

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



MT. AIRY VHF RADIO CLUB., "THE PACK RATS", PHILADELPHIA, PA. W3CCX
NET FREQUENCIES: 50.125, 144.150, 222.125, 224.58/222.98, 432.110, 903.100, 1296.100 MHz ARNS
AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

Meetings: Third Thursday of each month at 8:00 PM
Southampton Free Library, 947 E. Street Road
Southampton, Pennsylvania 18966

SCANNED TO PDF BY BERT, K3IUV, 2013

VOLUME XXXV

JUNE 1993

NUMBER 6

THE PREZ SEZ

We are now getting to the time of the year when activity starts to pick up on the VHF bands. With the 6 Meter E season comes the annual ritual of working old friends. Over the past several years I have noticed a marked decrease in activity on 6 Meters in this area. This was reflected in the local contest scores and lately in Pack Rat net attendance. Let's all make an effort to check into the net on Monday at 7:30 PM on 50.125 MHz. And occasionally give out a CQ on the band. I personally think that 6 is the best all around VHF band. It offers the most varied propagation on any amateur band. So get on and give an occasional CQ.

The Pack Rat's will again be operating W3CCX in the June VHF contest. The location will be the same as the last two years: Camelback Mountain in FN21. If you want to help out and have not volunteered your services, contact Pat, WB3DNI. It takes a lot of help to set up and tear down a contest station. So if you can be around and don't wish to operate we still want your help. Remember that this is a Club Activity and is always a lot of fun. So lets all support this club effort.

73

William T. Murphy
WØRSJ FN2ØJR

Pack Rats CHEESE BITS is a publication of the Mt. AIRY VHF RADIO CLUB, INC. Philadelphia, PA. and is published monthly.

SUBSCRIPTION RATE: \$10.00 PER YEAR (USA)
 \$12.00 PER YEAR (CANADA)
 \$15.00 PER YEAR (ELSEWHERE)

We operate on an exchange basis with other publications. Anything that is printed in CHEESE BITS may be reprinted, unless otherwise stated, provided proper credit is given.

DEADLINE FOR ARTICLES AND SWAP SHOP IS THE MONTHLY MEETING DATE. NON-COMMERCIAL SWAP SHOP ITEMS-FREE OF CHARGE.

SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, WB2YEH
 7258 Walnut Avenue
 Pennsauken, NJ 08110
 (609) 665-8488

EDITOR:

Harry Brown, W3IIT
 3012 Potshop Road
 Norristown, PA 19403
 (215) 584-4846

CLUB TREASURER:

Dave Mascaro, WA3JUF
 1603 Mink Road
 Ottsville, PA 18492
 (215) 795-2628

AWARDS CHAIRMAN:

Joe Kilgore, W2EIF
 (609) 783-9478

TRUSTEE OF CLUB CALL - W3CCX

Ron Whitsel, WA3AXV
 (215) 355-5730

PACKRAT 222 MHz REPEATER - W3CCX/RPTR

222.98/224.58 MHz, Churchville, PA

OFFICERS: 1991-1992


PRESIDENT: W4RSJ, Bill Murphy
 VICE-PRES: WB3JYO, Paul Drexler
 REC. SECR: WA3AQA, Walt Zumbach
 TREASURER: WA3JUF, Dave Mascaro
 COR. SECY: WA2GFP, Geoff Krauss
 DIRECTORS: N3AOG, Dick Comley (1 YRS)
 WA3NUF, Phil Miquelez (1 YRS)
 N3EXA, Brian Taylor (2 YRS)
 K3ESJ, Bill Jaxheimer (2 YRS)

MONDAY NIGHT NETS

TIME	FREQ.	NET CONTROL
7:30 PM	50.125 MHz	K3EOD
8:00 PM	144.150 MHz	W2EIF
8:30 PM	222.125 MHz	WB2YEH
8:30 PM	224.58R MHz	K3ACR
9:00 PM	432.110 MHz	WA3AXV
9:30 PM	1296.100 MHz	WA3NUF
10:00 PM	903.100 MHz	N3AOG

COMMITTEE CHAIRMEN

LADIES' NIGHT: WA3YUE 215-666-1558
 JUNE CONTEST: N3CX 215-679-7293
 HAMARAMA: K3EOD 215-742-3312
 VHF CONFERENCE: KB3XG 215-270-3158



