

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

NOVEMBER, 1985

NUMBER 11

THE PREZ SEZ

The Pack-Rat weekend is behind us and proved to be one of the best ever. Thanks go to Gary, WA2OMY, our VHF Conference Chairman and Lee, K3MXM, our Hamarama Chairman for the excellent job they did in organizing the weekend.

We would like to thank W3BQY, Boyd McClaskey of the General Electric Company who gave an excellent dissertation on Phase Locked Loop Synthesis. Next months meeting will concern a subject important to us all in the Delaware Valley. K3ZKO, Ron Cohen will give a talk on lightning protection for amateur radio stations.

With the VHF Sweepstakes less than three months away, it's time to get those long overdue antenna projects completed. Our VHF Sweepstakes Chairman, Dave, N3CX, will be planning our strategy over the next few weeks. Lets give him our continued support.

Mike, WB2RVX

* * *

IN MEMORIAM

BENJAMIN GINDIN, K3ESL - SILENT KEY - SEPTEMBER 28, 1985

JOSEPH H. RUSHTON, W3YXF - SILENT KEY - OCTOBER 12, 1985

MAY THEY REST IN PEACE

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

SUBSCRIPTION RATE - \$3.00 PER YEAR

We operate on an exchange basis with other publications. Anything that is printed in CHEESE BITS may be reprinted, unless otherwise stated, provided that proper credit is given.

SWAP SHOP ITEMS - NO CHARGE

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

EDITOR:

W3CL, HARRY B. STEIN
2087 Parkdale Avenue
Glenside, Pa. 19038
215-887-5052

PUBLISHER/SUBSCRIPTION MANAGER:

K3GAS, DOC CUTLER
7815 New Second Street
Elkins Park, Pa. 19117
215-635-1078

PRINTER:

WB2VLA, DAVID POWER
609-882-1040

TYPIST:

WA3TEM, MARSHA LISSAUER

TRUSTEE OF THE CLUB CALL - W3CCX:

WA3AXV, RONALD WHITSEL
215-355-5730

AWARDS CHAIRMAN:

W2EIF, JOSEPH KILGORE
609-783-9478

CLUB HISTORIAN:

W3CL, HARRY B. STEIN

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
LOCATED IN CHURCHVILLE, PA.

OFFICERS: 1985-1986

PRESIDENT: WB2RVX, MIKE GULLO
VICE-PRES: WA2OMY, GARY HITCHNER
COR. SECY: W3CXU, JOHN ALLEN
REC. SECY: W3NSI, LYN ROWLAND
TREASURER: K3GAS, DOC CUTLER
DIRECTORS: WB2VLA, DAVE POWER (EX-OF)
N3CX, DAVE HACKFORD (2 Yrs)
WA3JUF, DAVE MASCARO (2 Yrs)
WA3AAJ, JIM WARD (1 Yr)
WB3IND, GEORGE McMAHON (1 Yr)



