



MT. AIRY VHF RADIO CLUB, INC.

PACK RATS'

CHEESE BITS

CLUB CALL: W3CCX



MT. AIRY VHF RADIO CLUB, "THE PACK RATS", PHILADELPHIA, PA.
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

W3CCX

ARNS

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, K3HUV, 2013

VOLUME XXXVI

November 1994

Number 11

THE PREZ SEZ

October's meeting featured a guided tour slide presentation of two of our member's stations. Dick, N3AOG showed us some of his station's equipment secrets including homebrew transverters for 50 Mhz thru 5760, a fine collection of Travelling Wave Tube Amplifiers, and some rather unique tower maintenance techniques. It's amazing just how much Dick has been able to squeeze into a rather small shack! A second slide presentation was given by our VP Gary, WA2OMY. Just a couple of years ago Gary literally doubled the size of his garage, adding a second floor and built himself a top-notch operating shack and R&D facility. One unique feature of Gary's station is that he uses mast-mounted preamps on all bands above 432 and hasn't blown one yet! I'd probably say that his shack looks more like mine in that a half finished project can always be found somewhere. Maybe that's why I always like to visit Gary's... I know I'm not the only one with that problem. I think it's always interesting to see how other Packrats set up their shacks and tackle certain problems. I can usually learn something to apply to my own station. Why not take some slides of your station to share with us at a future meeting?

Now that the frost is on the pumpkin each morning it's probably time we start to focus a little more attention on that important club event that's just around the corner - The January Contest! Last month I talked a little about setting goals for yourself. I'm sure that if you pulled out the old January logs you'd probably remind yourself that there's always room for improvement in your station. Maybe you need a little more power on one of the lower bands to increase your QSO count, perhaps you've been thinking about getting on that new high frequency band for some time now, or maybe you need to do that antenna work you've been putting off. What I'd like to stress is that we all have to take a serious look at what we're doing, or possibly at what we're not doing and then figure out how we can make some improvements.

One of the truly great things about Packrats is that they're ready to help. All you have to do is ASK. I recall some time ago when I first got started in VHF and joined The Packrats I received more help than I thought was humanly possible.

Continued on page 4

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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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PACKRAT 222 MHz REPEATER - W3CCX/RPTR

222.98/224.58 MHz, Churchville, PA

OFFICERS: 1993-1994


PRESIDENT: WB3JYO, Paul Drexler
VICE-PRES: WA2OMY, Gary Hitchner
REC. SECR: WA3AQA, Walter Zumbach
TREASURER: WA3JUF, Dave Mascaro
COR. SECR: N3AOG, Dick Comly
DIRECTORS: WA3AXV, Ron Whitsel (1 YRS)
WB2YEH, Bob Fisher (1 YRS)
N3ITT, Alan Sheppard (2 YRS)
WA3NUF, Phil Migulez (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 610-630-1875
JUNE CONTEST: WB3DNI 215-672-5289
HAMARAMA: WB3JYO 609-538-1687
VHF CONFERENCE: KB3XG 610-584-2489



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OST

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Calendar of Coming Events -November 1994

Nov.

5 Predicted peak of the **Taurids meteor shower** at 0656 UTC.

5-7 **ARRL November CW Sweepstakes**. See Oct. QST, page 125 for rules.

6 **Build Session** at the QTH of Gary, WA2OMY. Call Gary at 610-539-6409 if you're coming.

7 Check into the 6 Meter Net on 50.150 MHz at 7:30 PM EST.

7 Check into the 903 MHz Net on 903.100 MHz at 10:00 PM EST.

8 **Election Day**

10 **Packrat board of directors** meeting at the QTH of Phil, WA2NUF.. Call 215-675-4277 for directions. All interested parties invited.

11 **Veterans Day**

12 Central Pennsylvania Repeater Assn **Hershey Hamfest** at the Hershey Armory, 28th Infantry off 422 on Baum Ave., Hershey, PA. TI on 145.47(-) and 145.29(-). VE Testing.

14 Check into the 2 Meter Net on 144.150 MHz at 8:00 PM EST.

14 Check into the 1296 MHz Net on 1296.100 MHz at 10:00 PM EST.

17 Predicted peak of the **Leonids meteor shower** at 1624 UTC.

17 **Regular meeting of the Mt. Airy VHF Radio Club** at the Southampton Free Library on Street Rd. in Southampton, Pa. The scheduled speaker will be Ron, WA3AXV, on the GPS satellite system. All VHFers are encouraged to come and enjoy the evening with us. You need not be a member. Do you need to attend this meeting to qualify for club contest minimum attendance? Come anyway and bring a friend.

