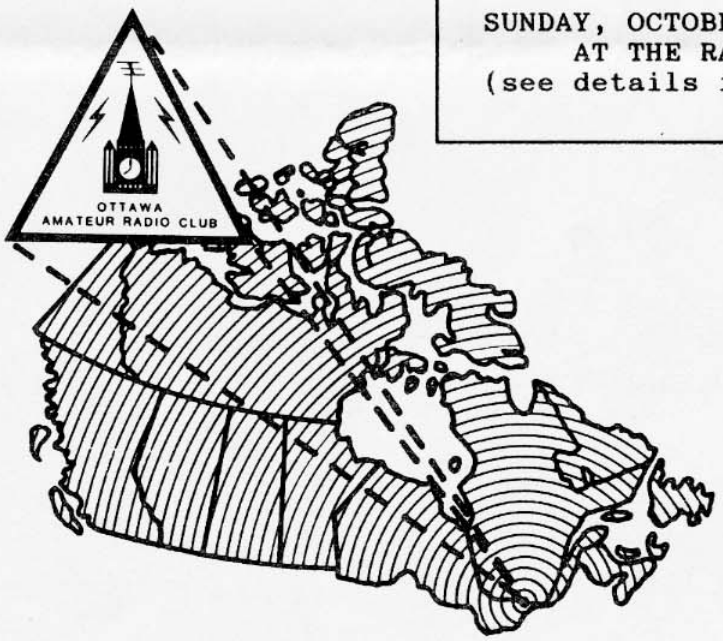
OCTOBER 1991

THE GROUNDWAVE

FLEA MARKET

SUNDAY, OCTOBER 6th
AT THE RA
(see details inside)



NEXT MEETING WILL BE HELD
WEDNESDAY, OCTOBER 2, 1991

Club Call VE3RC Repeater VE2CRA

AMSAT

CRRL

CARF

The Ottawa Amateur Radio Club,Inc., Box 8873, Ottawa, Ont., K1G 3J2

President	Peter Jago, VE3PWJ	836-1013	836-8680
Vice-President			
Secretary	Mike Spenuk, VE3JTQ	523-8242	
Treasurer	Mike Kelly, VE3FFK	722-5918	788-5782
Past-President	Dave Goodwin, VE2ZP	684-1432	
Directors	Clare Fowler, VE3NPC	232-1081	
	Dave Parks, VE3GSA	225-1206	
	Rob Morrison, VE3ZZR	236-6880	992-4334
Packet Group Chairman	Doug Yuill, VE3OCU	567-2700	230-1741
Repeater Chairman	Harrie Jones, VE3HYS	739-9365	738-2372
Net Manager	Wayne Greenough, VE3JSQ		
EMI Committee Chairman	Ralph Cameron, VE3BBM	825-1634	225-2850
Membership Chairman	Mike Babineau, VE3WMB	829-1677	765-4417
Nat. Cap. Award Manager	Brian Summers, VE3JKZ	523-1535	996-7885
Publicity	Mike Pilon, VE3BUP	731-1567	
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Production Committee	Paul Campbell, VE3CEP	733-0148	
	Chuck Baker, VE3PAP	824-1941	
	Ted May, VE3ADZ	741-0862	790-3576

THE OTTAWA AMATEUR RADIO CLUB, INC. is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the National Capital Area; and to the advancement and achievement of club members.

REGULAR MEETINGS of the OARC, Inc., are held on the first Wednesday of each month (except July and August) in the Champlain Room (2nd floor of the Old Teacher's College) of the RMOC HQ complex on Lisgar St., Ottawa, at 1930 hours. A bulletin board is available for posting notices of interest to other members about 1915 hours. Further details about each meeting is elsewhere in this publication.

PACKET RADIO MEETINGS will be held at 7:30 p.m. on Oct. 3, Nov. 28, 1991, Jan. 30, March 26, May 28, 1992, at the Group Lobby Room, Museum of Science and Technlogy. This is an OARC technical meeting open to all who have an interest in packet radio.

