



N.E.W.S. LETTER

The Publication of the North East Weak Signal Group



March 2011

Volume 20

Issue 2

President: K1WHS, Dave Olean
Vice President: WZ1V, Ron Klimas

Current Officers
NEWSLetter Editor: W1FKF, Don Twombly

Secretary: W1GHZ, Paul Wade
Treasurer: WA1MBA, Tom Williams

Next Meeting March 19, 2011

1 PM Storrs Library, Longmeadow, MA

FUNcube Dongle as a 96 KHz

Panadaptor for a Yaesu FT-817

+

Duct Tape Auction

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Don't Forget

**The North East Weak Signal Group
2 Meter VHF and Above Net
Every Thursday at 8:30 PM Local 144.250
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](mailto:tomw(at)wa1mba.org) You may download an application from our web page

<http://www.newsvhf.com/>

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The President's Corner

(Blank)

From our Treasurer

I'm pleased to say that our membership keeps on growing, slow but steady. Unfortunately, I haven't been keeping a specific list of recent new members, but I will in the future so that we can acknowledge them in the NEWSLetter. I won't be making the March NEWS meeting as I will be returning to CT around 3:30 that day from a week-long vacation in Ft. Myers (Red Sox Spring Training). So, maybe someone will be able to give my report for me at the meeting.

As I write this, the snow has melted quite a bit at my QTH, down to less than a foot, and even though more is predicted tomorrow, I'm sure that the Sprints are on their way!

Tom WA1MBA

Next Meeting March 19, 2011

1 PM Storrs Library, Longmeadow, MA

Using FUNcube as a 96 KHz

Panadaptor with a Yaesu FT-817

Duct tape Auction

From our Secretary

Minutes of NEWS meeting 15 January 2011

Storrs Library, Longmeadow, MA

Directors meeting 1225

NEWS Meeting, Storrs Library, Longmeadow, MA

President K1WHS called meeting to order 1317

Treasurers Report:

Current balance \$3920

94 paid-up members as of January 1. Now 97 members.

OLD BUSINESS:

Microwave Update Update

- webcast suggested. successful in 2010.
- Ustream possibility
- W1RT volunteered to do webcast

NEW BUSINESS:

Spring microwave activity weekend

- possible dates: 5/7 (sprint) 4/30 & 5/1 (SBMS, NEAR-fest)
- Rules committee - K1MAP, K1WHS
- Prizes - best DX (K1WHS donation), most QSO (W1GHZ donation)

MOTION by W1ZC to donate \$100 to Storrs Library - unanimous

ANNOUNCEMENTS:

January Contest plans by various members

Logbook of the World now supports VUCC

Meeting adjourned 1409

PROGRAM:

Show and Tell Session:

W1FKF - FUNcube dongle - 64 to 1700 MHz SDR receiver in a USB dongle

W1GHZ - DSO Nano - Digital Storage Oscilloscope and signal generator, iphone size, under \$100

N1JEZ and N1DPM - KW solid-state 2M amplifier using BLF-578 FET

N1JEZ - Rohde & Schwarz 432 amplifier conversion - 1.5 KW

K1WHS - bias network evaluation for triode amplifiers - TL431 and MOSFET better than big Zener

K1WHS - 3-phase HV Power Supply - HEAVY QRO



15th International Earth-Moon-Earth Conference EME 2012

Cambridge UK
16-18 August 2012

www.eme2012.com

January 2011 VHF Sweepstakes SOAPBOX

W1ZC FN43cd

Fired up my four band VHF station (6, 2, 432 & 1296) on a very cold January 22nd afternoon. Not really expecting much in the way of activity and enhanced conditions, I was pleasantly surprised by my score by Sunday evening. Lots of activity on all four of my bands from here in Southern New Hampshire. Unexpectedly, some very interesting enhanced signal levels occurred during most of Saturday evening into Sunday morning on all the bands but especially 432 and 1296 between Quebec down thru to Cape Cod and Long Island. It appears that a high pressure dome was centered right over central New England with 0 deg temps. Almost like a balmy mid summer evening. No real long haul tropo was heard but everything within 200 miles was really loud. No equipment failures and ice storms! Wonderful time. Bring on June!!!

