

# PACK RATS'



# CHEESE BITS



CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

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

NET FREQUENCIES: 50.125, 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, K3IUV, 2013

VOLUME XXXIV

SEPTEMBER 1992

NUMBER 9

## THE PREZ SEZ

Hi all. As I begin to write this month's column I would like us all to reflect on how much time we spend on the air. If you take away the contests and the net operation on Monday's are we making our presence felt on the air. The answer is probably no. I want to start by saying I have been guilty of this myself. We all tend to do a lot of listening when we have the equipment turned on. Perhaps an occasional CQ might stir up some interest. It may bring you into contact with a new ham, who may be interested in joining our club. In any case this problem is not just our problem but seems to be prevalent in the northeast corridor.

Let's all get a signal on the air even if it is on just one of your favorite bands. It might be nice to get another pack rat to alternate CQ's with you. This will allow you to know if your system is up to par. If it is not, now is the time to make the required changes.

W3XO has developed a cumulative contest that will allow credit for each contact, by band, during the year. This may be the incentive you need to become more active. I will bring contest forms to the September meeting.

The way it looks, we may have a excellent fall tropo session thank's to EL Nino. So let's all plan to be more active and enjoy the propagation.

73's

William T Murphy  
WORSJ FN20JR

Pack Rats CHEESE BITS is a publication of the Mt. AIRY VHF RADIO CLUB, INC. Philadelphia, PA. and is published monthly.

SUBSCRIPTION RATE: \$10.00 PER YEAR (USA)  
 \$12.00 PER YEAR (CANADA)  
 \$15.00 PER YEAR (ELSEWHERE)

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

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

SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, WB2YEH  
 7258 Walnut Avenue  
 Pennsauken, NJ 08110  
 (609) 665-8488

EDITOR:

Harry Brown, W3IIT  
 3012 Potshop Road  
 Norristown, PA 19403  
 (215) 584-4846

CLUB TREASURER:

Dave Mascaro, WA3JUF  
 1603 Mink Road  
 Ottsville, PA 18492  
 (215) 795-2628

AWARDS CHAIRMAN:

Joe Kilgore, W2EIF  
 (609) 783-9478

TRUSTEE OF CLUB CALL - W3CCX

Ron Whitsel, WA3AXV  
 (215) 355-5730

PACKRAT 222 MHz REPEATER - W3CCX/RETR

222.98/224.58 MHz, Churchville, PA

OFFICERS: 1991-1992


PRESIDENT: W0RSJ, Bill Murphy  
 VICE-PRES: WB3JYO, Paul Drexler  
 REC. SECR: WA3AQA, Walt Zumbach  
 TREASURER: WA3JUF, Dave Mascaro  
 COR. SECY: WA2GFP, Geoff Krauss  
 DIRECTORS: N3AOG, Dick Comley (1 YRS)  
 WA3NUF, Phil Miguez (1 YRS)  
 N3EXA, Brian Taylor (2 YRS)  
 K3ESJ, Bill Jaxheimer (2 YRS)

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQ.</u>	<u>NET CONTROL</u>
7:30 PM	50.125 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: N3CX 215-679-7293  
 HAMARAMA: K3EOD 215-742-3312  
 VHF CONFERENCE: KB3XG 215-270-3158



