

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

CHEESE BITS



MT. AIRY VHF RADIO CLUB, INC.

MT. AIRY VHF CLUB, INC., PHILADELPHIA, PENNSYLVANIA ARNS

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

VOLUME XXXI

APRIL, 1989

NUMBER 4

THE PREZ SEZ

Dave, N3CX, had a slide presentation of the June contest site in FNØ1 at the March meeting. It is a good location with a clear shot in almost every direction. Make plans now to join the crew in June!

Also coming up in June is the election of Club Officers. The Board of Directors has selected a nominating committee. It is Ron, WA3AXV, Harry, W3CL, and myself. If you would like to run for a Club Office or know someone who would, please let someone on the Nominating Committee know or make a nomination from the floor at the June meeting. (There is precedent for this rare and unusual action!)

On Monday, March 13th, Rick Connor, WC2K and Al Ward, WB5LUA, completed a 220 MHz contact during the Aurora. WB5LUA in grid EM13, is 1298 miles from WC2K, in FM29. Signals ran from 55A to 59A. This contact breaks the previous records on 220 MHz. Unless someone else in the Northeast or Canada completed a contact during this Aurora; Rick, WC2K and Al, WB5LUA, hold the new 220 MHz record. Congratulations to you both on the long-haul Aurora QSO and the possible new record.

73,

Bob, N2SB

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OF THE MONTH. SWAP SHOP ITEMS - NO CHARGE

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WA3AXV, RONALD WHITSEL
215-355-5730

PACK RAT REPEATER 222.98/224.58 MHz - W3CCX
LOCATED IN CHURCHVILLE, PA.

OFFICERS: 1988 - 1989

PRESIDENT: N2SB, BOB COOK
VICE-PRES: WC2K, RICK CONNOR
COR. SECY: WB3JYO, PAUL DREXLER
REC. SECY: WA3AQA, WALT ZUMBACH
TREASURER: K3GAS, DOC CUTLER
DIRECTORS:

WA3AXV, RON WHITSEL (2 Yrs)
K3GYS, GUS NICOLELLA (2 Yrs)
WB3DNI, PAT CAWTHORNE (1 Yr)
WB2VLA, DAVE POWER (1 Yr)

VHF CONFERENCE CHAIRMAN:

WC2K, RICK CONNOR
609-268-0736

HAMARAMA CHAIRMAN:

WB3DNI, PAT CAWTHORNE
215-672-5289

MONDAY NIGHT NETS

7:30 PM - 50.125 MHz
8:00 PM - 144.150 MHz
8:30 PM - 220.125 MHz
8:30 PM - 224.58 MHz
9:00 PM - 432.110 MHz
9:30 PM - 1296.1 MHz

NET CONTROL

W3CL
W2EIF
WC2K
K3GAS
WA3AXV
WA3NUF

* * *



THE AMERICAN RADIO RELAY LEAGUE

OST

HUGH A. TURNBULL, W3ABC

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215 355-5730

CALENDAR OF COMING EVENTS

By Harry Brown, W3IIT

APRIL

- 1 Annual North Jersey Hamfest sponsored by the Split Rock ARA will be held at the Dover Armory, Rte 15, just south of I-80 in Dover, N.J. Talk-in on 146.385/.985.
- 1-2 Greater Baltimore Hamboree and Computerfest at the Md. State Fairgrounds in Timonium, Md. Talk-in on 146.07/.67.
- 8 Chestnut Ridge Radio Club Hamfest at East Saddle River Road at Weiss Road in Saddle River, N.J. Talk-in on 146.355/.955.
- 10 ARRL 144 MHz Spring Sprint 7:00 P.M.-11:00 P.M. local time.
- 13 Pack Rat Board of Directors Meeting at the CTR of Pat Cawthorne. Call 215-672-5289 for directions.
- 15 "Flemington Hamfest '89" sponsored by the Cherryville Repeater Association will be held in the Hunterdon High School Field House. Talk-in on 147.975/.375, 145.615/.015, .52, 222.52/224.12, and 449.85/444.85.
- 18 ARRL Spring 220 MHz Sprint 7:00 P.M.-11:00 P.M. local time.
- 20 Pack Rat April General Membership meeting at the Southampton Free Library at 8:00 P.M. Bring and/or invite your on-the-air VHF buddies. All VHFers invited. 1988 4U1UN EME DXpedition.
- 22 Lyrids Meteor Shower, predicted peak 0233Z.
- 22-23 Trenton Computer Festival at Trenton State College in Trenton, N.J. Mostly computer but lots of good parts too.
- 26 ARRL Spring 432 MHz Sprint 7:00 P.M.-11:00 P.M. local time.
- 28-30 Dayton Hamvention. If you've never been there you've never seen anything like it. If you're looking to buy it or see it - GO!