73s, Dick,

W1ZC FN42dr Mason, NH

N1GJ January 2011 ARRL VHF Contest

First let me say that I am definitely one of the little pistols in the VHF Contest game. Although I have equipment operating on all bands from 6 Meters through 10 GHz, all antennas are small and located no more than 40 feet up on a single tower and power output is in the tens of watts range, except for the bottom four bands where it runs around 100 watts or so. I have no illusions about winning the Eastern Mass Section any time soon. That said, I do enjoy VHF contesting and try to participate whenever possible. Small antennas and low power do tend to limit both the total number of grids as well as the total number of contacts possible and this time around was no exception. For January 2011, the numbers were 173 contacts and 58 total grids for a score of 19,256 points. This score was achieved in a little over 12 hours of operating time during the weekend. About 15 contacts per hour is not great but that is about average for me. I normally plan to get a good nights rest each night and usually work in other activities over the weekend as well. Besides finding at least one station that I can talk to on all 10 bands (not possible this time), I especially look forward to working old friends each time around. There always seems to be something new and different in each contest-sometimes good and sometimes bad. This time it was bad. Murphy struck Saturday afternoon and before it was over I had lost the 3.4, 5.7 and 10 GHz rigs from the ten I started with. Because of weather and other factors, It will probably take until mid-spring sometime before I can track down all of the problems and everything is working again. The goal as always, will be to get everything running in time for the next contest.

Regards,

George Jones, N1GJ FN41qr

AF1T FN43cd

It is always good to spend a cold Winter weekend contacting Ham Radio friends, and the ARRL VHF S.S. is something that I've enjoyed for more than 40 years. Conditions were flat, like last year's, and the rotators froze. By Monday morning the temperature hit -20 degrees F (the coldest day of the year). How could anyone go roving My FN43 Grid was lacking K1WHS and KA1LMR (QRP Portable), so the Microwave Bands were activated mainly by K2HZN, N1JHJ (on 1296-MHz), and myself. My Microwave signals hardly made it out of New England, due to a lack of Snow Scatter, or any enhancement. It is worth noting that CW often got through when SSB couldn't. - My score would have been nearly 40% lower without CW. I was in the Low-Power Category with 11 Bands, and ran only 2 Watts on 2304-MHz, and less than 1 Watt on 10-GHz. I finished with 411 QSO's, 761 QSO Points, 92 Grids, and a claimed score of 70,012. I hope you all enjoyed the camaraderie of this event, and I will look forward to working you in the next one

73,

Dale AF1T FN43cd

The January 2011 ARRL VHF Contest from FN44ar *Mike, N1JEZ*

For the last several years I've been getting together with friends to run a multi-op in January from my camp in Newark, VT FN44ar. The site is about 12 miles north of Burke Mountain in Northeastern Vermont. My camp is located on 23 acres at 2000' with decent views to the E-S-W. There is no commercial power on site. The nearest power lines are about 1 mile away



Above is a picture of the site this year. We actually had a lot less snow than in previous years! The camp is on the left. To the right and behind the Subaru is the 'Shack'. It is a space about 1/3 of the total building. If you look close, you can see the 6M beam on the left hand side. To the right of the Shack is the generator building. In between is a military crank up mast that has 2M – 1296 mounted on it. The mast cranks up just 20 feet, so the top antenna is only about 28' feet off the ground. It's temporary until I can get my towers up. The town of Newark has no zoning, so I just need to find the time.

The generator building houses two units – a Honda EU2000i and Yamaha EF4500iSE 4500 watt unit. Both are 'inverter' units that put out pretty clean power. The Yamaha is nice because it has remote start/stop. I can press a button in camp and have power when I want it. Everything runs on 110 vac. I also have an 8 kW Northstar generator that can provide 220 vac that might get pressed into service as the shack grows.

The shack itself is 10' x 12'. It is extremely well insulated and has its own 15,000 btu propane heat system. I've been constantly changing the layout as I work with different amplifiers. This year I ran all solid state except for 6M. Below is a picture of the evolving amp rack.

