

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



MT. AIRY V.H.F. RADIO CLUB, INC. PHILA., PA. ARNS
50.2, 145.2, 432.1, 1296 MHZ, WR3ACD - 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 18966

VOLUME XX

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NUMBER 4

THE PREZ SEZ

The occasion of this writing is the first day of Spring. Certainly no Spring in history was welcomed more enthusiastically. Before we know it outdoor amateur happenings of all kinds will be upon us - flea markets, antenna measurement contests, six meter Es, and a return of 220 transmitter hunts! Lee, K3MXM will direct this years' hunts which will start shortly after the change to daylight savings time (May). Keep tuned to these pages for further announcements, in the meantime get those DF antennas dusted off and look around for a good attenuator... Whats an attenuator used for? For answers to this and other transmitter hunt questions see our resident experts W3AJF, W3CIL, W3CLT and W3SMK. (over 180 years of combined xmtr hunting experience)

The March general meeting featured a return by popular demand of "TV From Space", starring our own K3IUUV, Bert, who brought us up to date on the latest TV technology in use on the recently launched LANDSAT. Bert is the manager of RCA's Special Space Television Development Group. The techniques which were just wild schemes four years ago when Bert gave us the last space TV talk, are the proven technology of today.

Speaking of technology, the April meeting will feature charter member Elio, W3RZU in part II of the RF power transistor presentation. Last time he and his boss, Jim Benjamin of Solid State Scientific (Montgomeryville, PA) showed us how RF power transistors are made. Next meeting Elio will show us how to use these transistors in VHF power amplifiers. I understand the feature of this meeting will be a demo of a 2 meter amplifier running at a 1/4 gallon output!

73,

Tony, W3HMU

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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SWAP SHOP ITEMS - no charge.

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

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PRESIDENT: W3HMU, Tony Souza
VICE-PRES: W3HQT, Bill Olson
COR. SECY: W3IIT, Harry Brown
REC. SECY: WA3NFV, Dan Mitten
TREASURER: K3GAS, Doc Cutler

DIRECTORS:


K3MXM, Lee A. Cohen (Ex-Officio)
K3MWV, Dick Pierce (2 years)
WB2SZK, Randy Bynum (2 years)
K3IGX, Dick Boyle (1 year)
K3JJZ, El Weisman (1 year)

<u>MONDAY NIGHT NETS:</u>	<u>NET CONTROL</u>
145.2 MHZ 7:30 PM	W2EIF
50.2 MHZ 8:30 PM	W3CL
221.4/224.58 MHZ 9:00 PM	K3GAS
432.03 MHZ 9:30 PM	K3IUU
1296.3 MHZ 10:00 PM	W2EIF

<u>FRIDAY NIGHT ATV NET:</u>	<u>NET CONTROL</u>
439.25 MHZ 7:00 PM	WA3AXV


PACK RAT REPEATER - WR3ACD - 222.98/224.58
Churchville, Pa.