THE OARC EXECUTIVE normally meets on the second Wednesday of each month at 1930 hours. Contact the President to confirm the date of the next meeting.

DEADLINE FOR COPY is the second Wednesday of each month. Make yourself better known to fellow members and other amateurs, too, by giving us an article, technical or otherwise, relative to our hobby.

MATERIAL PUBLISHED herein does not necessarily represent the official OARC viewpoint. Items may be reprinted by Amateur Radio or other publications provided that proper credit is given to the author and to the OARC, Inc.

JUNIOR MEMBERSHIPS - To encourage young people to join the club and to participate in amateur radio, the club is opening a junior class of membership. Dues will be at a 50% discount but the junior member must pick up his/her copy of the Groundwave (preferably at the meeting).

RADIO AMATEUR CALL BOOKS are available at many local libraries. Ask at the information desk.

SAFETY BELTS, 2-METER RIG AND AN ENGRAVING PENCIL are available for loan to club members. The 2-meter rig may be borrowed by members who are hospitalized. The engraving pencil (to mark valuables for identification in case of loss or theft) and the safety belts with pole straps are available to any members. For the belts, a refundable deposit consisting of a cheque equal to the replacement value of the belts is required. Contact the President for the 2-meter rig or the engraving pencil; and Paul, VE3ICV, at 820-6643 (West End) or Brian, VE3JKZ, at 523-1535 (East End) for the belts.

THE CAPITAL CITY NET meets every Monday at 2000 hours on the Club Repeater VE2CRA (146.34/.94) to pass traffic and to make announcements of interest to amateurs in the National Capital Region.

PACKET RADIO VOICE NET meets following the Capital City Net on VE2CRA at 2040 hours. This is an informal net to answer questions about packet radio, pass along operating hints and provide information for future packet operators.

THE SWAP NET is a service provided and conducted by Ed Morgan, VE3GX. This feature appears on the Capital City Net, noted in the foregoing paragraph. To list items and make inquiries, call Ed Morgan at 733-1721.

POT-HOLE NET is a SSB/HF net sponsored by the Ottawa Valley Mobile Radio Club, and conducted every Sunday at 1000 hours on 3.760 Mhz. All amateurs are welcome to check in. The Swap-Net is a regular feature.

POT-LID CW NET is an informal slow-speed CW net sponsored and conducted by Ed, VE3GX, and meeting every Sunday, except during July and August, at 1100 hours on 3.620 Mhz, to promote interest in CW and CW procedures.

REPEATERS

VE2CRA	Voice	146.94/34 443.300/448.300
VE3OCR		223.34/224.94
VE3OCR	Packet	145.01(sx) Inter city links
VE3OCR	Packet	145.07(sx) Local Area net for QSO and Packet BBS.
56 kbps	Packet	220.55/433.55
VE3XDX	DX Info	146.25/146.85; packet 145.11 (SX)

For further information, please contact repeater chairman.

MINUTES OF THE OARC GENERAL MEETING OF SEPTEMBER 4, 1991

The September meeting of the Ottawa Amateur Radio Club was called to order at 7:35 pm by the president Peter Jago, VE3PWJ.

The first order of business was to reiterate the fact that the Vice-President's chair still sat vacant. No one present volunteered to fill this position.

Visitors to this meeting included: Ray VE7FLC; Paul VE3PGL; Dave; Earl VE3IMP; Ted VE3TGS; Chris VO2AC; and Peter VE3SOF.

Two presentations were made. The first was by Jeff Wilson VE3RCI, President of the Ottawa Valley Mobile Radio Club, to Roxanne Delmage VE3VON. Roxanne was this year's winner of the Joe Norton Trust Award for the Advancement of Amateur Radio. See page 3 of the September 1991 Groundwave.

