

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



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

ARNS

VOLUME XXVI

APRIL, 1986

NUMBER 4

THE PREZ SEZ

Spring has finally sprung as we approach the dreaded "Ides of April". Last chance to think about how you are going to deduct last years' radio purchases.

Those who attended the March meeting were treated to an exceptional program presented by Dr. Robert Schafer, WA3YYK. His presentation on filters drew much response from the group. His description of the construction of inductive and capacitive elements inside 141 type cable was extremely interesting.

For a change of pace, the Rats will make the assault on Spruce Knob, WVA (FM08) for the June VHF QSO Party. Rick Connor, WB2NPE has graciously volunteered for the job of contest chairman (been drafted -hi) Lets all give him much support as possible to get the event organized. Much work and planning goes into this venture and all are invited to participate.

Don't forget the upcoming Spring Sprints - the coming events column gives the dates. These are fun and easy going four hour evening affairs so give a few hours of your time.

Doc, K3GAS reminds us that there are still a few good seats left for Ladies Nite which is the evening of May 31st at the Warrington Motor Lodge. Looking forward to seeing you all at our regular meetings and Ladies Nite.

73, Mike, WB2RVX

* * *

A blessed event occurred on Friday, March 28, 1986. Our best wishes to Janet, KA2NYF and Mike, WB2RVX on the arrival of Kristin Patricia Gullo.

Pack Rats CHEESE BITS is a publication of THE MT. AIRY VHF RADIO CLUB, INC. Philadelphia, Pa. and is published monthly.

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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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W3CL, HARRY B. STEIN

<u>MONDAY NIGHT NETS</u>	<u>NET CONTROL</u>
7:30 PM - 50.125 MHZ	W3CL
8:00 PM - 144.150 MHZ	W2EIF
8:30 PM - 222.98/224.58 MHZ	K3GAS
8:45 PM - 220.125 MHZ	KS2T
9:00 PM - 432.110 MHZ	K3IUU/K1PXE
9:30 PM - 1296.1 MHZ	- - -

PACK RAT REPEATER 222.98/224.58 MHZ/ W3CCX
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- WA3JUF, DAVE MASCARO (2 Yrs)
- WA3AAJ, JIM WARD (1 Yr)
- WB3IND, GEORGE McMAHON (1 Yr)




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CALENDAR OF COMING EVENTS

Syllabus by Lee, K3MXM

APRIL

- 1 Be wary of those phone calls
- 3 Limerick, Pa. Emergency Drill, RACES and ARES Participation. Starts at 1600 - Rums until 2130.
- 6 Sunday, Greater Baltimore Hamboree and Computerfest - Timonium, Md. A real good get together and only about 3 hrs. South of Phila. Well worth the ride.
- *6 Delaware Valley Council of Amateur Radio Clubs.
- 10 Board of Directors Meeting - QTH: W3IIT, Harry Brown, 3012 Potshop Road, Norristown, Pa. Phone: 215-584-4846. Directors and interested members always welcome.
- 11 Halley's Comet - Closest to the Earth
- 12 Flemington, N.J. Hamfest
- 14 Monday Evening - 2 Meter Sprint
- 15 This is the day - your taxes are due!!
- 17 General Club Meeting - Program: Will be announced on Monday Nite Nets. Mario's Raffle, Frankie's Silent Auction, Refreshments; Visitors Welcome.
- 19-20 Trenton, N.J. Computer Festival - One of the biggest and best on the East Coast. A complete package - new displays, seminars, huge flea market. Make plans to attend at least one or both days - if you have anything to do with computers.
- 22 ARRL Sprint - 220 Mhz
- 23 Secretary's Day
- 24 Passover Begins
- 25-26-27 The Big Daddy of All Hamfests - Dayton, Ohio
- 27 Daylight Saving Time Begins - remember "Leap Forward" push the clock ahead one hour.
- 25-27 Friday through Sunday. If you are into cars, antiques, classics, stock hot rods, etc. Here is a different kind of flea market you might be interested. 4th Englishtown, N.J. Swap Meet and Auto Shows.
- 30 ARRL Sprint, 432 Mhz
- * The meeting will be at the Naval Depot, Oxford Avenue at Martins Mill Road, Phila. at 1400 (2 PM) in the main cafeteria. Your driver's license will get you past the guardhouse.

Good news Lee, K3MXM back home from the hospital and in good spirits. Hy Ecksel, WA3NDE feeling better after a couple of months in/out hospital.

