

Prez Sez

Another contest has come and gone. No pattern changes here! Even though I usually start the improvements here a couple weeks after the contest, a stall puts the panic into the week before! Yep, it was down to the wire here, with some projects still on the bench for next year. I will try to add band #10 (5.7G) for next year. I know of several others who were in the last minute mode too. Some success, and some failure. Sounds like life! It was our turn in the barrel this year, with the ice storm wiping out Saturday night. Our friends to the NE had this same problem a couple of years ago, probably worse! I did hear the “rats” banging away though, looking in every nook and cranny! My thanks to all who gave it their best!

It was good to see those that showed for the wrap up session. It is quite the social event now that we must submit logs directly to the ARRL. The “war stories” are great, and help spur a plan for the coming year. Hopefully a club project or two may blossom to get the group into better shape for next year. Now that we are past the January contest it is time to think ahead. Try to look ahead now and set aside time for the “other contest” which should not include ice. After working the winter contest from the QTH, I always look forward to the mountain top location!

One more item ... the 10 gig project. Since I have been talking about this for 10 months! The project finally came together on Friday afternoon before the contest. The offset dish didn't make the main mast, but got onto a camera tripod instead. I missed a few Q's and at least one grid because of this. Anyway, I did make a few good QSO's after some trial and error. My highlight was working Phil, WA3NUF during the peak of the snowfall. When I finally heard a signal I peaked the dish and then noticed a stronger signal with some elevation. The “snow scatter” contact was like making an aurora contact. Really COOL! I guess I can get away with Bill, AA2UK's “add a band” theory/philosophy one more year. And we will have 1 more 10 gig QSO at the mountain this year!

73, Ed - WA3DRC

Pack Rat Website: <http://www.ij.net/packrats>

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Pack Rat Web Site: <http://www.ij.net/packrats>

SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, W2SJ
7258 Walnut Avenue
Pennsauken, NJ 08110
(609) 665-8488
bobw2sj@prodigy.com

EDITOR:

Rick Rosen, K1DS
206 Kimberton Drive
Blue Bell, PA 19422
610-270-8884
rick1ds@hotmail.com

CLUB TREASURER:

Dave Mascaro, W3KM
1603 Mink Road
Ottsville, PA 18492(215)
dmascaro@gi.com

AWARDS CHAIRMAN:

Bob Fox, W3GXB
(346-8698610)

TRUSTEE OF CLUB CALL - W3CCX

Ron Whitsel, W3RJW
W3RJW1@aol.com
(215) 355-5730

PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz, Churchville, PA

OFFICERS: 1999-2000

PRESIDENT: WA3DRC Ed Finn, edfinn@voicenet.com
VICE PRES: WA3EHD Jim Antonacci,
Antonacci@worldnet.att.net
REC. SEC: WA3AQA Walt Zumbach,
zumbach@bellatlantic.com
TREASURER: W3KM Dave Mascaro, dmascaro@gi.com
COR. SECR: AA3GN Joe Landis, landisj@nad.com
DIRECTORS:

W3RJW (2 Yrs) Ron Whitsel, w3rjw@aol.com
N3ITT (2 Yrs) Al Sheppard, alitt@epix.com
N3PLM (1 Yr) Chris Getman, getmanc@nad.com
K1DS (2 Yr) Rick Rosen, rick1ds@hotmail.com

PACKRAT BEACONS - W3CCX/B

FM29JW Philadelphia, PA
50.080 144.284 222.065 432.298 903.071 1296.262 MHz
2304.034 3456.220 5763.190 10,368.170 MHz

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.150 MHz	WA3EHD/K3EOD
8:00 PM	144.150 MHz	N3ITT
8:30 PM	222.125 MHz	W2SJ/N3EXA
8:30 PM	224.58R MHz	W3GXB
9:00 PM	432.110 MHz	W3RJW
9:30 PM	1296.100 MHz	WA3NUF
10:00 PM	903.100 MHz	N3AOG
10:30 PM	<u>2304.100 MHz</u>	<u>W3KJ</u>

COMMITTEE CHAIRMEN

June Contest: N3ITT 610-547-5490
HAMARAMA: W3KJ 215-256-1464
VHF Conference: KB3XG 610-584-2489