The second presentation was made by Ray Perrin VE3FN to Jack Belrose VE2CV. Jack's article on Baluns (June 1991, QST) was voted best technical article by the ARRL Editorial Board.

Dave VE2ZP re-announced that DX PacketCluster manuals are still available with proceeds going to network enhancement.

There was no CRRL nor CARF bulletin.

The first guest speaker for the evening was John Henry VE2VQ who gave a talk on AMSAT and the current state of the Amateur Satellite Program.

Peter VE3PWJ announced that anyone with ideas on General Meeting Topics should contact any Executive member.

Doug VE3OCU reported that he will be stepping down from the Packet Group Chair after this year. Anyone interested in filling this chair is asked to contact Doug or the Executive. Packet Group meetings will be on the last Thursday of every second month starting in September. However, due to space limitations the September meeting will be held October 3 at the Science and Technology Museum. The following meeting will be November 28.

Dave VE2ZP demonstrated his Kenwood TS850 HF transceiver.

SEPTEMBER SPEAKER

The September 4th speaker was John Henry, VE2VQ, on amateur satellites. He recalled some history; for example, Oscar 1, launched in 1961, lasted only 30 days. Oscar 10, launched in 1983, is still in operation, but is not in good shape. Its high orbit permitted intercontinental DX.

There are now 13 amateur satellites in orbit - including Russian, European and Japanese ones. Two are in high elliptical orbits.

In 1992, a 400 kg amateur satellite will be launched on an Ariane rocket (by the French) into a 20,000 km x 36,000 km elliptical orbit with a 17 hour period.

OCTOBER MEETING

Speaker will be
Kent Chown, VE2LJ
on
"Operating from Zone 2"

IN CASE YOU MISSED IT
(from CARF News Bulletin 11-91)

The CANADIAN AMATEUR RADIO FEDERATION and the CANADIAN AMATEUR RADIO LEAGUE are pleased to announce the name of the proposed new single national organization as the RADIO AMATEURS of CANADA/RADIO AMATEURS du CANADA. CARF and CRRL are co-sponsors of RADIO AMATEURS of CANADA and are working toward the legal merging of the assets and services of both CRRL and CARF into RADIO AMATEURS of CANADA in the near future. (Item 1)

The DEFENCE OF AMATEUR RADIO FREQUENCIES FUND (DARF) NEEDS YOUR HELP NOW! This fund is to pay for expenses of the designated Canadians who are involved in defending our frequency spectrum allocations at WARC '92 which starts in Spain, February 1992. Please send your contributions to: DARF, c/o Tim Ellam VE6SH, 107 Strathearn Rise SW, CALGARY, AB, T3H 1R5. (Item 2)

RIC-3, Issue 3, dated 1 May 1991, is available at no charge from the Department of Communications. This RIC lists countries that forbid Amateur Radio communications, countries which have third party agreements, and countries which have reciprocal operating privileges. Please note that Spain now has reciprocal operating privileges. All Amateurs should have a copy of this RIC in their shack, together with RIC-25. (Item 4)

ITALIAN QSL BUREAU: This is to inform you that starting on 1 April 1991, the only QSL Bureau for Italy is the following: ARI-QSL Bureau, via D. Scarlatti 31, I 20124 MILANO, ML. ITALY. 73, Mario Ambroci I2MQP, Secretary General ARI. Thanks to NZ A.R.T. 'Break-In'. (Item 5)

THE TERRITORY NET: Alaska, Yukon, N.W.T. and B.C. now on 7085 kHz + or - LSB at 0430 UTC and is looking for check-ins. Net control Dave Macauley VY1DW (way up north on the Dempster Hwy.) (Item 6)

ATTENTION CRRL MEMBERS. As of 6 September 1991 Canada Post will close Postal Station E, London, ON. Starting immediately, please use this new address: CRRL, Box 56, ARVA, ON. N0M 1C0. (Item 8)