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. KENWOOD 220 RIG: A letter from Craig Martin KR6T - Customer Service Manager at Kenwood indicates that a 220 Mhz mobile rig matching the 2M TM2530 will be available soon. FM only, no price at this time.
2. NRD 525 RECEIVER: Japan Radio Co. will soon release the new NRD 525 receiver, which like the 505 and 515, will be general coverage and digital readout. No price info. yet.
3. TEN TEC RX325 RECEIVER: Production will begin soon on the new general coverage Ten Tec 325 receiver. A 9 digit readout is featured as well as keyboard entry of frequency, also regular variable tuning. Twenty five memories will be available which will store frequency, mode and band. Other features, are built in amplified whip antenna or external antenna, tuning knob lock out, noise blanker, clock timer, all in a very compact 9x9x3 cabinet. Price about \$500.
4. KENWOOD TS 440S: The new Kenwood 440 does not replace the 430. The 440 covers the same range as the 430 with the same power, but with some extra features. To start with, all modes are built in, including FM & FSK (200 watts in), optional built in automatic antenna tuner, keyboard entry of frequency, computer interface port, and 100 memories. Price about \$1,000 list.

* * *

ARRL BULLETIN NR 19 FROM ARRL HEADQUARTERS NEWINGTON CT MARCH 14, 1986 TO ALL RADIO AMATEURS: UHF packet radio got a big boost today. At ARRL request, the FCC suspended parts of its rules to permit third party traffic by packet stations under automatic control. Several conditions are attached to the waiver, provisions of Sec. 97.80 B and 97.110 B 4, which were both to be added to the rules March 14, are waived to permit amateur stations retransmitting digital packet radio communications on 50 Mhz and higher bands using AX.25 or compatible protocol to be operated under automatic control while retransmitting third party traffic. This waiver applies only to the retransmission of third party traffic originated at another amateur station which is under local or remote control. When an amateur station is operated under automatic control, devices must be installed and procedures must be implemented which will ensure compliance with the rules when the control operator is not present at the control point of the amateur station. This waiver will remain in effect until the commission takes final action on the petitions for reconsideration filed in PR Docket 85 105. Amateur packet operators must be alert to the increased dependency upon them for monitoring during the period of this waiver. They should immediately make known to the responsible control operator of an automatic packet station any misuse of his station so the licensee can take corrective action. In summary, UHF packet radio may continue under automatic control.

* * *

VISITORS - MARCH 20, 1986 MEETING

WB3DAD, Joe Colussi - Ambler, Pennsylvania

WA3YYK, Bob Schafer, Lansdale, Pa.

VOTED TO RETIRED STATUS

W3FQD, Dick Huntzinger

* * *

NOTE: The design characteristics for a 903 MHz antenna referred to on page 5, now is included in this issue of Cheese-Bits on page 10.

4X4 LAND TRIP AND TOUR FOR AMATEURS AND FRIENDS
Chaverim Amateur Radio Friendship

The CHAVERIM, an international movement to foster a closer relationship among Jewish Amateur Radio Operators and their friends throughout the world, are planning a two week trip to Israel and a tour of the Holy Land this fall. Departure date from J.F.K. Airport in N.Y. is scheduled for Mon. Oct. 27th. Return date will be Nov. 10th, 1986. Participants from the Philadelphia/Southern New Jersey areas will have transportation to J.F.K. provided. Flights will be by El-Al, the Israeli National Airline.

Besides visiting shrines holy to Jews, Christians, and Moslems, hams will have the opportunity to operate their equipment throughout the country. It is expected that the Israeli Amateur Radio Club and members of the QCWA will provide occasions for eyeballing.

All Amateurs, their wives, friends, and families, are most welcome to participate and are urged to contact Bill Soble, W3QXT, coordinator, at 9357 Hoff St., Phila., Pa. 19115, or call 215-676-6769 for information or to insure being included in the group, as space is limited.

* * *

PRESS RELEASE

12th Annual Eastern VHF/UHF/SHF Conference

The 12th Annual Eastern VHF/UHF Conference will be held May 16-18, 1986 at Rivier College, Nashua, New Hampshire. The program features a Friday night hospitality room, technical talks by well-known VHFers on Saturday, "rap sessions" for the various VHF/UHF bands, noise figure and antenna gain measurements on Sunday, and other activities. A new feature of this year's conference will be a series of tutorial presentations for the newcomer to VHF/UHF. To preregister, send \$13.50 to David Knight, KA1DT, 15 Oakdale Avenue, Nashua, NH 03062 before May 5. Registration at the door is \$20.00. The Saturday night banquet is \$14.00 also payable before May 5. This year, a special registration rate of \$10.00 is available for any first-time attendee.