Editors Notes-February, 2001

Since taking over for Harry, W3IIT, (temporarily, remember) my life hasn't changed, the phone hasn't rung more, my email hasn't been overloaded, and I've received one unsolicited article for the February issue (thanks Ron). I have taken a few pictures of the sites of contest preparation and activity, but have had none sent to me via the net or otherwise. I have enjoyed receiving a few reciprocal club letters, but have found little technical to publish. There was an excellent review of "Software Defined Radio" by Dennis, K3DS at the last club meeting in January. It certainly opened my eyes to new frontiers in communications design. Even more interesting was the scientific challenge made to several high-school engineer and science hopefuls by Dennis, as the competition to have the longest communications path with an inexpensive infra-red LED using only 75 ma of current was announced. This may be an opportunity for us to learn more about communications and optics, and enhance our laser communications. This is a request, and probably a recurrent one for greater input from club members to share ideas, construction information, technical topics and operating activities. I look forward to having you send me one article this year for publication, or a picture of your shack, a project, or antenna farm for sharing in Cheese Bits. I can receive attachments on my email, and hope to see yours soon.

Rick, K1DS rick1ds@hotmail.com

Upcoming Events

- Thursday, February 8 Board of Directors meeting at the home of K1DS, 206 Kimberton Drive, Blue Bell, PA. See directions on the Packrats reflector
- Monday, February 12 Check into the Packrat nets, starting at 7:30 PM on six meters, and moving up a band every half hour
- Thursday, February 15 Annual "Crying Towel" Club meeting at the Southampton Free Library. Be sure to have the "facts" of how you and your station fared during the January 2001 VHF SS ready for hungry ears. Bring your photos too! This is an open meeting and guests are invited. Bring tissues!!**
- Friday, February 16 Only a few more days left to submit your VHF SS logs to ARRL. They must be submitted electronically in Cabrillo format, or if done by hand, paper logs may still be submitted. Send yours in today!
- Monday, February 19 Check into the Packrat nets, starting at 7:30 PM on six meters, and moving up a band every half hour
- Saturday, February 24 The Infra-red Communications Challenge. Several high schools teams will compete to see if they can communicate over the longest distance with IR LEDs. Event takes place at the Temple University College of Engineering on the University campus at North Broad at 10 AM. The Engineering Building is at 12th and Norris.
- Monday, February 26 Check into the Packrat nets, starting at 7:30 PM on six meters, and moving up a band every half hour

Year 2000 Pack Rat 432 Net Check-Ins

Number of nets in 2000 = 48

WA3RLT	46	N3PLM	44	K3EOD	44	K3CX	41	W3HK	39
WA1YHO	39	W3KJ	29	W3KKN	27	AA3GN	27	WA3DRC	27
K1JT	24	K1PXE	17	NE3I	17	W3VU	14	WA2ZFH	14
K3GNC	14	K1NCO	13	N3EXA	11	N3DHI	9	K2YSY	7
N3ITT	7	WA3GFZ	7	K3EBZ	7	N3AOG	6	WA2VNV	6
AA3RE	6	WU3I	6	N3FUJ	5	KU3A	4	N3NGE	4
NA2T	3	N3YMS	3	WA3EHD	3	W2SJ	3	N2SCJ	3
AA2UK	3	KA3FQS	3	WA1FLA	2	K2TXB	2	N3YEB	2
W3DFM	2	W3KM	2	W3GD	2	W0RSJ	2	N3XJX	1
W3IIT	1	W2JPW	1	K0UWO	1	W1SD	1	KB3IB	1
K3VDB	1	N3XEM	1	W1ZC	1	K2PGB	1	N1SAG	1
W2PED	1	N1DPM	1	K1TEO	1	N1UJS	1	WZ1V	1
KB3CYE	1	K2MLB	1	WR3P	1	K3AX	1	W3GAD	1
W3VRD	1	WK8G	1						

