

# PACK RATS'



## PACK RATS

CLUB CALL: W3CCX

# CHEESE BITS



MT. AIRY VHF RADIO CLUB, INC.

MT. AIRY VHF RADIO CLUB, INC., PHILADELPHIA, PHILADELPHIA PENNSYLVANIA ARNS  
50.123, 144.150, 220.125, 432.110, 1296.110 MHz, W3CCX/R RPTR-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 19886

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VOLUME XXX

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### THE FREEZ SEZ

Ah, Fall—the best time of the year! The frost is on the pumpkin and the leaves are on the ground. For some reason, I'm having trouble convincing my neighbors of the benefits of letting the leaves stay where they fall. Looks like I will have to buy a rake sometime soon.

Since the September meeting's discussion on the VUAC Agenda and of the future of the 220 band, there was a band planning meeting sponsored by the Middle Atlantic Repeater Council. I attended the meeting and presented our feelings on a band plan. There is a report on the outcome in this issue.

At the October meeting, Jon Pearce, WB2MNF, presented a program on Satellite Communications. Jon let us know the status and modes of operation of the present amateur satellites and how to operate through their transponders. He also outlined the equipment and antennas needed. Most of us already have just about everything needed to give at least one of the satellites a try. Thanks for all the information, Jon.

If you have any ideas for programs or Club activities or a Club project, let me or Rick, WC2K, know or bring it up at a meeting. This is your Club, and your input is important to keep the Club vital and healthy.

Next month, Steve Simons, KF6AJ, is giving a presentation on vacuum deposited wear resistant coating for machine tools and decorative items. This is the same process used to make hybrid film circuits. It should be a very interesting program. I'll see you at the meeting.

73,

Bob, N2SB

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DEADLINE FOR ARTICLES IS THE GENERAL  
MEMBERSHIP MEETING: THE THIRD THURSDAY  
OF THE MONTH. SWAP SHOP ITEMS - NO CHARGE

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MONDAY NIGHT NETS

7:30 PM - 50.125 MHz  
8:00 PM - 144.150 MHz  
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9:00 PM - 432.110 MHz  
9:30 PM - 1296.1 MHz

NET CONTROL

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CALENDAR OF COMING EVENTS-NOVEMBER 1988  
By Harry Brown, W3IIT

NOVEMBER

- 3 CRRL Fall Sprints-1296 MHz, any 4 hours from 6 PM to 3 AM local time. See Oct. QST, page 107 for rules.
- 3 Predicted peak of the Cassiopids meteor shower at 0245 UTC and the Taurids meteor shower at 0300 UTC.
- 5-7 ARRL November CW Sweepstakes. See Oct. QST, page 106 for rules.
- 9 New moon.
- 10 Packrat Brd. of Directors Meeting at the QTH of Doc, K3GAS. Call 215-635-1078 for directions. All interested parties invited.
- 10 CRRL Fall Sprints-2304 MHz. See 1296 on 3 Nov.
- 16 Predicted peak of the Leonids meteor shower at 2000 UTC.
- 17 Regular meeting of the Mt. Airy VHF Radio Club at the Southampton Free Library on Street Rd. in Southampton, Pa. All VHFers and interested hams are welcome. Honest, it really is tonight!
- 19-21 ARRL November Phone Sweepstakes. See Oct. QST, page 106 for rules.
- 20 EME perigee.
- 26-27 ARRL International EME contest, second weekend.

APPLICATION FOR MEMBERSHIP

W3UBO, Frank Ford - XYL, Dolores  
261 S. Dietz Mill Road  
Telford, PA 19869  
215-723-5128

VOTED TO MEMBERSHIP

KA3QYH, Ron Wenig - XYL, Teresa  
3046 Essington  
Bensalem, PA 19020  
215-638-9257

\* \* \*

RF DESIGNERS WANTED

Bill Seabreeze, W3IY, called to advise that his Northern VA/DC firm is seeking RF Designers. Interested persons should call collect: Tom Davis - TEL: 703-883-1088.