THE AMERICAN RADIO RELAY LEAGUE

OST

HUGH A. TURNBULL, W3ABC

Director, Atlantic Division

6903 RHODE ISLAND AVE.
COLLEGE PARK, MD. 20740

(301) 927-1797

1-302-478-2757

AMATEUR
and
ADVANCED
COMMUNICATIONS

"Gisele"
K3WAJ

G. B. WALLS

3208 CONCORD PIKE (RT. 202)
WILMINGTON, DEL. 19803



Pennsylvania Institute
of Technology

PAUL D. MERCADO

Chairperson, Drafting Design Department

(215) 565-7900

Rose Valley-Notre Dame Campus
800 Manchester Ave., Media, Pa. 19063-4098

FOR SERVICE CALL
215-670-0990
215-922-1111



MICHAEL McMACKIN

RESERVED ROOMS & BOARDING
BATHROOM INSTALLATIONS • ELECTRIC DRAIN CLEANING

1397 HULLTOWN PIKE
LIME SPRING, PA. 17036

7408 PARKSIDE AVE
4470890, PA. 19040

CALENDAR OF COMING EVENTS
Syllabus by Lee, K3MKM

NOVEMBER

- 2-3 ARRL November Sweepstakes, CW, Info: QST Page 88
- 2-3 ARRL International EME Competition, Part I, Info: September QST
- 4 Will Rogers Day
- 5 Election Day - Be sure to make your voice heard and get out and vote!!
- 6 Warminster ARC Meeting, 8 PM at St. Johns Luthern Church, Hatboro, Pa. Atlantic Division Director, Hugh Turnbull, Guest Speaker.
- 11 Veterans' Day
- 12 A total Solar Eclipse can be viewed from the South Pacific
- 14 Board of Directors Meeting, QTH: K3GAS, Doc Cutler, 7815 New Second St., Elkins Park, Pa. 19117. If lost call 635-1078. Directors and concerned members always welcome.
- 16 U.S. Navy Emergency Disaster Drill - Hams in the 5 county Phila. area asked to provide communications.
- 16-17 ARRL November Sweepstakes - Phone - Info: QST Page 88
- 16 Stateline Hamfest, St. Andrews School, 120 Washington Ave., Westwood, N.J. info: Fred, N2ATI (201) 664-5320.
- 20 Hey bunkie - are you having troubles with your mail - well just remember that the pony express ceased operation this date in 1861.
- 21 General Club Meeting - Southampton Free Library 8 PM. General Topic: Ron Cohen, K3ZKO will give a presentation on grounding and lightning protection for your station. A meet the speaker dinner at the Buck Hotel at 6 PM. The Mario Raffle, Frankie's Silent Auction, Free Refreshments. Bring your friends and radio associates.
- 23-24 ARRL International EME Competition, Part II, Info: Sept. QST
- 23-24 CQ World Wide DX Contest - CW
- 27 Warminster ARC VE testing at the Willowdale Elementary School, Warminster, Pa. Starts at 6:30 PM. Just Walk In!!
- 28 Thanksgiving Day

* * *

Special Note for Halley's Comet Watchers: On the 9th Halley's Comet passes upward through the plan of the earth's orbit but is still further out than Mars until the 29th. Around the 16th, the comet can be spotted in binoculars as a hazy patch of light with maybe a short dim tail, as it passes just south of the beautiful Pleiades star cluster. The mighty comet has its first close approach to the earth on November 29 (still about 58 million miles away) but will be much closer and stirred to brightness and great tail length next March and April.

* * *

COME TO THE NOVEMBER MEETING AND WRITE-IN A HOLIDAY GREETING FOR THE DEC. ISSUE OF CHEESE-BITS.

NEW PRODUCTS OF INTEREST TO HAMS

BY Lyn, W3NSI

1. NEW MODEL-MICROWAVE MODULE: A new line of MMTs will be arriving soon. These are 25 watt output units with Gasfet front ends. The new model cabinet has the RF fittings on the back and switches and VOX delay control on the front panel. Units will be produced for 144, 432 and 50 Mhz. I.F. frequency is 28 Mhz. Price \$325.
2. HT DOCKING BOOSTER: CMC Communications is the U.S. distributor for a line of docking boosters for various HTs available for 144 and 432 Mhz. To use the dock, the battery pack is removed from the HT and the HT is slid onto the dock, connecting the DC power. A coax lead then connects the HT into the booster and optional preamp. Output is 30 watts on the 144 and 20 watts on 432. Units are designed to be used with the HTs external mic and a hang up clip is provided for the mic. A clip on the back of the unit fits into the car window slot. Price \$150. 5479 Jetport Ind. Blvd. Tampa, Fla. 33614
3. VHF/UHF ANTENNA TUNING UNITS: Kenwood has a pair of match boxes designed to match a 50 ohm output transceiver to a 25-100 ohm line. The SWT-1 and SWT-2 are very small for use in mobile operation, where matching the 50 ohm T/R output will avoid having the protection circuit drop the output from the transmitter. Power is rated at 100 watts FM and 200 PEP SSB. SWT-1 144-148 SWT-2 430-450.

A REPORT ON THE CONFERENCE

By Gary Hitchner, WA2QMY

The turnout for the Conference this year was excellent with over 120 in attendance. I was also happy to see so many Pack-Rats there.

All the speakers were well received with interesting questions from the floor. One surprise of the day was to see Paul Drexler, WB3JYO presented with an award for the January Contest and the announcement of being a winner in the Mini Circuits Design Contest sponsored by the Microwave Journal. He received a computer as a prize.

I wish to thank Doc, K3GAS for helping with the registration; Wil, K3PHY assisted by Ken his son for the bartending chore in the hospitality suite on Friday and Saturday evenings. I also appreciated the support again this year provided by Dave, W3ZD.

The Saturday night banquet was enjoyed by all at the Warrington Motor Lodge. The buffet dinner was excellent.

