

LAB TEST: We Compare 70 Monitors!

Free

ONTARIO (GREATER TORONTO) EDITION JULY 1995 VOLUME 8 NO. 7

CANADA'S COMPUTER INFORMATION SOURCE

The

COMPUTER PAPER

NEWS

REVIEWS

FEATURES

PROD. NO. *Desktop Video*

SCENE

TAKE

ROLL

DATE

SOUND

PROD. CO.

DIRECTOR

CAMERAMAN

INSIDE:

- IBM vs the Clones
 - Computer Camps
 - Digital Cameras
 - Weaving your own Web Site
- and more!*



System not necessarily as shown.

<p>\$1,499 MUL-4D66AM <ul style="list-style-type: none"> •486DX2/66MHz processor •4Mb RAM •128K Cache •540Mb IDE HDD •1.44Mb, 3.5" floppy drive •Double-speed CD-ROM •Dual speakers •16-bit stereo sound card •1Mb local bus video card •IDE LB I/O Card •Serial mouse •101 keys enhanced keyboard •MS-DOS 6.22 •Windows® for Workgroups 3.11 •Three-year parts & labour warranty, 1st year on-site •Microsoft® Encarta, Works & Money, Golf, CD Sampler, Dangerous Creatures and The Best Of Entertainment Pack <i>Monitor not included</i></p>	<p>\$1,699 MUL-4D100AM <ul style="list-style-type: none"> •486DX4/100MHz processor •4Mb RAM •128K Cache •540Mb IDE HDD •1.44Mb, 3.5" floppy drive •Quad-speed CD-ROM •Dual speakers •16-bit stereo sound card •1Mb local bus video card •IDE LB I/O Card •Serial mouse •101 keys enhanced keyboard •MS-DOS 6.22 •Windows® for Workgroups 3.11 •Three-year parts & labour warranty, 1st year on-site •Microsoft® Encarta, Works & Money, Golf, CD Sampler, Dangerous Creatures and The Best Of Entertainment Pack <i>Monitor not included</i></p>	<p>\$2,199 MUL-5D75AM <ul style="list-style-type: none"> •Intel Pentium 75MHz processor •8Mb RAM •256K cache •540Mb IDE HDD •1.44Mb, 3.5" floppy drive •Quad-speed CD-ROM •Dual speakers •16-bit stereo sound card •1Mb PCI video card •IDE I/O Card •Serial mouse •101 keys enhanced keyboard •MS-DOS 6.22 •Windows® for Workgroups 3.11 •Three-year parts & labour warranty, 1st year on-site •Microsoft® Encarta, Works & Money, Golf, CD Sampler, Dangerous Creatures and The Best Of Entertainment Pack <i>Monitor not included</i></p>
--	--	--



Special Offer! IBM OS/2® Warp Version 3 FREE with any system ordered before July 15, 1995.

IT'S WHAT'S INSIDE THAT COUNTS

Don't be fooled by the logo on the outside. What makes a quality PC is what's inside. We're a leading national distributor of name-brand components and a manufacturer of high-quality PCs. When you think about it, it's no wonder all roads lead to Samtack -- The PC Masters. After all, as a distributor and manufacturer, we provide high-quality, leading-edge computers at extremely low prices, with unbeatable service and support. What's more, we provide technical support to resellers and VARs through our toll-free helpline.

Samtack -- the logo on the outside is your guarantee of the best components inside.



TURTLE BEACH SYSTEMS



SAMTACK
 COMPUTER INC.
The PC Masters

Markham
 385 Bentley Street
 Markham, Ontario
 L3R 9T2
 Tel.: (905) 940-1880
 Fax: (905) 940-0331

Ottawa
 155 Colonade Road, Unit 20
 Nepean, Ontario
 K2E 7K1
 Tel.: (613) 727-0027
 Fax: (613) 727-0799

Montreal
 1580 St. Elzéar O.
 Laval, Quebec
 H7L 3N2
 1-800-541-2799
 Tel.: (514) 682-0886
 Fax: (514) 682-1035



Windows is a registered trademark of Microsoft in the U.S. and other countries. All other trademarks and registered trademarks are the property of their respective owners.

For dealer information, please call 1-800-565-1476.

- | | | | |
|--|--|---|---|
| <p>Advantage Multimedia - Hamilton (905) 524-2277
 Clean Machine - Burlington (905) 632-6601
 Durham Electronics - Oshawa (905) 432-3149
 P.C. Engineering Resource - Brantford (519) 754-4050
 SDL Micro - London (519) 680-0613
 System Builders Ltd. - Toronto (416) 537-2611</p> | <p>Adept Micro - Windsor (519) 974-2207
 Dataronic Systems Inc. - Don Mills (416) 447-2491
 EasyTek Computer Services - Scarborough (416) 751-5800
 PlanRite Business Systems - Brantford (519) 754-0326
 Sierra Electronics Co. - Markham (905) 513-6666
 TCI Data Systems Inc. - Whitby (905) 430-3559</p> | <p>Auto Tech Business - Peterborough (705) 749-9225
 Digital Scope Ltd. - Downsview (416) 663-1312
 Leamington Hi Tech Computer - Leamington (519) 326-2002
 Quest Computers Inc. - Scarborough (416) 751-8888
 Signa Computers Inc. - Scarborough (416) 755-1590
 TCM International - Windsor (519) 733-9334</p> | <p>Clarington Computer - Bowmanville (905) 697-3060
 Direct Access - Newmarket (905) 853-7953
 PC Business Systems - Chatham (519) 627-1441
 Reign International - Etobicoke (416) 251-4652
 Strictly Business Computer - Port Hope (905) 885-4597
 Time Computer Products - Toronto (416) 920-2220</p> |
|--|--|---|---|

COREL CD OFFICE Companion™

The best CD to complete your office suite

Internet Web Browser and Fax

Corel Web Mosaic™

- Built-in playback support for AIFF and AU audio files
- Direct display of GIF and JPEG images
- Full printing applications

CorelFAX™

- Send faxes from within any Windows application
- Built-in OCR and TWAIN-compliant scanning
- Send and receive faxes in the background

Personal Information Manager

Corel PLANNER™

- Cross-reference information easily by linking related items together
- Daily, weekly, monthly and yearly calendar views for planning appointments and activities

Fonts

Corel FONT MASTER™

- 500 high-quality Bitstream™ and URW™ fonts
- Preview fonts, assemble font groups, install and de-install TrueType® fonts on the fly



Business Graphics

CorelFLOW™ 2*

- 2,000 "drag and drop" symbols
- 90 customizable Smart Symbol Libraries
- Built-in spell checker
- Automatic shape connectors

Clipart and Photos

Corel GALLERY™ 2*

- 15,000 clipart images
- 200 photos and 75 sound clips
- Full-colour reference guide with thumbnails of each clipart image

Complete Electronic Reference

Corel BOOKCASE™

- 6 comprehensive references
- *Correspondence Library*—700 standard business letters

Multimedia Utilities

- *Corel CD Audio™*—Listen to your favourite audio CD from your CD-ROM drive*
- *WinTune™ 2.0*—System diagnostic indicator to optimize the performance of your PC
- *WinDat™ .WAV Editor*—Record and edit sound clips
- *Corel Screen Saver* and *Wallpaper Flipper*

You've got your office suite... but to maximize your productivity you need Corel CD Office Companion. It's value-packed with World Wide Web and fax communications, business graphics, PIM, clipart, fonts, reference libraries and multimedia utilities—all on one convenient CD-ROM!

Corel CD Office Companion—the ideal complement to:

- Microsoft® Office
- Novell® PerfectOffice™
- Lotus SmartSuite®

Incredible power and value all on one convenient CD-ROM



* Clipart, font and photo libraries vary from the standalone versions of CorelFLOW 2 and Corel GALLERY 2.

Microsoft is a registered trademark of Microsoft Corporation. PerfectOffice is a trademark of Novell, Inc., and SmartSuite is a registered trademark of Lotus Development Corporation. Microsoft Corporation, Novell, Inc. and Lotus Development Corporation make no endorsement of Corel or Corel CD Office Companion.

COMPUCENTRE®

\$139⁹⁹

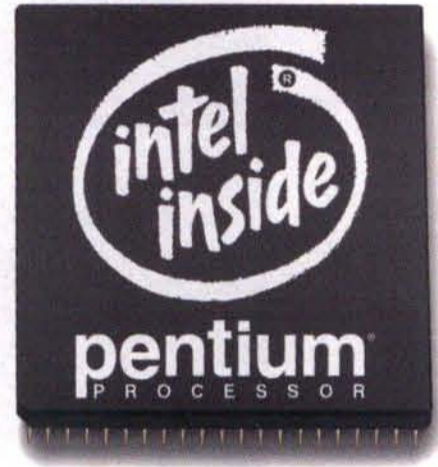
VISIT THE LOCATION NEAREST YOU!

Cdn\$ plus applicable taxes.

KUR-0141

COREL®

Call now for faxed literature!
1-613-728-0826 ext. 3080
Document #1058



Create multimedia presentations.
Crunch financial planning scenarios.
Manage complex documents.
Share ideas face to face.
Etc., etc., etc.

Do you have
the power?

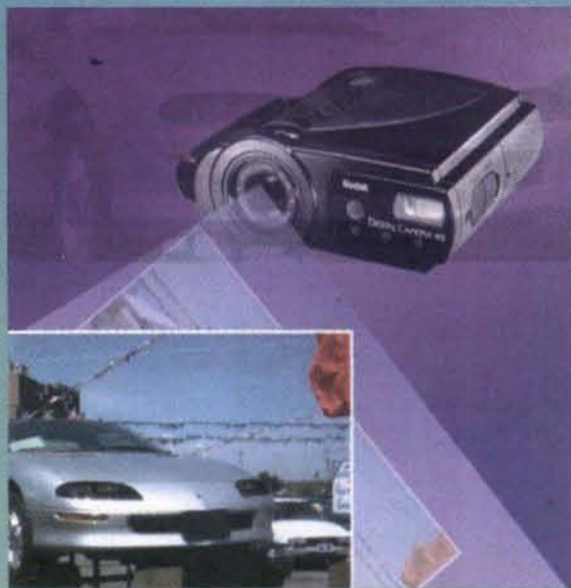


Today's business software, from suites to groupware, places great demands on your PC. And with even more sophisticated programs already being developed, that demand is only going to increase. Fortunately, an Intel Pentium® processor-based PC gives you the power to run today's most demanding PC software while still having plenty in reserve for tomorrow's.

intel®

C O N T E N T S

COVER STORY



16 Affordable Digital Cameras Arrive
No Film, Processing on Your Desktop
by James Omura

F E A T U R E S

DESKTOP VIDEO

- 20 Videoconferencing – A Solution Without a Problem?**
by Geof Wheelwright
- 24 Digital Video on Home PCs**
by Ron Greber
- 27 The Presario CDTV – A Computer for Couch Potatoes**
by Geof Wheelwright

SUMMER COMPUTING

- 30 Adventures at Camp Silicon**
by Jean Ikeson
- 36 Digital Maps for Real Highways**
by Martin P. Waterman
- 42 Deck Building Software**
by Martin P. Waterman

IBM VS THE CLONES

- 46 The Eternal Question – Buy Big Blue or Will a Clone Do?**
by Ross MacDonald
- 50 Beneath the Label – Peeking Inside IBM and Seanix PCs**
by Ross MacDonald

TCP TEST LABS

- 54 Monitor Mania**
by Jeff Evans
- 58 Monitor Buyers Guide**
- 63 Basic Tips for Buying Monitors**
by Geof Wheelwright

N E W S & R E V I E W S

NEWS

- 39 The Canadian File**
by Grant Buckler

SMALL & HOME OFFICE

- 40 On Your Own: Selecting Professional Advisors**
by Douglas Gray
- 40 EasyPhoto Brings Photo Scanning Home**
by Keith Schengili-Roberts

MULTIMEDIA SPEAKERS

- 64 The Quest for Great Sound**
by Gord Goble
- 65 Sound Rules For Buying Computer Speakers**
by Gord Goble

HARDWARE

- 68 Portability and Performance Canon's BJC-70 Printer**
by Martin P. Waterman

SOFTWARE

- 71 Review: My Legal Assistant**
by Rod Lamirand
- 72 Utilities Add Value to PC-DOS 7**
by Cub Lea
- 74 Getting Connected With Warp**
by Graeme Bennett

ONLINE

- 78 Commtalk: Confessions of an Online Junkie**
by James MacFarlane

80 Weaving Your Own Web Site Part II, Netscape-isms

by Keith Schengili-Roberts

85 HTML Improvement Needed

by Jacqueline Emigh

86 Will Write For Food

by Robert Earley

GAME, CD & BOOK REVIEWS

29 Video: The Gate To the Mind's Eye

by Keith Schengili-Roberts

76 CD: Eyewitness Encyclopedia of Science

by Ross MacDonald

89 Book: Counsel Thyself on the Net

by Cub Lea

90 Book: Probing the Digital Age

by Keith Schengili-Roberts

92 Book: East or West Cobol is Best

by Keith Schengili-Roberts

LEARNING

- 93 Neat Effects! Where Can I Learn That**
by Malcolm Warwick

D E P A R T M E N T S

- 6** From the Editor
- 7** Letters
- 9** What's New
- 88** NewsBytes
- 93** Learning
- 98** User Groups
- 98** Calendar of Events
- 99** Reader Survey
- 101** Classifieds
- 104** Computer Directory
- 106** Index of Advertisers

COMING UP IN ONTARIO EDITION

AUGUST 1995

Desktop Power Machines, 3D Graphics
Classifieds Mon., Jul. 3
Ad Deadline Wed., Jul. 5
Camera Ready Thu., Jul. 6
Distribution Fri., Jul. 21

SEPTEMBER 1995

Laser Printers, Education
Classifieds Mon., Jul. 31
Ad Deadline Tue., Aug. 1
Camera Ready Wed., Aug. 2
Distribution Fri., Aug. 18

OCTOBER 1995

Modems, Communications
Classifieds Mon., Aug. 28
Ad Deadline Tue., Aug. 29
Camera Ready Wed., Aug. 30
Distribution Fri., Sep. 15

Call Now
(416) 588-1580
for advertising
information

Visit
TCP Online

The Computer Paper's
World wide web site at

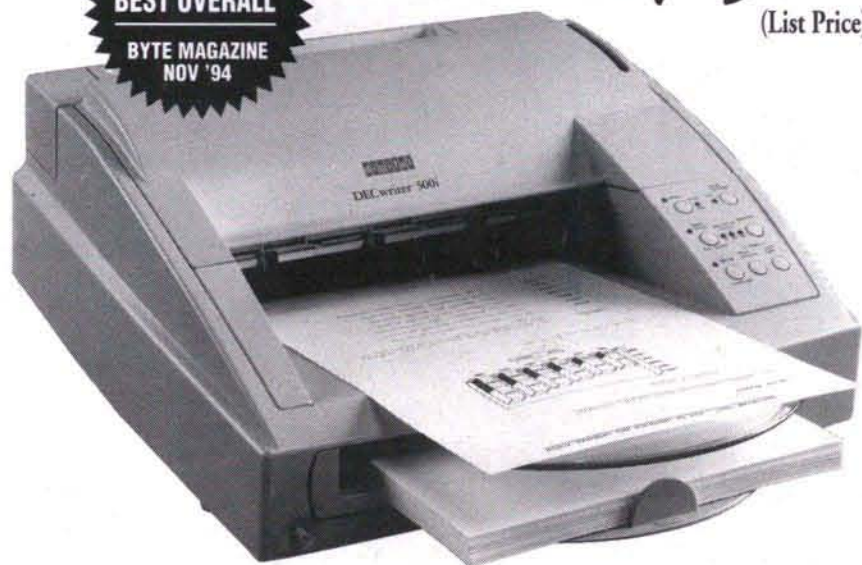


<http://tcp.ca/>

Color Printing On A Black & White Budget

★ WINNER ★
BEST OVERALL
BYTE MAGAZINE
NOV '94

\$479⁰⁰
(List Price)



Digital Inkjet Printer – DECwriter 500i

- Colour Upgradeable @ \$79
- 600 x 300 dpi Resolution
- **5 PAGES PER MINUTE OUTPUT**
- 150 Sheet Capacity
- HP PCL3 Extended
- 5 Resident Fonts
- Windows Driver Included
- Save Over 40% on Unique Cartridge Replacement
- 2 Year Warranty

FREE
CORELDRAW! 3.0
\$200 Value
(While quantities last)



FOR YOUR NEAREST RESELLER:

SUMMIT DIRECT

905-819-9555 (Mississauga)
905-738-0118 (North York)
905-849-9555 (Oakville)
905-548-9555 (Hamilton)
519-749-9555 (Kitchener)

TECHNIQUE MICRO SYSTEMS

1300 Shawson Dr., Unit 4
Mississauga, Ont L4W 1C3
905-564-5722

AUTO*TECH COMPUTERS

1070 Stone Church Rd. E
Hamilton, Ont L8W 3K8
905-388-5518

TGI DATA SYSTEMS

50 Thornmount Drive, Unit 26
Scarborough, Ont M1B 5P3
416-281-5595

COMPU CARE CANADA

16 Sims Crescent, Unit 4 & 5
Richmond Hill, Ont L4B 2P1
905-881-7604

MOTOR CITY COMPUTERS

400 King Street West
Oshawa, Ont L1J 2J9
905-725-1016

COMPUTE

333 King Street West
Oshawa, Ont L1J 2J8
905-433-7033

Digital's Master Distributor:



TECWAY
TECHNOLOGIES LIMITED

500 Cochrane Drive, Unit 3, Markham, Ont L3R 8E2
Tel: (905) 470-1454 Toll Free: 1-800-268-0119
Fax: (905) 470-1779

COMDEX/Canada '95
WINEXPO - WINDOWS WORLD
July 13-14, 1995 - Toronto, Ontario
Booth #1650

▲ Reseller Inquiries Welcome ▲



Reviewing the Reviewer

Writers and editors of computer magazines like to think that they provide a great source of information on the rapidly changing field of technology. Unfortunately, we all suffer from a common problem. That problem is that of product reviewers not understanding the products they are given to assess. If it is not frequent OTS errors (Operator Too Stupid), it is often the reviewer not giving a product sufficient time to realize the technology and its implications.

As writers and editors, we try to assume the thoughts and actions of the average user, but this often results in complex products getting short changed. "What is likely to happen to the average person looking at these things?" is the question we try to address. In the world of technology however people do specialize. They do make a career out of understanding a certain specialty software or hardware area, so sometimes we hire experts in those areas to write our reviews.

We often get products that are just too complex for us to do real justice to in a review, without one of our writers getting an advanced degree in the subject. GIS systems, workgroup software such as Lotus Notes, even wide-reaching products like Windows NT Server or Novell Networking software stretch our ability to assess the product intelligently. With that in mind, here are my thoughts on Apple's Newton.

Scattered Thoughts

My quest for the ultimate in personal organization continues. Regular readers of this column will be beginning to see a trend here. I use personal information manager software on my computer. I even got the workgroup version to share goals with key employees. I had a notebook computer, but recently gave it up for two desktop units and a very small and portable SCSI hard drive. I did this for two reasons, I hate the limitations that are forced upon you by notebooks and couldn't be bothered with the docking station units I tried out and I got tired of packing around the extra weight. The notebook computer never seemed to be there when I wanted to use it.

Typing is also distracting when talking to people on the phone, or in meetings and I usually end up scribbling messy notes in little paper organizers. The idea of a pen-based computer has appealed to me for a while, because of the thought of easy entry with a pen. I had requested a demo Newton, the pen-based Personal Digital Assistant (PDA) from Apple Canada, but it had not been forthcoming. I speculated on buying one at retail for around \$1,000, but held off because it seemed like such an outrageous price for something I was not sure I would like. Then I noticed they were selling off the original "Doonesbury-scorned" Newton Model 100's for \$175 in an ad in the back of a U.S. computer magazine. I couldn't resist trying it out for that price, so I ordered one up.

What I Failed To Get

I made the mistake of purchasing it without all the goodies that could have integrated it more with my work. I argued with myself "Don't be so extravagant—just get the basic unit and see if it is worthwhile before you blow the whole wad on the fancy stuff."

What good is a PDA if it can't link to your main computer? What good is a PDA if it has no modem and can't get your e-mail? These extras would have added at least \$300 to the package but truth be known, they probably would have added tremendously to the utility. My big problem was that I just could not get past two issues with the unit. The first was the handwriting recognition and the second was battery life.

Handwriting Analysis

Spending time with the unit, definitely helps improve handwriting recognition, but it is still finicky. Put it this way, if your penmanship (pen-person-ship?) skills have ever been questioned somewhere in our educational system, you probably won't have the patience to make the handwriting recognition work. Reading the manual about all the tricks to using the unit also definitely helped. There are a few very useful tricks that make it much more productive — little things like inserting letters when a typo occurs or double-tapping on a word brings up optional recognition guesses and a little keyboard so you can retype the letters of words the system just can't guess at.

The units use word recognition instead of letter-recognition, so they take a guess at the word you wrote based on a dictionary of only about 10,000 words. You can add words up to a point, but given that the English language is supposed to have hundreds of thousands of words in it, 10,000 seems like quite a small sampling and accordingly, it gets most words wrong.

Battery Problems

Another big problem with the Newtons is that they consume batteries like the O.J. Simpson trial spins off jurors. Mine died after a few days work, and I haven't gotten around to replacing them yet, so the unit sits there idle and unused, like much of today's technology. I know I should give it a longer try, but I will probably end up sticking this one into the office pool and let some one else take a shot at getting it to work, preferably someone with good handwriting skills and more patience.

Other Problems

I was also disappointed that the unit lacked a built-in spreadsheet, a big oversight especially since it seems to be very good at recognizing numbers.

Should You Buy One?

The new versions of these units, the Newton 120's, are supposed to be quite improved. The handwriting recognition keeps getting better, the units are a little faster, have more storage space and a range of third party software to increase their utility. First and foremost, you need to look at the way you work and check your own tolerance for fidgety things. If you have lot's of time, give it a whirl. They are fun units if you can get them to work. Perhaps one day they will work for me too.

In conclusion, it seems that when we rate products, we should also rate the reviewer. In this case:

Handwriting: Poor
Patience Quotient: Low
Enjoy the issue.

Douglas Alder
Editor/Publisher

P.S. Please fill out our reader survey on pages

Bread and Butter Issues

I wanted to let you know that your paper is the best thing to hit the computer market since sliced bread... or since the arrival of PCI bus.

I can't wait for the monthly issues to come out!

Timothy Spencer, via Internet

Gamer Appreciative

Just a note to say how much I enjoyed your article on memory management for PC games (See TCP May 1995). I have a number of boot disks for running games because of the need for different configurations. Your article comes up with some very helpful approaches to other configurations. Thanks.

Gordon D. Kelly, Calgary

Where is Picture Butte, really

I've always enjoyed your software reviews, but I've gotta say, that as a transplanted Albertan, I'm wondering exactly how accurate "Canada GeoGraph II" actually is. (See TCP, May 1995.) Picture Butte is just a few miles northeast of Lethbridge; it is actually southwest of Acadia Valley (which, by the way, is one of the driest, desert-like valleys I've ever seen).

Keith Jones, via Internet

DT replies: Canada Geograph is not to blame for this error — I made it up entirely by myself. It was meant as a kind of inside joke for us Albertans working here at The Computer Paper. Our production manager's dad farms near Acadia Valley. I thought she said south of Medicine Hat and I didn't bother to check. My apologies for letting a little humor displace accuracy, particularly embarrassing in an article dealing with geography!

KK, ex-Acadia Valley resident adds: Knowing how remote Acadia Valley is, I can't believe we got mail on this! The real way to find out how to get there is to look up nowhere in the dictionary, and there it is, right in the middle!!!

Winsocked

Hi there. I'm using Winsock 2.0B currently which is a very nice program. I'm sending this e-mail to you because I'm having a problem. When I use Winsock to call in to my Internet service provider it connects at

14400. Then when I go to run ftp or Netscape the speed is roughly about 4800. I can tell because it takes a little over half an hour for 1 MB instead of about 10 minutes. So you can see there is a big difference.

I've used Winsock ever since I got my Internet access and the problem has always been there. I think it might have something to do with Windows for Workgroups 3.11 *.ini files or my modem's initialization string. My modem is a Zoom 14.4 PC fax modem. I'm not sure but could my modem being a fax modem make any difference? I

know that the service is able to send at 14.4 because I know of other people that have transferred at that speed, so I know it's possible. My friends could not help no matter what they tried.

Winsock and Windows are set up at 19200 and the initialization string is the default one. I'm running Windows For WorkGroups 3.11. My modem is currently on Com 2 with default port addresses and my mouse is on Com1 Irq 4. I've connected with 14.4 to bulletin boards and downloaded at that speed before so I don't think

the modem is the problem. If you can suggest anything, I would really, really, appreciate it. As you can imagine surfing the net at anything less than 14.4 is not really fun.

Andrew Leung, via Internet

GB replies: I believe you are experiencing the slowdown primarily because your Internet service provider is overloaded and/or is splitting up its available bandwidth too much. The



WINNER
June 1995

**Impulse®
COMPUBOOK® 600c
Highlights:**

- 11.3" color display, DSTN-LCD
- 100MHz or 75MHz IntelDX4 processor
- 16-bit sound system with built-in speakers and microphone
- TrackPoint II with palmrest
- Up to 28MB RAM and 810MB HDD
- VL local-bus video and NiMH battery
- PC Card slots
- Only 6.6 lbs. and 1.7" high
- Pre-installed software: Microsoft DOS®, Windows for Workgroups™, Windows Sound System™, Video for Windows™
- 3-year warranty with toll-free technical support

Call for the dealer nearest you:

Impulse

IN TORONTO: 905 / 858-3000
TOLL-FREE IN CANADA

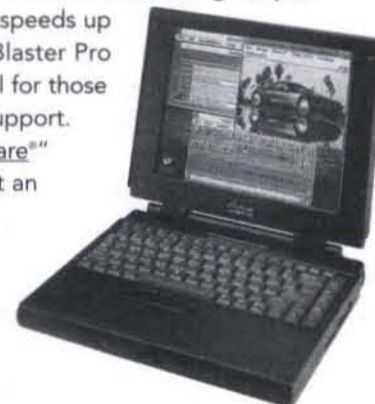
1-800-668-1111



Get the
big
picture.

With an 11.3" screen, our new Impulse® COMPUBOOK® 600c is the largest display on the market today. This dual-scan colour notebook gives you 20% more viewing area. With processing speeds up to 100MHz, and a built-in 16-bit SoundBlaster Pro compatible sound system, it's ready-to-roll for those professionals who need full multimedia support. And, it's all backed by our three year "iCare" limited parts and labour warranty. Contact an Impulse authorized dealer nearest you today and "get the big picture".

COMPUBOOK® 600c



Impulse

GO WITH YOUR IMPULSE®

Correction Notice

June's Laptop Buyers Guide chart contained some errors. See below for the correct information.

Acom/ Daiwa	
Video Memory	1MB
Extras	Raven CD-Note
Pacific Royal Smartbook	
Weight (w/battery)	6.3 lbs.
Max. Video Colors	(...)
Video Memory	1MB
Contact	1-800-538-8212
Warranty	3 Years
Pacific Royal Jetbook	
Weight (w/battery)	5.9 lbs.
Video Card	VESA VGA, C&T
Max. Video Colors	32,000 (640x480)
Video Memory	1MB
Audio	16 bit
Extras	Stereo Speakers
Video Memory	1MB
Contact	1-800-538-8212
Warranty	3 Years

Would You Report This?



Of Course You Would

If you saw a burglary in progress or a bank being robbed you'd call 911. Anybody would. It's the right thing to do.

Some crimes aren't as visible but they *are* extremely serious. Software piracy in Canada results in losses of more than \$300 million each year — sharply reducing job creation as well as research and development.

And remember, not only do users of illegal software penalize themselves by denying themselves valuable technical support, they can also punish you by dramatically increasing the spread of dangerous viruses.

A number of companies and organizations have already figured out how serious we are about software piracy.

The Canadian Alliance Against Software Theft (CAAST) has been

involved in legal proceedings against illegal bulletin board operators, a business college, a corporation and several retailers guilty of either trafficking in illegal software or "softlifting" — unauthorized copying of software. More than \$500,000 has been recovered.

Do Something About It

It's wrong, It's illegal. Do something about it. If you know of any company guilty of pirating software, take action. To help us catch software pirates,

or to receive our free information kit on how to avoid prosecution, call us at 1-800-263-9700.



If you know of any individual or company committing software theft, call CAAST

1-800-263-9700

symptoms don't sound like it is a modem-related problem.

You will, however, get slightly better throughput if you go to a 32-bit OS such as Windows 95 or OS/2 Warp, as these OSes use the buffer in a 16550 UART more efficiently than Win3.x does. The 16-byte (yes, 16 characters) buffer is used fully by Win95 but Win3.x only uses something like one byte to buffer incoming data.

If you are using an external modem, you must use a hardware handshaking cable for best results, and if your PC is an old one, and your modem is external, you might have the older, slower type of UART, which you should upgrade to the 16550.

Apple, Oranges and the Occasional Rotten Egg

I have to applaud you on being more balanced on your coverage of various computing platforms. I was wondering if your publication would be able to address an inequity (in my eyes) that most other magazines (i.e. anything with PC or Windows in the mags name) that when comparing computers the afore mentioned magazines will only focus on their preferred platform and give short if condescending comments on the "other" platform/s. I know its an old saw but I would like to see a balanced impartial overview of all desktop computers when doing model & cost performance comparisons. When I see headlines of "Dual Pentium, Fastest PC ever!" I get modestly PO'ed when (even as a Mac user) I know that the DEC Alpha, Mips chips, & the PPC, hold an edge over the Pentium in many areas & by simply doubling a chip on a board does not necessarily make it faster.

Also When you have access to a beta of Copland I wouldn't mind seeing some good hard looks at it, after all the free press that MS has gotten with its years of stalling Win4.0 (I'm calling a spade here) Maybe a little coverage of that point would add a little balance as far as this Macoid is concerned. I hope that my remarks will be taken with a grain of salt and maybe see The Mac & the MacKin get a little more fair press.

Bruce M Anderson, via Internet

DT replies: We've got some good news and bad news. First, scheduled for our August issue is a lab test report on desktop power machines, in which we will be looking at maxed Macs, plum Pentiums with other workstation class machines like Alphas and SparcStations thrown in for flavor (the final list depends on which machines we can get our hands on in time).

The bad news — but only from a Mac or OS/2 user's perspective, I suppose — is that we'll also be including extensive coverage of Windows 95 in August. The "official" release date has been announced as August 24, and many beta users — and Microsoft itself — have suggested that the current beta is very close to what will be in the official commercial release.

This will be an important release of an important operating system, despite what all the Microsoft detractors or Windows haters argue. It will have a major impact on the market, if for no other reason than the sheer numbers of computer users it will potentially affect — most computer users are PC users, and the majority of PC users are Windows users.

Building a Consensus

What is the probability that there will be a computer chess champion by 2000? Between 71 and 73 percent. What is the probability

that terrorists will have nuclear capability by 1999? Between 48 and 49 percent. What is the probability that Macintosh clones will outsell Macintosh computers by July 1997? Between 57 and 59 percent.

Where do these probabilities come from? They come from Idea Futures at <http://if.arc.ab.ca/IF.shtml>.

This project is a unique application of the WWW to deriving a consensus on issues related to science, technology and current events. It is completely interactive and currently has just under one thousand users and is gaining registrants every day. It is going to be awarded the Prix Ars Electronica or Electronic Arts Prize from the Austrian government this year. I believe that a web application of this nature fits well within the scope of your excellent publication and I would urge you to check it out.

Duane Hewitt, ddhewitt@acs.ucalgary.ca

How Fast Is Cellular?

I found Ross MacDonald's article (see "Fax and Modem from Your Cellular Phone" in June issue) very interesting. But I did not see any review of the modem speed while using cellular. If Ross was able to make use of 28.8 with a cellular I would like very much to learn how. The max I have been able to maintain is 9600 using Motorola's modem and Motorola flip phone and AT & T modem and Motorola flip phone.

Thank you for your informative articles.

Mike Bersier, via Internet

DT Replies: Your point is well taken. Because of the greater instability of a cellular phone connection compared to a land line — variable strength of signal within a cell, and potential signal disruption at hand-off points — data transmission is bound to be slower and less reliable over cellular. Reports last year with 14.4 cellular modems seemed to indicate that 9600 was a realistic transmission rate under good conditions.

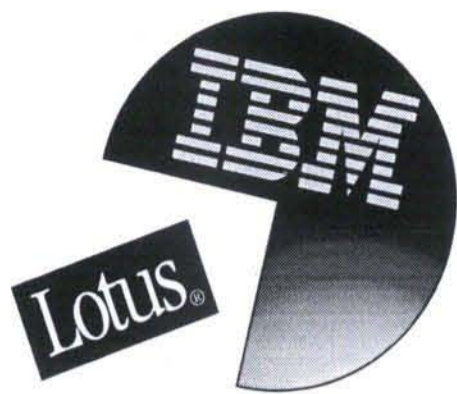
Research notes provided by AT&T Paradyne for our Keep-in-Touch cellular fax-modem show that completed cellular calls ranged from 100 percent with stationary cellular phones down to as low as 35 percent when the calls were being attempted in moving vehicles. We've also read that with our Keep-in-Touch modem, the fax transmission rate over cellular defaults to 4800 bps, even though the card is rated as a 14.4 fax-modem card. When connected to a land line, the card will send data and fax at the rated 14.4 kbps, however.

Sightings Steven M. Johnson



During morning rush hour freeway trips, commuting motorists are learning to drive while eating out of Commuter Breakfast Kits. They dish out hot cereal and sip drinks, steering with one hand.

IBM Grabs at Lotus



to the show this year is the Comdex Multimedia Showcase which highlights developers of multimedia systems, software and digital publishing. There promises to be a lot of attention focused on Windows World also as the eagerly anticipated August release of Windows 95 quickly approaches. No doubt, many developers will be showcasing their Windows 95 savvy applications. LAN Expo will feature Enterprise Live, a live simulation of several inter-networked local area networks. EnterpriseLive will also preview future open system developments.

As in previous years, three keynote addresses by industry leaders will be featured throughout the show. Khalil Barsom, President and CEO, IBM Canada Ltd. will give the Comdex Canada keynote address on July 11 from 1- 2pm. On July 12, from 9-10am. Robert McDowell, Vice President, Enterprise Customers, Microsoft Corporation will deliver the Windows World keynote and on July 14, David Dukes, Co-chairman, Ingram Micro Inc. and CEO, Ingram Alliance Reseller Company will deliver the distribution keynote from 9-10am. All keynote addresses

will take place in the John Basset Theatre in the Metro Toronto Convention Centre.

To register for a free exhibits pass or for \$50 off the Information Passport All-Days Conference contact Comdex at 416-283-3003 or on the Internet at <http://www.comdex.com:8000/Online/events/cdxcan/show/>.

Exhibit hours are July 12-13 from 10am to 5pm and July 14 10am to 4pm. — RC

Drop by to say Hi to us at
Comdex Canada '95



IBM Corp has initiated a hostile takeover of Lotus Development Corp. by offering US\$3.3 billion for 100 percent of the shares of Lotus. IBM made its intentions public on June 5, and filed papers with the US Security and Exchange Commission the following day.

In a news teleconference, on June 5, IBM Chairman Lou Gerstner said the computer industry was entering a new phase, where "all of the computing power of an enterprise are linked together." He said both Lotus and IBM "have been working significantly in this model of computing."

Lotus' plum application for this model is Notes, which many agree is the most mature application in this new style of "workgroup" computing. Notes Server versions are available for OS/2 and Windows, while clients are available for Windows, OS/2 and Macintosh. Lotus also has a set of productivity applications including Lotus 1-2-3, Ami Pro, Freelance Graphics, and Organizer, as well as a popular e-mail package called cc.Mail. All except Organizer are available for Windows and OS/2.

Along with a news release on the planned takeover, IBM also released a letter Gerstner sent to Lotus boss Jim Manzi. The first part read:

"Dear Jim:

"As you know from your conversations with IBM Senior Vice President John M. Thompson, IBM has been interested for some time in pursuing a business combination with Lotus.

"Because you have been unwilling to proceed with such a transaction, we are announcing this morning our intention to buy all of Lotus Development Corp.'s outstanding common shares for a price of \$60 per share, or \$3.3 billion."

Stay tuned. This story is just beginning. — DT

Comdex hits Toronto in July

It's baaack...

The Show that Ate Toronto returns July 12-14 to the Metro Toronto Convention Centre and Skydome to prove yet again that it's Canada's premiere computer trade show. Since its inception three years ago, Comdex Canada — including Windows World and LAN Expo — has devoured the competition and killed of major trade show heavy weights such as the Canadian Computer Show and Macworld.