From top to bottom:

- ACOM 1006 6M kW
- 222 – 500 watt amp – IOJXX pallet (twin fans on the front panel)
- 2M kW amp – using an NXP BLF-578 (front panel says ESP1000 - SEA)
- Power supply shelf. On the left is the 48 volt 1500 watt switching power supply that powers both 2M and 222 – not at the same time. On the right side of the shelf is an Astron 30A 13.8vdc switcher.
- 1296 amp – DL2AM 60 watts
- 903 transverter/amp 40 watts

Acrodyne 432 amp 650 watts – to the right are the two power supplies for the amp.

The two wattmeters hanging above are 2M and 222. Both are peak reading. To the left of the rack on the top shelf is an old Alinco 2M FM rig. There are also various backup 'brick' amps.





The 6M position was run mostly by Beau, N1MJD. The radio is an FT-920. We use WriteLog for logging, DVK and rig control. The Empire propane heater is just behind Beau.

The contest overall seemed a bit slow this year. From our location, activity was down. Despite this, we had a good time. It's not always about radio. Pictured below, Sunday morning breakfast with blueberry pancakes and hot VT maple syrup.



At the 2M – 1296 position is Joe, N1DMP. Here he is proudly displaying our standard "contest food". There are two rigs. For 2, 222, 432 and 1296 is an FT-736R. For 903 and soon to be 2304 and 3456, an FT-817. Logging is via WriteLog as well. There is also a YCCC SO2R box which allows the use of just one headset/key/footswitch. WriteLog controls it. I especially like the "split headphone" feature where we can monitor 2 or 432 liaison and the microwave IF in separate ears. That will be more valuable as I add additional microwave bands. Both WriteLog computers are networked together.

The contest overall seemed a bit slow this year. From our location, activity was down. Despite this, we had a good time. It's not always about radio. Pictured below, Sunday morning breakfast with blueberry pancakes and hot VT maple syrup.



We're planning to activate FN44ar as much as possible this year. Look for us in June, August and September for the ARRL contests and July for CQWWVHF.

73,

Mike, N1JEZ

n1jez@burlingtontelecom.net

Moonbounce Tips and Some Observations

By Bob DeVarney W1ICW

Before some old timer berates me for pretending to be an alleged expert, let me describe my frame of reference, and explain my intention with this article.

I am very much a newbie to EME. I made my first EME QSO slightly over a year ago on January 31st, 2010. I have made 198 QSOs in 39 DXCC countries and 25 states, with a relatively modest station, by EME standards.

With the exception of my elevation rotor, my station is not terribly different from the average well-equipped V/UHF contest operator's station. My foray into EME was really a personal challenge to see, firstly, if it could be done, and secondly, how cheaply and with minimal equipment.

I wanted as much to learn along the way, as to get to the end result of being able to make EME QSOs on a fairly regular basis (maybe a couple times a week) without having to invest the GDP of a third world country, or have an antenna array that needed it's own zip code.

Along the way, I've made a lot of mistakes and a lot of friends (some friends were mistakes.. just kidding!) and learned a lot, and had some real surprises. These are what I hope to share. I do not pretend to be an old-timer by any definition of the word, but I have some things that have surprised me that I thought it might be beneficial to pass along. So here goes..

First and foremost software. I call it the Holy Trinity. First, WSJT (freeware). Say no more. Lots of good primers on how to set it up and get it running so I won't even try here. This is the software that has revolutionized moonbounce (some would say ruin it but that's another story) It has made it possible for 6 meter EME. Period. Without WSJT, there would be no 6 meter EME because the arrays necessary for CW would be prohibitively large. Now, if you have one of the longer 6 meter beams, and 1 kW, you can work EME on 6 meters.

VK3UM's EME calculator (Freeware) This is like the Swiss Army Knife of moonbounce. Lets you evaluate your system, and simulate it in software to see what changes will do to your performance. Ever wonder how much sun noise you should be seeing? This will tell you. Lastly MoonSked. The only pay for software of the bunch. Currently shareware, the regular fee is 35 GBP or around 56 dollars American. While VK3UM does have an EME planner available for free as part of his software package, I find MoonSked the easiest to work with. You can evaluate the chances when making an EME QSO by looking at degrade, polarity difference, and other factors.