And the winner is: **WA3RLT with 46 check-ins ! Total Different Stations = 67**

Thanks to all who took the time to participate in the Pack Rat Monday night 432 MHz net during the year 2000. The winner of the most check-ins this year is WA3RLT. Ben has been a faithful member of the net for many, many years and is always near the top of the list. There is no reward for this achievement, other than the self-satisfaction of excellent club support and participation. Thanks Ben. This net meets every Monday night at 8 PM local on 432.110 MHz and is open to all comers. Please try to check in on this net or any of the other Pack Rat Monday night nets at every opportunity. Being an Amateur Radio Operator should be more than a once year event. Thanks Ron Whitsel, W3RJW 432 Net Control

2001 Spring VHF/UHF Sprints
International Contest
Sponsored by East Tennessee DX Association / NJ4I

ETDXA would like to remind everyone that the first of the Spring Sprints is only a few weeks away. Everyone is encouraged to participate, even if only in a small way. The rules have intentionally remained simple, and yes, they do encourage rover and microwave operation. The contest is intended for single operator, single transmitter entries, however if one wishes to introduce a newcomer to weak signal vhf/uhf operations, the sponsors of the contest reserve the right to allow such entries, if identified as such. We are continuing to refine the process, and we appreciate all the support which has been shown ETDXA. Certificates from 2000 are in process now.

The rules for 2001 will be placed on the ETDXA Web site; www.etsdx.org

There will be changes forthcoming in several areas in upcoming years. We are working on a Web - based submission of contest summaries (and hopefully logs), and eventually will move toward semi-automation of the process, and away (gulp !) from paper submissions. More on this as it develops.

Thursday or Saturday Microwave Sprints ?? Several letters have been received with differing opinions of the proper date. The support for staying on Saturday was greater by about 50%, thus remains on Saturday this year. You will note however, that several suggestions from both viewpoints was incorporated into this years contest.

I wish you the very best of VHF ! 73, Bert Rollen, K4AR

1. **Object:** To work as many amateur stations in as many 2 degrees by 1 degree grid squares as possible, using authorized amateur frequencies on the 50, 144, 222, 432, 902 MHz and above bands.

2. **Contest Period:** 2.1. The 144 MHz Sprint will be from 7 PM until 11 PM local time on Monday (April 9, 2001).

2.2. The 222 MHz Sprint will be from 7 PM until 11 PM local time on Tuesday (April 17, 2001).

2.3. The 432 MHz Sprint will be from 7 PM until 11 PM local time on Wednesday (April 25, 2001).

2.4. The Microwave Sprint will be on Saturday (May 5, 2001) from 6 AM until 1 PM local time. This includes all Amateur frequencies above 903 MHz. Please include band data in summaries and logs. NOTE: use of Liaison Frequency is encouraged.

2.5. The 50 MHz Sprint will be from 2300Z Saturday until 0300Z Sunday (May 12 & 13, 2001).

3. **Exchange:** Grid-square locator - signal report is optional.

4. **Scoring:** 4.1. QSO Points: Count one point for each complete QSO.

4.2. Multiplier: The total number of different grid squares worked. Each 2 degrees by 1 degree grid square counts as one multiplier.

4.3. Final score: Multiply QSO points by multipliers. Each Sprint is scored separately.

4.4. Rovers score same, but please segregate logs by grid. Scoring for Rovers is cumulative, total # of grids worked from each grid activated, multiplied by total # of stations worked in each grid activated.

4.5. Microwave Sprint scoring is cumulative, total # of grids worked from each band activated, multiplied by total# of stations worked in each band activated

5. **Reporting:** Logs (paper, ASCII, xls) must be submitted no later than four weeks after the closing of each event. Only submitted logs are eligible for awards.

6. **Certificates:** for top three scores in each Sprint, Certificate for top three scores in Rover Category, and Plaque for overall high score,

7. **Submission of Logs:** E-mail logs to : vhfdx@etsdx.org
Paper Logs to : ETDXA / NJ4I
1620 Hidden Hills Drive
Clinton, TN 37716

8. **Questions ?:** Email vhfdx@etsdx.org

Cabrillo Format File Conversion Help

If your present logging program does not write out the new Cabrillo format file, you can find links to solutions for converting your January VHF contest log into Cabrillo format on The North East Weak Signal Group homepage: <http://www.qls.net/vhfnews/>
-73 es GL, Ron WZ1V FN31mp -no excuses for not sending in a log now.