Housing will be available in dormitory rooms at the college at a modest fee. (The exact fee was not known at press time; contact the registration chairman for registration forms and fee information. Please include a SASE.) Those wishing accommodations in the dormitory must include payment at the time of preregistration. Make all checks payable to "Eastern VHF/UHF Conference." For those wishing to make their own housing arrangements, there are numerous hotels and motels nearby. A map of the area will be available.

The conference chairman is Thomas Kirby, W1EJ, who is ably assisted by a staff of volunteers from the New England VHF Community.

Point of Contact:
Lewis D. Collins, W1GXT
10 Marshall Terrace
Wayland, MA 01778
617-358-2854 (6 to 10 P.M. EST)

* * *

902MHZ CLUB PROJECT UNDERWAY

N3CX, Dave Hackford and WA3JUF, Dave Mascaro are working feverishly on 902 Mhz prototypes. Some of these items were displayed at our March meeting and they look outstanding. More on this later. Ron, WA3AXV has also provided the design characteristics of a 15 element 903 Mhz antenna. The print out will appear in the May issue of Cheese-Bits. Sorry we couldn't get this going before the Sprints!!

OPERATING NEWS

N3AHI reports that the K3MXK group plans to install beacons from 432 thru 10 Ghz at their 4777 ft. contest site in Southwest North Carolina. More details will follow.

Al Whiting, K3BRS of Lanham, Md. asks that we be on the look-out for him during the upcoming Sprints. He will be running a gallon on six and two; 100 watts on 432 but only 3 to 10 watts on 1296. Al sent along a number of complete indexes of all volumes from 1970 to 1982 of VHF communications for distribution at our last meeting. Also, 2 prize packets of the latest VHF communications for our door prizes. Tnx, Al.

Emil Pocock, W3EP of Athens, Ga. is revising the VHF propagation section of the ARRL 1987 Handbook at the present time. He also is going to study in detail VHF and UHF auroral propagation conditions during the great aurora on February 8th and 9th, 1986. He needs accurate reports of contacts made on all bands; 50 Mhz through 1296 Mhz. He says the following:

"Would you be willing to make copies of your logs during this aurora period? I need date-time, station, grid-square, and band for all contacts you made on 50 Mhz and higher, though I plan to focus on 144 Mhz and 432 Mhz.

I would be most interested to read of any 1296 Mhz aurora contacts, since none have ever been reported. I would be interested in any other comments and observations you have, and would also find it useful to know exactly how you learned an aurora session was in progress and when (what time) you first and last heard it.

I plan to write a full report on the aurora, which I would be happy to send to you in exchange for your logs. It may take me some time, but I hope you will find it worth the wait.

Thanks for your help and regards."

* * *

DOC SEZ - "WILL THE FOLLOWING PLEASE PAY THEIR DUES"

KF6AJ	W3FQD	K3IPM	AC3T
N2AQJ	WB2GEZ	W3ISV	K3VEQ
N2ASC	K3GFF	KA2JKI	WA3YDZ
WB2BJH	WA3HIT	WB3KES	WA1YHO
WB3CDE	W3HKZ	K3LYB	AA2Z
N2CG	W3HMU	W3PST	WB8ZAR
WB3CPW	WA3HVL	K3QQ	K3ZPN
WA3EPS	WB3IGR	WB2RXM	
W3FGQ	WA3IMT	WB2SZK	

* * *

TID BITS

Sunspot No. for February 1986 = 22.6 - Smoothed Number for August 1985 = 16.16.

Congratulations are in order for Paul Riling, WA3HIT who was recently elected President of the Men's Group of the Crescentville (Phila.) United Methodist Church. Paul has been the Coordinator of Communications for the Church.

Our Florida Pack-Rat K3KTY, John Tate sends 73 from Winauma, Florida.

My man Ernie, W3KKN recently stopped over in Frogmore, S.C. on his return from Florida with his good wife Bert, W3TNP. He said that the Frogmorites croak a bit now and then - oh well!!

(CONTINUED ON PAGE 8)

SWAP SHOP

FOR SALE: RCA Scope - 3" W033A w/leads & book, exc. cond. \$40. Lab-Volt VOM- Model 700 - solid state, w/leads & book, exc. cond. \$40. Anaconic Digital VOM #390-4 Dig. readout - measures caps. - w/book. exc. cond. \$60.