Over 500 exhibitors are expected to be on hand showing off their latest products. New

Lexmark

Because Life Is In Colour

You live in colour. So why would you want to print only black and white? Lexmark offers a variety of full colour printers at attractive prices. The ExecJet IIc is a very affordable ink jet printer that delivers vivid colour and near laser quality printing. And now, Lexmark introduces our first dual-cartridge ink jet printer, the WinWriter 150c, which prints brilliant colours and true blacks without having to switch cartridges! So, when you are looking for a colour printer, look for the ones with the Lexmark name. Because life looks better in colour.

For more information, call 1-800-358-5835.

NEW
WinWriter 150c
COLOR INK JET PRINTER

See You At COMDEX. Booth #1832.

LEXMARK
ADVANCING THE ART OF PRINTING

Apple Aims Performas at Home Market

Apple Canada has launched a new line of personal computers aimed squarely at the home market. Designed to appeal to first time buyers, family and home office users, the zippy new Performa series brings easy-to-use multimedia to the home, without sacrificing power.



The Performas represent Apple's introduction of PowerPC-based computers to the home. Both the Performa 5200CD and 6200CD models contain PowerPC 603 microprocessors, once reserved for high-end business-oriented models. What were once expensive add-on features are standard for the Performa series, which are complete multimedia systems in one package.

Continued on page 12



PUBLISHER / EDITOR Douglas Alder
ASSOCIATE PUBLISHER Hari Singh Khalsa
MANAGING EDITOR Graeme Bennett
NEWS EDITOR David Tanaka
TECHNICAL EDITOR Jeff Evans
CONTRIBUTING EDITOR Geof Wheelwright
PRODUCTION MANAGER Kim Knapik
PRODUCTION STAFF Kent Barrett, Kim Fedor, Jana Kolar, Ernest Stelzer, Jenny Winterbottom, Graeme Bennett
COVER DESIGN & LAYOUT CONTROLLER Christine McPhie
SECRETARY-TREASURER Kathryn Alexander
NATIONAL AD SALES John Oliver (416) 588-1580 Toronto john@tcp.com
PROJECT MANAGER Patricia FitzGerald
INFO SYSTEMS DIRECTOR Joshua Paul

Canada Computer Paper Inc.
VANCOUVER OFFICE
BRITISH COLUMBIA: 60,000 Circulation
B.C. AD SALES Dyal Singh Khalsa, Kit Griffin (604) 733-5596
 BCSales@TCP.MINDLINK.BC.CA
CONFLICT MANAGER Robbie Chesick
PRINTER Transcontinental West
 #8, 3661 W. 4th Ave., Vancouver, BC V6R 1P2
 Phone: (604) 733-5596, Fax: (604) 732-4280
PRAIRIE OFFICE
ALBERTA: 60,000 Circulation
PRAIRIE: 32,000 Circulation
ASSOCIATE PUBLISHER Suzanne FitzGerald sfitz@tcp.mindlink.bc.ca
PRAIRIE AD SALES Jennifer FitzGerald, Don Teller (403) 228-3355 Calgary
CALGARY DIRECT 1-800-407-3355
B.R.T.A., MANITOBA & SASK
TRIBUTION MANAGER John Gogol
PRINTER Calgary Sun
 Devenish Bldg, Suite 306, 908 17 Ave. S.W. Calgary, AB T2T 0A3
 Calgary Direct, Phone: (403) 228-3355, Fax: (403) 228-3456
 AB, Sask., & MB: 1-800-407-3355, Fax: 1-800-695-1155

TORONTO OFFICE
ONTARIO: 100,000 Circulation
ASSOCIATE PUBLISHER Maureen McKee
NATIONAL SALES MANAGER John Oliver
ONTARIO AD SALES Yvette Doucette, Tino Wong (416) 588-1580
 ONSales@TCPON.COM
PRODUCTION MANAGER Sangeeta Seth
PRODUCTION STAFF Helga Stitt, Douglas Sweet
CIRCULATION MANAGER Charles Oliver
PRINTER Metroland
 408-99 Atlantic Ave., Toronto, Ontario M6K 3J8
 Phone: (416) 588-1580, Fax: (416) 588-8574
 BBS Number: CRS Online (416) 213-6002

EASTERN OFFICES
EASTERN: 105,000 Circulation
OTTAWA AD SALES Einar Murchison (613) 789-6431
 OTTSales@TCPON.COM
 203-122 Clarence Ave, Ottawa, Ontario K1N 5P6
 Phone: (613) 789-6431, Fax: (613) 789-6433
MONTREAL SALES MANAGER Frank Kovacs f.kovacs@metaxis.qc.ca
MONTREAL AD SALES Bill Lowson (514) 843-4770
 MTLSales@TCPON.COM
 360 Notre Dame Ouest, Suite G-01A, Montreal, Quebec H2Y 1T9
 Phone: (514) 843-4770, 1-800-671-6380, Fax: (514) 843-3484
HALIFAX AD SALES Judy Publicover (902) 457-4390
QUEBEC, ONTARIO & EAST 1-800-465-3517

SUBSCRIPTIONS
 To have 12 issues of *The Computer Paper* mailed directly to your home (in Canada), send a cheque for \$24.95 to Suite #8, 3661 West 4th Ave., Vancouver, B.C. V6R 1P2. American subscriptions please send \$60 in US Funds. Overseas please send \$125 Canadian (first class).

THIS IS VOLUME 8, NO. 7, JULY 1995

The Computer Paper is published monthly by Canada Computer Paper Inc. All rights reserved. Reproduction in whole or in part without the permission of the publisher is strictly prohibited. The opinions expressed in articles are not necessarily those of the publisher. Information presented here is compiled from sources believed to be accurate, however, the publisher assumes no responsibility for errors or omissions.

E MAIL

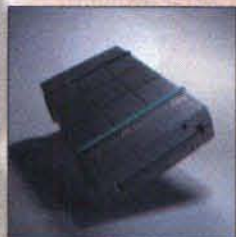
Letters@TCP.MINDLINK.BC.CA
 Editorial@TCP.MINDLINK.BC.CA
 Classifieds@TCP.MINDLINK.BC.CA

See The Future Of Storage.



Pinnacle Micro. The optical storage leader.

TAHOE 230



The Tahoe 230 MB is the world's first portable optical drive, weighing only 1.8 lbs. It offers quick access time and fast data throughput, with each rewritable 3.5" disk storing 230 MB of data. With its optional travel case and battery pack, the Tahoe is the perfect solution for users on the go. **\$795**

SIERRA 1.3 GB



The Sierra 1.3 GB is the industry's fastest optical drive. It can be used as both a hard disk replacement and an on-line archiving system. Each 5.25" cartridge holds 1.3 Gigabytes of data, and boasts a 30-year shelf life. It is ideal for data-intensive applications such as graphics, CAD/CAM, multimedia or data archiving. **\$2,495**

RECORDABLE CD



It's recordable. It's affordable. It's the #1 selling CD recorder system. As a 2X CD recorder, it creates custom audio, video and data CDs up to 650 MB. As a 2X CD-ROM player, it reads thousands of educational, multimedia and audio CDs. With its unique backup utility, it offers fast, reliable archiving of your valuable data. **\$1,695**

ORRAY 5.2 GB



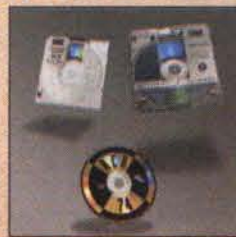
The Orray is the first optical drive to utilize multiple heads and disks, similar to hard disk technology. Designed for quick throughput, 4 MB/sec sustained, the Orray is ideal for digital audio/video and file server applications. Each removable, reliable, inexpensive optical media set holds up to 5.2 GB of important data. **\$9,995**

OPTICAL JUKEBOXES



Ranging from 20 Gigabytes to over 1 Terabyte, Pinnacle's optical library systems provide a centralized storage system to all users on a network. Designed for data management applications such as backup and archiving, HSM (Hierarchical Storage Management), document or graphics imaging. **From \$5,995**

OPTICAL MEDIA



Pinnacle Micro offers a variety of removable, inexpensive, high-performance optical media. By offering the highest quality in the industry, your data is protected (30 years for MO disks, up to 100 years for CDs). Expanding your data is as easy as purchasing more media.
RCD-74 • \$19, 3.5" 230 MB • \$39
5.25" 1.3 GB • \$169

To order or for a dealer near you call:
800.553.7070
 Tel. 714-789-3000 Fax 714-789-3150



Canadian Publication Mail, Sales Product Agreement #478881
 Printed in Canada ISSN 1195-3454
 Member of the BDA Division of CCAB.

The publisher reserves the right to refuse ads of a sexual or violent nature, or ads which may be deemed to perpetrate sexual or racial stereotypes. Specifically, ads referring to Adult Software or X-rated software will be refused. The publisher reserves the right to be the final judge of what is considered appropriate. For a copy of our full policy please contact your sales representative.



CorelDRAW 5
The Best in Graphics and Publishing
\$668.95* CD-ROM version



CorelDRAW 4
The Best in Graphics ...and more
\$194.95* CD-ROM version



CorelDRAW 3
Entry-Level Graphics
\$97.00* CD-ROM version



Corel VENTURA 5
Power Publishing
\$125.00* CD-ROM Upgrade version



Corel CD Office Companion
The Best CD to Complete your Office Suite
\$137.95*



Corel PHOTO-PAINT 5 Plus
The Best in Photo-Editing and Bitmap Creation
\$99.95* CD-ROM version



Corel Professional Photos on CD-ROM
The World's Leading Photo CD-ROM Collection
Individual titles: \$20.97* each



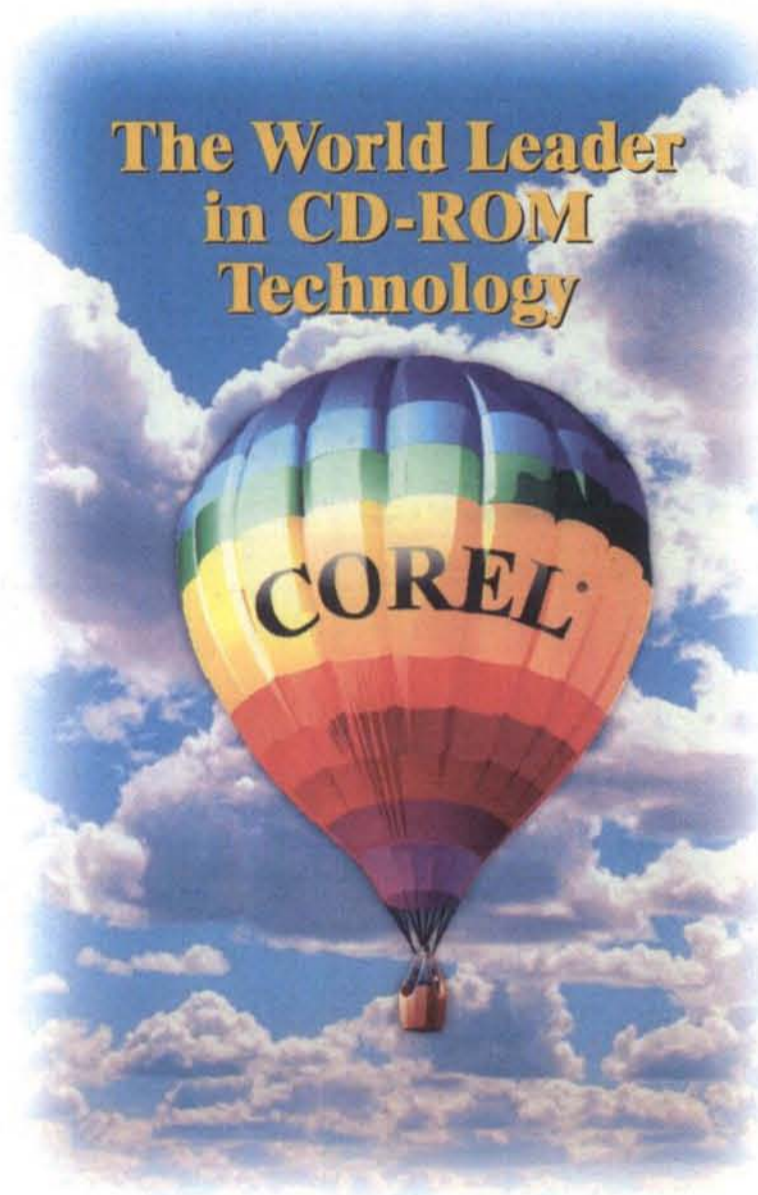
Corel Stock Photo Libraries
20,000 Royalty Free High-Resolution Photos on 200 CD-ROMs in each Library
\$987.95* each



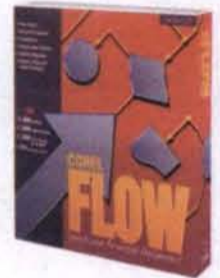
Corel CD PowerPak
The Best Multimedia Utilities for CD-ROM
\$54.95*



Corel ArtShow Collection
4 Coffee-Table Books and Companion CD-ROMs
\$125.00*



The World Leader in CD-ROM Technology



CorelFLOW
Quick and Powerful Diagrams
\$87.95*



Corel GALLERY 2
The World's Best CD-ROM Clipart ...and more
\$87.95*



Corel GALLERY
10,000 Clipart Images for Windows or Macintosh
\$47.77*



Corel CD Creator
The Easiest Way to Create CDs
\$349.00* S.L.P.



CorelSCSI Version 2
The Best Software to Connect SCSI Peripherals
\$126.00*

What makes Corel products world leaders?

- value-packed
- easy to use
- powerful
- leading-edge technology
- over 200 first place awards
- available in over 100 countries
- 300 approved Training Centres
- over 1,000 Service Bureaus

inmac®
1-800-567-5992

Please mention priority code E204-07 when ordering.

*Cdn\$ plus applicable taxes.
All products are registered trademarks of Corel Corporation.



Call now for faxed literature!
1-613-728-0826 ext. 3080



THERE'S ONLY ONE 100,000 Canadians, 3,000 services, \$9.95 U.S. per month. ONLINE SERVICE BIG At this rate, all of Canada will be on CompuServe. ENOUGH FOR CANADA

Canada is getting online. From Halifax to Vancouver, people are connecting to CompuServe — the world's biggest online information service. Over 100,000 Canadians are joining nearly 3,000,000 other members worldwide for over 3,000 services, covering almost every subject under the sun.

CompuServe puts you in touch with other people, places, and cultures, wherever you are. For instance there's easy Internet access, plus global e-mail links to over 20 million addresses.

But for a more Canadian focus, there's a special Canada Forum that lets you and fellow Canadians discuss business, politics, sports, and the arts. And Maclean's Online gives you the current issue of *Maclean's* magazine, plus additional articles, opinions, and information. It's your chance to talk back to the country's most popular and

influential news publication.

Right now, you can join CompuServe absolutely free. We'll send you CompuServe Information Manager software, one month's free access to more than 120 basic services, and a \$15.00 U.S. usage credit that gives you up to three hours to explore hundreds of additional services for an online charge of a local phone call.* Become a member, and it's only \$9.95 U.S. per month for unlimited connect-time to basic services.

So find out why biggest is best. To contact us, call **1 800 487-0952** and ask for the *Computer Paper* representative, visit our World Wide Web Page on www.compuserve.com, fax us at 1 614 529-1610, or e-mail to CANADA@CIS.compuserve.com.

 **CompuServe**

The information service you won't outgrow.

*The CompuServe information service is available through a local telephone call to the CompuServe network in: Calgary, AB; Edmonton, AB; Halifax, NS; Hamilton, ON; London, ON; Kitchener/Waterloo, ON; Montreal, PQ; Ottawa, ON; Quebec City, PQ; Regina, SK; Saskatoon, SK; Toronto, ON; Vancouver, BC; Victoria, BC; and Winnipeg, MB. Outside these areas, additional communication charges will apply.

Visit us at Comdex in Toronto, July 12-14.

Continued from page 10

The systems all come with a full stereo sound system with microphone, high resolution color monitors, CD-ROM drive and a 14.4 fax/modem. They also come pre-loaded with System 7.5, various productivity applications and a number of educational and entertainment CD-ROM titles.

Available as an add-on, the Apple Video System lets users create their own multimedia by capturing and editing video sources from a camcorder or VCR in a real-size window. A TV System add-on feature allows people to catch their favorite television programs while working at their Performa.

All Macintosh Performas are available from Apple Canada dealers, and start at an estimated street price of \$2,200. — K.S-R

Contact: Apple Canada Inc. 905-477-5800

New Brunswick to Get On-Line Education from Microsoft

The province of New Brunswick and Microsoft Canada are getting together to create an interactive "virtual campus" to deliver on-line education using via the recently announced Microsoft Online Institute.

Initially targeted at school-aged children ranging from Kindergarten to Grade 12, the Institute will provide students with access to courses not offered locally at their own school. They will also be able to interact with other on-line students from around the world.

The Microsoft Online Institute will let students into an on-line campus that can be accessed anywhere in the world 24 hours a day. New Brunswick will certify all of the courses offered, while educational professionals provide the on-line courses. This summer a group of Microsoft technical experts will train a group of educational professionals how to use Microsoft's new on-line content and development tools to provide course material. — K.S-R.

Contact: Microsoft Canada Inc. 905-568-0434

Canadian Firm Supplies Hardware at Halifax G7 Summit

Markham's Filbitron was chosen by the Canadian Government to provide pen-based technology and communications solutions for the Group of Seven Economic Summit, which took place in Halifax June 15-17.

The annual G-7 summit brings together the heads of state from the world's largest economies for high-level discussions relating to trade issues and economic policies.

Filbitron has been a leader in pen-based mobile communications since the

Continued on page 14

**ULTINET: CANADA'S BEST SOURCE FOR THE FASTEST SYSTEMS WITH PENTIUM® PROCESSORS
SETTING STANDARDS OF QUALITY & RELIABILITY SINCE 1984. OVER 34000 SYSTEMS SHIPPED.
COMPUTER PAPER MAY '95: OUR 90 MHZ MID TOWER "UNDISPUTED PERFORMANCE SPEED DEMON."**

**ULTINET PVT/M NOTEBOOKS
WITH MULTIMEDIA & MORE**



PVT/M Notebooks (mono, 4 mb RAM, Intel unless noted)				
Hard Drive:	250 mb	340 mb	520 mb	720 mb
PVT/M i486DX/2-66	\$2156	\$2173	\$2346	\$2476
PVT/M i486DX/4-100	\$2264	\$2282	\$2454	\$2584
PVT/M Notebooks with Pentium® Processor (8 mb RAM, dual scan)				
PVT/M iDX-66 (8 mb, dual scan)	\$3161	\$3333	\$3463	
PVT/M iDX-75 (8 mb, dual scan)	\$3501	\$3673	\$3804	
PVT/M iDX-90 (8 mb, dual scan)	\$3646	\$3819	\$3949	

Upgrade PVT/M Notebooks:
 PVT/M mono to dual scan colour display \$699
 PVT/M dual scan to active matrix colour display \$1030
 Each additional mb of 70 ns fast RAM \$80
 PCMCIA 14.4/14.4 or 28.8/28.8 Fax/Modem \$189/389
 PCMCIA Fax/Ethernet Combo \$689
 Extra NiMH battery for PVT/M notebook \$198
 External double speed/quad speed CD-ROM \$490/\$580

Name Brand Notebook Computers
 AST Ascentia 810N 486-66 250 HDD colour \$3450
 Compaq LTE Elite 4/75 EX 340 HDD \$5800
 IBM Thinkpad 360 colour 486DX/2-50 \$3580
 NEC Versa V 486DX/2-50 340 HDD colour \$3580
 NEC Versa P P-75 810 HDD TFT \$7280
 Panasonic CD-Note 486DX/2-50 active 260 HDD \$3800
 Toshiba 2450 CT 486DX/4-75 510 HDD \$5150

Notebook Features	PVT/Multimedia	AM-LITE	PENTIUM
Intel CPU Type & Landmark Speed (Genuine CPU-upgradable Intel, not Cyrix)	SX-33 110 MHz DX-33 110 MHz DX/2-66 220 MHz DX/4-75 300 MHz DX/4-100 330 MHz	SX-33 110 MHz DX-33 110 MHz DX/2-66 220 MHz DX/4-75 300 MHz DX/4-100 330 MHz	P-66 384 MHz P-75 400 MHz P-90 >400 MHz P-100 420 MHz
Unique CPU Upgradability	from SX-33 to DX/4/100	from SX-33 to DX/4/100	from DX-66 to DX-100
Base/Max RAM	4/36 mb	4/20 mb	8/40 mb
Local Bus Video RAM	1 mb	1 mb	1 mb
Max. HDD Capacity	720 mb	720 mb	720 mb
Internal Floppy	1.44 hi density	1.44 removable	1.44 hi density
Screen Size	9.5"	11.3"	10.5"
Max. Ext. Resolution	1024x768 256clrs	1024x768 256clrs	1024x768 256clrs
Int. Screen Resolution	640 x 480	640 x 480	640 x 480
Ext. SVGA Monitor	Simultaneous	Simultaneous	Simultaneous
1 serial & 1 parallel, ext. video, 2 PCMCIA slots	Y	high speed parallel high speed serial	Y
Battery Type	NIMH	NIMH	NIMH
Large Built-in Trackball	19 mm	integrated trackpoint	25 mm
Docking Chassis	Y	Y	Y
Removable HDD	standard	standard	standard
VESA Local Bus HDD	Y	Y	Y
Built in sound chip	8-bit mono	16-bit stereo	16-bit stereo
Dimensions (inches)	11.3 x 9 x 2	11.7 x 9.6 x 1.65	11.3 x 10 x 2.4
Weight (incl. battery)	6.2 lbs	5.8 lbs	7.9 lbs
Battery Life 2 - 4 hrs.	Y	up to 8 hours with 2nd battery pack	Y
SVGA PCMCIA Drivers	included	included	included
Carry Case, AC adaptor	included	included	included

**GROUP EMPLOYEE PURCHASE PLANS AVAILABLE
ULTINET NOW SELLS BRAND NAME
DESKTOPS & NOTEBOOKS. FAX YOUR REQUIREMENTS.
PCMCIA 14.4 Fax/Modem \$159 with Notebook with Pentium® Processor**

**ULTINET'S NEWEST NOTEBOOKS
THE TS-30 SERIES**

TS-30 Features:
 75/90 MHz Pentium® processors upgradable to future DX/2 technology
 Type II & III PCMCIA slots for external devices
 Built-in PCI video and hard drive
 High speed serial and parallel ports for faster data transfer
 LCD status panel for complete info on system ports, battery life & hard drive



TS-30 Notebooks (Pentium® Processor, 8 mb, dual scan colour)	Hard Drive:	340 mb	520 mb	720 mb
TS30 DX-75	\$4549	\$4721	\$4852	
TS30 DX-90	\$4694	\$4866	\$4997	

Upg. TS-30 10.4" dual scan LCD to 10.4" active matrix LCD \$1470

THE AM-LITE SERIES

AM-LITE Features:
 Super-large 11.3" dual scan LCD
 Built-in Trackpoint Pointing device
 Double Battery Life with second battery
 Type II & III PCMCIA slots
 High speed serial and parallel ports for faster data transfer



AM-LITE Notebooks (Intel™ CPU, 4 mb RAM, dual scan colour)	Hard Drive:	250mb	340 mb	520 mb	720 mb
AM486DX/2-66 Intel™	\$2924	\$2942	\$3114	\$3244	
AM486DX/4-100 Intel™	\$3033	\$3050	\$3222	\$3352	

Upgrade AM-Lite Notebooks:
 11.3" dual scan display to 9.5" active matrix \$970
 Extra battery for AM-Lite notebook \$179
 Each additional mb or 70ns fast RAM \$80

ALL MINITOWER SYSTEMS
 2 YEARS PARTS & LABOUR SYSTEM WARRANTY
 5 YEAR WARRANTY ON MOTHERBOARD
 ADD-ONS & ACCESSORIES CARRY RESPECTIVE MANUFACTURERS' WARRANTIES WHERE APPLICABLE.

MIDTOWER VALUE PACKAGES



486 ULTRA PRO SYSTEM SPECIFICATIONS:
 • 1.44 mb Japanese brand hi-density FDD
 • 486 VLB with 128k onboard cache, 486 PCI with 256k cache
 • 540 mb, 12 ms fast ATA HDD with 32-bit VESA IDE controller
 • **Fast 4 mb 32-bit 70 ns RAM onboard**
 • 14" .28dp SVGA NI monitor, 1 mb 32-bit VLB video card
 • Ultinet motherboard features:
 - Energy Star full-green power saving with full BIOS support
 - 4x30 pin & 2x72 pin sockets for memory upgrade flexibility
 - 3 VLB & 7 ISA slots, Intel™ #3, upgrade socket
 • Enhanced digital midtower case with 250 watt supply
 • 2 serial, 1 parallel, 1 game port
 • Deluxe 101-key spillproof keyboard & 3-button 400 dpi mouse

ULTRA PRO SYSTEMS WITH PENTIUM® PROCESSOR:
 • 1.44 mb Japanese brand hi-density FDD
 • 256k onboard cache expandable to 2 mb
 • 540 mb, 12 ms fast ATA HDD with enhanced PCI IDE controller
 • 14" .28dp SVGA NI mtr., 1 mb PCI local bus video card
 • 4 PCI local bus slots, 4 ISA slots & built-in overdrive socket on energy-saving motherboard
 • Enhanced digital midtower case with 250 watt supply
 • 2 serial, 1 parallel, 1 game port
 • Deluxe 101-key spillproof keyboard & 3-button 400 dpi mouse

Model (Intel™ CPU unless noted)	Lease to OWN	Landmark
i486DX/2-66, VLB	\$1265	\$51/mth 220 MHz
i486DX/4-100, VLB	\$1361	\$54/mth 347 MHz
iDX-60 w/Pentium® Processor, PCI	\$1369	\$55/mth 382 MHz
iDX-66 w/Pentium® Processor, PCI	\$1428	\$57/mth 382 MHz
iDX-75 w/Pentium® Processor, PCI	\$1550	\$62/mth 400 MHz
iDX-90 w/Pentium® Processor, PCI	\$1678	\$67/mth 480 MHz
iDX-100 w/Pentium® Processor, PCI	\$1848	\$74/mth 533 MHz
iDX-120 w/Pentium® Processor, PCI	\$2499	\$100/mth 639 MHz

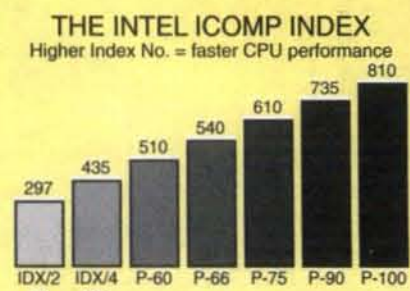
MIDTOWER SYSTEM UPGRADES:
 FASTEST PCI motherboard, Intel-Triton chipset for P-75/90/150 \$62
 Upgrade 486 VLB with 128k cache to PCI with 256k cache \$95
 Upgrade 4 to 8/16/32 mb RAM on 486 \$198/495/1188
 Upg. 4 to 8/16/32 mb RAM on P-60/66/75/90/100/120 \$208/578/1183
 Upgrade 540 mb HDD to 854 mb/1 GB HDD \$96/\$223
 Upg. 540 mb HDD to 1 GB/2 GB/4 GB SCSI HDD \$389/\$1131/1671
 Upgrade to fast I/O (2 x 16550 serial, 1 EPP, 1 game port) \$35
 PC-DOS/MS-DOS 6.22 full package & disks (OEM) \$28/59
 Windows 3.1 \ Windows 3.11 with workgroups (OEM) \$59/89
 Ultinet's PVT/M iDX-66 Notebook & DX-90 Midtower were rated by The Computer Paper.

MID-LEVEL PACKAGE
 8 mb RAM, 540 HDD
 15" .28dp NI monitor
 Double speed CD-ROM
 2 speakers, 2 CD titles, 16-bit sound card
 i486DX/2-66 \$1764 \$71/mth
 i486DX/4-100 \$1860 \$74/mth
 Systems below with Pentium® processor
 iDX-60 \$1847 \$74/mth
 iDX-66 \$1908 \$76/mth
 iDX-75 \$2061 \$82/mth
 iDX-90 \$2189 \$88/mth
 iDX-100 \$1847 \$74/mth
 iDX-120 \$3010 \$120/mth

PERFORMANCE PACKAGE
 16 mb RAM
 854 mb Hard Drive
 15" .28DP UVGA NI monitor
 ATI Mach 64 1 mb DRAM video card
 Quad-Speed CD-ROM
 True 16-bit sound card
 2 speakers and 2 CD titles
 i486DX/2-66 \$2353 \$94/mth
 i486DX/4-100 \$2450 \$98/mth
 Systems below with Pentium r processor
 iDX-60 \$2504 \$100/mth
 iDX-66 \$2564 \$103/mth
 iDX-75 \$2718 \$109/mth
 iDX-90 \$2846 \$114/mth
 iDX-100 \$3016 \$121/mth
 iDX-120 \$3667 \$147/mth

POWER PACKAGE
 16 mb, 70 ns onboard RAM
 1 GB enhanced, 9 ms, IDE HDD
 Mag DX17F 17" .28dp NI UVGA monitor
 ATI Mach 64 video card with 2 mb DRAM
 Quad-Speed CD-ROM
 16-bit sound card, 2 speakers, 2 CD titles
 DX/2-66 \$3087 \$123/mth
 DX/4-100 \$3184 \$127/mth
 Systems below with Pentium r processor
 iDX-60 \$3230 \$129/mth
 iDX-66 \$3291 \$132/mth
 iDX-75 \$3444 \$138/mth
 iDX-90 \$3573 \$143/mth
 iDX-100 \$3742 \$150/mth
 iDX-120 \$4393 \$176/mth

WHY BUY A 486 VLB?



PCI MOTHERBOARD
 with INTEL-TRITON CHIPSET for P-75/90/100/120/150 CPUs
 2 Enhanced Bus Master IDE Ports
 Fast I/O (2 x 16550 UART, 1 EPP port)
 Plug and Play Windows 95 Ready
 Fastest Motherboard Available
 P6 Overdrive upgradability
 MOTHERBOARD ONLY
\$305

PCI MOTHERBOARD SPECIALS
 60/66 MHz, 256k cache, Acer chipset \$129
 75/90/100 MHz, 256k, SIS/Acer chips \$198
 Above with built-in enh. IDE, multi I/O \$243
 60/66 MHz Pentium® processor \$330/400
 75/90 MHz Pentium® processor \$410/545
 100 MHz Pentium® processor \$729
 Multi-I/O (2 x 16550 serial ports) \$28
 PCI enhanced HDD controller \$28
 1 mb PCI video card \$98

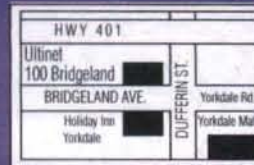
ULTINET BBS14.4K BPS, V.32bis
 24 hour on-line product info.
416-256-5681

VAR INQUIRIES WELCOME



The Ultinet Building, 100 Bridgeland Avenue, Toronto, ON M6A 1Z4
 Tel: (416) 256-2000 Fax: (416) 256-1449
OPEN: MON-THURS 9-7; FRI 9-6; SAT. 10-5
24 HR. TOLL-FREE SALES & TECH SUPPORT: 1-800-667-3858
 Ultinet accepts phone orders and ships mail order across Canada!

All prices based on cash or lease-to-own. For credit cards, Corporate and Government P.O.s, add 3%.



What's New

Continued from page 12

technology's inception, and was asked deliver a solution to meet the world leader's needs to obtain information quickly and reliably. Filbitron created an unobtrusive, pen-based solution for instant two-way communication with the leader's research offices, combining Filbitron's technology with Fujitsu Personal

System 500 tablet computers. Previously, time-critical information had to be communicated via telephone or fax.

Jim Clark, a Vice-President at Filbitron said that the summit's use of their pen-based solution "reinforces the viability and effectiveness of the technology, as well as the broad range of applications possible." — K.S.R.

Contact: Filbitron Marketing Corporation 905-477-0450

Official Olympic CD-ROM

SEA Multimedia plans to release the first official Olympic CD-ROM, entitled Olympic Glory, due to be released later this fall. The International Olympic Committee have granted SEA Multimedia an exclusive license to provide a comprehensive multimedia account of the hundred year history

of the summer Olympic Games beginning with the original Athens 1896 Olympics through to the Barcelona games. The CD-ROM will use articles, biographies of medal winners and video footage to illustrate highlights from Olympic history.

Designed to provide an educational and entertaining insight into sport and the summer Olympic games, Olympic Glory will also contain an interactive history lesson, along with statistical record of Olympic achievements. — K.S.R.

Contact: The Discovery Channel Multimedia, 301-986-1999



All the power of Internet at your fingertips.

HookUp is your best way into Internet, the Information Superhighway. Our lines offer you smooth, crystal-clear fibre-optic connections for the best in transmission quality. Only HookUp offers the full range of *Internet's* services.

HookUp gives you the cost-efficiency of E-Mail, the convenience of Internet's information retrieval tools, and the helpful guidance of HookUp's service representatives. Plug into the world today, the most convenient way...with HookUp.

Call now.

1-800-363-0400

HookUp
Communications TM

e-mail: info@hookup.net

YOUR GATEWAY TO INTERNET
SERVING OVER 150 ONTARIO TOWNS/CITIES

ENIAC Inventor Dies At 76

BY KENNEDY MAIZE

BLUE BELL, PA (NB) — J. Presper Eckert, co-inventor of the world's first digital computer died June 3 in Bryn Mawr, PA at age 76.

Eckert was a researcher at the Moore School of the University of Pennsylvania when he began working with John Mauchly on ENIAC (Electronic Numerical Integrator and Computer) in 1943. They completed building the first general purpose digital computer in 1946.

Later that year, Eckert and Mauchly started a business partnership that became the Eckert-Mauchly Computer Corp. In 1950, Remington Rand acquired the tiny company and changed the name to the Univac Division of Remington Rand.

Remington Rand in 1955 merged with Sperry Corp. to form Sperry Rand. Eckert was a Sperry executive when it merged with Burroughs Corp. to become Unisys.

Eckert retired from Unisys in 1989, but continued to consult for the company. He was granted 87 US patents, mostly for work on computers.

Eckert received numerous awards for his work, including the US National Medal of Science in 1969 presented by President Lyndon Johnson.

Eckert is survived by his wife of 33 years, Judith Eckert of Gladwyne, Pa.; his daughter Laura Phinney; three sons, John, Christopher, and Gregory; and three grandchildren. □

See us at
COMDEX/Canada '95
 MEXPO and WINDOWS WORLD
 July 12-14, 1995 • Toronto, Ontario
 Booth #7572



POWERED BY **intel**®
 ENHANCED BY **SIRUS**™
 CUSTOMIZED FOR **You.**

DOWNSVIEW
 3100 Steeles Ave. W
 (Jane & Steeles)

Tel: (905) 660-5009
 Fax: (905) 660-5331

MARKHAM
 Unit 15, 3075 14th Ave.
 (Woodbine & 14th)

Tel: (905) 470-2412
 Fax: (905) 470-1873

SIRUS™
The Pursuit of Excellence

Intel and the Intel Inside Logo are registered trademarks of Intel Corporation.
 © 1995 The Sirius Group Inc. All copyrights reserved. July 1995

NEWMARKET
 Unit 30, 1111 Davis Dr.
 (404 Town Centre)

Tel: (905) 853-2379
 Fax: (905) 853-6278

OAKVILLE
 238 Cross Ave.
 (North of GO Station)

Tel: (905) 845-9656
 Fax: (905) 845-3838

No Film, Processing On Your Desktop

Affordable Digital Cameras Arrive

BY JAMES OMURA

Last summer Apple established color digital photography for around \$1,000 with the introduction of the QuickTake 100. The question was, which direction would development take?

Products Reviewed

Apple QuickTake 150
Casio QV-10
Kodak DC-40
Logitech FotoMan Pixtura

Four cameras have been announced to answer that question. In fact, both the Apple and Logitech products are partnerships with Kodak, giving Kodak three kicks at the can and leaving Casio as the only real challenger to the Kodak presence in this price range.

While lower cost products are always desirable, so are "better products." So far the thrust is to make better products. Cost has dropped as well, but mainly in the sense of getting more for your money.

Although prices are still not firmly established, the lowest-cost camera of the current group will probably be the Apple QuickTake 150 which will sell for about \$1,030. This is approximately what the original QuickTake-100 cost a few months ago. The current estimated list prices put the Kodak and Logitech just a bit higher and Casio has not even hinted at a price.

