



The Publication of the North East Weak Signal Group

JULY 2002

VOLUME TEN

**ISSUE FOUR** 

E WS

President: W1GHZ Paul Wade V P: WA1MBA, Thomas Williams

CURRENT OFFICERS

Secretary: N1GJ George Jones Treasurer: N1DPM Fred Stefanik

# **NEXT MEETING**

#### OUR NEXT MEETING WILL BE A PICNIC ON JULY 20 AT THE KNIGHTS OF COLUMBUS PAVILION IN ENFIELD, CT. SEE THE MAP ON PAGE 8 FOR DIRECTIONS

# IN THIS ISSUE

FROM THE PRESIDENT DE W1GHZ	PAGE 2
SEC. REPORT NEWS BOARD MEETING OF 11 MAY 2002 DE N1GJ	PAGE 2
SEC. REPORT NEWS MEETING OF 11 MAY 2002 DE N1GJ	PAGE 3
SAVE A TREE GET YOU NEWSLETTER VIA EMAIL NOTICE DE K1UHF	PAGE 3
JUNE VHF CONTEST TOTALS DE KB1VC, WZ1V, K1UHF	PAGE 4,5
REPAIRING POWER AMPLIFIER TUBES DE AF1T	PAGE 5
A SIMPLE AMPLIFIER RELAY CONTROL CIRCUIT DE AF1T	PAGE 6
EXTREME QRP DE AF1T	PAGE 6
IN PRAISE OF POWERPOLE CONNECTORS DE W1GHZ	PAGE 7
CALL FOR PAPERS AND TALKS DE WA1MBA, N2LIV	PAGE 8
VHF PROGRAM AT BOXBORO ARRL CONVENTION DE W1GXT	PAGE 8
DIRECTIONS TO NEXT MEETING	PAGE 8
FOR SALE OR SWAP	PAGE 9

MEMBERSHIP in the N.E.W.S. Group is \$10 per year. Apply to Fred Stefanik, N1DPM, 50 Witheridge St., Feeding Hills , MA 01030 (413) 786-7943 You may download an application from our web page http://www.newsvhf.com

The N.E.W.S. LETTER is the publication of the North East Weak Signal Group. Articles may be reprinted with proper credit given to the author and the N.E.W.S. LETTER. Articles can be sent to K1UHF, Del Schier, 126 Old West Mountain Road, Ridgefield, CT 06877 Preferably only via e-mail with "NEWSletter" in the subject line, to K1UHF@amsat.org

#### FROM THE PRESIDENT

Our next meeting will be a picnic on July 20 at the Knights of Columbus pavilion in Enfield, CT. See the map for directions. We had a great time there the last two July meetings, and the pavilion has a roof, so come rain or shine. The club will provide hamburgers, hot dogs, and soft drinks. New this year veggieburgers! Bring anything else you need, and feel free to bring enough to share.

I hope that our outstanding chef will be available, but we will need a couple of volunteers to help with the cooking. No need to make reservations, just pitch in if it looks like something needs doing.

We will also have an informal swap session on tables in the back, so bring some stuff and maybe you can take home some different stuff.

#### MDS testing

The technical part of the meeting will be MDS (Minimum Discernable Signal) testing on 10 GHz and possibly 24 GHz if I can get some stuff together, so bring your gear. If you don't have any, it's still worth seeing all this stuff in one place - last year, we had them lined up the whole length of the pavilion. I got a new generator, so we shouldn't have the power problem we had last year.

To test for MDS, we set up a distant signal source. After everyone has a chance to peak up on the signal, the signal level is reduced one dB at a time - when you can no longer hear it, then you have found the MDS for your system. You decide how well it works, and whether you can hear as well as Don and Dale. This isn't a competition, just a chance to check out the gear with friends around to help.

As a doublecheck, the frequency is moved a few KHz, then the signal level is increased one dB at a time. If you weren't kidding yourself, you should be able to find it at the same level as before.

Finally, we also check relative ERP, transmitting one at a time and recording the relative power received at the distant point.

Results last year were pretty good. Most folks had 10 GHz stations that worked pretty well, while a few found problems so they could fix them before the 10 GHz & Up contest in August. Finally, a few others wished that they had brought their gear - and the rest of us shared the wish when they had trouble during the contest!

#### **NEWSletter Apology**

When I first became President, I tried to get NEWSletter material to the editor a month before the meeting, so that you could get it at least two weeks before the meeting. The last couple slipped a little, and Del and Tom weren't able to bail me out last month, so it was pretty late. We've heard some complaints, and they were justified, so we are starting early this time - see the date at the top.

#### **June Contest**

No six meter openings that I heard - if there were any, they happened during the two hours I was otherwise occupied each afternoon. The coastal tropo didn't make it inland to central Mass, either. One short rain shower for a quick 10 GHz contact was the only opening I got. But I still had fun, with a decent score, and hope you did as well.