19-21 **ARRL November Phone Sweepstakes**. See Oct. QST, page 125 for rules.

21 Check into the 220 MHz Net on 222.125 MHz or 224.58/R at 8:30 PM EST.

24 **Thanksgiving**

28 **First Day of Chanukah**

26-27 **Second Weekend of the ARRL International EME Competition**. See Sept. QST page 128 for rules.

26-27 **CQ World-Wide DX Contest - CW**. See Oct. QST, page 126 for rules.

28 Check into the 432 MHz Net on 432.110 MHz at 9:00 PM EST.

28 Check into the 903 MHz Net on 903.100 MHz at 10:00 PM EST.

NOVEMBER EQUIPMENT WORKSHOP

With the success of the build/test/fix sessions held last fall, it has been decided to get them going again. The next one is scheduled for Sunday, 5th of November. The session 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 610-539-6409.

THE PREZ SEZ contd. from page 1

I was on maybe one band at the time but I was interested in getting a real VHF station together and the only way I could afford to do that was by building my own equipment. There was much to be learned - building equipment (and making it work), constructing antennas, tower work, and assembling a decent station. All this was possible only thru the support and assistance I received from other club members. Within a relatively short time I was on several of the VHF/UHF bands and in the years to follow I continued to receive help from Packrats as I continued to upgrade my station. And it's just as rewarding to be able to help others from the experience we've gained over the years. Maybe you've had the same experience that I've had. One of the most productive ways for us to help each other with all these projects has been the VHF Building Blitzes at the QTH of Gary, WA2OMY's. The first Fall Building Blitz will take place at Gary's on Sunday, November 6th, followed by another session near Thanksgiving. Gary and a team of technical gurus will be ready to build, tune, debug, or repair just about any project you bring. A number of the DownEast Microwave kits are being assembled right now by members in preparation of the event. Give Gary a call, we always seem to have a good time together. And remember, Packrats love to help other Rats, especially when it's contest time.

73, Paul Drexler, WB3JYO

JANUARY CONTEST UPDATE - PACKRATS UNDER SEIGE

By: AI, N3ITT

Yes, it's once again time for all good Packrats to come to the aid of their club. With the fiercest competition we've ever faced, it's up to every one of us to start to prepare for the January contest. Check out your equipment and see what needs tending to. Think of everything you can do to improve your contest effort. Consider what you can do to help others. Look and see what you can lend out. Don't hesitate to ask for help. Remember the build and troubleshooting sessions and our club cable purchase (see Packrat Dick, N3AOG). By now, you should have received your contest questionnaire, try to get it bck to me ASAP, if you havn't already.

This year will be tough. With the clubs honor at stake, it's up to you to do the most you can. Talk it up with other hams, tell everyone you meet or talk to on the bands to get on in January. Consider doing a presentation at another club's meeting on VHF contesting.

Well, that's it for now. Please contact me if you need or can offer help - Let's go get 'em!!

73 and GL, AI, N3ITT

HAMFEST UPDATE

By: Paul, WB3JYO

Another successful hamfest was held at the Bucks County Drive In on Sunday, October 2nd. Mother Nature cooperated with good weather and our attendance was up this year to over 1400. Overall, the operation was nearly flawless thanks to the planning and hard work of all involved. The following Packrats participated at the Drive In:

WB3JYO, WA3JUF, KB3IB, W3KKN, WA3EHD, K3EOD, WB3DNI, WA2OMY, N3AOG, N3EXA, WA3NUF, WB3YEH, W3GXB, K3MFI, N3OZO, W3GAD, N3ITT, N3CX, N3NGE, N3GSA, WB3KRW, N3DEQ, K3PHY, WA3IAC, WB8ZAR, W0RSJ, WA3YUE, AND N3PER (did I miss any?)

The buyers door prize, a \$300 gift certificate to Hamberger, Inc. was won by Bill Vose. The vendor's door prize was won by Bob Rawling, a 144/440 MHz Misland dual band vertical antenna donated by Pete, KT2B.

SWAP SHOP

(send all ads to the editor)

Free: Polarad TSA Spectrum Analyzer, 10 - 1000 Mc with a spare mainframe. Call Harry, W3IIT at 610-584-4846.