RCA TV Camera - TC 1000 w/book, mount & spare 4848 vidicon. w/monitor & 9" GBC MV 900 w/book, both exc. cond. \$145. ATV research TV camera kit w/lens & vidicon 90% finished w/all parts & plans \$35.

CONTACT: Lyn Rowland, W3NSI
Phone: 215-742-7695 (Phila.)
201-255-5998 (Shore)

FOR SALE: Computer - Ampro little board based Z 80 CPM. Includes two DDDS drives, much software & Heathkit H19 terminal. Available complete or components - best offer, two 8" DDS disk drives, Shusart SA 850 \$75@/\$135 pr. Four new snowtires, 175-80, mounted on Subaru painted steel rims. \$75 pr/\$135 all four.

CONTACT: Bruce Loss, WA3YUE
Phone: 215-542-6405 (daytime)
215-947-4166 (after
5:30 PM)

FOR SALE: Icom 730 w/CW narrow filter, transverter, pwr. sply. Mint condx. \$490 or best offer.

CONTACT: Bill, K3ZMA
Phone: 215-822-0749

FOR SALE: Yaesu FT221 - all mode 2 mtr rig w/AC & DC pwr sply. \$245. TS 660 all mode & FM 6 mtr rig w/split VFO - mint cond. \$450. you pick up.

CONTACT: Charley Royer, K3BCV
847 N. Lacrosse Street
Allentown, Pa. 18103

FOR SALE: 1979 PONTIAC LEMANS STATION WAGON, power steering, power brakes, air conditioning, AM/FM radio, 70K miles, Very good condition. Asking \$2500.00.

1985 HONDA CIVIC 4 door, 5 speed, air conditioning, AM/FM stereo, white exterior blue interior. 12,500 miles. Asking \$7500.

CONTACT: Fred H. Lissauer
215-886-2590

FOR SALE: IC-251A, Icom 10 watt, all mode w/box & manual \$360. 3-500Z - new in box \$50. 7527B (Industrial 4-400B) new \$40. DSI 700 Mhz frequency counter w/box & manual \$50. Icom phone patch wired for IC-740 can be rewired for any of the series \$65. Kenwood remote VFO (VFO 120) \$65. Simpson 269 VOM - 100K/Volt \$20. All in ex. cond. shipped UPS prepaid upon receipt of money order or check.

CONTACT: Randy Bynum, WB2SZK
3634 Deedham Dr.
San Jose, CA 95148
Phone: 408-629-1100 Ex. 642 (Day)
408-274-4869 (Eve)

WANTED: General coverage rcvrs. SX28 or R-388 unmodified.

CONTACT: Bill Moessner, K3WRD
1002 Windsor Road
Warminster, Pa. 18974
Phone: 215-674-3892

* * *

COMMERCIAL ADS

A New Ham Store: Maryland Radio Center is now operating in Laurel, Md. for service, equipment and parts. They issue an interesting free newsletter. If you wish copies, make the request to the center at 8576 Laureldale Road, Laurel, Md. 20707. Phone: 301-725-1212.

Loop Yagis: 902 Mhz and 1296 Mhz 45 element \$70; 2304 Mhz \$62.50. Also available assembled and tested. Power dividers, stacking frames available. Linear amplifiers; 1296 Mhz. 1 watt in 18 watts out \$230; 2304: 1 watt in, 10 watts out \$300. Write for more information to: Down East Microwave, Bill Olson, W3HQT, Box 1655A, RFD 1, Burnham, ME 04922 (207) 948-3741.

TID BITS CONTINUED

Randy Bynum, WB2SZK keeping very busy in San Jose, California. Thanks for the nice letter Randy. He talked to our man Jim, WA3AAJ down in San Diego on 75 meters.

Bob Schafer, WA3YYK of Micro Coax Components, Inc. gave an outstanding technical talk at our March meeting. He described in detail the design of SHF filtering devices in cables.

LADIES NITE BANQUET IS MAY 31, 1986!!!

* * *

A BIOGRAPHICAL SKETCH OF OUR ARRL NITE SPEAKER

Bob Bennett, W3WCQ resides in Towson, Md. and was licensed in 1953. He was a research scientist at John Hopkins University Carlyle Barton Laboratory (Radiation Laboratory) from 1963 to 1970. Presently, manager of the Thor Division of Ketrion, Inc. Past President of the Chesapeake Amateur Radio Club and the Baltimore Amateur Television Society (BRATS). He has been a member of the ARRL VHF/UHF Advisory Committee for four years.