The meal was followed by a slide talk given by Dick Frey, WA2AAU on the W2SZ/1 contest activity. See you all next year!!

VISITORS MEETING OCTOBER 17, 1985

W3BQY - Boyd McClaskey, Flourtown, Pa.
Elias Nenó, Glenside, Pa.
W3VIR, Bill Pawson, Holland, Pa.

N3JB - Al Bonck, Chalfont, Pa.
K3ESJ - Bill Jaxheimer, Doylestown, Pa.

APPLICATION FOR MEMBERSHIP

W3FEY, George Gadbois
141 Maple Lane
Lancaster, Pa. 17601
717-397-0158

K3ESJ, William Jaxheimer
241 Hillcrest Drive
Doylestown, Pa. 18901

PERIMETER PROTECTION SYSTEMS ON 6 METERS?

From The ARRL Letter, Oct. 10, 1985

In turning a Canadian company's petition for operation of a perimeter protection system into a novice of Proposed Rulemaking, FCC appears to have deflected a potential threat to the Amateur Radio Services at 50-54 Mhz. In the NPRM, General Docket 85-231, FCC responded to a request for a waiver of Part 15 at 50-88 Mhz by proposing 54-88 Mhz instead.

It all began with a bit of alphabet soup called "CTLFDS" and ended up "GUIDAR." "CTLFDS" stands for "coupled transmission line field disturbance sensor." Control Data Canada, Ltd. (CDC), developed one and called it GUIDAR. It's a system that can be used to provide security surveillance for prisons, and to protect high-risk sites such as nuclear power stations from terrorism, theft and vandalism. GUIDAR operates on a principle of guided radar whereby a detection zone is created between "leaky" or ported coaxial cables deployed around the protected area. The present GUIDAR system employs two parallel cables buried approximately five feet apart and nine inches below the ground. An RF pulse is transmitted into one cable; some of this energy is coupled via the ports (holes) in the outer conductor of this cable into the ground and air near the cable. Some of this energy is reflected by objects in the ground and discontinuities in the soil, and is coupled into the second, or receiving, cable. When a human or other large object crosses between the cables, the change in RF coupled from cable to cable is detected and triggers an alarm. Such systems may cover a perimeter up to 2 miles long.

On June 24, 1984, CDC asked FCC for a waiver of Part 15 of its rules to allow the operation of GUIDAR at 50-88 Mhz. (Part 15 is that part of the FCC Rules governing operation of unlicensed low-power communication devices. Familiar Part 15 devices include cordless telephones, 49 Mhz walkie-talkies, garage-door openers, etc. Such devices must not interfere with any other service; they must tolerate interference from other services.)

Why did CDC make a run at 50-88 Mhz? The aim was improved performance of its GUIDAR. CDC indicated that the ability of the system to detect actual intrusions and to ignore objects that could cause false alarms is affected by the frequency of operation. Below 30 Mhz, sensitivity of the system to humans drops dramatically. Operation above 100 Mhz increases the system's sensitivity to small animals, resulting in numerous false alarms; also, above 100 Mhz, signal loss in the cable is significant. CDC stated that such systems must operate somewhere between 30 and 100 Mhz.

CDC stated that the present rules in Part 15, Subpart F, allowing perimeter protection systems to operate in the range 40.66 to 40.70 Mhz, do not allow for effective operation of a system such as GUIDAR. GUIDAR uses a pulsed signal with a bandwidth of 2.5 Mhz. A pulsed signal is employed to allow determination of the exact location along a perimeter where intrusion has occurred.

CDC proposed 50-88 Mhz for GUIDAR. This range includes the amateur 6-meter band, TV channels 2-6 and radio astronomy and aviation at 72-76 Mhz. CDC contends that its perimeter protection systems can operate in the 50-88 Mhz range without causing interference to radio services on those frequencies.

In the NPRM, FCC said that CDC's reasons for selecting 50-88 Mhz, rather than 30-50 or 88-100 Mhz, were "unclear." Yet, "In view of the public benefits to be derived from improved security at facilities such as prisons and nuclear plants, we find it appropriate to accommodate such systems to the extent possible." Operation of CTLFDS on vacant VHF TV channels sits well with the Commission. But what about 6 meters? Said FCC, "We have reservations about also permitting these systems to operate in the 50-54 Mhz amateur radio band because these systems could extend for considerable distance around a large facility, thereby increasing the likelihood that an amateur transmitter could come in close proximity to some part of the system".