THE AMERICAN RADIO RELAY LEAGUE

HUGH A. TURNBULL
 Director, Atlantic Division

OST

6903 RHODE ISLAND AVE.
 COLLEGE PARK, MD. 20740 (301) 927-1797

1-302-478-2757

**AMATEUR
 and
 ADVANCED
 COMMUNICATIONS**


"Gisele"
 K3WAJ

G. B. WALLS 3208 CONCORD PIKE (RT. 202)
 WILMINGTON, DEL. 19803

Graphic Design

Illustration

Production



Lynne D. Whitsel

209 Frog Hollow Road
 Churchville, PA 18966
 215 355-5730

Calendar of Coming Events -June 1993

June

- 5 Bergen ARA Hamfest will be held at Fairleigh Dickinson University in Teaneck, NJ. Technical Forums and VE exams will be given. TI on 146.19/79, and .52.
- 6 Tamaqua Transmitting Society Hamfest in Tamaqua, Pa. at the New England Valley Fire Company. Talk-in on 146.67 and 147.105.
- 7 The Arietids Meteor Shower predicted peak will be at 0805 UTC.
- 10 Packrat Board of Directors meeting held at the QTH of Gary, WA2OMY at 8:00 PM. All members of the club are invited. Call (215) 539-6409 for directions.
- 12-14 June VHF QSO Party. See May QST Page 126 for rules. W3CCX will be operating from Camelback Mountain, FN21, near Tannersville, Pa. on all bands thru 24 GHz.
- 14 Flag Day.
- 17 Packrat meeting at the Southampton Free Library on Street Road in Southampton, Pa. Annual election of officers. All members and interested VHFers welcome.
- 19 The Skyline ARC Hamfest will be held at the Cortland Co. Fairgrounds in Cortland NY. Talk-in on 147.78/.18. VE exams by reservation only.
- 19-20 1993 SMIRK Party Contest. 0000-2400Z. See rules in this issue of Cheesebits. Official log sheets can be obtained from Pat Rose, W5OZI at PO Box 393, Junction TX 76849.
- 20 Fathers Day
- 20 The Frederick Amateur Radio Club Hamfest will be held at the Walkerville Fireman's Carnival Grounds in Frederick MD. Talk-in on 147.66/06 and 146.52.
- 21 +/- 1 month. Look for openings to Europe on 6 meters.
- 26-27 Field Day. See May QST page 127 for the rules. Look for lots of activity on 50 and 144 MHz.

Oct.

- 2 Mid Atlantic VHF Conference. Exact location to be announced soon.
- 3 Hamarama 93 will be held at the Bucks County Drive In theater on Rte 611 north of Philadelphia in Warminster Pa.

VISITORS AT THE MAY MEETING

<u>CALL</u>	<u>NAME</u>	<u>QTH</u>
W3ABC	Hugh	College Park, MD
WT3P	Kay	Paoli, PA
WS10	Brian	Middletown, CT
W3AJS	Charles	Oreland, PA
W3WCQ	Bob	Towson, MD
Waiting	Don	Warminster, PA
WA3TUL	Glen	Glenside, PA

TID BITS:

Bill, W0RSJ, will be going back to school for around 8 weeks this summer at the University of Colorado in Boulder. He will start on June 6 and will be on a special program for a masters degree in communications. The program will require Bill to return for several summers- it must be tough.

In the May 93 issue of 73, Chuck, WB6IGF, in his "Above and Beyond" column has an interesting article on how to modify a standard C Band LNA to be broadbanded to cover 800 MHz to 4.2 GHz. Also included is a Discone antenna covering the same frequency band.

The April 1993 issue of QEX has an interesting article by Ben, G4YNM, titled "The Shrike Crystal Oven". It includes a 10 MHz oscillator but the main item of interest is the oven part which is quite simple using two small signal transistors and a 2N3055 as the heater. Two fixed resistors, a pot, and a thermistor complete the circuit. The prototype oven kept the temperature at +70 +/- 0.1 degree F.

Zack, KH6CP, in his RF column in QEX, has an article on a 5616 MHz LO. The input is a Rick Campbell 561.6 MHz oscillator signal that is multiplied by 5 using MMIC's and then a GaAsFET doubler with +15 dBm output. Artwork is included.

K1ZZ's editorial on page 9 of the June 93 issue of QST needs to be read and responded to by all that operate or expect to operate on 903 MHz. In particular, the recent FCC Docket 93-61 needs comments by June 29. This docket proposes the use of 902 to 928 MHz for use as a Location and Vehicle Monitoring Service and using 915 MHz for wind profile radars. Comments should be sent to: Federal Communications Secretary, Washington, DC 20554.

1993 LADIES NIGHT BANQUET AWARDS

Awards were given out at the May meeting to those that were unable to attend the banquet. The awards were presented to:

Phil Miguelez, WA3NUF, for 1st place in the January QSO Party.
Bill Jaxheimer, K3ESJ, for 2nd place in the January QSO Party.
N3CX/WA3JUF, Dave Hackford and Dave Mascaro for 3rd place Multiop in the June QSO Party.
Dick Comley, N3AOG for Best Design at Home Brew Night.
Walt Rausher, N3EVV for Most Unusual at Home Brew Night

LOCALLY READABLE VHF BEACONS

Walt, W2EA, in the May issue of "SJRA Harmonics" lists the following beacons that should be readable from the Philadelphia area. Headings (if shown) are from SNJ. Additional beacons for the microwave bands have been added to Walt's list.

