

# PACK RATS'



# CHEESE

# BITS



CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

MT. AIRY VHF RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA

ARNS

50.125, 144.150, 220.125, 432.110, 1296.110 Mhz, W3CCX - Repeater 222.98/224.58 Mhz

Affiliated Club: AMERICAN RADIO RELAY LEAGUE

Meetings: Third Thursday of each month at 8:00 P.M.  
Southampton Free Library, 947 E. Street Road  
Southampton, Pennsylvania 19866

VOLUME XXVI

SEPTEMBER, 1985

NUMBER 9

## THE PREZ SEZ

Congratulations to the crew and all who were involved with the planning and execution of the Spruce Knob Expedition. Scores were up, the weather was great, and everything went smoothly. Well, almost! For a detailed report on who got "Knobulized" and where, see Rick's (WB2NPE) report on Page 4.

Thanks to Dave (WB2VLA) and Nancy (N2AII) for their hospitality as the August regular meeting was held in Trenton. We were even treated to an air show during W3CL's health and welfare speech. (Clever thinking Dave!) The slide show once again proved we are getting older, but better.

With September upon us, our attention now turns to the Mid-Atlantic VHF Conference and Hamarama. Gary, WA2OMY and Lee, K3MXM again are doing an outstanding job, but they will need your help! I'm asking each Pack-Rat to check with Gary & Lee and volunteer a small amount of your time wherever it is most needed to assure that these two events will continue to be the successes that they've been in the past.

September also brings the first indoor meeting of the year and we will be treated to an update on satellite communications. Why not bring a friend?

73, Mike, WB2RVX

\* \* \*

## A DX REPORT FROM ENGLAND

By Jay, KS2T - Toms River, N. J.

Here's a short note on the reception report on the 6 meter beacon from G4GLT on 30 July, 2223Z. The beacon runs 10 watts but has about a 130 foot run of RG-213, the antenna is a 1/4 wave vertical at 110 feet above average terrain, about 200 feet above sea level, it's 5 miles inland from the ocean. The beacon is on 50.070 Mhz with KS2T ID. G4GLT gave the beacon signal a 429 report. He uses an IC-551, a 5 element Cushcraft at 70 ft, an amplifier with 120 watts output. He is located some miles north of London. Here's what he wrote to me: "Before 2230Z I worked crossband W4CKD, K2MUB and W3JO, then after 2230Z I worked the following direct: W4CKD, W3OTC, KB3QM, KA1PE, W2HRW, W2CUK (who is in S. Carolina) WB2IFC (located in FM27), VE1YX, and KA4DVH, Fla. It was quite a widespread opening with lots of G stations in the midlands and Southern England getting very excited about direct contacts to the States."

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SWAP SHOP ITEMS - NO CHARGE

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING: THE THIRD THURSDAY OF THE MONTH.

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MONDAY NIGHT NETS

7:30 PM - 50.125 MHZ  
8:00 PM - 144.150 MHZ  
8:30 PM - 222.98/224.58 MHZ  
8:45 PM - 220.125 MHZ  
9:00 PM - 432.110 MHZ  
9:30 PM - 1296.1 MHZ

NET CONTROL

W3CL  
W2EIF  
K3GAS  
KS2T  
K3IUV/K1PXE  
- - -

PACK RAT REPEATER 222.98/224.58 MHZ/ W3CCX  
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WA3JUF, DAVE MASCARO (2 Yrs)  
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WB3IND, GEORGE McMAHON (1 Yr)



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CALENDAR OF COMING EVENTS  
Syllabus by Lee, K3MXM

