The Rochester VHF Group

The VHF Journal

Volume 68, Issue 5		January 2015

The next regular meeting of the Rochester VHF Group will be Friday, April 11th 2014 at 7:30 PM at
Spencerport Wesleyan Church
2653 Nichols St., Spencerport
Map and directions on last page

In this issue:

Topic: Contest Warm-up and club project

RVHFG's Beacons	
Band	**MHz**
6m	50.078
2m	144.298
1.25m	222.050
70cm	432.300
23cm	1296.257

W2UTH 6 meter Skimmer
http://www.reversebeacon.net/dxsd1/dxsd1.php?f=0&c=W2UTH&t=de

The Chairman Speaks!
Tom Jennings KV2X

Groupers:

I look forward to seeing you at the meeting and bring a friend.

73,

Tom Jennings KV2X

Continued….

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Secretary Report

By Tom Jennings, KV2X for Freddie Sulyma, WB2GFZ

Rochester VHF Group Meeting Minutes for 12 December 2014

Tom, KV2X, called the meeting to order at approximately 1945 local time by welcoming everybody and thanked Bill, K2TER, for hosting the Tune-up Clinic. Everybody had a chance to introduce themselves and briefly discussed their ham radio activities during the past month. K2TER talked about the status and plans for the MUD web page. KV2X asked if there was motion to accept the minutes from the last meeting as printed in the Journal. K2DH motioned to accept and K2TER seconded. KV2X asked if there was a motion to accept the Treasure's report as printed in the Journal. K2OS motioned to accept and WB2BYP seconded.

Attending: AF2K, KD2HEV, K2TER, K2OS, K2STF, WB2BYP, K2DH, K2EHF, KV2X, and WB2QCJ

Old Business: 2meter skimmer status: WB2BYP said he was waiting for sound card.

We talked about club project and KV2X will look into what DEMI offers for LNAs. K2STF mentioned that the Dollar store has Christmas tins on sale.

New Business K2TER wants everybody to make noise about the January VHF contest

We discussed the new rules. We also discussed the Sprints. The question was asked if the ARRL participated in the sprints.

We decided the January meeting would discuss plans for the January VHF contest and club project.

After the new business, KV2X asked if there was a motion to adjourn the meeting. K2DH motioned to adjourn and K2TER seconded.

Program: Tune-up Clinic

VHF Group
Treasurer's Report (12/31/2014)

CHECKING/CASH ACCOUNT	
Current Balance (PP = $2.90, Cash = $245.00Cash, $2215.80 Checking):	$2463.70
Income:	$ 00.00
Expenses: Donation to AWA (CHK1053, Dated 12/13/14, Not Cashed)	$ 00.00
Current Balance (PP = $2.90, Cash = $245.00Cash, $2215.80 Checking):	$2463.70

Members paid up for 2014 – 2015 are as follows:

AB2YI, Dave Muller	KB8VAO, Stephen Gocala	W2GPS, Richard Hambly
AF1T, Dale Clement	KD2HEV, Dave Malecki	W2IT, Roy Wildermuth
AF2K, Irv Goodman	KF2MR, Jarred Jackson	W2UAD, Ken Evans
K2EHF, Jeffrey Luce	KV2X, Tom Jennings	W2XH, Ryan Tucker
K2ERG, Elbert Gross	N2IK, Walt Bordett	WA2CHV, Jack Kelly
K2GAB, Gloria Stevens	N2NEP, John Cunliffe	WA2QAU, Bob Roberts
K2OEQ, Duncan Brown	VA3CDD, Dean Denter	WA5VJB, Kent Britain
K2STF, Steve Fleming	VE3CRU, Bill Burgess	WB2BYP, John Stevens
K2TER, Bill Rogers	VE3DS, Dana Shtun	WB2GFZ, Freddie Sulyma
K8ZES, Sid Emmons	VE3NPB Murray Hill	WB2KAO, Tim Magee
KA2ENE, Harry Hoffman	W1XR, Jim Welch	WB2QCJ, Dean Keyser
KA2LIM, Ken Kent	W2CNS, Bob Nezelek	WO2P, Fred Miller
KA2OQZ, David Carlson		

Respectfully submitted,
Freddie Sulyma, WB2GFZ, Treasurer

Tune-up Clinic Results

By Dave Haliday, K2DH

This year's annual Tune-up Clinic was held on December 12 at the home of Bill Rogers, K2TER. We had a very good assortment of LNA's and Converters this year, unlike some previous events. We had units for all bands from 50MHz through 24GHz and we were able to measure them directly, using an Agilent E4446A Spectrum Analyzer outfitted with the Noise Figure personality module. The Noise Source used was an Agilent 346C (opt H01) Noise Source, which is a calibrated 5dB ENR source tuned to operate up to 26.5GHz.