215-674-0300



LAFAYETTE RADIO ELECTRONICS
"Associate Store"
531 Easton Road
Horsham, Pa. 19044


Paul Hamilton, Bruce Clark



PENNSYLVANIA
INSTITUTE OF TECHNOLOGY

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MUSIC FOR ALL OCCASIONS

PI 2 3525 PI 5 6785

CALENDAR OF COMING EVENTS
Syllabus by Lee, K3MXM

APRIL

- 1 Need we say more about this day and those strange phone calls you might receive.. Beware of Mr. Lyons.
- 2 Greater Baltimore Hamboree- Calvert Hall College, Towson, Md. Info Bro. Jerry Malseed, W3WVC
- 1-2 Roanoke Division Conventions (ARRL) and Really Big Flea Market, Charlotte, North Carolina - See March QST
- 1-3 ARRL - QRP QSO Party, See Page 88 March QST
- 8 Cheltenham Township - Kite Flying Contest - Curtis Arboretum, 11:00 a.m. Now that you have told all those people what to do - come on out and watch them perform.
- 9 Penn Wireless ARC, Tradefest 1978, National Guard Armory, U.S. Rt. 1 Roosevelt Blvd and Southampton Rds, Phila., Pa. Door prizes, food. Bring your own tables. 8 am till 3:30 pm. This is their first Hamfest, so lets give them a hand by showing up as buyers or sellers. More info., P.O. Box 652, Langhorne, Pa. 19047
- 13 Board of Directors Meeting, QTH W3CL, Harry Stein, 2087 Parkdale Avenue, Glenside, Pa. 19038. 215-TU 7-5052. Directors and interested parties invited.
- 15-16 First EME (Earth-Moon-Earth) ARRL Contest, First Part. See Pg. 88 March QST. Listen for W3CCX/2 - it will be in there slugging away...From QTH of K2UYH on 144, 220, 432, and 1296 Mhz.
- 16 SPARC, Pomona, N.J. (Atlantic City area) - First Hamfest in this area. Stockton State College, Pomona, N.J. Information: SPARC, P.O. Box 142, Absecon, New Jersey.
- 19 For all you long distance runners, Today is the day. Patriot's Day, Boston Marathon, Boston Gardens, Boston, Mass. 02114.
- 20 General Club Meeting- Southampton Free Library, Street Road, Southampton, Pa. Topic: Practical Design using solid state scientific RF power transisters, By our own ElioColussi, W3RZU. An open meeting to all Pack Rats and their friends.. The Mario Raffle, Frankie's Silent Auction, Refreshments.
- 22 First Day of Passover.
- 22/23 Trenton Computer Festival, Trenton State College, Trenton, N.J. (See additional information by A1, K2UYH)
- 28-29-30 Dayton Hamfest, Dayton, Ohio.

COMING EVENTS:

- May 14 Warminster ARC Hamfest, Wm. Tennent High School Yard, Johnsville, Pa. This is their annual event and is getting bigger and better each year and is right in our backyard. A good one to attend.
- 20 Ladies Nite and Pack Rat Banquet, The Country Squire Inn, 680 Easton Rd. Horsham, Pa. \$25.00 a couple.

* * * * *

We wish Lenny Ciucci, W2GGB a speedy recovery who has been hospitalized for a period of time with a very rare ailment. Received a very nice note from his xyl Violet.

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn W3NSI

1. RF AMPLIFIER: Vanguard Labs has a special Extra Low Noise preamp for use between 135 Mhz and 250 Mhz. Unit is rated at less than 2 DB NF and 17 DB gain. Preamp is available with choice of BNC, VHF, or N connectors, and tuned to your frequency at the factory. Very compact well shielded item. Price #102 - \$36.95; 196-23 Jamaica Ave. Hollis, N.Y. 11423.
2. VHF, UHF ANTENNAS: A group of French antennas are being imported by Texas RF Distributors, Inc. The Tonna antennas have a good reputation in Europe, where they are used on 2 and 75 CM. (220 Mhz not a band in use over there) Both 9 and 16 element yagi types are available for 2 meters, while a 21 element yagi is sold for 432 Mhz. An Oscar special has a 9 element 2 meter and 19 element 432 mounted on one boom. Price - Oscar \$51.2 m \$26 & \$54. 432-\$44. 4800 West 34th Street Suite D 12A, Houston, Texas. 77092.
3. THRU-LINE WATTMETERS: Bird has a set of new wattmeters available which cover 1.8-30 Mhz on the model #4360, and 140-180 Mhz on the model 4362. Two power ranges are switch selected. The low band ranges are 200 and 2000 watts, forward and reflected, and the 2 meter job is set up for 25 and 250 watts, forward and reflected. Accuracy is 8% of full scale, and impedance is 50 ohms. Size 6" x 4" x 3 1/2". Price \$94 both models.

* * *

VHF/UHF REPORT

By Jo, W2EIF

There is increased activity on 10 meters lately indicating that the Sun Spot cycle has definitely started on its upward trend. The activity has also affected 6 meters apparently also. There have been reports of commercial signals on six but no identification of the signals as yet. There are also reports from the New England area that BBC television signals (audio) has been received. I hope someone can confirm the reports.

The VHF/UHF bands continue with low activity however, one can usually make contact on 2 meters, SSB or CW around 144.1 Mhz or on SSB at 145.025 or 145.1 Mhz.

