

N.E.W.S. LETTER



November 2011 Volume 20 Issue 6

The Publication of the North East Weak Signal Group

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NEXT MEETING: November 19th, 2011

Please note the new location for the Board of Directors Meeting. Due to the closing of our previous meeting location, we are now having the BOD meeting at:

Lulu's Pizzeria and Family Restaurant 151 Hazard Ave Enfield, CT 860-763-2377 http://www.luluspizzerria.com/ Please note that the location change only applies to the Board of Directors Meeting. The regular meeting location remains unchanged.



The next meeting of the North East Weak Signal Group will be on Saturday, November 19th, 2011. The Board of Directors Meeting will start at 11:30 AM, and is open to all members. Please note the new BOD meeting location at Lulu's Pizzeria and Family Restaurant, in Enfield, CT. The general meeting will be at 1:00PM at the Storrs Library in Longmeadow, MA. If northbound I-91 to exit 49, right off exit - 2 miles north on Rt 5. If Southbound I-91 to exit 1, 1.5 miles south on Rt 5, library is on left just before Rt 192).

Don't forget

The North East Weak Signal Group 2 Meter VHF and Above Net Every Thursday at 8:30 PM local 144.250 MHz. W1COT, WZ1V or K1PXE Net Control

MEMBERSHIP in the N.E.W.S Group is \$15 per year. Apply to Tom Williams, WA1MBA. Email tomw(at)wa1mba.org You may download an application from our web page:

http://www.newsvhf.com/

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President's Corner

the Conference Committee, everyone who lent a hand, and everyone who attended Microwave Update last month. The conference was a huge success, and it November meeting we try to figure out our schedule for couldn't have been done without your help.

While at the conference I had the opportunity to speak. Our treasury remains strong, and we are slowly getting with many club members about a variety of topics. One topic that came up more than once was the perceived requirements for articles to be published in the NEWSletter. While there are no formal rules, it seems appropriate and obvious that articles submitted to the NEWS Letter should be at least loosely related to weak signal amateur radio.

The real concern was more along the lines of "my project is not nearly as interesting or cutting-edge as some of the other members' projects." Personally I think that if you are passionate about your project to the point where you have considered writing an article, then you absolutely should. The audience of NEWS letter is far wider than just those of us building QRO VHF amplifiers, systems on 241GHz, making EME contacts, building contest super-stations, or stuffing panadapters into their radios. NEWS is composed of many members with many different interests; your hard work and enthusiasm will surely be appreciated.

If you are still not convinced that your topic is worthy of the NEWSletter consider writing something for the website. The audience is even broader here, and your article is sure to inspire someone with ideas for a similar project. If you are uncomfortable with your writing ability, or just want a peer review before your article gets published, give it a shot and we will find someone to work with you. Chances are you have already mentioned your project to a friend who would be willing to help you with your write up.

I hope everyone survived the October storm. We got a few inches of snow and quite a bit of wind on the eastern coast of CT, but it didn't amount to much. I did have one scare where I heard what sounded like a guywire breaking. Fearing the worst I ran out to my tower to see if it was the source; fortunately everything was status quo. The Friday before the storm I had just put the 80' and 90' sections up, the final section will go up soon... I am looking forward to getting on the air from my new QTH.

At the November meeting I will be bringing my Signal Hound software defined Spectrum Analyzer and Tracking Generator and will give a live demo. See you there!

Greg Zenger, N2GZ

Treasurer's Report

First and foremost, I would like to thank everyone on Thanks to everyone for a great conference. It was a pleasure having both the VHF and the Microwave groups together again after 9 years. Don't forget that at the upcoming year.

> renewals of membership as is typical this time of year. If you have not renewed, do so. Just email me: tomw@wa1mba.org if you need to ask about your dues status. My mailing address is on the return of the NEWSLetter, just send a check for \$15 (per year) made out to NEWS Group.

> As winter sets in (I am writing this with 14 inches of snow on the ground and it's still falling at 1 inch/hour) I am tearing apart the shack, cleaning up, and deciding how to simplify to make maintenance easier going forward. Who knows, maybe I will be able to get on for January...

73's Tom WA1MBA

Secretary's Report

Minutes of NEWS meeting 15 October 2011, at Eastern VHF/UHF Conference, Enfield CT

President N2GZ called meeting to order at 1705

Treasurers report Balance \$4100 59 paid up members plus 14 permanent REMINDER - Dues are due

No Old Business

NEW BUSINESS

Motion by WA2VNV to make a donation of \$500 to Microwave Update toward expenses - unanimous

Announcement by WZ1V that the Eastern VHF Society is donating the projector used at Microwave Update to the NEWS Group.