MAY

- 5 ARRL Spring 902 MHz Sprint 7:00 P.M.-11:00 P.M. local time.

VISITORS - MARCH 16, 1989 MEETING

W3AJS - Charles E. Keener - Oreland, PA
N3EXA - Brian Taylor - Doylestown, PA

CHANGE OF ADDRESS

KA3KSD - David A. Mueller
140 Shingiss Street - Apt. 307
McKees Rocks, PA 15136
412-922-8022 (w)

PROPAGATION REPORT
Paul Drexler, WB3JYO

If you haven't heard about the BIG Aurora yet, you've probably been sleeping. The excitement started Sunday evening, March 12th, around 2100 local time; the bands were full of buzz! 6 thru 432 were filled with action- 2 meters sounded like a low band DX contest, solid with Aurora signals from 144.1 to 144.225.

This Aurora may well have been the best Aurora in 25 to 30 years, with a reported K index of 9 and an A index of 156! Mixed in with the Aurora was sporadic E during a period, with VE3 and VE4 stations over S9! The Aurora peaked 270-300 degrees, quite a bit south of what we normally experience in this area. It has been reported that the New England stations did not have Aurora, being too far north of the "curtain" ~~in the FL Keys~~ reported both radio and visual Aurora (tnx WC2K)! The grids to the Midwest and South that were worked are too numerous to list.

Rick, WC2K spent quite a bit of his operating time on 220, and has netted what may be a new DX record! Rick worked WB5LUA on 220 at a distance of 1298 miles! Rick also ran with Dave, KD5RO on 903 but couldn't complete a QSO, although Dave reports copying Rick on that band.

The Aurora is said to have been continuous from Sunday evening thru the morning of Tuesday, March 14th, dying out at 0200 local time. Can anyone remember a better Aurora?

FIRST 1296-MHz WAC AWARDS

It has been nearly 13 years since the first VHF/UHF WAC was achieved on 432 MHz, and recently the barrier was broken on 1296 MHz as well!

According to Eileen Sapko, ARRL Awards Manager, the first 1296 MHz World and North American WAC awards have been achieved by Willy Bauer, LX1DB, and Allen Katz, K2UYH, respectively. LX1DB's award was achieved in January and K2UYH's in February 1989.

JUNE CONTEST UPDATE

Pack Rat expedition W3CCX will set up station in Clearfield County, PA, FNØ1 on Friday, June 9 and operate the ARRL VHF contest. Take-down and return home will be Monday the 12th. The following band chairmen are seeking manpower and equipment for the operation:

50 MHz - WB2YEH, Bob Fisher 609-665-8488
144 MHz - WB3JYO, Paul Drexler 215-598-3934
220 MHz - N2SB, Bob Cook 609-722-0132
432 MHz - WA3AXV, Ron Whitsel 215-355-5730
903 & up - WA3JUF, Dave Mascaro 215-795-2648
 WA3NUF, Phil Miguelez 215-675-4277
 W3CX, Dave Hackford 215-679-7293
Laser comm. - WA3YUE, Bruce Loss 215-947-4166
Expedition Chairman- Dave Hackford 215-679-7293

We're looking for 100% Club involvement this year. As we saw from Dave's slide presentation last meeting, the site is a beautiful mountain-top location with accommodations nearby. We emphasize that if you are unable to make the trip, you can still contribute to the expedition. Band chairmen are looking for rigs, power supplies, amplifiers, preamps, rotors, cables, spares etc. We're also looking for Club members to operate from the home stations of participants. If none of these opportunities suit you, at least plan to work W3CCX on all bands during the contest.