The current focus is still on the industrial market including real estate, insurance, government "documentation" photography, and photojournalists. But even if you're none of those, you may be tempted to try this technology. Read on.

What's Good?

Many people are interested in jumping into

digital photography and are wondering if this is a good time. There are a lot of factors to look at, but they boil down to:

1. whether the system can take acceptable pictures,
2. how easy is it to obtain those pictures, and
3. how much it costs per picture?

Also most important at this stage is to compare it in all these ways to other technologies.

Picture Quality

The first question is, what quality of picture can be taken? Technically (as opposed to artistically), the measure for what's good is accuracy of reproduction. For traditional photography, the question is "what kind of resolution can the camera/lens/film give?"

It turns out that even that is a hard question to answer, with a lot of factors involved. But let's say that a typical standard lens and "drugstore film" system gave at least 40 lines-per-mm at 50 percent contrast in full color. A comparative specification in digital technology would be 1440 x 960 pixels at 24 bit color.

For 35 mm photography, the above result would still not be considered very good. For digital photography, however, such figures would make a camera maker proud — proud enough, for example to charge in the range of \$16,530. For that amount of money you can buy a Fujix DS-505/DS-515 Digital Card Camera which uses a 2/3 inch 1.3 million pixel (1280 x 1000) CCD and Nikon lenses.

What can you do at roughly \$1,000? The Logitech is the best resolver of this group. But even so, each of the 768 pixels in a row on the Logitech's sensor records only one of the three needed colors (red, green or blue). In terms of equivalent "accuracy," the Logitech can only guarantee the equivalent of 256 pixels. The rest of the image data is estimated or assumed. Real resolution will depend on each picture, and is generally higher, but compared to traditional technology we're still dealing with a reduced level of quality. The final pictures are closer in quality to "pocket instamatics" or upper priced Polaroids.

As Good As Video?

How does this compare with a full motion video camcorder and a capture digitizer? There are a few options to look at, but there are some surprises along the way. While capture boards may claim 640 x 480 x 24 bit resolution, this is only real resolution if the original signal source has that much information at the start.

Most consumer quality camcorders, even most Hi-8 and S-VHS, are based on 1/3 inch sensors that have only 270,000 pixels (even a 640 x 480 image has 307,200 pixels) and like the digital cameras, each pixel is either red, green or blue. Moreover there is loss of accuracy due to the extra conversions. Video capture digitizers can do an acceptable job for some purposes, and if you have access to upper end video camcorders with higher resolution sensors (410,000 pixel) and/or multiple sensors you will have enough information to

make good use of high-resolution capture circuits. However, compared to this, at the \$1,000 price range, the digital still cameras are very attractive.

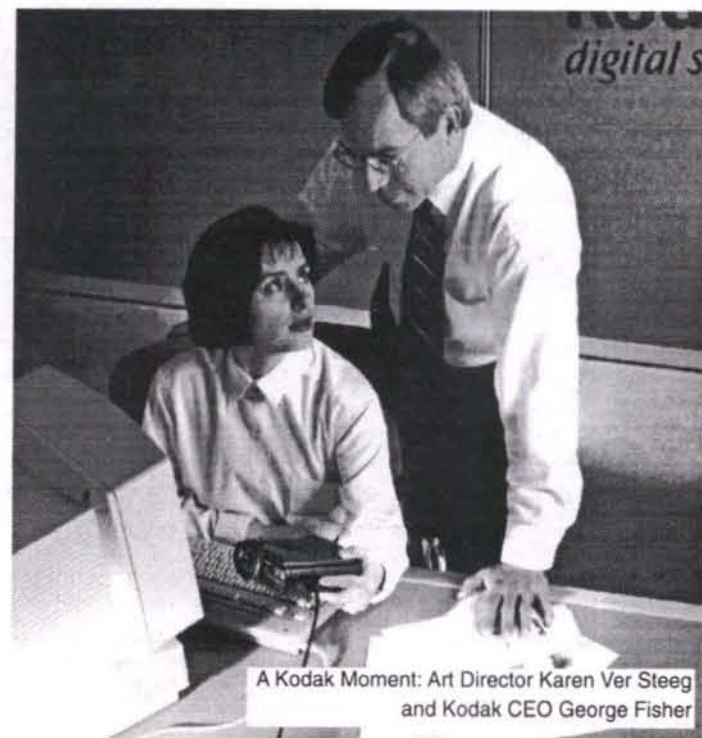
Availability

The best estimate is that all these latest cameras will be on the shelves by the end of June.

The Cameras

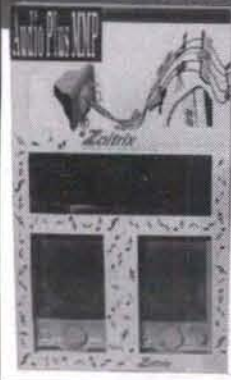


Apple: Changes from the original QuickTake 100 to the QuickTake 150 have been conservative. The main difference is that the camera itself has double the storage (2MB of flash ROM). New lens coatings no doubt will improve image quality. Apple claims that increasing the low resolution mode to 640 x 480 resolution while still holding 32 images was accomplished by "compression technology." No details have been provided yet of what that means. The new close-up attachment should prove valuable for cataloguing small parts.



A Kodak Moment: Art Director Karen Ver Steeg and Kodak CEO George Fisher

Rock 'n' Roll Your PC!



Zoltrix Multimedia kits include a variety of popular Microsoft Home software titles.



Zoltrix

MULTIMEDIA KITS & PERIPHERALS

Quad & Double Speed CD ROM • Speakers
CD Software • Microphones • Sound Cards

- Upgrades your PC to multimedia standards inexpensively
- Easy to install
- Includes software and well documented user manuals
- Full two year warranty
- Cross-Canada tech support

3D MICRO COMPUTERS

For a dealer near you call:
1-800-567-7413

Casio: The Casio QV-10 is the only non-Kodak produced product and shows dramatically different thinking. It is clearly inspired by the Sharp ViewCam series of video camcorders. The lens would be held in one's left hand and can rotate up and down for optimum shooting angle. The back active matrix LCD screen is a view finder and can be used to review images. Special composite views holding one, four and nine pictures are featured.

Unlike the Kodak products which automatically adjust the aperture for each shot, the Casio has a two position aperture. Using the CCD scan for the exposure requires no moving parts. Casio calls this a "silent CCD shutter." It should also eliminate the delay between the "shutter release" and the picture that hampers the Kodak products when used to stop action. The resolution is not given, but from the data provided the images sound close to 320 x 240 x 24 bit.

odd. It's hard to believe that this is a matter of saving money. Unless specified otherwise the following comments apply to both cameras.

For picture quality the Logitech FotoMan Pictura is the class act of the four products. The image format of 768 x 512 = 393,216 pixels has 28 percent more detail than the Apple QT150 (640 x 480 = 307,200 pixels) and 3.2 percent more than the Kodak (756 x 504 = 381,024 pixels). It's unlikely that the Casio is anywhere near as good in terms of picture quality. Specifications clearly were based on a desire to make a better version of the Apple QuickTake 100.

There is still a 49 mm distance (center to center) from the "taking" lens to the viewing lens, requiring some thought to avoid parallax in pictures closer than around 12 feet. But there is now roughly 72 mm from the center of the taking lens to the near end of the flash, probably reducing "red eye" even further. The camera is set to beep after every picture and whenever the lens cover is opened. The Logitech software can switch off the beep.

The "shutter release" is round and recessed. There is no doubt when one's finger is on it. There is still a substantial delay between the time the button clicks and the picture is taken, but it seems to be shorter than the QuickTake 100. It is difficult to time something this fast but it might be around

	Apple QuickTake 150	Casio QV-10	Kodak Digital Camera 40	Logitech Pictura
Size (mm)	?	130x66x40	155x135x55	155x135x55
Weight	?	190g+batt.	500g(w/batt.)	500g(w/batt.)
Hi Res Images	640x480x24-bit	NA	756x504x24-bit	768x512x24-bit
Low Res Images	640x480x?	?	?	384x256x24-bit
Lens	?	5.2mm F2	F2.8	F2.8
Sensor	?	0.2" CCD	?	?
RAM	1 MB flash	2 MB flash	?	?
List Pr.	NA	?	?	\$1,499
Str. Pr.	\$1029	?	?	?

0.5 sec. That's still long enough to interfere with "action photography."

The lens cover is controlled by a sliding lever which is located away from the lens, making it less likely that fingers will accidentally touch the lens.

Minimum Computer

In the middle of the system is your computer. Logitech defines their minimum system as a 486/33 with 8 MB RAM running MS Windows 3.11 or higher. The test computer was a Samsung NoteMaster 486S/25N with 8 MB of RAM, but running Windows 3.1 on top of MS-DOS 6.2. My slightly outdated OS seemed to run the beta test software without problems.

Kodak is a bit more forgiving, requiring at minimum a 386 with 4 MB RAM and Windows 3.1 over MS-DOS 3.3 for their Windows software or a Mac II, 4 MB RAM and 7.0.1 system software. No minimum system

specifications were available for the Apple and Casio products.

The Apple QuickTake 150 comes with either the Mac or Windows software and cables. The Mac software is PhotoFlash 2.0 and QuickTake Image Access. The Windows version is QuickTake 1.5 and the PhotoNow! TWAIN driver. If both software packages are required, the second is \$149 extra. The new software has filters for color correction, lightening and darkening.

No information is available about Casio computer connection kits.

Both Windows and Mac software and cables are included in the Kodak DC-40 kit. The Kodak Windows software comes in two parts. There is a set of TWAIN modules and a "free standing" application.

For the Logitech Pictura the only software so far is Digital Eyes by Day One Inc. for



Kodak/Logitech: The Kodak and Logitech are essentially the same camera except for the image format, minor cosmetic differences, and minor internal software differences. The Kodak image format is only slightly less than the Logitech Pictura and the difference is

Hello, how may we help you?

When you call IBM Direct to buy an IBM ThinkPad or Ambra Notebook for your home office or small business, you won't believe all the help that comes with it:

- ▶ Fast, easy toll-free ordering with one simple phone call
- ▶ Friendly, helpful, knowledgeable specialists who understand your home office or small business needs
- ▶ IBM HelpWare's 3-year Express Maintenance Warranty* on Ambra Notebooks. Or 3-year International Warranty Service* wherever ThinkPads are sold
- ▶ IBM HelpWare's EasyServ* option provides pre-paid courier pick-up and delivery warranty service for your IBM ThinkPad
- ▶ Access to IBM HelpWare's toll-free PC Support Line to assist you - 24 hours a day, 7 days a week, during the warranty period
- ▶ A 30-day money-back guarantee** when you order by phone. So if you are not 100% satisfied with your newnotebook, return it for a full refund
- ▶ Convenient payments with Visa, MasterCard or American Express
- ▶ So call to order your IBM or Ambra Notebook today!



FOR YOUR Small Business or Home Office

NEW!
• 11.3" Screen
• 16-bit Stereo



Ambra DX4 Notebook Series A bold new symphony of sight and sound

Choose From These Options:

- DX4-75MHz or DX4-100MHz Processor
- 4MB or 8MB RAM (maximum 20MB)
- 350MB, 525MB or 810MB Removable Hard Drive
- All Ambra DX4 Notebooks Include:**
- The Very First 11.3" Dual Scan DSTN Colour Display
- 16-Bit Stereo Sound for Business Audio to Go
- Built-in Microphone & Speakers
- LCD Status Indicator
- Full-Size Fully Functional Keyboard

- IBM TrackPoint Cursor Pointing Device for easy fingertip control
- 32-Bit VESA Local Bus VGA Video
- Local Bus IDE Controller
- 2 PCMCIA Type II or 1 Type III Slot
- Internal 3.5" 1.44MB Diskette Drive
- NiMH Battery with Power Management
- IBM PC DOS 7.0, Windows for Workgroups 3.11, World Clock & ID Logic Radio
- 6.5 lbs. with Battery
- 3-Year IBM Express Maintenance Warranty*

Ambra DX4 Prices Start At **\$3,999** For DX4-75MHz/4MB RAM/350MB HDD/11.3" DSTN Lease/month \$143.16*

Other Ambra Notebooks available from \$3,399

NEW!
• Mwave DSP
• Infrared



IBM ThinkPad 755CD/CE Series The ultimate mobile presentation machines

These IBM ThinkPad Models Offer Mwave DSP technology, including:

- Telephony for Full Duplex Speaker-phone, Answering Machine, Voice Message & Remote Message Retrieval
- Infrared Transceiver for Wireless Communications with other IT products
- Built-in 14.4K Data/Fax Modem
- CD-Quality 16-Bit Audio
- These ThinkPad Models Also Include:**
- 10.4" Black Matrix on Array TFT Colour Display
- DX4-100MHz Processor
- 16KB Internal Cache
- 8MB RAM (Maximum 40MB)

755CE Prices Start At **\$7,499** For DX4-100MHz/8MB RAM/340MB HDD/10.4" TFT Lease/month \$256.47*

Other ThinkPad models available from \$2,999

To order, call IBM Direct today. **1-800-465-7748, Ext. 897**
Or call for our FREE catalogue. You can pay for your purchase with your Visa, MasterCard or American Express. Sorry, we cannot accept credit cards for lease payments.†



*3-year warranty with International Warranty Service includes 1 year of on-site and 2 more years of depot service. EasyServ Hardware Warranty Service option provides prepaid courier pick-up and delivery of your IBM ThinkPad. 3-year IBM Express Maintenance Warranty on Ambra Notebooks includes replacement of any defective parts within 48 hours (except weekends and holidays). May take longer than 48 hours in certain locations. **Warranty and 30-day money-back guarantee information is available by calling IBM Direct at 1-800-465-7748. Shipping, handling and applicable taxes are not included in the prices. Prices subject to change without notice. †Visa, MasterCard and American Express cannot be applied to leasing options. Leasing arranged by Comcorp Financial Services Inc. Payments based on a 36-month fair market value lease. Ambra is a trade-mark of ICP Ltd., and is used under license therefrom. IBM, ThinkPad, Mwave, Telephony, TrackPoint III, HelpWare, IBM Express Maintenance and EasyServ are registered trade-marks or trade-marks of International Business Machines Corporation and are used under license by IBM Canada Ltd. DX2 and DX4 are trade-marks of Intel Corporation. All other product or brand names are registered trade-marks or trade-marks of their respective companies.



Affordable Digital Cameras

Continued from page 17

Windows. The software has all the basic functions to download and view the pictures, and to control the camera settings, but also includes some image manipulation features.

The correction controls supported are the expected brightness, contrast, saturation and hue, as well as sharpness (and softening). It can also rotate in one-degree increments, zoom up or down, and copy/paste (thought

the copy clipboard is limited to 256 colors and dithers to compensate). File types include JPG, BMP, PCX, TGA, TIF and GIF. A cable is included.

Output and Storage

Storage is still a weak point for digital photography. Most people are still limited to 1.44 MB 3.5-inch floppy disks. This is not an acceptable long term solution. Kodak and Logitech recommend using JPEG format (JFIF). My beta test copy version 1.0.0 Digital Eyes software supported compression from

level 2 to level 255 JPEGs.

While JPEG data compression is impressive, losing detail from a picture that is already relatively low quality is not appreciated. I compared a file stored as JPEG level 2 (332,233 bytes) against the same image stored as a PCX file (1,153,867 bytes) and estimated roughly 11 percent loss of detail. Compressing the same image with full detail in LHA gave a best case of 869,511 bytes (compressed BMP file).



A file stored as JPEG at 332K



The same file stored as PCX at 1.153MB

These are fairly typical numbers for JPEG. Considering only these file formats provided by Logitech, storing in JPEG format saves roughly half the disk space and loses only about 11 percent of the detail. At an average of around 400K per file, that still only leaves room for about 3 pictures per disk.

Apple, using the inherent redundancy of the data, has a special image format capable of fitting 12 full detail images per disk. Even still, end users will find the lack of convenient and inexpensive storage an annoyance.

Other Technologies:

Another interesting development is the Sharp Viewcam teleport VR-MS1U which functions as a color fax system. But the Sharp system only operates between their own transceiver units and supports only video recording for mass storage. There is no computer interfacing. One way to use this with a computer might be if one of the computer fax companies supported the transmissions. When asked, Delrina would only say they were watching the situation.

Videolabs has a number of camera and capture technologies which feature their FlexCam video cameras on flexible "goose-neck" style mounting systems. Videolabs uses 270,000 pixel and 410,000 pixel color video sensor technology and combines them with 8, 16 or 24 bit capture systems for still and full motion capture. From a still photography standpoint the only problem is that these are not free-standing cameras, but require attachment to computers or video recorders.

We've also just learned that Chinon has recently announced the ES-3000 for Windows and Mac (available from Provincial Products Inc.) and Dycam also has two color digital cameras for Windows and Mac.

Reach The Pinnacle of Optical Storage

Make Your Own CDs



RCD-1000™ Recordable CD-ROM Drive

The Pinnacle Micro's RCD-1000 is the first affordable, double speed recordable CD system which includes easy-to-use software for both Macintosh and Windows-based applications. The Recordable CD System gives you the power to easily master data, audio, video, and mixed mode CDs over multiple recording sessions. Each compact disc can be then played on any standard CD-ROM player. In addition, the RCD supports formats such as ISO-9660, HFS, CD-I, CD-CA, CD-ROM-XA, and Photo CD. You can create your own CDs for low-cost data distribution, reliable backup or even master your own disks for mass duplication.

3 Drives In One!

- 2X CD-Recorder
- 2X CD-ROM Player/Drive
- Tape Drive Replacement

USES

- Store graphics for only 2 cents per megabyte
- Create data, video, audio CDs
- Backup accounting records, business plans, charts, legal documents, etc.
- Great for low-volume distribution of media - only \$16 per disk

PROS

- Affordable complete system
- Inexpensive RCD media
- RCD media readable on millions of drives
- More reliable than tape - CDs 100 year life
- Faster than tape
- 1MB buffer to ensure hard drive compatibility

Fast Optical Hard Drive Solutions



SIERRA™ 1.3 & 2.6 Gigabyte Optical Hard Drives

The new Sierra 1.3GB, and the Sierra 2.6GB provide fast, on-line access to mass amounts of data. These products are ideally suited for graphics, pre-press, imaging, digital audio/video, on the road presentations, and any data intensive applications. The Sierra drives are equipped with a large 4MB cache buffer and has a fast access time of 19ms. Each 5.25" removable cartridge holds 1.3 GB of data. You can achieve unlimited capacities simply by purchasing additional disks. Pinnacle's high quality media has a shelf life of more than 30 years and conforms to the ISO/ANSI/ECMA standards for data transfer and vendor interchangeability.

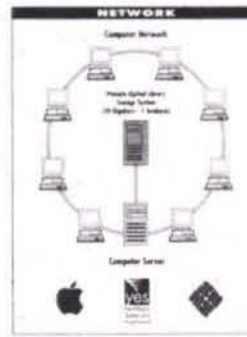
TAHOE™ 230MB Portable Optical Hard Drive

The new Tahoe 230MB offers the ultimate in removability and transportability for mass data storage. The Tahoe 230 is a fully rewritable optical drive that connects to any SCSI or parallel port interface, which makes it perfect for portable or desktop computing. Each removable 230MB disk is ECMA standard compliant for disk swapping with any other ECMA 3.5" magneto-optical drive. The Tahoe is also backward compatible, automatically detecting, reading and writing to 128MB media. The Tahoe's optional battery pack provides 3.5 hours of battery life, which helps extend battery life of portable computers. Its the perfect solution for users on the go, such as graphic designers, service bureaus, color pre-press or any data intensive personal computer applications.

Optical Library Systems

Orray, Alta, Aspen, Alpine, Mammoth, Demi Teton, Teton, and Grand Teton

Pinnacle Micro offers a full line of high capacity magneto-optical library systems ranging in capacity from 20 Gigabytes to over 1 Terabyte. Pinnacle library systems, the Alta-20GB™, the Aspen-40GB™, the Alpine-120GB™, the Mammoth-186GB™, and the over 1 Terabyte Grand Teton™ are based on the ISO/ANSI/ECMA standard 1.3 Gigabyte optical mechanism offering a 19-millisecond effective access time, data throughput of up to 2.0 Megabytes per second and a 4500 RPM rotation speed. Pinnacle's optical library systems provide on-line, centralized storage for networks, client-server environments, and are also ideal for individual workstations. PVFS allows users to transparently access data from the optical cartridges quickly and efficiently.



TO ORDER CALL MULTIMEDIA EFFECTS: (416) 502-0404

Trademarks: Alta, Aspen, Alpine, Mammoth, Demi Teton, Teton, & Grand Teton of Pinnacle Micro Inc. All other trademarks of their respective owners. 49-6A THE DONWAY WEST • SUITE 1011 • NORTH YORK • ONTARIO • M3C 2E8 • TEL: (416) 502-3942 • FAX: (416) 502-1593

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY
AUTOMATED FAXBACK-LINE: (416) 502-0266
SEE DOCUMENT NO. BESIDE EACH PICTURE

Miscellaneous Features and Specifications:

Apple QuickTake 150:

- Flash (Auto)
- New coatings for lens and sensor
- Snap on close-up lens system for 10 - 14 inches w/flash diffuser
- Mac PhotoFlash 2.0 software
- Windows QuickTake 1.5 software

Information from Apple was incomplete but the following specifications for the QuickTake 100 probably apply to the QuickTake 150:

- Size in mm 155x135x55; weight: 500g w/batteries
- Lens 8 mm f/2.8 - 16, fixed focus 4 ft to infinity
- Shutter speed 1/175 - 1/30 sec.
- Sensor ISO 85
- 3 AA batteries

Casio:

- Field recording, NTSC
- Delete one shot or all shots
- F2, F8 manual switching
- Focused at F2, 60 cm to 310 cm
- Close-up 13 cm to 16 cm from lens filter

- Metering based on center point of CCD
- Aperture priority automatic
- EV +5 to 18
- Corrections + or - 2EV
- Shutter 1/8 to 1/4000 sec.
- Auto white balance
- 10 sec. delay timer
- 1.8" TFT screen, viewfinder
- IO: digital IO, video out and power adapter
- 4AA batteries

Kodak and Logitech (common to both):

- ISO 84 equivalent sensor
- Lens equivalent to 42 mm on 35 mm camera
- Shutter Speed Range 1/30 - 1/175
- Aperture f/2.8 - f/16
- No focus (4 feet to infinity)
- Flash (on, off or automatic)
- Exposure compensation + or - 1 f stop
- Erase last picture or all pictures
- 10 or 20 sec. delay timer
- Lens thread 37 mm for filters, close-up adapters, etc.

- 4AA cells allow up to 800 pictures on Lithium batteries or up to 150 images using NiCad batteries


Kodak:

- Power consumption <500 mW standby, <4.5W operating
- Telephoto and wide angle adapters optional

Logitech:

- Speed 1 picture per 5 sec.
- AC adapter requires 2.0 Amps @ 7.5 volts, center positive. □

WHAT IF THE INTERNET CAME WITH POWER STEERING, CRUISE CONTROL AND HELPFUL TOUR GUIDES?



(it does, for about  an hour!)



The Internet is the Information fastest-growing information committed to providing you with at extremely competitive rates.

**NO
BUSY
SIGNAL
POLICY**

Superhighway, the largest and network. At InfoRamp, we're the best Internet service possible. Our helpful representatives are

available 5 days a week, and InfoRamp's No Busy Signal policy always ensures an Internet connection! Imagine driving the superhighway whenever you want for as little as  an hour! • We offer the widest choice of Internet tools, including Pipeline's award-winning user interface, Mosaic and many others, at connection speeds of up to 28.8 kbps. Plus we've packaged many extras, including Reuters and AP news feed, at no additional cost to you. • With prices as low as  per hour, you're not only getting great service, you're getting great value. • So get in the driver's seat! Call InfoRamp today and we'll have you cruising the Internet in minutes!



InfoRamp
Simplifying the Internet

Voice: (416) 363-9100

e-mail: staff@inforamp.net

Contacts

Provincial Products Inc.
3035 Wharton Way,
Mississauga, Ontario L4X 2B4
(905) 629-3737

Dycam, Inc.
9414 Eton Avenue
Chatsworth, Calif., 91311
(800) 883-9226; (818) 407-3960

Apple Canada
7495 Birchmount Rd.
Markham, Ont. L3R 3G2
(905) 477-5800

Casio Canada Ltd.
240 - 2100 Ellesmere Rd.
Scarborough, Ont. M1H 3B7
416-431-3747

Fuji Photo Film Canada Inc.
275 Britannia Road E.
Mississauga, Ont. L4Z 2E7
(905) 890-6611

Kodak Canada Inc.
3500 Eglinton Ave. W.
Toronto, Ont. M6M 1N3
(416) 766-8233

Logitech Canada Inc.
200 - Building 6, 5025 Orbiter Dr.
Mississauga, Ont. L4V 2Y5
(800) 231-7717

Sharp Electronics of Canada
335 Britannia Rd. E.
Mississauga, Ont. L4Z 1W9
(905) 890-2100

VideoLabs, Inc. products:
Viewtech
25 - 1200 Aerowood Dr.
Mississauga, Ontario L4W 2S7
(905) 238-3057

Bytewise
9720 Trans Canada Highway
Ville St. Laurent
H4S 1V9
1-800-465-5241

Videoconferencing - A

BY GEOFF WHEELWRIGHT



Video conferencing systems have been around for a decade or more but have traditionally been expensive and difficult to use, while offering limited benefits. While videoconferencing has often been an alternative to travel for some well-heeled multi-national companies, video conference systems have not achieved much in the way of widespread use.

All that, however, is now changing with the advent of new videoconferencing and videophone systems based around PC technology. Traditionally, such systems have suffered from two major problems — image quality and speed.

Early Flickers

Until a few years ago, prototype videophone and some low-end video conferencing systems could either show images as flickering, halting, black and white affairs or as even more halting color images. Voices also tended not to be in sync with the images of the people who were speaking.

The image quality problem had a lot to do with the lack of high-definition small screens that could be fitted inside personal videophones. The screens used for videoconferencing were often only marginally better.

The biggest culprit in the whole sorry mess was the speed of transmission. If that could be fixed, all the other problems would melt away. Most of the low-end systems produced in recent years — and particularly those that operated over telephone lines — have only been able to show between 10 and 20 image frames per second. It is generally

accepted that in order to achieve the best smooth, 'full motion' video, something like 30 frames per second is required.

Sending 30 frames of complex video

information down the telephone line every second is no easy feat, and one which gets even harder when you start adding in the

What's This?



66MHz 486DX2

Micra 466 8/420 **\$1,455**
See details below.



75MHz Pentium

Optima 575 8/420 **\$2,125**
See details below.

Micra 466 Home PC

Your Best Value in a 486 Home Computer

- 486DX2/66 Processor with CPU Fan
- ZIF Socket Pentium™ Overdrive™ Upgradable
- 128k write-through cache, Award BIOS
- VLB Enhanced IDE controller, 3.5" Floppy
- 32-bit VLB graphics accelerator (1MB exp 2MB)
- Mini-Tower case with LED
- 2-Button Mouse, 101-key Enhanced Keyboard
- MS-DOS® 6.22

With 256k write-through cache add \$35
 With 100MHz 486DX4 Processor add \$100
 With Microsoft® Windows® 3.11 add \$55
 Creative Labs 2x-CD MultiMedia Kit* add \$395

- A ▪ 4 MB RAM, 70 NS, 72-pin
- 420 MB Enhanced IDE hard drive
- 14" SVGA monitor, 800x600 NI, 0.28dp

\$1,245 (Lease \$44/month)

- B ▪ 8 MB RAM, 70 NS, 72-pin
- 420 MB Enhanced IDE hard drive
- 14" SVGA monitor, 800x600 NI, 0.28dp

\$1,455 (Lease \$52/month)

*Creative Labs kit includes Dual-Speed CD-ROM, SoundBlaster™ 16 (Installed) and 18 CD-titles.

Optima 575 Business Desktop

Pentium Power at an Awesome Price

- Intel 75MHz Pentium Processor
- Intel Neptune PCI chipset
- 256k write-back cache, Award BIOS
- PCI Enhanced IDE controller, 3.5" Floppy
- 64-bit ATI Graphics Xpression™ (1MB exp 2MB)
- Mini-Tower case with LED
- Microsoft Mouse, 101-key Enhanced Keyboard
- MS-DOS® 6.22 & Windows™ 3.11

With 512k write-back cache add \$95
 With 90MHz Pentium Processor add \$150
 With 100MHz Pentium Processor add \$350
 Creative Labs 4x-CD MultiMedia Kit* add \$475

- A ▪ 8 MB RAM, 70 NS, 72-pin
- 420 MB Enhanced IDE hard drive
- 14" SVGA monitor, 1024x768 NI, 0.28dp

\$2,125 (Lease \$76/month)

- B ▪ 8 MB RAM, 70 NS, 72-pin
- 850 MB Enhanced IDE hard drive
- 15" SVGA monitor, 1024x768 NI, 0.28dp

\$2,395 (Lease \$85/month)

*Creative Labs kit includes Quad-Speed CD-ROM, SoundBlaster 16 (Installed) and 18 CD-titles.

Included with every Quanta system: Two VESA (486 systems)/Four PCI (Pentium systems) and 4 ISA slots. Enhanced IDE I/O controller. CSA approved 230 Watt power supply, switchable between 115/230V. EPA Energy-Star motherboards. High-Speed serial (16550 UARTs) and parallel ports. Two-year comprehensive warranty for your system. **486-based systems also include:** ZIF socket for easy upgrading to the Pentium OverDrive™. Secondary cache expandable to 256k cache and RAM is expandable to 128MB. **Pentium-based systems also include:** Secondary cache in Pentium systems is expandable to 512k. RAM is expandable to 192MB.

Quanta Computer and the Quanta Computer logo, Micra, Optima, ProMedia, Proxima and the "Putting you ahead of the times." slogan are trademarks of Nu-Inteltek Systems Inc. The Intel Inside logo, the Intel Pentium and OverDrive are registered trademarks of Intel Corporation. MS-DOS, MS, Windows, Windows NT and Microsoft are registered trademarks of Microsoft Corporation. All other brands and product names are trademarks of their respective companies. Lease rates quoted are good through 06/30/95 and are subject to change without notice. Leasing is available to qualified customers only. Quanta Lease prices are quoted for a 42 month term with a \$10 purchase option. Quanta Computer prices and offerings valid in Canada only and are subject to change without notice. Prices are cash discounted 2%. Shipping and handling charges and any applicable taxes are extra. *On-site service may not be available in some locations. ©1995 Quanta Computer (a division of Nu-Inteltek Systems Inc.). All rights reserved.



..... it's a screw that doesn't work!

Lesson #1

What is more useless than a screw without a thread?

A computer that doesn't work. *Point:* the more they shave-off, the less you get! What might seem like a "good deal" on a computer, often couldn't be further from the truth. Those seductively inexpensive computer systems sometimes come with RAM you can't upgrade, a monitor that would make an optometrist shudder, a CPU that can also be found in your refrigerator, and a hard disk with an acute case of schizophrenia.

At Quanta, we do things the other way around, *we focus on quality first!* Our formula is simple. We design, integrate and test all of our systems with quality components that deliver outstanding performance. We deliver superb service by managing *our own* technical staff. The result is a balanced system from a company that offers the best value and performance for your dollar. We stand by our commitment to quality with a *full two-year warranty* and an optional on-site service plan called *QuantaCare*, nationwide.

Quanta: Guaranteed Quality, Guaranteed Service, Today.

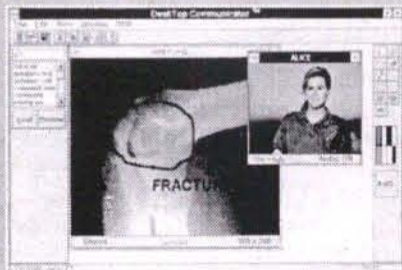
NEW UPDATED PENTIUM CHIP

2-Year Warranty

All Quanta Computers come with a two-year parts and labour warranty. We also offer an optional *QuantaCare* program that gives you on-site next-business-day service on all Quanta desktop systems and servers for \$99 per year.*



Medical Imaging



Medical imaging is a potential use of teleconferencing. Screen is Eytel's Communicator I videoconferencing system.

(Eytel, 604-984-2522)

Pictures near headline are from an Eytel brochure

Solution Without A Problem?

more detailed information needed to process colour images.

The telecommunications industry thought it had licked part of the problem a

few years ago by moving to install premium-cost "integrated service digital networks" (ISDN) so that the information sent out over a phone line would be digital, just like that handled by

computers and compact disc players.

When information is stored in digital format,



ProMedia 590 Power MultiMedia System

40% Faster than the Average 90-MHz Pentium System

- Intel 90MHz Pentium Processor
- Intel Triton PCI chipset
- 256k pipeline-burst SRAM cache, Flash BIOS
- PCI Enhanced IDE (Mode 4) controller
- 4x EIDE CD-ROM drive, 3.5" Floppy
- SoundBlaster™ 16 stereo sound & speakers
- 64-bit ATI Graphics Xpression (1MB exp 2MB)
- Mini-Tower case with LED
- Microsoft Mouse, 101-key Enhanced Keyboard
- MS-DOS 6.22, Windows 3.11 & 18 CD-titles

- A**
- 8 MB EDO-RAM, 70 NS, 72-pin
 - 850 MB Enhanced IDE hard drive
 - 15" SVGA monitor, 1024x768 NI, 0.28dp

\$3,345 (Lease \$114/month)

- B**
- 16 MB EDO-RAM, 70 NS, 72-pin
 - 850 MB Enhanced IDE hard drive
 - 15" SVGA monitor, 1024x768 NI, 0.28dp

\$3,895 (Lease \$133/month)

- C**
- 16 MB EDO-RAM, 70 NS, 72-pin
 - 1100 MB Enhanced IDE hard drive
 - 17" SVGA monitor, 1280x1024 NI, 0.28dp

\$4,395 (Lease \$150/month)

With 100MHz Pentium Processor add \$200

With 120MHz Pentium Processor add \$750

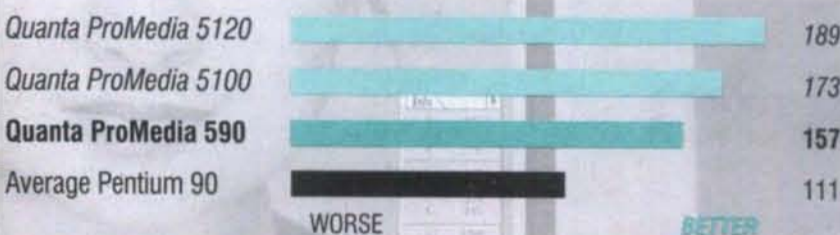
With 512k SRAM cache add \$115

Extra 16MB EDO-RAM add \$975

Quanta's ProMedia Series Eclipse the Competition!

We have used some of the latest technology to create a series of multimedia computers which are among the fastest Pentium-based PCs available today. We have used Intel's new Triton PCI chipset which improves hard-disk bandwidth and PCI bus throughput by 50%. Extended Data-Out (EDO) RAM and pipeline burst SRAM cache provide significant performance gains over previous memory designs. Add this to ATI's 64-bit Mach64™ graphics accelerator, a high-speed Enhanced IDE hard drive and Intel's super-fast Pentium Processor and the reason for the ProMedia's ability to easily outperform the competition is clear.

WinStone* 95 Score ➔ 0 40 80 120 160 200



The Quanta ProMedia systems were tested with 16MB of RAM, 512k cache, and 1100 MB hard-disk using MS-DOS 6.22 and Windows for Workgroups 3.11. WFWG used 32-bit disk and file access with 4 MB file cache and 128k allocated to SMARTDRV.EXE, 20-MB permanent swap-file and video set to 800x600 resolution with 256 colours, small fonts and a vertical refresh rate of 72Hz. All unnecessary drivers and power management features were disabled during the course of testing. *WinStone 95 is the property of Ziff-Davis Publishing's PC Magazine benchmark operation. Pentium 90-based system average based on findings in PC Magazine's Annual Buyer's Guide, Vol. 13, No. 21, December 6, 1994, p.142.