The prolonged cold weather has undoubtedly had an adverse effect on activity. I know it has for me and I hope that the remainder of March and April will produce some aurora or good tropo conditions to make things more exciting. May will produce the start of the six meter openings. 50 Mhz openings should be common after the first week in May.

Don't forget the EME contest held in April and May. See QST for details.

* * *

TID BITS

Our apologies to Bill Benner, W3KM. His call was listed as K3KM in the Contest score recap in last months Cheese-Bits.

220 Mhz Hidden Transmitter Hunts will be starting up again soon - this is by popular demand. Announcements will be made on our Monday Nite Nets.

The HK1TL EME team gave an FB presentation to the Philmont Mobile Radio Club at their March meeting. They made another presentation to the Shore Points Amateur Radio Club on Friday March 17th at NAFEC in Pomona, N.J.

The officers of the Club wish to thank Steve Simons, WA3WAS and his family for hosting our March Board of Directors Meeting.

Pack-Rats wishing to join a group purchase of the synthesized Midland 220 Mhz FM rig for \$380, get in touch with Ric Janssen, K3QQ.

Doc, K3GAS wants to remind you once again that DUES ARE DUE. He makes an additional observation: Murphy's Law - Nothing is as easy as it looks. Everything takes longer than you expect. If anything can go wrong, it will at the worst possible moment.

We are saddened to report that Charley Jenkins, W2VX (an old friend of the Pack-Rats) died Sat. February 25, 1978. Our condolences to the Jenkins family.

Wayne Overbeck in N6NB's VHF newsletter of Jan. 1978, conjectured that the Pack-Rats would make 700,000 points - if we are the high scorer again it will be the eighteenth, Wayne - you must have noted that we made 766,388 points!

The March 16th Regular Meeting was almost wiped out by the snow storm but Tony, W3HMU our President decided to chance it and said "its on" - 27 hardy Pack Rats showed up and 1 visitor (WB3KNU, Hugh of Huntingdon Valley, Pa.) Bert, K3IUV gave an excellent illustrated talk on "TV in Space." K3TGX, Dick saved the day bringing "donuts galore" for the refreshment portion of the meeting. Roads were in good shape all the way home.

SWAP SHOP

FOR SALE: Swan 260 (80,40,20) with HP23 power supply. Excellent condition. Mike, assorted extras and coax cable. Manual \$200.

CONTACT: WA3FOF, Ralph Alexander
Phone: 215-276-4185

FOR SALE: 2 meter converter, Drake SC-2 and power supply. Brand new - never used. Paid \$80., best offer. Want receiver for a little guy to get started.

CONTACT: W2SVV, Ceasar Arena
2377 Pennington Rd.
Trenton, N.J. 08638
Phone: 609-737-3079 nites and week ends.

FOR SALE: Clegg 27B = \$200.

CONTACT: WA3OQR, Charles Zeager
Phone: 215-533-9277 after 4 PM

FOR SALE: Porsche 914 Ski Rack. Good condition. Includes Lock.

CONTACT: WA3TEM, Marsha
Phone: WA5-8400, 9-5 daily.

* * *

TID BIT

Al Katz, K2UYH reports "there will be a number of technical sessions of direct interest to hams at the third Trenton Computer Festival on April 22/23. The ARRL and AMSAT will have booths. The Flea Market should be a big one with lots of hard to find digital items

* * *

DEVICES AND PARTS SOURCES

Compiled by Don, WB3CDE

1. Small Parts, Inc.
6901 N.E. Third Avenue
Miami, Florida 33138
305-751-0856

Free catalog available
small or large quan.
stainless steel, teflon,
nylon, brass, aluminum
balls, rod, screws, tools
self-clinching nuts; fair
prices.

Cadillac Plastics
Pennsauken, N.J.
609-662-4100

Teflon, teflon tapes,
plastics, most items ship-
ped in small quantities,
but rather expensive.

3. ARCOS
Fred Merry, W2GN
P.O. Box 546
E.Greenbush, N.Y. 12061
518-477-4990

Free catalog available
Parts for KW stripline
UHF Amps. and Pwr Splys.
kits for 144, 220, 432 KW
Amps., chassis, design
data available. Good
source for small quan.
items.

4. Semiconductor
Supermarket
P.O. Box 3047
Scottsdale, AZ 85257

Free catalog available
semiconductors and
components.