THE AMERICAN RADIO RELAY LEAGUE

**HUGH A. TURNBULL, W3ABC**  
 Director, Atlantic Division

6903 RHODE ISLAND AVE.  
 COLLEGE PARK, MD. 20740

(301) 927-1797

**OST**

---

1-302-478-2757


**AMATEUR**  
 and  
**ADVANCED**  
**COMMUNICATIONS**

G. B. WALLS

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

---

Graphic Design   Illustration   Production



Lynne D. Whitsel

209 Frog Hollow Road  
 Churchville, PA 18966  
 215 355-5730

Calendar of Coming Events-September 1992

- Sept.  
7 Labor Day
- 10 Mt. Airy VHF Radio Club Board of Directors meeting will be held at the QTH of Pat, WB3DNI. Call 215-699-7051 for directions. Directors and all interested parties are welcome.
- 12-14 September VHF QSO Party. Starts 1800 UTC Sat. and continues thru 0300 UTC Mon. See Aug QST, page 90 for rules. Get on and at least give out a few points. Look for N3EVV roving in FN10, 11, 19, 20, 21 and FM19 and 29 on 50, 144, 222, 432, and 1296 MHz.
- 17 First indoor meeting of the fall season of the Mt. Airy VHF Radio Club will be held at the Southampton Free Library on Street Road in Southampton, Pa. All members and interested VHFers are invited to meet and share with us. The program will be "Hints and Kinks for No-Tune Transverters" by Dick, N3AOG.
- 19-20 ARRL 10 GHz Cumulative Contest. See June QST, page 82 for rules.
- 20 South Jersey RA Hamfest/Computerfest at the Pennsauken High School parking lot. TI via K2AA on 145.290(-600).
- 20 LIMARC Hamfest will be held at the NY Institute of Technology, Rte 25A in Old Westbury, NY. TI on 146.25/.85
- 26 Elmira International Hamfest-Computerfest will be held at the Chemung County Fairgrounds, Horseheads, N.Y.
- 28 Rosh Hashanah
- Oct.  
3 Mid-Atlantic VHF Conference will be held at the Sheraton Poste Inn in Cherry Hill, NJ. Admission \$8 in advance or \$10 at the door (includes HAMARAMA). For further info, contact the Conference Chairman, John Sortor, KB3XG, See flyer in this issue.
- 4 Mt. Airy VHF Radio Club "HAMARAMA" will be held at the Garden State Park, Rte 70 & Cornell Ave. in Cherry Hill, NJ. Note new location. Unlimited parking (how about that). TI on 146.52 and 223.5. See flyer and map in this issue.

Membership Changes Revised

The list of members listed as dropped from the membership rolls in last month's Cheesebits has been changed. The following are reinstated: WA3NDE, WB2RVX, and W3VIR.

TID BITS

Congratulations to John, WU3C, on winning the Murgas Amateur Radio Club Scholarship that is administered by the Foundation for Amateur Radio. John will be attending Wooster Polytechnic Institute this fall.

Reprints of the WB3JYO series of Cheesebits articles on "A High Performance 50 MHz Transverter" are available from Paul, WB3JYO. Paul's correct phone number is (609) 538-1687

John, KB3XG has a new work phone number. Call him at 215-270-3158.

A tower party is being planned for Ernie, W3KKN. Please call Ernie at 215-659-3485 for details. Anyone requiring antenna or tower work are encouraged to contact Paul, WB3JYO so that you can be scheduled early - before it gets cold.

TID BITS cont'd

Please contact, Al, K3EOD if you still need an assignment for HAMARAMA.

The October meeting of the club will feature Dave, N3CX, with a talk on "Construction techniques for the DL6WU Yagis".

SWAP SHOP

Send non commercial swap shop items to the editor.

For Sale: ICOM IC2A 2M HT with a separate microphone and additional battery pack (needs nicads). \$125.00. Call Harry, W3IIT, 215-584-4846.

COMMERCIAL AD

LOOP YAGIS: 902 MHz 33 element \$89 kit, \$109 assembled and tested. 1296 MHz 45 element, \$89 kit, \$109 assembled and tested. 1296 MHz 55 element "Sooper Looper" \$99 kit, \$124 assembled and tested. 2304 MHz 45 element \$75 kit, \$89 assembled and tested. Also available: element and hardware kits for the above. 2 and 4-way power dividers. Discount on complete arrays. Solid State Linear Power Amps, 13 VDC: 1296 - 8W in 35W out \$315, 1W in 20W out \$265, 4W in 70W out \$695. GaAs FET Preamps: 903 MHz .8dB NF \$90, 1296 MHz .8 dB, 2304 MHz 1 dB max NF \$140. SHF SYSTEMS No-tune Transverter kits, w/144 MHz IF now available for 903 through 3456 MHz. Write or call for complete catalog. DOWN EAST MICROWAVE, Bill Olson, W3RQT, Box 2301 RR-1, Troy, Maine. For information and orders telephone (207) 948-3741.