What has been proposed by the Commission is a set of standards for perimeter protection systems allowing for operating at 40.68 Mhz, 54-72 Mhz and 76-88 Mhz. For systems operating between 54 and 88 Mhz, strength of emissions is not to exceed 10 microvolts per meter at a distance of 30 meters - the same limitation placed on computers for use in residential areas. FCC carved 50-54 Mhz and 72-76 Mhz from CDC's original proposal: "Permitting operation on TV channels 2 through 6 should be more than sufficient, since this ensures that in any given area there will be at least two vacant TV channels on which a perimeter protection system could be set to operate." (CONTINUED ON PAGE 6)

SWAP SHOP

FOR SALE: Kenwood TS-700S; 2 mtrs, all modes with "P" modification w/ manuals \$350. Collins 75S3B rcvr and 32S3 xmtr with 561-F2 pwr/sply w/connecting cables plus manuals \$450. All prices firm - equipment in mint condition.

CONTACT: W2HX, BB Wentzel
318 Gardner Avenue
Trenton, N.J. 08618
Phone: 609-393-4823

FOR SALE: 3-19 el. Cushcraft 2 mtr. boomers \$70 each. All three for \$180.

CONTACT: Mike Gullo - WB2RVX
Phone: 609-768-4789 - Home
609-964-8040 - Work

FOR SALE: KLM-16 el 432 Yagi w/balun \$45. Cushcraft 220B - 220 boomer \$50.

CONTACT: WA2OMY - Gary Hitchner
Phone: 215-539-6409

FOR SALE: Midland 13-509 220 Mhz xcvr xtalled with 9 Delaware Valley Repeaters (includes Pack-Rat ktal) plus 3 simplex freqs. \$150.

CONTACT: K3VIT, Tom Jenkins
Phone: 215-836-4991

FOR SALE: Drake 2-C rcvr, \$100; Drake 2NT CW xmtr, \$100; and HQ-170 rcvr, \$125. All in good working condition.

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

* * *

COMMERCIAL ADS

FOR SALE: 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.

* * *

TLD BITS

Sunspot No. for September 1985 = 3.9. Smoothed No. for March 1985 = 18.

Congratulations to N3CX, Dave and Sylvia Hackford on the birth of a son David Trout Hackford, 2nd.

Two Pack-Rats, Dave Mascaro, WA3JUF and Bill Olson, W3HQT made the September Issue of Microwave and RF Magazine.

Our Arizona Pack-Rat Dick Boyle, K3IGX has been visiting the Delaware Valley. He attended the October board and regular meeting. He also managed to squeeze-in the Conference and Hamarama. Come again soon, Dick.

Art Abbott, KA2VHN won the Hamarama Raffle prize; the Icom 2AT. We will probably hear more from Art in the future.

N3CX, Dave Hackford is the January 1986 VHF Sweepstakes Chairman. You will be hearing from him soon. Get ready!

Boyd McClaskey, W3BQY of the General Electric Co. gave an excellent presentation on frequency synthesis and phase locked loops to a full house at the October meeting. Lots of questions from the floor.

Condolences to the families of Ben Gindin, K3ESL and Joe Rushton, W3YXF - recent Silent Keys.

* * *

PERIMETER PROTECTION SYSTEMS ON 6 METERS CONTINUED

Comments on General Docket 85-231 were due by October 11, 1985, with the League to file in support of FCC's decision to keep these devices out of the 6-meter band. Reply Comments are due on or before November 12.

(215) 355-5400

MARKETLINE™

SYSTEMS, INC.
975 JAYMOR ROAD
SOUTHAMPTON, PA. 18966

Computers & Peripherals

73 Amateur Radio's Technical Journal

PO BOX 931
FARMINGDALE, NY 11737

\$25 one year \$53 three years

NE 7-8929

GEORGE S. VAN DYKE, JR., P.E.
CONSULTING ENGINEER

W3HK

4607 CONVENT LANE
PHILA., PA. 19114



AMIL S. GUMULA
PRESIDENT

A. G. RADIO PARTS CO.
939 TOWNSHIP LINE RD.
ELKINS PARK, PENNA. 19117
TELEPHONE: 215-886-5100

RCA Authorized
Distributor

(302) 328-7728
ORDER LINE 800-441-7008



Delaware Amateur Supply

"AMATEUR SALES AND SERVICE"

PAUL WA3QFX
KATHY KA3IYO

71 MEADOW ROAD
NEW CASTLE, DELAWARE 19720

AMATEUR
SALES & SERVICE

(215) OL 9-5900

"HAM" BUERGER INC.