Swap and Sale Shop

- K3IPM: Icom 746 with 2 optional filters installed. hand mike and manual.
DEM 6 meter Transverter 28/6
DEM 2 meter Transverter 28/2
Both Transverters are new never used completely assembled ready to go. All of these items are very reasonable priced for quick sale. These items are in excess of my current needs as I have recently upgraded to a better transceiver.
Please contact Stan directly at: Ss1seed@aol.com
- W4OP: I have a spare SSB 10 gig transverter for sale and thought you might know someone in your group looking to become QRV. It is a DB6NT design- all surface mount, about 2"X1"X6". NF=1.2dB and Po-240mW. All SMA in/out. Very small and very light. Asking \$475. Unit was new in October- never in TX mode.
Dale Parfitt parinc@GTE.net Reply-To: par@parelectronics.com
- W1SD: I have for sale an FT-736. It covers 50, 144, and 432. The radio is a 7 or 8 out of 10. The asking price is \$800.
Stephen Dallas
Agilent Technologies Inc.
3000 Minuteman Road MS 0105
Andover MA 01810-1099
Phone: 978-659-3777 Email: Stephen_dallas@agilent.com
- K1NR/3: WANTED: Drake TC-6 six meter transmit converter in very good to excellent condition. Should be complete with manual and power cord. Will buy with CC-1 and SC-6 or with a complete station if you don't want to split it up. No smoker's units please.
Also looking for TR-7 line with accessories in v.g. to excellent condition.
Please contact Gene K1NR at eugeneb@nmi.com or K1NR@ARRL.NET. or by phone at 610-831-0868
Evenings until 9:30 PM EASTERN TIME. Thanks & 73 Gene K1NR/3
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VHF SS Tid Bits

>It was fun. I'm planning a 'high-performance' laser comm rig. It would be great to try it out in June. I've wondered if a contact from Camelback to High Point is possible (they are line-of-sight). **73, Walt N3EVV**

>A few words about my experience with HSMS skeds in last month's ARRL VHF SS may be of interest to some readers. In the northeast, at least, the weather and propagation were anything but cooperative this year. Here in central New Jersey, rain turned to freezing rain and then to snow through Saturday night. Many antennas were coated with layers of ice, and SWRs and feedline losses were up. There was no aurora, almost no E-skip on 6 m, and tropo conditions were poor. But I'm happy to report that even with an ERP several dB below normal -- my 2 m 160-Watt brick didn't like the ice on the antenna -- the HSMS mail got through. I completed QSOs in 4 of 5 skeds. Many thanks to WB5APD (EM84), W9FX (EM57), W8WN (EM77, on both 6m and 2m) for completed QSOs and additional grid multipliers, and to W5SNX (EM73) for a valiant try at digging my signals out of the noise. And thanks to everyone else that I worked in more normal ways! Even with activity and enthusiasm somewhat down, it was lots of fun. -- **73, Joe, K1JT (FN20qi)**

>It was a wild weekend, to say the least--just a brief note to let you all know that Leon and I drove to the 4-grid corner of FM 28, 18, 19 and 29 for starters. We operated in the first three grids for about 2 hours each, but the pickin's were slim, as we were real low and there was a steady downpour all day. Went for dinner at the truckstop there, and headed north, with the idea of operating in FM29 closer to Philly, especially with the weather about to change. Should have been a sign that there was a huge diesel loaded with salt, sand and a plow next to our operating site in FM19! The drive north took more than 3 hrs, as the snow was falling fast and roads weren't cleared. There were accidents all over the road, and we kept it very slow, as not to become a weather casualty, especially in the rear-wheel drive van, loaded with gear, batteries and antennas. Got to a spot in FM29, but just long enough to make a few microwave QSOs, and then creep on home. Didn't get home til 1:45AM, and you know how the storm intensified. Next AM the news reported the weather in NJ and New England, and the fact that the NJ Turnpike was down to 35MPH speed limit--hence the choice to spend most of the day operating here in FN20. As it was, we didn't get home til 10PM Sunday night. Sorry that we couldn't make it to the Palisades in FN 30 and the high spots in FN21 & 31 for a better shot to the N.E. VHF ops. Will detail the rest in Cheese Bits and at "The Crying Towel." Suffice it to say that Leon and I had a great bonding weekend, didn't get in each other's way, and shared the mike and duties excellently, and supplied plenty of QSOs from our tour. **73, K1DS/R & N1XKT/R**