<u>CALL</u>	<u>FREQUENCY MHZ</u>	<u>HEADING</u>	<u>INFORMATION</u>
K1NFE	50.011	60	BCN, Conn 06062 (temp off the air)
W3VD	50.064.6	255	BCN, JHU/APL 39R17N/76R9W + long dash
KS2T	50.072.1	90	BCN FM29VX
KL7GLK	50.076.7	240	BCN MD FM18
WB2CUS	50.077.6	320	/B SARA FN10 (dits)
KS2T	144.275.0	90	BCN FM29VX
KL7GLK	144.289.4	240	BCN MD FM18
WA2UMX	144.289.8	30	FN23XC
W3VD	144.295.5	255	BCN, JHU/APL 39R17N/76R9W + long dash
W3VD	432.313		BCN, JHU/APL 39R17N/76R9W + long dash
W1UHE	432.315		FN41
N3CX	903.080		FN20, Pennsburg, PA
K3IVO	1296.052		FM19, Annapolis, MD
N3CX	1296.085		FN20, Pennsburg, PA
N3CX	2304.030		FN20, Pennsburg, PA

DAYTON '94

By Bill, K3ESJ

Anyone needing a room at Dayton in 1994 should contact me, Bill Jaxhelmer, K3ESJ ASAP at 215-822-0121. I need a commitment by June 15 in order to confirm the reservations.

ELECTION OF OFFICERS

At the May meeting, the Nominating Committee presented a slate of officers for the year 1993-1994. At the June meeting, nominations will be open to the floor and the election will be held. Any member may nominate anyone for an office (after a second to the nomination) and the nominee agreeing to run for the office. The present nominees are:

<u>OFFICE</u>	<u>CALL</u>	<u>NAME</u>
President	WB3JYO	Paul Drexler
Vice Pres.	WA2OMY	Gary Hitchner
	KB3XG	John Sorter
Treasurer	WA3JUF	Dave Mascaro
Rec. Sec.	WA3AQA	Walt Zumbach
Corr. Sec	WA2GFP	Goeff Krauss
Director*	WA3AXV	Ron Whitsel
	WB3DNI	Pat Cathorne
	N3ITT	Alan Sheppard
	N2SB	Bob Cook
	WB2YEH	Bob Fischer

*K3ESJ and N3EXA have 1 year remaining in their 2 year term.

PACKRATS SURVIVE BLIZZARD AND INVADE DAYTON

A determined pack of rats set off on the annual trek to Dayton on Thursday, 22 April. Just west of Harrisburg, the gods that determine who is worthy of attending this great event decided to put the crew to a test and suddenly the skies opened up to a sudden snow storm. It started with just a flurry of small flakes but when we kept going, the gods got serious and really started dropping the dreaded white stuff causing us to drop our speed to 70 MPH which is below the normal limit for hams heading to Dayton and truck drivers. Seeing that we were determined to charge ahead, the gods granted our wishes and lifted the temporary impediment to our journey. After arriving at Dayton, "20 dB Murphy" reported that the Easton crew, taking a slightly more northern path down to Harrisburg had to plow thru at least two feet of snow. Converting this to the real world meant that they saw snow flurries or heard a weather report that there might be a little unkind weather.

I'm sure that I've left out a call or two, but the following rats and some of their camp followers were seen browsing the flea market: K3ESJ (who organized? the expedition), WB3DNI, N3AOG and wife, N3CFE, W3HQT, N3NGE, WORSJ, and WD5BRP.

Some of us were able to attend the informal VHF dinner on Friday night. We'd like to thank Brian, WA8NZQ for organizing it. There were around 100 attending and many more would have if there was more publicity and a larger location available (Dayton has some limits on available restaurants on the hamfest weekend).

We were able to attend a portion of the forums and found (as we suspected) that there are other VHF "crazies" out there. The rovers venturing into the wilds of southern Canada in the summer with lots and lots of bugs was one example. They were even able to successfully make meteor scatter mobile contacts on the way up while in motion. W5UN gave a very interesting talk on his MBA (Mighty Big Array). It was very impressive. There aren't many of the rats that couldn't make a contact with him via the moon if they were persistent.

Contd. pg 6

-June 1993 Cheesebits Pg. 5-

Among the rats, ex-rats and friends of the rats that we ran across were K3ZKO, K2R6(RTH)/4, W1JR, and the whole set of executives from Down East Microwave including W3HQT, K1WHS, and N2CEI. DEM had a sample of their new 6M transverter for viewing. I believe it will be in a "semi" kit form - one reason is the extensive use of chip components. They will also have 2M and 222 transverters available.

As we were packing up on Saturday night, one bargain hunter ventured a little too close to the rats nest we were selling out of. This curious W7 stopped a little too long and was quickly told of the wonders of 5.7 GHz TWTA's and that he might go a long time before finding a bargain as good as we could provide him (all very true). He couldn't resist our offer and went for this incredible bargain. He remained a little unsure about his decision since, when the car full of hams he was with stopped for him and while they sat there not believing what was happening when the TWTA was somehow squeezed into the car for the looong trip back to Utah, he cried out "You'll rot in hell for doing this to me" We knew that he would never regret buying this treasure and would likely make a desperate search when he got home to contact us so that he could thank us for his good fortune. We're sad to report that the W5 from Texas did get away without the bargain 904 diplexers, but then theres Dayton '94.