SWAP SHOP

FOR SALE: KWM-2 w/xtals, 312B-5 Station control, 516F-2 for portable operation. Also carrying case for digital read out Model DD-1C. Sold only complete - \$900. Collins #32-3 Transmitter w/xtal, 75-S-3C xcvr, 516F-2 Power supply & Spectronics Digital read out. Sold only complete - \$700. GONSET RF Power Amplifier w/ 4X250 tube, output 500 watts on CW, AM, SSB, & FM w/5 watts drive. Never turned on. Price - \$275. ALL COLLINS EQUIPMENT IS THE ROUND EMBLEM.

CONTACT: A.G. WENTZEL, JR., W2HX
318 Gardner Avenue
Trenton, NJ 08618
PHONE: 609-393-4823

FOR SALE: 144 MHz Tempo 2002 - 700 W output - \$750. 4 - F9FT - 1296 ant. w/ stacking frame - like new - \$200.

CONTACT: HERB KRUMICH, K2LNS
PHONE: 717-472-9245

FOR SALE: TS-180 mtr xcvr - factory aligned w/both SSB filters & CW filters & DFC - manuals - mint condx - \$650.

CONTACT: K3BCV - CHARLIE ROYER
847 N. LaCrosse Street
Allentown, PA 18103
PHONE: 215-432-2805

WANTED: Socket for 4-1000.

CONTACT: ED BARBACOW, K3ZCY
330 Ceylon Road
Carmichaels, PA 15320

WANTED: 2 - 432 MHz TONA RIW SST-0719 HAM IV or equivalent; 2 - 220 MHz boomers; 220 MHz H frame.

CONTACT: HERB KRUMICH, K2LNS
PHONE: 717-472-9245

WANTED: 6 mtr SSB xcvr.

CONTACT: BILL, K3WRD
PHONE: 215-674-3892

COMMERCIAL ADS

HAM RADIO MAGAZINE: HR is the leader in Amateur Radio state-of-the art! Projects for every interest. Plus Joe Reisert, W1JR. Act now. Don't miss another exciting issue! Greenville, NH 03048 (603) 878-1441.

LOOP YAGIS: 902 MHz 33 element \$82 kit, \$99 assembled and tested. 1296, 45 element \$82 kit, \$99 assembled and tested. 1296-55 element (New "Super Looper") \$99 kit, \$119 assembled and tested. 2304-45 element \$67 kit, \$80 assembled and tested. Also available: Element and hardware kits for above. 2 & 4 way power dividers. Discount on complete arrays. Solid State linear amplifiers, 13.8 VDC: 1296 MHz, 8 W in 35 W out \$305, 1 W in 20 W out \$55. Coming soon: 65 W Solid State Linear for 1296. GaAs FET preamps 902 MHz .8db NF \$80, 1296 .8db \$80, 2304 1db max \$125. Universal 1 GHz LO kit \$48 less xtal, 700-800 MHz LO kit \$48. Xtals available. Write for complete catalog: DOWN EAST MICROWAVE, Bill Olson, W3HQT, Box 2310 R.R. 1 Troy, ME 04907 - 207-948-3741.