W1SMS made a motion of thanks to WZ1V -Unanimous

Motion by N1DPM to have a more dynamic NEWS website.

N2GZ and N1JFU will investigate and report next meeting.

Meeting adjourned 1728

Financial Chairman's Report:

I want to personally thank everyone who either attended, helped with committee work, or otherwise supported our joint Conference a few weeks ago. Because of your efforts, Microwave Update 2011 / Eastern VHF-UHF Conference was a HUGE success. We had close to 150 attendees altogether from all over the US, Canada, and Europe, and nearly 160 attended the Saturday night banquet (including XYL's). Thanks to Tom WA1MBA for the wonderful job publicizing our event.

Phil K3TUF and Claire KA3TUF put together a great on-line registration page for us, which made it easy for everyone to register in advance. Bruce WW1M put together a great tour along with the staff of Haystack Observatory.

W1GHZ's wife Beth Wade organized the YL/Familytours wonderfully.

W1GHZ and K1WHS did a great job organizing the program and announcing the speakers. We had great speakers! John W1RT, Don W1FKF, Steve N1JFU, and Mike N1JEZ all aided with the audio/visual support. A new NEC projector used during the event was later bought back and donated to the NEWS Group club.

The measurement lab sponsored by Greg Bonaguide WA1VUG of Rohde & Schwarz was a hit with everyone. Thanks to KB1VC and WA2VNV for assisting Greg. We sold every one of our 200 written Proceedings, and most of our T-shirts thanks to everyone's efforts, especially our Registration team of W1SMS, N2GZ, and K1JR. (and W1GHZ for his afterconference sales efforts). The auctioned items generated over \$1200 in revenue. A lot of this came from the 2 Solid State KW amps donated by NXP, N1DPM, N1JEZ, and KA1ZE. We received \$1000 in donations from DEMI, the Packrats, and NEWS to offset the Hospitality rooms and refreshments expense of approximately \$1300. Mark K1MAP did a terrific job coordinating this. Tom AC1J and Mickie W1MKY did a wonderful job procuring all the door prizes. Thanks to everyone who donated them. Chairman Emeritus Bruce N2LIV provided lots of advice over the phone, and if he were able to attend I know he would have been proud. The staff at the Holiday Inn Enfield were great. To make a long story short, the total expense to put on this event came out to just under \$14,000. And our total net proceeds came in at just over \$14,000. This is about as perfect an outcome as one could expect! And there's still some money coming in from on-line CD and T-shirt sales! Thank you, everyone!

-73, Ron Klimas, WZ1V

MUD & NE VHF Conference 2011: One Ham's Opinion

If you consider that my raffle ticket at the banquet was the first one called and I walked away with the FLEX-1500 Software Defined Radio from the door-prize table, this would have been a GREAT conference. But, wait, there's more....

I picked up Jim WA3EHD at 5:45PM on Thursday evening and we zipped up through the evening traffic, arriving in Enfield, CT at the Holiday Inn at about 9:45PM, registered and headed to the hospitality suite where there was a nice crowd gathered and a room full of food and beverages. We arrived at the same time with Doc W3GAD and Rich KB3NRL and we all had a great time mixing with the other attendees. Paul, the WA3QPX, Mike, WA2RVX and XYL, Ed, WA3BZT, Paul, WA3GFZ, Phil, K3TUF and his XYL Claire, KA3TUF, Steve W1SMS and his XYL, Ken, KA2LIM and his XYL, Russ, NN3Q, and Roger, W3SZ, had all arrived earlier. Roger took the Haystack Observatory tour on Thursday and was excited to share his experience there. The N.E.W.S. members were there in force, as well as several VE hams, NTX Microwavers. and Sandra and Steve from DEMI. John Jaminet, W3HMS, and his XYL were also there, and we sat together at a few meals over the weekend to get to know each other more, as he is a prospective club member. He gave a detailed talk on his 1296 EME setup and activities as part of the MUD program.