What I missed were a bunch of familiar calls from the NEWS group! It must have been my receiver, because I know you wouldn't miss a VHF contest.

#### VHF Conference and Microwave Update

The mailing should be out by the time you read this, so get your reservations in before the hotel fills up. All the folks that volunteered to help at the last meeting are appreciated, but there are still a few small jobs you could do, either beforehand or during the conference, so let Matt or Bruce know what you would like to do and they will add you to the list. Together we can make this the best conference anywhere in 2002!

#### N.E.W.S. webpage

The NEWS group now has its own domain, with a new URL for the club webpage: www.newsvhf.com Ron is doing a great job as webmaster, so check it out. I love the scrolling banner with the next meeting date.

Paul W1GHZ

## SECRETARY'S REPORT OF THE NEWS BOARD MEETING FOR 11 MAY 2002.

The NEWS Board Meeting was called to order by President Paul Wade, W1GHZ, at 12:54 PM. The Treasurer was not in attendance so there was no Treasury Report available. A discussion of the Worked All Bands Award, sponsored by NEWS, will be brought up during the main meeting.

The next meeting of NEWS will be held on 20 July at the K of C park in Enfield, CT. Use of the park has been secured for that date. Ron, WZ1Vvolunteered to do the burgers, etc.

A discussion of delivery of the NEWS Letter was next on the agenda. Del, K1UHF, said that he could e-mail out the NEWS Letter if someone would supply the necessary info. If we want to get info out to everyone it should be sent to the reflector where it will be sent to everyone on the list. NEWSVHF.COM gets you to the reflector. If nothing else, you will get a copy of the NEWS Letter via US mail. Electronic mail will get you a copy approximately two weeks sooner.

The Board meeting was adjourned at 1:04 PM.

### SECRETARY'S REPORT OF THE NEWS MEETING OF 11 MAY 2002.

The May meeting of the NEWS Group was called to order by President Paul Wade, W1GHZ, at 1:05 PM. A discussion of the rules for the Worked All Bands Award was taken up after Tom, WA1MBA, passed out a preliminary copy to those present. After discussion, it was moved and seconded that the rules be accepted. An ammendment was offered and seconded to cover "every band available". After the ammendment was voted and passed, the main motion was voted on and passed. Members of the NEWS Group should make every effort to publicize the Award.

Fred, N1DPM, NEWS Treasurer, presented a report on the state of the NEWS treasury. We have \$2305.00 as of the date of the meeting. The group voted to accept the report as presented.

Microwave Update , to be held concurrent with the NEWS Annual Conference, is in need of volunteers to help with the many tasks involved. Each of the task areas was reviewed and volunteers were signed up. The dates for the Combined conference are 24-27 October 2002. There is still room for a few more volunteers-see Matt, KB1VC or Paul, W1GHZ, if you can help in any way. Bruce, N2LIV, reported that the Radisson Hotel was taking reservations for the Conference weekend at \$89 per night. Call early and let them know it is for the Conference.

The question of what constitutes membership in NEWS for purposes of participating in the club portion of the ARRL January Contest, was discussed. It was decided that anyone who was a member with paid-up dues, could submit a contest log to be counted in the NEWS Group final score. A motion to that effect was made and seconded and passed by those present at the meeting.

After a short break, the meeting continued with a Duct Tape auction, presided over by our able President, Paul, W1GHZ. Some of the funds realized were contributed to the NEWS Treasury. Everyone enjoyed the auction and picked up much "valuable" stuff.

Next, a presentation was made on the latest 222 MHz Transverter designed by Paul, W1GHZ. The bugs have been worked out ? and a kit of parts may become available from Down East Microwave shortly. Paul had copies of the 222 Transverter PCB for sale to anyone who wanted one. Small quantity P C boards of your latest project can be had from www.express PCB.com. For more written details and pictures of this 222 transverter project, check:

-NEWS Letter for May 2002 and -www.W1GHZ.org

### <u>SAVE A TREE</u> <u>MAKE THE CLUB WEALTHY</u> <u>GET YOU NEWSLETTER QUICKER</u>

The NEWSletter is available online in Adobe .pdf format each issue. The URL is always in the same format, for instance this issue is at:

http://www.westmountainradio.com/K1UHF/NEWS/news0207.pdf Even if your email or mail gets fouled up you can still find the NEWSletter on-line.

The option of members receiving the NEWSletter electronically was discussed but a formal system wasn't really figured out as yet.

This month everyone gets a snail mail copy whether they want it or not. Also everyone that we have an email address for gets an email notice also. This month no one will miss their NEWSletter and you will see how the email will work if you are on the email list.

Considering that you will get your NEWSletter faster, in color (sometimes) and will save the club lots of money you can opt for electronic notification and download instead of a hard copy.

If you want the email notice ONLY, send both Fred, N1DPM and Del K1UHF an email with your correct email reply address and we will put you on the email list and take you off the snail mail list.