>I went to FM28 at 6:00pm local time and found conditions terrible, I could not even hear any Phila microwave beacons and the 432 sounded like it was under water. I did manage to work a number of contacts there but mostly to the west and south. I stayed till 1:00 am and left in a blizzard. I got home 4 hours later. Went out to my favorite spot in FM29 about 4 miles away and worked many in the club and others. My 6 meter set up never worked high SWR shut down of the ft-100 and 5ghz lo was dead from the start. Called it quits at 9:30 pm Sunday evening. Think I had about 300 q's. **73, Bill, AA2UK**

>(From N.E.W.S. gang) Once again I gave the low power category a try. The activity level I felt was up from last year but the actual amount of contacts worked was down due to weather related conditions. What this meant was that there were more stations to work in much less workable time so the end result was lower scores. Had there not been any detrimental WX conditions, scores would have been at an all time high! Boy, have rigs like the FT847 and alike put a lot of people on the lower bands! The weather related issues caused some odd blank spots on the grid map. For example....I did not work an FN30 on ANY band!!! I heard Joe, WA2ZFH a few times on Sunday night but could not connect with him. Pleasant surprises were working W0RSJ up to 3456 except for 2304 (problem on their end), and working WA2RQC in FN23 (a tough one due to lack of activity) through 1296. He was pleased that we worked on 903 as he didn't think his stuff was working. All in all I had a blast and the low power category worked great again from my 75' x125' suburban neighborhood lot as I had ZERO TVI / RFI complaints. I think we could get even bigger numbers on the microwave bands simply if there were more stations on. There are quite a number of stations within 100 miles of here that with minimal (a couple of watts max) stations on 903 and up would be VERY WORKABLE. 10GHz is on the bench here and 5760 is soon to follow. **73 Fred, N1DPM**

> (from a GP Rover) Whew....this was the toughest rove yet. Conditions, both weather and RF, were horrible. In short, I heard many, many stations that never heard me, including many of the usual big guns! Started at a decent site just off rt 30 west of Bedford PA. Couldn't get to the highest clear place--too much ice and snow--but got close. Heard dozens of stations on 144.237, most calling W3IY/r in FM26--none calling me that I could hear. Finally abandoned that freq after one contact in the first 20 minutes of the contest--in particular, one turkey called and called 'IY and never listened or he could have worked me easily--I plan to send him a note, later...amazingly, I didn't ever work most of the stations that I heard on 144.237 early! Meanwhile, lots of stations calling but not many working anyone!

Snow got very heavy, and by the time we moved to FM09, we had about 4 inches of new snow, but no ice. An interesting observation--on all bands, but especially on 903 and up--the snow seemed to scatter the signals so that no clear peak could be found, but we could hear reasonably strong signals over 60-70 degrees beamwidth. On 5760, this was accompanied by an aurora-like sound to the cw. We didn't complete on 10G from either of the first 2 sites--guess snow scatter takes more coordination. Did work lots of grids on 2M, very little above that. The 2M signals were attenuated, but not obviously scattered. About 6:30 pm we headed down the mountain. The snowplow was following us...wish it was the other way around! Took 90 minutes to go 20 miles, but safely...stopped at Bedford to help pull a guy off the guardrail--all that safety equipment came in handy--but no points for that contact! (Cont'd)