Bright and early on Friday morning we started with the buffet breakfast, and many of us got this complimentary as Priority hotel members. The first day was dedicated to Microwave presentations, and the next day was a split session format for both MUD and Northeastern VHF. After greetings and introductions, WW2R opened the conference with an overview of his projects and the use of parameter monitoring of solid state amplifiers with PICs and readout displays, in addition to the usefulness of various Elecraft K3 band-specific PTT outputs. W5LUA followed with a presentation of the "Kfactor" determination and measurement of LNAs to improve their stability. Perhaps I understand a bit more, but it's great that there are so many capable RF engineers in ham radio that can design, build and measure "the right stuff."

W1AUV was the third speaker and gave us a taste of his 10GHz activity in the northeast and the various views of different locations for operating, and the somewhat limited azimuth horizons from several, but there were selected openings to work a limited number of stations, even through the narrow gaps.

"radar" for new car models, the audience was concerned about the potential loss of this spectrum for amateurs. I was more impressed that the design of this stuff was in microns. W1GHZ finished off the morning sessions with information of dish sub-reflectors, particularly the advantage of the simple flat design.

Lunch was part of the conference package and we filed After lunch we reassembled for more speakers. I into the ballroom for a soup and sandwich buffet. There was more time to visit the vendors and get some gear test time with Greg from Rohde and Schwarz. DEMI brought many of their kits and microwave transverters for sale. There were vendors with solid state high powered amplifiers being shown and sold, including bands 144, 222, 432, 903 and 2304. N4MW had a table full of HP power meters and various test second if operated outside of their parameters. Some equipment. LNAs with .16 nf and 26 dB gain for of the high-power devices and their copper heat 144MHz were also for sale.

The MUD afternoon focused on EME, dishes and horns. K2UYH reviewed portable EME and small station capabilities. W3HMS described his 1296 EME station and activity. WB2BYP documented his 28' Kennedy dish installation in pictures. WD5AGO was able to have his pre-recorded presentation on low-cost microwave horns presented, followed by Q&A by telephone.

The group went to the Outback for dinner, and we headed back for the 7PM indoor flea market. I managed to pick up some "stuff" that will enable a few for azimuth and elevation. more rats to get on the higher bands with January loaners. The evening finished off with more through 903, but he had plenty for sale. I also skipped refreshments and relaxation in the hospitality suite, compliments of the Packrats.

Saturday's conference was split between MUD and the On to the banquet at 6PM to check out the prize table. NE VHF. WA5VJB gave an interesting pictorial review of waveguide, explaining some detail on waveguide polarization, termination, transition and attenuation. WA4LPR followed with a 2-hour tutorial on The Science and Practice of Phase Noise Measurement, complete with practical demonstration. This is when I needed to make the decision whether to stay and let it float over my head, or to switch and hear capability. I moved next door to catch KA2LIM describing their contesting operation. W1WSO followed with his thoughts on developing a 6m beacon. The take-home message was that the Audino PIC kit is one that I ought to order and learn PIC programming, and perhaps even use a PIC controller and possibly a readout in the rover station. I jumped back into the MUD side to hear N1JEZ describe the use of the new

After a break to grab more coffee and visit the vendor Funcubedongle as an SDR for the FT817. He picked room, we were back in to here some of the progress off the 60+ MHz IF and coupled it to an SDR computer being made in the 78GHz communication LNA from program to get a visual display signals from his WA1MBA. As this is also involved with the proximity microwave transverters. My dongle had just arrived in the mail the day before I left for the conference—here is another winter project—perhaps trying to pick off IF in my FT100D. Back into VHF to hear Steve and Sandra describe their successful14 grid rove this past June and their encounter with a dust-storm that peppered them and their station.

> missed WA1ZMS speaking on "More Miles from your Mixers" and VE4MA describing "78 GHz EME Preparation" in favor of N1DPM describe his construction of a 1KW SSPA for 2m, and VE2DFO showing his 144/222 2KW SSPA build. The take-home lesson here is assure proper cooling and protection of the devices as they are pricey and fail in a nanospreader mounts were auctioned between presentations. To complete the afternoon, I listened to W1RT/R describe the improved automation of his rover setup, and then N1JEZ and KT1J describe their communication projects and experimentation on 122 and 241 GHz. There are a suprising number of components for these frequencies available from Italian and German sources. The picture of the 241MHz signal on the spectrum analyzer at Kuhne was impressive. Here again, the SDR display of the down-converted signal was extremely useful in locating the transmission and peaking the small dish using gear-reduction drives I missed the W2ZV presentation of the LNA boards that he is using for 144 the WA1ZMS session showing the water-cooled 1.5KW 144MHz SSPA used at W2SZ this summer.