Send your request NOT TO RECEIVE A HARD COPY of the NEWSletter to both freddpm@juno.com and k1uhf@snet.net. Fred will remove you from the list that is sent to Tom WA1MBA for mailing labels and I will send a notice to you when the next NEWSletter is ready for download.

The NEWSletter will not be attached to the email, there will only be a hot link to West Mountain Radio's fast and very reliable server where the NEWSletter will be in .pdf format. You must of course have Adobe reader installed in you computer to read it.

We will also bring this up at the meeting to go over any fine points before taking any members off of the snail mail list. You may have received it both ways this issue. You may of course, continue to get the NEWSletter both ways but you will have to pay your dues, hi.

73, Del K1UHF

The meeting was adjourned at 3:25 PM.

# THE NORTH EAST WEAK SIGNAL GROUP'S JUNE VHF CONTEST TOTALS

	UNLIMITED MULTI OP																				
Cal	1	Grid	NC	Points	6m	2 m	222	432	903	1 2G	2 3G	3 4G	5 7G	10G	24G	47G	75G	120G	145G	240G	LAS
K1W	IHS	EN43	YU	328440	412/95	323/44	79/30	126/32	24/12	29/14	9/5	6/3	4/3	-	-	-	-	-	-	-	-
NOL	IK	EN34	NU	236188	297/134	157/51	46/27	71/32	13/8	21/12	11/8	-	-	5/1	_	_	-	-	-	-	2/1
K70	W	CN93	N II	39627	183/61	65/24	19/10	74/11	1/1	4/7	2/2	-	_		_	_	-	-	-	_	
NW/5	F	FIQS	N II	37967	180/70	/18/71	1//7	29/13	-	7/2	2/2	_	_	_	_	_	_	_	_	_	_
100.5		LLJU	14 0	57502	100770	40721	14//	20/15		// 5											
LIMITED MULTI OP																					
<b>C</b> 1		c · .		<b>.</b>	~	-						2.46		100	246	470	750	1200	1 4 5 6	2405	
<u>Cal</u>	<u>. L</u>	Grid	<u>N C</u>	POINTS	<u>6m</u>	2m	222	432	903	1.26	2.36	3.46	5.76	106	246	4/G	/56	120G	1456	240G	LAS
K 3 Y		FNII	NL	606825	625/102	600/72	190/50	285/55	-	-	-	-	-	-	-	-	-	-	-	-	-
AA4	IZZ	EM96	NL	3/6259	40//116	398/81	113/42	154/42	-	-	-	-	-	-	-	-	-	-	-	-	-
K2E	SAR	FN31	NL	350316	5/5/98	415/53	94/34	200/3/	-	-	-	-	-	-	-	-	-	-	-	-	-
W35	50	FNOO	NL	332904	388/103	345/6/	100/42	164/52	-	-	-	-	-	-	-	-	-	-	-	-	-
NOC	ĮJM	EN13	NL	1/1/98	359/150	94/5/	45/35	42/32	-	-	-	-	-	-	-	-	-	-	-	-	-
K8C	.C	EN82	NL	169644	302/97	220/52	34/24	107/38	-	-	-	-	-	-	-	-	-	-	-	-	-
NIS	E	EN63	NL	124560	265/92	181/42	49/20	/4/26	-	-	-	-	-	-	-	-	-	-	-	-	-
K5T	R	EMOO	NL	78000	209/91	143/30	22/14	52/21	-	-	-	-	-	-	-	-	-	-	-	-	-
KB1	DFB	FN41	NL	63936	279/56	133/24	27/9	63/19	-	-	-	-	-	-	-	-	-	-	-	-	-
W2N	INY	FN24	NL	31460	52/29	/4/32	39/24	41/25	-	-	-	-	-	-	-	-	-	-	-	-	-
AA1	.VL	FN42	ΥL	1/050	123/2/	10//20	-	40/8	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE OP HIGH POWER																					
<u>Cal</u>	.1	Grid	N C	Points	6m	2 m	222	432	903	1.2G	<u>2.3G</u>	<u>3.4G</u>	5.7G	10G	24G	47G	75G	120G	145G	240G	LAS
K1T	ΈO	FN31	ΥH	481399	277/81	374/62	110/38	148/39	41/20	59/25	20/12	16/10	-	8/6	-	-	-	-	-	-	-
AA2	UK	FM29	ΝH	334125	223/73	233/53	73/36	93/39	31/18	46/23	25/14	15/11	-	9/8	-	-	-	-	-	-	-
K3D	DNE	FM19	ΝH	235445	197/59	187/42	70/29	108/35	37/18	46/20	24/14	-	-	-	-	-	-	-	-	-	-
WB9	ΡZ	EN60	ΝH	223486	379/134	156/48	46/30	86/37	-	18/13	-	-	-	-	-	-	-	-	-	-	-
W2F	U	FN13	ΝH	206540	104/47	122/41	59/30	76/35	27/18	35/23	22/15	13/9	11/7	8/5	-	-	-	-	-	-	-
K2 S	MN	FN20	ΝH	171644	95/33	233/49	66/30	102/34	26/14	41/19	12/9	-	-	-	-	-	-	-	-	-	-
K10	БХ	FN31	ΥH	120840	76/27	178/36	57/22	73/28	27/12	32/11	10/6	6/4	3/3	7/3	-	-	-	-	-	-	-
K2U	JOP	FM09	ΝH	97120	112/48	92/32	45/22	57/26	16/8	21/12	12/6	-	5/3	5/3	-	-	-	-	-	-	-