Had a quick dinner, hit the road for FN10--the PA turnpike, mostly, which was slowed to a crawl, especially up Sideling Hill...but we made it to the base of the mountain (about 50 miles from the dinner stop) in about 2 hours. Took another half hour to the mountaintop, again with a stop to help a stranded motorist...our truck operated beautifully! Unfortunately, in the dark, heavy snow, and now 1/2" plus radial ice on everything, we had a misfortune heading for the mountaintop site--we took a wrong turn. No place to turn around, so we just headed up the road 'til it ended at a comm tower--seemed pretty high. Had to move many ice-laden trees out of the way--Linda drove, I chopped and pulled on trees...probably was a 'no trespassing' area, but who will ever know--and if there was a sign, it was covered in ice and snow and we never saw it! One tree mashed the 6M omni (happens every time-- I never learn...), and bent the 1296 yagi so that it was pointed skyward...easy to fix in decent wx, very hard to fix in the cold...We got to FN10 at 10pm, and the bands were quiet! Finally woke some guys up, and had good contacts over distance with a few folks. Snow-related scatter very evident, signals on 432 were heavily affected, and anything higher. Completed a couple of 10G contacts; very difficult. Again, about 4 inches of new snow/ice on everything in just a couple of hours at the site. Cleaned up as best as possible, and stopped at a marginally high FM19 location, worked a couple of guys on schedule, and headed home. Took 5 hours for the normally 105 minute trip, but my wonderful spouse, Linda (no call sign), drove courageously and we made it home safely. I called my Sunday partner, Ike, W3IKE, and told him I was canceling the rest of the trip, and he agreed---went to sleep for a few hours, and when I woke up the sun was out, the sky was clear, and the snow was melting! I grabbed my keys and headed out again! Met Ike, and went the the usual grid corner area near Ruthsburg, MD, about 30 miles east of the Annapolis Bay Bridge. Encountered terrible line noise of some sort from about 330-30 degrees. Worked through it, no highlights...hoped to give W2UR and others some needed microwave mults--mostly not successful--I hear better on 2304 and 5760 than I get out, and we lost the 903 preamp again (4th contest in a row--whew!). Skipped the bridge grids--report was for gale winds down there (probably was nicer than that) and they won't let me on the bridge in high winds, usually. Also, I was worn out! We seldom called CQ; there just wasn't as much activity. Bottom line: I haven't cleaned the log yet, and I still forget to enter the correct band sometimes, so these are preliminary. 685 QSOs, 1400 pts, 121 mults with rover bonus for about 200K...I'm very sorry that we couldn't give out more microwave multipliers. The conditions and our equipment just wouldn't support it...**73! brian the rover nd3f@aol.com**

>Just a reminder cuz quite a few stations are still trying to line up antennas while listening for signals. If you align your rotor to one (or more) of the beacons and use 6-digit grid data, there is absolutely no reason to fool around lining up antennas. Naturally you can tweak the antenna once you hear him, but I guarantee you will here him sooner and easier using 6-digits. If the data file says 155 deg then that's where your antenna goes. Then it is just a matter of finding the stations TX frequency. This always works. Don't forget to calibrate your TX freq's against our club's beacons. Tell the guy to go 50-KHz above the beacon. Then you will both be on the same frequency. Good luck guys and CU on the bands. **73, Dave W3KM**

>I bought a Yaesu FT-817 this last weekend and have begun to play with it. It is Yaesu's new portable "QRP" rig with 160 meters - 70 cm all mode capability. I am using it to replace an FT-690, FT-290, and FT-790 (all MK II versions). It is quite a neat rig, with quite a few features. And some you might not expect in a portable rig. I won't bore everyone by repeating the feature list - see the Yaesu web page or data sheet. The one drawback to the long feature set is that it takes reading the manual and playing with the rig to learn all of them. Most of them are handled through one of two menu systems. The main problem with the rig is power consumption and power capacity. It is powered with either an internal AA pack or an external 8-16 volt supply. The rig comes with a AA holder for 8 cells. An optional 1200 mA AH ni-cad pack (not available yet) will also fit inside. The ni-cad pack can be charged in the radio via an external 13.8 volt supply. By a simple mod (see www.mods.dk) one can fool the radio into thinking that the Yaesu ni-cad pack is installed. This would allow one to charge user supplied ni-cads or Ni-MH cells in the radio. I haven't tested this mod yet. I will be though. AA alkalines don't last very long. Perhaps only a few hours of operation with very little transmitting. The older Yaesu portables draw less current and used C-cells in their battery pack. Consequently they lasted much longer on batteries. I tested the current draw on my FT-290 MKII and the FT-817 and came up with the following data: A 13.8 volt supply was used all of the tests. On TX tests a dummy load and Daiwa CN-465m power/SWR meter was used for very approximate TX power level measurements. With these numbers it is quite easy to see why the FT-817 internal batteries are ill equipped. The RX current draws are almost 3x that of the FT-290 while the TX current draws are a bit higher for equivalent output powers. To be fair though, the FT-817 is almost 3/4 the size and volume and 1/2 weight of the FT-290. By adding a small external battery pack, the FT-817 would fare much better on operating time. I haven't had much opportunity yet to test the actual on-air performance of the radio. I am especially curious to check the strong-signal handling performance (or lack thereof) of the radio. I hope to test that during the upcoming January VHF contest with a QRP portable operation. **73, Marc - N8KWX**