CORRECTION: ATTENTION QUARTERLY CENTURY WIRELESS ASSOCIATION members. The Southern Ontario Chapter 73 'Get-Together' is changed from 5th October to 12th October 1991. Info from Harry VE3MO. (Item 9)

VE3OSC - 13 September 1991 to 5 January 1992 - The Ontario Science Centre will be hosting an exhibition from the Soviet Union called SIBERIA: NORTHERN DISCOVERY AND SURVIVAL. VE3OSC will be trying to contact Northern Siberia, Northern Canada, floating ice stations and other Arctic regions during this exhibition period. The station will operate daily Monday to Friday 1100-1500 hrs. and on Saturday and Sunday 1100-1700 hrs. Volunteer licensed Amateur operators are needed to help run the station. If you can help, please contact: Diane Young at 416-429-4100, ext. 533, or write to her at: Ontario Science Centre, 770 Don Mills Road, DON MILLS, ON. M3C 1TC. Thank you. (Item 13)

VE3ODX - Thanksgiving Weekend - Saturday - Monday 12, 13, 14 October 1991. The Ontario DX Associations' Amateur Radio station will be operating from the site of the Ontario Educational Leadership Centre, located on the eastern shore of Lake Couchiching, about 120 kms or 75 miles north of Toronto. Activity will be on 80 metres through 10 metres and a special QSL card will be issued for those working or hearing the club station. On Sunday we can be found on the club's own net at noon (7.068 MHz LSB), or checking into ANARC Net (7.240 MHz) AT 10:00 am. Reception reports on QSLs should be sent to VE3ODX, P.O. Box 161, Station A, WILLOWDALE, ON. M2N 5S8. (Item 14)

ON4CLM - 27 October to 3 November 1991. This is the 9th Annual celebration of the Liberation of the Belgian town of Knokke by Canadian troops 1 November 1944. Operation will be on all bands, phone and CW. Complete information will appear in the October issue of The Canadian Amateur magazine, or write to radio station ON4CLM, P.O. Box 110, B-8300 Knokke Heist, Belgium. (Item 15)

LETTER

July 3, 1991

To: Dave Parks, VE3GSA

Dear Dave:

Your directory arrived yesterday and has been heavily used to update my Ontario "club list". The purpose of this list is to provide access for prospective Amateurs to a club in their home area. It will be used at VE3CNE for the duration of the Canadian National Exhibition in late August and early September. We have a lot of visitors each year and make a real effort to get those showing an interest in Amateur Radio pointed towards a club. I extracted from your directory information about the "general-level" clubs in your area such as the Ottawa ARC but left out info about clubs with a very specific focus. Thank you for making my task much simpler.

And my compliments to you and your crew for producing such an exemplary document - it puts us in the Toronto area to shame! I can appreciate the amount of time and effort which went towards bringing this to fruition.

Again my thanks,

(signed) Geoff, VE3KCE
on behalf of the VE3CNE Committee

SILENT KEY

A long-time and active operator, Bud Willing, VE3ANL, after a lengthy illness, died in Ottawa on September 6th. He obtained his license in 1937 and his early interest in radio led to a career in the Royal Canadian Corps of Signals, beginning in 1938. In WW II he served with the 1st Canadian Divisional Signals from 1939 to 1946. He left to earn a B.Sc. at the University of Western Ontario and re-enlisted in 1950. Until retirement in 1969, he had various postings at home, the U.S.A., Germany and Egypt.

Bud, a member of the Ottawa Amateur Radio Club, was well known on traffic nets and was active in local amateur activities.

de Doug Burrill, VE3CDC

PACKET NEWS

The Packet Group is giving four papers at this year's ARRL Computer Networking Conference. They will be available (after the conference) at Bytown Marine, or on order from CRRL. It seem we have a lot of talent in the group.