PROPAGATION REPORT  
by Paul Drexler, WB3JYO

Not too much exciting happening on the bands these days, but if you've taken the time to make some noise or check on things periodically, chances are you probably found something to work.

On September 22nd, the higher bands were open to the West and then on the 28th the higher bands opened to the South. On October 6th K1GX/1 (LM96) was heard on 2 around 0025 GMT with an S3 signal. On October 9th several 4's were heard on 6 around 1245 GMT but conditions didn't improve much more than that.

On Monday morning, October 10th a good aurora was present through 2 meters with stations active from New England to the Northwest. Although the aurora was quite good for a solid hour, activity was rather sparse for a Columbus Day morning (not everyone gets off) grids FN03, FN65, EN70, and EN74 were active.

On the morning of the 16th 2 meter propagation was enhanced to the South and on the 17th during the evening good conditions existed to New England.

On the 23rd, Mike, N3BBI reports working grids EM82 and 83 on 6 around 1000 local time. Keep listenin' though, 10m is hot and F2 has been reported in other parts of the world.

CU on the bands.

REPORT ON THE MIDDLE ATLANTIC REPEATER COUNCIL MEETING (T-MARC)

by Bob Cook, N2SB

This meeting was held on Sunday, October 16, in Savage, MD. The purpose was to come up with an alternate band plan for the 220 MHz band if we suffer a permanent loss of 220-222 MHz.

The meeting was sponsored by T-MARC and Bob Bennett, W3WCQ, was invited as the representative of the VHF-UHF Advisory Committee. There were also representatives of the weak-signal (CW-SSB-EME) community and FM repeater and packet radio communities.

A number of possible band plans were presented and discussed. The item that everyone planned for was to maintain the current 1.6 MHz split for repeaters and not have any repeaters go off the air due to lack of space on the band. This of course doesn't leave much band for the rest of the current users to divide up.

So, after much discussion, this is the 222 MHz band plan that came out of the meeting:

222.0 to 222.3	- CW, SSB, EME, Beacons
222.3 to 222.4	- Wide band packet or control
222.4 to 223.4	- FM repeater inputs
223.4 to 223.5	- Wide band packet
223.5 to 223.6	- FM simplex
223.6 to 223.7	- Wide band packet
223.7 to 224.0	- Links
224.0 to 224.9	- Repeater outputs
224.9 to 225.0	- Wide band packet

This is a tentative band plan and is subject to modification. It also is what the people at the meeting considered good for this area in the country and doesn't take into consideration other areas, i.e., California. Any comments you have can be brought up at the meetings at the library or directed to the VHF-UHF Advisory Committee.

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PHONE: 215-635-1078

FOR SALE: 1296 MHz ant. system. 4  
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CONTACT: HERB KRUMICH, K2LNS  
999 Meadow Run Road  
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PHONE: 717-472-9245

FOR SALE: Kenwood TS600, all mode 6 mtr w/manual - \$325. Lunar 6 mtr amp 120  
w. w/manual - \$150; leader 50 MHz ant. coupler. Kenwood TS700 SP, all mode 2  
meter, mic. w/manual -\$250. Mirage B1016 amp w/manual - \$150.  
Kenwood TS520 SE, mic w/manual - \$300. MFJ Versa Tuner II 941B - \$35. - Drake  
22C w/manual - \$100.; 2 mtr lunch box - \$20.; 3-low-pass filters; 5 swr mtrs;  
2-ant switches; 2-tenna rotor switch boxes; brute force filter; 1-dummy load;  
12 volt pwr sply; assorted books, tapes & parts (free); antennas-2 mtr 214B Jr.  
boomer (Cushcraft); 1-Hi QUA mini beam-both free for taking down.

CONTACT: GEO. MC MAHON, WB3IND  
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Olson, W3HQT, Box 2310 R.R. 1 Troy, ME 04907 - 207-948-3741.