Endeavor 5180D NT Workstation

Uncompromising Performance for Demanding Applications

- Dual Intel 90MHz Pentium Processors
- Intel Neptune PCI chipset
- 512k write-back cache, Flash BIOS
- PCI 32-bit Fast SCSI-2 controller
- 4x SCSI-2 CD-ROM drive, 3.5" Floppy
- SoundBlaster™ 16 stereo sound & speakers
- 64-bit ATI Graphics Pro Turbo (2MB exp 4MB)
- Full-Size tower case with 9 drive bays
- Microsoft Mouse, 101-key Enhanced Keyboard
- Windows NT™ 3.5 Workstation

- A**
- 32 MB RAM, 70 NS, 72-pin
 - 2100 MB SCSI-2 hard drive
 - 17" SVGA monitor, 1280x1024 NI, 0.28dp

\$7,595 (Lease \$253/month)

- B**
- 64 MB RAM, 70 NS, 72-pin
 - 4100 MB SCSI-2 hard drive
 - 20" Sony GDM-20SE1 trinitron monitor, 1280x1024 NI, 0.25sp

\$11,995 (Lease \$399/month)

With 100MHz Pentium Processors add \$400

With SCSI-2 Fast & WIDE add \$200

Enterprise 590S NT Server

High-Performance Reliability

Intel 90MHz Pentium Processor • Intel Neptune PCI chipset 512k write-back cache • Flash BIOS • PCI 32-bit Fast SCSI-2 controller • 4x SCSI-2 CD-ROM drive • 3.5" Floppy ATI Graphics Xpression (1MB exp 2MB) • Full-Size tower case with 9 drive bays • Microsoft Mouse • 101-key Enhanced Keyboard • Windows NT™ 3.5 Server

- A**
- 32 MB RAM, 70 NS, 72-pin
 - 4100 MB SCSI-2 hard drive
 - 14" SVGA monitor, 800x600 NI, 0.28dp

\$6,995 (Lease \$233/month)

- B**
- 64 MB RAM, 70 NS, 72-pin
 - 9000 MB SCSI-2 hard drive
 - 14" SVGA monitor, 800x600 NI, 0.28dp

\$10,995 (Lease \$367/month)

With 100MHz Pentium Processor add \$200

With 2nd Pentium Processor add \$700

With SCSI-2 Fast & WIDE add \$200

Proxima Internet Server

A Turn-Key Internet Solution

Intel 100MHz Pentium Processor • Intel Neptune PCI chipset • 512k write-back cache • Flash BIOS • Fast SCSI-2 controller • 4x SCSI-2 CD-ROM drive • 3.5" Floppy ATI Graphics Xpression (1MB exp 2MB) • Full-Size tower case with 9 drive bays • Microsoft Mouse • 101-key Enhanced Keyboard • BSD Internet Server version 2.0

- 32 MB RAM, 70 NS, 72-pin
- 2100 MB SCSI-2 hard drive
- 14" SVGA monitor, 800x600 NI, 0.28dp

\$6,295 (Lease \$210/month)

With 4100 MB HD add \$595

Call for turn-key solution and connectivity details.

To Order, Call Now.

Putting you ahead of the times.™

Quanta
COMPUTER
A Division of Nu-Infotek Systems Inc.

1-800-450-3466

Monday to Friday, 9AM-6PM, Saturday 10AM-4PM (ET)

280-55 Metcalfe Street, Ottawa ON, K1P 6L5
Phone 613-563-8170 • Fax 613-563-8045

it can be more easily manipulated by systems that incorporate computer processing power. Although these have been helpful, they are by no means installed universally and are not the only key to the solution.

Enter The Personal Computer

And this is where the personal computer comes in. To get the kind of performance and quality necessary to make digital video-conferencing technology an affordable reality, you really need a good deal of computer processing power to "shuffle bits around" on the screen.

You also need high-quality, color displays and data compression/decompression software. The usefulness of the former is obvious, while the latter is required to 'squeeze down' the amount of information needed to be sent over the phone line and the expand it again when it has been received at the other end.

PCs have been doing all these things quite successfully in recent years. Processing power is now approaching that of the mini and mainframe computer world, high-quality, digital color displays are in common use in many personal computers and some form of compression/decompression software is an everyday part of many PC users' software utility libraries.

There are also heavy incentives for major players in the PC market such as Intel and Microsoft to promote the use of video conferencing. For Intel, widespread demand for videoconferencing will further drive demand for the high-end processors used to achieve maximum performance in videoconference systems, while Microsoft will benefit from sales of operating systems that provide software support for videoconferencing applications.

And Intel is being very aggressive in seeking agreements with partners who can help foster the creation of a video conference-friendly business environment. In the US, for example, Intel announced late last year deals with the New York telephone company NYNEX, as well as the giant GTE's telephone operations division to promote the sales of Intel ProShare (as well as Intel RemoteExpress ISDN LAN adapters) when they were selling ISDN services.

The agreements mean that anyone who signs up for ISDN services from either of those companies gets a substantial discount on Intel ProShare and Remote Express. Intel's ProShare Video System 200 lets users see each other on the PC screen and work simultaneously on shared documents, "whiteboards" and applications. RemoteExpress LAN lets users have LAN-connection performance to office LANs from wherever they have their ISDN line installed.

Intel is not counting on telecommunications companies alone to carry the ball for its videoconferencing efforts. Compaq, Dell,



A Country by Consent

Multimedia History of Canada

Now on CD-ROM, home licence \$129.95, PC or MAC
WEST/DUNN productions, WWW <http://infoweb.magi.com/~westdunn/>
Dealer enquiries welcome. Phone (613) 241.1087 Fax 241.3924

SCREEN THIEF

**Captures the tough screens
other programs just can't reach!**

"it's worth its weight in gold."

—PC Magazine

"It all adds up to the best screen capture program I've seen."

—The Software Magazine

"It can capture the most awkward of games, even those in SVGA like
El-Fish and The 7th Guest, and that's pretty damn impressive."

—PC Format

AVAILABLE AT SOFTWARE STORES NOW!

FormGen CORPORATION
11 Holland Drive, Bolton ON L7E 1G7
Tel: (905) 857-4141

Microsoft and Windows
are trademarks of
Microsoft Corporation



Digital Equipment and a range of other PC manufacturers are also committed to promoting the system. AT&T's Global Information Systems (formerly NCR) offers its own videoconferencing system, and Intel also has the commitment of companies such as Northern Telecom, Novell, PictureTel and WordPerfect, to further mutual evolution of videoconferencing standards.

Meanwhile, third party software companies are hopping on the ProShare bandwagon. Canadian document conferencing specialist SMART Technologies of Calgary announced last year that it had signed a long-term agreement with Intel to jointly develop document conferencing software products for desktop and boardroom applications. The first fruits of this agreement will be jointly-developed document conferencing products that incorporate the SMART Video Conferencing System with Intel's ProShare Personal Conferencing.

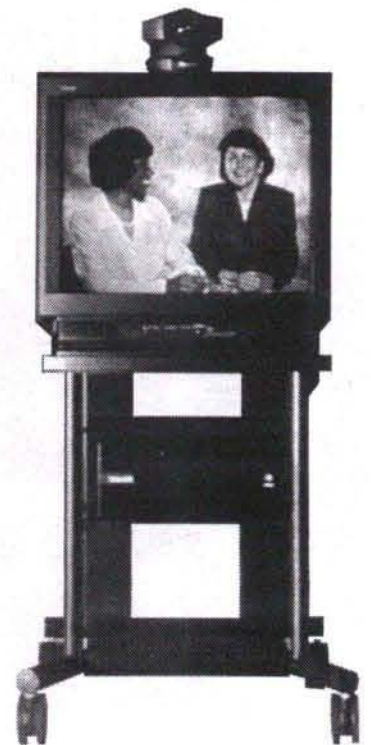
A great many strides have been made in PC and network-based videoconferencing over the past year, but some huge leaps may be expected in the next 12 months if even half of the planned joint arrangements between companies like Intel, Microsoft and AT&T actually get carried out.

All these companies are starting to offer impressively-priced technological solutions to videoconferencing requirements. The real question they now face is: what if it is lack of demand, rather than technological or financial barriers, that has prevented the growth of the videoconferencing industry in the recent past? The answer to this query would make a great subject for debate at your next video-conference. □

**Tell Advertisers you
saw their ad in**



PictureTel's Pro Systems



PictureTel, meanwhile, recently unveiled two new professional group videoconferencing systems that it says are "designed to make videoconferencing as widespread a business tool as the telephone." The new high-end Concorde-4500 and mid-range Venue-2000 systems — as well as its Montage-500 series of "conferencing servers" — are supposed to replicate more closely than ever the experience of an in-person meeting.

"This is the biggest product roll-out in our history," said Dr. Norman E. Gaut, chairman and CEO of PictureTel. "We've expanded our broad product offering with the Concorde-4500, the ultimate viewing machine against which all other dial-up group videoconferencing systems will be measured. The Venue-2000 is an important new mid-range system specially designed for first-time users needing high-quality, easy-to-use videoconferencing at a popular price point. The Montage-500 delivers the industry's easiest-to-use multipoint conferencing servers, and its lowest priced four-port bridge. Together, these products solidify PictureTel's already dominant market position."

They are not, however, cheap. The Concorde-4500 has a suggested list price of US\$43,995, while the Venue-2000 lists for \$21,995 and the Montage-500 begins at \$35,000. — GW

LAN Management System™



The New Standard For Networking Environments

Introducing the LAN Management System, from Datafile, designed specifically for your network applications. LMS allows you to create a professional atmosphere, highly organized and instantly accessible, with exacting design and superior quality. The system consists of modular steel components that are custom configured based on your needs, and can be easily reconfigured in hundreds of ways as your requirements change.



A TAB PRODUCTS COMPANY

Consulting Services
Filing Systems Design
Data Centre Products

THE INTELLIGENT WAY OF MANAGING INFORMATION

For a **FREE LMS Brochure**,
call us at 1-800-667-4020 or fax us at (416) 497-1560.
"See us at Comdex. Booth #7270 Skydome"

Put Your Hands on Some REAL POWER!

Pentium 90 Systems from \$1998!

Ultimate MultiMedia!

This high-end feature system has PCI and SCSI Components, and a 17" MAG Innovision Monitor!



Intel PENTIUM 100 MHz CPU, Deluxe ASUS TRITON MainBoard, 256KC, 16MB Ram, 1GB SCSI-2 HD, Adaptec 2940 PCI SCSI, ATI Mach64 PCI with 2MB, 1.44M Floppy Drive, 230W Medium Tower Case, 17" MAG Innovision Colour SVGA (.26DP, Energy Star), Plextor QUAD Speed SCSI-2 CD ROM, KOSS Power Speakers, SoundBlaster 16, Honeywell Keyboard, Logitech Mouse, MS DOS 6.22, MS Windows 3.1

Ask about our Great Lease to Own Plans!

P90 MHz \$2688 CAD Workstation

With a SONY 15" SVGA Monitor and ATI MACH64 with 2 MEGS DRAM!
Intel Pentium 90 MHz CPU, ACER PCI MainBoard 256KC, 8MB Ram, Quantum 730 MB HD, PCI EIDE controller, ATI Mach64 with 2 MB, Panasonic 1.44MB Floppy, 230W Mini Tower Case, SONY 15sf 15" SVGA Multiscan Trinitron (.25DP), Honeywell 101 Keyboard, Logitech 3-Button Mouse, MS DOS 6.22, MS WINDOWS 3.1

P90 MHz \$3998 Graphics Workstation

The ultimate business/entertainment system. Your family will love it!
Intel Pentium 90 MHz CPU, ASUS SiS MainBoard 256KC, 16MB Ram, 1 GIG HD, PCI EIDE controller, ATI Mach64 with 2MB, Panasonic 1.44MB Floppy, 230W Medium Tower Case, MAG Innovision 17" SVGA (.26DP), Honeywell 101 Keyboard, Logitech Mouse, QUAD SPEED CD ROM, Soundblaster 16, Stereo speakers, MS DOS 6.22 & WINDOWS 3.1

66 or 100 MHz \$1698

Complete MultiMedia

With an Intel DX2/66 or AMD DX4/100 CPU! Same Price! Your Choice!

Energy Star VLB MainBoard 256KC, 4MB Ram, Quantum 540 MB HD, 32-Bit controller, Trident VLB SVGA w/ 1 MB, Panasonic 1.44 Floppy, 230W Mini Tower Case, 14" SVGA Monitor .28NI, Mouse, 101 Keyboard, Dual Speed CD ROM, SoundBlaster 16, Stereo Speakers, 12 MultiMedia Titles, MS DOS 6.22, MS Windows 3.1

P75 MHz \$2488 POWER MultiMedia

Featuring a 3.3 Volt MainBoard that can be fitted with 90 and 100 MHz processors too!

Pentium 75 MHz CPU, Deluxe ACER PCI MainBoard with 256KC, 8MB Ram, 850 MB HD, PCI EIDE controller, PCI 1MB SVGA Card, Panasonic 1.44 Floppy, 230W Mini Tower Case, 14" SVGA Monitor (.28DP, Energy Star), Logitech Mouse, 101 Keyboard, 4X CD ROM, SoundBlaster 16, KOSS Speakers, MS DOS 6.22, MS Windows 3.11, Grolier 95 Encyclopedia



Pentium 75 MHz, 8MB Ram, 64 bit PCI video, 540 MB HardDrive with PCI EIDE, 1 YEAR ON-SITE warranty, 2 Year Depot, 24 Hour technical support by IBM!

... IBM Authorized Dealer ...

More Power the Easy Way ... Trade up and get TOP DOLLAR for your TRADE-IN!

WOW! 14ms! 64K Cache!
One per customer.
NO DEALERS.
Installation NOT included.
\$278
CONNER
850MB HardDrive

hp HEWLETT PACKARD
Colorado T1000 TRAVAN tape backup unit.
Features 400 MB Native Capacity, and 800 MB with compression

ACER PLEXTOR
QUAD SPEED CD ROMS
4 PLEX
FROM \$228

UPGRADE UPGRADE
95% of Items IN STOCK
Expect it! Quality Components. Quality Service. Quality People!

Network Solutions

Network Interface Cards	
NE2000 Ethernet Combo Card	\$69
GVC Ethernet Card	79
3Com Etherlink III	169
Intel EtherExpress 16	159
Intel EtherExpress Pro 100Mbps	299
Cabling	
RG-58U Coax/RJ-45 Twisted pair	39c/ft
Hubs	
Surecom 8 Port	\$168
GVC 8 Port Ethernet	249
Artisoft/3Com 8 Port (USA)	289
SMC Tigerhub 8 Port	419
Dlink 8 Port	279
Power Protection	
APC 200/280 Back-UPS	\$169/199
APC 400/600 Back-UPS	249/399
APC 600 Smart-UPS	545
APC 900 Back-UPS	545

Panasonic
The CR-562, a FAST, QUALITY DUAL SPEED CD ROM! \$118

TROUBLE SHOOTING EXPERTS! Call on SIGNA for expert trouble shooting services for installation and/or stability problems with Windows & OS/2 Warp!

iomega zipdrive
100 MB SCSI - Expand Your Storage, Easy Backups ... great for saving your largest files, and makes transfers between systems a snap! The perfect way to manage large multimedia libraries!

drive zip
For PCs and MACS
HUGE Selection of CABLES and ADAPTORS!

The SCSI Advantage Over Enhanced IDE ...

- TRUE MULTITASKING
Disk Subsystem for Windows NT, Windows 95 and OS/2 Warp (only SCSI permits simultaneous access on multiple devices!)
- BROAD SUPPORT
For devices like tape back-ups, optical/removeable drives, etc.
- MOUNT EXTERNALLY
Easily hookup more components.
- SUPPORTS 15 DEVICES
EIDE only supports up to four!
- 50% FASTER than EIDE
Get up to 20 MB/s transfers vs 13.3 MB/s with EIDE.

SCSI Controller Cards
Incorporating 32Bit RISC Technology

SyQuest
Use for Data Back-ups or as external HardDrives!
88, 200 and 270 MB Removable Cartridge Drives

MOTHERBOARDS / PROCESSORS

AMD 486DX2/66 3VL, 128KC w/CPU	298
AMD 486DX4/100 3VL, 128KC w/CPU	358
Intel 486DX2/66 3VL, 128KC w/CPU	338
Pentium 75/90/100, 4 PCI, 256KC No CPU	258

Creative Labs Discovery CD16 (2X/4X) CALL
SoundBlaster 16 Val.Ed./SCSI-2 no ASP 118/238
ACER 2X/4X, Soundblaster 16, packaged with MS Encarta/Works/Money 318/418
SoundBlaster AWE32/Value Edition 378/298

ASUS

ASUS PCI/P54SP4 SiS Chip set	318
ASUS PCI/P54TP4 Intel TRITON Chip set	348
ASUS PCI/P55TP4 Intel TRITON Chip set	398

VIDEO CONTROLLERS

ATI Mach64 PCI/VLB 2MB DRAM	268
ATI Mach64 PCI 2MB/4MB VRAM	378/598
Diamond Viper/Stealth 64	CALL

MEMORY for Desktops/Notebooks
72 PIN, 1 to 32Megs with or w/out parity Call

COLOUR SVGA MONITORS

Proview 14" .28DP NI	\$298
MAG Innovision DX 15".28DP	518
MAG Innovision DX 17".26DP	928
SONY 15sf 15" .25DP Multiscan	648
SONY GDM-17se 17" .25DP	1498
NEC XE17 17"	1468

SCSI DRIVES FOR PCs AND MACS

Conner 1 GIG SCSI-2	\$648
Quantum 540MB/730MB	298/358
Quantum 1.09 GIG	648
Quantum 4.2 GIG 9ms 512KC	1598
SyQuest Int.Cart.Drv. w/ 270MB Rem/Car.	688

PRINTERS

Canon BJ 100	\$298
Canon BJC 4000 Colour	468
Epson Stylus Colour	698
HP Deskjet 540	398

SCSI ADAPTORS

Adaptec 1522 16 Bit ISA SCSI	\$118
Adaptec 2825VL 32 Bit VLB SCSI-2	248
Adaptec 2842VL 32 Bit VLB, Full Kit	338
Adaptec 2940 PCI 32 Bit PCI, Full Kit	418

FAX MODEMS/COMMUNICATIONS

Monterey 14.4/28.8 INT	\$88/188
GVC 14.4 Int/Ext F/M	98/138
GVC 28.8 Int/Ext F/M	CALL
US Robotics 14.4/28.8 Int/Ext	CALL/CALL
US Robotics Courier V.Everything	CALL

IDE Hard Drives (many brands in stock)

Quantum 540MB/730MB	258/328
Maxtor/Western Digital 1 GIG	478

CASES

Mini Tower, 220W	58
Medium Tower, 220W/235W Deluxe	88/118
Full Tower, 250W	148
Server Case, 2 Fans, 10 Bays	228

CD ROM Drives for PC and MAC

ACER 2X Speed IDE	\$138
SONY 2.4X Speed SCSI-2	258
Plextor Quad Speed SCSI-2, 256KC	478
ACER/TEAC 4X Speed	228/288

TAPE BACK-UP SYSTEMS

Colorado 350/800MB/1.4 GIG	\$248/298/498
Trakker 350MB External Parallel	398
Conner 2.1 GIG SCSI DAT (Internal)	1198

MULTIMEDIA KITS AND ACCESSORIES

SoundBlaster SCSI w/Advanced Signal Proc.	288
---	-----

401
Ellesmere
SIGNA
Brigstock
Kennedy Road

SIGNA COMPUTER SYSTEMS
1358 KENNEDY ROAD, SCARBOROUGH Phone (416) 755 - 1590 Fax (416) 755 - 5950
SIGNA COMPUTER SYSTEMS, the trusted choice of over 100 major corporate clients and institutions

Lease To Own!
Visit Store for Details

QuoteS by Fax!
Government, Corporate and Institutional P.O.'s

4 Blks. South of Hwy. 401

Trademarks & logos are properties of their respective owners. Quantities are limited. Prices and specifications are subject to change without notice. Prices are already cash discounted.

100% CANADIAN Owned and Operated!

Digital Video On Home PCs

BY RON GREBLER

Everybody loves the movies. If you've seen films like *Forrest Gump* and *True Lies*, then you've witnessed how incredibly impressive digital video effects can be.

What you might not know is that these films, plus a lot of others, were also on computers as well. This expensive proprietary technology, that the entertainment industry in Hollywood has been using for the last few years, is now available economically for home personal computers and it's called Desktop or Digital Video.

So What Is It?
What is digital video? Well, the video part is straightforward — almost every house has a VCR or camcorder. What's the digital part? That's where your home PC comes in. Digital video is the merging of these two technologies. Quite simply, it means you can transfer video images and sound to your home computer and while there create impressive looking productions.

How Does It Work?
Although DV can get quite complicated quite quickly, the process of how it works is straightforward. Firstly, you need source information, sometimes called source or raw footage. Source information can be picture and sound information from a CD-ROM disc, a videotape played by a VCR, a camcorder hooked up to your computer or even a signal from cable TV (although that requires special equipment). Once you have source information for your video, you need to get it into your PC.

A capture card converts the source information (which is an analog signal) into digital information that the computer understands. This process is sometimes called digitizing. In our case it's a process of converting from NTSC (our North American standard for analog TV signals) to a bitmapped image. What actually happens is that each frame of

video picture is organized into pixels. Now that we've found a way to capture this information, we've run into a problem — a big problem. Brace yourselves, there's a little math coming up.

Let's figure out how much memory it's going to take to store our recently digitized video.

Start with 3 bytes per pixel for accurate broadcast color. That's one byte each for red, blue and green.

Now multiply by the monitor dimensions. Assuming you decide on VGA resolution, that means length (480 bytes) x width (640 bytes).

Multiply that by the number of frames per second you want your video to run at. For the sake of argument, let's use 30 frames per second, which is a good rate for smooth playback.

And multiply that by 60 seconds for 1 minute.

You get a whopping total of 1.6 Gigabytes! And that's for picture only. If we included CD-quality sound we'd have to add an additional 5-12 megabytes.

Reducing File Size
File size can be reduced, at the expense of image quality. Some methods of cutting down file size are:

MULTI MEDIA SYSTEMS
Commodore
CBM-P560

Intel Pentium 60MHz Processor
PCI local bus
8MB RAM, 256K cache
530MB hard drive
3.5" floppy drive
Double speed CD ROM drive
16-bit sound card
1MB PCI video card
MS DOS 6.22 & Microsoft Mouse
Windows for Workgroups 3.11
8 Exciting CD tiles

Wordperfect Works
WP Grammarik
Random House Webster's School & Office Dictionary
WP Clip Arts for the Home
WP InfoCentral
Paper Plane
Wallabee Jack "The Lost Lionado"
Grollier's Encyclopedia '95

\$1749 or **\$63pm**

THREE YEAR WARRANTY
intel inside
MICROSOFT WINDOWS
READY-TO-RUN

One Year On-site pentium
CBM Commodore PCs are built in Canada by:
3D Microcomputers, 350 Steelcase Road West,
Markham Ontario, L3R 1B3 Fax: 905-479-7688

The Intel logo is a registered trademark and Pentium is a trademark of Intel Corporation. Microsoft and the Windows logo are registered trademarks of Microsoft Corp. On-Site service is not available in all areas of Canada. Prices and configurations are subject to change without notice. Systems not necessarily as shown. Regional freight charges may apply.

E-TECH CANADA LTD
7725 Birchmount Road, Unit 4, Markham
(905)479-9696

PLANTRONICS
World Leader in Telephone Headset
The World's best selling headsets:
long-wearing comfort, ultra light & stylish
Fits for all kinds of telephone & modems

Supra headset
Mirage headset
Adaptor M10

We provide best technical support & service
Authorized Dealer
E-TECH CANADA LTD 7725 Birchmount Rd. Unit 4, Markham
(905)479-9696

MULTIMEDIA CRAZE

PRO SERIES

VESA DX4-100 MHz

256K CACHE 3 VESA SLOTS 72 PIN RAM
540 MB IDE HARD DRIVE. 1.44 F.D.D
8 MB 72 PIN RAM. DUAL SPEED CD-ROM
16 BIT STEREO SOUND CARD.
ENHANCED IDE CONTROLLER CARD
MINI TOWER CASE. 1MB VLB V.CARD
14" SVGA .28 N/I MONITOR. 101 K.BOARD
MOUSE AND MOUSE PAD. MS DOS AND
MS WINDOWS WITH DISKS AND MANUALS
12 TOP QUALITY CD ROM AND ENCYCLOPEDIA

SALE \$1888 (65.89/MONTH)

PREMIUM SERIES

PENTIUM 75 PCI

256K CACHE PCI SLOTS 72 PIN RAM
540 MB IDE HARD DRIVE. 1.44 F.D.D
8 MB 72 PIN RAM. QUAD SPEED CD-ROM
16 BIT STEREO SOUND CARD.
ENHANCED IDE CONTROLLER CARD
MID TOWER CASE. 1MB PCI V.CARD
14" SVGA .28 N/I MONITOR. 101 K.BOARD
MOUSE AND MOUSE PAD. MS DOS AND
MS WINDOWS WITH DISKS AND MANUALS
12 TOP QUALITY CD ROM AND ENCYCLOPEDIA

SALE \$2438 (84.36/MONTH)

PENTIUM SPECIAL SALE

75 MH.

1988

OR 69.26
A MONTH

90 MH.

2138

OR 74.29
A MONTH

- PENTIUM INTEL PCI
- 256K CACHE
- MID TOWER CASE
- 8MB FAST RAM
- 830 MB HARD DRIVE
- 64 BIT PCI VIDEO CARD
- SVGA .28 N/I MONITOR
- 101 KEYBOARD
- MS DOS WITH DISKS
- MOUSE AND MOUSE PAD

CALL FOR THE BEST PRICES

Model	Price
BJ100	\$199
HP540	\$238
HP560	\$CALL
HP5P	\$338
BJC 4000	\$428

HARD DRIVES

420 MB \$199
540 MB \$238
720 MB \$CALL
830 MB \$338
1.0 GB IDE \$428
1.0 G.B SCSI \$668
2 GB SCSI \$1248

MOTHER BOARDS

486/SLC33 \$89
486/DX2-66 AMD \$278
486/DX2-66 INTEL \$295
486/DX2-80 AMD \$308
486/DX4-100 AMD \$388
486/DX4-100 INTEL \$CALL
PENTIUM 75 PCI \$688
PENTIUM 90 PCI \$838
PENTIUM 100 PCI \$988

CONFIGURATION

256K CACHE VLB
4 MB RAM 70 N/S
540 MB HARD DRIVE
1 MB VLB VIDEO CARD
SVGA .28 N/I MONITOR
1.44 FLOPPY DRIVE
101 KEYBOARD
MINTOWER CASE
MOUSE AND MOUSEPAD

FAX MODEMS

14.4 ZOLTRIX \$69
14.4 VOICE FAX \$89
14.4 USR INT \$149
14.4 USR EXT \$179
28.8 ZOLTRIX \$229

VIDEO CARDS

VLB 1 MB \$99
PCI 1 MB \$119
ATI VLB 1 MB \$159
ATI MACH 32 2 MB \$199
ATI PCI 2 MB \$210

MISC

1.44 FLOPPY DISK \$39
101 KEYBOARD \$19
MINTOWER CASE \$55
MIDTOWER CASE \$79
FULLTOWER CASE \$135
14" .28 N/I MONITOR \$209
15" .28 N/I MONITOR \$435

DUAL SPEED CD-ROM \$139

486/33 MHz

4 MB RAM. 1.44 FLOPPY DRIVE
SVGA CARD AND MONITOR
SUPER I/O CARD. MINTOWER
CASE. 101 KEYBOARD, MOUSE
AND MOUSE PAD, 420 MB H.DRIVE

\$919

ASHTON
BUSINESS SYSTEMS INC.

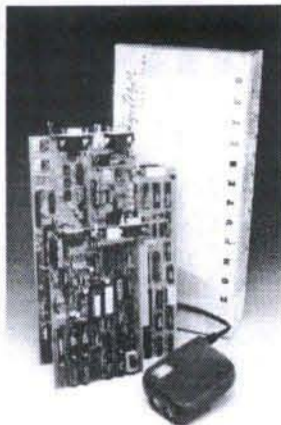
MONDAY TO FRIDAY 10-7
SATURDAY 10-5

TEL: 905-795-8333
FAX: 905-795-8147

PRICES ARE SUBJECT TO CHANGE WITHOUT ANY NOTICE
ASHTON RESERVES THE RIGHT TO CORRECT TYPOGRAPHIC ERRORS

DESKTOP VIDEO

ComputerEyes videodigitizers capture video images at up to 1024 x 512 pixels. Contact Canadian distributor Pac Tec, 204-774-6051



pressed so that it can play on your video monitor in 'real time'. So much for the technical details. Now comes the fun part.

Digital Editing

The fun part is the editing. Speaking very generally, editing is done through software programs specifically designed to deal with and manipulate video file formats such as Video for Windows (.AVI), Quicktime (.MOV), JPEG, and MPEG, to name a few. A bonus is that many of these programs come bundled when you purchase a capture board.

Even if you have to purchase one separately you'll find them quite reasonably priced, starting as low as \$200 or \$300. Some programs to consider are in:sync's Razor, Ulead System's MediaStudio 1.0, and Adobe System's Adobe Premiere 4.0. For the Mac, also consider Premiere as well as Avid's VideoShop and MacroMedia's Mediamaker. There are lots of programs to choose from so decide what you need and want to achieve before purchasing.

Most of these programs have a reasonable learning curve so you'll figure out how to use them pretty fast. A large number are based on a timeline, which is portrayed as a linear path representing the duration of your digital video. To assemble your video, insert, move, copy, or delete your video and audio clips at the positions along the timeline where you want them to appear. Later, once you have edited your project, you can add transitions (fades, dissolves, wipes, etc.) and other effects such as titling, 2D and 3D graphics and more.

Some editing programs come with these features but others don't. Almost all are available to accept plug-ins from other programs that offer a wide variety of fantastic perks.

The Big Screening

So you've created a masterpiece, now what? You could drag all your friends and family in front of your 14-inch monitor and screen your movie, but that's a little anti-climactic. More likely you'll want to output your video. If you have a write-able CD ROM drive (don't we all?) that's one option.

A more realistic one, and the best way to reach the largest audience, is to dump it to analog video, i.e., to a medium like a videotape. For this we must go back to your capture card. A few, but not very many, capture cards have jacks that output to analog. Most likely you'll need to purchase a VGA to NTSC converter. Now you can dump your video to a VHS VCR. Wasn't that easy?

- Reduce the physical size of the play window (from full screen to as small as 1/16th of the original image or 'postage stamp size')

- Decrease the number of colors in the image (from 16 million to as low as 16 and in some cases even less)

- Reduce the frame rate from the broadcast standard of 30 frames down to 15 or even two frames per second (can you say jerky?).

But there's another way — compression. Compression means just what it says. It takes the digital information and squeezes it down (without losing any of it) so that it is easier for your PC to handle and also so it doesn't eat up all your hard drive space. The best compression scheme today can reduce the information by as much as 100:1. That would bring your one minute of full screen, full color, 30 frame per second digitized video to a mere 16 MB! Compression can come in the form of hardware or software or both.

The compressed information is decom-

INTERNET NETWORKING SOLUTIONS

- Industry price/performance leader
- Reliable, secure network access
- Includes RADIUS software to meet your Accounting, Authentication and Authorization needs
- Scalable solutions from 1 - 10 000 users
- Includes an easy-to-use graphical administration interface (UNIX, Windows, DOS and SNMP support)

Livingston
Enterprises, Inc.
Livingston Dial-Up routers are the first choice of Internet Service Providers & Network managers when it comes to dial-in applications.

(http://www.livingston.com)

For more information call today!



SEACHANGE
CORPORATION

Tel: (905) 542-9484

Fax: (905) 542-9479

http://www.seachange.com
routers@seachange.com

West Coast Office
Tel: (604) 658-5448



the used computer store

489 Queen Street, West
Toronto, Ontario M5V 2B4
Tel: (416) 504-9357 Fax: (416) 504-9359
South side, just west of Spadina Ave.

Grand Opening

Friendly Staff
Parts • Service
Windows • DOS • Mac

BRAND NAME USED COMPUTERS
CALL FOR GREAT PRICES

WE'VE PRODUCED MEDIA for OUTSTANDING CLIENTS

High-End Digital Pre-Press
Typography / Lithography
Interactive / Presentation Media

KELLOGG'S NISSAN FORD GOODYEAR BOWNE XEROX DIGITAL EQUIPMENT OF CANADA CONSUMERS DISTRIBUTING AMERICAN EXPRESS TORONTO TRANSIT COMMISSION I.D.A. PHARMACIES ONTARIO LOTTERY CORPORATION GESTETNER AULT FOODS JAPAN CAMERA TORONTO HUMANE SOCIETY ...

NOW, IT'S TIME to GET SERIOUS

World Wide Web

SITE DESIGN PAGE DESIGN PUBLISHING

C.K. MOVIES

<http://www.inforamp.net/ckmovies>

Phone: (416) 425-5469 Fax: (416) 425-3676
e-mail: ckmovies@inforamp.net

Platforms

Digital video is available on a number of different platforms including PC/Windows, Macintosh and PowerMac, Amiga, and Silicon Graphics. I'll avoid Amiga and SGI, despite the fact that they're both excellent platforms, because of obscurity and price respectively.

Speaking generally, when looking at systems for digital video, faster processors, faster clock speeds, faster throughput and generally faster everything is best. And of course LOTS of hard drive space, preferably in the gigabyte range! In terms of pricing, editing software can start as

low as \$200 and hardware (such as capture boards) at \$500 but the upper limit is sky high.

Speaking as a non-partisan observer, the Macintosh is better overall than the PC/Windows platform in regards to desktop video. The Mac — and particularly the PowerMac due to its RISC-based processor architecture and powerful operating system — creates a very hospitable environment for manipulating digitized video. A strong graphics interface and plug and play availability also help quite a bit. The downside is that it's more expensive.

A PC/Windows based environment is filled with exciting options for the hands-on user, particularly because the choices for software and hardware are in the hundreds. The configurations however, are numerous, complex and in some cases conflicting. When developing a desktop video system, consider the speedy new PCI bus and Pentium processor, which together create an excellent environment.

Don't throw away your 486 VESA bus systems just yet though — they too can be quite acceptable. The benefits of having so many options is that a variety of PC/Windows systems

can be configured to accommodate digital video.

The bottom line in regards to platforms: you should work with what you have and what you feel comfortable with, in order to build the system that will suit your particular desktop video needs.

Hardware

As mentioned earlier, a capture card is needed to convert the video images and sound into a form that the computer can understand. This is a very important piece of equipment and there are a number of different elements and options which will affect price.

All capture cards have inputs — the more inputs, the higher the price. All cards have a composite input which actually is a female standard RCA plug exactly the same as the one found on the back of every VCR. There is usually one for sound and another for image.

Another type of input is an S-Video plug (female) common to higher-end camcorders and VCRs. The benefit of this type of connection is that it separates brightness and color information from the video image. This means your digitized image is of higher quality.

Another very important option is hardware-based compression. Does the board have a compression chip on it or do you need to buy a separate 'daughter card'? Look at the type of compression scheme (J-PEG, MPEG, Indeo, etc.) offered. The more efficient the compression scheme, the higher the price.

Finally, does it have outputs? An output raises the price of the card because it means an on-board VGA to NTSC converter is included. Also don't forget to consider the type of output (S-Video, RCA, etc.).

Products

Some boards of note are miro Computer Products miroVideo DC1, Intel's Smart Video Recorder Pro, and Creative Labs Video BlasterRT300 for the PC.

For the Mac there is the VideoSpigot, Movie Movie and MoviePak. Mind you, there are a wide variety of cards available so you should shop around for what's best for you. The above cards are all in the \$500-\$1000 range.

Why Would I Want It?

The old saying about a picture being worth a thousand words holds true in regards to desktop video. Video is an excellent communicator and a way of getting your message across in a clear, concise and dynamic way. And the output of video from your personal computer is of sufficient quality for training and industrial videos, video yearbooks, event coverage, real estate, personal effects insurance archives, marketing videos, home movies and much, much more!

Reality Check


There are numerous naysayers and critics of DV on home platforms who say that there isn't enough memory, or the processors are never fast enough, it'll never fly, etc. Frankly, I think they're missing the point. A lot of what's fun about computers are the opportunities for discovery they present. In answer to the critics, of course, as with any new technology you're bound to run into a few bugs, limitations or other problems.


That being said, if you're interested in exploring a new technology, try digital video. If you are adventurous and keen on seeing video images magically moving on your computer monitor, limited only by your creativity and imagination, then try it, you're bound to love it. □


INTERNET ACCESS "DESIGNED FOR THE NEW USER"





FAST • EASY • LOW COST


 **Mosaic:** Access the World Wide Web via this exciting graphical interface.


 **File Transfer Protocol:** Download utilities, games, patches from sites all over the world.


 **SLIP:** With SLIP access you get a fast, direct connection to the Internet. No extra charge or setup fee.


 **High speed E-mail:** Keep in touch with family, friends, and business associates via the Internet.

 **Telnet:** Access the Library of Congress, news from NASA, or Online games in Australia.

 **Point and Click:** Forget clumsy unix commands, surfing the net is as simple as point and click.

 **Usenet News:** Discuss movies, find technical support, or retrieve the latest investment news.

 **Gopher:** With simple menu's retrieve files and documents from Internet sites. Great for new users!

 **Support:** Free technical support & new user seminars. \$22..90/month, or \$229/year. (2 hours per day).



PHONE FOR FREE INFORMATION PACKAGE

VOICE: 416-233-7150 ONLINE (2400-28800) 416-233-2999, OSHAWA/WHITBY 905-427-5958

 is a division of **COMPUTERLINK ONLINE INC.**

A Computer For Couch Potatoes?