SEPTEMBER

- 1 Grandfather's Day
- 1 Robert E. Lee appointed superintendent of West Point Military Academy, 1852
- 2 Labor Day - last holiday before knuckling down for the long winter.
- 2 Japanese sign surrender aboard USS Missouri in Tokyo Bay, 1945
- 5 Watermelon Day in Rocky Ford, Colorado
- 8 Gaithersburg, Md. Hamfest - a really big one!!
- 10 The Lincoln Highway - first coast to coast paved highway in the United States opened in 1913
- 12 Board of Directors Meeting - QTH: NF2L, Bill Smith, 2605 Fenimore Road, Medford, N.J. 609-267-2461. Directors and interested members always welcome.
- 14-15 September VHF QSO Party - 6 meters on up - exchange grid squares. A good warm up for the January Contest - See August QST Page 75 for full details.
- 15 South Jersey ARC Hamfest - Pennsauken High School, Pennsauken, N.J. just over the Tacony Palmyra Bridge and a real nice local Hamfest well worth attending. VEC testing, plenty of door prizes. Info: Fred Holler (609) 795-0577.
- 14-15 European DX Contest - See July QST.
- 16 Rosh Hashanah
- 19 General Club Meeting. Back indoors for the winter session. Southampton Free Library, Street Road, Southampton, Pa. 8:00 P.M. Topic: Ray Hallett, an engineer with GE will present a program on the Landsat series of satellites, slides and pictures will show details of land taken from space. The Mario Raffle, Frankie's Silent Auction- Refreshments. Bring your radio buddies along.
- 21-22 York Pa. Hamfest - now a two day affair. Computers, Ham Equipment, Seminars, Manufacture Displays, a big one.
- 21 The "Star Spangled Banner" first published as a poem in the Baltimore American Newspaper, 1814
- 21-22 Can-Am Contest - phone; a good chance to hook-up with our good neighbors to the North - all bands. Info: August QST, Page 80.
- 25 Yom Kippur
- 27 American Indian Day
- 28 Elmira, New York Hamfest
- 30 When you tire of shouting into a microphone and want to try some real shouting, wander out to Missouri Valley, Iowa for the Annual World Championship Wild Goose Calling Contest.

REMEMBER: HAMARAMA is coming October 5-6 - We need your help - sign up now.

TO OUR SUBSCRIBERS - CHEESE-BITS SUB NOW \$3.00

MT. AIRY VHF CLUB

1985 UHF CONTEST SUMMARY

By R. Connor, WB2NPE

The Pack-Rat "road show" enjoyed superb West Virginia weather, warm hillbilly hospitality, and overall contest success in this year's expedition to Spruce Knob, W. Va. From the early planning stages to the final trip home, our radio club participants in the 1985 mountaintop UHF event executed a nearly flawless effort.

The operation was "spruced" up from 1984 by some course corrections and additional preparation provided by the one-year veterans WA3AXV, N2SB, N3CX, K2EVW, WA3JUF, WA3NUF, WB2RVX, and WB2NPE. New enthusiasm and additional manpower were the contributions of new Knobists N3AOG, WB3DNI, and AK3O. We missed two members of the 1984 trip KD6KD and W3HQT who just couldn't shake loose this year. We hope to see both of you back in action next year!

Upon arriving at the summit, noon, Friday, 2 Aug., the first troops in were greeted by our friend Dennis, N8FCJ. Many of us had worked Dennis on Spruce Knob in previous VHF contests and we invited him in July to join us for the UHF contest. He became our host, scout, power company, and entertainment. The Pack Rats truly owe Dennis a big thank you for his assistance with our operation. He lives about one hour from Spruce Knob and offered his unlimited help and supplies. We took him up on his trailer-mounted 7-KW diesel generator complete with flood lighting and this tiger supplied us with 3/4 of our AC power. His familiarity with the roller coaster roads of West Virginia helped to efficiently navigate our roving UHF station through the neighboring grid squares. In addition, Dennis kept us laughing and happy with his great sense of humor. Thanks Dennis, for making life on the Knob extra easy and loads of fun.