SEPTEMBER VHF CONTEST ROVING BY N3EVV

By Walt, N3EVV

I will be roving during the September VHF Contest. Operation will include 50 and 222 222 MHz FM and 144, 432, and 1296 MHz all modes. My plans are to be at Camelback, in FN21, at the start of the contest on Saturday. Then on to FN11, southeast corner, then returning to FN20 (near home) til about midnight. Sunday, I'll head to FM29 near Lancaster, Pa., then FM19 and FN10 with a return to FN20 Sunday evening to finish the contest. The van and equipment preparation is underway

CHEESEBITS SUBSCRIPTIONS

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

----- Name:  
Name: \_\_\_\_\_ Call: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
Town: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_  
Subscription Rate: \$10.00 per year (USA), \$12.00 (Canada), \$15.00 (Worldwide)  
Sept 92

Send to: SUBSCRIPTION/ADVERTISING MANAGER:  
Bob Fischer, WB2YEH  
7258 Walnut Avenue  
Pennsauken, NJ 08110

**THE PACK RATS**  
**The Mt. Airy VHF Radio Club, Inc.**  
**presents**

**1992 MID-ATLANTIC STATES**  
**VHF CONFERENCE & BANQUET**  
**Saturday, October 3rd**

**SHERATON POSTE INN**  
**Cherry Hill, NJ**

**All Day VHF/UHF/SHF Program**  
**Well Known Speakers**  
**Lunch, Dinner**

**Special Room Rates for "HAMARAMA"**

----- tear here -----

ADVANCE REGISTRATION FOR VHF CONFERENCE ONLY PAYMENT MUST BE RECEIVED BY 9/25/92  
 Admission ticket for "Hamarama" is included in the Conference Registration Package

		Advance Reg	At Door
NAME/CALL: _____	CONFERENCE	\$ 8.00	\$10.00
ADDRESS: _____	LUNCH	\$16.00	\$17.00
CITY: _____	DINNER	\$20.00	\$21.00
STATE: _____ ZIP: _____	TOTAL	\$	

Make Checks payable to: "Mt. Airy VHF Radio Club, Inc."  
 Advance tickets held at the door - send SASE for conformation.

**THE 1992 MID-ATLANTIC STATES VHF CONFERENCE AND BANQUET**

**SPONSORED BY THE "PACK RATS"**

DATE/TIME      Saturday October 3, 1992 - 09:00 to 21:00

PLACE:            Sheraton Poste Inn, Routes 70 & 295  
Cherry Hill, NJ 08034 (609) 428-2300

ROOMS:            Toll Free Reservations (800) 257-8262 (In NJ) (800) 257-8261  
\$64 single occupancy - \$64 double occupancy  
Group rates will be guaranteed until 9/18/92. Must mention "Mt. Airy VHF Radio Club", "Pack Rats", or "Hamarama" to receive group rates.

SPEAKERS:        09:00      Paul Schuler, SARA  
   Amateur Astronomy  
   10:00      Bruce Long, KJ3Z  
   Stable Frequency Source Design  
   11:00      Bob Schafer, Microrep/Microstock  
   In-Line Filters & Broadband Antennas  
   13:00      Tony Velnich, US Geological Survey  
   Radio Flood Warning  
   14:00      Mike Cresap, W3IP  
   Automated Beacon Logging  
   15:00      Steve Kostro, N2CEI  
   No-Tune Update

LUNCH:            12:00      DELI BUFFET - Corned beef, turkey breast, roast beef, Swiss  
   cheese, potato salad, tomato, pickles, with salad, dessert, &  
   beverage included - \$16.00

DINNER:           19:00      CHICKEN DIJON - Boneless breast of chicken lightly breaded on a  
   bed of sauce. Served with soup or salad, vegetables, potato,  
   dessert, & beverage - \$20.00

HOME BREW:       20:00      Please bring along a home brew project, working or in process.  
   The projects will be on display during the conference. A panel  
   of judges will be appointed, prizes will be awarded.