If you can plan ahead to go to Dayton '94, see Bill, K3ESJ for a room ASAP.

SWAP SHOP

Send non commercial swap shop items to the editor.

WANTED: Loan of a portable 6M SSB rig for a trip to KL7 in August. Call Goeff, WA2GFP at 215-643-2031 with your generous offer.

FOR SALE: 5.7 GHz, 25 watt TWTA, -24v, 7 amp, fully metered, \$125.00. 5.7 to 6.3 GHz Microwave sources with internal oven, \$30.00. Various isolators and filters for 5.7 GHz, 2 ft. GG214 cables with N conn, 6x8xi in and 3x8xi in sealed boxes and 15 dB, 1watt coax attenuators with N connectors. Call Pat, WB3DNI at 215-672-5289.

FOR SALE: AIL Type 74 ANFI with 07403 30 MHz IF and tunable 07422 tunable 20 to 60 MHz IF (needs work) \$100.00, AIL Type 71 Noise Generator P.S. \$25.00, AIL Type 07049 and 07050 W/G Noise Sources \$25.00 each, and AIL UHF Noise Source \$25.00. Contact Harry, W3IIT, 215-584-4846.

FOR SALE: Icom IC551D with FM board and PS-20 P.S. \$600.00, Icom PS-20 P. S. \$125.00, Arcos 6M Kw Amp \$400.00. All plus shipping. Contact Bruce, N2LIV at 516-265-1015.

WANTED: Info on Varian TWT Model VTC-6160B4, 10 GHz 20 watt TWTA amp/supply and NovAtel cellular telephone diplexer for 903 MHz. Contact Bruce, N2LIV at 516-265-1015.

COMMERCIAL AD

LOOP YAGIS: 902 MHz 33 element \$89 kit, \$109 assembled and tested. 1296 MHz 45 element, \$89 kit, \$109 assembled and tested. 1296 MHz 55 element "Sooper Looper" \$99 kit, \$124 assembled and tested. 2304 MHz 45 element \$75 kit, \$89 assembled and tested. Also available: element and hardware kits for the above. 2 and 4-way power dividers. Discount on complete arrays. Solid State Linear Power AMPS, 13 VDC: 1296 - 8W in 35W out \$315, 1W in 20W out \$265, 4W in 70W out \$695. GaAs FET Preamps: 903 MHz .8dB NF \$90, 1296 MHz .8 dB, 2304 MHz 1 dB max NF \$140. SHE SYSTEMS No-tune Transverter kits, w/144 MHz IF now available for 903 through 3456 MHz. Write or call for complete catalog. **DOWN EAST MICROWAVE**, Bill Olson, W3HQT, Box 2301 RR-1, Troy, Maine. For information and orders telephone (207) 948-3741.

The 19th Annual Eastern VHF/UHF/SHF Conference will be held August 13-15, 1993 at the Quality Inn, Vernon, Connecticut. The Quality Inn is located on the Hartford Turnpike (State Rts. 30 and 83) between Exits 63 and 64 on Route I-84, nine miles east of Hartford, Connecticut.

Hartford is centrally-located at the intersection of routes I-91 and I-84, within a two-hour drive of both Boston and New York City. Most major airlines provide service via Bradley International Airport, and AMTRAK provides frequent service from Northeast Corridor locations.

The Quality Inn has both Par 3 and miniature golf on the premises. A go-kart track, theatres, playground, racquetball, and indoor pool are adjacent to the hotel. There are ample shopping malls nearby, and it is short drive to downtown Hartford.

Friday night will feature an informal social gathering. All day Saturday there will be technical talks by well-known VHFers and "rap sessions" for each of the VHF/UHF bands. A noise-figure clinic and contest will also be held on Saturday afternoon.

On Saturday evening there will be a banquet at the hotel, followed by the popular "VHF Trivia" quiz and additional informal social activities. Sunday morning there will be antenna gain measurements (220 MHz through 2304 MHz, weather permitting) and a flea market in the parking lot.

The conference registration which includes annual membership in the Eastern VHF Society and the printed conference proceedings. The Saturday night banquet, featuring your choice of roast beef, stuffed shrimp, or chicken capon, will cost \$22.00, payable in advance.

The registration chairman is Byron Blanchard, N1EKV. Those who have attended in recent years will receive a preregistration packet in the mail. Otherwise, please contact Byron at 16 Round Hill Road, Lexington, MA 02173 for a registration form (He would appreciate a self-addressed, stamped envelope!).

Rooms are available at the Quality Inn at the special rate of \$49.95 single, \$55.00 double, including a continental breakfast. Make your reservation directly with Lori Tozier at the hotel (203) 646-5700.

The Eastern VHF/UHF/SHF Conference is sponsored by the Eastern VHF Society, the NEVHF Association, and the Northeast Weak-Signal Group. The conference chairman is Thomas Kirby, W1EJ, ably assisted by volunteers from the Northeast Weak-Signal group who have taken the lead in planning this year's conference.