5. Barry Electronics
512 Broadway
New York, N.Y. 10012
212-WA5-7000

Free catalog available
Surplus and new tubes,
(Eimac, etc.) Caps, trans-
formers, fingerstock.
Prices vary.

W.W. Grainger
29 E. Highland St.
Allentown, Pa. 18103
215-433-5196

Dayton blowers, pumps, etc.
Cheap!

7. American Design
Components
39 Lispenard St.
New York, N.Y. 10013
212-966-5650

Free catalog available
Pwr Splys, blowers, caps
coax rlys, pots, motors,
variacs. Not cheap!

8. Grey Fox
Telford and Quaker-
town, Pa.
215-723-3831

V.G. prices on Rohn twr.
components; ex. Rohn
25@ -\$32/section.
Discounts amateur rigs,
Amps, antennas, etc.

9. KLM
17025 Laurel Road
Morgan Hill, CA 95037
408-779-7363

Free catalog available
VHF antenna parts avail-
able (insulators, etc.)
Honor Master Charge on
phone orders.

10. Phelps Dodge
Route 79
Marlboro, N.J. 07746
201-462-1880

Ask for catalog-"Communi-
cations Antenna Systems"
Hardline, connectors.
40% discount if ordered
on a club letterhead.
Ask for Sid Hult

11. Varian, Eimac Div.
301 Industrial Way
San Carlos, CA 94070
415-592-1221

Good literature and data
available on tubes,
sockets, specs, etc.
Ask for Bill Orr, W6SAI
of the Amateur Division

* * * * *

LATE SWAP SHOP

WANTED: by Tony, K4AWS
Yaesu FTDX-400, FTDX-560 or FTDX-570
Phone collect: 904-793-5202
FOR SALE: Hornet TB-1000 4 Elem. beam
20-15-10. Heath SB102, Heath SB 220
Contact: W3ZD, Dave Zimmerman
Phone: 215-675-4539

MODIFICATION OF SEARS, ROEBUCK CB MAGNET MOUNT ANTENNA

FOR AMATEUR 220 FM SERVICE

by Tony Souza, W3HMU

Introduction

Sears sells a reasonably priced magnet mount CB Antenna which is easily converted to 220 MHz. The resulting 5/8 wave vertical works very well and costs about 1/3 the price of a comparable unit. The antenna sells for \$14.50 in the catalog and \$19.95 at Sears stores. It is marketed by Cascade Electronics, Timonium, Md. 21093; a division of Tescos, Inc. The Sears catalog number is 61G38411C. The unit is very well made and features a soft aluminum bottom plate, a brass-ended coil form, a chrome plated spring and a hefty stainless steel whip.

Modification

Referring to Fig. 1, the four basic components are: (1) magnet base, (2) loading coil, (3) spring, (4) stainless steel whip. The two components which are modified are the loading coil (2) and the whip (4). The whip is cut down to 23-1/2 inches (597mm) by removing a piece of the large diameter end which fits into the spring assembly. The loading coil is more involved but can be performed with simple tools.

First, the outer plastic sleeve is removed to expose the base loading inductor. This is done by inserting a piece of pipe of the correct size to just fit inside the sleeve and contact squarely the outer conductor of the coaxial connector (a socket wrench works very well). A sharp rap with a hammer or the socket wrench will break loose the sleeve from the coil form. Unsolder and remove the existing coil and replace it with a coil made up of six turns of #14 buss wire. Solder the new coil at each end to the coil form (see Fig. 2). Connect a 10pf disc ceramic capacitor between the feed-through and a point on the coil 1-1/4 turns above the ground end. Do not replace the plastic sleeve yet. Assemble the coil, magnet base, spring and whip. The length from the base of the spring to the top of the whip should be set at 25-3/4 inches (654 mm).

Check the SWR at 223.5 MHz. Small adjustments can be made by extending or retracting the whip section in and out of the spring assembly and by moving the coil turns above and below the tap point closer or farther apart. The SWR should be under 1.5 to 1 as measured at the end of the length of RG-58 provided. If all is OK, replace the outer sleeve over the loading coil and reassemble. The modification of this antenna for 220 FM is complete. CU on the Pack-Rat machine.