The grand-prize was a FLEX-1500, and now that is mine. The other top prizes that were picked included 100' LMR600 with connectors, Bird wattmeter with option of a choice of slug. 432MHz and 2304MHz antennas, 144MHz splitter, 2-band walkies, preamps, DEMI kits, High-power SSPA devices and boards, and large gift certificates for various parts vendors and publications. Dave Sumner, K1ZZ, was the dinner some of the speakers with topics suited to my speaker, and he regaled the crowed with a few stories about his family and his introduction to 10GHz communication, and how it was fine to be a nerd. He even mentioned that they named their daughter Deryn, and her future husband introduced himself by asking if she knew that the anagram of her name was "nerdy."

> Sunday morning found the gang in the rear parking lot doing some tail-gate selling and buying. There were

dishes, amplifiers, 24GHz Gunn diode assemblies, lengths of UT-141, connectors, dummy loads, and other useful gear and boat anchors. I lingered over a homebrew 10GHz set-up that was set-up with a Realistic 10m transceiver that included a nice LO block and a 1dB nf preamp, but there was too much "age" on the unit for me to make an offer. I stopped by to see the WA2IID rover trailer. This is a closed trailer with two masts and rotors, set up for operation through 10GHz. The thing you notice first is the dozens of bungee cords that hold everything in place for travel! Three racks held all the gear-one each for radios, support needs and auxiliary electronics. There were a pair of deep cycle batteries and the usual switching, and a Honda 1KW generator for charging. We pulled out a bit after 10AM and headed to Danbury to accept the kind invitation of Steve Simons and Jen to have a BBQ lunch at their home. This was truly a treat—not only for the nice burgers and dogs from the grill, but also to see their home and his workshops and out-buildings. Too much detail to include here, but it is clear that he will be engaged in finishing the house detail. manufacturing, cleaning out his out-buildings, tower work, and landscaping with his big tractor and attachments.

I got home in time to visit at a friend's house where a bit of a dinner party was brewing, and then head out for a few hours of dancing with the XYL. She asked how the weekend went, and all I could say was, "It was a great mini-vacation." Thanks to so many who made the vendors, and of course, the other attendees.

-73. Rick. K1DS

Links From the 6m Beacon Talk

Arduino Web Page - http://www.arduino.cc/

The Arduinos will soon be available from Radio Shack.

Notes on 11m CB Conversions to 6 Meters:

http://www.gsl.net/wj5o/cb2 6bcn.htm http://malzev.tripod.com/radiodoc/sixmeter.htm -

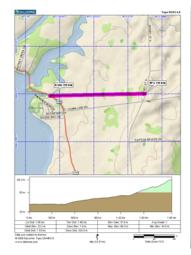
W5JO's Website has a lot of good information on beacons: http://www.qsl.net/wj5o/.

Notes on Commercial LMR Radios:

http://www.repeater-builder.com/

73, Tom. W1WSO http://w1wso.blogspot.com/

122 GHz Update



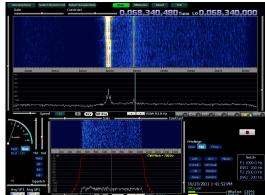




On 23 October 2011 (1746Z) Mike, N1JEZ, and I completed an SSB contact on 122.256.1 GHz over a distance of 1.8 km. This was an increase over the earlier results of just less than 1 km. The margin over the noise was about 40 dB, thus leaving ample room for future increase in distance. The weather was overcast, dry and cool. The improvement was attributable primarily to being able to aim more accurately on my side with the use of a newly installed weekend a success including N.E.W.S. and Packrat rifle scope. Mike's set up already included a rifle scope members, prize donors, speakers, League officials, and an IF spectrum display using a Funcube SDR, as well as a new heavy duty tripod with geared az/el adjustment. A later attempt to bridge a distance of 8km did not succeed. It clearly showed the need for improvement in fine az/el adjustment on my tripod. (I'm working on it!).

> Both sides used identical rigs: OCXO at 141.333 MHz, X96 multiplier to 13567.968 MHz, tripler to 40703.904 MHz. subharmonic mixer to 122111.712 MHz. FT817 IF at 144.1 MHz. Procom 25 cm dish and feed.