MICROWAVE PARTS FOR SALE: All prices shown are POSTPAID in the 48 states. Check w/Ham call accepted. 10 GHz GUNN SOURCES: All sources work the same, put out about 5 mw on 10.525 GHz and easily tune to 10.1 GHz. (I have modified them to 9.4 GHz easily). They run on 7.5 VDC, and include a separate detector diode to allow for transceive operation. SOLFAN-STYLE \$20; FLAT-PLATE ANTENNA STYLE (w/SMA's and coax) \$20; ROUND-HORN UNITS (lightest) \$20; TINY JAPANESE-STYLE (very short horn, tiny) \$30, (Japanese style comes complete w/new case and PC board, already working as an intrusion alarm. Not certified! NEW!) 6 GHz STUFF: All are rectangular waveguide items, 1.37" x .62", w/flanges where applicable, including postage! Waveguide-to-SMA transition \$25; Waveguide, rigid, about 36" long, new \$20; 2 lb assembly, w/vane attenuator, several corners, elbows, and straights, w/flanges \$15; Waveguide terminations, ferrite-cone \$20; Flexible waveguide, various lengths, used \$20; Rectangular-to-Eleptical transitions, some new, all OK, some w/Andrew eleptical stubs still attached \$20. INFRA-RED STUFF: Racal model IR-773, Interior 35' sensor, new w/instructions, similar to Radio Shack \$25. Many hundreds of SMA and SMC connectors, new in packing, adaptors, solid-coax-still getting it indexed - send for stock sheet and prices. I DON'T WANT THEM!! SHF MICRO-WAVE SUPPLY, 7102 W. 500 S., LA PORTE, IN 46350 ALAN RUTZ WA9GKA.

THE FOLLOWING MEMBERS OWE DUES FOR 1989

N3AHI	W3FEY	K3IPM	WA2OMY
W3AJF	W3FGQ	WB2JHG	WB2RVX
N2AQJ	W3FOD	K3JJZ	W3RZU
WB2BJH	WB2GEZ	WB3KES	AC3T
W3CJU	WA3HIT	K3KVS	KS2T
WB3CTP	W3HK	NF2L	WA3TSE
W3CXU	W3HKZ	K3LYB	K3VEQ
N3EAX	K3HSS	KA3MGB	W3VIR
K3EPB	W2HX	WA3NDE	WA3YDZ
WA3EPS	WB3IGR	K3NHX	AA2Z
K3ESJ	K3IGX	WA3NUF	W3ZD
K2EVW	WB3IND	AK3O	KC7Z

TID BITS

- Our condolences to the Ron Whitsel (WA3AXV) family on the recent passing of his mother, Gloria.
- K3VIT, Tom Jenkins reports he is training with a "Seeing Eye" dog. Good luck, OM.
- W2AXU reports that a SID (Solar Flare) with an x20 strength occurred the mornin of March 6, 1989 at 1405Z and lasted about 2 hours. The HF bands went dead. I was the strongest flare since 1972.
- Our member KA3KSD, David Mueller will be moving back to Pittsburgh. Keep in touch, Dave.
- Did you watch Day-1 last month? Pack Rat Bill Murphy, WØRSJ was featured on the AT&T ad. You looked and sounded great, Bill.
- Winner of Pack Rat/Rochester Award Tom Cook, WA2BPE. Worked 15 Pack Rats during January VHF SS. Good show!
- W3NSI, Lyn Rowland now resides in Silverton, NJ. QTH correct in '89 Club Directory.
- W3HOT, Bill Olson going to stay put in Troy, ME. Promises an activity report from the North Lands.
- John, K3KTY now retired - miss your "Man in Florida" reports, OM!

DAYTON HAMVENTION VHF/UHF PROGRAM

The VHF/UHF program starts Friday evening, April 28, with the preamp and converter noise figure measurements at 1930, at the Hamvention site. Measurements conducted on 144 thru 1296 MHz by Steve Whitefield, WA3OJX and Norm Alred, WA8EUU. Door prizes for top homebrew entries. The VHF/UHF program resumes at 0900 Saturday morning in Room 5, and includes the following talks:

- VHF/UHF and Above - Past Records and Future Challenges, Joe Reisert, W1JR
- Getting started on 903/1296 MHz EME, Dave Hallidy, KD5RO
- Traveling Wave Tubes for Amateur Microwaves, Tom Hill, WA3RMX
- 50 MHz DXing - Africa style, Dave Heil, J52US

The antenna gain measurements will be conducted on Sunday at 0930-1200 at Meadowdale High School, about 1/2 mile south of Hara Arena; free shuttle bus service. Gain measurements of 144 thru 1296 antennas made by Joe Burke, WA8OGS and Terry Price, WD8ISK and other members of the Midwest VHF/UHF Society. Homebrew and Commercial category for each band. Prizes will be awarded to selected entries. Tnx Joe Burke, WA8OGS.