We had a lot of fun, saw some pretty interesting devices (including WB2BYP's unit from AD6IW- see the measurements of that LNA's performance on 902, 1296, and 2304 MHz!). Based on our results that night, it looks like K2TER will have all his bands operational for the January contest.

I hope to see you all on the bands in the January VHF contest, especially now that we all know your gear is working!

73

Dave Hallidy K2DH

BAND	OWNER	LNA CONV	NF (dB)	Gain (dB)	Mfr	Comments
50 MHz	WB2BYP	LNA			HB	Non-Functional
222 MHz	KV2X	CONV	1.77	14.7	DEMI	
	WB2BYP	LNA	0.16	22.7	WA2ODO	ATF36077?
	K2OS	LNA	0.33	23	HB	MGF-1402
432 MHz	WB2BYP	LNA	1.94	15.9	HB	2N5179
	WB2QCJ	LNA			Janel	Non-Functional
902 MHz	WB2BYP	LNA	4	23.3	WA3IAC	MSA-103?
	WB2BYP	LNA	0.35	25.7	AD6IW	?
	WB2BYP	LNA			HB	Non-Functional
1296 MHz	K2TER	CONV	0.91	15.6	DEMI	
	K2DH	LNA	0.57	27.8	WD5AGO	Previously 0.28dB!
	WB2BYP	LNA	0.43	22.8	AD6IW	
	WB2BYP	LNA	4.25	21.7	WA3IAC	MSA-103?
	K2OS	LNA	0.74	17.7	HB	MGF-1302 #1
	K2OS	LNA	0.9	16.6	HB	MGF-1302 #2
	K2OS	LNA	2.44	8.2	HB	MRF-966
2304 MHz	K2DH	LNA	0.36	34.5	WD5AGO	EME Preamp
	WB2BYP	LNA	4.55	17.88	WA3IAC	MSA-103?
	WB2BYP	LNA	0.55	17.5	AD6IW	
	K2TER	CONV	1.78	13.9	DEMI	
3456 MHz	K2DH	LNA	0.48	30.6	WD5AGO	EME Preamp
	WB2BYP	LNA	0.56	28	WD5AGO	EME Preamp
	K2TER	CONV	2.12	20.4	DEMI	
5760 MHz	K2DH	LNA			WD5AGO	3456 LNA on 5760
	K2TER	CONV			DEMI	Non-Functional
10368 MHz	K2DH	LNA	1.22	11.6	HB	W5LUA NE325?
	WB2BYP	LNA	1.39	29.8	ALC uW	Commercial Ku-Band LNA
	K2TER	CONV	1.65	17.7	DEMI	
24192 MHz	K2DH	LNA	2.7	23.1	DB6NT	