KE8	BFD	EM84	ΝH	95400	192/83	122/39	29/17	54/27	4/4	10/8	2/2	-	-	-	-	-	-	-	-	-	-
N7A	\U	DN07	ΝH	93052	276/123	67/18	25/8	41/14	8/4	14/5	-	-	-	-	-	-	-	-	-	-	-
K7R	RAT	CN85	ΝH	80325	287/111	92/19	28/11	45/12	-	-	-	-	-	-	-	-	-	-	-	-	-
K9E	A	EN71	ΝH	79680	98/50	144/47	49/33	70/36	-	-	-	-	-	-	-	-	-	-	-	-	-
K5A	M	DM54	ΝH	62205	334/147	17/10	5/2	8/6	-	-	-	-	-	-	-	-	-	-	-	-	-
K5L	LL.	EM10	ΝH	60030	97/49	82/28	17/14	42/24	14/12	9/8	11/9	1/1	-	-	-	-	-	-	-	-	-
W4E	UH	EM74	ΝH	59600	141/71	113/42	28/17	45/19	-	-	-	-	-	-	-	-	-	-	-	-	-
W3E	P	FN31	ΥH	55842	276/72	99/27	-	35/22	-	3/2	-	-	-	-	-	-	-	-	-	-	-
K3Z	20	FM18	ΝH	54500	282/92	154/33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W60	)AL	DM79	ΝH	52029	210/86	43/11	12/5	31/8	8/3	12/5	3/2	1/1	1/1	1/1	-	-	-	-	-	-	-
KN4	ISM	FM16	ΝH	49232	126/63	116/42	-	60/31	-	-	-	-	-	-	-	-	-	-	-	-	-
W10	ΉZ	FN42	ΥH	47628	81/16	131/24	45/14	69/16	19/6	18/6	-	-	-	4/2	-	-	-	-	-	-	-
W7E	W	CN84	ΝH	46331	187/61	94/20	27/12	49/14	-	-	-	-	-	-	-	-	-	-	-	-	-
VE7	'DXG	CN88	ΝH	45360	184/71	94/16	18/5	59/13	-	-	-	-	-	-	-	-	-	-	-	-	-
W1R	RZF	FN42	ΝH	42528	71/21	162/35	42/18	63/22	-	-	-	-	-	-	-	-	-	-	-	-	-
W6K	(BX	CM98	ΝH	37100	103/43	69/19	25/13	46/16	-	19/9	-	-	-	-	-	-	-	-	-	-	-
WZ1	V	FN31	ΥH	36828	67/24	53/22	-	44/20	14/10	18/10	9/7	8/6	-	-	-	-	-	-	-	-	-
N2D	γ	FN30	ΥH	33453	90/27	88/19	48/15	53/14	-	11/6	-	-	-	-	-	-	-	-	-	-	-
AA7	'A	DM43	ΝH	15168	113/48	33/17	-	17/11	-	4/3	-	-	-	-	-	-	-	-	-	-	-
W1Z	2C	FN42	ΥH	13113	-	143/26	-	68/21	-	-	-	-	-	-	-	-	-	-	-	-	-
KB5	MY	DM13	ΝH	13014	148/37	93/17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NJ2	F	EL96	ΝH	12258	80/34	63/10	16/3	26/7	-	-	-	-	-	-	-	-	-	-	-	-	-
N2F	KF	FN30	ΝH	12042	29/12	56/15	22/11	35/11	-	8/5	-	-	-	-	-	-	-	-	-	-	-
K5V	/H	EM00	ΝH	5430	13/11	8/2	1/1	5/4	-	-	37/12	-	-	-	-	-	-	-	-	-	-
N2M	1C Y	FN30	ΝH	3196	31/14	37/14	-	13/6	-	-	-	-	-	-	-	-	-	-	-	-	-
N1C	)FZ	FN31	ΝH	1254	39/14	10/6	-	4/2	-	-	-	-	-	-	-	-	-	-	-	-	-
KA2	FIR	FN20	ΝH	48	2/2	2/2	-	2/2	-	-	-	-	-	-	-	-	-	-	-	-	-
								0			o										
								SINGL	E OP I	LOW P	UWER										
<u>Cal</u>	.1	Grid	N C	Points	6m	2 m	222	432	903	1.2G	2.3G	3.4G	5.7G	10G	24G	47G	75G	120G	145G	240G	LAS
K1U	JHF	FN31	Y S	127798	165/41	184/33	63/28	78/27	-	29/14	13/8	-	-	11/6	-	-	-	-	-	-	-
AF1	T	FN43	ΥS	94170	144/49	105/19	52/16	60/16	21/7	22/7	11/5	7/3	6/3	7/3	-	-	-	-	-	-	1/1
NOL	.L	EM09	N S	65667	178/99	51/32	25/17	34/21	-	8/8	-	-	-	-	-	-	-	-	-	-	-
W1P	M	FN41	ΥS	60024	102/37	110/32	41/19	55/19	13/8	15/8	-	-	-	-	-	-	-	-	-	-	-
N9D	G	EN53	N S	59498	111/60	116/33	41/24	55/25	-	-	-	-	-	-	-	-	-	-	-	-	-
K81	W	EM75	N S	48776	182/73	70/27	20/13	36/21	-	-	-	-	-	-	-	-	-	-	-	-	-
WA3	EOQ	FM09	N S	48642	32/14	93/38	44/26	54/29	-	27/14	-	-	-	-	-	-	-	-	-	-	-
N6M	1U	DM05	N S	47724	244/42	150/23	-	94/17	-	-	-	-	-	-	-	-	-	-	-	-	-
WB2	SIH	FN31	N S	33852	53/17	107/26	46/17	59/18	1/1	10/5	-	-	-	-	-	-	-	-	-	-	-
AI3	Z	FM19	N S	26700	76/23	88/22	41/15	40/12	-	10/3	-	-	-	-	-	-	-	-	-	-	-
KC6	STEU	CM98	N S	23579	88/29	77/19	12/5	46/14	-	14/6	-	-	-	-	-	-	-	-	-	-	-
KC0	)HFL	EM17	N S	22050	127/51	47/28	7/6	14/11	-	3/2	-	-	-	-	-	-	-	-	-	-	-
W5 S	XD	EM02	N S	21424	109/63	27/14	13/10	14/10	-	6/6	-	-	-	-	-	-	-	-	-	-	-
AA1	YN	FN43	Y S	19136	71/23	58/14	27/12	40/11	-	12/4	-	-	-	-	-	-	-	-	-	-	-
VCA		EMAC	N S	14475	67/79	117/12	-	7/4	-	-	-	-	-	-	-	-					
r\G4	ВМН	EM/6	N J	144/5	02/20	11//45		,,,,									-	-	-	-	-
WD5	БК БК	EM/6 EM12	N S	14322	186/77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