This year we were prepared for the brand of weather which crippled the 1984 try. The gear was set up in the rental truck and N3AOG's motor home to combat the elements which nearly put us out of business last year. Of course, the air was dry, temperatures ranged from 40 to 80 degrees, and clear skies prevailed for the entire weekend; you couldn't order finer weather. Although it was still an advantage having the shacks up off the ground in roomy vehicles -- a big improvement over last year's tent operation. This time, the tents served their intended purpose -- sleeping quarters.

Chief Chef, N3CX, was occupied with the roving detail, (along with WA3JUF and WB3DNI), and it appeared for a while that these Pack Rats would have to go hungry on the mountain while Dave was out. But, much to our surprise, Richard, K2EVW unveiled yet another talent and assumed the job of feeding the animals. Needless to say, the grub was great.

Except for an immediate transceiver problem on 220 (which we had backed-up) the radio gear in the five stations performed well. We ran KW's this year on 220 and 432, increased power on 2304, and increased antenna height on all bands. We employed aluminum towers this year which yielded the higher installations and easy set-up/take-down. 9913 feedlines proved successful on 220 and 432 leaving two runs of 7/8 Heliac for 1296 and 2304. The 'HQT loopers for 2304 mounted nicely above the 1296 array and performed superbly.

Activity was down this year from 1984. Many of the UHF regulars including some with which we had schedules, failed to make an appearance on the bands. I guess UHFers take summer vacations too. However, our improved stations probed into every compass direction and netted 6 grids over last year on 220, 5 more for 432, and 2 more for 1296. 2304 suffered slightly only because of the absence of reliable active stations. Phil, WA3NUF, capitalized on the fine weather conditions and scraped up 1 additional QSO over last year on 10 Ghz. His operation again included one of the highlights of the weekend - a 75 mile QSO with AB4L. Way to go Phil!! Conditions were just average at our location. Except for some brief periods of slight enhancement, the propagation was simply flat. So, the contest crawled along for its 24 hours, and the Knob gang dredged the bands for every contact and multiplier available. Take-down and clean-up were smooth maneuvers and the whole crew was on the road again by 4 PM.

The caravan home was uneventful and relaxing which was the final indication that the weekend was a complete success.

(CONTINUED ON PAGE 6 )

SWAP SHOP

FOR SALE: KLM-Linear amp 2 meter  
10W in 160 out \$150.

CONTACT: WA3GSY, Harvey  
215-828-4347

FOR SALE: 813 tubes, new \$20 ea;  
808 tubes like new \$3 @; 866 tubes  
like new \$2@. Power Xfms - 120V. Pri-3500V -  
0.5A Sec. \$15; 120V. Pri - 1500V - 0.35A  
Sec. \$10; Panasonic stereo, FM/cassette, A.C.  
& batts. like new \$35; WANTED: Early 30's  
homebrew equip. and magazines.

CONTACT: K3CQZ, Ben Brown  
Phone: 215-224-8177

FOR SALE: Kenwood TR7800 - synthesized 2M  
FM-25W. \$200; Midland 13-509, 220 Mhz FM  
rig (P.R. rptr xtal)\$100; Pack-Rat HB 2 mtr.  
xverter, pwr. sply & enclosure \$75.

CONTACT: WA3AAJ, Jim Ward  
Phone: 215-887-1062

FOR SALE: ICOM-IC-2A 2 mtr HT \$165; Light duty  
foldover, crank-up tower 50ft. \$50; Hustler  
H.F. 5 band trap vertical \$45.

CONTACT: Bill, WB3LGO  
Phone: 215-885-3595 before 7 P.M.

WANTED: 6 mtr xverter - solid state  
preferred, or tubes for 28 Mhz.

CONTACT: WB3IGR, George Fazio  
Phone: 215-576-1897

WANTED: Tower 50 ft. or higher, heavy duty  
free standing or guyed, crank-up. Galvanized  
preferred.