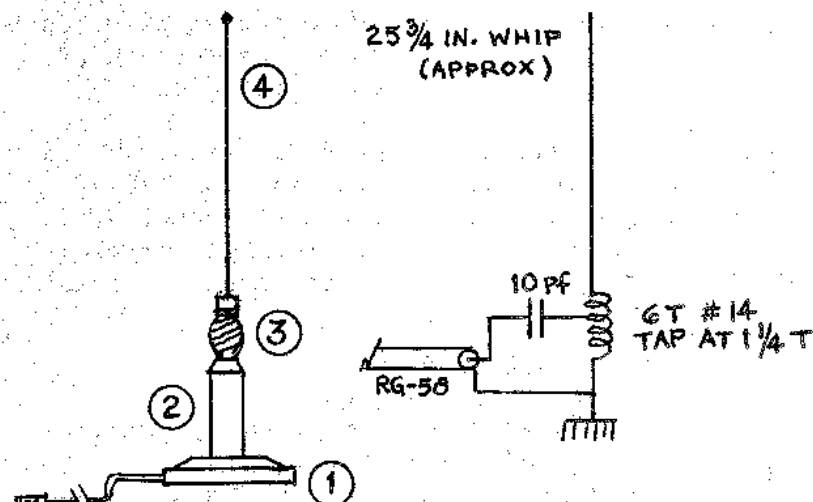


FIG 1. 5/8 WAVE 220 MAGNET MOUNT ANTENNA

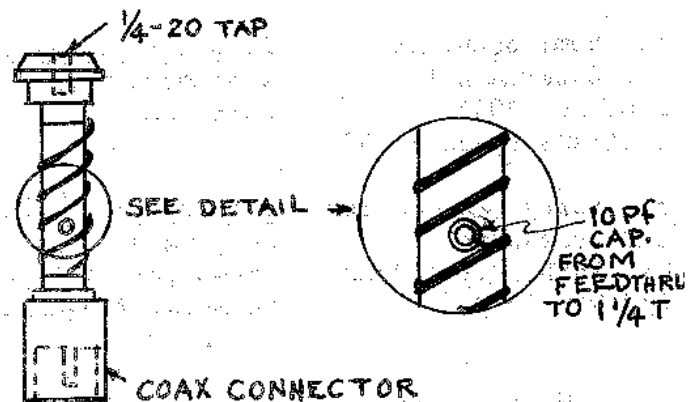


FIG 2. MODIFICATION TO LOADING COIL

THE IMPOSSIBLE (?) DREAM

by Ric, K3QQ (ex WA3UDS)

The date was July 2, 1974; the rig a Heathkit HW-7 (700 mw on 15, 1.3 w on 20, 2 w on 40); the antenna a long wire; the call WN3UDS and the dream to work QRPP- Worked -All-States. WN3UHA became my first contact (PA on 40CW), followed by 15CW QSO's with AL, FL, GA, MI, MO, NJ, SC, TN, and WI during the same month. August brought MA, ME, MN, TX and a 15 meter Quad. AZ, CA, KS, LA, MS, NC, NE and OK were confirmed over the next three months-- then the Quad collapsed during a December storm.

I loaded my 700 milliwatts on 15CW into the wreckage, answered WN0MYB's CQ, and got SD. December also brought an Advanced ticket and a 10 thru 80 meter trapped vertical. After no new states appeared for several months, I built a horizontal phased array for 15 meters fed with 450 ohm ladder line (it loaded up on 10 thru 80 with an AC-5 tuner) and worked nine more states by July. The wreckage of the 15 meter Quad was converted to a 10 meter quad and by the end of 1975, the 2, 6, 8, 9, and 0 call areas were completed. The HW-7 was retired in favor of a Ten-Tec Argonaut 509 (10 thru 80 CW and SSB, 1.5 w on 10 to 3 w on 80). The trapped vertical was replaced with a quarter wave ground plane for 20 meters. DE, KY, and VA materialized on Field Day 1976 followed by RI on 40 SSB and by AR, OR and UT on 20CW. Forty-eight down, two to go!