N8BJQ	EN80	N S	13197	70/40	89/43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N4IS	EL96	N S	7392	51/24	49/16	-	27/8	-	-	-	-	-	-	-	-	-	-	-	-	-
N7IR	DM43	N S	6164	60/31	21/7	4/1	12/4	-	7/3	-	-	-	-	-	-	-	-	-	-	-
KA1EKR	FN42	Y S	5400	-	44/14	17/10	21/12	-	5/4	-	-	-	-	-	-	-	-	-	-	-
KB9WZJ	EM69	N S	4784	23/17	41/25	-	14/10	-	-	-	-	-	-	-	-	-	-	-	-	-
NZYEV	FN34	YS	3627	33/12	42/10	-	21/9	-	-	-	-	-	-	-	-	-	-	-	-	-
N8CJK	EN84	NS	3626	/4/49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL/CO	EM04	NS	3451	-	119/29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Y S	3330	36/10	33/10	- 11/E	18/8	-	2/2	-	-	-	-	-	-	-	-	-	-	-
KILPS V1WTV		T S	3040	22/0	22/9	11/5	4/3	3/3	4/4	-	-	-	-	-	-	-	-	-	-	-
KIWIK KR1EDO			25/0	6/2	24/0	10//	11/5	-	-	-	-	-	-	-	-	-	-	-	-	-
	EN20		152	0/3 7/1	13/3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WAZCLV	FN30	N J	2	2/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
								Q	RP											
Call	Grid	NC	Points	6m	2 m	222	432	903	1.2G	2.3G	3.4G	5.7G	10G	24G	47G	75G	120G	145G	240G	LAS
K9PW	EN52	NQ	145908	161/62	164/40	56/29	71/17	16/11	23/13	6/5	3/3	4/4	6/5	-	-	-	-	-	-	-
K9AKS	EN42	ΝQ	65685	112/63	97/32	42/23	53/23	-	12/10	-	-	-	-	-	-	-	-	-	-	-
KA6AMD	DM15	NQ	5890	10/4	65/11	11/5	30/6	2/2	9/3	-	-	-	-	-	-	-	-	-	-	-
K2Q0	FN02	NQ	5280	33/17	35/21	3/2	18/8	-	-	-	-	-	-	-	-	-	-	-	-	-
								RO	VER											
Call	Grid	N C	Points	6m	2 m	222	432	903	1.2G	<u>2.3G</u>	3.4G	5.7G	10G	24G	47G	75G	120G	145G	240G	LAS
W3IY	FM19	N R	253032	113/24	202/28	124/22	148/22	56/13	69/13	42/8	21/6	14/4	18/4	2/1	-	-	-	-	-	-
N2JMH	FN13	N R	123571	117/23	155/33	104/22	58/13	24/5	27/8	20/5	13/3	14/4	9/3	-	-	-	-	-	-	-
WA2IID	ROVE	N R	59415	114/18	102/15	53/10	67/12	20/8	13/6	6/1	6/1	6/1	10/4	8/3	-	-	-	-	-	-
N8UM	EM75	N R	49560	86/30	95/33	36/18	43/18	7/7	15/8	2/2	-	-	-	-	-	-	-	-	-	-
N1MU	ROVE	NR	43516	27/14	81/21	29/8	32/12	17/4	19/5	15/5	12/3	10/2	5/3	-	-	-	-	-	-	-
KJ1K	ROVE	YR	15700	33/9	29/7	15/3	29/6	11/4	13/3	7/3	9/3	6/3	1/1	-	-	-	-	-	-	-
N1XKT	FN20	NR	14300	34/15	21/9	15/7	15/6	7/2	8/3	7/2	7/2	5/1	5/1	-	-	-	-	-	-	1/1
KIDS	FN20	NR	6464	//2	12/5	10/4	9/3	//2	8/3	//2	//2	5/1	5/1	-	-	-	-	-	-	1/1
NN5DX	RUVE	NR	5400	19/3	42//	-	28/4	9/3	-	14/2	-	-	-	-	-	-	-	-	-	-
NZMH	RUVE	NR	2430	23/11	22/8	8/3	10/3	-	-	-	-	-	-	-	-	-	-	-	-	-