CHEESEBITS SUBSCRIPTIONS

Cheesebits subscriptions are available to everyone interested in activities and information from the VHF thorough the microwave frequencies. Subscriptions are for 1 year of 12 issues. For a subscription, send the following information:

Name: _____ Call: _____

Street Address: _____

Town: _____ State: _____ ZIP: _____

Subscription Rate: \$10.00 per year (USA), \$12.00 (Canada), \$15.00 (Worldwide)

June 93 Send to: **SUBSCRIPTION/ADVERTISING MANAGER:**
 Bob Fischer, WB2YEH
 7258 Walnut Avenue
 Pennsauken, NJ 08110

Reference

REFERENCE TABLE OF RIGID RECTANGULAR WAVEGUIDE DATA AND FITTINGS

Designation	IEC ()	EIA WR ()	Recommended Operating Frequency Range For TE ₁₀ Mode		Cut-off For TE ₁₀ Mode		Power Rating (megawatts) (see note 1) 1.25fc - 1.9fc	Theoretical attenuation lowest to highest frequency (dB/100ft.)	JAN WG RG ()	Material Alloy	JAN FLANGE		EIA WG WR ()	DIMENSIONS (Inches)						
			IEC (GHz) 1.25fc - 1.9fc	EIA (GHz)	Frequency (GHz)	Wavelength (cm)					Check UG () / U	Cover UG () / U		Inside	Tot. (-)	Outside	Tot. (+)	Wall Thickness (nom.)		
	3	2300	0.32-0.49	0.32-0.49	0.256	116.84	246-348	.040-.027	290	Alum.			2300	23.000	11.500	0.020	23.376	11.876	.020	0.188
	4	2100	0.35-0.53	0.35-0.53	0.281	106.60	205-290	.046-.031	291	Alum.			2100	21.000	10.500	0.020	21.376	10.876	.020	0.188
	5	1800	0.41-0.62	0.41-0.62	0.328	91.44	150-213	.058-.039	201	Alum.			1800	18.000	9.000	0.020	18.250	9.250	.020	0.125
	6	1500	0.49-0.75	0.49-0.75	0.393	76.20	104-148	.076-.051	202	Alum.			1500	15.000	7.500	0.015	15.350	7.750	.015	0.125
	8	1150	0.64-0.98	0.64-0.98	0.513	58.40	61.5-87.1	.113-.078	203	Alum.			1150	11.500	5.750	0.015	11.750	6.000	.015	0.125
	9	975	0.76-1.15	0.75-1.12	0.609	49.53	44.2-62.6	.145-.098	204	Alum.			975	9.750	4.875	0.010	10.000	5.125	.010	0.125
	12	770	0.96-1.46	0.96-1.45	0.766	39.12	27.6-38.1	.206-.140	205	Alum.			770	7.700	3.850	0.010	7.950	4.100	.010	0.125
L	14	650	1.14-1.73	1.12-1.70	0.908	33.02	19.6-27.8	.317-.214	69	Brass	417A*		650	6.500	3.250	0.010	6.660	3.410	.010	0.080
	18	510	1.45-2.20	1.45-2.20	1.157	25.91	12.09-17.1	.456-.309	103	Alum.	418A*		510	5.100	2.550	0.010	5.260	2.710	.010	0.080
W	22	436	1.72-2.61	1.70-2.60	1.372	21.84	8.6-12.2	.588-.399	104	Brass	436A*		430	4.300	2.150	0.008	4.460	2.310	.008	0.080
	26	340	2.17-3.30	2.20-3.30	1.736	17.27	5.4-7.6	.837-.567	105	Alum.	437A*		340	3.400	1.700	0.005	3.560	1.860	.005	0.080
S	32	284	2.60-3.95	2.60-3.95	2.078	14.43	3.5-5.0	1.136-.777	48	Brass	548 53		284	2.840	1.340	0.005	3.000	1.500	.005	0.080
	40	229	3.22-4.90	3.30-4.90	2.577	11.63	2.44-3.46	.953-.652	75	Alum.	585A 584		229	2.290	1.145	0.005	2.418	1.273	.005	0.084
C	48	187	3.94-5.99	3.95-5.85	3.152	9.510	1.52-2.15	1.514-1.026	340	Brass	148C 149A		187	1.872	0.872	0.005	2.000	1.000	.005	0.064
	58	159	4.64-7.05	4.90-7.05	3.711	8.078	1.17-1.66	1.270-.860	49	Alum.	406B 407		159	1.590	0.795	0.004	1.718	0.872	.004	0.064