CONTACT: Asa, AB30  
Phone: 215-275-0688 work  
215-692-7785 home (anytime)

\*\*\*\*\*

COMMERCIAL AD

FOR SALE: TR-7 users.....NB-7 noiseblanker(new) by Drake, \$65.00. SL-300/SL500 filters for  
TR7, \$50.00; New MN-75 antenna tuners \$125.00. HS-75 Drake padded headphones \$15.00@; LF-2  
2 outlet surge protector, \$18.00@ new. TS-120S...\$375.00; MS-4 Drake spkr, \$35.00. Kenwood  
SP-520, \$35.00; Kenwood BS5 pan adaptor(new) \$39.00. CONTACT: K3UKW, Tony Musero  
Phone: 215-271-8898.

\* \* \*

1296 and 2304 Mhz Loop Yagis: 2196 45 element \$85. 2304 45 element, \$75. 2 way and 4 way  
power dividers and stacking frames available. Also element kits. Available soon 20 and 70  
watt solid state linear amplifiers for 1296. Write for info: Bill Olson, W3HQT, Down East  
Microwave, Box 1655A RFD 1, Burnham, ME 04922 Phone: 207-948-3741

\* \* \*

VISITORS - AUGUST 15, 1985 MEETING

KA3MGB - YL Kathryn, Allentown, Pa.  
K3MXM- XYL Peggy, Elkins Park, Pa.  
W3CL - XYL Sylvia, Glenside, Pa.

N2AII - Nancy, Trenton, N.J.  
KA2NYF - Janet, Voorhees, N.J.  
WA3NFV - XYL Judy, Hilltown, Pa.  
W3AJS - Ed, Oreland, Pa.

CHANGE OF ADDRESS

KF6AJ - Steve Simons  
7 Rodline Road  
Danbury, CT 06811

\* \* \*

PRODUCT NEWS

Updated information on Belden 9913 coax cable - the braid shield has been upgraded  
from 68% braid shield to 89%. Connector information as follows: Gilbert manufactures a  
crimp "N" connector for 9913; Part No. NS-3008-23. Ampbenol manufactures a modified "N"  
connector for 9913 (solder type); Part No. 82-202-1006. (Tnx, Rich, K3ACR)

1985 UHF CONTEST SUMMARY  
CONTINUED

We have some new ideas and plans to implement for the 1986 Knob expedition. These refinements will be hashed out after the contest results are published. We seem to be hot on the trail of W2SZ/1, and I believe that we can accomplish a win with a little extra effort. Additional Pack Rats who are unable to make the journey to the Knob can play a key roll by activating some of our home stations while we're gone. Also, additional participation on the trip would provide better rover coverage, one of W2SZ's favorite tricks. We'll discuss this more during the year.

If you haven't seen the pictures and alides for this year, see AXV, JUF, RVX, or myself. There must be six rolls of film shot of the expedition. Thanks to all of the club members who worked hard to work us: W2EIF, W3CL, W3CXU, W2AXU, WA2OMY, KB3QM, K1PXE, W3HFY, W3KKN, W8ZAR, WA3AAJ and W3TNP. There is nothing like working our own guys from 400 miles away. Until next year --- 73 and GL.

P.S. Over 100 tourists visiting Spruce Knob for the weekend, saw a demonstration of our Contest operation. All were amazed at the friendliness and enthusiasm expressed by the Mt. Airy VHF Club. Some good PR for Ham Radio!!