Club Total Score: 1466818

**Soapbox de K1UHF:** I hadn't remembered but my wife had, I had said, in response to her comments about TVI in January, that I might go out to a mountaintop for June. Saturday morning I was not ready, I had fried my 2 meter amp's T/R relay a few weeks before, blue flames. I decided to stay home and operate low power, mostly as a XYL compromise. I hastily re-configured my station for low power operation. After several hours of operating the contest I was surprised at how difficult it was to work stations on 2 meters running only 150 watts instead of 1500, didn't think about it, just plugged away. Sunday evening, with just a couple of hours left, I had been calling CQ for hours and was concerned that my 2 meter Teletec amp was getting too hot. I reached over to check it and much to my surprise, it was cold. It has no lights and no power meter, but I should have known, it had been unplugged all weekend. Definitely low power category, 25 watts on 2 meters. I still had fun and a good score for the class.

#### **REPAIRING POWER AMPLIFIER TUBES BY DALE CLEMENT, AF1T**

Last week, I turned on my home built 6 mteter linear amplifier and heard a loud bang. Thin I noticed tht it was drawing idling current in the "stand by" mode. Not good! Troubleshooting revealed the problem, a grid to filament short in one of the two 3-500Z triode tubes. These are expensive, over \$200 each for the Eimac graphite anode version like mine, which I believe is not longer made by Eimac.

I set the amplifier aside and worked some of the West coast stations still rolling in on 6 meters. I ran into Jud Snyder, K2CBA an old friend from Grafton, N.Y., ad mentiond my problem. He remided me of an old trick; voporize the shorted grid wire with a pulse of high current. My reluctance was countered by Jud's query, "What have you got to lose?" I jumpered the two filament pins together, and also the three grid pins together, and connected my variable power supply between them. Alas the short persisted; appparently the available 8 amps wasn't enough. Jud insisted on more current, and to connect the tube up to the 115 V house circuit. This should be safe, as the sort would voporize in a few milliseconds. That still seemed risky to me (don't try this at home...). But, I remembered a car battery, charged for emergency use, so decided to hook that up instead. The tube flasshed. Tapping the glass produced another flash and a second tap still another. Repeated tapping did nothing. An ometer test showed that the shorted path had opened up. The stray grid wire that had likely fused intself on to the filament was finally vaporized! I replaced the tubes, as well as the series protective resistor in the 2.5 kV power supply (which did its job and burned open).

The amplifier seems to run as well as ever, 1.4 kW out with 70 W ofdrive. I'd been using the same 3-500 Z's for over 255 years, and thousands of contacts, so certainly have gotten my moneys worth (the were only about \$50 each when new). Maybe they'll blow out tomorrow, or perhaps last another 25 years. Meanwhile, I'm looking for spare 3-500 Z tubes. Thanks to K2CBA for the suggestion.

### A SIMPLE AMPLIFIER RELAY CONTROL CIRCUIT BY DALE CLEMENT, AF1T

Here is a simple method of keying (energizing) a relay such as that found in a linear amplifier. I use variations of this circuit to control my various home-built amplifiers and transverters. Directly grounding a relay coil to energize it can damage the sensitive contacts in your HF exciter, due to high current or transient sparking.