Communication Specialists

BOB HERSHMAN
WA3ZID

68 N. YORK RD.
WILLOW GROVE, PA. 19090

215-342-5982

WA3HIT

Paul and Betty Rilling

INCOME DIVERSIFICATION

5830 Weymouth Street -Phila., Pa.19120

The Ham Radio Publishing Group



Greenville, NH 03048 (603) 878-1441

HAM RADIO - the Technical Ham's
Magazine. Ask for a free sample
copy or our Book Catalog.

CALL DOC CUTLER (K3GAS)
FOR YOUR ELECTRONIC NEEDS

NEW, RECONDITIONED, OR AS IS.

LOW PRICES

by appointment

215-635-1078

Heathkit® ELECTRONIC CENTER

Stan Demski
Manager

Heathkit Electronic Center
6318 Roosevelt Blvd.
Philadelphia, Pennsylvania 19149
(215) 288-0180

Veritechnology
ELECTRONICS CORPORATION



NESHAMINY TRAVEL SERVICE

Harriet Saltoff
Home: (215) 947-4483

Phone:
(215) 757-1585

2337 Neshaminy Blvd.
Bensalem, PA 19020

BROWSING - THURS. 7⁰⁰ - 9⁰⁰
SAT. 9⁰⁰ - 4⁰⁰

Day-Nite (215) 455-2121

FERTIK'S ELECTRONICS

Components & Equipment

LEON FERTIK

5400 ELLA STREET
PHILADELPHIA, PA. 19120

LUNAR, MICROWAVE MODULES, ARCOS, ASTRON, KLM
YAMA, TONNA F9FT

THE VHF SHOP

GERRY K3MKZ
Box 349 R.D. 4
Mountaintop, Pa. 18707

(717) 868-6565
M - F after 6:00 p.m.
Weekends Anytime!

EASTSIDE SURPLUS SALES

12894 NE 15th PLACE
BELLEVUE, WA 98005

(206) 453-0795

Carl Barish
KC7ZC

A CANDY STORE OF PARTS FOR THE EXPERIMENTER.

(302) 328-7728
ORDER LINE 800-441-7008



Delaware Amateur Supply

"AMATEUR SALES AND SERVICE"

ROB WA3QLS
GAIL KA3ITN

71 MEADOW ROAD
NEW CASTLE, DELAWARE 19720



Jenkintown & Glenside Electric Co.

WA3WLQ

220 YORK ROAD
JENKINTOWN, PA
Turner 4-0375 - 4-1050
WA 7-4325

"HAM" BUEGER, INC.
Electronic Equipment Distributor
"Right in the middle of a lot of good company!"

If we're judged by the company we keep, we should do pretty well!

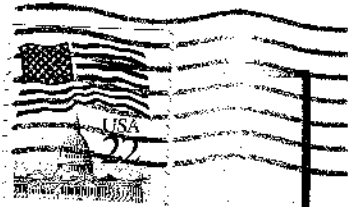
Service Since 1956
68 N. YORK ROAD
WILLOW GROVE, PA 19090
215-659-5900

CODE OF ETHICS

Wilson Electronics Corp.
Xcelite
SPRAGUE
TELEX
AMPHENOL
CLASHCOT
TRW
NBC
ROHN
BRONCO
"W2AU"
Larsen Antennas
hy-gain
ICOM
GTS
Saxon
DRAKE
COE
nte
GILFER LMB
TPL
Weller
Waldom
communications specialists
MISCO
Vector
AMCO
SMAN
AMPS SPECIAL INDUSTRIES
BOARR
phylas
HUSTER
DMK
COVER GRAFT
TCR
South River
South
TEN-TEC
VIBROPLEX
ASTATIC
Miller
SAKTON
WALDOM
callbook
Waldom
communications specialists
MISCO
Vector
AMCO
SMAN
AMPS SPECIAL INDUSTRIES
BOARR
phylas
HUSTER
DMK
COVER GRAFT
TCR

Cheese Bits
2087 Parkdale Ave.
Glenside, Pa. 19038

TRENTON, N.J. 086
OCT 27
1985
PM



MEETING NOTICE

MT. AIRY
VHF
RADIO
CLUB,
INC.

W3F00
DICK HUNTZINGER
130 FAIRHILL DR.
CHURCHVILLE, PA. 18966

PACK RATS

FIRST CLASS