BUDGET

The executive is preparing a draft budget for 1991-92. Proposals for expenditures should be submitted to Mike Kelly, VE3FFK, by the last week in October. Proposals for fund-raisers would also be appreciated. The budget will be discussed at the November meeting, so if you're not there don't complain about how your money is about to be spent.

TUNING UP

You're on the hunt for Pacific DX. Your beam heading is 270 degrees as you slowly cruise down past 14200, the 'phones clamped to your head... "temperature is 27C here in Tahiti. The name is .."-TONE-. "Well, 73 and good DX! N7ABC, this is FO.."-LOUDER TONE-".clear and going QRT. I will be back at.. "-STILL LOUDER TONE-.."on this frequency." Thanks to a "tuner-upper" you miss the information that you need to catch a new one. Oh, well what can we do; everyone needs to match his transmitter to his or her antenna, especially if the antenna impedance is far from 50 ohms, right? WRONG! There is no need for a properly equipped station to ever violate the law (and common courtesy) by emitting an unmodulated and unidentified carrier. This is one form of QRM which is entirely preventable. How? The problem should be addressed in two parts: (a) tuning the transmitter; and (b) matching the antenna and transmission line to the transmitter.

Older transceivers and transmitters having tube finals require grid or drive peaking, plate dipping, and loading. Such rigs are simply switched from the antenna into a noninductive dummy load (resister), and peaked following the maker's instructions (fig. 1). For the new solid state rigs, one only needs to set the power output level into the dummy load.

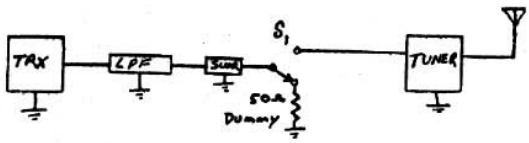

Figure 1. Typical station

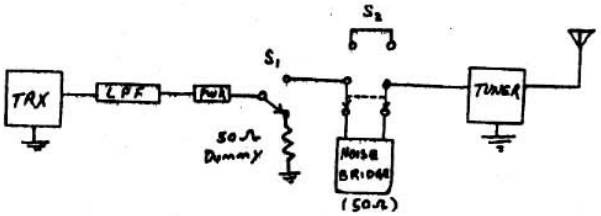

Figure 2. "Good operator" station (noise bridge)

The second part of the problem, matching the transceiver to the antenna without generating QRM has less well known solutions. If the antenna impedance is close to 50 ohms, you're ready to transmit, but if the value is something else, you probably need an antenna tuner with an older tube rig and definitely need one with a new "no tune" rig! Using the common station arrangement shown in Figure 1, you must radiate at least enough power to operate the SWR meter and thus become a "tuner-upper", while matching rig to transmission line. Figure 2 shows one way round this problem; the use of an RF noise bridge. This device, originally developed by the military for silent tuneups by submarines, works just as well for amateurs. The circuit consists of a balanced bridge with a 50 ohm reference to which is fed white or pink (broadband RF) noise, heard as a loud (S-9) rushing noise on the receiver. When the input impedance of the bridge (the transceiver output impedance) exactly equals the tuner input impedance and both equal 50 ohms, then the white noise level drops sharply and you are perfectly tuned. Any standard noise bridge will work, but the most convenient one is the Palomar Tuner-Tuner, designed expressly for this purpose. It uses a single 2-position switch to turn on the

white noise and switch the bridge into the transmission line. The antenna tuner is then adjusted for a noise null, the bridge switched out and you're ready to transmit. After a short period of use the single knob switch on-switch off routine becomes second nature. If the system has one drawback it is its cost: about $150 in Canada. However, with the use of a proper DPDT RF switch or relay, any noise bridge including the homebrew ones in the ARRL Handbook and Antenna Book will work as well. You've emitted no QRM, "trashed" no QSO's, violated no laws, and your transmitter's expensive finals never see large, potentially damaging mismatches.