On November 7, 1976 I found KL7BVY, one of the few Eskimos who is an Amateur, on 20 SSB and received a 5/2 report. There were several unsuccessful attempts to work Hawaii during the first half of 1977, then I had to go QRT during the second half after an arsonist destroyed my home. I returned to the air in January 1978 with a re-built home, an 80 meter dipole, an Extra Class ticket and a new call. Hearing that KH6's were scheduled to appear on 80 SSB on the weekend, I stayed up and was surprised to get a partial copy on KH6XX, even though my dipole is so low that its radiation pattern is straight up. The next weekend he was stronger and I tried to work him. Nothing! Two weeks later a clearly audible KH6 appeared. I asked an Arizona station to have him listen for my CW signal. The KH6 could tell I was trying but could not copy. An hour later I tried again. This time KH6WF was able to copy his report and gave me a marginal but very welcome 229. Then on March 11, 1978 I again worked KH6WF, this time on 80 meter SSB. Bill gave my 3 w to a dipole at 25 feet a solid 3/3 report.

A number of hams who had listened to our QSO extended congratulations on the accomplishment. Finally----- QRPP Worked-All-States and it took only four years and eight months. Now that that's over I have another impossible (?) dream - QRPP Worked-All-States on 80 meter SSB. It shouldn't take too long; I've already worked forty-two states in less than three months.

(Good luck Ric)

-----cut along this line-----

PACK-RAT LADIES NITE-BANQUET RESERVATION FORM

Saturday May 20, 1978 - 6:30PM - The Country Squire Inn, 680 Easton Rd. (Rte 611) Horsham, Pa.

Name _____ Call _____
Address _____ City _____ State _____
Phone _____

Prime Rib _____ Fish _____ \$25.00 per couple

PRIZES - AWARDS - FAVORS - CASH BAR - MUSIC - DANCING - JOIN THE FUN

make out checks to The Mt. Airy VHF Radio Club, Inc., and Mail to :- Doc Cutler, K3GAS
7815 New Second St., Elkins Park, Pa. 19117

Increasing Solar activity promises some exciting DX possibilities for 6M enthusiasts over the next several years. 10 meters is already showing signs of life. Relatively dormant since 1958 recent months have produced almost daily openings into Europe, Oceania and Asia from the east coast on the 10M band. 10 meters has always been a fair barometer of propagation conditions. 6 meters and many sharp operators regularly monitor ten to get a feel for what might be going on six.

Extraordinary propagation has already been witnessed on 6 meters this year. On March 2nd it has been reported that KH6IAA worked Argentina, Chile and Japan. March 3rd produced contacts with Australia and New Zealand. But, the real encouraging news was a two-way between JA5CMO and CE3OK: Japan to Chile on the 6 meter band!

To keep up to date on happenings on the 6M band, tune into a new 6M Net that meets on 75M: Tuesdays, 2300 UTC, 3820 Khz. K1ZFE (CT) and WB2RLK/VE1 share the net control duties. The net usually runs for several hours and may move several Khz plus or minus QRM. Exchange of current information on 6 meter activity is the purpose of the Net. Regular check-ins include the following well known VHFers: W3XO, WA4GPM, W8III, K8NXI, W2REB, VE1ASJ, WA1NCR, K3MWV, WA9DOT - plus many more every week.

Another bit of news is that for all future VHF contests (starting in June) all ARRL countries will count as individual multipliers in the scoring formula. In anticipation of this ruling, many stations have prepared to be operational this Summer from choice DX locations. Following is a list of known DX operations scheduled for the up-coming months. The list should be reasonably accurate and current. Additions or corrections will be issued as the dates grow closer. (Notice that most of the operations are centered about the June 10th and 11th QSO Party)

<u>DATE</u>	<u>CALL</u>	<u>OPERATOR(S)</u>	<u>COUNTRY</u>
May 21-31	VE1)D/VP9	VE1OD	Bermuda
May 27-June 4	FP0(???)	K1TOL/W1AIM	?
June 3-13	WB2RLK/VP9	WB2RLK	Bermuda
June 4-?	FP8AA	K2RW	St. Pierre & Miquellon Is.
June 7-14	VP2M(?)	K8NXI	Montserrat
June 10-11	C6AAD	?	Bahamas
	WA4CGM/KV4	WA4CGM	Virgin Is.
	WB2CHO/VP5	WB2CHO	Turks Is.
	W5SXD/ZF1	W5SXD	Grand Cayman
	XE2(???)	WB2NMT/N6CA	Mexico
	W2BN/KL7	W2BN	Alaska
June 15-30	VP2MX	WB2RLK	Montserrat
Jul 1-Aug 31	KV4IF	?	Virgin Is.