Wanted: Student or better microscope, 600X, with turret-mounted objectives, etc. Also, a 6 inch or better reflector telescope with eyepiece, optics, etc. And a 3 ft. dish with a f/D of .45 through .6. Call David, N3CX, at 215-679-7293 (H) or 215-483-2030 (W).

For Sale: Heath SB401, SB301, HM102, wattmeter, and manuals, \$150.00. HP608 RF Signal Generator, 10 - 420 MHz, \$60.00. Contact Gary, WA2OMY at 610-539-6409.

Wanted: 2 Meter multimode rig, 10 to 25 watts output. Call David, N3CX, at 215-679-7293 (H) or 215-483-2030 (W).

For Sale: AIL Model 74 Automatic Noise Figure, needs some work. Includes UHF, 07049 and 07050 waveguide no noise sources and HV supply and manual., \$100 OBO. Second UHF source for \$15.00. Call Harry, W3IIT at 610-584-4846 or hbrown@resd.vf.ge.com.

ARRL Bulletin 85, October 25, 1994 - FCC proposes reallocation

The FCC has adopted a Notice of Proposed Rule Making to convert a block of spectrum from federal government to commercial use, including two UHF bands shared by Amateur Radio on a secondary basis with the government. The proposal would allocate 2390 to 2400, 2402 to 2417 (both shared by amateurs), and 4660 to 4685 MHz to the Fixed and Mobile Services. The FCC is required by the Omnibus Budget Reconciliation Act of 1993 to adopt rules for such a reallocation by February 10, 1995. The FCC said it received a number of responses to its Notice of Inquiry on the proposed reallocations, including formal comments from "the amateur community" (primarily the ARRL). More information was in October QST, on page 83.

HEALTH & WELFARE

We're sorry to report that the sister of Sylvia Stein, XYL of Harry Stein, W3CL recently died.

NEW PHONE NUMBER

KB3QM, Ron Allen, 302-947-9573

ADDRESS CHANGE

Al Whiting, 4X4/K3BRS
DCMO
PSC 98, Box 100
APO AE09830

TID BITS

The Oct. 94 issue of QEX has the 2nd part of Paul Wade, N1BWT's, article on Practical Microwave Antennas.

Tentative 1995 ARRL Contest Calendar

By: Billy Lunt KR1R

JANUARY

1 Straight Key Night
7-8 ARRL RTTY Roundup
21-23 ARRL January VHF Sweepstakes
28-Feb 5 ARRL Novice Roundup

FEBRUARY

13-17 School Club Roundup
18-19 ARRL International DX Contest, CW

MARCH

4-5 ARRL International DX Contest, phone

APRIL

17 (Mon) 144-MHz Spring Sprint
25 (Tues) 222-MHz Spring Sprint
3 (Wed) 432-MHz Spring Sprint
13 (Sat) 902-MHz Spring Sprint
13 (Sat) 1296-MHz Spring Sprint
13 (Sat) 2304-MHz Spring Sprint
20-21 (Sat-Sun) 50-MHz Spring Sprint

JUNE

10-12 ARRL June VHF QSO Party
24-25 Field Day

JULY

8-9 IARU HF World Championship

5-6 ARRL UHF Contest
19-20 ARRL 10-GHz Cumulative Contest

SEPTEMBER

9-11 ARRL September VHF QSO Party
16-17 ARRL 10-GHz Cumulative Contest

NOVEMBER

4-6 ARRL November Sweepstakes, CW
18-20 ARRL November Sweepstakes, phone

DECEMBER

1-3 ARRL 160-Meter Contest
9-10 ARRL 10-Meter Contest

HINTS & TIPS FOR TOWER MOUNTING

by: FRED STEFANIK, N1DPM

- Use a good quality PVC or Fiberglass (more \$\$) weatherproof electrical enclosure. These are made to go outside and survive the elements. **DO NOT USE STEEL!!!**
- Leave an air passage open in the bottom for two reasons:
 - 1) Allows temperature, pressure, and humidity to equalize.
 - 2) Allows drainage in the case of a catastrophe!!**CAUTION:** Keep the passage small to prevent a bee condominium!!
- Mount all boxes and antennas so they are accessible.
- Mount the boxes "lid up" for serviceability. You don't want to open up the box to repair something up there and have gravity suck the parts out of the box!!
- Mount the box so it can be easily disconnected and dismantled in order to service it in the shack.
- Use an "on-board" regulator system or a remote sensed power supply to keep the voltage stable.
- Chart your frequency vs temperature so you know where you are.
- Meter your power source in the shack, both voltage and current. This serves as a good output indicator.
- Use circulators on the power amplifier output if they are available to protect the transmitter from high vswr (ice /rain) on the antenna.
- Record your receiver static "S-Meter" reading as a standard. This will allow you to tell if something in the system receiver died.
- Add power and preamps so you can work the band dry!!!

