

PACK RATS'



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CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



MT. AIRY VHF RADIO CLUB., "THE PACK RATS", PHILADELPHIA, PA. W3CCX
NET FREQUENCIES: 50.150, 144.150, 222.125, 224.58/222.98, 432.110, 903.100, 1296.100 MHz
AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE ARNS

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

VOLUME XXXVI

February 1994

NUMBER 2

THE PREZ SEZ

The preliminary January Contest results look encouraging at this point. Despite below average band conditions and widespread antenna icing, Packrats have again made a fine showing. It takes an enormous amount of work by everyone in order to make the January contest a club success. It was particularly encouraging to see the number of Rats that made major station improvements including new bands. Largely, this was made possible by Gary, WA2OMY's building blitzes (it looks like these have been so successful that they will continue in some form throughout the year). Thanks also to the team captains and Phil, WA3NUF, for pulling off another well organized contest.

Get your contest logs to your team captains ASAP if you haven't already done so. The wrap-up session this year will again be at the home of Bob Fischer, WB2YEH, on Saturday, February 12, 1994.

Our February meeting program will be the well known Crying Towell session. I know of a few stories that will definitely be worth hearing! Why not bring a friend with you to the meeting?

73, Paul Drexler, WB3JYO

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

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Joe Kilgore, W2EIF
(609) 783-9478

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Ron Whitsel, WA3AXV
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PACKRAT 222 MHz REPEATER - W3CCX/RPTR

222.98/224.58 MHz, Churchville, PA

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DIRECTORS: N3EXA, Brian Taylor (1 YR)
K3ESJ, Bill Jaxheimer (1 YR)
WA3AXV, Ron Whitsel (2 YRS)
WB2YEH, Bob Fisher (2 YRS)

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQ.</u>	<u>NET CONTROL</u>
7:30 PM	50.150 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: WB3DNI 215-672-5289
HAMARAMA: WB3JYO 609-538-1687
VHF CONFERENCE: KB3XG 215-270-3158

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215 355-5730

- 9 Birth of Brendan Behan, Dublin 1923.
- 10 Packrat board of directors meeting at the QTH of Pat, WA3DNI at 8:00 P.M. Call 215-672-5289 for directions.
- 12 Lincoln's Birthday.
- 12 January Contest wrap-up session at the QTH of Bob, WB2YEH starting at 10 AM. Get your logs and checksheets to your contest coordinator so they can be checked and submitted.
- 12 AURORA '94 will be held in Brooklyn Park, Minnesota. for information, contact Paul Husby, W0UC at 612-642-1559.
- 14 St. Valentine's Day. Remember your sweetie.
- 15 Presidents Day.
- 16 Ash Wednesday
- 17 Packrat meeting at the Southampton Free Library on Street Road in Southampton, Pa. at 8:00 PM. The theme of the evening will be our Annual "Crying Towel" session. The best story of what went wrong during or in preparation for the January contest wins the coveted "Crying Towel". All friends and interested parties are welcomed to come enjoy the evening with us.
- 19-20 ARRL International DX Contest CW. See Dec. QST page 125 for rules.
- 21 Washington's Birthday (Observed).
- 26 Annual AARG Hamfest and Computer Show at the Lebanon Fairgrounds in Lebanon, Pa. Talk-in on 146.04/64. VE will be given.
- May
- 14 Ladies Night at the Mill Race Inn. Mark your calendar.

TID BITS

The January 1994 issue of QEX has an article on a 2 meter amplifier by Zach, KH6CP. It's a "nearly complete" article - you provide the input and output matching networks.

Congratulations to Len, N3NGE and wife for a new son, Joshua, born Saturday afternoon of the January contest.

The Dec93/Jan94 issue of the NTMS newsletter "Feedpoint" has articles using N connectors on Cellwave 1/2 inch coax by John, N5GO, Notes on using HP 432 Power meters and HP 478 Power Sensors by Paul, N5GO, Results of the Microwave Update 93 NF Measurement competition, Modifications to commercial 10 GHz boards for use as 1 watt 10 GHz transverters by Kerry, N6IZW (boards are available, contact Kerry at 619-462-2220 evenings or weekends), and a +12 volt to -20 volt converter for powering up microwave sources by Greg, KF5N.