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OFFICIAL BULLETIN NR 697 FROM ARRL HEADQUARTERS NEWINGTON CT MARCH 9 1978
TO ALL RADIO AMATEURS BT

This is a modification of Official Bulletin 696 regarding United States and Canadian amateurs seeking to take advantage of reciprocal operating agreements while traveling in the others country. Travelers should request specific application forms from the ARRL through the Membership Services Department, ARRL Headquarters, as soon as possible. Completed forms should be forwarded by the traveler to the DOC or FCC as applicable a minimum of 45 days prior to departure AR

OFFICIAL BULLETIN NR 698 FROM ARRL HEADQUARTERS NEWINGTON CT MARCH 16 1978
TO ALL RADIO AMATEURS BT

Next month the annual ARRL Open CD Party, open to all ARRL members as well as those members holding official Communications Department positions, will be held. The cw weekend is set for April 7 through 9 and is followed by the phone weekend 14 through 16 April 1978. Full details can be found on page 83, March QST. Log forms are available for a self addressed envelope, from ARRL, 225 Main Street, Newington CT 06111. AR

OSCAR 8 IS UP

The 29.402 Mhz and 435.095 Mhz beacons are working fine. Good Mode J and Mode A performance. The orbit is nearly circular with a 909.583 KM mean altitude; a period of 103.193 minutes; inclination of 99.146°; 25.7983° progression at the equator each orbit. "Oscar 8 is available for general use, operating Mode A weekdays (Wednesday, experimental only) and Mode J Saturday and Sunday (GMT). Both transponders are working so well (20W ERP produces S9 and 1W S6 on Mode A, and Mode J appears to be about 6 db better!) that linears are definitely not needed." (From HR Reports)

* * *

I-SEE CLUB FOUNDED

"Let me tell you about my operation," a line that's the staple of old jokes, might be the motto of a new organization of Bucks-Mont residents who have undergone cataract surgery involving the implantation of an artificial lens in the eye.

The reason for starting the club is that somebody who's considering that kind of surgery might like to hear about the experiences of those who've already had it.

The group meets in a conference room at the office of Dr. David P. Morrison Jr., Plumstead Township, who treated the members. However, the club is not restricted to Morrison's patients. The next regular meeting scheduled for 12:30 p.m. April 6. For information phone 598-7514. (From the Doylestown Daily Inteleger)

Our own Howard Fretz, K3EPB, who has had intraocular lens implanted in the eyes after surgical removal of cataracts is one of the founding members.

* * *

THE SHAVTRONICS AUTOMATIC SUBSONIC PULSED POWER FEEDBACK POWER REGULATOR

by Pete Shavney, WA3OVH

Many years of research have been invested by a distinguished team of research analysts at the Shavtronics Laboratories in developing an automated subsonic means by which technical regulation 95.43 of the FCC rules and regs can be complied with (in particular para. (b) "...amateur stations shall use the minimum amount of transmitting power necessary to carry out the desired communications...")

In the Shavtronic design OVH#1, two series of pulsed tones 100 Hertz apart corresponding to a signal to noise ratio (SNR) of 10/9 are transmitted at subsonic frequencies based on tenth of a millisecond samplings of radiated RF energy as measured at the output from the transmitter (or amplifier). The receiving station with appropriate modifications, senses the subsonic pulses, reflecting these precisely as sent each tenth of a millisecond while in receive mode, back to the transmitting station. As long as the interval of 100 Hertz is maintained, nothing happens. However, as soon as the SNR at the receiving station deteriorates, the upper of the two pulses is raised or lowered in accordance with the change in conditions. For example, if the receive signal becomes 20 or 30 db over nine, then the upper pulse being reflected, is dropped down ten or twenty Hertz, instantaneously overriding the output power level of the transmitting station, dropping it down to the former 5/9 level. And conversely, as soon as the received level deteriorates to say 3/9 the upper pulse would be raised ten or twenty Hertz effecting an immediate increase in the transmitting stations' output power level.