18th Annual Mid-Atlantic VHF-Conference 1 October 1994

By Gerd Schrick, WB8IFM

I was pleasantly surprised to find that this year's Packrats Conference was taking place very close to the original site where it was for many years.

The conference had moved to New Jersey a few years ago and coincidentally I had not been able to attend since. They came back because fewer people showed up, proving again: if you have a good thing going, don't change it. Anyway, this event took place in a relative small meeting room at the Days Inn in Horsham PA, on the other side of the Drive-In, where the big flea market is the following day (sunday) and closer to the turnpike.

With about 75 hams attending the room was too small to feel comfortable. Other than that the event was well organized and interesting presentations were offered. It is not easy to come up with good material, and one has to congratulate the organizers and the presenters for a job well done. This conference does not offer proceedings but most presenters had some "handout".

Following is a brief description of the presentations:

Dielectric Resonance Filters. By Rafi Herstig K&L Microwave

These "ceramic" filters are smaller but almost as good as coaxial type cavity filters. Traditional LC-filters suffer from lossy coils, however the ceramic in the filter acts as a low loss transmission line. These filters can be built for frequencies between 200 and 5000 MHz. At 1 GHz an unloaded Q of 1000 can be achieved. The company passed out a computer diskette with a filter design and selection program. Selecting your parameters, the program immediately indicates the influence and changes on other parameters in graphical and numerical form. If you have the final version, a part number by which such a filter may be ordered appears. It takes 6 to 8 weeks and between \$ 50.- to 90.- to obtain such a filter. If you like a diskette you may want to contact: K&L Marketing, 408 Coles Circle, Salisbury MD 21801, or Tel. (410)749-2424, Fax 749-5725.

Uniden HR-2510 For Transverter Applications. By Chris Fagas, WB2VVV

With just a few parts and some minor surgery you can adapt this inexpensive 10m transceiver (it can be had at flea markets for \$100 to \$150) to get on Vhf with a transverter. Chris figured out how to drop the power to the low level required for the transverter, how to bypass the input circuitry (the infamous diode controlled IMD generator) and to add a reed relay (from Radio Shack) and transistor for TR-switching. He will also tell you (on request) what to do to extend the frequency range to cover a full 4 MHz instead of the 1.7 provided. Chris distributed an 18 page handout and I am sure he would mail you one for a couple of bucks to cover the cost of copying and postage. Here his address: 68 Kinderkamack Rd. Park Ridge NJ 07656.

Understanding the GPS System. By Ron Whitsel, WA3AXV

From his work experience at a Government Agency and as an avid boater Ron gave an excellent technical and operational run down on GPS. Although accuracy of GPS is the best so far of all

present and previous navigation systems (10m, intentionally reduced to 100m for civilian use), repeatability is not one of its strengths as it is in LORAN. And even at the low prices of the GPS receivers LORAN is still less expensive and provides higher relative accuracy and Ron recommends it for boat or plane. The bad news is that the Coast Guard is planning to shut down LORAN to save money. If you are a user or otherwise like to see the LORAN system retained let the authorities and your congressman know this. Ron passed out copies of his slide presentation (30).

Tower Mounting SHF-Transverters. By Fred Stefanic, N1DPM
Fred showed how his station evolved with better results each time. He started with all the equipment in the shack and more or less expensive cables running to the antennas to eventually mounting not only LNAs but transverters, PAs and relays on the tower right next to the antennas. He is using PVC electrical enclosures and has presently 903, 1296, 2304, & 3456 MHz covered, getting "more bang per buck" with this technique. Fred passed out a sheet with tips/ does & don'ts for tower mounting.

Homebrew Waveguide. By Dick Comly, N3AOG
Dick, described as the "Packrats' resident machinist/aluminum sculptor" takes the old fashioned approach. He keeps the equipment in the shack and uses the best possible feedline which happens to be waveguide. He describes his approach for 5760 MHz using standard rectangular aluminum profile. He discussed transitions and bends. His own run is about 35' total and includes a bunch of 9913 coax jumpers and transitions. He stayed away from bends thus far. Total loss is 4.5 dB. An 8 page "Waveguide Primer" he passed out describes his technique.