	70	137	5.38-8.17	5.85-8.20	4.301	6.970	0.79-1.12	2.617-1.773	343	Brass	343B 344		137	1.372	0.686	0.004	1.508	0.750	.004	0.064
X _L	84	112	6.58-10.00	7.05-10.00	5.259	5.700	0.52-0.73	2.910-2.004	50	Alum.	440B 441		112	1.122	0.497	0.004	1.250	0.625	.004	0.064
	102	(7.23)-(11.0)	7.00-11.0	7.00-11.0	5.785	5.182	0.48-0.68	4.761-3.292	51	Brass	522B 51		102	1.020	0.510	0.003	1.148	0.638	.003	0.064
X _S	100	90	8.20-12.5	8.20-12.40	6.557	4.572	0.33-0.47	3.993-2.761	68	Alum.	137B 138		90	0.900	0.400	0.003	1.000	0.500	.003	0.050
	120	75	9.84-15.0	10.00-15.00	7.868	3.810	0.28-0.34	5.093-3.450	52	Brass	40B 39		75	0.750	0.375	0.003	0.850	0.475	.003	0.050
K _U	140	62	11.9-18.0	12.4-18.0	9.486	3.160	0.18-0.25	4.272-2.894	67	Alum.	136B 135		62	0.622	0.311	0.002	0.702	0.391	.002	0.040
	180	51	14.5-22.0	15.0-22.0	11.574	2.590	0.12-0.17	6.614-4.570	346	Brass	541A 419		51	0.510	0.255	0.0025	0.590	0.335	.0025	0.040
K	220	42	17.6-26.7	18.0-26.5	14.047	2.137	0.066-0.094	8.971-6.077	91	Alum.	596A 595		42	0.420	0.170	0.0020	0.500	0.250	.0020	0.040
	260	34	21.7-33.0	22.0-33.0	17.328	1.730	0.053-0.076	6.762-4.581	107	Silver	598A 597		34	0.340	0.170	0.0020	0.420	0.250	.0020	0.040
K _A	320	28	26.4-40.1	26.5-40.0	21.08	1.422	0.036-0.051	10.696-7.245	354	Brass	600A 599		28	0.280	0.140	0.0015	0.360	0.220	.0015	0.040
Q	400	22	33.0-50.1	33.0-50.0	26.34	1.138	0.023-0.033	8.971-6.077	347	Alum.	383		22	0.224	0.112	0.0010	0.304	0.192	.0010	0.040
	500	19	39.3-59.7	40.0-60.0	31.36	0.956	0.016-0.023	12.082-8.185	351	Alum.	383		19	0.188	0.094	0.0010	0.268	0.174	.0010	0.040
V	620	15	49.9-75.8	50.0-75.0	39.86	0.752	0.010-0.144	22.042-15.464	272	Brass	385		15	0.148	0.074	0.0010	0.228	0.154	.0010	0.040
	740	12	60.5-92.0	60.0-90.0	48.35	0.620	0.0069-0.0098	18.487-12.970	274	Alum.	387		12	0.122	0.061	0.0005	0.202	0.141	.0005	0.040
	900	10	73.8-112	75.0-110.0	59.01	0.508	0.0046-0.0066	13.936-9.778	355	Alum.	1528*		10	0.100	0.050	0.0005	0.180	0.130	.0005	0.040
	1200	8	92.3-140	90.0-140.0	73.6	0.406	0.0030-0.0042	26.465-17.928	271	Brass	1527*		8	0.080	0.040	0.0003	0.120	0.080	.0003	0.020
	1400	7	113-173	110.0-170.0	90.9	0.330	0.0019-0.0028	22.197-15.036	121	Alum.	1525*		7	0.065	0.0325	0.00025	0.105	0.073	.00025	0.020
	1800	5	145-220	140.00-220.0	115.7	0.259	0.0012-0.0017	22.391-15.168	66	Silver	1524*		5	0.051	0.0255	0.00025	0.091	0.066	.00025	0.020
	2200	4	172-261	170.0-260.0	137.3	0.218	0.00086-0.00122	49.491-33.526	97	Silver	1526*		4	0.043	0.0215	0.00020	0.083	0.062	.00020	0.020
	2800	3	220-335	220.0-325.0	176.2	0.170	0.00054-0.00076	41.508-28.119	99	Silver	1528*		3	0.034	0.0170	0.00020	0.156	0.101	.00020	0.020
								31.292-21.198	359	Brass										
								165.920-112.397	278	Alum.										
								104.906-71.065	276	Silver										
								146.611-99.317	275	Silver										
								280.185-135.609	277	Silver										
								288.036-195.120												
								372.048-252.032												
								529.155-358.459												