NEW MEMBER

Ken Bromberger, N3PER
2824 E. Foxchase Circle
Doylestown, PA. 18901

Job Available

Chuck Steer, WA3IAC, reports that his employer, Flan and Russell, a leading designer of antenna positioners and controls is looking for an electronics technician. Contact the personnel department of Flan and Russell, Horsham, Pa or call Chuck at 215-335-0637.B

(Send all ads to the editor)

FOR SALE: Henry 2002 2 Meter 2 KW Amplifier or trade for an Icom 6 Meter 100 watt all mode rig or for a Yaesu FT-6200 450/1.2 FM Dual Bander or for \$500.00. 80 ft and 103 ft 7/8 inch hardline, \$100.00 each. Two DEM 1295 Loop Yagis and a 4 bay stacking harness, \$60.00. Contact Marty, WB2GEZ at 609-758 8865.

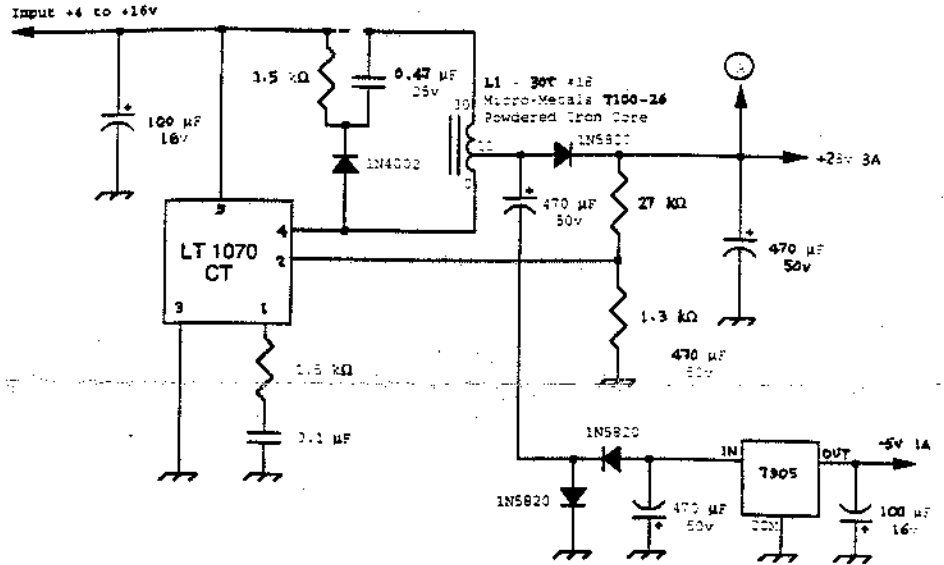
FOR SALE: Two VHF Engineering Synthesizer kits (50% completed) for either 2M or 220. Convert your old crystal rig to a synthesized rig \$30.00 each OBO. Contact Harry, W3IIT at 215-584-4846.

For Sale to lowest Bidder: three 48 inch high roll around racks, top 18 in. sloping at about 15 degrees. Contact: Pat, WB3DNI, 215-672-5289

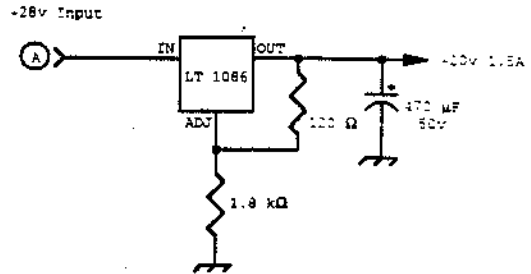
EQUIPMENT WORKSHOP s CONTINUE

With the success of the build/test/fix sessions held last fall, it has been decided to get them going again just after the January contest. The next one is tentatively scheduled at the end of February. the exact date has not been established but will be announced over the nets. The sessions will carry on with any projects that didn't quite get completed and will include fixing the items that failed during the contest. Lots of expertise and even parts will be available. Signal generators and spectrum analyzers will be available for ALL of the VHF through the Microwave bands. If you need a ride or directions get on the repeater or call Gary at 215-539-6409.