Building A Serious EME Station. By Tom Dinyovsky, KB2AH
The emphasis is on "serious"! Tom, a carpenter by trade, really goes all out. But he would have had a hard time w/o a sponsor and a nearby junkyard. The sponsor, a plumber, provided the steel. 7000 Lbs of it went into his 34' dish. With the steel taken care of, one of the "larger" sums was spent on a plastic garbage can (his wife refused to let him use the house can!). His primary frequency is 1296 MHz, where the dish exhibits 40 dB of gain (10,000!) and a beam width of about 1 degree. He also works 432. Tom played a tape of a QSO he had with a Finnish station that morning. The (voice)signals were 55 as good or better than OSCAR 13! Tom's skill in building this monster antenna also shows in his operating techniques. He manually controls the dish and uses no sequencer for TR switching, this requires a good deal of coordination. TV-cameras help him to read the AZ/EL dials and a bore site camera to sight the moon when there are no clouds. Tom explained a lot by showing color slides. He is not the type to sit long enough to write about his station. So the presentation was "IT". He passed out QSLs with a nice photo of his QTH.

ANOTHER VIEW ON ROVER RULES IN VHF CONTESTS

The following view is taken from an editorial by Doug, W2CRS, editor of the Rocky Mountain VHF+ Newsletter. Doug describes how the new Rover Rules remove the incentive for Rovers to Rove under the new contest rules.

MORE on the NEW ROVER RULES or HOW TO WIN THE NEW ROVER CLASSIFICATION-
An Editorial by Doug Allen, W2CRS

I was very pleased to meet CQ columnist and author Joe Lynch, N6CL, and ARRL Assistant Technical Editor Zach Lau, KH6CP/1, at the Microwave Update. Both were very knowledgeable about the new rover rules and controversy. Joe said that he had heard a lot of criticism of the new rover rules from all over the country and that the CQ VHF contest would stay with the old rules.

Zach was very sympathetic to the "problems" caused by the new rules and, in fact, had himself proposed "new rover rules" that he believed were a much better compromise. Zach explained that the main reason for the change was complaints from many club members who participate in the January club competition (the ARRL VHF Sweepstakes). Rover scores, they complained, were so high, and so out of line with other single op and even multiop scores that they unduly influenced club scores. Because there are more contest participants in January who are club entrees than all other participants combined, and they complained, the rules were changed. In brainstorming with Zach, I suggested that rover scoring remain the same, but that the rover scores not be included in the club score as rovers have already contributed to the club scores immensely by working club members (and hopefully others). This change would seem to eliminate the "club score problem" without giving rovers the disincentive to rove (if they want to be competitive).

Ironically, this was essentially the "new rover rules" that Zach had presented, but Emil's "new rover rules" won the day. Zach was not very optimistic that further changes would be made in the rover rules, at least in 1995. Upon further consideration, I remain convinced that the new rules that Zach had presented are the best solution. However, I urge our readers to spend a few hours studying the new rules and how they will affect roving and contesting in your area.

I have spent many hours studying the impact of the new rules and discussing them with dozens of VHFers. The new rules look innocuous at first glance, but fundamentally change roving by virtually eliminating it as a competitive, multi-grid contest expedition. With the new rover rules adopted, rovers will score best by operating at good VHF locations very near the most densely populated areas in the minimum number of grids- two! Being near densely populated areas, they will come to rely on FM for a major part of

much of the excitement of VHF contests be eliminated, but all scores, single op, multi-op, etc., will be significantly reduced, especially in those areas, well over half the country, where rovers have contributed in a very large way to scores. And with less excitement and lower scores, there will be less participation. And with less participation, lower scores still.

Now, here is what I would do to win the new rover classification. In January, I would operate Saturday from a high spot in north-eastern NJ (line of sight to NYC). For Sunday, I would move to a different NJ (or perhaps NY) grid still high and line of site to NYC. I would concentrate working grids on SSB/CW, but spend most of my time on FM simplex working every HT, mobile, and fixed station possible. For the June and September contests, I would operate Saturday the same as in January and, if ambitious, operate Sunday from Slide Mountain in the Catskills, again working as many grids as possible on SSB/CW, but spending more time racking up a tremendous FM score.