At the meeting on May 15, 1986 he will present his views on both promoting and coping with the influx of new activity on the bands 220 Mhz and above (FM-TV, high speed Packet; pulse modulation and other computer related techniques). Mode compatibility, trade-offs, interference, and band planning will be discussed. It poses to be an interesting evening since he will be joined by the ARRL Atlantic Division Director Hugh Turnbull, W3ABC.

* * *

ADVANCE NOTICE OF THE 1986 ESTES PARK CONFERENCE

The dates are August 28-31, 1986, the Labor Day Weekend. The Conference will be called "Microwave Update 1986." The location will be amotel called "The Inn at Estes." There was an advance mailing sometime in March. (Tnx Don Hilliard, W0PW)

* * *

THE JOB OF AN EDITOR

Getting out this paper is no picnic,
If we print jokes, people say we are silly.
If we don't, they say we are too serious.
If we stay close to the office all day,
We ought to be out hunting new material.
If we go out and try to hustle,
We ought to be on the job at the office.
If we don't print contributions,
We don't appreciate genius.
But if we do print them, the paper is filled with junk.
If we edit the other fellow's write-up, we're too critical.
If we don't, we're asleep.
If we clip things from other papers,
We're too lazy to write them ourselves.
If we don't, we are stuck on our own material.
Now, likely as not, some guy will say
We swiped this from some magazine.
We did

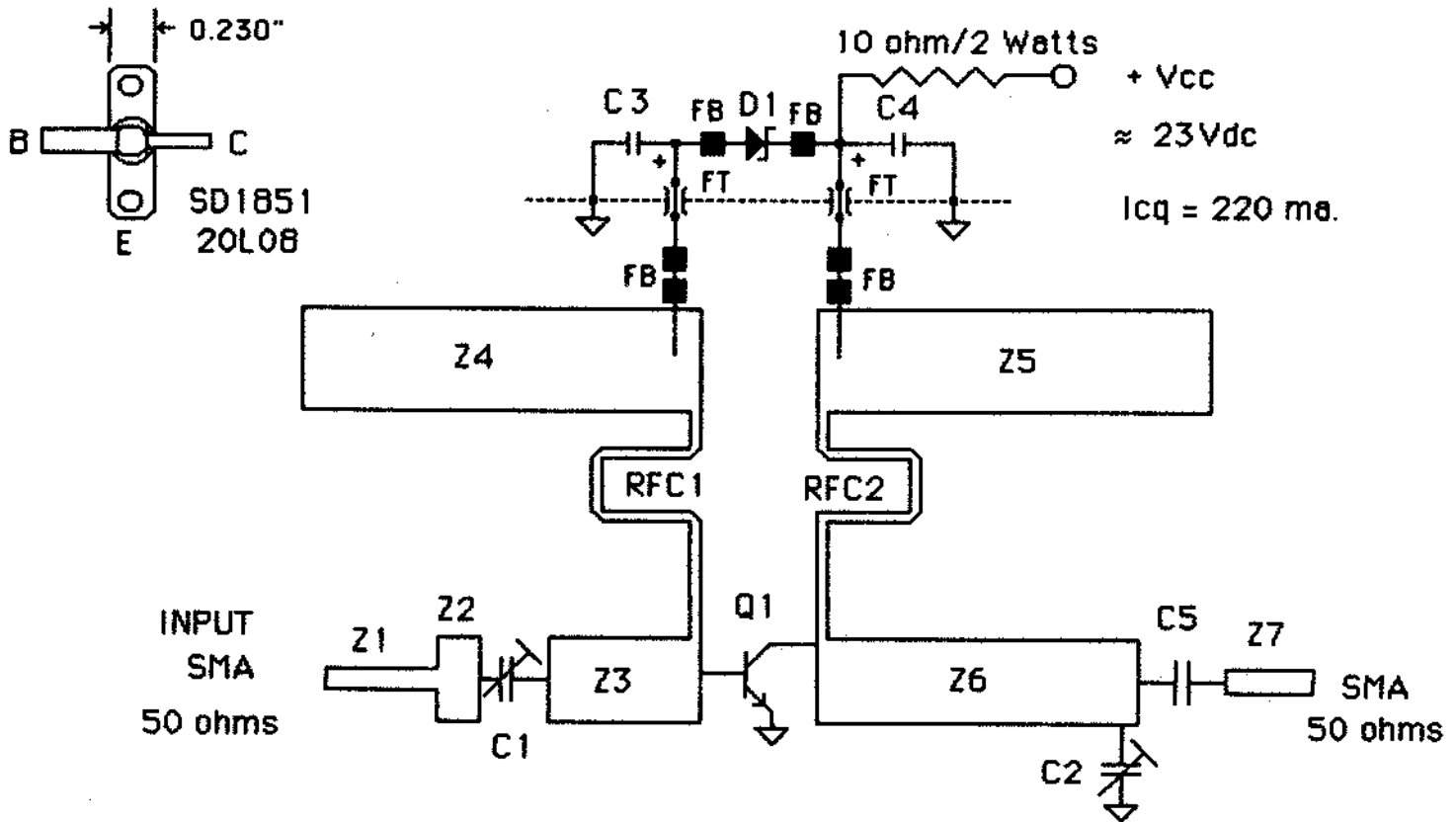
NOTE: We swiped it from the Cryptogram (Sept. 1964). They swiped it from the Exponent.
Who stole it from the Reader's Digest. Who stole it from Far East Club Activities.
Where they stole it is unknown! Tnx, W3FQD