BY GEOFF WHEELWRIGHT

The Compaq Presario 920 CDTV has been my main desktop computer for the last six months and we have been through a lot together. The machine came to me in the dying days of 1994 when NHL hockey was still in limbo, the infamous Intel Pentium chip "bug" was starting to become the butt of computer industry jokes, and Microsoft chairman Bill Gates was only the second-richest man in the United States.

Now that the ice chips have fallen where they may, the Pentium is outselling the aging 486, and Gates is once again America's top capitalist, it is time to take stock of my first "information appliance." For the latter phrase is what the marketing gurus at Compaq decided the Presario should be called.

So What's In An Information Appliance?

In all the recent advertising for the Presario, the essential fact that you are being encouraged to buy a home computer is hidden in the small print. The machine is sold as a replacement for the TV, the fax machine, the answering machine or the CD stereo because it can carry out the functions of all those devices with varying degrees of success.

The biggest gimmick to impress me from the outset was the TV tuner in the system. Being an inveterate TV hound from a very young age, the whole idea of having a cable-ready TV set inside my PC was hugely attractive.

Until I started working with the Presario, I had seen many different attempts at offering affordable desktop video and TV functions in a PC — and always found that the only systems which were at all impressive usually cost the earth and did not always deliver what they promised.

Not so the Presario. Priced competitively with other similarly-specified systems that don't have the TV function, the Presario 920 CDTV boasts a minitower case design that allows it to slide neatly under my desk, while also including a 486SX2/66 processor (designed to be upgradable to Pentium technology), a 525 MB hard disk, 8 MB of RAM standard (expandable to 100 Mb), a double-speed CD-ROM drive, a built-in 14.4 bps fax/data modem, 16-bit stereo sound, a MIDI/game port, five 16-bit ISA expansion slots (and one "Compaq Reserve" slot), five drive bays (two internal and three external), enhanced local bus video, 1 MB video RAM (upgradable to 2 MB), and a 3.5-inch 1.44 MB diskette drive.

What Can You Do With A TV In Your PC?

After the initial enthusiasm of surprising friends and family with the appearance of TV programs hidden underneath an Excel spreadsheet or a World Wide Web page, I put some serious thought into what the built-in TV in the Presario could actually do for me.

As it happened, I already had a TV in the room that acts as my home office, so the idea of having a TV in my place of work was not actually new. This was quite useful, however, as it helped me to focus more tightly on the question of exactly what unique things a computer-based TV could do for me.

The first thing I discovered was that the concept of having a TV in one on-screen window while working with another didn't work particularly well for most applications. When I am word-processing or working with a spreadsheet, my focus really needs to be on the data I am creating, not on the latest antics of the guests on Phil, Oprah or Sally.



It was not worth sacrificing the screen real estate to replicate what I already could achieve just by flicking the remote control of the portable TV in my office. Once I gave up on the idea of actually trying to watch TV while I was working, the whole computer/TV thing started working a lot better for me.

If I was tuned to something like CBC Newsworld or CNN, it was quite useful to have the TV sitting behind my active working window, and then ALT-Tabbing to the TV screen when I heard something interesting coming up. The experience was like the day using the Wakeup function. This will bring up a scheduled TV channel at a specified day and time. A maximum of 15 events are allowed in the application.

Continued on page 35

Email • Usenet News • World Wide Web • FTP • Telnet • Gopher • IRC • UNIX Shell

When the going gets weird, the weird turn pro.

— Hunter S. Thompson

Our offices have moved to **Bay Street.**

Check out our new digs. BEHIND UNION STATION. SOUTH OF THE GARDINER. CLOSE TO GO TRANSIT. WALKING DISTANCE FROM THE SUBWAY. TWO T1S TO THE WORLD.



Toronto's first. Toronto's Largest. And still Toronto's Best
Full Service Internet Provider for Individuals
Support & Info (416) 363-8676 • Voice... 10am to 6pm, Monday to Friday
Email...info@io.org
10 Bay Street, Suite 1001, Toronto, Ontario M5J 2R8
Call (416) 363-4151 to sign up online
Set terminal program to 8-N-1, VT100 or VT102 emulation, login as "new"

SEND IN THIS AD
FOR A \$5 CREDIT

Valid on new accounts only, with a minimum payment of \$20
GIFT CERTIFICATES NOW AVAILABLE
LIMIT ONE COUPON PER CUSTOMER

The Presario CDTV

Continued from page 27

having radio with a little something extra — or like having a TV on in the background while you are working and swiveling your head around when you hear something interesting.

Six months into the TV/PC experience I now find that the only times I tend to use the TV is either when there is some big, breaking story underway or if I am surfing the World

Wide Web and find myself getting utterly bored when waiting for a huge set of images on a complex Web page to be downloaded. Channel surfing while you are Web surfing provides the perfect mix for lateral thinkers.

Software Is The Key

If you actually want to play with the content of a TV show (assuming we all know and observe the copyright rules inherent in any commercial television productions), there are some fun things you can do with the TV tuner that go above and beyond finding new

ways to watch TV.

The built-in Compaq "TVO" software that comes as part of the Presario MediaPilot, for example, allows you to freeze and save images from TV shows. The only problem here is in finding a file format to save a frozen TV image in. Compaq includes provisions for saving images in everything from 8-bit gray to full 24-bit color in Windows BMP, TIF, TARGA, PCX and IBM MMotion format.

The better the quality you have on the saved image, the more disk space it takes up. And after allowing several hundred kilobytes

of space to be eaten up by storing a fairly low resolution image of Fred Flintstone and Barney Rubble (no royalties to Hanna Barbera required — I have since erased said copyrighted images) and waiting quite a while for the saved images to be loaded into my paint package, I did not find this anything more than time-intensive amusement.

If you have access to better image-editing software, had perhaps more memory than the 8 MB in my Presario and perhaps took the Pentium upgrade, then this could end up being quite useful, particularly if you allowed the video signal to the TV tuner to come from your VCR. This would then allow you to incorporate your own still video images into presentations without having to buy a video capture card. I suspect I also might have been somewhat more impressed with this application if I had an application which could read files saved in the IBM MMotion format.

Printing is another amusement that wore thin after a while. Being able to print "live" TV images direct to the laser printer has its uses, but the quality of your printer will have a lot to do with whether or not it is even worth trying. Here it would have been nice to have a good, high-quality color printer to try with this. Gray-scale TV images do not look much more exciting than old episodes of "What's My Line?"

The Zoom and Pan options on the TVO application do, however, represent something you can have some fun with. Unlike a normal TV, where the most you might have for zoom control is some form of "picture in picture" on expensive TVs, the Presario TV software lets you zoom in on an area of the screen to answer questions like "what happens if I zoom in on that area over by the grassy knoll?" Once you have zoomed-in, you are also allowed to pan around the zoomed screen area and search to the answers to any TV mysteries which may plague you.

And, of course, you can change the size of the display window to anything you like. The rule of thumb seems to be that the smaller you go, the higher-resolution you get. You can even go full-screen, which doesn't look too bad if you are willing to watch it from as far away as you would normally watch a TV. Overall, however, I would have to say I was positively impressed with the high quality of the screen display, which is far better than you'll see from most multimedia viewers and QuickTime movie players for desktop Windows PCs.

The Mega Channel Changer

There are some other unique things you can do with this TV because it resides in your computer. To tune and set cable TV channels, for example, you just use the Tuner/Presets menu to bring up a dialog box in which broadcasting or cable channels can be set. Up to 100 favorite channels can be set for each type of broadcasting system.

You can, for example, select Scan All Channels button to automatically scan the TV signal for channels that the board can receive. That's how I got all the channels programmed into my Presario.

To manually add a channel to your "favorite TV channels" list, you select a broadcast system and a TV channel. Enter the name in the space marked Name. You then select any entry in the Favorite Channels list and then click Add to add the channel. The channel number with the channel name will appear in the list.

Finally, you can schedule your Presario to "broadcast" to you at certain preset times of

ADDRESS

ARCHIE

ASCII

BINARY

BOUNCE

CLIENT SERVER

COMMAND LINE

DOWNLOAD

E-MAIL

FTP

FAQ

GIF

GOPHER

HOST

HYPERTEXT

IRC

JPEG

LOGOFF

LURK

MOSAIC

MODEM

NETWORK

NODE

ONLINE

POSTMASTER

PROTOCOL

SIG

SHELL

SLIP

TCP

TELNET

UNIX

UPLOADING

VERONICA

GLOBE AND E-MAIL.

InterLog Internet Services is Toronto's best way to bring the Internet into your home or office.

Using a graphic interface from almost any computer you can access E-mail, gopher, thousands of UseNet newsgroups, ftp, irc, talk, MUD, WAIS, Telnet, the World Wide Web, and more!

When you dial into InterLog, you are actually connecting your computer to the global Internet. You'll be able to communicate directly with over 20 million people through your Macintosh or PC.



**TORONTO'S BEST LINK
TO THE INTERNET.**

MODEM TO (416) 515-1414

SET YOUR TERMINAL PROGRAMME TO 8-N-1, LOGIN AS "GUEST"

VOICE SUPPORT: (416) 975-2655

E-MAIL: SALES@INTERLOG.COM

No Plot, But A Visual Feast

BY KEITH SCHENGILI-ROBERTS

The Gate to the Mind's Eye: A Computer Animation Odyssey

Music by Thomas Dolby
Publisher: Miramar/BMG Video
50 Minutes Stereo, Digitally Mastered

see much more from Dolby in the future, including an upcoming CD-ROM game based on Francis Ford Coppola's movie *The Conversation*.

The Gate to the Mind's Eye is a good addi-

tion to a series known for showcasing the best in digital animation. Not only will it make you realize that there are a lot of very talented people out there, who are making their artistic visions come to life via the

otherwise soulless number-crunching hearts of their computers, but that virtual realities are a maturing art-form.

It's also lots of fun, so enjoy the ride! □

The Gate to the Mind's Eye is the latest addition to a series of computer-animated videos from Miramar. The original title, *The Mind's Eye*, was the first video to bring the art of computer animation to a large audience. The series has collected some of the most dazzling images, characters and universes conjured by some of the world's best computer animators. The Gate to the Mind's Eye is not only a worthy successor to the series, but also displays the ways in which computer animation has progressed since the original *Mind's Eye* video.

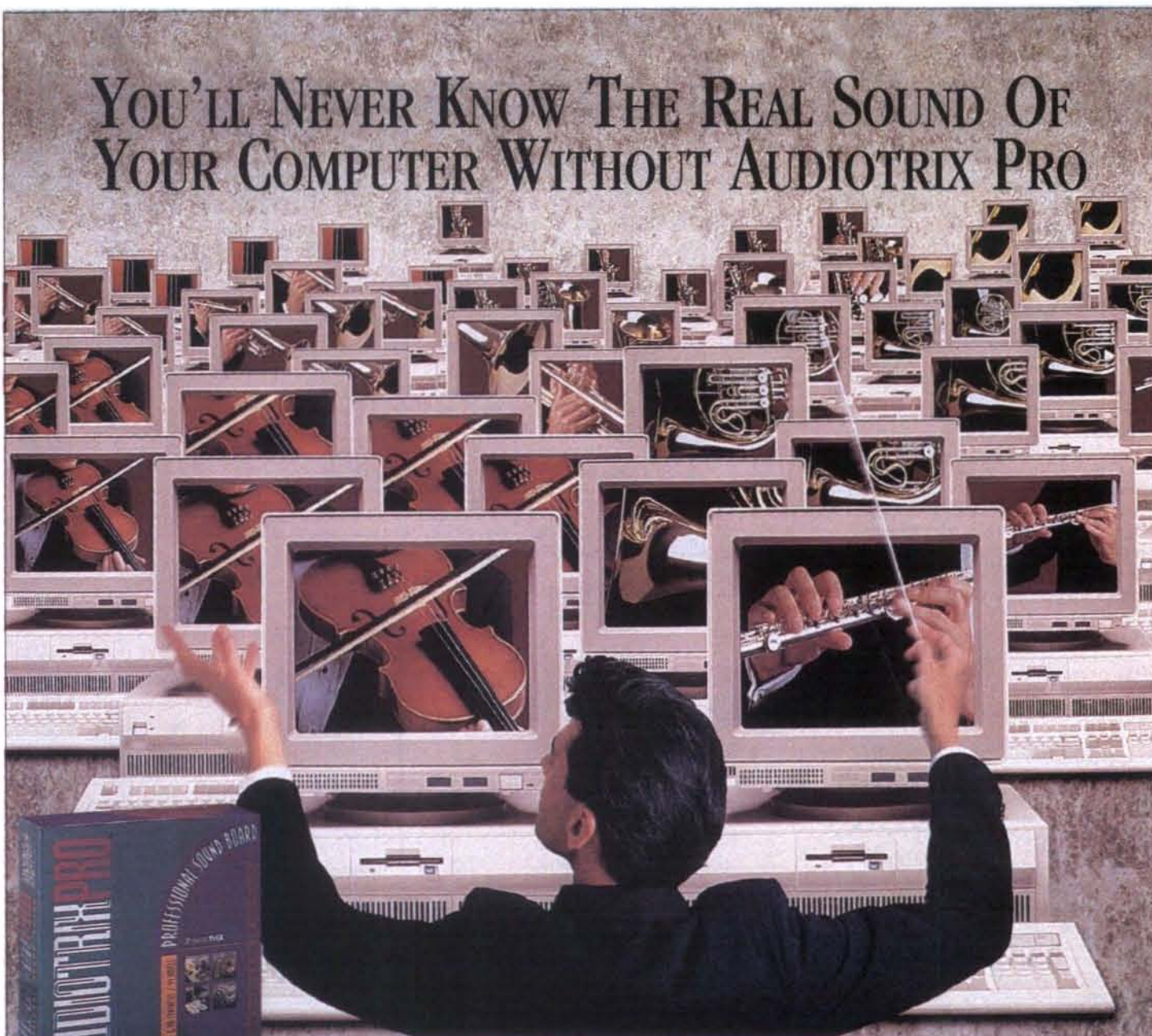
In what can be seen as either a drawback or an advantage, the animations are strung together in the most "virtual" of plots. The "plot" for *The Gate to the Mind's Eye* centers around a protagonist dubbed "Alloy" who observes the insanity of a cyber-future-gone-wrong. His solution: collapse the Universe and start all over again. While the plot is as insubstantial as the virtual worlds depicted, it makes a great excuse to show off some great digitized cataclysms and other spectacles.

The video brings together works from various animators. It almost makes you want to see the works in their original form, but the collage presented in *The Gate* brings together many works which would not be as impressive when seen on their own — if you can find them on their own. In short, the video is great eye-candy, but don't seek for any greater meaning in the overall story.

The real pleasure comes from sitting back and letting the creative talent and imagination in the animations wash over your eyes. More than any of the previous *Mind's Eye* videos, *The Gate to the Mind's Eye* is almost seamless in its melding of animation by separate artists, displaying fewer obvious jumps in animation style. This is evidence that computer animation tools are maturing and that the computing power to create such stunning images is becoming more common.

Some memorable scenes from *The Gate* include the visions of a futuristic cyber-hell, a sky filled with wispy cloud-like faces drifting over a land of masks, and the Universe collapsing upon itself — and then re-exploding. If you watch shows on history or science, expect to see a few sequences here that will eventually turn up on television, such as the vivid sequences of spiraling DNA and incredibly detailed views of ancient cities in their prime.

The music for the video is done by Thomas Dolby (remember "She Blinded Me With Science" from the early '80s?). Dolby has been very active recently in some off-beat projects, including interactive soundtracks for video games. His Headspace company offers "sound designs" for emerging multimedia and interactive productions, and Dolby has supervised work for firms such as Intel, Sega and Virtual World Entertainment. In *The Gate to the Mind's Eye* his music ranges from New Age Ambient (N.E.O.) to Techno-Industrial (Armageddon). Like some of the best film soundtracks around, the music in *The Gate* enhances the viewing experience. Expect to



YOU'LL NEVER KNOW THE REAL SOUND OF YOUR COMPUTER WITHOUT AUDIOTRIX PRO

THE WORLD'S #1 FULLY EXPANDABLE SOUND BOARD

What the experts have to say about Audiotrix Pro:



Earned The Fat Seal

The first sound board to have been awarded The Fat Seal from The Fat Man, George Alistair Sanger, who, together with Team Fat, have produced some of the most memorable music in the PC gaming industry (eg. Loom, Wing Commander, The 7th Guest & more). The Fat Seal certifies that the Audiotrix Pro has been tested and is recommended by The Fat Man for use with software containing General MIDI music.

95/100



Earned a rating of 95/100

"Surprise, surprise, surprise! The Audiotrix Pro came through with flying colors, excelling in all areas and surpassing my wildest expectations. Truly a sound card for the dedicated gamer... This card performed flawlessly." Computer Game Review (U.S.) November 1994



Earned 'WINNER' Recommendation

"The installation of the AP was problem-free... The sampling quality was high... Its compatibility and expansion possibilities make it a very convincing choice." WIN Magazine (Germany) November 1994



Earned the Computer Player Recommended Seal

"Installation was a breeze with no hardware jumpers necessary... Professional musicians, developers and hard-core enthusiasts will definitely enjoy the enhanced Full Duplex mode... The General MIDI sounded superb... It's hard to go wrong with the Audiotrix Pro." Computer Player (U.S.) January 1995



Earned the PC Pro Recommended seal

"A high-end card that's intelligently designed, compatible with almost everything and exceptionally easy to install." PC Pro (U.K.) January 1995

- Over 300 retail locations in Canada demo the Audiotrix Pro
- Call 1-800-820-8749 for the retailer nearest you
- Available at all FUTURE SHOP and ADVENTURE ELECTRONICS locations

Mediatix Peripherals, Inc., 4229 Garlock Street, Sherbrooke, Quebec, Canada J1L 2C8
Tel: (819) 829-8749 Fax: (819) 829-5100 BBS: (819) 829-5101
e-mail: sales@mediatrix.com WWW: <http://www.mediatrix.com/mediatrix>

Mediatix and Audiotrix are trademarks of Mediatix Peripherals, Inc. All other trademarks or registered trademarks are the property of their respective owners.

AUDIOTRIX PRO
PROFESSIONAL SOUND BOARD
A SOUND INVESTMENT

HEAR IT FOR YOURSELF!
FREE AUDIO DEMO CD
CALL 1-800-820-8749
Quote Ref. #77b
While quantities last

OTA

Notebook Centre

343 College Street Toronto M5T 1S5

Tel 416-921-1177
 Fax 416-921-8664
 Mon & Sat: 9AM-6PM • Tues-Fri: 10AM-7PM

Dedicated to portable
 computing & connectivity

PCMCIA

We can install your "plug & play" PCMCIA cards

- PCMCIA II to III Adapter \$150
- 105 MB HD PCMCIA-III \$425
- 170 MB PCMCIA-III IBM approx. . \$599
- Data Security Scrambler \$345
- Generic Ethernet \$250
- SCSI + Sound \$695
- Multimedia 16-bit sound \$295
- 14.4 kbps Fax Modem \$225
- Fax/Modem/Ethernet PCMCIA-II \$595
- Camera 320x260 grey \$850
- Global 100m Positioning \$1200

Full line of PCMCIA cards in stock!

See our in-store
 daily specials & clearance items.
 We have 20+ notebooks
 on display.

CD-ROM

Portable CD 2x & card \$499
 NEC 3XP Portable SCSI \$75
 4x Parallel \$575
 Port. 2x+Sound PCI \$725

PARA

Parallel to SCSI \$295
 Video Capture \$395
 256 Greyscale 8 1/2" \$575
 420 MB ext. e \$695

PRINTERS

- Canon LBP430 300 dpi laser \$699
- Canon BJC4000 Inkjet \$489
- Canon BJ20 Inkjet w/feeder \$259
- Canon BJ10sx Inkjet \$269
- Citizen PN60 Thermal Mini \$445
- DEC 1152 300 dpi PostScript \$899
- HP 4L, 300 dpi laser \$785
- HP 4P, 600 dpi laser \$1385
- HP 4, 600 dpi laser \$2025
- HP 320 Inkjet portable&feeder .. \$525
- HP OfficeJet print/fax/copy... \$1099
- HP 550C Inkjet \$595
- HP 560C Inkjet \$695
- Lexmark WinWriter 100 ink .. \$415
- Lexmark ExecJet IIC col. ink ... \$495
- Lexmark OptraR 1200 dpi, 2MB \$2095
- Panasonic KX-P4400 w/1MB \$665
- Raven Windows Printer L3 ... \$623

TO TBA

2100 Series rated power supply

Model	HC	CPU	Display	Price
T2100	2"	6 DX2/50	Mono	\$2195
T2100CS		86 DX2/50	10.2" Col.	\$3295
T2100CT		486 DX2/50	Hi-Col	\$4795
T1960CS		486 DX2/50	Pas Col.	\$3145
T1960CT		486 DX2/50	Act Col.	\$4395
T2400C		486 DX2/50	Enh Col.	\$3645
T2400F		486 DX2/50	Act Col.	\$6595
T36F	8	486 DX2/50	Act Col.	\$4895
T2	4	486 DX4/75	Pas Col.	\$5145
T	8	486 DX4/75	Hi-Col	\$6995
	0	486 DX4/75	Act Col.	\$5995
	00	486 DX4/75	Act Col.	\$6995
	500	486 DX4/75	Act Col.	\$6595
	800	Pentium 75 MHz		\$7995

SAMSUNG

THE BEST WINDOWS PERFORMER!
 w/ Windows, Trackball, Carrying Case,
 PCMCIA II & III, & 3 Yr Intl Warranty

CPU	Video	RAM	HD	Price
486DX2/50	D.S.Colour	4	260	\$3095
486DX2/50	D.S.Colour	4	350	\$3295
486DX4/75	D.S.Colour	4	350	\$3495
486DX4/75	D.S.Colour	4	350	\$3795
486DX4/75	Act.Colour	4	350	\$4895
486DX4/75	Act.Colour	4	520	\$5195

4 MB Memory Upgrade with N.B. \$350

EPSON

ACTION NOTE-850 SERIES

w/ DOS, Windows, Trackball, PCMCIA

CPU	Video	RAM	HD
486 DX2/50	9.5" Mono	4	250
486 DX2/50	10.3" DS Col.	4	250

AST

ASCENTIA 910N SER

w/ DOS, Windows, Trackpoint,
 "Long Battery Life" - Lithium

CPU	Video	RAM	HD	Price
486 DX2/50	10.3" DS Col.	4	350	\$395
486 DX2/50	10.3" DS Col.	4	395	\$485
486 DX4/75	10.3" DS Col.	4	395	\$695
486 DX4/75	10.4" TFT Col	4	395	\$735
486 DX4/75	10.4" TFT Col	4	395	\$375
4 MB Memory Upgrade				\$675

AST

ASCENTIA 800/810N SERIES

w/ DOS, Windows, Trackball, PCMCIA

CPU	Video	RAM	HD	Price
486 SX/33	9.5" DS Col.	4	250	\$3045
486 DX2/66	10.3" DS Col.	4	250	\$3345
486 DX2/66	10.3" DS Col.	4	340	\$3695
486 DX2/66	10.3" DS Col.	4	500	\$3895

Panasonic

-41 (Built-in CD)

CPU	Video	RAM	HD	Price
486 DX2/50	10.4 Hi-Col	4	350	\$6495
486 DX2/50	10.4 Hi-Col	4	395	\$7595
486 DX4/75	10.4 Hi-Col	4	395	\$8695
486 DX4/75	10.4 Hi-Col	4	395	\$9295
Pentium	10.4 Hi-Col	4	395	\$9995
Pentium	10.4 Hi-Col	4	395	\$10595

8 MB Memory Upgrade with N.B. \$675

WEIGHT WATCHER

D.E.C.

(Digital Equipment Corporation)

Ultra series weigh only 4 lbs!

w/ 340 MB HD, DOS, TrackPoint, PCMCIA

Model	CPU	Video	RAM	HD	Price
HiNote	486DX2/50	D.S. Col.	4	3750	\$4200
HiNote Ultra	486DX2/50	D.S. Col.	4	4200	\$5400
HiNote Ultra	486DX2/50	Act. Col.	8	5500	\$5995

THINKPAD

S C series-4 MB RAM w/ DOS,
 PCMCIA, Power Adapter & NIMH

Model	CPU	RAM/HD	Video	Price
360CSE	486DX2/50	340 D.S. Col		\$3395
755C	486DX2/50	340 10.4 Act		\$5645
755C	486DX4/75	340 10.4 Act		\$6145
755C	486DX4/75	540 10.4 Act		\$6595

755CE & 755CD series-8 MB RAM

Model	CPU	RAM/HD	Video	Price
755CE	486DX4/100	340 10.4 Hi-Col		\$7495
755CE	486DX4/100	540 10.4 Hi-Col		\$7895
755CE	486DX4/100	810 10.4 Hi-Col		\$8395
755CD	486DX4/100	540 10.4 Hi-Col		\$9395
755CD	486DX4/100	810 10.4 Hi-Col		\$9995

NEW!

HUGE SELECTION OF NOTEBOOK CASES ON SPECIAL!

Impulse

THE BEST VALUE!

NEW Impulse PENTIUM Notebooks!

CPU	RAM	HD	Display	Price
75MHz	8MB	350MB	10.3" OSTN	\$4595
75MHz	8MB	720MB	10.3" OSTN	\$5195
75MHz	8MB	350MB	10.4" TFT	\$6295
75MHz	8MB	720MB	10.4" TFT	\$6895
90MHz	8MB	350MB	10.3" OSTN	\$5095
90MHz	8MB	720MB	10.3" OSTN	\$5695
90MHz	8MB	350MB	10.4" TFT	\$6995
90MHz	8MB	720MB	10.4" TFT	\$7495

Impulse CompuBook 600 Notebooks

w/ 4 MB RAM, TrackPoint, NIMH Battery,
 DOS, Windows, 3 Year Impulse Warranty
 11.3" Dual Scan Passive Colour Display, 640x480

DX4/75MHz	340MB	3695.00	DX4/100MHz	340MB	3645.00
DX4/75MHz	510MB	3745.00	DX4/100MHz	510MB	3895.00
DX4/75MHz	810MB	4095.00	DX4/100MHz	810MB	4245.00

Adventures At Camp Silicon

BY JEAN IKESON

Summertime and school is out: time to label clothes and pack the kids off to summer camp in some remote nature spot. You remember — the smell of pine, sound of camp songs and long hikes down woodland trails!

This year, however, the hottest camps are trekking young internauts through the jungles of the Internet, jumping into virtual-reality computerscapes, and bringing it all to life with multimedia camper-designed projects.

While computer camps have been around for a while, a few are taking the experience to new levels. Adventures in Engineering Computing from McMaster University and the Virtual Ventures/Aventure Virtuelle organization from Carleton and Hull Universities are examples of the newest and most exciting summer camps for teenagers. These are far more than introductory computing but "give kids a chance to get into computer technology and the Internet as they evolve."

Carleton University has set up a national organization to develop additional sites across Canada. Most notable is the Aventure Virtuelle, a Francophone version of Carleton's Virtual Ventures, based at the University of Hull, Quebec. Expect to see additional Francophone locations develop from the Hull model in 1996 in Quebec and possibly internationally in France.

Carleton is presently negotiating with a university in British Columbia to establish Virtual Ventures in that province. Other summer computer camps for children five and up are offered by for-profit franchises such as Future Kids nationally and Technokids in Ontario. To find a nonprofit program locally, try the nearest university or college (Calgary's, Manitoba's and UBC's are described here), public libraries, school boards, and parks and recreation departments.

Corporate and government sponsors such as Bell Canada, IBM Canada, Silicon Graphics and Industry Canada are aiding these nonprofit camps.

Virtual Ventures

This camp is the prototype for a national Virtual Ventures program that the developers hope to spread across Canada. This type of national initiative has already been successful with the YES camps (Youth Engineering and Science Camps of Canada) at many Canadian universities from the University of Victoria to Memorial University in Newfoundland.

These have been so popular that one university has restricted admission to mail-in only because parents were lining up at dawn and fighting over their place in line. Such



enthusiasm shows how starved Canadian parents are for high-quality science and technology programs for their children.

The Ventures program hopes to address this need in computer technology, with an emphasis on electronic communications. In their second year of operation, they say their "mission is to provide Canadian youth with an understanding of electronic communications, empowering them to participate in the development of the global community."

Virtual Ventures is intended to be more than a computer camp. Kids will learn how to "surf" the Internet and "get launched into cyberspace." There are workshops in multimedia, virtual reality, animation and robotics. Campers will be challenged by a cyberspace scavenger hunt with prizes. Week-long design projects integrate the daily activities. A ratio of one instructor to five students is expected.

A nice innovation is two one-week advanced sessions for kids who want more than one week or who attended the camp in 1994. Their "Net Surfing" section is much more than a definition of the Net and, "wow, isn't it cool." Campers learn about telnet and e-mail, Gopher, FTP, Archie, and Veronica and how to use them at home and at school as well as at camp.

There is an emphasis on hands-on applications that the organizers hope will extend interest beyond one week in the summer. As a result, participants will receive 30 days of free Internet access after they finish the camp. What a great idea! Students will not only learn how to navigate the World Wide Web, but will also create WWW pages. They will learn to program HTML and use multimedia in their Web pages. This gives them a chance to share their work with other Canadians and also be involved in adding to an application of new technology.

A new venture in robotics will be the construction of an exo-skeleton arm. This sort of workshop is customized to each student's interests, needs, and level of ability. The idea is to meet the camper at his or her own level and excite them about the possibil-

Continued on page 32

All prices are cash discounted and subject to change without notice.

FASTEST PENTIUM ON PLANET EARTH...

Triton/EDO

120 MHz

THE LATEST **ZAPPA** MOTHERBOARD...FROM
WITH...**TRITON** PCI CHIPSET

-Supports Synchronous SRAM Pipelined Burst Mode
EDO (EXTENDED DATA OUT) MEMORY
- REDUCES NUMBER OF WAIT STATES

120 MHz 100 MHz 90 MHz
\$2699 \$2199 \$1999

**30-45%
FASTER!!
THAN OTHER
PENTIUMS**

BASE SYSTEM...
8 MB DRAM (128 MB Max)
EDO MEMORY OPTIONAL
540 MB HD • 3.5" FLOPPY
Enhanced IDE MODE 4 PIO,
3 PCI, 4 ISA
2X 16550 Serial,
1X ECP/EPP Parallel

NOKIA

Model 447L
17" Multimedia Monitor
up to 1280 x 1024
.28 dot pitch • MPB-II
Stress Power Speakers
Built right in!

\$1099⁹⁹



Model 447X 17" Monitor
The best money can buy!
1600 x 1200

\$1699⁹⁹

Stealth 64 Video Multimedia Accelerator

64-Bit Graphics
DIAMOND
MULTIMEDIA
VRAM



• Real Time Digital Video Acceleration
• **30 FRAMES PER SECOND**
• Support for Cinepak, MPEG, Indeo
• Full Screen Full Motion video

• Max Res 1600 x 1200
• 2MB upgrd to 4MB
\$499⁹⁹

**NOW
IN STOCK**



MICRONICS

Yes
Enhanced
Performance
SCSI
SCSI

8 MB RAM exp. to 192 MB
256K cache exp. to 512K
Intel Neptune PCI Chip Set
540MB super fast Hard Disk
3.5" 1.44 MB drive
3 PCI slots • 5 ISA slots
PCI Plug-and-Play ready — Mode 3
Super Faaast PCI enhanced IDE
2 high speed UART 16550 serial
1 bi-directional ECP/EPP parallel
Humungous 600 W Power Supply

The Micronics 54PI

• Windows 95 Ready **\$2099**
• PCI Plug and Play

MICRONICS DUAL PENTIUM M54Pe

EISA / PCI90/100 MHz
The ultimate
Windows 95/NT Workstation!
USED IN IBM PC FILE SERVER



8 MB RAM exp. to **612 MB!!!**
256K cache exp. to 512K
Intel Neptune PCI Chip Set
3.5" 1.44 MB drive
3 PCI slots • 5 ISA slots
PCI Plug-and-Play ready — Mode 3
Super Faaast PCI enh. IDE support
2 high speed UART 16550 serial
1 bi-directional ECP/EPP parallel
Humungous 600 W Power Supply

NOW DELIVERING \$2399
w/1 PENTIUM 90 CPU

adaptec

NOBODY BEATS OUR ADAPTEC PRICES
AHA1542 CF Bus Mastering
AT Bus SCSI Adapter **249⁹⁹**
The industry standard
AHA1505 AT Bus SCSI Adptr **69⁹⁹**
A must for SCSI CD-ROMs
AHA2842 Bus Mastering
VEBA Local Bus SCSI Adapter **339⁹⁹**
Adaptec AHA 2940
PCI SCSI-2 **299⁹⁹**
Adaptec AHA 2940W
PCI Fast/Wide SCSI-3 **399⁹⁹**

TAPE BACKUPS

THERE'S NO LOWER PRICE
FROM COLORADO
350 MB **\$199⁹⁹**
420 MB CONNER **\$199⁹⁹**
700 MB WANTEK **\$269⁹⁹**
850 MB CONNER **\$299⁹⁹**
1 GB WANGTEK DC600 **\$999⁹⁹**
WangDAT
3100 2 GB 4 MM SCSI **\$1099⁹⁹**
3200 4/8 GB **\$1399⁹⁹**
3400 8/16 GB DSS-2 **\$1699⁹⁹**
Maxoptix
REWRITABLE OPTICAL 1GB
NEW LOW PRICE
\$1199⁹⁹

DEALS OF THE CENTURY!!

digital Seagate
BARRACUDA
2.1 GB SCSI-2 BLAZING FAST
7200 RPM • 8MB 512 K Cache
\$1599⁹⁹

2 GB AV SCSI-2
MADE IN GERMANY
BUILT LIKE A TANK
1024 X 768
512 K Cache
\$999⁹⁹

3.5 GB AV SCSI-2
MADE IN GERMANY
BUILT LIKE A TANK
1024 X 768
512 K Cache
\$1499⁹⁹

IDE HARD DRIVES.....
540 M Quantum <12ms **\$269⁹⁹**
850 M Maxtor <12ms **\$329⁹⁹**
1.275 G Maxtor <12ms **\$469⁹⁹**

TRINITRON MONITORS

MADE BY SONY
DAZZLING!!
0.25 DOT PITCH
1024 X 768
NON-INTERLACED
TRINITRON technology
guarantees the best,
sharpest, brightest
picture possible!
Great for PC & MAC
CPD-155F **\$699⁹⁹**
14" **\$499⁹⁹**
GDM 17SE-17" 1600 x 1280 .25 mm **\$1599⁹⁹**
GDM 17SF-17" 1280 X 1024 .25 mm **\$1349⁹⁹**
GDM 20SE1-20" 1600 x 1280 .30 mm **\$2888⁹⁹**

CREATIVE

Sound Blaster
Sound Blaster 16 VIBRA IDE **\$99⁹⁹**
Sound Blaster 16 VIBRA MCD **\$109⁹⁹**
Vibra models not ASP or Wave table upgradeable
THE ORIGINAL (ASP, Waveable upgradeable)
Sound Blaster 16 MCD **\$119⁹⁹**
w/ Advanced Signal Processor **\$189⁹⁹**
Sound Blaster 16 SCSI-2 **\$169⁹⁹**
w/Advanced Signal Processor **\$239⁹⁹**
Sound Blaster AWE-32 **\$399⁹⁹**

TURTLE BEACH SYSTEMS

Monte Carlo..... **\$99⁹⁹**
Maui..... **\$229⁹⁹**
Tropex..... **\$339⁹⁹**
Monterey..... **\$499⁹⁹**

EXCEL 4.0
\$59⁹⁹

EMPLOYMENT OPPORTUNITY
We are looking for people with computer knowledge for full time and part time technical sales positions. Preference will be given to people with strong technical background and minimum 2 year retail sales experience.
FAX your resume to:
1-519-747-0932

CRAZY SATURDAYS

SATURDAY JUNE 25 ONE DAY ONLY ONE DAY ONLY

Panasonic 2X CD-ROM Drive **\$99⁹⁹**
TEAC 4X **\$209⁹⁹**
CREATIVE MADNESS CREATIVE
SOUND BLASTER 16 VIBRA - IDE **\$99⁹⁹**
MAGNEX
Maxtor 850 M IDE Hard Disk <12ms **\$289⁹⁹**
1.275 G Maxtor IDE **\$439⁹⁹**
CREATIVE
SOUND BLASTER 16 VIBRA - IDE **\$99⁹⁹**
AWE 32 VALUE **\$189⁹⁹**
REG **\$89⁹⁹** **\$69⁹⁹**
16550 SUPER I/O
Super Faaast
VESA enhanced IDE support
E-IDE x 2 • IDE x 2 • Floppy x 2
2 high speed UART 16550 serial
1 bi-directional ECP/EPP parallel
Perfect companion to Maxtor 850
Breaks the 540 MB barrier

*CASH & CARRY ONLY *NO DEALERS PLEASE *1 PER FAMILY *NO PHONE CALLS PLEASE WE RESERVE THE RIGHT TO LIMIT QUANTITIES

4.4x THE FASTEST CD-ROM DRIVE IN THE ENTIRE UNIVERSE!!!