A 6 Meter Roving Antenna

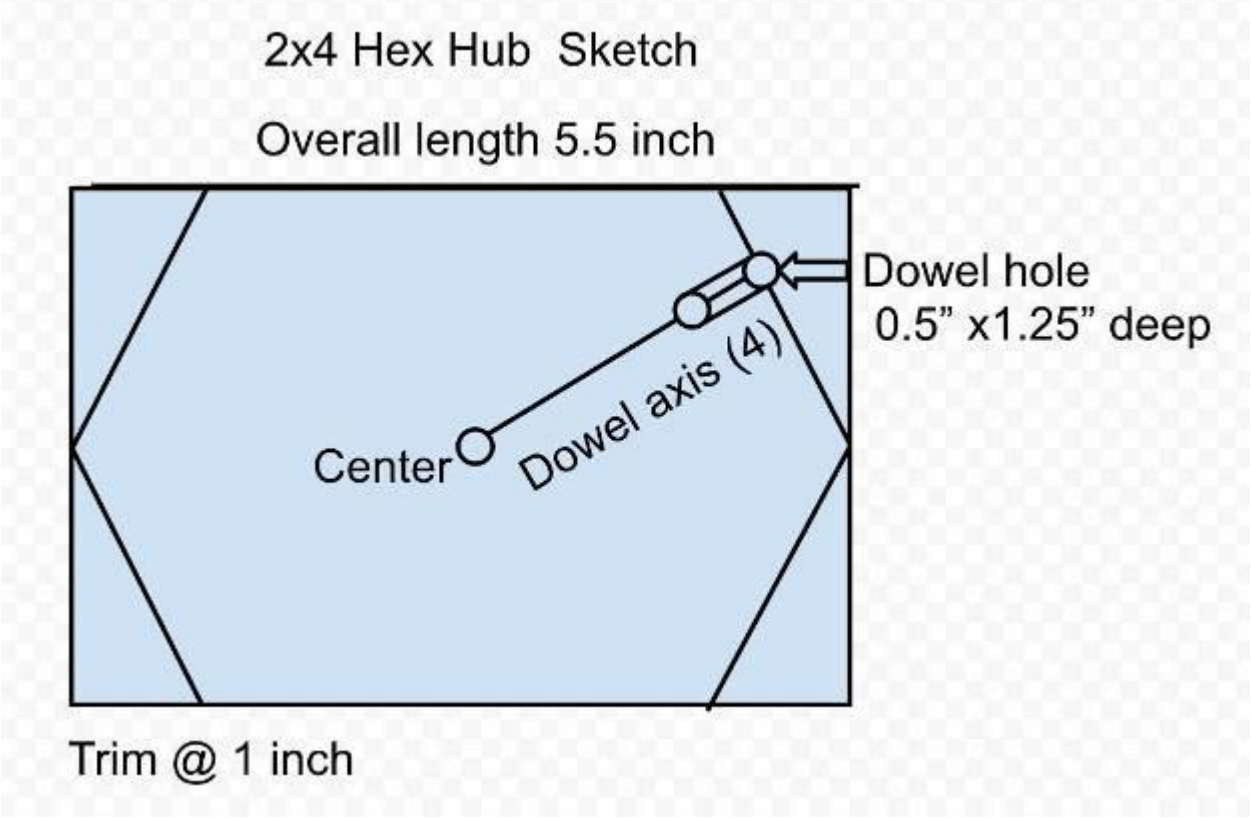
David Muller, AB2YI

Here is my take on simple, compact 3-element 6 meter beam suitable for roving or portable use. The design is from Martin Hedman, SM0DTK: http://www.sm0dtk.se/antennas.htm.

I've come to prefer this over the Moxons I have used, and the dimensions are nearly the same. In fact, the turning radius is just 47"--one inch more. It weighs about one pound, stacks into a 4-foot bundle, takes two minutes to assemble, and provides 10 dB gain, 20 dB F/B.

For about $10, you can build this from a 2x4 wood block, four ½" x 48" dowels, and 30 feet of insulated wire. The 2x4 forms the center hub, and the dowels will flex when installed, so you only need to be reasonably accurate when building.

Hub. Select a clear piece of 2x4 and line off a 5 ½" length--leave extra. Draw center lines, on each side. Measure back 1" on each edge, and make a line to the center end--these are your face cuts. Sketch is not to scale.



From hub center, draw a line perpendicular to each face cut line, this is the dowel axis. When you make the face cuts, extend the axis line across the cut and mark the center for the dowel hole. Drill a ½" hole 1 ¼" deep perpendicular to the face. I would suggest reaming this hole with the drill a little so the dowel fits easily, it will swell when wet.

Mounting. The driven element is centered so that it crosses directly over the hub, but it is elevated 6-8" due to bowing of the dowels. If you are mounting on top of a mast, I just drill the hub center for a dowel that inserts into the mast, and use an angle bracket next to it secured with a hose clamp. Mounting next to a mast, the hub can be notched, or just an angle bracket used.

Dowels. Select four straight ½" x 48" dowels, ($1.53 ea. Home Depot) With a hand saw cut ½" deep slot in one end (use the labeled end as it may bind if inserted in hub). These are the correct length at 48".

Wire. This design has folded elements returning along the dowels, and a dipole driven element with "T" ends. All elements add to the common width a tail or "T" leg so be sure to check before you cut. Martin specifies 1mm insulated wire--I used #16 or #18. The antenna is broad and forgiving. I attached heavy monofilament loops to achieve the correct spacing when slipped into the notched dowel ends. But, I found that the director and reflector can be permanently attached to the dowels, needing no loops. The wire can pass through the notch or a drilled hole and/or be taped down to the dowels. Insert the dowels in the hub to place the director and reflector, when the "T" ends are fixed to the dowels, the antenna springs into shape.

Here are the measurements, (1.25 M is extrapolated and has not been tried).