I have purposely used eastern seaboard locations because no other part of the country is competitive using the new rover rules (or the old ones- and that is not an issue) due to population densities and number of grids with VHF activity. Also, I operated VHF contests from the eastern seaboard for 35 years, and I am very familiar with the area! Here in Colorado, I would operate from Mount Evans (DM79) on Saturday and Pikes Peak (DM78), Sunday (in winter Daniels Park DM79 and Palmer Park DM78), again pursuing grids on SSB/CW and Qs on FM. Colorado Springs and Pueblo are also in DM78 and Denver is in DM79 so these are not sought after grids! In fact, without rover grid expeditions there are only 12 grids within 400 miles of Denver with SSB/FM VHF activity so my rover contesting would very much concentrate on the one resource we have, lots of simplex FM activity.

As I write this, I realize I know how to win the new rover category! With only two grids to activate, I can set up just as I have for portable operation in the past. It sure makes you guys who invested thousands of dollars in "state-of-the-art rover mobiles" look foolish. The problem is, I don't want to spend the majority of my time operating FM in this chicanery called a rover class. And after the excitement of "chasing rovers" as a single-op entrant, sitting in front of a radio day and night listening mostly to white noise (or instead fishing for FM simplex contacts) does not sound very appealing, either. VHF contesting has been the most exciting part of amateur radio for me since 1958. Maybe it will be again, but I don't know.

FOR SALE

CONTACT STEVE SIMONS KF6AJ
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- | | | | | |
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| J) | YAGI AARRAY 4218XL | 144 MHz | 6 X 18 Elements | Cushcraft - power divider available |
| K) | HELIX | 1 5/8" | 1 ea 150' 2 ea 75' | with connectors |

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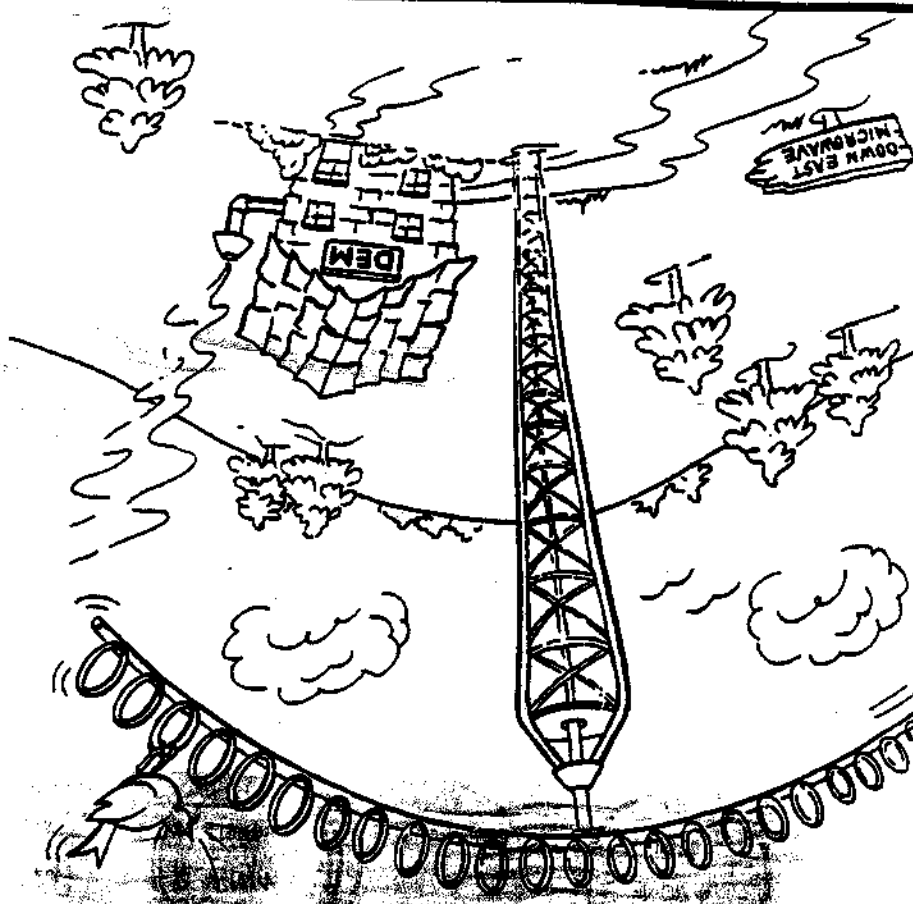
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