\* \* \*

THE FOUNDATION FOR AMATEUR RADIO NEWS RELEASE 8/15/85

The Foundation for Amateur Radio is pleased to announce the 1985 winners of the nineteen (19) scholarships which it administers. John W. Gore Memorial Scholarship - \$900 James H. Baker, KI4YN, Alexandria, VA; Richard G. Chichester Memorial Scholarship - \$900 Eugene S. Reilly, KA8JIG, Cincinnati, OH; Edwin S. Van Deusen Memorial Scholarship - \$350 Richard K. Soper, WA2IKV, Syracuse, NY; QCWA Memorial Scholarships - \$600 each, Francis P. Horan, KA3CJR, Drexel Hill, Pa., Hai T. Nguyen, KAOALZ, Colorado Springs, CO; Carl H. Puckett, KA7BWC, Great Falls, MT, John E. Schnupp, N3CNL, Ephrata, PA, David J. Schmocker, KJ9I, Oconomowoc, WI, John G. Sullivan, N2DYC, Haddonfield, NJ. QCWA Robert S. Cresap Memorial Scholarship - \$500, Douglas Swiatlowski, KA2KMT, Camillus, NY. Radio Club of America Scholarship - \$500, James W. Healy, NJ2L, West Hurley, NY. Edmund B. Redington Memorial Scholarship - \$500, David Swiatlowski, WA2KLM, Camillus, NY. Young Ladies' Radio League Scholarship - \$500, Diane E. Willemin, N8CAY, Elyria, OH. Amateur Radio News Service Scholarship - \$500, Michael Krensavage, KA3CUP, Marietta, GA. Columbia (MD) Amateur Radio Association Scholarship - \$650, Christine L. Gray, KA3NAK, Elkton, MD. Baltimore (MD) Amateur Radio Club Scholarship - \$500, Eric J. Smith, KA3KJO, Silver Spring, MD. Dade Radio Club Tropical Hamboree Scholarships - \$500 each, Christopher A. Atkins, KA2QWC, Fort Pierce, FL; David R. German, N4EAD, Sarasota, FL. Lewis W. Wilkinson Memorial Scholarship \$500, Wayne F. Poole, KC4XL, Surfside, FL.

These scholarships were open to all Radio Amateurs meeting the qualifications and residence requirements of the various sponsors. The FOUNDATION is a non-profit organization representing fifty clubs in Maryland, the District of Columbia and Northern Virginia. It is devoted exclusively to the scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service.

Announcement of the 1986 awards will appear in the April or May issues of the major amateur radio publications. Additional information regarding the FOUNDATION'S Scholarship program can be obtained from FAR Scholarships, 6903 Rhode Island Avenue, College Park, MD 20740.

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NEWS FLASH! K3HZO, Stateside Coordinator for the West Kent Amateur Radio Society passed the following on the Pack-Rat nets Monday evening August 26, 1985: The Society's station set up on the mountain close to Galway Bay in Erie for possible 2 meter contacts across the pond to the USA, were forced to abandon the site due to a severe storm and high winds. Will try again next year!

TID BITS

Received the latest travel information from John, K3KTY at Myakka City, Fl including snapshots of the town and Mt. Washington - Tnx John - we miss you and Barbara also.

Sunspot No. for July 1985 = 30.8. Smoothed No. for January 1985 = 20.0.

K3KTY, John Tate Continues his sweep of Florida State; would you believe a town called "Frost Proof". Latest is a Florida generic post card with all the blocks checked off.

K3GAS, received schematics on a "Radio Shack UHF tuner on ATV" and a "Universal preamp or line driver". Who sent these? Can't print them until an ID is received.  
(Editor sez)

Jim, WA3AAJ (fondly known as Merlin) is leaving the area - new job in San Diego, CA. Keep in touch, please.

Congrats to the Paul Randolph family, WB3HHO. Son Paul, WB3HHP was married to Phyllis on June 1, 1985. Our best wishes.

The "Lick & Stick" session at the W3ZD QTH on Saturday, August 24, 1985 prepared the VHF Conference and Hamarama flyers for mailing. Those who participated besides W3ZD were K3ACR, W3CL, K2EVW, K3GAS, W3IIT, K3JJZ, WØRSJ (A surprise showing), WB2VLA and K3VYG.

Bill Murphy, WØRSJ, is now working in New Jersey and will be locating in Easton, Pa. (High hill country)

Tom, W1EJ, who sent the antenna gain measurements to Ron, WA3AXV (reproduced in this issue) reports that next year they hope to have a 800-1000 ft, range available, Tnx for the info. Ron & Tom.