If you are a satellite user, it is similar to the functionality of Nova for Windows. Get 'em, play with 'em, learn how to use 'em, you'll learn to love 'em Evaluate your station: Do you have a single yagi and 160 watts? It's going to be a bit tough but it can be done. More on this later. Do you have a single long yagi with better than 12 dBd of gain and 500 watts or more? Now we're talking.

I have recently started to work some of the smaller stations with my modest setup. I run a stack of four 7-element M2 2M7s and 600 watts with a DB6NT preamp at the antenna. With my setup I have worked stations as small as K0AWU who runs a single 10-element yagi and 500 watts.

Don't have elevation capability? No problem ! W5UWB has been burning up the airwaves with a single yagi station and modest power. He knows exactly when his ground gain lobes are (here's where the MoonSked software comes in, to know when the moon is going to be at your critical elevations)

and uses them to his distinct advantage at his moonrise and moonset. It's amazing to see him come up from a -29 to a -20 in a couple of sequences when he hits a ground gain lobe. So don't be afraid to try it, you might just be very pleasantly surprised.

Getting back to the single yagi and 160 watts, my first 10 EME QSOs were with 100 watts from my TS-2000X and my M2 2MCP14 satellite antenna. This is essentially a 7-element yagi, circular polarized. Going to a linear polarized station, I am at a constant 3 dB loss. So my effective antenna gain is only approximately 7 dBd ! With this extremely small station, I was able to get my feet wet on EME. You will find the larger stations only too willing to help work you (they get a new "initial" out of the bargain) and quite patient too. I don't say it will be easy. I am saying it can be done, and you can try it to see if it is something you will enjoy. Then you can plan appropriately to upgrade or not.

I was able to assemble my station pretty cheaply, in fact in the ultimate scheme of things, it has been a zero investment proposition because I sold off surplus gear (anybody who's been a ham for any length of time accumulates surplus gear) to pay for the acquisition of what I wasn't able to build or get for free. A big help was free feedline. Many of us are simply overwhelmed with the cost of hardline. I will say this about that. All of my tower contractor friends tell me they are tripping over stuff they've pulled out of installations that is still good. The only way to know is to ask. Faint of heart never won fair of maiden. If you don't know the name and number of tower contractors in your area, you should.

By saving money on my feedline, I was able to spend it on antennas. I chose this route out of simple expediency. I would have loved to build my antennas, but because I built nearly everything else, I simply didn't have the time. Between that, a full time job, and part-time college, I was REALLY squeezed for time. If you are good at it and have the time, you can do the opposite by building your antennas from scratch and then having that money available to buy hardline if it can't be acquired for free.

When trying to plan out the best times for potential EME contacts, don't be afraid to try times when all the software in the world says it shouldn't work. That's not to say I am recommending trying with HS0ZIL with his 10 elements and 80 watts when the degradation is at 15 dB! But I am saying that some of the best and seemingly easiest QSOs I've had have made was when the degradation was over 4 dB and even 5 dB. I have worked three single yagi stations this week alone when the degradation was over 4 dB. The toughest times for me seem to be the week following the optimum conditions for the month. I have not been able to explain this as degradation it is the same number as the days and weeks leading up to the "good weekend". And when conditions are optimum and the degradation is under a dB. I can have days where I have a terrible time makes contacts. Can't explain it, so I won't try. Sheer dogged determination and persistence is very nearly worth an extra pair of yagis. What I mean by this is that it may take you months to complete a QSO with a station, but with some rare exceptions, you will, eventually, if you spend enough time at it. As a former HF qrp cw operator, I have learned to have patience, especially when you want to work that rare DX that everyone else is working. With my modest EME station, I am seldom the first or loudest to work a DX-pedition or new country, but by putting in the time, night after night, missing the odd hours of sleep to be on for moonrises and moonsets, and really hanging in there, I have often been able to work the stations that I wouldn't have even tried to work when I first got QRV on the moon. Maybe this is why they call us *lunatics*?! Most of the DX-peditions these days are running decent sized equipment and antennas.