One advantage of the new system; it would no longer be necessary to call CQ using a full gallon, as the station receiving your signal after locking on to your subsonic carrier would immediately override your power output if your signal was weak, raising it up to an S9 level. However, the overall effect would be to reduce congestion on the bands immensely as nearly everyone tends to use maximum power when calling CQ and hardly anyone ever turns the power down after making contact even though they may be twenty or thirty over nine at the receiving stations' antenna. (From the PennARC Kilowatt - YET ANOTHER "FOF" KIT)

THE FUSION REACTOR - OR HOW TO BEAT THE ENERGY CRISIS

By WA3FOF

Contrary to popular belief I am not just an average editor of a club paper but in addition to the rest of my functions I am also a self taught nuclear physicist. In those times when am wearing a dirty white coat (who can keep a white coat clean) looking around for new methods to power my radios, I have come up with several interesting ideas like a controlled fusion reactor. Part of the reason for this research can be laid directly at the feet of our President, James Earl Carter, who in a moment of monumental stupidity (the editor may or may not be Republican - he isn't sure) and fear stated and issued an executive order that all work on the so called fast breeder reactor would be stopped. The reason was simple enough, since if a small amount of the fuel was stolen, it could be made into a nuclear device by any competent high school student or below average college student who had the rest of the easy to get material.

It is beyond the scope of this essay to go into detail of how to build your own nuclear device because I do not want a rush to get enough Plutonium let alone a rush at the store to buy the rest of the materials. Let us face it; since the authorities get upset when a kid has a couple of firecrackers they sure would go completely off at the prospect of some kid having his own "A" Bomb. So we will leave and end the discussion of building your own bomb and go on to the subject of building your own controlled fusion reactor.

Lets discuss what exactly the process called fusion is: Fusion is the act of combining lighter elements into a heavier one and it is the reverse of fission. Fusion is the same process used by the Sun to generate its vast amount of energy that gives off the heat and light. So we know that the process works, since they have made "H" Bombs and every once in a while you too can see the sun thru the smog. In other words a small uncontrolled "H" Bomb and a very large controlled star, the Sun, show that the above are feasible.

The basis for this process is that heavy Hydrogen has a mass of 2.016 and two of these when worked on combine to form Helium that has a mass of 4.003. The mass of two heavy Hydrogens are 4.032 so there is a loss of $4.032 - 4.003$ or shall we say 0.030. Einstein says this mass becomes energy from the equation $E=MC^2$, which is 0.030 times $(300 \text{ times } 10^6)$ or 2.7 times 10^{15} per helium atom formed. A LOT OF ENERGY.

The first problem is finding fuel; the only fuel being heavy Hydrogen or Deturium. This is really not as much of a problem as you might think as the worlds oceans have heavy water in them. So a little refining process to separate the heavy water and from it you can obtain all the Deturium pellets that you need at a very modest cost. See any Junior High School Science Text or ask a student for details. Please note by building the processing plant near the reactor by the ocean you have a source of fuel and a method for keeping everything nice and cool right under your feet.

The next real problem is to build the reactor vessel. Some Nutronium, the element of a very high mass consisting of only neutrons, would be the best material but this material is not found on Earth nor can it be manufactured with our current technology. But all is not lost because there are adequate replacement materials that are available and rather cheap. Fire Brick with coolant pipes running thru it and with four feet of reenforced concrete held together with about six inches of high chrome stainless steel should do the job.

Next we need a triggering device and this is not any problem for electronic minded Radio Amateurs. All we need is a bank of thirteen phased Lasers, each one Laser delivering a two Megawatt Pulse in the infrared region. Note the pulse helps on the electric bill. However the bank of thirteen Lasers must be exactly on the target and totally in phase with each other. The inside of the vessel is in a vacuum and power is obtained from the steam from the coolant pipes. By building a hemisphere vessel and a large amount of Deturium pellets you have an engine for a space ship. This system would in a short period of time attain a speed of $3/4$ and up to the speed of light. At this speed time slows down and in the lifetime of a man he could travel to all the planets and back.

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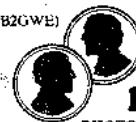
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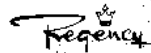
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