\* \* \*

OCTOBER 5TH VHF CONFERENCE NUTSHELL NEWS

By WA2OMY, Gary Hitchner, Chairman

We have something for everybody at this years conference on October 5, 1985.

Speakers are as follows: W3XO - Bill Tynan will give introductory talk with VHF and Shuttle news. WA2FXB - Sid Leiberman will present a 40 page report on predicting E skip on 2 and 6 meters. WA2LQQ - Rip Riportella, President of Amsat, will discuss PacSat schedule and future plans for Amsat. 1200 Lunch - sandwich and salad buffet. W1JR - Joe Reisert will cover VHF antenna design and stacking, also how to get the most out of commercial antennas. Harvey Kaylie, President of Mini Circuits, will cover double balanced mixer design and how to use mixers properly. W3HQT - Bill Olsen will be down from Maine to present and show new products he is making for 1296 and 2304 and beyond. Hope to see a large turnout on the 5th. Hospitality suite at the Warrington will be open Friday and Saturday night - be our guests. Saturday night - buffet dinner, bring the XYL.

\* \* \*

902-928 MHZ BAND IS OURS

Acting on PR Docket 84-960, FCC has announced the availability of 902-928 Mhz for use by all radio amateurs holding Technician Class licenses and above, effective 0001 UTC September 28, 1985. Amateur use of the new band must be on a secondary, non-interference basis. Emission types NØN, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, F8E and PØN have been authorized. In a related action, FCC restricted use of the 902-928 Mhz band at the White Sands Missile Range. Amateur use of the band is prohibited inside the range, and use for 150 miles outside the range is restricted to a maximum transmitter peak envelope power output of 50 watts. An interim bandplan for 902-928 Mhz was adopted by the ARRL Board of Directors in October 1984. It appears on page 20 of the 1985-86 edition of the Repeater Directory. More on this side of the 902 Mhz story in the next ARRL letter.

From the ARRL Letter August 15, 1985

\* \* \*

Many thanks to the Miller family (KS2T, Jay) in Toms River, N.J. for hosting our August Board meeting on Saturday, August 10, 1985.

GOLDWATER ON NO-CODE

The No-Code amateur license is far from a dead issue in the mind of America's leading radio amateur. During a recent videotaped interview, US Senator Barry M. Goldwater, K7UGA, indicated that he felt the idea of a no-code license should be reconsidered. Goldwater made the statement in answer to a question from NBC newsman Roy Neal, K6DUE. Neal had asked Senator Goldwater what he saw as the thrill of amateur radio, and if any "open door" existed to entice newcomers to the service. To this, the senator responded, "Well, I hate to say this because I am basically opposed to it, but I think we are going to have to take a harder look at the no-code licensing -- not across (all) the bands, but in some isolated section of the spectrum for those people who will not get into amateur radio because they do not want to learn the code. They would become, I think, interested (in CW operation) after they came in and had a permit to operate on a very limited area of the bands on voice. They would turn to CW, I would hope, because I would hate to ever think of CW getting out of amateur radio. But, it's out of everything else. We don't even teach it in the Air Force anymore." When asked if we have permitted today's technology to "run away from us" or if ways exist to circumvent this, Senator Goldwater replied, "In communications, we are just beginning....Five years from now, what you and I are talking about will be passed. It won't be used anymore. Communications is the fastest moving and fastest advancing science we have, and getting back to the base of your question: do I think that young people or old people will be willing to try and work out a circuit with modern solid state equipment? I have my doubts, to be honest with you. As long as there are companies making kits...there will be people making (building) amateur gear. But even they are falling out of it."

The senator admitted that he would be hard put to try and construct a modern high-tech piece of solid state ham gear, adding that he felt, "We have to recognize that the day of store bought equipment is here!"

The ten minute interview with Senator Goldwater was videotaped aboard the "Queen Mary" Hotel/ocean liner in Long Beach, California during the recent ARRL Southwestern Division Convention. Goldwater was the banquet speaker and Neal was emcee.