The latest C56EME station ran 2 8-element I0JXX X-POL yagis and 400 watts. Not a huge station, and six months ago, I wouldn't have even tried. But by hanging in there, night after night, I was able to work them on their fourth day. Again, don't expect miracles, but you'll never know unless you try. Faraday rotation is not ALWAYS in the wrong way, and every once in a while it goes in your favor, but you won't know that unless you are there trying.

To X-POL or not to X-POL, that is the question... Fred N1DPM and I have discussed this some. He has decided for, and I have decided to stand pat where I am. I'd love nothing more than to put up four M2 2MXP32 yagis on a new tower, but who can afford it? Besides which, the added complexity of an X-POL array is a task I'd rather not take on. From trying to work Ian VE7IRA who does have X-POL antennas, I haven't actually seen that it helped him. We have tried for months to work off and on. And he's spent hours switching polarity back and forth and forth in a vain attempt to see me or vice versa. By all accounts we should be able to work. We each have approximately 16 dBd of gain, and each have at least 350 watts. We each regularly work the same stations as each other, but never have we been able to work until this week. Same thing for me when I worked Paul, UN9L in Kazakhstan. I spent MONTHS trying to work him. We both lost sleep trying to work at moonrise or moonset, getting up in the middle of the night to make a sked. Was it worth it? I think so. Sure you could throw money at the problem, and have a swell huge array, and it would be like shooting fish in a barrel, as easy as EME ever can be. If it was easy, they'd call it HF, right?

By putting in the time commitment, and being there night after night, through the good and bad conditions, I have been able to make some QSOs that I would never have thought possible last year. So, in closing, I would say "get on, give it a try, and you never know." Part of the reason I decided to try EME was because I had some nice VHF gear that never got used, and I was bored with the satellites. You can only work the same 5 or 6 people so many times on the Easysats before the blush is off the rose.

Being a real old-timer on the satellites (I was first QRV on AO-13 and the Russian RS-birds in 1989) I, like many other old-timers lament the passing of the HEO Phase 3 birds. Perhaps some day we will get some larger satellites back. Until then, I am content to make QSOs through Oscar Zero.

73,

and keep your
frequency up..

Bob W1ICW

w1icw@myfairpoint.net



For Sale

Toshiba UM2683A 55 Watt 3.4 to 3.7 GHz

Solid State Linear Amplifier

\$200.00 plus shipping

My spare amp, never fired it up, 3mw drive for full output. Requires large heat sink

Don W1FKF donw1fkf-news.yahoo.com

Cardo Systems BTA II Bluetooth Adapter

2 for \$10.00

With wall charger

Make your Transceiver Wireless

Plug Bluetooth Dongle into Transceiver, use with your cell phone Bluetooth headset .. VOX on TX without adding additional circuit, just add mating connectors..

Don W1FKF donw1fkf-news@yahoo.com



DEMI 903 MHz transverter

For Sale: Like new DEMI 903 MHz transverter, 30W out, <1.5dBNF, 144MHz 10W in IF, common IF and RF, mounted in PVC tower-mountable box, DEMI Price \$590. My price \$400. Ron WZ1V,

EMAIL: wz1v@arrl.net

Fore Sale:

Decibel 220 MHz preamp with input filter.

Pulled from a 220 MHz Land Base system.

Wacom 900 MHz Pass/Reject cans.