Nearly any PNP transistor can be used for Q1, provided it will handle the relay coil current, and open circuit voltage. An advantage of the TIP type transistor shown is that the collector terminal can be grounded directly through the 6-32 mounting screw, which will heat sink it to the chassis. Diode D1 reduces induced reverse voltage spikes from the relay coil. Capacitors C1, C2, C3 bypass stray R.F. energy, and are typically .001 uF to .01 uF ceramic disks. R2 may be 1K to 10K, 1/4 W or 1/2 W. R1 may be reduced in value if the E-C voltage drop of Q1 exceeds 2 V. or so (depends upon relay and Q1 gain). Increasing R2 will reduce the keying current through J1 . As depicted, this current is only a few mA., which is a considerable improvement over the directly keyed relay (100 mA or more) sometimes found in old equipment. The keying current can be further reduced (to 0.1 mA or less) by cascading a small PNP transistor to Q1 in "Darlington" fashion, or by using a special "Darlington" version of Q1. This exercise is left for the reader to pursue.



### EXTREME QRP BY DALE CLEMENT, AF1T

6 meters has been a hot band during the Winter months. Some of the F2 propagated signals have been incredibly strong. Lots of folks are using QRP (low power). A good example is VE8NSD in the North West Territories, running 2 watts from a Yaesu FT 817 into a vertical antenna. He generates a pile up of calls every time he gets on from his rate location. N6CA has been working states and grids with as little as 10 milliwatts. Hi inspired me to try what I call "Extreme QRP."

I connected the L. O. port of a double balanced diode mixer (type SRA-1) to a 22 MHz crystal oscillator (powered by a 9 V battery) and the I.F. port to the 28 MHz transverter output of my TS-820S H.F. rig, through an attenuator and coaxial switch to my 7 element 6 meter yagi. 28 MHz plus 22 MHz equals 50 MHz, low and behold, an instant transverter! Of course, the image frequency of 6 MHz (28 MHz minus 22 MHz) is also produced, but the Yagi filters most of this out. The coaxial switch allowed me to use my regular 6 meter receiver (Drake TR-6), which is more sensitive that a DBM without an RF stage.

I contacted some of the locals - N1EUX, K1DG, K1WHS, and WB1FLD, with as little as 2.5 microwatts! Thus inspired, I worked several West coast stations - KB7WW, K7ICW, K0JY, WA7KRP, and K0JJ on both CW and SSB. with 2.5 microwatts. Each of these contacts figures out to hundreds of millions of miles per watt. The best DX was with F6FHP on Jan. 3, 2002. He copied my 2.5 microwatts at 3445 miles (5544 km.) This is 1.37 billion miles per watt! Does this seem possible? the ionosphere must act like a pretty good mirror at 50 MHz, and perhaps even provides some focusing "gain"!



# IN PRAISE OF POWERPOLE CONNECTORS PAUL WADE W1GHZ

#### W1GHZ@ARRL.NET

With summer approaching (though rather slowly in New England), many of us will be going out roving or mountaintopping with our radios. From painful experience, 75% of the problems in the field are power problems – just getting 12 volts to the electronics. (Don't ask what the other 75% of the problems are...).

One thing that helps a lot with power is good, reliable, connectors. I started out with CB connectors and little coaxial power connectors like the ones on some Japanese radios, then the 10 GHz gang migrated me to Cinch-Jones connectors. Others used the Molex connectors from Radio Shark. These all had common properties: they are flaky, unreliable, come apart with a pull on the cable, and can be plugged in backwards if you push hard enough. A few brave souls used banana plugs – and inevitably plugged them in backwards. Eventually, we discovered Anderson PowerPole (www.andersonpower.com) connectors – robust, reliable, and almost foolproof, even in dark, wet and cold.

The PowerPole connectors are great on cables, but the other end was still a problem – I don't like pigtails hanging off my gear. Matt, KB1VC, and I made a couple of chassis mounts with a milling machine, but they took too much work. Distribution was anoth-



er problem, with tangled octopus cables connecting all the gear. Then the "RIGrunner" from West Mountain Radio (www.westmountainradio.com) came out and solved the distribution problem: a nice box with a dozen PowerPole outlets, with fuses and an undervoltage indicator. Unfortunately, they followed the ARES standard for connections (see Figure 1), which was the opposite of what we had chosen. However, it only takes a minute to reverse the connectors, unless they were glued them together.

The RIGrunner also showed me how to make the chassis mount – solder the PowerPole to a PC board and bolt that to the panel. I had some extra space on PC board design I was sending off to be made at ExpressPCB, so I added a couple of PowerPole mounts. They worked so well, I got carried away and made more boards for small distribution boxes. Figure 2 is a photo with several sizes, suitable for a rover or mobile setup. Assembly is simple: take some #10 bare copper wire (from household wiring), solder it to the PowerPole contacts, assemble the connector, push the other end of the wires through the board so the plastic housing sits flush, and solder to the board. Use a real soldering iron, not one of those tiny point ones we use for chip capacitors. Figure 3 shows the back side of the board, with the wires soldered in place. Notice the idiot diode and bypass capacitor at one end – cheap precautions.