FT-290 MKII

Receive 1/2 volume noise SSB mode	0.11 A
Receive full volume noise SSB mode	0.12 A
Receive 1/2 volume voice SSB mode	0.14 A
Receive full volume voice SSB mode	0.31 A
Receive 1/2 volume noise FM mode	0.10 A
Receive full volume noise FM mode	0.11 A
Receive squelched	0.10 A
TX FM high power (1.8 W meas)	1.18 A
TX FM low power (0.25 W meas)	0.60 A
TX CW high power (1.9 W meas)	1.17 A (with sidetone)
TX CW low power (0.25 W meas)	0.63 A (with sidetone)

Backlight draws 90 mA in addition to the above numbers

FT-817

Receive 1/2 volume noise SSB mode	0.29 A
Receive full volume noise SSB mode	0.31 A
Receive 1/2 volume voice SSB mode	0.33 A
Receive full volume voice SSB mode	0.46 A
Receive 1/2 volume noise FM mode	0.29 A
Receive full volume noise FM mode	0.31 A
Receive squelched	0.26 A
TX FM 4/4 power (3.9 W meas)	2.02 A
TX FM 3/4 power (1.9 W meas)	1.48 A
TX FM 2/4 power (0.6 W meas)	1.04 A
TX FM 1/4 power (0.4 W meas)	0.91 A
TX CW 4/4 power (3.9 W meas)	2.07 A (with sidetone)
TX CW 3/4 power (1.9 W meas)	1.53 A (with sidetone)
TX CW 2/4 power (0.6 W meas)	1.09 A (with sidetone)
TX CW 1/4 power (0.4 W meas)	0.97 A (with sidetone)

Backlight draws 20 mA in addition to the above numbers.

Satellite Bits

ARLS003 AO-40 Report Suggests Damage to Antenna Systems

From ARRL Headquarters Newington, CT January 16, 2001

To all radio amateurs AO-40 Report Suggests Damage to Antenna Systems

The latest information on AO-40 suggests that the satellite might have suffered antenna system damage when it went silent last December 13. The satellite stopped transmitting while ground controllers were testing the 400-newton propulsion system. AMSAT-DL Vice President and AO-40 team member Peter Guelzow, DB2OS, reports that efforts to restart the 2-meter transmitter continue to be unsuccessful. The satellite had been sending telemetry via the 2-meter transmitter when it quit transmitting last month. Guelzow said this week that while the 2-meter, 70 cm and 1.2 GHz receivers are working on the high-gain antennas, none of them will work on the omnidirectional antennas. He speculated that either the omnidirectional antennas or the cabling or the antenna relays are damaged. Additional tests will be carried out, he said, including testing the VHF transmitter using the omnidirectional antennas. Plans also call to test the 70-cm transmitter on both the high-gain and omnidirectional antennas, once the spacecraft's spin rate has been reduced and AO-40's heat-dissipation mechanism is working again. Guelzow said that AO-40's attitude control system is fully functional--something that would be critical to keeping the satellite in orbit on a long-term basis. But, the sun sensor's electronics have quit working, and, Guelzow said, without sun and attitude information, no magnetorquing can be performed. AO-40 team leader Karl Meinzer, DJ4ZC, was reported to be developing a software fix that does not rely on data from the sun sensor. It will be tested soon. Guelzow expressed the hope that once the sun angle and antenna-pointing capabilities have been established, the ground crews will have a better chance to check out the status of the 2 meter and 70 cm transmitters through "better-controlled and suitable experiments." He indicated that AO-40's arcjet thrusters and the reaction wheels also will undergo testing as soon as possible.

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