WA6CGR - 5/19/93
DC/DC Converter
Input = +4 to +16v
Outputs:
+28v @ 3A
+20v @ 1.5A
-5v @ 1A
 $\eta = 65\%$



From NMTS FEEDPOINT



CHEESEBITS SUBSCRIPTIONS

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

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February 94

Send to: SUBSCRIPTION/ADVERTISING MANAGER:

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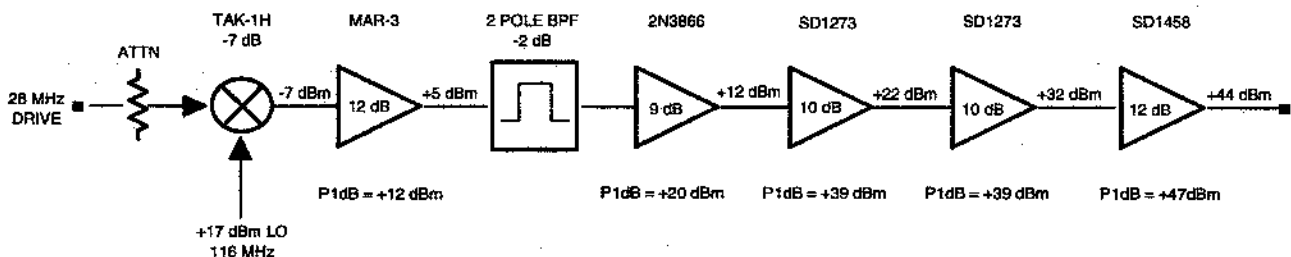
A LINEAR 144 MHZ TRANSMIT CONVERTER

Circuits for a complete "crunch proof" 144 MHz receive converter have been presented in Cheesebits over the past several months. A companion transmit converter will be presented to complete the transverter. The 144 MHz transverter is a companion to the 50 MHz version previously published in Cheesebits. A block diagram for the transmit portion is shown below. This design is similar to the 50 MHz version except that additional stages were needed to make the desired power level at 144. All stages are stable into a 10:1 VSWR, and considerable effort went into making the design as linear as possible for good sounding SSB quality. Power output is a conservative 20 watts, a convenient drive level for a grounded grid or solid state amplifier. If less output power is desired, simply attenuate the 28 MHz drive signal as required. Since circuit construction is no more difficult than at 50 MHz, this design should also make a good "first time" project.

Each amplifier is operated at better than 3 dB below it's 1 dB compression point in order to maintain excellent SSB linearity. Additionally, biasing was chosen for optimum linearity using a two-tone intermodulation distortion (IMD) test. Feedback is used in each stage for good stability and input match.

Looking at the block diagram you'll note that a Mini-Circuits TAK-1H mixer is used. This is a high level double balanced mixer requiring a 50mW (+17 dBm) LO power for extremely good linearity. The higher LO power of the TAK-1H allows a greater IF drive level to be used while maintaining low distortion; consequently fewer gain stages are needed following the mixer. The TAK-1H is similar to the old SRA-1H mixer, but with improved performance. An SRA-1H can be used if you have one in your junk box.

All gain stages with the exception of the final amplifier are biased class A for excellent linearity. For simplicity the first stage uses a Mini-Circuits MMIC amplifier. A 2 pole bandpass filter follows to reject LO and image frequencies. The second gain stage uses a 2N3866 biased at 40 mA for +12 dBm output. Two SD1273 stages biased at 150 mA bring the power level to +32 dBm. The final stage is an SD1458 TV linear transistor biased class AB at 300 mA for greater than 20 watts output. A lowpass filter (not shown) may be used following the final stage to further suppress harmonics.



WB3JYO 12-93

DC / DC Converter Parts List - WA6CGR 5/25/93

Resistors:

- 1 - 120Ω 1/4 Watt
- 1 - 1.3 kΩ 1/4 Watt
- 2 - 1.5 kΩ 1/4 Watt
- 1 - 1.8 kΩ 1/4 Watt
- 1 - 27 kΩ 1/4 Watt
- 1 - 2.7 kΩ 1/2 Watt

Capacitors:

- 4 - 0.1 μF Monolithic Ceramic 0.2" Spacing
- 1 - 0.47 μF 35v Monolithic or Tantalum
- 2 - 100 μF 16v Electrolytic
- 4 - 470 μF 50v Electrolytic

Inductors:

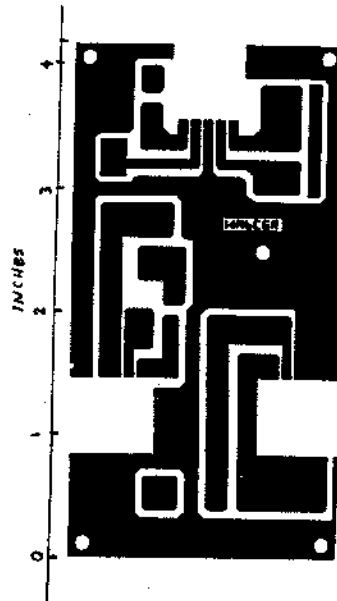
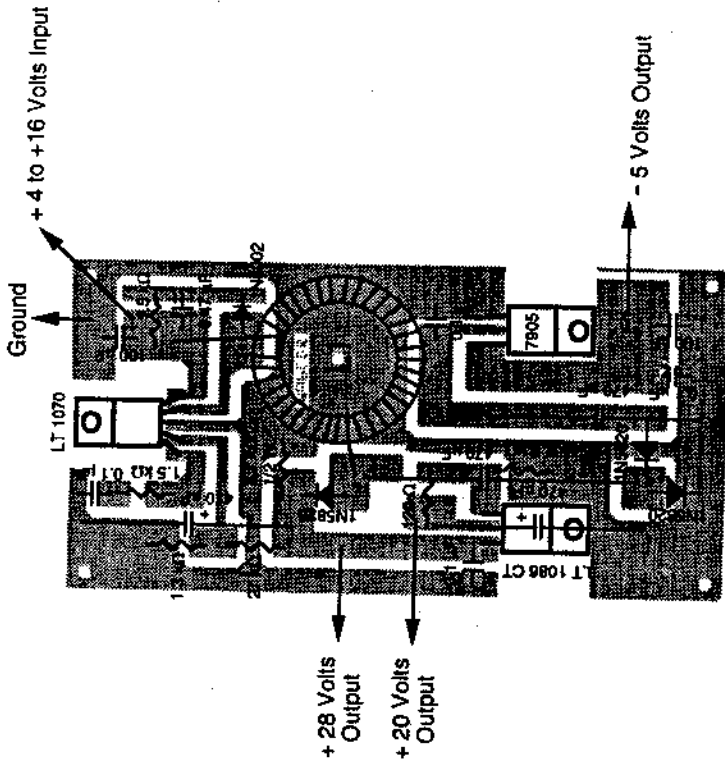
- 1 - 30 Turns #18 on T-100 - 26 Core - Micrometals, Tapped at 11 Turns

Semiconductors:

- 1 - 1N4002 Diode
- 3 - 1N5820 Diode
- 1 - LM 7905 -5 Volt Regulator
- 1 - LT 1086 CT Adjustable Low Dropout Regulator
- 1 - LT 1070 5A Switching Regulator

Misc:

- 1 - Printed Circuit Board



From NMTS FEEDPOINT

WA6CGR
DC - DC Converter
Parts Locator
Input +4 to +16 VDC
Outputs:
+28 VDC @ 3 Amps
+20 VDC @ 1.5 Amps
-5 VDC @ 1 Amp

5/25/93

THE AMERICAN RADIO RELAY LEAGUE, INC.

INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

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January 13, 1994

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QST-

OFFICIAL JOURNAL

To: Mt. Airy VHF Radio Club
Rochester VHF Group

At the mid-November meeting of the ARRL Board's Membership Service Committee, I called attention to KD5RO's resignation as Atlantic Division representative on the Contest Advisory Committee and provided copies of his letter explaining why he resigned. Two members of MSC are serious VHF operators themselves.

Although it was evident from the ensuing discussion that the rover issue is more of a regional than a national controversy among VHF competitors, MSC members agreed that a resolution of the matter was overdue from CAC. I was assured by those in responsibility that action would be taken to get CAC to front-burner this subject.

The enclosure is a copy of an ARRL bulletin that represents a step forward. Realizing that both clubs have already commented to CAC on the rover issue, I still hope that you will comment on this specific proposal. If it does not seem to cover all the bases, will you please suggest specific language that will close the loop holes?

The address for your comments is shown in the bulletins. Comments will be circulated to the entire CAC.
73,

Kay Craigie WT3P

encl 1

From : KD3OA @ KD3OA.PA.USA.NA
To : QST @ ARL
Date : 940113/0240
Message ID: BF 32222@KD3OA, 970@WB3JOE \$ARLB005
Subject : ARLB005 CAC STUDIES ROVERS
Path : N3ETIK3RLI!KD3OA

ZCZC AG69
QST DE W1AW
ARRL BULLETIN 5 ARLB005
FROM ARRL HEADQUARTERS
NEWINGTON CT JANUARY 12, 1994
TO ALL RADIO AMATEURS

CAC STUDIES ROVERS

THE ARRL CONTEST ADVISORY COMMITTEE (CAC) IS STUDYING THE SCORING FOR ROVERS IN VHF CONTESTS. IN PARTICULAR THEY ARE LOOKING AT THE IMPACT OF ROVER SCORING ON CLUB COMPETITION IN THE JANUARY VHF SWEEPSTAKES. THE COMMITTEE INVITES INPUT ON THE FOLLOWING PROPOSAL:

"ROVERS ARE NOT ELIGIBLE FOR CLUB AGGREGATE COMPETITION. ROVERS MAY NOT ENGAGE IN THE PRACTICE OF GRID CIRCLING, WHICH IS DEFINED AS THE PREMEDITATED (NOT COINCIDENTAL) ACT OF TWO OR MORE ROVER STATIONS GOING TO THE SAME LOCATIONS AT THE SAME TIMES AND WORKING EACH OTHER, REGARDLESS OF WHETHER OR NOT THEY WORK ANYONE ELSE. THIS SPECIFICALLY INCLUDES FAMILY MEMBERS TRAVELING IN THE SAME OR DIFFERENT VEHICLES."

THE FOLLOWING MAY ALSO BE INCLUDED IN THE PROPOSAL:

"ROVERS WHO ARE SUSPECTED OF GRID CIRCLING WILL BE GIVEN A CHANCE TO DEMONSTRATE THEY WERE NOT BEFORE THEIR LOGS ARE DISQUALIFIED."

COMMENTS MAY BE SENT TO: ARRL - CAC, 225 MAIN STREET, NEWINGTON, CT 06111. EMAIL COMMENTS MAY BE DIRECTED TO INTERNET ADDRESS:
CAC @ ARRL.ORG
NNNN

Relayed from W1AW to packet with BID \$ARLB004 by KD3OA@KD3OA.PA.USA.

[End of #:970 @:WB3JOE (#:32222 from KD3OA @ KD3OA.PA.USA.NA)]

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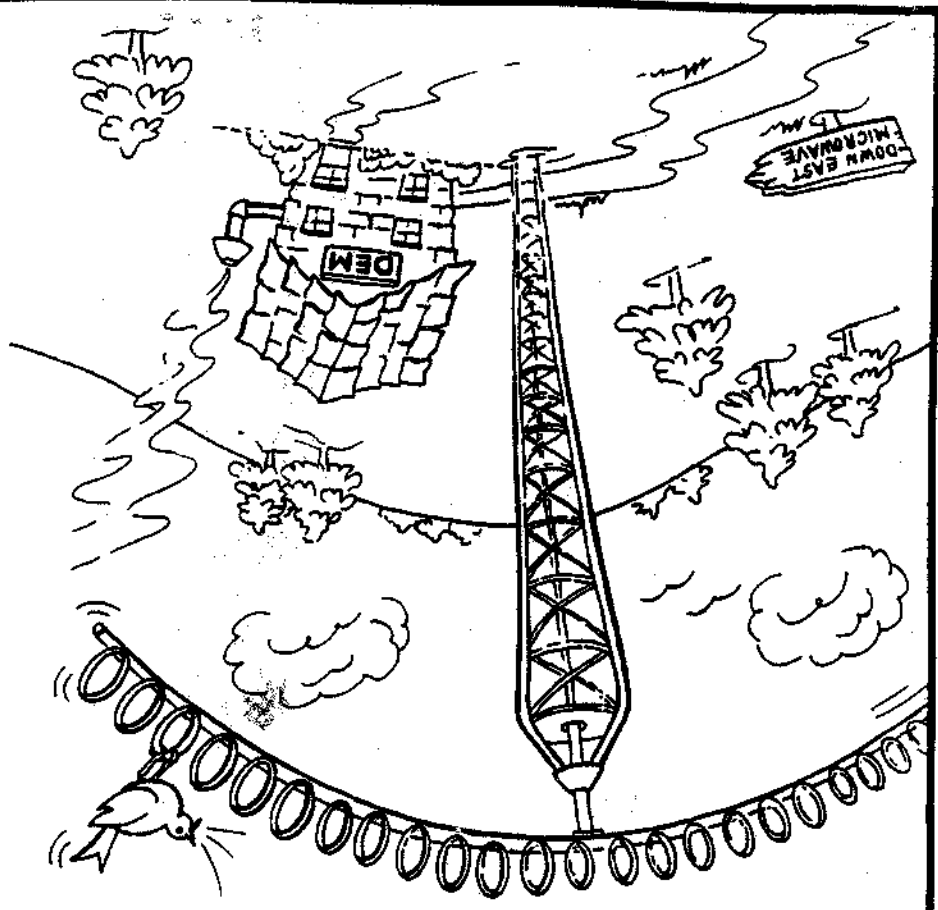
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