0.8 Watt Class 'A' Linear Amplifier for 2.3 GHz.

Gain > 8 DB

RTL > 20 DB

P sat ≈ 1.2 Watts



C1 4.5 pf Johanson Gigi-trim cap

C2 0.3-3.0 pf Johanson piston cap

C3,4 10 ufd/35 vdc (6vdc ok for C3)

C5 47 pf chip cap

D1 22 volt zener 1N4748A

FB ferrite bead (2 on each FT) (1 on each lead of zener)

FT Feedthru cap, Spectrum Controls Inc.

* SCI 729-303 (or 1000 pf)

Q1 Thomson CSF Semiconductor
SD1851 (TCC20L08)

Z1,7 50 ohm line 0.080" wide

Z2 0.10 X 0.4" (trim to tune)

Z3 0.180 X 0.30"

Z4,5 RF Short 0.275 X 1.0"

Z6 0.180 X 0.60"

RFC1,2 Choke 0.035 X 1.10"

Board = 1/32" Teflon Er = 2.5

D. Mascaro WA3JUF 1985

NBS ANTENNA COMPUTATION BY WA3AXV

15 ELEMENT - 4.2 LAMBDA DESIGN

ESTIMATED GAIN IS 14.2 DB

ELEMENTS THRU THE BOOM

FREQUENCY = 903 MHZ

ELEMENT DIA. = .061 INS

BOOM DIAMETER = .5 INS

BOOM LENGTH = 4 FT 6 7/8 INS

DIRECTOR SPACING = 4.02 INS (4 INS)

REFLECTOR SPACING = 2.61 INS (2 19/32 INS)

ELEMENT LENGTH

ELEMENT SPACING

REFLECTOR	6.61 INS	6 5/8 INS	0.00	00
DRIVEN ELE.	6.46 INS	6 7/16 INS	2.61 INS	2 19/32 INS
DIRECTOR 1	6.06 INS	6 1/16 INS	6.63 INS	6 5/8 INS
DIRECTOR 2	6.06 INS	6 1/16 INS	10.66 INS	10 21/32 INS
DIRECTOR 3	6.03 INS	6 INS	14.68 INS	14 21/32 INS
DIRECTOR 4	5.88 INS	5 7/8 INS	18.71 INS	18 11/16 INS
DIRECTOR 5	5.84 INS	5 13/16 INS	22.73 INS	22 23/32 INS
DIRECTOR 6	5.78 INS	5 25/32 INS	26.76 INS	26 3/4 INS
DIRECTOR 7	5.74 INS	5 23/32 INS	30.79 INS	30 25/32 INS
DIRECTOR 8	5.69 INS	5 11/16 INS	34.81 INS	34 25/32 INS
DIRECTOR 9	5.69 INS	5 11/16 INS	38.84 INS	38 13/16 INS
DIRECTOR 10	5.69 INS	5 11/16 INS	42.86 INS	42 27/32 INS
DIRECTOR 11	5.69 INS	5 11/16 INS	46.89 INS	46 7/8 INS
DIRECTOR 12	5.69 INS	5 11/16 INS	50.91 INS	50 29/32 INS
DIRECTOR 13	5.69 INS	5 11/16 INS	54.94 INS	54 15/16 INS

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3/20/86


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