TOSHIBA
XM-3601 SUCCESSOR TO
THE LEGENDARY XM-3501

INCREIBLE 120 msec!!!
SCSI-II

XM-5301B 4X SCSI-2 **\$449⁹⁹**
600 kb/s, 256 k cache 150 ms.....
XM-5302B 4X IDE **\$299⁹⁹**
600 kb/s, 256 k cache 150 ms.....

QUAD SPIN ON A SHOESTRING

TEAC SuperQuad 4X
TEAC's new SuperQuad 4X CD-ROM drives will obsolete the 2Xs.
195 ms • 600 kbs **\$249⁹⁹**
Plugs right into your Sound Blaster 16

NEC Blowout

4X CDR-511 SCSI-2 • 600 KBS • 220 ms 256K Cache w/ LCD **\$449⁹⁹**
MultiSpin CDR-500
SCSI-2 Internal TRIPLE SPEED
450 kb/sec <195 msec
MPC Compliant • 256 k Cache
GREAT FOR MAC & PC **\$349⁹⁹** RETAIL VERSION W/ LCD DISPLAY
MultiSpin CDR-501
250ms 300 kb/sec MPC Compliant **\$249⁹⁹**
MultiSpin CDR-250 IDE INTERFACE **\$169⁹⁹**
By far the BEST 2X IDE CD-ROM ever made!!

OS/2 WARP V3
IMPOSSIBLE PRICE!! **\$69⁹⁹***
*with hardware purchase only

CD TITLES

Battle Chess **\$19.99**
MYST **\$49.99**
Carmen Sandiego **\$29.99**
Iron Helix **\$24.99**
Compton's Multimed **\$19.99**
Putt Putt To The Moon **\$39.99**
Critical Path **\$29.99**
Quantum Gate **\$29.99**
Dracula Unleashed **\$39.99**
Return to Zork **\$24.99**
Encarta '95' **\$59.99**
Seventh Guest **\$39.99**
Mantis & Civilliz **\$24.99**
Simm City 2000 **\$39.99**
MegaRace **\$29.99**

PC FACTORY
878 YONGE STREET
416-920-2577 FAX 416-920-0749

Prices and Specifications subject to change without notice. All prices 3% cash discounted.

PENTIUM MOTHERBOARDS
Micronics M54Pe dual Pentium EISA/PCI w/256K Cache and 1 90 MHz CPU **\$1499**
Micronics M54PI 90 MHz ISA/PCI w/256K Cache **\$1099**
Intel Premiere PCI/II 100 MHz Special Edition Lightning Fast ISA/PCI w/256K Cache **\$1099**
Intel Premiere PCI/II 90 MHz ISA/PCI w/256K Cache **\$949**
Intel ZAPPA (Triton) PCI/II 90 MHz ISA/PCI w/256K Cache **\$999**

ALTEC LANSING MULTIMEDIA

PC MAGAZINE EDITOR'S CHOICE
ACS300.1
Ferofluidic cooled 1/2" dome tweeters
4" Mid/Bass 18 Watts
2 x 4" woofers 18 Watts
Freq. Resp. 35Hz - 20kHz **\$349⁹⁹**

ACS3
Ferofluidic cooled 1/2" dome tweeters
3" Mid/Bass 12 Watts
2 x 4" woofers 15 Watts
Freq. Resp. 40Hz - 20kHz **\$299⁹⁹**

ACS-50
ferofluidic cooled 3/4" dome tweeters
2.5 X 1.25" Mid/Bass
4.5W per channel
100Hz - 20kHz **\$119⁹⁹**

ACS150 SubWoofer
Unique multipath acoustic chamber. Thundering bass down to 35 Hz. 15 W **\$189⁹⁹**

ACS500 Surround Sound
80 W. 32Hz - 20kHz
Amazing sound Multimedia & Home Theatre **\$499⁹⁹**

YAMAHA The ultimate in Multimedia Sound

YST-MSW10 Active Sub-woofer
Best of 1993
Bass response down to thundering 35 Hz!
\$249⁹⁹
YST-M10 **\$129⁹⁹**
SIGMA DESIGNS
A whole new world of interactive MPEG CD-ROM entertain
REALmagic
REAL MAGIC LITE FROM **\$599⁹⁹**
w/10 full-feature movies
on CD
WATERLOO
UNIVERSITY OF WATERLOO
170 UNIVERSITY AVE W.
519-746-4565 FAX 519-746-6673

Cash & Carry - ALL SATURDAY/SUNDAY SALES FINAL - NO PHONE CALLS PLEASE

Adventures at Camp Silicon

Continued from page 30

ities of computer applications.

Moo World is a continuous "game" where each week's participants have something new to contribute to the virtual world. In "rend 386," campers create and animate their own virtual worlds. Last year's ideas ranged from riding a car with a bouncing head to getting off at the top of a Ferris

wheel. One activity which is met with great enthusiasm is the setting up of a video-conferencing network.

The full day, week long sessions run June 26 - Sept 1, and are open to youths aged 10 to 18. Cost is \$200.

For information, contact Faculty of Engineering, Carleton University, Ottawa, 613-788-2600 ext 1932; FAX 613-788-5682 e-mail director@vv.carleton.ca

Aventure Virtuelle

This camp is strictly in French for Francophone youth. But it is more than a camp. It is also a development project to translate technology written in English to French and inject the appropriate cultural spin so that it is more relevant and accessible to their inter-nauts. The logic is "build it and they will come." Steve Saunders, director of the camp, is hoping for sponsors to help cover the cost of translating Netscape's HTML help pages. The idea is to make available a Francophone



version of the Internet's most popular software. Like the Carleton and McMaster groups (described later), they recognized that kids were not encountering "Bill Nye, Science Guy" in the classroom very often. They want kids to get excited about high tech and its possibilities.

Last year the curriculum included web-based multimedia projects, virtual reality, 3-D animation and video teleconferencing. This year they hope to add projects in artificial intelligence and designing interactive web games. Because Aventure Virtuelle is based on the Carleton model, the emphasis is on hands-on activities that can be transferred all or in part to home use, such as Freenet skills.

The weekly, full day program runs from July 3 to August 4. Cost is \$150.

For more information contact Aventure Virtuelle Universite de Quebec a Hull, 819-773-1818 courrier.ilelectronique@uqah.quebec.ca mrondeau@uqah.quebec.ca Or: ssaunders@uqah.quebec.ca

High Content, Hands On

Adventures in Engineering Computing, like Virtual Ventures/Aventure Virtuelle is taught by university students, many of whom are from engineering departments. These students were often frustrated by the lack of technology and science taught in high schools. They are trying to fill the gap with high-level content and hands-on applications that may be continued at home when camp is over. What these groups do not mention but becomes obvious is the enthusiasm and almost charismatic glee with which the organizers are developing their programs.

This camp concentrates on hands-on activities with a student to counsellor ratio of 6 to 1. They hope to attain a 50:50 boy/girl ratio to encourage more young women to become involved in computing.

Basic computing skills are required. If someone has done a project previously, a "velvet sack" provides additional activities to keep interest at a high level. With a theme of involving campers in ongoing developments, a section by Professor McCrackin delves into the history and evolution of computers and speculates about computers of the future.

As the name implies, the McMaster camp is skewed to engineering. For example, one day stresses computer-based problem solving in which students learn how to "modularize" large, technical design problems. One such problem would be how to break the space shuttle down into manageable parts.

One day is set aside for building and demonstrating a simple digital circuit and disassembling, inspecting, and troubleshooting a computer workstation. A week-long project uses the engineering design

PRINT IT.



FOR THOSE WHO DEMAND THE BEST COLOR PRINTING, EPSON INTRODUCES PHOTO QUALITY 11 X 17 OUTPUT FROM A 720 DPI INK JET COLOR PRINTER: THE AMAZING EPSON STYLUS PRO XL.



PROJECT IT.

EXPERIENCE THE BRILLIANCE OF THE WORLD'S SMALLEST, LIGHTEST, BRIGHTEST DATA/VIDEO PROJECTION SYSTEM: EPSON'S ELP-3000 MULTIMEDIA PROJECTOR.



EPSON'S ES-1000C 30-BIT COLOR SCANNER IS PERFECT FOR SCANNING TEXT AND GRAPHICS.

SCAN IT.



EPSON'S PERSONAL DOCUMENT STATION ALLOWS YOU TO EASILY SCAN, EDIT, OCR, FAX, E-MAIL OR ELECTRONICALLY FILE DOCUMENTS.

SEE IT. BELIEVE IT. BOOTH 1608.

EPSON

1-800-BUY-EPSON

720 dpi printing requires EPSON coated paper. Also prints 360 dpi on plain paper. EPSON and EPSON Stylus are registered trademarks of SEIKO EPSON CORP. ©1995 EPSON AMERICA, INC. 20770 Madrona Ave., Torrance, CA 90503. For dealer referral or warranty details in the U.S. and Canada, call 800-BUY-EPSON (800-289-3776). For Latin America, call 305-265-0080.

See Us At COMDEX/Canada'95

Continued on page 34

Canada's
**NOTEBOOK
SPECIALISTS**

THE NOTEBOOK STORE

Canada's
**NOTEBOOK
SUPER CENTRE**

LOWEST PRICE

You always get the lowest available price on The Notebook Stores Systems. We guarantee it or we'll refund the difference. Plus 5% (conditions apply)**

SAMEDAY EXPRESS

Order any of our standard systems and we will have it ready for pick up within 4 hours, or order by 6:00 P.M., and we will have it to you by 10a.m. the following day.

CUSTOM CONFIGURATIONS

Eliminate Installation hassles by letting The Notebook Store install your extra memory, and modems. Configuration is Free

REPAIR DEPOT

We can repair all brands of notebooks for all problems including Screens, Floppy Drives, Hard drives, Ports, Power and all other problems requiring repairs.

COMING SOON

New Locations in Metro

Authorized: IBM, Toshiba, NEC, AST
Compaq, Panasonic, Zenith, Apple,
HP, Epson, Samsung, DEC

NEC
486 SX 33 Colour
\$2099



Limited Qty

features
Intel 486 SX 33 14 MB Ram 1 Colour
210 MB Hdd 1 Dos/Windows
Trackpoint 1 2 PCMCIA 1 Intl 3 Yr.

Product Code	List Price	Our Price
VERSA S	\$2999	\$2099

IBM THINKPAD
COLOUR 486 DX 4/75
\$4883



New Model

features
486-Dx-4/75 14 Megabytes Ram 11 10.5" Active
Trackpoint 1 2 PCMCIA 1 Vesa Local Bus 1M
340 Meg HD, Dos/Windows/SW

Product Code	List Price	Our Price
Thinkpad 370	\$4299	\$3579

TOSHIBA
486 DX2/50/260 2 PCMCIA
\$2121



features
486 DX2/50 14 Megabytes Ram
Trackpoint 1 2 PCMCIA
260 Megabyte hard Drive

Product Code	List Price	Our Price
T2100	\$2899	\$2126

Zenith
486 DX2/50 Active Colour
\$2888



FREE 14.4 Mdm

features
Intel 486 dx2/50 4 Megabytes Ram
200 Megabyte HDD, 3 Yr. Warranty
2 PCMCIA, Rem Hdd, Upg. CPU

Product Code	List Price	Our Price
Noteflex	\$3969	\$2888

TOSHIBA
486 DX2/50 4/340 / PCMCIA
\$2689



Great Value

features
4 Megabytes Ram, Trackball
340 Megabyte hard Drive
Active Matrix Col. 1 Dos / Windows

Product Code	List Price	Our Price
T-1960 CT	\$3699	\$2699

SHARP
Active Matrix Colour
\$1999



Active Matrix

features
486 DX Processor 4 Megabytes Ram
210 Hard Drive 1 Active Matrix Colour 1 F-R
PCMCIA 1 Dos/Windows 1 Ltd. Warranty

Product Code	List Price	Our Price
SHARP 6850	\$4799	\$1999

TOSHIBA (Lower Prices)		S.R.P	Only
Toshiba 2100	486 dx 50 260	\$3299	\$2121
Toshiba 2100CS	486 dx 50 350	\$4299	\$3243
Toshiba 2150CD	486 dx4 75 500	\$6789	\$4401
Toshiba 2400CS	486 dx2.50 250	\$4299	\$2689
Toshiba 2450CT	486 dx4.75 510	\$5999	\$4622
Toshiba 4800CT	486 dx4.75 320	\$5699	\$3982
Toshiba T4850CT	486 dx4.75 700	\$7899	\$4601
Toshiba 4900CT	Pentium 75 800	\$9999	\$7665
PANASONIC - CD NOTE		S.R.P	Only
Panasonic 486 DX2/50 Active	260	\$6499	\$3799
Panasonic 486 DX4/75 Active	450	\$7995	\$4588
Texas Instruments - Lower Prices		S.R.P	Only
TM4000-M	486 DX 2.50 4/340	\$4199	\$2999
TM5000-M	Pentium PCI 10.5 8/500	\$7499	\$6944

AST ASCENTIA		S.R.P	Only
ASCENTIA 810n	486-66 250 Passive	\$3699	\$2900
ASCENTIA 810n	486-66 340 Passive	\$3999	\$3111
ASCENTIA 810n	486-66 510 Passive	\$5699	\$3305
ASCENTIA 910n	486-50 8/340 Passive	\$5499	\$3772
ASCENTIA 910n	486-75 8/540 Passive	\$6299	\$4181
ASCENTIA 910n	486-75 8/540 Active	\$8999	\$5800
COMPAQ CANADA		S.R.P	Only
Compaq Contura 410	50 dx 250	\$3999	\$2991
Compaq Contura 410	50 dx 340	\$4899	\$3134
Compaq LTE Elite	40cx 170	\$5599	\$4673
Compaq LTE Elite	50cx-ltd.340	\$6699	\$4199
Compaq LTE Elite	4.75 cx 340	\$7799	\$6549
Compaq LTE Elite	4.75 cx 510	\$8799	\$7034

NEC TECHNOLOGIES		S.R.P	Only
Versa S	486 sx/33 250 DSTN	\$3799	\$2099
Versa V	486 dx4/50 340 DSTN	\$4805	\$3411
Versa M	486 dx4/75 340 Active	\$6758	\$4694
Versa P	Pentium 75 340 Active	\$9999	\$6422
COLOUR 486 dx 33 4/200 (Active Matrix Colour)			
FEATURE	486 DX33 SHARP	\$1999	
IBM THINKPAD			
Thinkpad 370 C	10.5 Active 486 dx 4/75	\$4883	
Thinkpad 370 C	10.5 Active 486 dx 4/75	\$5261	
Thinkpad 701 CS	Butterfly 486 dx 2/50	\$5477	
Thinkpad 755 C	10.4 Active 486 dx 4/75	\$5661	
Thinkpad 755 CE	10.4 Active 486 dx 4/100	\$7080	
Thinkpad 755 CD	10.4 Active 486 dx 4/100	\$8968	
Thinkpad 755 CX	10.4 Active Pentium 75	\$9533	

IF YOU FIND A BETTER PRICE CALL THE NOTEBOOK STORE BEFORE YOU

GUARANTEED LOWEST PRICES

NOTEBOOK UPGRADE CENTRE

NEW REPAIR DEPOT

We Make Buying Easy

ON THE SPOT

FINANCING LEASING

VISA / MASTERCARD / AMEX

FREE ALARM WITH EVERY NOTEBOOK PURCHASE

Here are just a few modules available. All are professionally installed at no extra charge.

MEMORY

TOSHIBA
NEC
IBM
AST
ZENITH
TI
COMPAQ
APPLE

PCMCIA Options

FAX/MODEMS
NETWORK
HARD DRIVES
MEMORY
BATTERIES
SOUND
EXTRA SERIAL
CD ROM 1 TAPE B/U

PORTABLE PRINTERS

All of these printers can be equipped with a battery and used from your remote location.

Canon BJ 10 SX
HP Portable Printer
Citizen PN60, Notebook II
Fujitsu, and All Others
New Canon BJC 70

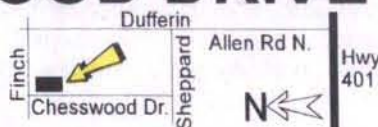
from **\$279**

4495 CHESSWOOD DRIVE

2 lights W. of Dufferin, & 1 Street South of Finch
OR

Take the 401 to Allen N. at 2nd stop light (Sheppard) Make left, & 2nd light make a right (Chesswood) to 4495

(WATCH FOR OUR NEW LOCATIONS OPENING SOON)



(416)630-5681

No One Sells for less and gives better service

* ALL CORPORATE AND GOVERNMENT PURCHASE ORDERS ARE ACCEPTED ** PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE
*** ALL PRICES ARE CASH AND CHEQUE DISCOUNTED ALREADY *parts must be in stock and the same item. 5% of the difference.

HEWLETT PACKARD **Canon** **AST** 486 DX2/66

MULTIMEDIA

- 540 mb hd, 4 mb ram
- 1 MB Local Bus Video
- 3.5 Floppy
- Double Speed CD ROM
- 16 Bit Sound Card, Mic
- Speakers, DOS, Window
- And Much More

Only \$1699

Green Main Board:
3 VLB 128K Cache
Pentium 4 PCI 256K
560 Mb HD, 1.44 FD
4M RAM upto 128M
I/O Card 2S/1P/1G
1M VLB Video card
Pentium 1M PCI
14" .28 SVGA Mo.
Mini Case 230w, KB

QUAD SPEED CD ROM (TOSHIBA)
Made in Japan, XM-5302B

- 256k Bytes Built in Memory
- 150 m.s. Access Time
- 600KB/s Transfer Rate
- MPC-2 Compliant

\$269

HARD DRIVE
560M \$229 Fax Modem Zotrix I. 14.4k \$69
850M \$299 US Robotics Int./Ext. \$139/159

ATI VLB Mach32 D 1M (upto 2M) \$129
ATI VLB/PCI Mach64 D/V 1M \$239/359

Monthly Special

LASER PRINTERS

HP 4L 300dpi 4ppm 1Mb	\$ 738
HP 4P 600dpi 4ppm 2Mb	\$1288
HP 4MP 600dpi 4ppm 6Mb PS	\$1864
HP 4+ 300dpi 12ppm 2Mb	\$1994
Canon LBP 430w 300dpi 4ppm 1mb	\$ 698

BUBBLE JET PRINTERS

HP Office Jet 600dpi (Printer/Fax/Copier)	\$ 998
Canon BJ-100 360dpi 4ppm	\$ 278
Canon BJ-230 360dpi 4ppm	\$ 488
Canon BJC-4000 Color 720dpi 5ppm	\$ 459
Canon BJC-600 Color 360dpi	\$ 579
Canon BJC-70 720dpi 4ppm (Port.)	\$ 529

3D COMPUTER & NETWORK (CANADA) LTD. Mon-Sat 10-10
759 Queen St. E. M4M 1H3 T: (416) 461-7101 F: (416) 461-7214 Sun Appt.

Adventures at Camp Silicon

Continued from page 32

cycle from brain storming to demonstration using multimedia skills learned in other phases.

A CAD/CAM activity involves designing an airplane wing or possibly a deck for the backyard. Each camper is assigned an e-mail address for the week. An entire day is spent on how to use the Internet and communications, including browsing on the World Wide Web. Adventures has set up its own Web page

(<http://adventures.eng.mcmaster.ca>)

along with an FTP site

(FTP: adventures.eng.mcmaster.ca).

However, a discussion of on-line ethics and the social responsibility of computer users sensitizes impressionable teens to the implications of hacking and cracking.

A fundamental philosophy of this group is that computing involves more than typing a report on a 386. They want campers to experience the diversity of applications from programming in a graphical environment to creating multimedia documents with sound clips and animations. As well, counsellors hope to show a variety of platforms such as OS/2, Macintosh and Sun SPARC systems.

Computer-related achievements by Canadians and possible careers in areas such as biomedical engineering or computer engineering are discussed. The attempt to integrate so many levels of computing may seem daunting.

Judging by the schedule, Adventures at McMaster seems to pull it off with the infectious enthusiasm of its organizers. The engineering students mourn the lack of availability of this kind of program when they were in high school. As a result, they are highly motivated to provide others with a window into the excitement and range of computer technology.

The camp runs weekly from July 3 - August 25, full days, for students entering grades 9 and 10. Cost: \$200, financial assistance available.

For more information contact Adventures in Engineering Computing, McMaster University Faculty of Engineering, Office of External Relations Hamilton, Ont. 905-525-9140 ext. 24906; FAX 905-546-5492 email: info@adventures.eng.mcmaster.ca

Other University, College-based camps

Micro Computer Program of Mini University and Children's Camps
Faculty of Physical Education and Recreation Studies, University of Manitoba, Winnipeg Tel: 204-474-9142. Ages 9 - 15. A two-week camp. Cost \$220.

It seems that the Internet is the hot camp topic this year. This camp is no exception. Communication programs including Hypertalk and the Internet will be explored, along with Netscape, Hypercard and Logo. A variety of "mark up" programs will be used to create HTML pages "forging worldwide links to the latest information in many fields, graphics, short video sequences, not to mention many other fun, innovative activities!" With two weeks, this camp has some interesting possibilities.

Computer Connections '95

University of British Columbia, Vancouver Tel: Continuing Studies Non-credit; Brain Waves Division One week, half-day, one session only, limited to 17 campers. Cost \$200

This camp also explores the Internet and multimedia in a hands-on setting. Campers will learn to set up and install hardware and software, how to use the Internet for e-mail and how to participate in news groups and on-line discussions. They will also create multimedia sound and graphics presentations.

British Columbia Institute of Technology Multimedia CD-ROM Camp

Phone Laura Davie, Kids Camp Coordinator,



432-8614; July 17-28 and Aug 14-25; Cost \$375, includes lunches.

In this camp, kids will make their own multimedia CD-ROM disc using still and video cameras, sound equipment and computers. They will be guided through the process by students from Virtual High, a Vancouver high school.

Camp participants will also get lessons on Internet surfing, and will get a chance to design their own Web page.

14th Annual Summer Computer Camp

Faculty of Continuing Education University of Calgary Tel: 403-220-4100; FAX 403-289-7287 Kilobits: Half-day programs (Ages 4-7), June 3, 10; Cost \$45 Megabits: Half-day, two-week camps (Ages 8-12), July 4 - August 25; Cost \$170 Gigabits: Half-day, two-week camps (Ages 13-16), July 4 - August 26; Cost \$170

The youngest group has a camp called Computer Fun for the Very Young. The two older groups have a variety of "courses" that range from an introduction to computers to programming using LOGO, QuickBASIC, C++ or Pascal. Gigabits offers one camp on using the Internet and Freenet. Call 220-4989 for additional information.

Commercial Computer Summer Camps

Futurekids Computer Learning Centres

Across North America, check for local phone listing. Cost varies with franchise, about \$150/one week or \$250/two weeks. Half-day camps for one or two weeks. Ages 4 - 14

Futurekids offers a variety of well-organized camps that should appeal to young children. The same format should be available at all franchises. For example, in Robotics for ages 8 - 14, campers put together a moveable machine

HARDWARE, SOFTWARE, ACCESSORIES AND SERVICE

It is your choice..... We have them all.....

Quality Clone or Affordable Brand Name

COMPAQ Special
Apple Macintosh

NEW

AFORDABLE 486 POWER

IBM COMPAQ Canon
HEWLETT PACKARD NEC Raven

VESA Local Bus
4MB RAM
1.44MB Floppy
420MB Hard Drive
VLB SVGA w/ 1MB
MiniTower Case

CYRIX DX2/66	\$ 930 ⁰⁰
486 DX2/66	\$ 980 ⁰⁰
486 DX4/100	\$ 1035 ⁰⁰
PENTIUM 60MHz	\$ 1250 ⁰⁰

SVGA Monitor From \$ 230

SERVICE & SUPPORT

- We repair and upgrade most make of PC
- Authorized **COMPAQ** & **AST** service center
- Novell Networking
- Installation & Support
- CNE on Staff

MONITOR

SUPER POWER
90 MHZ PENTIUM PCI
PCI BUS

8 MB RAM
1.44 MB Floppy Drive
850 MB Hard Drive
PCI SVGA Card
PCI IDE Controller
Enhanced Keyboard
Mini Tower Case
Monitor from \$ 230 **\$ 1790.00**

SUPER SPECIAL

540 MB HARD DRIVE
HP 4L LASER PRINTER
RAVEN 410 PAGE PRINTER
AST NOTEBOOK

~~\$ 270~~
~~CALL~~
~~\$ 490~~
SPECIAL

ONWARD COMPUTER

Store Hours:
Mon - Fri 9:30 - 6:00
Sat 10:00 - 5:00

5070 Dixie Road (N of Eglinton), Mississauga
Tel.: (905) 602-5070 Fax: (905) 238-3312

The Presario CDTV

Continued from page 27

To add an event, you select the broadcast system and TV channel and set the time — in hours and minutes — in the "Time to WakeUp" box. Just like programming a VCR, you can then select the day or choose ALL to make the event occur every day, and specify a program length in minutes of between 1 to 999. This specifies the length of time for the TV application to remain "wake up" before it goes dormant. This might be useful if you want to be reminded of some important broadcast that you don't want to miss during the business day — or for a show you are going to watch in bed that you know will put you to sleep (thus ensuring that the TV "switches itself off" automatically when the program is over).

Inventing Uses For The Technology

Unfortunately, the "TV in a PC" is still a technology looking for a real application. When internal TVs come bundled with "digital VCR" software — or allow you to easily store highly-compressed video in common data formats such as MPEG-1 or QuickTime — then this whole area will become much more interesting.

If there are further breakthroughs in the development of low-cost add-on "video-phone" and videoconferencing technologies to be used with internal PC-TVs, this could also prove a strong attraction for video on the desktop. This would also have to be accompanied by cheaper, high-speed data links and the availability of low-cost, high quality video cameras.

As it is, the whole thing is lots of fun initially and then becomes a little frustrating because of the many things it still can't do. If you want a TV on your desktop, it is still easier and cheaper to buy one and put it on your desk next to your PC monitor.

My final word on the CDTV is that it is probably an idea ahead of its time. Compaq has done a nice job of putting a cable-ready TV inside a desktop PC, and has included some good software to turn it into a far better TV than anything else in my house.

What would really make this a compelling application — and cause me to want to buy a PC with a TV card in it — is software that would allow me to record my favorite TV shows or home movies into a highly compressed file, edit them and even add PC-based titles. But so far, it isn't possible to do that in a machine priced at Presario levels. □

Computer Camps

Continued from page 34

out Lego parts including gears, wheels, motors, etc. and then hook it to a computer and control it with a program kids write themselves. For Young Inventors, children, ages four and up, create and invent "exciting" projects to personalize and print. There is a different focus daily to maintain interest. For ages seven and up, the Space Camp explores astronomy and computer bulletin boards. Early enrollments receive a free back pack.

Technokids

Scarborough, Mississauga & Oakville, Ontario
Tel: check for local listing. Various camps, age groups from 5 - 13. Half-day for two weeks, Cost \$199. Full-day at Bronte Provincial Park, Cost \$249.

Young children ages 5 - 7 create their own animated adventures complete with sound effects in TechnoToons camp. Older children ages 8 - 13 ought to enjoy TechnoCop. They will take mug shots, scan fingerprints, compile a database and keep a case file to

catch the "crooks" that are loose on TechnoKids computers. Other camps include TechnoQuest in which kids travel the globe completing their TechnoPassport as they pass through the Internet, create maps, electronically mail postcards, and discover the diversity of the world as they fill their TechnoTravelLog. There are some good ideas here that should keep campers excited. TechnoKids states that their purpose is integrating computers into real-life educational projects and experiences. Ratio of one instructor per four students, one computer per child. □



"Well priced"
"Windows performance is Impressive!"
See Computer Paper Review, May Issue!

BONUS PACK



CARTIER II
Multimedia Notebook 486/66

Intel 486 DX-II 66MHz CPU
Multi-Level Powersaving Features
16-Bit Integrated Sound Card
Sound Blaster & MS Sound Compatible
Built in Speakers & Microphone
200MB Fixed Disk Drive
4MB System Memory (32MB Max.)
Mono LCD Display
Local Bus Video 1MB
Supports Colour Monitor 1024 x 768 256 Colors
1 PCMCIA Type III or 2 PCMCIA Type II
DOS 6.22 w/ Manual & Diskettes
Upgrade to DX-4 100Mhz Only \$199
Optional Docking Station \$400
Optional I4,4 Voice / Fax / Modem \$260

\$2,250

Great Value, Performance & Proven Reliability!

CARTIER I
Notebook 486/50

Intel 486 DX-II 50MHz CPU
Multi-Level Powersaving features
Built-In Track-Ball
200MB Fixed Disk Drive
4MB System Memory (32MB Max.)
Mono LCD Display Local Bus Video
Supports Colour Monitor
PCMCIA Type II Expansion Slot
DOS 6.22 w/ Manual & Diskettes

\$1,899

[CARTIER I / II] Dynamic Colour Upgrade \$790
[CARTIER I / II] Upgrade to 8MB of RAM Only \$335
[CARTIER I / II] Upgrade Drive to 340MB Only \$120 / 514MB Only \$305

A m P A Q A u t h o r i s e d D e a l e r s

<p>Toronto PC Shop 319 College Street (College & Spadina) 416-960-2010</p>	<p>East Markham WonderCom 4350 Steeles Ave E. #25 (Market Village Plaza) 905-513-8568</p>	<p>West Markham Techwell Globe Inc. 2800 14th Ave. #14 (NW of Woodbine/Steeles) 905-475-7570</p>	<p>Etoicoke CompuMemories 3088 Bloor St.W. (1Block W. of Royal York Ave.) 416-232-2777</p>
---	--	---	---

AmPAQ Corporation Canada
Tel: 905 470 7666
Fax: 905 470 2184






*Intel, Intel 486, & the Intel Inside Logo are the trademarks of Intel Corporation. AmPAQ, CARTIER I & CARTIER II Multimedia are trademarks of AmPAQ Corporation. All other trademarks are the trademarks of their respective companies. Prices indicated in this advertisement are already 3% discounted based on payment by cash or equivalent. System configurations and prices are subject to change without prior notice. Dealers may sell for less.

Novell Gold Reseller Since 1988

Your complete network service provider

Novell Authorized Service Centre



Lotus Business Partner
(Notes Specialists)

Panasonic
Authorized Service Centre

Specializing in: Application
Development, Network Design,
Training, Maintenance and
Custom Programming

Also Authorized: AST & IBM PC Server,
NEC RISC Server, Compaq ProSignia/Proliant/
Systempro Servers and HP Laser Printers.

**AMNET 2000 INC. 3555 14TH AVE.,
UNIT 9, MARKHAM, ONT., L3R 0H5**
TEL: (905) 415-7272 FAX: (905) 415-7270

Digital Maps For Real Highways

BY MARTIN P. WATERMAN



Part of Map 'n'Go's Trip Planner

Products: Delorme Map 'n' Go
Microsoft Automap Road Atlas
Rand-McNally TripMaker
Price: All under \$60

route, I gravitated towards the Delorme product. The two market leaders are Rand-McNally with 47 percent of the market and Delorme with 20 percent of the market for road map software.

If you do much traveling, either for business or pleasure, there are three popular road map software packages that will help you efficiently and effectively plan and reach your destination. You may be thinking, "why not just go out and purchase a road atlas?"

You could, but you'd miss out on a rich source of information that could make your next trip more interesting and fun. The power of these programs is in the database and how they are able to quickly assemble mass amounts of travel and trip information.

All three programs are relatively inexpensive with street prices in the \$50 to \$60 range. All allow you to print maps and a travel itinerary. The Delorme and Rand-McNally titles come with full sized hard copy atlases too. Rand-McNally also throws in a book of coupons for travel discounts, although you probably won't use many of them since they are valid only in certain areas.

Each package has its strength. For printing, I liked the Rand-McNally program. For fast reference, Automap was my choice. To find attractions and stops along a travel

Delorme Map 'n' Go



Delorme seems to have bet heavily on the future of multimedia computing by offering its road map software only in CD-ROM format. Personally, I think this is a mistake, since many travelers like to take their notebook computers with them and few notebooks are equipped with CD-ROM drives. Perhaps Delorme should do some cross merchandising and offer a 50 percent off coupon on an external CD-ROM player to make up for their exuberance.

MULTIMEDIA CONNECTION

SUMMER CLEARANCE

200-300 TITLES

25% 30% 40% OFF

LOWEST PRICES!

MAC

- A.D.A.M. \$49
- BEGINNING READING \$49
- KID PIX STUDIO \$58
- ESPN: FULL SWING & PUTTING \$59
- PUTT PUTTS FUN PACK \$39
- REBEL ASSAULT \$69
- SAMMY'S SCIENCE HOUSE \$49
- WINGS OVER EUROPE \$49
- SPELLING BLIZZARD \$49
- WHERE IN THE WORLD CARMEN Jr. \$49

NEW PRODUCT ARRIVING WEEKLY

PC TITLES

- SPORT FISHING \$25
- GONE FISHING \$48
- CLASSICAL MUSIC \$22
- HARDBALL 4 \$47
- NBA LIVE 95 \$59
- BOB DYLAN: HIGHWAY 61 \$39
- HARD DAYS NIGHT \$28
- CYBERIA \$35
- DAY OF THE TENTICAL \$25
- REBEL ASSAULT \$35
- DETROIT \$19
- NASCAR RACING \$38
- FREE BSD 2.0 \$29
- EXPLORAPEDIA V 1.0 \$39
- CREATIVE WRITER \$49

DON'T MISS IT!

1000'S OF TITLES IN STOCK

MAC

- WORLD ALMANAC \$49
- LITTLE MONSTER AT SCHOOL \$49
- THE TORTOISE AND THE HARE \$49
- FREE CD-ROM BACK \$49
- WEEKEND HOME PROJECTS \$25
- DRAGONSLAR \$25
- PLAYBOY \$29
- ECSTASIA \$29
- Easy Cooking vol. 1 Chinese \$39
- Full Throttle \$56.99
- Body Works 4.0 \$29

WIN

Interac

Prices are already cash discounted. Prices, availability subject to change without notice. * See in-store for details. Shipping and Taxes Extra.

HOT PRICE !!
QUALITY GUARANTEE !!

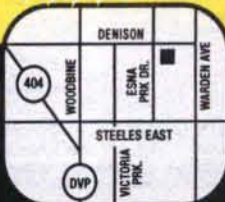
.Motherboard

.I/O Card .RAM

NETWORK CONSULTANT

GIVE US A CALL OR FAX RIGHT NOW
WHOLESALE ONLY

SYSTEMATIC ELECTRONICS INC.
160-3771 Jacombs Road, Richmond, B.C., Canada V6V 2L9
Tel: (604) 821-9938 Fax: (604) 821-9908



SUMMER COMPUTING

Ordinarily, I really would not harp about CD-ROM-only availability. However, Map 'n' Go contains so much useful information — 31,000 hotels, inns, campgrounds, restaurants and other points of interest throughout Canada, the U.S., Mexico and the Caribbean — that I want to have access to it all when I travel.

This wealth of information probably accounts for the program having become an instant best-seller with over 100,000 units sold within three months of introduction.

Delorme is also the king when it comes to road miles with over one million. That is almost double Microsoft Automap's mileage. On the other hand, Delorme covers only 50,000 cities and towns, compared to 125,000 for Rand-McNally and 120,000 for Automap.

Delorme gives you a wide choice of destinations and points of interest. For example, when the program is creating your map, you can tell it to include points of interest within 5, 10, 20 or even 50 miles of the proposed route.