Note 1: True theoretical values at 1 atm. dry air at 20° C, no safety factor included.
*Contact Flange

Per, Hugh Turnbill, W3ABC, at the May club meeting, the ARRL has requested that the CAC have their recommendations for changes to the contest rules to the BOD by 1 July. Don't delay in getting your comments to your ARRL CAC representative. The Atlantic Division representative is Dave Halliday, KD5RO, 8747 Tabors Corner Road, Wayland, NY 14572.

POSSIBLE ROVER RULES CHANGES

by Dave Halliday,
Atlantic Division CAC Representative

As you have no doubt heard either on the air or at RVHFG meetings, there has been a lot of discussion about the ARRL's contest rules as they apply to the Rover Class. This is due mainly to what happened during the January 1993 ARRL VHF Sweepstakes, when a couple of Rovers went out and proceeded to rack up **HUGE** scores by working no one but each other. They did this by operating under the ARRL's "Family" rule which allows members of the same family to operate using the same gear, and by working the other members of the "caravan" back and forth across Grid lines in all possible combinations on 10 bands (50 MHz through 10 GHz) from 7 or 8 Grids. Although perfectly legal as far as the contest rules are concerned, this was clearly **NOT** what the League had in mind when it established the Rover Class a few years ago. This class was formed to encourage hams to take their gear to "rare" locations, providing VHF/UHF and Microwave contest QSO's to aid the scores of fixed stations from places where there were likely to be few, if any, operators. For the most part, this is what has happened. However, the January contest is different, because this contest allows clubs to total the individual scores of their members together, and compete against other clubs for the coveted January Sweepstakes Gavel. The RVHFG has competed in this contest for many years, sometimes successfully, winning several gavels. For the past few years, we have also campaigned a number of Rovers to aid in this endeavor. The enhancement to a club's score is obvious- a couple of well-equipped Rovers can (and did!) run up scores of **OVER A MILLION POINTS EACH!** And yet, the fixed stations in the club **NEVER** has to work these Rovers (and in the case of the winners, never did).

There has been a lot of dissent among contesters as to whether there should be a change to the Rover Rules which would prevent operation of the type I described above. I have been advised by the League that they are awaiting some word from us (the RVHFG) before they make any decision regarding a rules change. I would like, as Atlantic Division Contest Advisory Committee

like, as Atlantic Division Contest Advisory Committee member, to make a recommendation to the League based on what I feel the RVHFG and other Division clubs would like to see happen here. A number of questions come to mind, such as:

Should we make any changes at all?

Are the rules okay as they currently stand?

What should the change be- should Rovers be forbidden to work other Rovers?

Should a change be made that only affects Rover operations during the January contest?

Should Rovers only be allowed to work other Rovers on the bands above 2.3 GHz (much like the multi-op rule for working your own operators)?

Should Rovers only be allowed to work each other once for QSO and Multiplier credit (after that QSO credit only)?

I'd like you to think about this subject, if you have any interest in it. My hope is to discuss this at the May meeting, with the hope of developing a position that the RVHFG can support and present to the ARRL Contest Branch, since they seem interested in our input. As a January Rover operator (with KD2KQ), I know what my position is on this subject, but I want to represent the interests of the RVHFG and the Atlantic Division. I know that this article is likely to be reprinted in the Mt. Airy Pack-Rats "Cheesebits" newsletter, so if a consensus is reached at our May meeting, I will wait until after the Pack-Rats hold their next meeting and can contact me with any input they might have, before presenting anything to the League. Of course, there is nothing to stop you from contacting the ARRL yourself if you are so inclined and would rather be heard in this manner. The important thing is to let the League know where you stand on this issue, if it's important to you. Thanks for reading this and I hope you bring your ideas with you to the May meeting.

UPPER MIDWEST VHF'ERS RESPOND TO ROVER ISSUE

A few Upper Midwest VHF'ers have sent in their thoughts on the rover controversy. If you have any opinions about the matter, forward your ideas to your ARRL division CAC member.

Here are my thoughts about the recent correspondence that has been generated concerning the use of Rover caravans. Based on what I have heard, there appears to be at least two general issues that have emerged.

The first issue is that Rover scores are starting to swamp the club aggregate scores for the January VHF Contest (the only VHF contest that features club competition). Key to this issue is not the existence of the Rover caravan, but is the fact that the scoring system used to compute a Rover's score is different than the scoring system used by all the other operating classes. With or without a rover caravan, it has always been true that a Rover can outscore a fixed station because of the difference in the scoring systems. In the 1991 September VHF Contest, KB0ZQ/R, without the use of a Rover caravan, scored 136,504 points while the highest non-Rover score in the Dakota Division was 56,835 points. Therefore, to resolve the first issue, we need to address how the Rover score is used in club scoring.

The second issue is that the Rovers that have been operating in the Rover caravan have neglected (intentionally or not) to work other stations outside of the caravan. I think that this is an insulting comment to Rovers everywhere and was probably made by a fixed station that has no idea of the effort that is required nor the difficulties that are encountered while putting forth a Rover effort. If a Rover does not work another station, it's probably because they are fully occupied maximizing their own score (this is a contest!) while driving, navigating, logging, resolving problems, putting up or taking down antennas, etc. I don't believe that a Rover would put out such an effort and NOT work a station unless the Rover was too busy maximizing their own score. On the other hand, while I have never actually experienced it, I have heard of big Multi-Op stations that have sent out the own Rover(s) with instructions to work only the designated Multi-Op station; I can only say that this must be one really bored Rover!

In summary, the issue about club scoring and Roving does need to be addressed. Perhaps we should consider removing Rover scores from the club aggregate score. This would still allow Rovers to compete with Rovers and would still allow the Rovers to add to the club scores through working the fixed stations. On the other hand, I would strongly oppose any rule changes that would attempt to restrict Rover-to-Rover contacts." - Jon, KB0ZQ/R

"I am a serious Rover and contester. Reading the March/April issue's letter from the Dakota Division CAC Rep brought to my attention that some VHF'ers are criticizing and disapproving of Rovers working Rovers frequently during a contest.