Exact plans for the release of the entire interview are unknown, though a portion of it may be included in the upcoming ARRL Ham in Space documentary, "SAREX."

The technical aspect of the interview was made possible by Dave Bell (W6AQ), who donated the use of his television equipment, and KTTV cameraman/engineer Mert Garlick (N6AWE), who manned it.

\* \* \*

NOTICE FROM AN OLD TIME PACK-RAT

Al Whiting, K3BRS, is the U.S. distributor for the German publication, VHF COMMUNICATIONS which is published four (4) times yearly. The English version is \$18 for 1985. A brochure is in the mail...if you want to subscribe before you receive the brochure, please send the order to P.O. BOX 432, Lanham, MD 20706.

\* \* \*



## Antenna Gain Measurements : Eleventh Eastern VHF/UHF Conference

19 May 1985 RIVIER COLLEGE Nashua, N.H.

CALL	ANTENNA TYPE	ANTENNA DESCRIPTION	BOOM LENGTH FEET	REQUIRED RANGE FEET	GAIN dBd
BAND 432 MHz - MEASUREMENT RANGE 260 FEET LONG:					
W1JR	36 El. Yagi		28	690	17.4
K1FO	32 El. Yagi	Modified Boomer	24	510	17.0
K1FO	30 El. Yagi	LBX Stock	22	430	16.8
W1JR	31 El. Yagi		24	510	16.7
W1JR	28 El. Yagi		21	390	16.5
W1JR	21 El. Yagi	F9FT	15	200	15.0
K1FO	24 El. Yagi	Modified CC-424B	18	280	14.8
K1FO	24 El. Yagi	CC-424B	18	280	14.7
K1FO	19 El. Yagi	K2RIW 19	12	130	14.7
K1FO	19 El. Yagi	Tama	13	150	14.5
K1FO	18 El. Yagi	Modified Tama less 1 Ref.	12	130	14.5
G3BVU	88 El. J-Beam	MBM 88	12	130	14.3
K3BRS	19 El. Yagi	Modified K2RIW 19	12	130	14.1
W1EJ	17 El. Yagi	Superyagi Geometry	10	90	14.0
K1WHS	16 El. Yagi	Modified 4.2 Wave NBS	10	90	13.8
K1WHS	15 El. Yagi	4.2 Wave NBS	10	90	13.5
K1FO	17 El. Yagi	3.2 Wave NBS	7	40	13.4
K1FO	13 El. Yagi	K2RIW 13	10	90	13.0
WB1FKF	13 El. Loop Yagi		8	60	12.7
K3BRS	12 El. Yagi	2.2 Wave NBS	5	20	11.6
K3BRS	10 El. Yagi	Modified K2RIW 13	*	*	11.3
K1FO	20 El.	CC- CoLinear without Balun	*	*	9.9
W1JR	6 El. Yagi	NBS	3	10	9.7
K1FO	20 El.	CC- CoLinear	*	*	9.6
N1BWT	STD # EIA Reference Used ##		1	1	7.7
K1WHS	EIA Dipoles	432 MHz EIA Ref. Antenna	1	1	7.7
K3BRS	14 El. Yagi	KLM without Balun	12	130	7.1

BAND 1296 MHz - Measurement Range 260 Feet Long					
					GAIN dBd
W1JR	45 El. Loop Yagi		12	380	20.5
W1JR	55 El. Yagi	F9FT	15	600	19.8
W3HQT	45 El. Loop Yagi		12	380	19.4
W1EJ	64 El. Yagi	Superyagi Geometry	17	770	16.8
VE3BFM	7 El. x 3	4 bays CoLinear Yagi	*	*	16.5
N1BWT	HORN	CALCULATED GAIN	*	*	15.4
K3BRS	31 El. Loop Yagi		8	170	15.0
WB1FKF	24 El. Loop Yagi		7	130	13.8
VE3BFM	7 El. x 3	Single Bay CoLinear Yagi	*	*	11.9
W1EJ	EIA Dipoles	1296 MHz EIA Ref. Antenna	1	1	10.0
K1WHS	EIA Dipoles	902 MHz EIA Ref. Antenna	1	1	7.1
W1E	24 El. Loop Yagi	RSGB with broken Match	7	130	5.7
N1BWT	13 El. Yagi	W2CQH design	3	20	5.2