Mike N1JEZ

n1jez@burlingtontelecom.net



2011 North East Weak Signal Group VHF CALENDAR:

March 19, 1PM - 4PM - [N.E.W.S. Group Meeting](#)
April 11?, 1900-2300 Local - [144 MHz Spring Sprint](#)
April 22, 2110Z - Lyrids meteor shower
April 29-30 - [Southeastern VHF Society Conference](#)
April 29-30 - [New England Amateur Radio Festival - Deerfield, NH](#)
May 20-22 - [Dayton Hamfest](#)
May 14, 1PM - 4PM - [N.E.W.S. Group Meeting](#)
June 4 - [Rochester NY RARA Hamfest](#)
June 11-13, 1800Z-0300Z - [ARRL June VHF QSO Party](#)
July 9, 11AM - 4PM - [N.E.W.S. Group Picnic](#)
July 16-17, 1800Z - 2100Z - [CQ Worldwide VHF Contest](#)
August 6-7, 1800Z - 1800Z - ARRL UHF Contest
August 13, 0300Z - Perseids meteor shower
August 20-21, 6AM - 11:59:59PM - ARRL 10-GHz & up Cumulative Contest
September 10-12, 1800Z-0300Z - [ARRL September VHF QSO Party](#)
September 17-18, 6AM - 11:59:59PM - ARRL 10-GHz & up Cumulative Contest
September ??, 1900-2300 Local - [144 MHz Fall Sprint](#)
September ?? - [Mt. Airy \(PackRats\) VHF Conference](#)
September ??, 1900-2300 Local - [222 MHz Fall Sprint](#)
October 2 - [Mt. Airy \(PackRats\) Hamarama](#)
October ?, 1900-2300 Local - [432 MHz Fall Sprint](#)
October ??-?? - [New England Amateur Radio Festival - Deerfield, NH](#)
October ??, 0600-1200 Local - [Microwave Fall Sprint](#)
October 13-16 - [Microwave Update hosted by NEWS Group](#)
October ??, 2300-0300 UTC - [50 MHz Fall Sprint](#)
November 19, 1PM - 4PM - [N.E.W.S. Group Meeting](#)
November 17, ?????Z - Leonids meteor shower

Southeastern VHF Society

Huntsville, Alabama
April 29 - 30, 2011

[Call For Papers](#)

[Technical Program](#)
[Conference Schedule](#)
[Registration Form](#)
[Lodging Information](#)
[Maps & Directions](#)
[Antenna Gain/NF](#)

<http://www.svhfs.org/conference.html>

Joint Conference Announcement



<p style="text-align: center;">Microwave Update 2011 Sponsored by North East Weak Signal Group N.E.W.S.</p>	<p style="text-align: center;">37th Eastern VHF/UHF Conference Sponsored by North East Weak Signal Group and the Eastern VHF/UHF Society</p>
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October 13 – 16, 2011
Holiday Inn, Enfield, Connecticut *

	Microwave Update	37th Eastern VHF/UHF Conference
Thursday 13 Oct	TBD Tour Tour of ARRL Headquarters	Friday: No Activities
Thursday Evening	Hospitality Session hosted by DEMI	
Friday 14 Oct	Microwave Registration, Speakers, Auctions Technical Sessions	
Friday Evening	7 PM — Swap session for registered attendees only plus invited surplus dealers	Hospitality Session hosted by N.E.W.S/ Pack Rats.
Saturday 15 Oct	Microwave Speakers, Auctions Technical Sessions	VHF/UHF Registration Technical Sessions, Band Sessions & Noise Figure Lab
Saturday Evening	BANQUET Awards & Prize Drawing (First 10 prizes to Banquet ticket holders)	
Sunday 16 Oct	8 AM (no early birds) FLEA MARKET — in parking lot Open to all ANTENNA MEASURING Microwave Update Close Out	

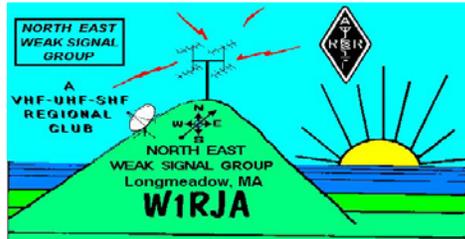
Both events open to all registered attendees

SPOUSE'S PROGRAM: Friday and Saturday, including TBD.

* **LOCATION:** **Holiday Inn** Enfield, Connecticut is on Interstate Highway 91 at the border of Connecticut and Massachusetts, 5 minutes south of Springfield, MA, and 20 minutes north of Hartford, CT. The closest airport is Hartford, with a shuttle van to the hotel. Other convenient airports are Boston (about 1.5 hours), Worcester, MA, Providence, RI and Manchester, NH. Domestic fares to Providence and Manchester are often much cheaper than Boston, so comparison shop. International flights generally go to Boston or Hartford, but the New York airports are within reasonable distance if you find a bargain fare.