OTHER ACTIVITIES:      The Sheraton offers shuttle van service to the Garden State Race Track and the Cherry Hill Mall. Casino trips are based on availability. Please inquire at the front desk for schedules.

----- tear here -----

MAIL TO:            1992 VHF CONFERENCE  
   MT AIRY VHF RADIO CLUB  
   P.O. BOX 311  
   SOUTHAMPTON, PA 18966



# PACK RATS



THE MT. AIRY VHF RADIO CLUB, INC.

Presents

## HAMARAMA '92

SUNDAY, OCTOBER 4, 1992 - Rain or Shine

Gates open - Buyers: 7:00 A.M. - Sellers: 5:00 A.M.

### GARDEN STATE PARK

Route 70 and Cornell Ave., Cherry Hill, N.J.

#### UNLIMITED PARKING

Food, Beverages & Facilities on site-SORRY, NO OVERNIGHT PARKING

ADMISSION: \$4.00 each person + \$1.00 per car parking fee

SELLERS ADD: \$8.00 ea 10'x20' space-no electric-bring own table(s)

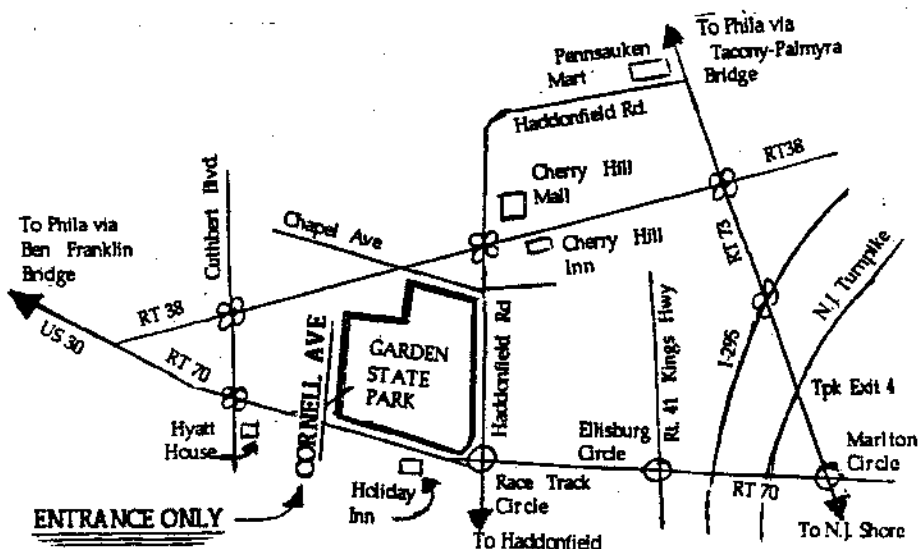
TALK-IN: 223.50 (Simplex) & 146.52 (Simplex)

### MID-ATLANTIC STATES VHF CONFERENCE & BANQUET

SATURDAY, OCTOBER 3, 1992 - 9:00 A.M. to 9:00 P.M.

Location to be announced

For further information write: PackRats  
P.O. Box 311, Southampton, Pa. 18966



1992 Mid Atlantic VHF Conference

By: John, KB3XG

If you are planning to attend the 1992 Mid Atlantic VHF Conference, do yourself a favor and pre-register. The room rates are \$64.00 a night if you register before Sept. 18. After then, the price goes up \$10.00. We are offering a dollar off each meal and 2 bucks off the conference fee if you pre-register by Sept. 15. We must tell the Sheraton how many people will be attending 4 days before the event. Remember, if you enjoy ham radio fellowship like I do, you'll send in your form pronto.