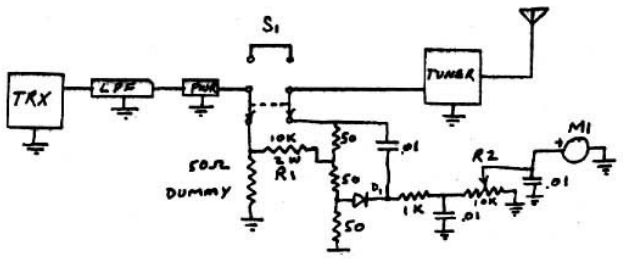

Figure 3. "Good operator" station (reflectometer)

There's a second approach to intelligent tuner tuning; the resistive bridge reflectometer. It's simple, cheap, and just the thing to add if you build your own antenna tuner or dummy load! Figure 3 shows one adapted from the design of Jerry Volpe, KB8ZO (CQ, Aug. 1983). The reflectometer is run by transmitter RF, and thus does away with the battery, white noise generator, and RF bridge transformer required in a noise bridge. However, with the reflectometer, your antenna is radiating some RF, 0.01-1.0% of the transmitter's tuneup output. The more sensitive a milliammeter you use for M1, the higher the value of R1 will be and the less signal will be radiated during tuneup. The diode should be a signal type (Ge) for good sensitivity and the switch should be an RF type, or it might defeat the purpose of the reflectometer! To use the reflectometer, apply just enough RF to the dummy load to activate M1 with R2 set for high sensitivity, adjust the tuner for a zero reading, then switch S1 to the transmit position and you're ready to go! If the reflectometer is so good, why do tuner manufacturers persist in incorporating SWR meters that require you to transmit your full tuneup RF? Probably partly because the SWR meter is better known to a conservative amateur public and because you must have a dummy load in conjunction with a resistive reflectometer. Use of either the noise bridge or reflectometer approach is a good example of watts and rudeness being replaced by Amateur wits and courtesy!

de The WIARC Bulletin

FLEA MARKET

Sunday, October 6th, at the RA, in the Canada Room. Setup will be at 8 a.m., doors open at 9 a.m. $3.00 entrance fee, $5.00 per table. Contact Peter Jago, VE3PWJ, to reserve a table. Talk-in will be on VE2CRA, 2m at 450 MHz.

HELP WANTED

Contester - to write a Contesting Column for the Groundwave. Call Mike James, VE3PDE, or contact him at the next meeting.

Volunteers - needed to assist with the servicing and commissioning of repeater hardware. Contact Harrie Jones, VE3HYS.

Vice-President - still needed - please come forward.

Sep. 11/91

Last month I told you all to get off your butts and put up an antenna before the snow starts to fly. For once I took my advice and planted some wires of my own.

The problem: I don't keep a special corner of the house just to play radio in. I use my radio toys where I happen to be. (That's why you hear me bicycle mobile on 2 and 6 meters.) It also makes antennas a bit tricky. I even thought about assembling a "remote base" with the shortwave stuff in the attic, and a low power vhf link up to it from what ever room I happen to be in. It's good to dream a bit, but I know I'd never get it built.

The solution: a pair of end fed "long" wire antennas. Long is in quotes because they aren't really very long, only about 15 meters each. The idea was to put up something that I could do general shortwave listening on. One goes from my bedroom out over the back yard to a pole near the property line. The other goes from the kitchen (directly below the bedroom) up to a back corner of the garage, also near the property line.

Now comes the nifty idea part (next weekends project).. It occurred to me that I could tie the outside ends of these two wires together. Then I could replace the single wire feed to each room with a short length of RG 8 and run a wire down from one to the other outer conductor of the coax. Then, if I short the bottom piece of coax, I have a delta loop that is fed from the bedroom. If I move that shorting strap upstairs, I have the same delta loop fed from the kitchen. Even if it resonates at 60 meters, I should still be able to tune it up so it works on at least one ham band. Since the coax bits aren't very long, and I don't use much power anyway, a high swr wouldn't hurt performance very much. If it still won't tune up, I'll be able to play with the lengths of both of the wires that connect the existing antennas together. If I hadn't started putting up wires last Sunday, none of this would have occurred to me.