T.J. Kirby W1EJ

Antenna Gain Measurements : Eleventh Eastern VHF/UHF Conference

19 May 1985 RIVIER COLLEGE Nashua, N.H.

CALL	ANTENNA TYPE	ANTENNA DESCRIPTION	BOOM LENGTH FEET	REQUIRED RANGE FEET	GAIN dBi
BAND 2304 MHz - MEASUREMENT RANGE 160 FEET LONG:					
W1JR	Dish	4 Ft. Diameter	4	80	24.0
W1JR	Dish	32 Inch Diameter	3	40	23.0
W3HQT	53 El. Loop Yagi		8	300	21.0
W3HQT	45 El. Loop Yagi		7	230	20.5
N1BWT	30 El. Cigar		3	40	17.0
W3HQT	45 El. Loop Yagi	Tuned at 2400 MHz	7	230	17.0

NOTES:

- \* - Major linear dimension of antenna is not known and the range requirement is not determined.
- 1. - The antennas measured on 70 cm are referenced to a 7.7 dB over a dipole EIA standard gain antenna. The 13 cm antennas are referenced to a standard gain horn calibrated in dB above isotropic. To compare the antennas measured with different standards add 2.15 (2.2) dB to the gain over a dipole to obtain the gain over isotropic. Conversely subtract 2.2 dB from the dBi figures to obtain the gain over a dipole.
- 2. - Some few values presented have been scaled above the range measurements to correct for transmission line losses.
- 3. - The required range is determined to be the distance to the edge of the Fraunhofer Region. That distance is:

$$R=2xLxL/W$$

L = The antenna major dimension.

W = The operating wavelength.

J.D. Kraus, Chapter 1, p 6, "ANTENNAS"



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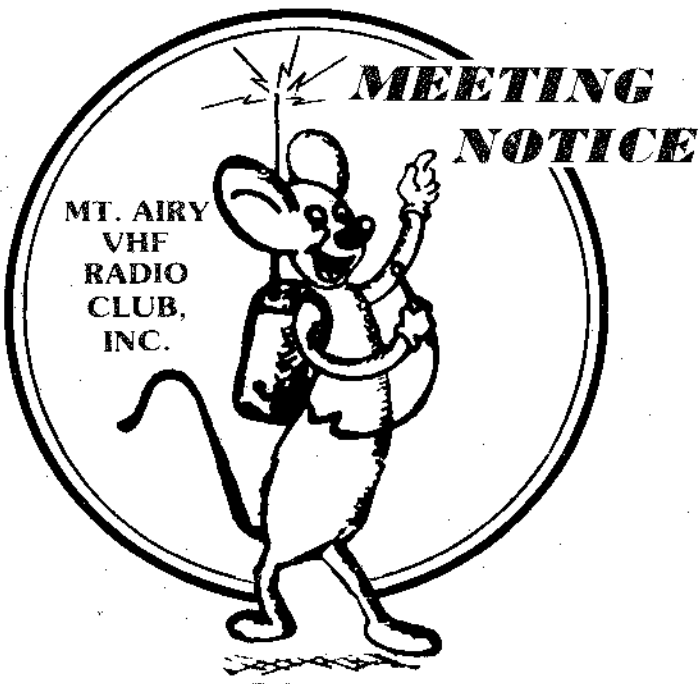
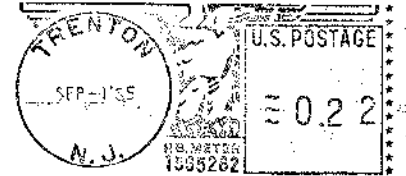
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