DAYTON HAMVENTION APRIL 28, 29, 30, 1989

VHF/UHF Program sponsored by MIDWEST VHF/UHF SOCIETY

Oral arguments by the ARRL before the FCC, and possible open hearings brought by congressional pressure, could result in a reversal of last summer's Commission decision to reallocate 220-222 MHz from amateur to land mobile use. The FCC is expected to grant, if it has not already done so by the time you read this, an ARRL request present oral arguments before the Commission in the League-initiated Petition for Reconsideration filed in the 1 1/4 meter transfer issue. Last October 9, the ARRL filed what it publicly called "a strongly worded petition (that) accuses the FCC of predetermining the outcome of the original proposal" as presented for public comment in Docket 87-14.

In its filing, the ARRL stated that "in order to justify what clearly was a predetermined outcome to this proceeding, the Commission failed to address the arguments of the Amateur commenters; it extended the reply comment dates after the deadline for filing reply comments without advance notice; it accepted comments of United Parcel Service more than six months after the close of the already-extended comment dates because the record lacked support for the position the Commission had already chosen in this proceeding..." This filing on behalf of the amateur radio community by the ARRL appeared to represent a new, and hard-line stand toward the FCC and those who would attempt the theft of amateur spectrum for reassignment to other use. The request to present this view in the form of oral argumentation, probably by ARRL Counsel Christopher D. Imlay, N3AKD, is yet another point in the resolve of the League to retain 220-222 MHz and all other amateur allocations for use by ham operators.

The ARRL has also carried the 87-14 battle further by filing strong negative comments on RM-6595 -- a United Parcel Service request that the company claims to be an action to assist the Commission in the "formulation of rules for the (reallocated) 220-222 MHz band and to ensure that the much needed spectrum is made available on a timely basis." This appears to be a blatant effort on the part of UPS, and probably other commercial interests, to speed up the reallocation process and simultaneously trample under the demands of the amateur radio community that this unwarranted theft of valuable amateur radio spectrum be reversed.

In its filing against RM-6595, the ARRL pointed out that United Parcel Service is trying to obtain a band that may never be made available to them, nor to anyone else wanting it for land mobile purposes. According to the ARRL, it is very much premature and a definite waste of valuable FBB time and resources to begin a proceeding which may soon be rendered moot by action on any one of the more than 500 Petitions for Reconsideration on Docket 87-14 currently before the Commission. Further, even if the FCC were to deny all these petitions and proceed with the reallocation order, there would have to be coordination procedures developed for the band between government and non-governmental users.

What the ARRL did not say in these comments, but did say publicly at the time of the reallocation, was that it was also prepared to litigate the matter in the courts conceivably tying up action on the reallocation of 220-222 MHz for many years.

Meanwhile, the General Accounting Office has delivered a report on the FCC's frequency allocation policies, especially in regards to the way in which it handled the matter of Docket 87-14, which is very critical of the Commission.

Six tests or standards were applied to the FCC in the matter of Docket 87-14, and in all six cases, the Commission received a failing grade.

In addition, Arthur Kay, W5APX, has been in direct contact with US Senator James Sasser (D-Tennessee). In a letter to Kay from Sasser, it was announced that the FCC has informed Congress that there will be public Review Hearings dealing with the way in which Docket 87-14 was handled by the Commission. It

(Continued page 8)

NEW VHF/UHF PRODUCTS
DE W3HQT/QEX

Avantek has released a series of silicon NNICs that use isolated collectors. They call their manufacturing method the Isosat process. This process has allowed Avantek to optimize device feedback for flat gain and low noise. The new device is designated the INA 02170, and, at this point, only comes in the 70-mil hermet (read: expensive) package, but will be available soon in the familiar plastic MMIC package. The device is unconditionally stable, and performance is as follows:

<u>FREQUENCY (MHz)</u>	<u>GAIN (dB)</u>	<u>NOISE FIGURE (dB)</u>
432	32.5	1.75
902	32	2.0
1296	27	2.3
2304	16	3.75

For more information, contact your local Avantek sales office. Another new product of note is the Mitsubishi M67715. This is a hybrid linear-power-amplifier module designed for about 10 mW drive and 3 to 4 W output at 1296 MHz. Saturated output is about 5 W. This module replaces the NEC MC5874, and is used as an output stage in 1296 MHz hand-held rigs, and as a driver in multimode rigs in the 10 W output class. Mitsubishi is expected to market this product on a small-quantity basis in the near future.

87-14 BATTLE (continued from page 7)

is conceivable that the findings of such hearings could lead to either a reversal of the findings in 87-14 or dismissal of the entire action as if it had never taken place. The latter would be a mixed bag for the Amateur Radio Service. Prior to the reallocation order, 220-225 MHz was a shared allocation. While removing 220-222 MHz from amateur use, the same Report and Order declared 222-225 to be "amateur exclusive."

If the reallocation order is overturned or dismissed it means a return to the pre 87-14 status quo with the entire band again being a target for other services -- including land mobile, FM broadcast band expansion, cordless telephony and a vast array of others to attempt to acquire by methods similar to those used by land mobile in the 87-14 debacle, or through lobbying the FCC to propose such reallocations at the next World Administrative Radio Conference that many experts in telecommunications believe could come as early as 1992. TNX WESTLINK REPORT. (Let's win the reversal and strive to protect all bands in the future!! -Jr. Ed.)

SIX METER DXPEDITION

Expect noted VHF enthusiast W6JKV to be on the air from Western Kiribati T3 from March 26 through April 7 and then from Tuvalu T2 April 8 - 15. Most of the operation will be on 6-meters, but you can look to coordinate on the high end of 20 and 10 meters and on the international 6-meter DX liaison channel of 28.885. QSL as directed during operations. TNX WESTLINK REPORT.

COMPANY'S COMIN'

The Rochester VHF Group submitted 48 logs to the ARRL for the January VHF Contest this year. Their total club score totalled 1,127,992 --- an all-time high for that club. Expect to have some company in the Unlimited class next year.

HINTS AND BITS

Subject: Blown GaAsFET Preamplifiers

I always hear of Amateurs having repeated problems with their GaAsFET preamps. Replacing the device several times can be costly and very annoying. The trick is to know why the device keeps blowing out.

Nearly all preamp failures are the result of power supply problems. Spikes on the power supply will destroy most preamps. GaAsFET devices have breakdown voltages typically in the less than 10 volt range. So it's easy to see why they fail when subjected to power supply spikes in the hundreds of volts range. Power supply spikes occur when your station goes from receive to transmit and back again. All relays must have a diode in parallel with the coil to minimize spikes. Spikes are minimized, not eliminated.

Very few failures occur with RF problems, unless the transmitter is put directly into the preamp of course. The preamp can withstand many milli-watts of RF into the input before failure occurs. And even more power into the output before the FET is damaged. This mode of failure can be eliminated by using properly sequenced antenna relays. If enough isolation cannot be achieved with one, then use two relays.

Now, find out why the preamp keeps failing: First determine if the FET is blown or the preamp has a dc problem. Use your volt meter and compare readings on a good unit of similar design. Read my lips - I said volt meter, not ohm meter. Then determine whether it's a spike problem or an RF problem.

First, set-up a good preamp and listen to a signal source or a beacon.

1. Check the current set-up by operating your other bands one at a time. If your preamp fails, then the preamp is being spiked by a common power supply connection with the other bands. Power the preamp with a battery to confirm this.

2. If #1 is OK then while listening to the signal source, hit the transmit/receive switch (on the band in question) several times with the RF power off. If the preamp blows, then the preamp is being spiked by the power supply used for that band. Power the preamp with a battery to confirm this.