The moral of the story: The antenna that you put up while the idea is still a crazy half baked scheme will always outperform the one that you haven't got around to erecting because the design needs a bit more analysis. If you wait for perfection, you'll never get anything done.

Your assignment for this month: (sorry, I'm stuck in school mode) I still need an antenna for the living room. The window overlooks my beautiful paved driveway. Across the width of the driveway is my neighbour's beautiful aluminum siding, almost 3 meters away. The wall on my house is also aluminum siding on that side. I have another window a few meters above the living room one. My brightest idea so far is to hang a wire about a hockey stick off of the upstairs window, bringing it down to the living room at one end, and back to the garage on the other end. The problem with that is the darn phone line already uses some of that space... Any ideas on how to get rf into (and out of) my own private canyon?

Now a bit of fun.. A few weeks ago, during the morning drive to work net (a.k.a. Rubber Boot Net), it happened that four check-ins in a row were named Mike. It was of course quickly established that we should start a net where only people named Mike can check in. Then VE3BUP said he knew four other guys who were named Mike Pilon, and that three of them were hams. He proposed a W.A.M.P. award for working all four of them. It has since occurred to me that I know of five other Mike Kellys. So how many people have you run across, using YOUR name? Relatives don't count.

Last Word... PATIENCE.

73 ..VE3 FFK (mike)

VE3XDX PACKETCLUSTER PROGRESS REPORT

The VE3XDX PacketCluster has been in operation since May. As of 5 September, we have 788 spots from 173 countries reported by 65 people. Band by band, here are the number of spots reported:

160m - 4; 80m - 31; 30m - 5; 40m - 34; 20m - 529; 17m - 18; 15m - 123; 12m - 6; 10m - 20; 6m - 4; 2m - 3; plus another 11 with incorrectly entered frequencies.

The most prolific reporters...VE2ZP (204), VE3VN (169), VE3CRG (72), VE3PNT (51), VE3RCI (43), VE3XJ (39), VE3HI (33), and VE3FXR (25).

The most commonly reported countries... 3B8 (10), 4S (17), 4X (11), CM (13), D2 (11), F (13), TL (14), UA (11), FJL (10) UF (12) VP5 (12) VU (16) YB (14).

Month - by - month, here's what usage has been like:

	MAY	JUN	JUL	AUG
spots	54	105	227	371
loggers	6	7	23	49
countries	32	59	96	127

Here's a sample of the most recently reported DX on 144.93 MHz:

14147.6 UM8MGM 12-Sep-1991 0149Z <VE3VN>
14006.7 4S7WP 12-Sep-1991 0126Z
good sig <VE3VN>
14005.1 VU2LX 12-Sep-1991 0123Z
calling cq <VE3VN>
3502.98 4K1AUM 11-Sep-1991 0357Z <VE2ZP>
3793.57 7X2DG 11-Sep-1991 0352Z <VE2ZP>
3790.0 VP8CFM 11-Sep-1991 0351Z
So. Orkney <VE3BBM>
7000.9 JW/DJ5PA 11-Sep-1991 0248Z
QSX 7002.1 <VE3VN>
7003.46 YN/SM0OIG 11-Sep-1991 0140Z <VE2ZP>
7001.83 RO4OA 11-Sep-1991 0133Z <VE2ZP>
14256.0 3B8CF/3B7 10-Sep-1991 0229Z
list being taken @.267 <VE2GSX>
14086.2 FG4FI 10-Sep-1991 0108Z
rtty <VE3XJ>
28495.0 CE9GEW 9-Sep-1991 2046Z
S.Shetlands <VE3GS>
14195.0 XY0RR 9-Sep-1991 1454Z
Fair sig QSX 200-230 <VE2GSX>
14191.9 9H1EL 8-Sep-1991 2242Z <VE2GSX>
21044.1 3X0HNU 8-Sep-1991 1611Z
DIRECTIVE CALLS <VE2LJ>
21295.0 XY0RR 8-Sep-1991 1458Z
weak was good @ 1300 Z <VE2GSX>
14003.7 4K1B 8-Sep-1991 1447Z
Mirny QSL UV6AAP <VE3CRG>
21335.0 9J2BO 7-Sep-1991 1815Z <VE2GSX>
21012.1 RH8AJ 7-Sep-1991 1714Z
Alex <VE3CRG>
21217.3 5B4ES 7-Sep-1991 1536Z
in contest <VE2GSX>
21287.3 UL8LYA 7-Sep-1991 1416Z
good sig. <VE2GSX>
14035.1 3B8CF/3B7 7-Sep-1991 1309Z
QSX+ LP <VE3CRG>
14197.0 JT1BV 7-Sep-1991 1253Z
good sig. <VE2GSX>