The Propagation report 15 July to 13 August 1992

by Bill Murphy WORSJ, FN20JR

I have been traveling since the beginning of the period but know that there has been some good Tropo on 2 through 432 MHz. I did spend two days listening to the Presides meteor shower. I base my opinions on listening to schedules of others and monitoring 144.200 MHz. The shower appears to have peaked on 11 Aug. 1992 between 19:15 and 19:50 GMT on the east coast. Unfortunately many people were knocked off the air due to severe thunderstorm activity in the area just as the shower peaked. I noted a good number of Blue whizzer's on 12 Aug around the 18:00 GMT time period with stations in the 4TH, 5TH and 9TH call area. Many stations working random's on 144.200 made five or more contacts during this period. I listened to the HF frequency 3.818 MHz and the interest in the shower appears to be increasing in area.

The Big Opening in August (so far)

By: Dave, N3CX

Well, it was Friday evening on 21 Aug. What beautiful WX for August. The temp was already 55 deg at 2030 local time. I was setting on the back porch with the XYL talking over the days events. Earlier in the evening I had mentioned to Sylvia (my XYL) that this seemed like a night for tropo. Being married to an amateur for 25 years especially a VHF/UHF ham she knows what the word tropo is-HI. Well I said I was going to the shack to see how the bands are. She said CU tomorrow (the XYL knows what happens in the shack if things are good). I flipped the ON/OFF switch on my 432 amp to ON and called CQ towards the west -nothing. I called CQ again and K0BI/8 in EN72 comes back-WOW I said, sigs about 539. After that exchange, I called CQ again and W8EUU/EN82, next K8MD/EN82, W8UCI/EN82, W3QIZ/FN00 /20 over 9. I moved the antennas around and heard the boys in WNY talking to K3SIW/9. I broke in and told them to tell the boys out west to turn their antennas East. I moved down to 432.097 and called CQ again -there was a signal in there and it came out of the noise W0RAP/EN42/Iowa, sigs were up to 559, next QSO K3SIW/9/EN42/Ill. Now I was jumping around calling on the 222 machine trying to get the Rats on, but it was late and a Friday. I was almost 2400 and I hit the sack when the tropo went away. I got up early Saturday morning (8/22) and tried to work W8EUU again, I had a set up a sked -but nothing. Paul, WA3NZL, called me and said he had talked with W8EUU on 432.1 about 0700 and sigs were really down, no path for me this morning. Saturday night was hot starting about 2030 local time and K4CAW called me. He's in FM06 and was 25/9 pounding in. We went right to 1296 and he was just as strong on 23 cm. Went back to 432 and called -WD4KPD/FN15 came back, we went to 222 also. Not everyone has packet radio to check the band out on condx's. Sunday morning (8/23) was jumping. I worked N4EVV/FM04, WB4TQD/FM05, WR3I/4/FM06, WB4YWI/EM95 and I got called by WA4ZIA/EM95 - he was pounding in almost pinning the meter at times. We worked from 432 up thru 3456MHz- "unbeleiveable". Signals on 3456 were 459- I was really excited! Sunday evening I worked K4CAW on 432 and WA3AXV and myself had a round table with Al on 1296. K2UOP/FM09 showed up and gave a few Rats a new one on 1296, from Tom's new QTH in the mts of WVA. WD4JQV/EM94-SC was in there on 432 and I also worked him on 1296. After he called W3ZZ with no luck, he called me - what excitement. On the Monday night net (8/24) things were still in there with KM4ID/EM93. At this writing, I hope this is a sign of the fall season.



MICROWAVE UPDATE '92

25 June, 1992

Make plans now to attend Microwave Update '92, which will be held October 16-18, 1992 at the Holiday Inn Holiday in Rochester, New York. The Rochester VHF Group is proud to have the opportunity to sponsor this year's conference. Microwave Update is the premier Amateur conference dedicated to technology on the bands above 902 MHz. Because of the location of Rochester and its excellent airline connections, this year's conference may well turn out to be the largest ever held. In addition to the "regulars" who have attended past Updates, we expect a good draw from the large contingent of microwavers present in the Northeast. We are planning a tour of the local surplus outlets on Thursday, October 15 for those who arrive early. Technical presentations will occupy both Friday and Saturday. Not to break with tradition, we will conduct Noise Figure measurements on Friday night, along with a poster session and indoor flea market. The activities will officially end Saturday night with a fine banquet, to be held at the Holiday.