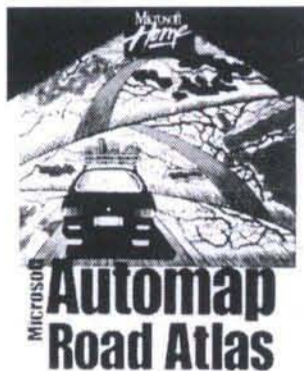
There is often narration that accompanies the points of interest, as well as photos. The program can even assemble a slide show of all the interesting sights along your proposed trip route. You can print your map and travel plans but I did not find this feature to be as good as Rand-McNally's output.

Retailing for about \$50, this program is one of the more useful CD-ROM titles available today. In addition to a CD-ROM capable computer, you will also need 4MB of RAM and 3MB of Hard Drive space. Delorme also makes a popular CD-ROM product called Street Atlas USA as well as other CD-ROM mapping titles for consumers and business.

Microsoft Automap Road Atlas

Automap Road Atlas sold over 300,000 copies before its recent incarnation as a Microsoft Home product, the result of Microsoft purchasing the program from NextBase Ltd. The good points about this product are its simplicity of use and two unique features. The first allows you to enter the cost of gasoline, the size of your gas tank and your mileage for city and highway driving. You set the speed of your journey and the program will calculate how much gas you will use and the associated cost. You can even tell the

program to remind you to fill up when there is only a certain amount of gas left and this is done by adding a gas pump icon along the route of your trip. Be conservative when using this feature since there may not always be a gas station at the place where you are supposed to fill up.



The program will also plot the time at which you should reach certain destinations based on your start and finish time and the chosen speed.

Automap Road Atlas contains 145,000 places in Canada, the United States and Northern Mexico. It contains several hundred thousand miles less of roads than Rand McNally, but it also covers a smaller area, including only Northern Mexico. As far as I could tell, they did not cut corners on their maps of Canada and the US when I compared the two. Automap also has short descriptions and facts about states, provinces and cities, which I found useful.

One of the new features for Automap allows the user to draw a box around certain areas they want to avoid when traveling. You can avoid construction areas, roads that are bad or particularly dangerous in the winter, or any area you would rather pass by. The program then compensates for your preferences and chooses an alternative route. Rand-McNally's TripMaker also allows you to avoid segments of road.

This program gives you a choice between CD-ROM and disks. For the CD-ROM version, Microsoft recommends a 256 color SVGA display although a VGA will suffice. You will need at least 3.5 MB of disk space with the recommended amount being 8MB. For diskettes, you will need between 6-8 MB of

With over 10 million calls to our service... isn't it time you joined CRS?

10 Million On-line Calls

Consider CRS Online's **BULLETIN BOARD SERVICE** and call for a free hour of access.

Through your subscription, discover:

- THOUSANDS OF FILES**
The latest shareware releases and the largest on-line software collection.
- 8,000 PUBLIC CONFERENCES & INTERNATIONAL E-MAIL**
Get information on thousands of topics from experts and hobbyists from around the world. Send messages person to person, around the world, for free.
- TOLL-FREE CALLING**
For most of South-Central Ontario.
- FLAT ANNUAL FEE**
Subscribers get 2 hours and 2 megabytes every day.
- SAME DAY SIGN-UP**
Monday to Friday, sign up over the phone and be on-line by 6 pm the same day.
- FREE TECHNICAL HELP**
Phone support, free seminars, and on-line help from CRS and thousands of computer users and companies.
- NEWS & INFORMATION SERVICES**
Direct news feeds from Reuters/UPI and stock results from 12 exchanges are low cost extras.

ONLY: \$59.95 for a 3-month trial subscription
\$129.95 for your first year, or just \$12.95 per month
(monthly subscriptions are for a minimum of 12 months)

INTERNET access with every subscription

- your own Internet E-mail address (e.g. joe.wired@canrem.com)
- USENET newsgroups
- Internet Ping and Finger

FTP/Telnet/Gopher
(extra to the personal subscription)
\$40 for 25 mb of FTP and/or 25 hours of Telnet/Gopher

60 MINUTES of FREE ACCESS

USE YOUR MODEM TO CALL
(416) 213-6002 OR 213-6003

For those outside Toronto, call the office to get the free access number for your area.

START GETTING THE MOST OUT OF YOUR MODEM. CALL AND SIGN UP TODAY: (416) 213-6000

Even if you haven't bought your modem yet, call CRS Online and get your free information package.

CRS ONLINE Ltd.

12 Steiny Blvd., Unit 24, Etobicoke, ON M9W 6M5 • Phone (416) 213-6000 • Toll free: 1-800-563-2529

On Board Systems Inc.

3838 Midland Ave., #106, Scarborough, Ontario, Canada. M1V 5K5
Tel: (416) 321-3111 Fax: (416) 321-3104

NETWORKING SOLUTIONS

* Novell * - * Lantastic * - * Windows Workgroups *

- FREE ON-SITE ESTIMATION
- CERTIFIED NETWORK-SUPPORT STAFFS
- NETWORK SERVICE CONTRACT
- CUSTOMIZED NETWORK SOLUTIONS
- END-USER NETWORK TRAINING
- * ADVANCE SERVER SYSTEM AVAILABLE * FOR MAXIMUM DATA PROTECTION

Services	Novell	Microsoft NT	IBMLAN
	NETWARE 4	Server 3.5	Server 4.0
1 Directory	YES	No	No
2 Integrated Messaging	YES	No	No
3 Multiprotocol Routing	YES	No	No
4 Network Management	YES	Limited	Limited
5 Security	YES	Limited	Limited
6 File	YES	YES	YES
7 Print	YES	YES	YES

Novell Netware 3.12 / 4.1 5-user Package

1 FILE SERVER - INTEL 486/DX2/66 - 16 MB RAM, 1.44 MB FD - SCSI 1 GB Hard Disk - Full Tower Case W/250W PS - Mono VGA Monitor *** 9-Ports Hub Included ***	+	4 WORKSTATIONS - INTEL VLB 486/DX2/66 - 8 MB RAM, 1.44 MB FD - 420 MB HD - 14".28 NI SVGA Color Monitor - Dos, Windows, Mouse.	=	\$ 11,499. or \$ 300./mth*
---	---	--	---	--

*Base on 66 mth leasing & credit approved.

Novell Certified NetWare Engineer **Novell Authorized Reseller**

AST **IBM** **NEC**

AUTHORIZED DEALER

hard drive space depending on which features you want to load. Automap Road Atlas also contains 1,600 articles and the CD-ROM version has an additional 1,100 color photographs.

Automap is also available for Macintosh computers, System 7 or later with 4MB of RAM. For business use, there is also Microsoft Automap Pro that carries a suggested retail of \$139. This product is designed to manage sales, customer support and business travel and includes a professional database.

Rand McNally TripMaker



The first thing I liked about Rand McNally is that they give you the choice between CD-ROM or disks. I actually loaded the software on a notebook computer in order to run "what if" and actual vacation and business travel scenarios.

TripMaker has a rich database (640,900 miles of road and 125,000 cities and towns) and it prints out a trip log (based on your input) showing you which exits to take, distances, and attractions along the route.

The complete installation from disk takes a minimum of 11 MB of hard disk space and

if you want to install all the databases, you will need 15MB. The CD-ROM version requires 1MB of hard disk space and a double-speed CD-ROM drive.

While using the three road map software packages, I found myself continually turning to the the Rand-McNally product. I was surprised that its maps even looked good when printed out to a dot-matrix printer.

Some of the features of TripMaker include 88 pre-planned scenic tours developed by Rand McNally's travel experts, budget estimates for hotels, gas, meals and entertainment, and reference information on border crossings, toll roads, and toll free phone numbers for airlines, car rentals and hotels.

Rand McNally was founded in 1856 and is the world's largest commercial map maker. They are credited with developing the first nationwide road numbering system in the US.

TripMaker is designed for a family or individual planning a vacation that includes auto travel in Canada, the United States and Mexico. The secondary market is for the business auto traveler. If you are using Automap, Expert TravelPlanner, AAA Trip Planner or Delorme's Map 'n' Go, you can get a competitive upgrade for about \$40.

Expert TravelPlanner and AAA Trip Planner, by the way, are a cut below the three covered in this review. Expert TravelPlanner Gold Edition by Expert Software is approximately \$10 less than the others, but is a much inferior product.

Another CD-ROM program, AAA Trip Planner from Compton's New Media sells for about \$40 dollars but does not give you a choice among the shortest, quickest and most scenic routes and, therefore, lacks the versatility of the three programs reviewed. The AAA product, however, does print the best looking maps — but be prepared to wait, since printing a highly detailed map takes a long time. Other disadvantages of the AAA Trip Planner are that it does not include maps of Canada (or Mexico) and is sparse on other features. There are a few other products but they are really not worth mentioning.

Conclusion

Automap and Map 'n' Go use government maps while Rand-McNally uses its own proprietary ones. Both Rand-McNally and Map 'n' Go are cross indexed with their road atlases. All three programs have comprehensive on-line help. In addition they all allow you to select the quickest and shortest route. However, Rand-McNally is the only one that allows you to choose the most scenic route. This is a very important feature since the majority of road map software users (estimated at 75-80 percent) are vacationers. □

Contacts:

Delorme Mapping
P. O. Box 298, Main Street
Freeport, Maine 04032
Phone 1-207-865-1234
1-800-452-5931

Microsoft Canada, Inc.
320 Matheson Blvd., West
Mississauga, Ontario L5R 3R1
Phone: 905-568-0434

Rand-McNally New Media
8255 North Central Park Ave.
Skokie, Illinois 60076-2970
Phone 1-800-333-0136
708-329-8100

PC Shop

All the information you need in

Black & White

Intel Pentium

- Pentium PCI Motherboard w/ 256KB Cache
- SVGA PCI Local Bus Video Accelerator w/ 1MB RAM
- PCI Local Bus IDE I/O Controller

Plus All Standard Features

- 75MHz\$1735
- 90MHz\$1875
- 100MHz\$2045

Intel 486

- 486 VESA Local Bus Motherboard w/ 128KB Cache
- SVGA VESA Local Bus Video Accelerator w/ 1MB RAM
- VESA Local Bus IDE I/O Controller

Plus All Standard Features

- DX2-66.....\$1320
- DX4-100.....\$1430

AmPAQ Authorized Dealer



*Intel, Intel 486, Intel Pentium & the Intel Inside Logo are the trademarks of Intel Corporation. AmPAQ is a trademark of AmPAQ Corporation. All other trademarks are the trademarks of their respective companies. Prices indicated in this advertisement are already 3% discounted based on payment by cash or equivalent. System configurations and prices are subject to change without prior notice. Use of the EPA Energy Star logo does not represent endorsement of any product or service.

319 College Street, Toronto
(Between Spadina & Bathurst)

Tel: (416) 960-2010
Fax: (416) 960-6231

Standard Features:

- True Green EPA "Energy Star" Compliant Local Bus Motherboard • "Energy Star" SVGA Color Monitor, .28, 1024 x 768 • 4MB 70ns Fast RAM, 72-Pin • 420MB Fixed Disk Drive • 1.44MB Floppy Disk Drive • Pro-Series Mini-Tower Chassis with Digital Display • Enhanced 101-Key Keyboard & 3-Button Ergonomic Mouse w/ Pad • Microsoft DOS 6.22 with Manual, License, Diskettes

Upgrade to 15" Monitor

Energy Star, MPRII,
NI, .28, 1280 x 1024\$139

Upgrade to 8MB of RAM\$198

14,400 Internal Fax/Modem\$75

MultiMedia Bundle

Panasonic 2x CD-ROM
Creative Labs 16-Bit Soundcard
Shielded Stereo Speakers\$239

**We Also Sell AmPAQ™
Notebooks & Desktops**
Please call for details.

The Canadian File

BY GRANT BUCKLER

Apple Weaves A Web

Apple Canada Inc. and WorldLinx Telecommunications Inc. have joined forces to offer the Apple Internet Server Solution for the World Wide Web in Canada. The package combines an Apple Workgroup Server, using PowerPC technology, with Toronto-based WorldLinx's national Internet Access Service.

At the moment the package is being offered only in Canada, a spokesman for Apple said. Authorized Apple Canada dealers — those that choose to participate — will sell it, he added. The WorldLinx Internet Access Service is also available separately as well as with the Apple server package.

The package will come with an Apple Workgroup Server and all the software needed to set the server up as a World Wide Web site. For a flat monthly fee, customers will be able to use WorldLinx's Canada-wide Internet Access Service to make the Web site available to Internet users. The fee covers unlimited network usage, and access is available from nodes in 23 Canadian cities, officials said.

Contact: WorldLinx, 416-350-1000 or 800-263-9673; Internet World Wide Web <http://www.worldlinx.com>

Can You Spell Big?

The worldwide recovery of IBM is reflected in its Canadian subsidiary's move from 16th to 13th in *Canadian Business* magazine's ranking of Canadian companies by sales this year.

But Northern Telecom Ltd. of Mississauga, ON, topped IBM Canada Ltd. of nearby Markham, remaining in sixth place despite losing money in 1994, and helping propel its parent company, Montreal-based BCE Inc., to second in the magazine's rankings by 1994 sales.

In a related ranking by over-all three-year growth, Ottawa software developer Corel Corp ranked fourth, though its 1994 sales of \$224.7 million placed it 446th in the over-all ranking — a jump of 50 notches from last year, when Corel edged onto the top 500 listing in 496th place.

Internet From Your Cable Supplier

Three major Canadian cable-television companies have announced joint plans to offer computer access to the Internet and other online services via cable modems connected to their networks. Rogers Cablesystems, Ltd., Shaw Communications Inc. and Le Groupe Videotron Ltee. announced their plans during the Canadian Cable Television Association's annual convention.

Together, the three cable operators serve about 65 percent of all homes connected to cable, said David Masotti, vice-president of business development at Rogers Cablesystems in Toronto. He added that the initial partners hope to involve other Canadian cable-TV operators later. Canada has one of the world's highest cabletelevision penetration rates.

The new service will let computer users turn to cable modems which, by taking advantage of the broadband cable network's greater bandwidth, can move data as much as 1,000 times as fast as today's fastest tele-

phone modems. Several manufacturers already sell cable modems, but a key roadblock to their use has been the lack of support by cable-television operators.

Rogers, Videotron, and Shaw hope to launch their service early in 1996.

Educators Seek Phone Relief

Canadian telephone companies should be allowed to offer a new category of services for educational institutions, says a report prepared by a group of educators and telephone company representatives. According

to the report, lumping schools, colleges, and universities in with businesses threatens their ability to take advantage of new telecom technology.

Continued on page 53

Quanta

Complete Macintosh LC 475 4/250 System

\$995

While Supplies Last

Your Macintosh Value Centre

Government NMSO and Corporate PO's welcome.



Macintosh LC475 with Daewoo 14" Display, Apple Design keyboard and mouse, and Claris Works 2.1. (Word Processor, Spreadsheet, Drawing, and Communications software).

Buy Bundles and Save!

Mass Storage

Hard Drives (SCSI)	
Quantum LPS 540 MB	\$375
Seagate Hawk 31230N 1000 MB	\$795
Seagate Hawk 32550N 2100 MB	\$1495
Seagate Hawk 15320N 4100 MB	\$1795
Seagate Hawk 410800N 9000 MB	\$4325
Removable Storage	
Iomega 100MB ZIP Drive	\$305
Iomega 100MB ZIP Cartridge	\$35
SyQuest External 5.25" 88 MB	\$665
SyQuest 88MB Cartridge	\$99
SyQuest External 3.5" 195 MB	\$620
SyQuest 195 MB Cartridge	\$79
SyQuest External 3.5" 270 MB	\$875
SyQuest 270 MB Cartridge	\$109

Monitors

Apple 14" Plus Display	\$395
Apple MultipleScan 15"	\$585
Apple MultipleScan 17"	\$1375
Apple MultipleScan 20"	\$2895
Daewoo CMC 1424S 14"	\$295
Daewoo CMC 1502B 15"	\$475
Daewoo CMC 1701 17"	\$895
MAG DX17F 17"	\$995
Radius SM17XL 17"	\$1135
Radius SM20Plus 20"	\$2135
Radius TPD/216S 21" Grayscale	\$1375

Graphics Cards

Radius Photo Engine	\$1185
Radius Thunder/246f	\$1895
Radius Thunder IV GX 1152	\$2695
Radius Thunder IV GX 1360	\$3225
Radius Thunder IV GX 1600	\$3945

Newton

Newton Message Pad 120	\$995
------------------------	-------

LC 475 & 630

LC475 4/250	\$595
LC630 4/250	\$1095
LC630 8/250	\$1245
LC630 8/350/CD	\$1725

Upgrades

LC Accessories (for LC575 & 630)	
Macintosh PowerPC 601 Card	\$1135
Apple Video System	\$210
Apple Video/TV System	\$340
Apple Presentation System	\$420
Apple Express Modem Card	\$325
PowerMac Accessories	
DOS 486DX2/66 Card for 6100	\$975
PowerMac AV Expansion Card	\$645
PowerMac 256k Cache Card	\$240
PowerMac GeoPort Telecom Card	\$170
Miscellaneous Accessories:	
Connectix QuickCam	\$150
DayStar FastCache 040 128k (070069x0)	\$215
DayStar PowerCache 030/50MHz	\$545
DayStar Turbo 040/33MHz w/128k cache	\$965
DayStar PowerCard 601	\$1025
DayStar PowerPC 601/66MHz 256k	\$1545
DayStar PowerPC 601/100MHz 256k	\$2635
Kensington Thinking Mouse	\$149
Logitech Mouseman	\$95
Mac Mousestick	\$65
Practical Peripherals 28.8 fax/modem	\$349
Serial Port Juggler	\$135
Targus PowerBook Handbag	\$79

PowerMacs

6100/66 8/350/256k cache	\$1995
6100/66 8/350/CD/256k cache	\$2375
6100/66 16/500/256k w/486DX2-66	\$3045
6100/66av 16/500/CD/256k cache	\$3265
7100/80 8/500 256k cache	\$3975
7100/80 8/700/CD/256k cache	\$4415
7100/80av 16/700/CD/256k cache	\$5175
8100/100av 16/700/CD/256k cache	\$6135
8100/100 16/1000/CD/256k cache	\$6245
8100/110 16/2000/CD/256k cache	\$7555

We have thousands of additional products available. Please call if you are interested in a product that is not listed in this advertisement or for the most up-to-date pricing.

PowerPC

PowerBooks

PowerBook 150 4/120	\$1495
PowerBook 150 4/250	\$1895
PBook Duo 230 4/160 w/XP modem	\$2525
PBook Duo 280c 12/320 w/XP modem	\$5495
Macintosh Duo 1.44MB Ext Floppy Drive	\$270
Macintosh Duo MiniDock	\$420
Macintosh Duo Dock II	\$1395
PowerBook 520 4/240	\$2695
PowerBook 520C 4/160	\$3295
PowerBook 520C 12/320 w/faxmodem	\$4475
PowerBook 540C 4/320	\$5795
PowerBook 540C 12/500 w/faxmodem	\$7135

Printers

Apple Stylewriter II	\$369
Apple Colour Stylewriter 2400	\$535
Apple Personal Laserwriter 320	\$930
Apple Laserwriter Select 360	\$2125
Epson Stylus Colour Inkjet	\$745
HP Laserjet 4ML	\$1485
HP Laserjet 5M?	\$1595
HP Laserjet 4M Plus	\$2995
TI MicroWriter PS2J	\$975
TI MicroWriter Pro PS23	\$1845

Software

Adobe Illustrator 5.5	\$545
Adobe Photoshop 3.0	\$799
Adobe Premiere 4.0	\$750
Aldus Pagemaker 5.0	\$849
Claris Filemaker Pro 2.1 (upg)	\$140
Claris Works 3.0	\$179
Connectix Ram Doubler	\$85
Conflict Catcher 3	\$95
Fractal Design Painter 3.0	\$469
Fractal Design Sketcher	\$79
Kai's Power Tools 2.0	\$159
KPT Bryce 1.0	\$149
Insignia Soft Windows	\$450
MacroMedia Director 4.0	\$1235
Microsoft Encarta	\$119
Microsoft Office 4.2 (upg)	\$379
Microsoft Word 6.0	\$395
Microsoft Excel 5.0	\$395
MYST CD-ROM	\$79
Norton Utilities 3.1	\$135
QuarkXpress 3.3	\$995
Quicken 4.0	\$65
WordPerfect 3.1	\$99

Hundreds more titles in Stock!

To Order, Call Now.

1-800-450-3466

Int'l: 1-613-563-8170 tel 1-613-563-8045 fax
Monday - Friday 9AM-6PM, Saturday 10AM-4PM (ET)

Quanta

COMPUTER

A Division of Nu-Infotek Systems Inc.

Putting you ahead of the times.™

Apple Authorized Premier Partner

Quanta Computer, 280-55 Metcalfe Street, Ottawa ON, K1P 6L5

Quanta Computer and the "Putting you ahead of the times." are trademarks of Nu-Infotek Systems Inc. All brand names and product names are trademarks or registered trademarks of their respective companies. Quanta Computer prices and offerings are subject to change without notice. Shipping and handling charges are extra. 15% Restocking fee on returned merchandise. *Upgrade price, may require trade in or proof of purchase from prior version. All prices cash discounted 3%. Copyright © 1995 Quanta Computer. All rights reserved.

EasyPhoto Brings Photo Scanning Home

BY KEITH SCHENGILI-ROBERTS

EasyPhoto/EasyPhoto Reader

Manufacturer: Storm Software

System Requirements: Microsoft Windows 3.1 or later, 486 processor or higher, VGA Monitor (256 colors), 8 MB RAM, CD-ROM drive, 13 MB free hard disk space

S.R.P.: \$99

As the technology improves, people are beginning to expect presentations that look more professional — even if it is just a flyer, school report or a notice for a local garage sale. This sort of thing wouldn't have been possible even a couple of years ago, but with the advent of CD-ROM drives and multimedia PCs, it is now possible for families to have the sort of processing power and image manipulation software once reserved for the art departments of large corporations.

Whole lines of software are being developed by major software companies to meet the demands of the Home Office, which is increasingly becoming a mature and demanding market. Storm Software's EasyPhoto is among the first to bring photography to the PC to the home.

EasyPhoto is exactly what its name would suggest: a simple and easy way to use photos on your PC. Designed with family use very much in mind, the interface is extremely easy to use, and provides a convenient means of organizing and storing your

images. One thing that sets EasyPhoto apart from other, more high-end photo manipulation software is a sense of scale — its functions have been limited to the most useful and most often used. The program is not exactly "feature-rich," but makes up for this by doing a lot of the work for you.

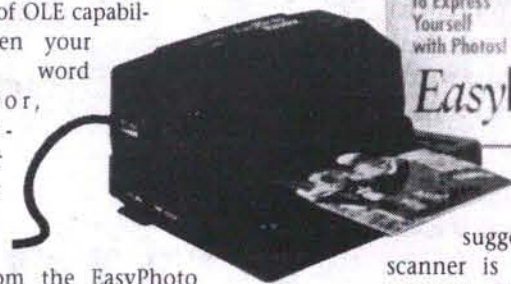
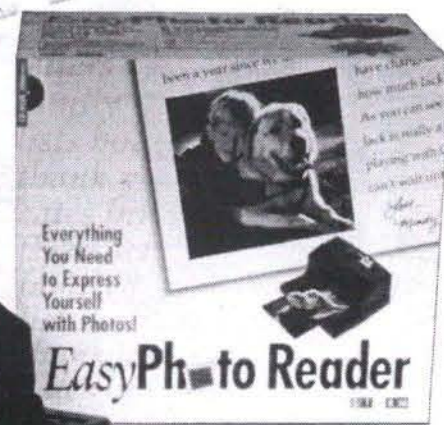
When you start EasyPhoto you are prompted to select a image source. There are four different ways to import images to use with the program. You can choose from over 450 stock photos contained on the EasyPhoto CD-ROM, ranging from cheesy postcards to photo clip art, and images of famous places from around the world. EasyPhoto is also able to read Kodak Photo images you can have processed onto CD-ROM or diskette. If you have an electronic camera (like the Logitech PhotoMan) you can plug your camera to your PC and download the images to your PC. Or you can use Storm's own EasyPhoto Reader, a small scanner specifically designed for scanning photos.

When you've chosen a source, you choose the photo you want, and the program places the image in a gallery of pictures that you can use immediately. It displays a thumbnail of the image so you always know what you are working with and, by double-clicking on it, it expands to full size along with a range of tools. It does not have all of the tools included in high-

end packages, but it does have the basics, and that's all that the people this is aimed at will want to use anyway. EasyPhoto lets you resize, rotate and crop your pictures, adjust their color and exposure, and comes with a handy tool to electronically remove "scratches" from your pictures.

But most of the work in designing this package has gone into its seamless adoption of OLE capabilities. Open your favorite word processor, spreadsheet or other program, click on a photo from the EasyPhoto gallery, then drag and drop it onto your other program. You can then resize the picture from within your other program, and print out the final result. This is an ideal arrangement for most users, and makes EasyPhoto a powerful tool for adding pictures into your documents.

EasyPhoto tries to make it very easy to make your documents personal. Included in the literature that comes with the package are information and a deal to get your favorite photos transferred onto Photo CD, so that you can then make your own personal photo galleries within the program.



The other option is to buy the EasyPhoto Reader for the suggested retail price of \$480. The scanner is designed specifically to scan photos, and provides crisp color scans at 400 dots per inch. The scanner plugs into the back of your printer port, and its adaptor has a pass-through feature to allow you to keep printing while having the scanner attached to your computer. The scanner automatically feeds the image through, so you do not have to worry about uneven and jagged scans of your pictures. For images too big to be fed through the scanner, you can detach it from its base and use it as a hand-scanner whose mechanism will draw itself across an image. The price is steep, but the results are excellent, and you can expect to find it available for a much lower street price. The alternative is investing in a color scanner which will cost several times as much as the EasyPhoto Reader.

If you are building a World Wide Web site, the EasyPhoto Scanner will likely fit your scanning needs. Most images used on the Web are generally no bigger than the size of a photograph, and you can feed pictures, clip art and other image sources into the scanner for processing. The compact scanner works with the most common image formats (JPEG, TIFF, BMP and Photo CD), and you can insert scanned JPEG images directly into your Web pages.

In what may be an emerging trend in software, there is no print manual provided with this product. A brief guide is provided with the program, but the rest of the help is provided on-line. This is useful when you are learning and using the program, but has the potential to leave users high-and-dry if the program refuses to work properly. Thankfully much of the package is pretty much fool-proof, and this reviewer had no problem using the software.

As with any photo-manipulation software, the faster the processor and the more memory your computer has, the faster your computer will work with the software — and the happier you will be in the long run.

EasyPhoto is an excellent image manipulation program for the home user. It has the ability to manipulate photos in a simple and effective way that is ideal for home use. EasyPhoto lives up to its name as easy-to-use photo software that allows people to organize and use their images in a powerful, yet simple software package. □

Contact: Storm Software 1-800-275-5734 or World Wide Web: <http://www.stormsoft.com/storm/>

Selecting Professional Advisors

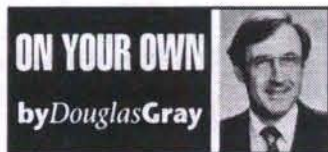
Professional advisors — a lawyer or accountant, for example — are essential to your small business health and success. They can provide knowledge and expertise in areas in which you have little experience. They will also round out your management so that your business is operating most efficiently, with minimal risks and good, sound information.

It is important to recognize when it is necessary to call an expert. Because of the costs associated with hiring a lawyer or accountant, some business owners are inclined to try the do-it-yourself approach. This can be a shortsighted decision and detrimental to your business. For instance, the person who processes his or her own income tax return rather than hiring a tax accountant may miss out on small business tax exemptions that could save much more than the cost of the accountant's time. Or a person who signs a lease or a contract without having it reviewed beforehand by a lawyer may regret it for many years to come.

Make A List, Check It Out

There are many factors to consider and questions to ask when selecting advisors. It is helpful to prepare a list of such questions and pose these to each of the prospective advisors. Put them in writing and prioritize them. You want to control the agenda. Here are the key selection criteria to consider.

• **Qualifications:** Before you entrust an advisor with your work, you will want to know that he or she has the appropriate qualifications. In the case of an accountant, you want to make sure they have a professional



designation such as C.A. (Chartered Accountant) or C.G.A. (Certified General Accountant).

• **Experience and Confidence:** Such factors as the degree of expertise, the number of years of experience as an advisor, and the percentage of time spent practicing in that area are critically important. The amount of reliance and confidence you are going to place on their advice and insights is obviously related to the degree of experience they have in the area. If you can find an advisor with specific expertise in your type of business, so much the better. Ask business associates and your trade or professional association for referrals.

• **Compatible Personality:** If you are going to have an ongoing relationship with the advisor, it is important that you feel comfortable with the advisor's style of communication, attitude, approach, candor, and commitment to your business success. A healthy respect and rapport will put you more at ease when discussing business matters and thereby enhance your further understanding. If you don't feel good chemistry, do not use the advisor, as you will resist communicating with them.

• **Fees:** It is important to feel comfortable with the fee being charged, and the payment

terms. For instance, if you need a good tax accountant to advise you on minimizing taxes, you may have to pay a high hourly rate for the quality of advice that will save you several thousands of dollars. On the other hand, if what you require is the preparation of annual financial statements, perhaps a junior accountant or bookkeeper can do the job competently at a more affordable rate. Always ask about cost estimates in advance. You do not want surprises.

• **Comparison:** Most initial consultations are free. It is a good rule of thumb to see a minimum of three advisors before deciding which advisor is right for you. It will also accelerate your learning curve and self-confidence. The more exacting you are in your selection criteria, the more likely it will be that a good match is made, and the more beneficial that advisor will be to your business.

Remember to be very selective during your screening. The right choice will enhance your prospects for profit and growth; the wrong one will cost you time, money and stress. If you are having second thoughts about an advisor, don't procrastinate. Promptly select a more suitable one.

Douglas Gray, LL.B., is a Vancouver-based speaker, retired lawyer, columnist and author of 14 business books plus a real estate investment software program. His books include *Home Inc.: The Canadian Home-based Business Guide* and *The Complete Canadian Small Business Guide* (both by McGraw-Hill Ryerson), and *Start and Run a Profitable Consulting Business* and *Marketing Your Product* (both by Self-Counsel Press).

NOBODY BEATS FUTURE SHOP®

**ON COMPUTERS, FAX,
CELLULAR PHONES, PRINTERS,
SOFTWARE, ACCESSORIES AND
MORE... WE GUARANTEE IT!**

**WE WILL BEAT ANY OTHER AUTHORIZED DEALERS
ADVERTISED PRICE BY 55% OF THE DIFFERENCE OR
IT'S YOURS **FREE!****

SEE IN-STORE FOR COMPLETE DETAILS

FUTURE SHOP®
DISCOUNT SUPERCENTERS

We accept out-of-town
phone orders.
Call your nearest Future Shop
for details.



Canadian Business Automation Inc.

5172 Dundas Street West, at Kipling Tel: (416) 237-0363
(CBA, Clearance Centre) 10 Strada Road, unit 6. Tel: (905) 850-3769
Toll free: 1-800-699-2683

COMPLETE SYSTEMS

486DX2 66 INT.	\$1295.00	OR	53.00/M
486DX2 80 AMD	\$1275.00	OR	53.00/M
486DX4 100 INT.	\$1395.00	OR	57.00/M
486DX4 100 AMD	\$1335.00	OR	55.00/M
PENTIUM 66MHZ	\$1655.00	OR	68.00/M
PENTIUM 75MHZ	\$1695.00	OR	70.00/M
PENTIUM 90MHZ	\$1795.00	OR	74.00/M
PENTIUM 100MHZ	\$1995.00	OR	82.00/M
PENTIUM 120MHZ	\$2745.00	OR	113.00/M



MULTIMEDIA

SONY 2X CD ROM DRV IDE	\$155.00
ZOLTRIX TRUE16BIT S.CARD	\$ 85.00
AP1600 SB PRO COMP S. C.	\$ 45.00
SOUND BLASTER 16 VALUE	\$ 99.00
MICROSOFT MULTIMEDIA 4X	\$395.00
MICROSOFT MULTIMEDIA 2X	\$245.00
TOSHIBA 4X CD ROM DRV.	\$249.00
NEC 4X CD ROM DRV	\$279.00
CD TITLES. MOST POPULAR	SCALL

STANDARD FEATURES

IDE Cont. VL-Bus, 2s, 1p, 1g.
4MB RAM, VL-Bus Video 1MB
3.5" 1.44MB FDD, 540MB HDD
SVGA Colour Monitor 0.28dp NI
Mini Tower Case 220W P/S
Keyboard, Mouse

NOTEBOOKS

IBM THINKPAD 360CSE DUAL 486DX2/50 4RAM 340HDD	\$3569.00
IBM THINKPAD 360CSE DUAL 486DX2/50 4RAM 540HDD	\$4349.00
IBM THINKPAD 500 MONO 486SLC2/50 4RAM 170HDD	\$1849.00
IBM THINKPAD 755CE ACTIVE 486DX4/100 8RAM 540HDD	\$7349.00
IBM THINKPAD 701 PASSIVE 486DX2/50 4RAM 360HDD	\$5449.00
MAGITRONIC MONO DX2/66 4RAM 260HDD 16BIT SOUND	\$1979.00
MAGITRONIC DUAL S. DX4/75 8RAM 340HDD 16BIT SND	\$2999.00
MAGITRONIC DUAL S. DX4/100 8RAM 520HDD 16BIT SND	\$3349.00

TRADE IN SPECIAL

THIS MONTH ALL HARD DRIVES 40 TO 420, TRADE AT 0.50 PER MB. SIMM MEMORY TRADE AT 40.00 PER MB. AGAINST THE PURCHASE OF LARGER SIZE MODEL.