TID BITS

-The October meeting was well attended and it was good to see K3DLS, W3PST, K3VE  
K3LOM and K3ACR. for a change.  
-The contest chairman, Paul, WB3JYO will be asking for your help in the next  
weeks. Please start getting your station and antennas in shape.

VISITORS - OCTOBER 20, 1988 MEETING

KD2GV, Mike, Cherry Hill NJ  
WA3IAC, Harmonic, Angie Steer, Philadelphia, PA  
WB2MNF, Jon Pearce, Medford, NJ  
W3UBO, Frank Ford, Telford, PA  
KA3QYH, Ron Wenig, Bensalem, PA

SPECIAL NOTICE

Come to the November meeting and fill out the holiday greeting card for a buck!

## PROPOSED CONTEST AWARD

Wayne King, N2WK, has sent to us a draft of a proposed contest award for the January VHF Sweepstakes in which the Packrats and the Rochester VHF Group would co-sponsor plaques for the 1989 event. The proposal describes two awards

A) Worked all Rochester VHF Group Award sponsored by said group and awarded to the Packrat station that works the most stations in the Rochester Group.

B) Worked all Packrats Award sponsored by said group and awarded to the Rochester VHF Group station who works the most Packrats.

These awards would probably exclude multi-op stations and Wayne has sent along some additional rules and criteria which will be reviewed by our contest chairman, the Board of Directors, and the general membership at the next meeting(s). There has been a kindling of the exchange of ideas, technical material, technical assistance, and warm friendship between the Rochester Group and the Mt. Airy VHF Club. An operating achievement award such as Wayne suggests could further enhance the relationship and activity. What do you think??

NOTE: The Rochester VHF Group is a relatively small, (about 30 members), group from Rochester, New York. They are not to be confused with the Rochester Amateur Radio Association (RARA), infamously known for entering the contest unlimited category with hundreds of 2 meter FM operators. The Rochester VHF Group is made up of serious! VHF/UHF/SHF weak signal CW, SSB enthusiasts.

### A CARIBBEAN DX TRIP IN DECEMBER BY KA3B

During the month of December 1988 I will be travelling to the Turks & Caicos Islands (VP5) in the Caribbean. Although the main purpose of my trip is to be active for the ARRL 10 Meter Contest on the weekend of the 10th and 11th, I will be active on the 6 meter band as much as possible during my stay. I plan to arrive on the Island of Providenciales on the 8th of December and depart on the 13th. During the non-contest periods I will monitor 28.885 MHz for pending band openings. With this trip taking place in early December, it is hoped that contacts can be made by both F2 and E-skip as my operation will fall within the secondary E-skip season which peaks during this month.

At the present time I have Bob Cooper VP5D attempting to secure a VP5 callsign for me. If this can't be done, then I will sign as: VP5/KA3B. The grid square for Providenciales is FL 41. For anyone requesting a QSL card for my operation, I would recommend the direct route through the Call Book address. PLEASE, enclose a self-addressed stamped envelope (SASE) for a reply. QSL's for this operation will be available in late January or early February.

Although most 6 meter enthusiasts east of the Mississippi have worked and confirmed Turks & Caicos thanks to the activity of Bob Cooper VP5D, it is hoped that extended propagation on 50 MHz into the West Coast and Europe will provide a "new one" to those that haven't been fortunate enough to work this semi-rare location in the past. Bob VP5D is to be thanked ahead of time for his assistance and cooperation in getting this operation off the ground.

GOOD DX & 73



## US AMATEURS SET MICROWAVE RECORDS

Records were recently set by US amateurs on three microwave bands.

Moonbounce at 10GHz has long been the dream when EME enthusiasts let their imaginations run wild. It is a dream no longer, thanks to the pioneering work of WA5VJB, KF5N, WA7CJO and KY7B.