As you may or may not be aware, October is a great time to visit Rochester, with pleasant days, cool nights and beautiful fall colors in abundance. The Holiday Inn Holiday is conveniently located eight miles south of the city, about ten minutes from Greater Rochester International Airport, and just a few miles from Interstate 90, the New York State Thruway. The immediate area abounds with restaurants, shopping facilities and other hotels. The airport is well served by the major airlines, including: American, United, USAir, Northwest, Continental and Delta. The Holiday Inn has agreed to a flat rate of \$72 per night regardless of how many people occupy a room, for conference attendees- this is a substantial discount from their regular rates. We suggest trying to reserve a room in the block reserved for us at the Holiday Inn, but if the price is a little "too rich for your blood", there are other less lavish motels within a mile of the Holiday. Give K5RO or K2OS a phone call or drop us a note and we can put you in contact with these other facilities.

Enclosed in this package is a registration form for the Holiday, a brochure describing the features of the hotel, and an advanced registration form for the Conference. Please be sure to fill out and return the hotel registration card before September 15, or if you prefer, you may call the hotel and place your reservation by phone. Their phone number is: (716) 475-1510. If you make your reservations by phone, be sure to state that you are with the conference so that you get the preferred rate. On the conference registration form, please indicate what, if any, preamps/converters/filters/etc. you plan to bring so that we may prepare accordingly. Also, be sure to enclose a check to cover registration, any extra copies of the proceedings you'll need and the banquet fee if you wish to attend that function on Saturday evening. By the way, spouses are welcome to attend the banquet and are encouraged to do so.

The list of technical programs to be presented at the conference is growing. Already committed to presentations at the conference are the following:

VE4MA HEMT Preamps for 3.4 & 5.7 GHz  
N1BWT 5.7 GHz Mixers  
W2AAU 24 GHz Operation  
W3HQT/1 Hints & Kinks for the Down East Transverters  
W5VJB Microwaves Made Simple  
W8LJUA Design & Construction of HEMT LNA's for 2,3,5 & 10 GHz  
W5SAGO A Complete 1296 EME System- Feed, Preamp, Hybrid, etc.  
K47B No-Tune Microwave Transceivers  
W9TP/2 Computer Control of Antennas  
K5RO/2 Meteor Scatter and Aurora at 902 MHz and Above

This is an impressive list, but WE ARE STILL SOLICITING TECHNICAL PAPERS AND TOPICS FOR PRESENTATION. If you would like to speak at the conference, please contact W9IP/2 or K5RO/2, and we will include you. If you have anything you have been working on recently, why not plan on presenting a short talk about it? You'd probably be surprised to find out how much good work by Amateurs goes unnoticed due to our unwillingness to "blow our own horns". You can even submit a paper if you are unable to attend the conference.

We have been in contact with Mark Wilson, AA2Z/1 at ARRL Headquarters and the League has agreed to publish the proceedings once again. As always, their support of Microwave Update is greatly appreciated. Any papers to be included in the proceedings will need to be in W9IP/2's hands no later than 1 September so that he can submit them to the League.

Prize drawings, which have become a regular part of Microwave Updates past, will also be held at this year's conference. We plan several drawings during breaks in the technical sessions Friday and Saturday- all registered attendees will be eligible for the prizes. If you would like to donate a prize to the conference, please contact Tom Hodge, WA2YTM, our Prize Chairman. All donations are greatly appreciated and all donors will be duly noted.

Last, but certainly not least, K5RO's wife Diane has agreed to organize alternative programs during the conference. These plans are still being solidified, but may include a trip to Niagara Falls, a "Fall Colors" tour of the Bristol Mountains/Finger Lakes Country just south of Rochester, and trips to the LARGE shopping malls just a short drive from the conference site. Contact us for details if your spouse would be interested in participating. We'll also have a hospitality suite available for the ladies' use during the conference.