- Henry, KT1J, FN34ha



Noise Figure & Gain Results From MUD 2011

<u>50 MHz.</u>

Call	NF	<u>Gain</u>
WA2ODO	.09	23.34 (2 nd)
WA2ODO	.10	24.58 (3 rd)
WA2ODO	.06	27.60 (1 st)
WA2IID	.60	24.74 `´

<u>144 MHz.</u>

<u>IF</u>	<u>Gain</u>
69	17.80
07	22.49 (1st
	24.50 (3rd
	26.20 (2 nd
18	22.93 `
63	18.60
60	17.32
35	23.80
33	22.50
39	22.80
77	21.60
22	24.70
17	23.66
16	24.66
18	25.97
16	25.65
77	21.60
	69 07 13 12 18 63 60 35 33 39 77 22 17 16 18

222 MHz.

<u>l</u>
3
6 (1 st)
B ` ´
0 (2 nd)
4 (3 rd)

432 MHz.

Call	NF	<u>Gain</u>
VA3NRN	2.10	9.30
VA3NRN	1.16	10.65
WA2ODO	.21	23.81
WA2ODO	.04	34.78 (1st)
WA2ODO	.17	28.12
WA2ODO	.04	33.26 (2 nd)
K10R	.62	13.59
W2ZV	.32	23.77
WA2ODO	.06	34.36 (3 rd)

<u>902 Mhz.</u>

<u>Call</u>	<u>NF</u>	<u>Gain</u>
WA2ODO	.10	21.17 (1 st)
WA2ODO	.12	21.39 (2 nd)

1296 MHz.

Call	<u>NF</u>	<u>Gain</u>
WA2IID	1.95	23.44
WA2ODO	.32	14.26 (3 rd)
VE2XX	.95	15.17
WA2ODO	.44	19.71
WA2ODO	.20	18.68 (1st)
WA2ODO	.31	15.83 (2 nd)
W2ZV	.49	15.80
WA3GFZ	1.23	24.83

2304 MHz.

NF	<u>Gain</u>
.25	19.07 (1st)
.31	16.28 (3 rd)
.34	18.80
.29	16.23 (2 nd)
.37	13.39
2.2	27.2
	.25 .31 .34 .29

3456 MHz.

Call	NF	Gain
WA2ODO	.71	10.44 (2 nd)
WA3QPX	.68	14.98 (1 st)

5760 MHz.

Call	NF	<u>Gain</u>
K3TUF	.95	11.96 (1 st)
K3TUF	1.00	11.25 (2 nd)

10368 MHz.

Call	NF	<u>Gain</u>
W3SZ	2.38	11.45 (3 rd)
W3SZ	1.65	15.60 (1 st)
WB2RVX	3.0	4.10 `´
K3TUF	4.17	26.3
K3TUF	2.58	6.77
W3HMS	2.19	24.25 (2 nd)



N.E.W.S. Group Officers

PRESIDENT:

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ACTIVE ON: 6, 2, 432, 10 GHz.

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24GHz.

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ACTIVE ON: 6, 2, 432, 903, 1296, 2304, 3456, 5760,

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ACTIVE ON: 6, 2, 222, 432, 903, 1296, 2304, 3456,

5760, 10 GHz, 24 GHz.

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5760, 10 GHz.

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W1ZC, Dick Wilborg (1 yr)

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Mason, NH 03048 – FN42dr Home: 603-878-3680 w1zc @ myfairpoint.net

ACTIVE ON: 6, 2, 432, 1296





N.E.W.S. Group

Membership Application

Name:	
	Grid:
Addreess:	
City:	State: Zip:
Phone:	Work (Optional):
Email:	
ARRL Mem	ber: Y / N Electronic Newsletter Delivery: Y / N

Operational Bands (circle) 50 MHz 144 MHz 222 MHz 432 MHz 903 MHz 1.2 GHz 2.3 GHz 3.4 GHz 5.6 GHz 10 GHz 24 GHz 47 GHz 76 GHz Light Other (list)

The North East Weak Signal (N.E.W.S.) Group was established to form a camaraderie among fellow VHF-UHF-SHF enthusiasts, and support a convenient means to exchange technical information. We currently have 6 meetings per year held at a centrally located facility, and provide a "NEWS Letter" that is distributed 2 weeks prior to each meeting. Any contributions to this publication are appreciated and can be sent to: Tom Filecco, W1WSO. Email: w1wso@comcast.net. Dues are \$15/year. Remember, this group is formed by VHF'ers for VHF'ers.

Mail to:

North East Weak Signal Group c/o WA1MBA Tom Williams PO Box 28 Shutesbury, MA 01072

Email: tomw@wa1mba.org

NEWS is an ARRL Affiliated Club.



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