On August 27, the four managed a contact between a station set up at WA5VJB's QTH near Dallas and that of WA7CJO in the Phoenix area. At the Texas end, 55 watts from a TWT (traveling wave tube) provided the RF to a 12-foot dish with a receiver noise figure of 2.1 dB. At the western end of the circuit, a 16-foot dish and a TWT delivering 90 W was used with a receiver noise figure of 1.5 dB. During the week rain hampered their attempts. Due to water absorption a 3 cm, rain and even clouds result in significant attenuation. In addition signal spreading, apparently due to moon roughness, and 20 kHz of Doppler Shift contributed to the challenge. Both groups were able to hear moon noise which aided in knowing that they were pointed correctly.

Congratulations are certainly in order to this group for a difficult job well done in accomplishing the first 10-GHz EME QSO.

The second record-breaking contact occurred on 47 GHz. Terrestrial communications at 47 GHz are not an easy feat to master, especially when attempting to attain distances greater than a few miles. However, on August 6, 1988, microwave enthusiast WA3RMX/7 and the gang at the Tektronix Employees Radio Amateur Club of Beaverton, Oregon (call sign K7AUO) made long distance communication on this band seem easy. On 47.040025 GHz at 2145 UTC that day, using 3.5 mW and 28.5 inch dishes on both ends, the group made a 65.37 mile (105 km) QSO on SSB with signals averaging S3 (after the clouds lifted, signals becoming even stronger). For this contact both stations were located in grid square CN82.

As with 10 GHz, moisture content in the atmosphere greatly affects communications on these high microwave bands. Attenuation at these frequencies is very severe and becomes even worse with clouds present. Clear skies and low humidity allow the greatest distances to be achieved.

Congratulations to WA3RMX/7 and the Tektronix gang K7AUO for their accomplishment of what should prove to be both a new United States and world distance record at 47 GHz.

It has been a couple of years since the last 3456 MHz record was set, but that doesn't mean that amateurs have been dormant on the band. Recently a new US record was set on the morning of August 7, 1988, between KX00 (located on Pikes Peak) in Colorado and WB5AFY in Northern Texas. This contact of 454 miles (730 km) shatters the old North American record of 288 miles set in 1986. KX00 was using 13.5 W into a 29-inch dish, while WB5AFY used 250 W and a 6-foot dish.

On August 6, KX00 worked WB5ULA on 902 MHz for a distance of 615.2 miles (990 km)-8 miles short of the 623 mile US and world distance record set by WB5ULA (Texas) and W4ODW (Florida) on March 22, 1988.

You can be certain that all microwave operators, and especially the above-mentioned enthusiasts, will be attempting to create new records. Microwave activity in the US is alive and well!