If you have any questions, need more information, wish to be a speaker, or wish to discuss the conference, please don't hesitate to drop us a note at:

Microwave Update '92  
c/o Rochester VHF Group  
P.O. Box 92122  
Rochester, NY 14692

Or call us at one of the numbers listed below.

We're looking forward to seeing you at Microwave Update '92!

# MICROWAVE UPDATE 92

## Registration Form

NAME: \_\_\_\_\_ CALL: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ TEL: (    ) \_\_\_\_\_  
 CITY/ST/ZIP \_\_\_\_\_

- A. I WILL BE ATTENDING SURPLUS TOUR. Y N <Circle Choice>  
 B. I CAN SUPPLY TRANSPORTATION FOR TOUR. Y N  
 C. I WILL ATTEND ANTIQUE WIRELESS MUSEUM TOUR ON SUNDAY. Y N  
 D. I WILL BRING A LNA FOR N.F. CONTEST. Y N  
   WHICH BAND: 902 1296 2304 3456 5760 10368 24192  
 E. I WILL BRING A CONVERTER FOR THE N.F. CONTEST. Y N  
   WHICH BAND: 902 1296 2304 3456 5760 10368 24192  
 F. I WILL BRING A FILTER, ETC, FOR TEST ON SCALER ANALYZER. Y N  
 G. I WILL BRING AN OSC/L.O. FOR SPECTRUM/PHASE NOISE TEST. Y N

- H. CONFERENCE FEE <If received by Sept 18, 1992> \$35.00 \$ \_\_\_\_\_  
 J. CONFERENCE FEE <After Sept 18, 1992> 40.00 \$ \_\_\_\_\_  
 K. EXTRA COPIES OF THE PROCEEDINGS \_\_\_\_\_ @ \$10 ea \$ \_\_\_\_\_  
 L. BANQUET TICKETS: Qnty \_\_\_\_\_ @ \$20.00 ea \$ \_\_\_\_\_  
   CHECKS TO: Rochester VHF Group TOTAL: \$ \_\_\_\_\_

MAIL PROMPTLY TO: Edward Gable K2MP  
 187 Lighthouse Rd  
 Hilton, NY 14468

### ALTERNATIVE ACTIVITIES

- M. SPOUSE'S NAME \_\_\_\_\_  
 N. I WOULD LIKE TO ATTEND THE ALTERNATE ACTIVITIES. Y N  
 P. I CAN HELP WITH TRANSPORTATION ON FRIDAY. Y N

The 1992 Microwave Update Conference is proudly hosted by the Rochester VHF Group, the oldest continuously running VHF Group in the country. Welcome everyone.

# DOWN EAST MICROWAVE

MICROWAVE ANTENNAS AND COMPONENTS

BILL OLSON  
W3HQT

BOX 2310 RR1  
TROY, ME 04987  
(207) 948-3741

CRAIG HENDERSON  
N8DJ8

Ph. (419) 352-4465  
Hrs. 10-5



C. A. T. S.  
Rotor Parts & Repair



7368 S.R. 105

Pemberville, OH 43450

215-288-0325



# W3HK

GEORGE S. VanDYKE, JR. P.E.

1737 Scattergood St.  
Phila., PA 19124

## The R.F. Connection "Specialists in RF Connectors and Coax"

KABQPG

Joel Knoblock  
301/840-5477  
Fax 301/869-3680

Order Line 800-783-2668  
Suite 11, 213 N. Frederick Ave.  
Gaithersburg, MD 20877

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



### Delaware Amateur Supply

"AMATEUR SALES AND SERVICE"

PAUL WA3QPX  
KATHY KA3IYO

71 MEADOW ROAD  
NEW CASTLE, DELAWARE 19720

(202) 588-1068  
(215) 745-6173  
(302) 886-7630  
(609) 266-3668



### COMPU-SIMPLE, INC.

COMPUTER APPLICATIONS FOR SMALL BUSINESS

BRIAN M. WEISMAN  
Consultant

P.O. BOX 66374  
WASHINGTON, DC 20035

215-342-5982

WA3HIT

Paul and Betty Rilling  
INCOME DIVERSIFICATION

5830 Weymouth Street -Phila., Pa.19120

Gerry Rodski - K3MKZ

717-868-5643  
6-10 PM

SSB ELECTRONIC U.S.A.  
Call for Catalog

124 Cherrywood Dr. Mountaintop, Pa 18707

609-541-0120

## Bob Fischer Company, Inc.

AERIAL LADDERS - UTILITY EQUIPMENT

BOB FISCHER  
PRES.