Mini Horse Dimensions

Wire lengths in inches

Band	Width	Director Tail	Reflector Tail	T-Leg Director	T-Leg Reflector	Depth	T to loop
6 M	80.7	13	20	10.6	5.3	47.2	23.6
2 M	28.4	4.7	7.1	3.5	1.8	16.5	8.25
1.25 M	18.5	3.1	4.6	2.3	1.2	10.8	5.4

The center insulator is just a piece of double-sided PC board in the shape of a "T" with pads cut for each leg. As suggested by Bob Nezelek, W2CNS, I added a small coax choke in the feed, 3 turns 3" dia. using ⅛-inch Teflon RG-316. For 25 feet @ 50 MHz, the loss for RG-316 is only 0.8 dB more than LMR 240-UF (1.4 vs. 0.6 dB). I support the coil and coax on a short dowel that also mounts to the hub.

For the "T" ends, I tied loops at the end of heavy monofilament (20-50 lb.) fish line, and then taped it to the wire end setting the correct length. Over that I wound a whip finish, permanently anchoring the line. One winds over the tag end and pulls the free end through using the temporary pullout loop. Here is a sketch:

Some notes: Dowels don't follow the wood grain and they can snap if strained against a cross grain. Even so, this antenna has good strength and minimal wind load. (One might rip some straight grain strips and fit to a hub for greater strength). If roving amid trees, carry a few spares which are cheap and quick to replace. I generally spray paint the dowels and wire with flat, light gray primer to reduce visibility. For 2 M and above, Tops had 30-inch bamboo skewers for $2, just right to fit a smaller hub.

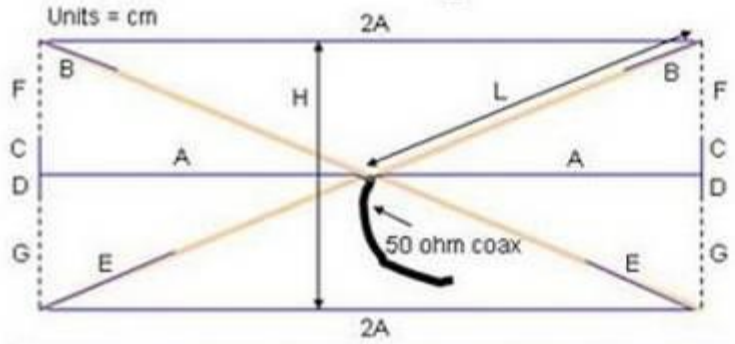
Moxons are fine antennas, but if you can fit a 3-element in the same space, why not consider it. I think you will have a hard time beating the dB/dollar ratio.

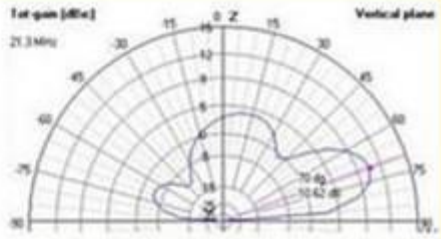
David Muller, AB2YI

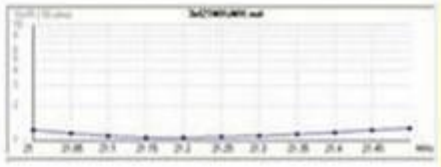
The figure below is from Martin's page, dimensions are in cm.

MH-Antenna

Gain = 10 dB
F/B = 20 dB







Freq	A	B	C	D	E	F	G	H	L
144	36	12	9	4.5	18	12	16.5	42	41.5
50.1	102.5	33	27	13.5	51	33	46.5	120	119
28.3	182	58	48	24	91	58	82	212	211
24.92	206	65	54	27	102	66	93	240	238
21.2	243	77	64	32	121	77	109	282	281
18.1	285	91	74	37	141	91	128	330	329
14.2	364	116	96	48	181	116	164	424	421
10.1	513	164	136	68	256	164	232	600	594
7.1	728	232	192	96	362	232	328	848	842

1 mm insulated wire
Fishing rod
Support lines

Classified Listings

None this month.

Meeting Location and Directions

Spencerport Wesleyan Church on 2653 Nichols St. (actually Hwy. 31).

Directions from Rochester:

531W exit RT. to 259N

259N turn Rt. on 31E (first Rt. at traffic light)

Look for Spencerport Schools Bus Garage on left

Take first Rt. on Sheldon at A-framed church, park in rear lot.

Enter gray metal door under fire escape.