TNX ARRL Letter

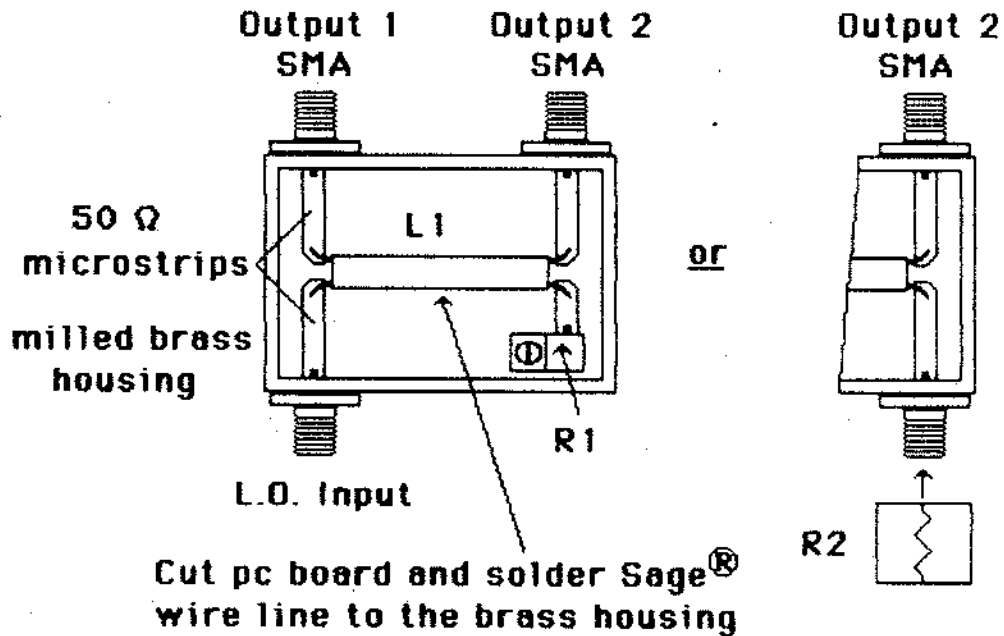
## ALUMINUM SOLDERING

You can solder aluminum! At the location you plan to solder on the aluminum place a drop of motor oil. Next take a sharp pointed tool and thoroughly scratch up the surface. Do not wipe off the oil. Now take your soldering iron, heat the spot and apply a good rosin core solder. You will find the solder will adhere completely - both physically and electrically. Works great for making connection to aluminum chassis. Try it.

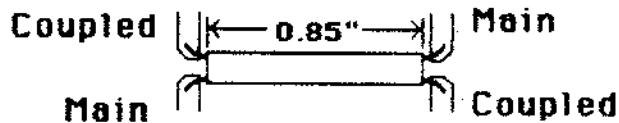
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## 2-Way 2304/2160 MHz Power divider



### Proper lead configuration



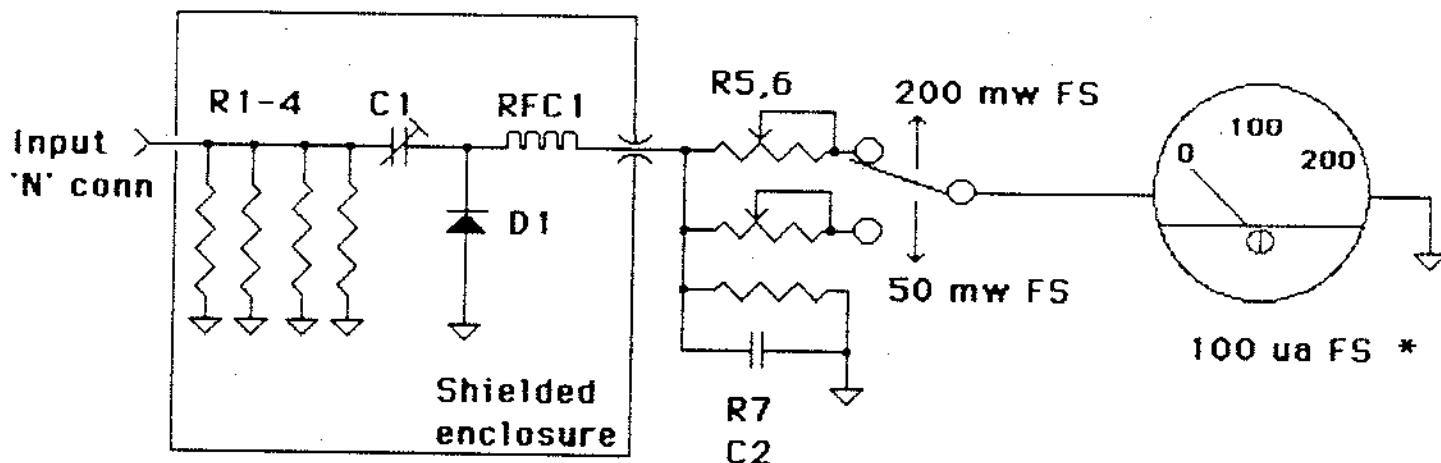
- L1 Sage<sup>®</sup> 3dB wireline
- R1 50  $\Omega$  microstrip type termination
- R2 50  $\Omega$  termination, WA3JUF, Nov.1985  
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- C2 .01 ufd
- D1 BAR11, HP2811, etc.
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\* meter had 2 scales, 200 and 50 FS

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