28TH & LINCOLN AVE.  
CAMDEN, N. J. 08105

## DESTINATIONS INC.

A FULL SERVICE TRAVEL AGENCY

HARRIET SOLTOFF  
TRAVEL CONSULTANT

616 SOUTH THIRD STREET  
PHILADELPHIA, PA. 19147

RES. (215) 947-4483

609-541-0120  
M. F. F.

Day-Nite (215) 455-2121

## FERTIK'S ELECTRONICS . . . .

Components & Equipment

LEON FERTIK

5400 ELA STREET  
PHILADELPHIA, PA. 19130

RICHARD E. COMLY

# ARROW

TOOL, DIE & MACHINE CO., INC.  
2065 BENNETT RD. PHILA., PA 19116

(215) 676-1300  
FAX 934-9237



(809) 268-0736

RICHARD CONNOR



## RECON Communications

- COMMUNICATIONS TOWER MAINTENANCE
- ANTENNAS, FEEDLINES, TOWERS INSTALLED
- TOWER PAINTING, RE-LAMPING, RE-GUYING
- RF SYSTEM TROUBLESHOOTING
- LIGHTNING PROTECTION, GROUND SYSTEMS

Emergency Service

412 Carranza Road  
Tabernacle, NJ 08068

(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

(215) 745-6173  
(302) 886-7630  
(215) 342-8832  
(609) 266-3668



### COMPU-SIMPLE, INC.

COMPUTER APPLICATIONS FOR SMALL BUSINESS

ELLIOTT T. WEISMAN  
Consultant

P.O. BOX 7161  
WILMINGTON, DELAWARE 19803

## RUTLAND ARRAYS

For the finest VHF/UHF antennas  
1703 WARREN ST.  
NEW CUMBERLAND, PA 17070

Call or write for our new catalog!  
(717) 774-5298 7 - 10 pm EST

STEVEN N. WHITE  
Attorney at Law

WA3IAO

2217 PALOMINO DRIVE  
WARRINGTON, PA 18976

TEL: (215) 343-6902  
FAX: (215) 343-6903

**"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!

417 DAVISVILLE ROAD  
 WILLOW GROVE, PA 19090  
 215-659-5900  
 Service Since  
 1956

**Xcelite**  
 Wilson Electronics Corp.

TELEX  
 SPRAGUE  
 AMPHENOL  
 CUSHCROFT  
 TRW  
 NPG  
 ROHN  
 ASTATIC  
 Saxon  
 ICOM  
 CHS  
 +high gain  
 Larsen Antennas  
 "W2AU"  
 HAM-KEY  
 BEANCAT  
 VIBROPLEX  
 TEN-TEC  
 Soma  
 TAB BOOKS  
 KENWOOD  
 AMP SPECIAL INDUSTRIES  
 COVER CRAFT  
 AMECO  
 HUSTLER  
 Vector  
 MISCO  
 WILD  
 WILDOM  
 callbook  
 GILFER LMB  
 TPL  
 Weller  
 M.L.M.  
 communications specialty  
 DRINK  
 priplex  
 dodge  
 SOMAR

**Cheese Bits**  
 412 Carranza Rd  
 Tabernacle, NJ  
 08088



**MT. AIRY  
 VHF  
 RADIO  
 CLUB,  
 INC.**

DICK HUNTZINGER  
 W3FQD  
 130 FAIRHILL RD.  
 CHURCHVILLE, PA 18966

12/92

**PACK RATS**

**FIRST CLASS**