If you are interested in using the VE3XDX PacketCluster, connect to VE3XDX on 144.93 MHz (1200 baud packet). The node is located in Metcalfe at the home of Paul, VE3JLP. If you have trouble getting in, try digipeating through VE3VN (west end) or VE3KYT (east end).

User guides are available for $10 each from:

Paul Cooper	VE3JLP	821-2176
Ron Scwartz	VE3VN	829-3676
John Connor	VE3RMM	727-5805
Dave Goodwin	VE2ZP	684-1432

The proceeds will go to replacing the borrowed equipment we're now using. Links to Toronto, Rochester, and Montreal are in the works. That will expand the number of potential reporters providing DX info.

de Dave Goodwin, VE2ZP

OTTAWA AMATEUR RADIO CLUB INC.
BOX 8873 OTTAWA ONT. K1G 3J2 **

MEMBERSHIP RENEWAL/APPLICATION
1991-92

<PLEASE PRINT>--<PLEASE PRINT>--<PLEASE PRINT>--<PLEASE PRINT>

SURNAME: FIRST NAME: CALLSIGN(S):

ADDRESS:

LICENCE TYPE(S):

POSTAL CODE:

PHONE NUMBER(S) HOME #: WORK PHONE #:

[ ] Single membership($15.00)
[ ] Family membership($20.00)
[ ] Junior membership($7.50) must pick up groundwave (not mailed)
[ ] NEW APPLICATION (Fees as above, or $10.00 if after Feb. 1992)
[ ] RENEWAL --OLD MEMBERSHIP NUMBER (from your card, if known):__ __ __

FAMILY MEMBERSHIP = 1 GROUNDWAVE/FAMILY, 1 DIRECTORY/FAMILY
Members are entitled to a free copy of the directory, so new or returning members who DIDN'T pick one up before, should see the membership chairman, currently Michael Babineau VE3WMB, for their copy.

<ACTIVITIES & INTERESTS>

Favourite band(s)/mode(s)/operating activity:

I WOULD LIKE TO BE CONTACTED ABOUT:

[ ] Serving on club executive
[ ] Helping with production of "The Groundwave"
[ ] Operating or organising field day
[ ] Speaking at a club meeting
[ ] Assisting with the fall fleamarket/auction
[ ] Operating as a net controller for the capital city fm net
[ ] Entering a project in the homebrew contest
[ ] Helping to provide communications for the Canadian Ski Marathon
[ ] Helping with emergency communications
[ ] Other (what would you like to do with the club this year?)

** Applications might be processed a bit faster if sent directly to the membership chairman's home address: 5-2959 Richmond Rd., Ottawa K2B 6S6, rather than to the P.O. Box (the box isn't checked daily). Some information from this form may be published in the directory of members of amateur radio clubs in the national capital area.