The soldering isn't much work, but the metalwork is tedious – I don't have a square drill, so the rectangular holes take a lot of filing. Now that West Mountain Radio is offering 5 and 8



outlet RIGrunners, I'd recommend them unless you really need tiny like the one in the Pomona box in Figure 2. If you prefer homebrew, the PCB files are on my webpage at www.w1ghz.org/powerpole – download the software from www.expresspcb.com and you can modify them any way you like. Cut and paste the patterns together to fill up the board outline, then send the file off to ExpressPCB and you'll get 3 boards back in 4 days, for \$62.

There are bigger PowerPole connectors available as well, if you need more power, although the 30-amp rating of the standard ones should be adequate for most ham use. The big one in the lower left of Figure 2 is rated at 75 amps, and the really big one in the upper right is rated at 125 amps. I use the big ones with heavy cables on my rover batteries – they are much easier to swap with gloves on in the dark and wet (everything works better in warm sunshine, I hear). A good source for the larger ones is www.powerwerx.com. So, if you aren't already using PowerPoles, I recommend them. You'll not only be compatible, you'll be on the air at full power.



### CALL FOR PAPERS AND TALKS

The Joint Conference of Microwave Update 2002 and the 28th Eastern VHF/UHF Conference announces a call for papers and talks for these conferences.

Topics specifically about VHF and UHF, and those normally associated with the Eastern VHF/UHF conference and topics of interest to the annual Microwave Update are solicited. Papers will be accepted until August 31, 2002. If you want to give a talk, please respond to N2LIV for presentations during the Eastern VHF/UHF sessions, and WA1MBA for presentations during the Microwave Update sessions. If you are not sure which you would prefer, Bruce and Tom will help.

On the due date, manuscripts, in legible form, along with any photographs and diagrams are due. Please let N2LIV and/or WA1MBA know at your earliest convenience if you intend to submit a paper and/or would like to give a talk.

Bruce Wood N2LIV 3 Maple Glen Lane Nesconset, NY 11767 bwood@erols.com Tom Williams WA1MBA PO BOX 28 Shutesbury, MA 01072 tomw@wa1mba.org (413) 259 1921

#### VHF PROGRAM RETURNS TO THE BOXBORO ARRL CONVENTION

Following an absence of several years, there will be a VHF/UHF/Microwave session at this year's New England Division ARRL Convention. These programs will occur from 9 AM until 2PM Sunday, immediately followed by the convention prize drawings at 2PM. (Is their any interst in coffee, pastry and conversation in the meeting room at 8:30?)

Sunday will provide a "laid back" atmosphere for the VHF program, without competition from the many events held on Saturday. In contrast with Saturday, parking at the Boxboro Woods Holiday Inn is readily available on Sunday, and many dealers are eager to make "deals" rather than transporting their unsold merchandise back home.

Of course your \$8.00 advance registration ticket (purchased before August 1) provides admission on both days. Friday's events held at the convention site will require pre-registration and an additional fee.

Lew Collins, W1GXT, is serving as the VHF Program Chairman for the convention. Paul Wade, Dave Olean, and Chip Taylor will be among the featured speakers.

Check the Convention web site at http://www.boxboro.org for updates on the convention program.

Lew Collins W1GXT

#### **DIRECTIONS TO THE NEXT MEETING**

Exit 48 (East) on Route 220 Take a left turn at the 9th traffic light (Washington Road) The K of C is about a mile on the left.

#### DON'T FORGET

<u>THE NORTH EAST WEAK SIGNAL GROUP</u> <u>2 METER VHF AND ABOVE NET</u> <u>EVERY THURSDAY NIGHT AT 8:30 p.m. LOCAL</u> <u>144.250</u> W1COT, WZ1V, K1UHF OR K1PXE NET CONTROL





# **THE NEXT MEETING**

OUR NEXT MEETING WILL BE A PICNIC ON JULY 20 AT THE KNIGHTS OF COLUMBUS PAVILION IN ENFIELD, CT, SEE DIRECTIONS ON PAGE 8

MDS (MINIMUM DISCERNABLE SIGNAL) TESTING ON 10 GHZ AND POSSIBLY 24 GHZ

YOUR ATTENDANCE IS NEEDED FOR THE CLUB'S ARRL COMPETITION !!

# DON'T FORGET

THE NORTH EAST WEAK SIGNAL GROUP 2 METER VHF AND ABOVE NET EVERY THURSDAY NIGHT AT 8:30 p.m. LOCAL 144.250 W1COT, WZ1V, K1UHF OR K1PXE NET CONTROL

### **North East Weak Signal Group**

c/o N1DPM Fred Stefanik 50 Witheridge St. Feeding Hills, MA 01030



Check your membership expiration date on the mailing label!!