3. If #1 and #2 are OK then operate the transmitter using push to talk, with RF power applied. Make sure the rig is in transmit before hitting the key. Then operate the transmitter with RF applied, using VOX or semi-breakin CW. This will tell you if VOX or CW break-in are a problem. This could be a spike problem due to sequencing or an RF problem at this point. If the preamp blows on a battery supply, then the problem is RF related.

A few things that should be done regardless of the problem are: All relay coils should have a IN4001 (or equiv) diode across them (don't forget the relays in your commercially made equipment). All preamps should be powered either by a separate power supply or by a battery.

The preamp voltage may be turned off during transmit. I have been doing this for many years without even one failure. The reason this works is that it may disconnect the preamp from the spiking source at just the right time. Of course, the relay coil doing the switching should not be on the same power supply as the preamplifier.

Sufficient isolation from the transmitter is a must especially if you run high power. If you don't know the isolation of the relay you have, then ask someone who has access to a network analyzer to measure it for you.

Another problem may be due to lightning and static crashes hitting your antenna. Wiring your antenna relay in the energize to receive configuration will minimize this problem since the antenna will be disconnected from the preamp when the station is off. This will also help in another way. If your control circuits fail, you will transmit into the antenna and not into an open antenna relay.

(Continued next page)

The antenna relay and other T/R switching external to a transverter or transceiver should be hard keyed. RF switching is only easier during the initial set-up. Later it ends up being more work. To be most effective and sequenced properly, hard keying should come from the transceiver as close to the PTT/break-in circuitry as possible. Hard keying in a transverter system should be done by the control circuits that key the key the transverter into the TX mode.

Finally, don't overlook the RF problems that can occur in some of the transceivers due to oscillating power amplifiers. The power amplifier modules can oscillate when going back to the receive mode, which biases on the Pin diode antenna switching circuit which allows the RF to go into the output of an external preamplifier. See April 1987 Cheese Bits.

de WA3JUF

WHAT'S THIS 8BA STUFF?
DE KA5JPD + "FEEDPOINT"

A recent phone call brought the question, I'm working on a project from the RSGB Handbook and can't figure out what drill and tap size to use. What is this 8BA junk anyway?

This can be a problem for those not having reference charts. A single chart showing all threads and drill sizes is large and difficult to read; between the American Standard and British there are only 16 commonly used threads. Maybe a chart showing the sizes used most by us radio nuts would be usefull. The OUTSIDE DIAMETER refers to the threaded part of the shank while FRACTIONAL CLEARANCE is usually a loose fit. In almost no case is a fractional size satisfactory as a tap drill as they result in much less than the desired 75% thread depth.

<u>SIZE</u>	<u>OUTSIDE DIAMETER</u>	<u>FRACTIONAL CLEARANCE</u>	<u>TAP DRILL</u>	<u>DECIMAL</u>	<u>BRITISH</u>
2-56	.086	5/64	#50	.0700	8BA
4-40	.112	1/8	#43	.0890	6BA
6-32	.138	9/64	#36	.1065	4BA
8-32	.164	11/64	#29	.1360	3BA
10-24	.190	13/64	#25	.1495	2BA
1/4-20	.250	1/4	#7	.2010	ØBA

I hope this will help keep up with the WRINKLES in your screws. - Carl KA5JPD

1989 NORTH AMERICAN VHF/UHF CONTESTS
TNX RVHFG JOURNAL

April 10	ARRL 144 MHz Sprint
April 18	ARRL 220 MHz Sprint
April 26	ARRL 432 MHz Sprint
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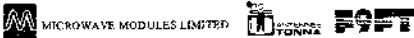
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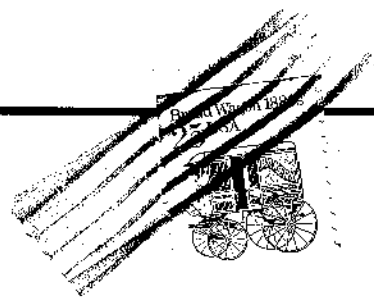
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