Rather than get defensive, I suggest we all just drop the subject and wait another contest or two before getting all worked up over Rovers and contest rules. Between the Aurora '93 gathering and this Upper Midwest VHF/UHF Newsletter, I have been so amazed and pleased at the growth of VHF/UHF/SHF operations in the Upper Midwest, along with making lots of good friends. I was shocked to read the CAC's letter - complaints and criticism seem so incongruous with the fine VHF'ers I've come to know in the Upper Midwest.

Sure, I could vent my spleen - but I think it's too early for that and too strange. I hope my Rover-ops to date have been appreciated and I hope to do more. Let's wait and hope that complaints and criticisms go away. Where should I go in June???" - Bruce, KE9QT/R

**DOWN
EAST
MICROWAVE**

MICROWAVE ANTENNAS AND COMPONENTS

BILL OLSON
W3HOT

BOX 2310 RRI
TROY, ME 04987
(207) 948-3741

CRAIG HENDERSON
N8DJ8

Ph. (419) 352-4465
Mrs. 10-5



C. A. T. S.
Rotor Parts & Repair



7368 S.R. 105

Pemberville, OH 43450

215-288-0325



W3HK

GEORGE S. VanDYKE, JR. P.E.

1737 Scattergood St.
Phila., PA 19124

The R.F. Connection
"Specialists in
RF Connectors and Coax"

K43RPG

Joel Knoblock
301/840-5477
Fax 301/869-3680

Order Line 800-783-2666
Suite 11, 213 N. Frederick Ave.
Gaithersburg, MD 20877

(302) 328-7728
ORDER LINE 800-441-7008



Delaware Amateur Supply
"AMATEUR SALES AND SERVICE"

PAUL WA3OPX
KATHY KA3IYO

71 MEADOW ROAD
NEW CASTLE, DELAWARE 19720

(202) 588-1068
(215) 745-6173
(302) 886-7630
(609) 266-3668



COMPU-SIMPLE, INC.
COMPUTER APPLICATIONS FOR SMALL BUSINESS

BRIAN M. WEISMAN
Consultant

P.O. BOX 66374
WASHINGTON, DC 20035

215-342-5982

WA3HIT

Paul and Betty Rilling
INCOME DIVERSIFICATION

5830 Weymouth Street -Phila., Pa.19120

Gerry Rodski - K3MKZ

717-868-5643
6-10 PM

SSB ELECTRONIC U.S.A.
Call for Catalog

124 Cherrywood Dr. Mountaintop, Pa 18707

609-541-0120

Bob Fischer Company, Inc.

AERIAL LADDERS - UTILITY EQUIPMENT

BOB FISCHER
PRES.

28TH & LINCOLN AVE.
CAMDEN, N. J. 08105

DESTINATIONS INC.
A FULL SERVICE TRAVEL AGENCY

HARRIET SOLTOFF
TRAVEL CONSULTANT

616 SOUTH THIRD STREET
PHILADELPHIA, PA. 19147

RES. (215) 947-4483

609-541-0120
SAT. 8-4

Day-Nite (215) 455-2121

FERTIK'S ELECTRONICS

Components & Equipment

LEON FERTIK

5400 ELLA STREET
PHILADELPHIA, PA. 19120

RICHARD E. COMLY

ARROW

TOOL, DIE & MACHINE CO., INC.
2065 BENNETT RD. PHILA., PA 19116

(215) 876-1300
FAX 934-9237



(609) 268-0736

RICHARD CONNOR



RECON
Communications

- COMMUNICATIONS TOWER MAINTENANCE
- ANTENNAS, FEEDLINES, TOWERS INSTALLED
- TOWER PAINTING, RE-LAMPING, RE-GUYING
- RF SYSTEM TROUBLESHOOTING
- LIGHTNING PROTECTION, GROUND SYSTEMS

Emergency Service

412 Carranza Road
Tabernacle, NJ 08088

(302) 328-7728
ORDER LINE 800-441-7008



Delaware Amateur Supply
"AMATEUR SALES AND SERVICE"

ROB WA3QLS
GAIL KA3ITN

71 MEADOW ROAD
NEW CASTLE, DELAWARE 19720

(215) 745-6173
(302) 886-7630
(215) 342-8832
(609) 266-3668



COMPU-SIMPLE, INC.
COMPUTER APPLICATIONS FOR SMALL BUSINESS

ELLIOTT T. WEISMAN
Consultant

P.O. BOX 7161
WILMINGTON, DELAWARE 19803

RUTLAND ARRAYS

For the finest VHF/UHF antennas
1703 WARREN ST.
NEW CUMBERLAND, PA 17070

Call or write for our new catalog!
(717) 774-5298 7-10 pm EST

STEVEN N. WHITE
Attorney at Law

WA3IAO

2217 PALOMINO DRIVE
WARRINGTON, PA 18976

TEL: (215) 343-6902
FAX: (215) 343-6903

