	N3HKN	39	27	W3UHP 32 21
WA3JER	56	39	W3NGL	3	3	N0VLR	48	20	N8REI	19	10	N3DXE	33	25	WA3K 32 21
KA3KSP	55	39				N3PHL	19	9	N3PHL	19	9	N2QIV	24	18	W3WH 28 12
W03J	50	34	B - Zone 2			W3KVS	46	22				N3WYZ	20	11	W3TZW 16 12
W3IOH	49	32	N3WVB	297	127	K3FH	44	25	D - Zone 4			W3NJO	16	12	N3RDV 7 4
WE3Y	49	22	N3BPB	273	131	N3JXG	43	24	K8OMO	327	90	N3XCD	13	10	
N3DOK	41	24	N3LJU	220	104	N3LLU	37	21	KZ3W	126	48				Check log(s)
AA3TA	39	28				NN3J	33	16	KA3UDR	109	30				K8CAT



WIRELESS ASSOCIATION OF SOUTH HILLS, INC.

Membership Application/Renewal for 2000



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

(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 (F1 or F2 or A1 dues x 20% x No. of household family members): \$ _____

Name(s): _____

Name: _____	Call Sign: _____
Address: _____	License Class: _____
City, State: _____	Expires On: _____
Home Phone: _____	Work Phone: _____
Email Address: _____	Birthday: _____
	ARRL Member? <input type="checkbox"/> Yes <input type="checkbox"/> No Family ARRL Member? <input type="checkbox"/> Yes <input type="checkbox"/> No
Signature: _____	Date: _____
	Amount Enclosed: \$ _____

Please make your check or money order payable to the club treasurer, Mark Stabryla.
The Wireless Association of South Hills, Inc. reserves the right to accept or reject new memberships or renewals.
Please return completed membership form along with check/money order to the club treasurer or mail to:
Wireless Association of South Hills, Inc.
C/O Mark Stabryla N3RDV, VP/Treasurer
1120 McKnight Drive
Bethel Park, PA 15102-2456

Wireless Association of South Hills, Inc.

Order Form for "The TLC Embroidery Company"

Embroidered Shirts and Hats

Quantity	Item/Description	Size	Color	Unit Cost	Net Cost
				Sub-Total	
				6 % Sales Tax	
				Total Enclosed	

Available	Cost (S M L XL)	Cost (2X 3X 4X)	
Golf Shirts	\$20.00	\$22.00	Club logo is not currently available on the hats due to size limitations. Contact TLC Embroidery for more information.
Rugby Shirts	\$20.00	\$20.00	Prices, availability & available colors subject to change without notice.
Light Jackets	tba	tba	
Lined Jackets	tba	tba	Use additional sheet(s) if necessary
Hats	\$10.00	\$10.00	

Make checks payable to "TLC Embroidery"
Mail to: The TLC Embroidery Company
366 Dry Ridge Road
West Alexander, PA 15376

Phone: 724 - 484 - 7703

Wireless Association of South Hills, Inc.
www.washarc.org



WASH Field Day,
June 24th & 25th
Mt. Lebanon Park
We've got a Rig
waiting for you!

Inside This Issue:

- Breezeshooter's Groundwave Results! Iace?
- OK, got your plans for Field Day in place?
- Antennas on a Shoestring!
- Yet more on the Hollow State!
- Report from the Pittsburgh Marathon!

All that and more... turn the page & enjoy!



A Lineup Like This... And Yet, They Served Us at the Outback!

Some of the WASH Contingent at Hamvention:

(L-R:) N3KFD, WN3VAW, N3RNX, NØRNX, Gary Cole, N3IDH, KA3UPY, W3SRL

Not Shown: W3WH (the photographer) and the Mooning Gorilla

Photo courtesy of and ©Copyright 2000 Bill Hill W3WH

The WASHRag
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