** **SURPLUS TOUR:** The surplus dealers in New England are scattered, so an inordinate amount of driving would be required. Instead of the traditional surplus tour, we are inviting the best surplus dealers in the Northeast to setup at both the Friday evening swap session and the Sunday morning flea market. In addition, the dealers who have setup at previous Microwave Updates have promised to bring even more delectable goodies. If there is sufficient interest, it may be possible to arrange a tour of a very large dish on Thursday morning.

Latest updates, registration forms and hotel info at <http://www.microwaveupdate.org>



N.E.W.S. Group

Membership Application

Name: _____ Call sign: _____ Grid: _____

Street: _____

City: _____ State: _____ Zip: _____

Phone (home) _____ - _____ - _____ Optional (work) _____ - _____ - _____

Email _____

ARRL member? 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 is being 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 "NEWSLETTER" that is distributed 2 weeks prior to each meeting. Any contributions to this publication are appreciated and can be sent to: Don Twombly, W 1FKF 23 Maura Dr. Woburn, MA 01801 Email: donw1fkf-news (at) yahoo (dot) com. Dues are \$15/year. Remember, this group is formed by VHF'ers for VHF'ers.

Mail to:

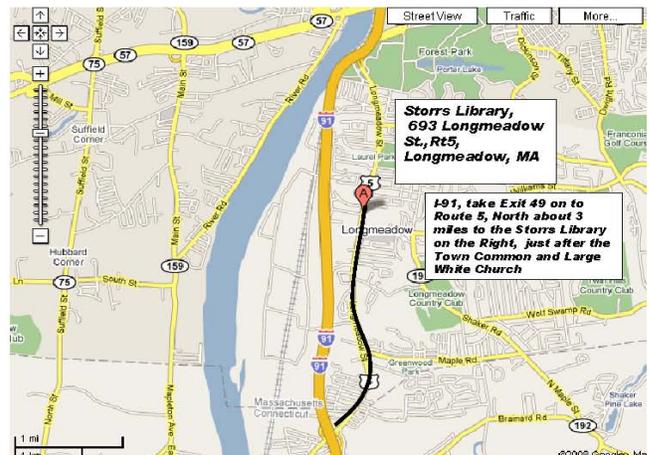
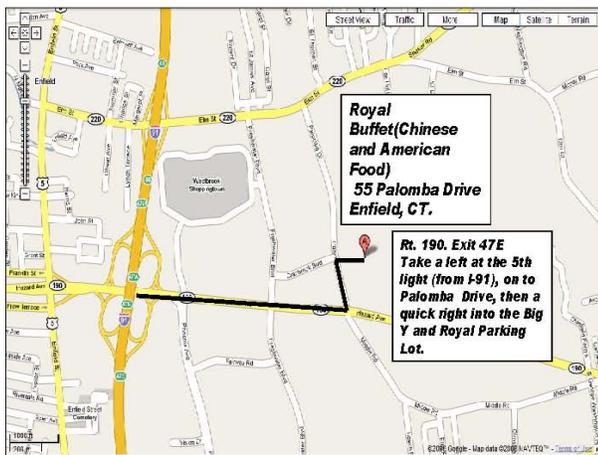
North East Weak Signal Group

c/o WA1MBA Tom Williams PO Box 28

Shutesbury, MA 01072

Email: [tomw \(at\) wa1mba \(dot\) org](mailto:tomw@wa1mba.org)

ARRL Affiliated Club





SSB Electronic USA manufactures and distributes HF, VHF, UHF and SHF equipment covering 10 MHz to 47 GHz

124 Cherrywood Drive,
Mountaintop, PA 18707
USA

<http://www.ssbusa.com/ham.html>



Chassis Kits & Custom Enclosures

Charles Byers K3IWK

<http://home.flash.net/~k3iwk/>

5120 Harmony Grove Road

Dover, PA 17315

Phone/Fax (717) 292-4901 k3iwk@flash.net

Phone between 6:00 - 9:30 P.M. EST



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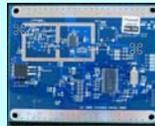
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