HARD DRIVES

530MB FUJITSU	\$249.00
545MB SEAGATE	\$249.00
560MB SAMSUNG	\$239.00
730MB QUANTUM	\$325.00
850MB MAXTOR	\$345.00
1.05MB IBM	\$445.00
1.08MB SEAGATE	\$505.00
1.2MB MAXTOR	\$475.00
1.2MB CONNER	\$515.00

MOTHERBOARDS

486SX 33MHZ(CYRIX)	\$205.00
486SX 33MHZ(INTEL)	\$225.00
486SX 40MHZ(UMC)	\$205.00
486DX 33MHZ(INTEL)	\$275.00
486DX2 66MHZ(AMD)	\$275.00
486DX2 66MHZ(IBM)	\$245.00
486DX2 66MHZ(INTEL)	\$335.00
486DX2 80MHZ(AMD)	\$295.00
486DX4 100MHZ(INTEL)	\$445.00
486DX4 100MHZ(AMD)	\$375.00
PENTIUM 66MHZ	\$645.00
PENTIUM 75MHZ	\$745.00
PENTIUM 90MHZ	\$895.00
PENTIUM 100MHZ	\$1095.00
PENTIUM 120MHZ	\$1695.00



PRINTERS

RAVEN RP9100 9PIN 192CPS	\$195.00
RAVEN RP2405 24PIN 192CPS	\$235.00
RAVEN RP2406 COLOR CAP.	\$295.00
RAVEN LP410 LASER 4PPM	\$485.00
RAVEN LP470PS POSTSCRIPT	\$685.00
CANNON BJ100 INKJET	\$295.00
CANNON BJC4000 INKJ. COL.	\$485.00

FREE SOMETHING

FREE INSTALLATION ALL SYSTEM UPGRADES FROM JUNE 5 TO 10

FREE SPEAKER WITH EVERY SOUND CARD PURCHASED JULY 02 TO JULY 22

FREE ENCARTA 95 W. EVERY MULTIMEDIA SYSTEM PURCHASED JULY 10 TO 15

VIDEO CARDS

TRIDENT 9000 ISA 512K \$	54.00
TRIDENT 8900D ISA 1MB	\$ 85.00
TRIDENT 9440 VL-B 1MB	\$ 99.00
TRIDENT 9440 PCI B 1MB	\$119.00
C. LOGIC 5422 ISA 1MB	\$ 87.00
C. LOGIC5424 VL-B 1MB	\$ 95.00
C. LOGIC 5429 VL-B 1MB	\$102.00
S3 805 VL-BUS 1MB	\$105.00
ATI MACH32D 1MB	\$145.00
ATI MACH32V 2MB	\$219.00
ATI MACH32V 2MB	\$329.00
ATI MACH64D 2MB	\$259.00
ATI MACH64V 2MB	\$385.00

KEYBOARD/MOUSE

MITSUMI 101 KEYS	\$21.00
HONEYWELL 101KEYS	\$39.00
KEYTRONIC 101KEYS	\$45.00
MICROSOFT "J" MOUSE	\$43.00
LOGITEK ERG. MOUSE	\$39.00

GVC Fax/Modem

14.4 KBPS Int. S/R	\$ 99.00
14.4 KBPS Ext. S/R	\$139.00
14.4 KBPS Int. w/voice	\$135.00
14.4 KBPS Ext. w/voice	\$155.00
28.8 KBPS INT V34	\$259.00
28.8 KBPS EXT V34	\$285.00

MONITORS

14" SVGA 0.39DP IN	\$235.00
14" SVGA 0.28DP IN	\$275.00
14" SVGA 0.28DP NI	\$295.00
15" FLAT SCRIN DIG	\$435.00
17" FLAT SCRIN DIG.	\$785.00

ZOLTRIX Fax/Modem

14.4KBPS Int S/R	\$ 69.00
14.4 KBPS Ext. S/R	\$119.00
14.4 KBPS Int. w/voice	\$ 95.00
28.8 KBPS Int. S/R VF	\$135.00
28.8 KBPS Ext. S/R	\$235.00
28.8 KBPS INT V34	\$195.00

JUNE 24 SPECIAL

PENTIUM 75MHZ CPU AND COOLER ON A P75/90/100 MOTHERBOARD SIS CHIPSET, INTEGRATED ENH IDE AND 2 16550 H/S SERIAL \$649.00

JULY 1 SPECIAL

MAXTOR 1.2 GB HARD DRIVE ENHANCED IDE 10MS ACCESS TIME 128K BUFFER \$449.00

JULY 08 SPECIAL

TOSHIBA QUAD SPEED CD-ROM DRIVE 150MS 600KB/SEC TRANSFER RATE SOUND BLASTER 16 VALUE SOUND CARD/SPEAKERS \$339.00

EXTREME POWER PCI

Intel Pentium 100 MHz Processor Acer Pentium Board w/Enh IDE I/O ISA PCI, 4PCI local bus slots 8MB RAM, 256K cache 1MB PCI SVGA Video 64 Bits 1GB IDE high speed hard drive 3.5" 1.44MB floppy drive 14.4 Voice / Fax /Modem Ext tower case w/230watts P/S Microsoft "J" Mouse & pad Mitsumi 101keys Enh Keyboard QUAD SPEED CD-ROM drive SB Value 16 bitsound card 40Watts stereo speaker set 15" L/R 0.28DP dig. SVGA Mon. MS DOS 6.22 & Windows 3.1 Microsoft Home bundle, 4 Titles \$ 3,249 or pay \$134/month

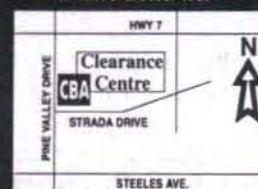
ULTIMATE CONFORT PCI

Intel Pentium 75 MHz Processor Acer Pentium Board w/Enh IDE I/O ISA PCI, 4PCI local bus slots 8MB RAM, 256K cache 1MB PCI SVGA Video 64 Bits 560MB IDE high speed hard drive 3.5" 1.44MB floppy drive 14.4 Voice / Fax /Modem Ext tower case w/230watts P/S Microsoft "J" Mouse & pad Mitsumi 101keys Enh Keyboard QUAD SPEED CD-ROM drive SB Value 16 bitsound card 40Watts stereo speaker set 15" L/R 0.28DP dig. SVGA Mon. MS DOS 6.22 & Windows 3.1 Microsoft Home bundle, 4 Titles \$ 2,679 or pay \$110/month

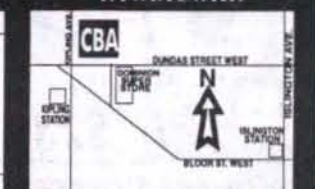
AFFORDABILITY PLUS

AMD 486 dx4-100MHz Processor 486 green Board w/AMI Win BIOS ISA VL-bus, 3vessa local bus slots 8MB RAM, 128K cache 1MB VL-bus SVGA Video 32 Bits 560MB IDE high speed hard drive 3.5" 1.44MB floppy drive 14.4 Voice / Fax /Modem Ext tower case w/230watts P/S Microsoft comp. Mouse & pad Mitsumi 101keys Enh Keyboard Sony 55E 2X CD-ROM drive Zoltrix true 16 bits sound card 30Watts stereo speaker set 14" 0.28DP SVGA Mon.NI MS DOS 6.22 & Windows 3.1 Microsoft Home bundle, 4 Titles \$ 1,995 or pay \$82/month

WOODBRIIDGE



ETOBICOKE



SUMMER COMPUTING

Deck Building Software

BY MARTIN P. WATERMAN

Products

Title: 3D Deck
From: Books That Work

Title: Home Series Deck
From: Autodesk

easily.

I encountered another limitation during a deck I was designing for a friend: the software would not design a deck more than 10 feet high. (I thought it would be interesting to present him with plans for a deck since he lives in a high rise apartment complex.)

Options are limited in several areas. For instance, you have only four railing patterns from which to choose. For my decks, I like the railings that have a built in bench on the inside circumference of the design. If you are looking for custom and special design features such as this, Autodesk's Deck product will give you greater control in creating your designs.

3D Deck is, nevertheless, a feature rich program. To get you started, there is an interactive book on deck design and you get complete step-by-step building instruction from the pros. One thing I really appreciate about software from Books that Work is the animation sequences — complete with sound — that tell you how to do everything from digging post holes to calculating the rise of stairs.

The package also includes 40 animations that you can watch over and over again. This is like having your very own building instructor. There are other resources — 80 illustrations, photographs, information on materials, building code data and a glossary.

Once you design a deck, it will calculate the cost, but using U.S. lumber costs and U.S. currency. You can call or visit your local lumber yard and key in the new prices. You can also change the materials list. This is facilitated by information contained in the program for those who do not have an understanding of the different types of woods.

You can print your design — a useful feature since drawings are often required for a building permit. And, of course, you'll want plans on site as you construct your own deck.

System requirements for 3D Deck are an IBM or compatible PC with a 386 or higher CPU, running Windows 3.1 with at least 2MB RAM, a VGA monitor and Hard Drive with 10 MB of free space. The program includes an uninstall utility that allows you to remove the program and all its files from your hard drive.

The Home Series Deck by Autodesk and Books that Work's 3D Deck (you might see this also packaged as Design & Build Your Own Deck) are very different programs. If I had to quickly characterize them, I would say that Tim "The Toolman" Taylor (of TV sitcom Home Improvement fame) would probably choose the Multimedia 3D Deck, a Windows program (also available on CD). It is much more colorful and visual, and far easier to use and learn. On the other hand, Al Borland, Tim's more proficient sidekick, would probably choose Home Series Deck, a DOS program with a greater learning curve but allowing attention to the finer details.

The 3D Way To Deck Planning

A testament to the ease of 3D Deck is that within five minutes of loading the software, I had designed a deck complete with two sets of stairs and railings. I had also viewed it from the side, above and 3D, as well as studied the materials list.

Within a very short time, I had designed several decks and found myself immersed in the program because the designing was so easy. This ease does not come without a cost, however.

About the time the software arrived, my friend John was contemplating building not one but two decks. When John used the software, some of its limitations became apparent. For instance, in the program you can choose to add walls, but they have to be straight. John wanted one of his walls to have some indentations in it. (This could have been compensated for in the Home Series Deck program because you draw your deck.)

In 3D Deck, you start with a generic deck design. You can then point and click to adjust such things as corners, angles, stairs, height and railings.

As it turned out, John was very satisfied with the program because he could print out the plans for his contractor. The few amendments were minor and could be corrected



MEMORY

4MB 72 PIN.....\$195.00

Trade-in -4pc 1MB 30 pin to 4MB 72pin.....\$48.00

SIPP to SIMM conversion from.....\$15.00

Memory modules REPAIR from.....\$15.00

Pentium 90.....\$1999.00

System Including: 8Mb Ram, 540 Mb H.D., 256 K Cache, 1.44 Floppy Dr., PCI Bus 1Mb Super VGA, 1024x768 0.28 non-Interlaced 14" monitor, Tower Case, Fast I/O & printer port, 101 Keyboard.

540 Mb
Seagate \$250

16 Mb
72 pin RAM
\$670

Memory
4m X9 30 pin
\$185

486-100
Main Board
\$145

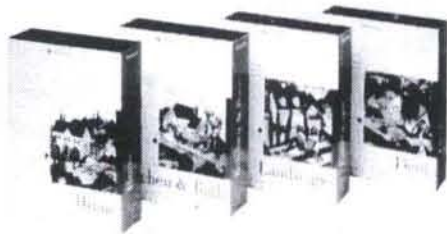
CPU Systems

Tel: 416-733-2100 Fax: 416-733-2275
142 Willowdale Avenue, North York M2N 4Y4
Price quoted are subject to change without notice.

The Home Series Deck

As far as computer requirements go, Deck is easy on system resources. It needs only an IBM or compatible computer with 640K of RAM, a hard drive, DOS 3.0 or higher, a mouse and a graphics card. Autodesk recommends a math co-processor and extended memory.

But as far as human requirements go, we are talking about a serious investment in time. The manual is over 250 pages long (versus 13 pages for 3D Deck). The Home Series Deck promises to have you up and running in 30 minutes. I found that after 30 minutes I felt I was more like up and walking. An hour into



the tutorial, I still felt awkward. This is despite the fact that I had used another program in the Home Series (Landscape) previously.

I am trying to dissuade anyone from trying this program, but its suitability depends on your objectives. If you are an architect or working with one, your plans can be imported into a number of CAD programs.

Another caveat: there are many CAD program users that look down on these lesser applications. Many bring up a good point in suggesting that if you want this kind of precision, just go ahead and use a real CAD program such as AutoCad Lt or something similar. This is another alternative to consider when designing a deck and the skills you learn can prepare you for other design tasks.

Even a small deck can cost more than a thousand dollars in wood and hardware — and when you add in labor you have a major investment. It would probably take an added investment of four-to-eight hours to get a good feel for the program. If you are planning to use other modules in the Home Series such as Kitchen & Bath, Landscape, or Home, then the initial time investment will be offset.

The Deck program I tested was Release 2 which has some significant features such as a built-in 3D viewer, more predrawn symbols and the ability to save drawings to AutoCad and .DWG format.

Deck has some very powerful tools such as the ability to let you view your deck in 3D from many angles. You also have the ability to draw elevation views and of course, you can design a multi-level deck — something that is impossible with the Books that Work product. There is online help and a tutorial but I found these awkward to use and incomplete in their

explanations of some concepts.

I asked my friend John if he wanted to try the Autodesk program and he said no, mainly because he did not have the time to invest in learning the product.

Conclusion

Somehow I wish I could merge the best of these two programs into one package. I have often gravitated toward CAD programs because of their accuracy, versatility and ability to create fine detail. However, they come with a cost: the time needed to properly learn their features. Many casual users will find the learning curve is unacceptable, especially when almost as much can be achieved by programs that allow you to point, click, drag and print.

If you want a simple deck, the 3D Deck is the program for you. If you want your deck to have multiple levels or a highly customized design, or if you want a high degree of accuracy to your plans, the Home Series product will do the job.

For my project, I am using 3D Deck, mostly because the program fits my general approach to software. I have always looked at construction projects much like cooking. The plans are much like recipes. Don't mess with the main ingredients but adjust the rest to suit your tastes as you go along. I guess that is why I like the Books that Work product so well. It is like fast food but can have gourmet results.

Regardless of which product they choose, newbie deck builders will be far better off using either product than drawing the plan by hand. There are many books and videos available on deck building. However, they cannot give you a materials list at the click of a button nor can they provide an escape from the pencil and eraser. To your neighbors who would rather build decks the old fashioned way, you can proudly exclaim "Eat my sawdust!"

According to Peter Fordham, Retail Product Development Manager for Autodesk, "Home Series Deck was discontinued as of May 1, 1995. Autodesk will continue to support the product until the end of July 1995. Although Home Series Deck is no longer being produced, it still may be available in retail channels." □

3D Deck: Design and Build Your Deck \$ 79.95 (U.S. Suggested Retail) Books that Work 285 Hamilton, Suite 260 Palo Alto, California 94301 1-800-242-4546

The Home Series Deck \$ 69.95 (U.S. Suggested Retail) Autodesk 2320 Marinship Way Sausalito, California 94965 1-800-228-3601 or in Toronto: 905-946-0928

Custom Software Specialists

Specializing in consulting services in:

- Business/Engineering Software
- Windows, DOS, OOPS Applications
- Networking, Multi Platform Connectivity Applications

- Windows Customized Software Development
- Visual Basic, Access, visual C/C++, Crystal Reports, SDK, VBAssist, Data Widgets
- Clipper R&R
- Guaranteed 40%-50% Savings



Electronic Business Solutions

Call Gord Dubey (416) 801-9722

Multimedia Systems

486 VESA Local BUS Systems

486DX2-66	\$1199	4MB RAM, 540MB HD, 14"
486DX4-100	\$1229	SVGA NI, .28mm, 256K Cache,
486DX4/100	\$1249	Mini Tower Case, Mouse, etc....

Pentium PCI BUS Systems

Pentium 100 PCI	\$1999	8MB RAM, 540MB HD, 14"
Pentium 90 PCI	\$1829	SVGA NI, .28mm, 256K Cache,
Pentium 75/66 PCI	\$1699	Mid Tower Case, Mouse, etc....

Many more items. Call for details.

High performance CAD systems are available. Call for details.

GOLDEN ROC Computer Systems Ltd.

1554 Davenport Rd., Toronto, Ont. M6H 2J1 Mon-Sat
Tel: 416-651-8239 Fax 416-651-2982 10:00am - 8:00pm

Monitor Repair for just \$69

We provide 90 days warranty.

MONITORS:	
Daytek 15" .28mm, NI, Green	\$399.99
Daytek 14" .28mm, NI, Green	\$285.99

VIDEO CARD:	
Trident 9440 1MB ex. to 2MB	\$104.99
ATI Mach32 1MB ex. to 2MB	\$134.99
Cirrus Logic 5429 1 MB ex. to 2MB	\$103.99

HARD DRIVES: (Installation for \$10.00)	
Seagate 420/540/1GB	\$229/\$249/\$459
Samsung 560MB/Quantum 540MB	\$229.99

CD ROM:	
Panasonic 562 Double Speed	\$145.99
TEAC Quad Speed	\$245.99
Creative 16 Sound Blaster	\$99.00

PRINTER:	
HP LaserJet 4L	\$709.99

Prices Subject to Change Without Notice.

CD-ROM Software for Less

1-800-578-7684

FREE COD 2-3 DAY DELIVERY ON 3+ ORDERS !!! LOW SHIPPING FEE ON LESS, WITH NO COD CHARGE!

MYST \$38	NASCAR Racing \$39	REBEL ASSAULT \$35	THE 1995 GROBLER MULTIMEDIA ENCYCLOPEDIA \$28	F14 FLEET DEFENDER \$36	KIDS KORNER		
<p>Fun and Games</p> <p>Alone in the Dark 2 \$65 Aegis Guardian of the Fleet \$36 Aces of the Pacific \$32 BattleDrome \$39 Chessmaster 4000 \$28 Cyberia \$36 Doom 2 \$69 Dragon's Lore \$34 Gabriel Knight \$32 Hell \$27 Ind. Jones, The fate of Atlantis \$26 Indy Car \$32 Magic Carpet \$63 Mad Dog McCree 2 \$29 Mega Race \$18 Outpost \$29 Sam and Max \$34 Return to Zork \$21 TFX Flight Simulator \$36 X-COM UFO Unknown \$34 X-COM Terror of the Deep \$64 Who Killed, Series \$24 ea.</p>					<p>REFERENCE</p> <p>American Heritage Talking Dictionary \$28 Animals San Diego Zoo \$17 Better Homes and Gardens, Garden \$18 Better Homes and Gardens, Cookbook \$18 Compton's Interactive Encyclopedia 95 \$29 Family Doctor 3rd Edition \$22 Mayo Clinic Family Health Book \$25 Mayo Clinic Total Heart \$30 Mayo Clinic Sports and Health \$30 Internet Info \$27 Prehistoria (Compton's) \$26 Home Gardener (SoftKey) \$27 World Atlas V5 \$20</p>	<p>Business and Utilities</p> <p>Cica Window Explosion \$22 Clip Art Cornucopia \$26 Clip Art Heaven \$14 Linux (Walnut Creek) \$27 Mother of All Clip Art \$24 Sound Sensations \$14</p>	<p>3D Big Adventure \$39 3D Dinosaur Adventure \$49 A.D.A.M The Inside Story \$52 Body Works V4.0 \$34 BusyTown \$49 Early Math \$54 Kid's Can Read Series \$22 ea. Leonardo the Inventor \$56 MS Magic School Bus \$68 ea. Play and Learn the Bible \$22 Playing with Languages \$30 ea. Pull Pull and Fatty Bears \$39 The Way Things Work \$72 The Living Book Series</p>
<p>Microsoft Lowest Prices</p> <p>Dinosaurs, Golf, Encarta, Works.</p> <p>Add 7% GST, (ONT Residents add 8% PST)</p> <p>73 Stonemeadow Dr., Kanata, Ont. K2M 2M3 Phone (613)591-2052, Fax (613)591-9525</p>					<p>Arthur's Birthday \$53 Arthur's Teacher Trouble \$23 Harry and the Haunted House \$53 Just Grandma and Me \$23 Little Monster at School \$53 New Kid on the Block \$53 Ruff's Bone \$53 The Tortoise and the Hare \$53</p>		

Serving Canadians Since 1986

QUEST BUSINESS SYSTEMS AND COMPUTER RENTALS

795 WARDEN AVENUE, SCARBOROUGH ON M1L 4C4 TEL. (416) 751-8888 or 751-7764

SALES SERVICE NETWORKING

Fast reliable Service and Best prices On

Mother boards, CPUs, Hard drives, Upgrades, Monitors, Printers, Scanners, Memory, Computer parts, Keyboards, Floppy drives, CD-ROM Drives, PCMCIA Options and memory modules for Notebook Computers

SYSTEMS	All Systems include
486 DX2-66 1199	4 meg.ram 1.44 floppy drive
486DX2-80 1299	340 meg Hard drive
486DX4-100 1399	2 ser. 1 par. 1game port SVGA VLB with 1 meg
PENTIUM 66 1499	101 keyboard
PENTIUM 100 1779	SVGA Monitor

WHILE QUANTITIES LAST
Prices subject to change without notice

LEASING AVAILABLE

Specials of the Month

14.4 Fax/Modem/Voice Bitcom, Super voice for Windows Int. with 5 year warr. \$89	14.4 Ext. Fax/Modem Comit, Winfax Lite 5 years Warr. \$99
---	--

Lantastic 6.0 Starter Kit includes 2 Lantastic V6.0 Nodes 2x16 bit Ethernet cards 20 ft. cable and 2 Terminators Complete Kit Only \$289

COMDEX Special Only till July 31st

PCMCIA 14.4 Fax/Modem Voice with Cellular ready PCMCIA Ethernet RG58/RJ45 Combo	\$179	PCMCIA 28.8 Fax/Modem PCMCIA SCSI Adapter	\$385	All PCMCIA Products are tested by IBM, Toshiba and Compaq Windows 95 Ready
	\$179	Support 7 devices including drivers for CD-rom and Scanners	\$189	

SPECIAL PRICING FOR RESELLERS

MULTIMEDIA CD-ROM		HARD DRIVES	
Panasonic Quad speed	239	MAXTOR 540	229
Panasonic Dual speed	119	QUANTUM 540	229
Mitsumi Dual speed	139	SAMSUNG 560	229
Toshiba Quad speed	247	MAXTOR 850	289
Teac Quad speed	249	MAXTOR 1.02	409

We will Beat any Advertised Price on any Computer Accessories/ Government And Corporate P.O.Welcome

MDG

PENTIUM 75 FULLY LOADED ONLY \$1395

**INTEL TRITON CHIPSET, EDO MEMORY
THE LATEST TECHNOLOGY AVAILABLE**

**ABSOLUTELY THE LOWEST
PRICES ON THIS CONTINENT**

INSTANT PICKUPS
Pre-burned and tested units ready to go any time.

**CAMBRIDGE AND OWENSOUND
LOCATIONS OPENING NEXT MONTH**

It is impossible to get better value for your money anywhere else. Prove us wrong and get a free gift.

Deal with the best sales and Technical support force in the industry, do not settle for less.

INCREDIBLE LEASING OPTIONS
No money down

While quantities last. Price is cash discounted add 3% for credit cards or terms. On spot financing, leasing available. Prices are subject to change without notice. We reserve the right to substitute components with one's of the same or greater value.

MDG will beat any advertised price or quote on a system by \$ 30 or it is yours free.

- => Premium quality mother boards with 4 pci for Pentiums, 3 vesa for 486's.
- 128 cache 486's , 256 cache Pentiums
- => 560 MB Enhanced IDE hard drive (three times higher transfer rate then regular ID
- => 4 MB 72 pin memory 70 ns exp to 128 MB
- => 32 bit pci/vesa ide controller 2s/1p/1g ports
- => 1.44 floppy drive Fujitsu or Toshiba
- => 1mb Trident svga pci / vesa local bus card
- => 14" Svga Daytek monitor 1024x768 resolution
- => Elegant miny tower case with 230 w p/s
- => Enhanced 101 keyboard

Full multimedia upgrade \$ 199.00
2x CD rom (Panasonic or Sony)
16 bit sound card , speakers, microphone

ONE YEAR PARTS, THREE YEARS LABOUR WARRANTY

486dxii66
\$ 1049 or \$ 42/mo

486dx/100
\$ 1195 or \$ 49/mo

Pentium 75
\$ 1395 or 55/mo

Pentium 90
\$ 1599 or \$ 59/mo

Pentium 100
\$ 1799 or \$ 64 /mo

System could be modified to meet your requirements , please ask about different upgrades available.

THE DREAM MACHINE: INTEL PENTIUM 100 CPU , INTEL MOTHER BOARD WITH ENHANCED IDE CONTROLLERS AND DUAL 16550 INTEGRATED IN THE BOARD, PCI ALL THE WAY, 16 MB RAM 72 PIN (60) 1 GB WESTERN DIGITAL ENHANCED IDE HARD DRIVE (IMPOSSIBLE TO MEASURE SPE ATI MACH64 ULTRA PRO 2 MB VRAM PCI VIDEO CONTROLLER , 1.44 FUJITSU FLOPPY DRIVE , 101 KEYTRONICK 2000 KEYBOARD , ORIGINAL MICROSOFT ERGONOMIC MOUSE ELEGANT MDG MID TOWER CASE WITH 300W POWER SUPPLY AND 5 EXTERNAL SLOTS. SONY 15" MONITOR WITH SONY TRINITRON TUBE .25 DP NON-INTERLACED, FLAT . MITSUMI QUAD SPEED CD ROM AND CREATIVE LABS VIBRA SOUND CARD FOR YOUR ULTIMATE SOUND AND VISUAL PLEASURE. **\$ 3945.00**

FILE SERVERS WITH DUAL CPU PROCESSING AVAILABLE.

THIS MONTH ONLY
NOW with TRITON chipset and EDO memory for the same lowe price.

Our computer vision systems take heavy beating on production lines. Only MDG machines can stand the test of time and work trouble free for years in dirt and smoke. Lawrence Ho, VP R&D , ASPRO Technologies LTD. Any small business looking for a computer, will get the best value for there money from MDG. Louis Al Jaar, Business Development Adviser, Federal Business Development Bank

MDG	415 HORNER AVE #2	HOURS:				tel:
	Etobicoke , Ont.	Monday to Friday	9 to 7			416-255-9343
	M8W 4W3	Saturday, Sunday	10 to 6			fax:
						416-255-8672

MDG

THE UPGRADE CAPITAL OF THE WORLD

Upgrade Specials : Done while you WAIT

**UPGRADE YOUR OLD DX/66
TO A PENTIUM 75 \$479**

**UNBELIEVABLE DEALS ON
PENTIUM 75, 90, 100
UPGRADES FROM 486/33
AND 486/66**

**UPGRADE YOUR OLD DXII/66
TO A NEW DX/100 \$ 99**

Upgrade 486dx/66 to a Pentium 90 only \$ 599

MOTHERBOARDS

MDG has the greatest selection of mother boards in Toronto. 100's of 486's and pentium's in stock anytime. Our sales staff will be happy to help you to select the right one for your needs.

486DX/33... ..\$195 486DX/66.....\$225
486DX/80.....\$299 486DX/100 ...\$345

CPU is included + \$ 60 for pci bus
PENTIUM 75\$595 PENTIUM 90\$ 695
PENTIUM 100 ..\$ 845 PENTIUM 120...\$1195
256 cache memory, 4 PCI slots, solid board
INTEL TRITON CHIPSET AND EDO MEMORY
AVAILABLE, THE LATEST TECHNOLOGY .
ASUS, ACER, INTEL, BIOSTAR, UMC, GIGABYTE

ALL OF THE BIGGEST NAMES AVAILABLE AT MDG
IF A MOTHER BOARD IS ANY GOOD WE HAVE IT.
worried IF YOU CAN USE YOUR OLD 30 PIN
MEMORY? MDG GIVES YOU THE BEST TRADE IN
VALUE FOR YOUR 30 PIN SIMMS .

HARDDRIVES

MDG offers a huge selection of Enhanced and regular hard drives , including Maxtor, Fujitsu, Quantum Seagate, Western Digital IBM and Conner. SCSI drives and controllers available at the lowest price anywhere.

Monthly Specials:

FUJITSU 546MB..... \$ 219
QUANTUM 1GB SCSI ..\$ 585
WESTERN D. 850 MB ...\$ 299
ADAPTEC 2940 CONT...\$ 255
ENHANCED IDE CON. \$ 27
Any other size between 546 mb
and 8 GB available.

MONITORS

NEC:

17XV \$ 1049
17XE \$ 1379
17XP \$ 1449
21XP \$ 2995

Mag:

17DXF \$ 895
17MX \$ 1365
21MX \$ 2445

Sony:

17sf \$ 1195
17se \$ 1445
20se \$ 2525

MODEMS

ZOLTRIX:

14.4 F/M \$ 79
14.4 F/M/V \$ 99
28.8 INT \$ 189
28.8 EXT \$ 239

GVC:

14.4 INT \$ 119
14.4 EXT \$ 159
28.8 INT \$ 225
28.8 EXT \$ 245

NE 2000 network
cards \$ 39
GVC 14.4 fax
modem with voice
and fax on demand
\$ 99

OPEN SUNDAY

OPEN SUNDAY

10 AM - 6 PM

OPEN SUNDAY

OPEN SUNDAY

EXCELENT DEALS ON ALL KINDS OF MEMORY UPGRADES , WE ARE NEVER OUT OF STOCK ON ANY CAPACITY OF 30 OR 72 PIN RAM.

PENTIUM 75 , 90 , 100 AVAILABLE AT ANY TIME NO WAITING

MDG WILL BEAT ANY ADVERTISED PRICE FOR A SYSTEM BY \$30 OR IT IS FREE
GREAT DEALS ON NETWORK INSTALLATIONS AND SERVICE CONTRACTS Shipping Canada Wide
MDG, COMPUTER PLACE WHERE QUALITY AND SERVICE COUNTS

SPECIALS : TURN YOUR 4 MB RAM INTO 16 MB FOR ONLY \$ 499 (72 PIN) INSTALLATION AND TESTING NOT INCLUDED FOR ANY KIND OF UPGRADE.
UPGRADE 8 MB RAM TO 16 MB FOR ONLY \$318 (72 PIN).
30 TO 72 PIN MEMORY CONVERSION WHEN UPGRADING MOTHER BOARD

16 MB RAM \$ Call 8 MB RAM \$ 399 4 MB RAM \$ 215 4 MB (30 PIN) \$ 189 1 MB (30) \$ 46

Dealing with MDG sales and technical staff over years , I always knew they try to solve our problem not just to sell me a computer.
Most computer places needed 48 to 72 hours to provide a system for my home office. At MDG they have pre-burned units ready to go any time. By the time I have finished my free coffee my unit was ready and I saved \$ 200 comparing to the best quote I had before MDG.
lex Jeffrey, End User

MDG

415 HORNER AVE #2
Etobicoke , Ont.
M8W 4W3

HOURS:

Monday to Friday 9 to 7
Saturday, Sunday 10 to 6

Branches (7/7/0)

QEW
HORNER
MDG

Locations

tel:
416-255-9343
fax:
416-255-8672

EVERYDAY LOW PRICES
Multimedia Specials

<p>486DX4-100 - 8 MB 72 Pns. Ram - 540 Hard Drive - 1.44 Floppy Drive - 14" SVGA 0.28 N/I - PCI 1MB V.Card (Exp. To 2 MB) - PCI IDE - Mini Tower Case - 3 Buttons Mouse / Pad - 101 Enhanced Keybd. \$ 1965</p>	<p>486DX2-66 - DX2-66 Exp. To DX4-100 - 8 MB 72 Pns. Ram - 540 Hard Drive - 1.44 Floppy Drive - 14" SVGA 0.28 N/I - PCI 1MB V.Card (Exp. To 2 MB) - PCI Enhanced IDE - Mini Tower Case - 3 Buttons Mouse / Pad - 101 Enhanced Keybd. \$ 1799</p>
--	--

16 Bit True Stereo Card
 Microphone
 30 Watts Speakers
Quad Speed
FREE 12 Titles
 Publisher: Infocentral, Wallace Jack, Gramath, Clip Art, BookShelf, Home Dictionary, Paper Airplane, WP Works, Entertainment Pk., Random House

16 Bit True Stereo Card
 Microphone
 30 Watts Speakers
Double Speed
FREE 7 Titles
 Ms Money, Ms Golf, Ms Encarta 95, Ms Scenes, Ms Works V3.0, Entertainment Pk.

Super Special
486DX2-66 Free Mouse & Pad
Pentium Sale
Pentium 90 \$ 2115
Pentium 75 \$ 1965
FREE MS DOS
 - 850 MB HDD
 - 8 MB Ram
 - PCI IDE Cont.
 - 1 MB ATI PCI V.Card
 Mid Tower
 1.44 FDD
 101 Keyboard
 14" SVGA 0.28 N/I
 Mouse/Pad

Plus Multimedia Kit
 Double Speed CD-ROM
 16 Bit Sound Card
 Pair Of Speakers
\$ 185

CUSTOM PROGRAMMING
 For MS-DOS & MS-Windows

- 540 HDD	\$230	Discovery CD	\$362
- 850 HDD	\$330	Digital School	\$369
- 420 HDD	\$221	SB16	\$110
- 14.4 Fax/Modem	\$65	API600	\$55
- 14.4 V/F/Modem	\$99	16 Bit True	\$95
- US Rob. Int.	\$130	14" 0.28N/I	\$280
- 30 Watts Spks.	\$25	15" 0.28N/I	\$415
- 80 Watts Spks.	\$85		

Trillium Computers
 (1995)
 6625 Inmken Road, Unit # 4, Mississauga
Ph: (905)795-0191
Fax: (905)795-0192

The Eternal Question

Buy Big Blue, Or Will A Clone Do?

BY ROSS MACDONALD

Cast your mind back to not so long ago... to those heady, less complicated days of yore when IBM advertising centered on the pitch: "Nobody ever got fired for choosing IBM".

You don't hear that slogan any more, because the sad fact of the matter is that quite the opposite is now the case. Though IBM remains the standard to which "clone" computer manufacturers adhere, gaps in quality and reliability that once separated Big Blue from its competitors have shrunk to non-existent proportions. Of course, there are still hundreds of "fly-by-night" cheapie clone companies out there to belie this development. But there are also multitudes of well established, reputable clone manufacturers that have eliminated the purchasing perils of the past while at the same time offering system prices that are 15+ percent lower than those of comparable IBMs.

But, alas, few questions are ever so simply settled — especially in the world of computers. Both IBM and the clone companies have convincing arguments to sway us toward their products, each claiming all the advantages, and none of those drawbacks they assign to the opposition. In my never-ending quest to provide readers with useful information, I asked representatives from both IBM Canada and a "typical" clone company why we should buy their computers... and why we shouldn't buy the other's. The results that follow are as they were presented. It's up to you to decide who wins the debate. Both are well aware that votes will be cast with your wallets.

Pete Pietramala, marketing representative for the IBM PC Company, spoke for that side of the argument while Julian Gagnon,

Director of Marketing for Seanix Technology — a nine year old Richmond, B.C. company that currently sells about 50,000 computer systems per year under the "ASI" brand name — was asked to speak for clones.

The Clones

"The biggest thing that we at Seanix like to emphasize to consumers who are making a purchasing decision," Gagnon heartily begins, "is that our computers are not only manufactured in Canada, but they're designed and engineered in Canada too. Our on-staff engineering team develop all the mother boards, video cards and I/O products that go into our computers. Our computers have a very high Canadian content and that's the first step that we take in communicating with our potential customers."

But where you might see that as an all too obvious pitch for Seanix products specifically, Gagnon manages to better align the oblique nature of his argument: "As you know," he says, "the standards of quality for manufacturing are very different from one country to another and Canada has a very good reputation worldwide for standards of quality. Products that are made in Canada — not just computers but all kinds of products — are considered very high quality by other countries. That's why Seanix has gone through a number of steps to make sure we have the maximum quality. For example, our manufacturing plant is ISO [the International Standards Organization, based in Geneva] 9002 certified which is a very high international standard for quality of manufacturing."

Gagnon continues that any reputable clone manufacturer will be equally concerned

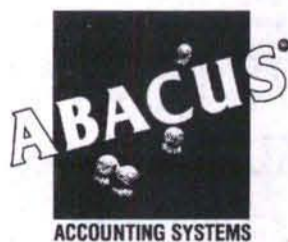
Ever wonder why powerful accounting software has to be so expensive and hard to use?



So did we...

For every business owner, bookkeeper and accounting professional who is tired of the status quo in accounting software, we bring you Abacus II.

Abacus II is setting new standards by offering more power, for less money, in a format that anyone can master. That's because Abacus II was designed from an end user's perspective. So although it's sophisticated enough to make your accountant smile, it puts the power in the hands of the person that really needs it. *You.*



ABACUS II FEATURES

- General Ledger
- Accounts Payable
- Accounts Receivable
- Inventory Control
- Assemblies
- Invoicing/Order Entry
- Point of Sale
- Purchase Orders
- Can. and U.S. Payroll
- Job Costing/Estimating
- Quotations
- Fixed Assets
- Advanced Report Generator
- Spreadsheet, Graph and Chart Functions
- Quick-Start Disk and Tutorial

NOW YOU CAN TAKE ABACUS II FOR A TEST DRIVE!
 CALL NOW FOR YOUR FREE ABACUS II CD

1-800-665-6657

3.5" demo disk also available.

Abacus Accounting Systems Inc.

Suite 488 Capital Place, 9707 - 110 St., Edmonton, Alberta T5K 2L9 Fax (403) 488-8150

the used computer store

489 Queen Street, West
 Toronto, Ontario M5V 2B4
 Tel: (416) 504-9357 Fax: (416) 504-9359
 South side, just west of Spadina Ave.

Grand Opening

Friendly Staff
 Parts • Service
 Windows • DOS • Mac

BRAND NAME USED COMPUTERS
 CALL FOR GREAT PRICES

IBM VS THE CLONES

with the quality of their components which means their machines ought to be just as solid as IBM's but still cheaper to buy.

"My next point," he continues, "is that clone companies are able to move very fast on new technologies while IBM — being a much larger company — requires quite a bit more time to go through product development or to adopt and integrate the newest ideas into their product lines. We smaller companies often come up with new ideas on our own or we incorporate the latest developments at a faster rate. So you'll find that clone companies typically produce only high performance systems as their product lines are always being updated.

"This means there are some definite advantages with clones in terms of performance," Gagnon continues, "I've read many magazine articles that invariably compare similar systems from clone companies with systems from IBM and, even though you'll sometimes see IBM near the top of the various performance tests, it's almost guaranteed that it will be listed among the much less expensive clones.

"We once sent a DX4/100 system to a magazine for such a review, for example," Gagnon reflects, "and, though that's considered only a mid-range computer system, it performed in the same category as IBM's Pentium 60 system.

"We can achieve this because of a number of technical refinements that are related to the quick adoption of new technologies that I talked about earlier. We use burst mode on the external cache for all our systems, for example, which — simply put — increases the speed of communication between the CPU and the cache... which is where the information is stored.

"In general, I would say companies like IBM are far more conservative in terms of new technology so you don't find things like burst mode being used in their products until a long time has passed. And that has a negative effect on performance. They don't move as fast and they keep the same models on the market for a much longer period of time. Clones like Seanix, though, are always ahead because, as soon as things like burst mode or even Enhanced IDE interfaces — which we also put in all our systems — become available, we start using them."

In view of such differences, it's difficult to understand how clone prices can be so much more competitive than IBM's — anywhere from 20 to 40 percent cheaper according to Gagnon. And it becomes even more paradoxical when you consider that, as Gagnon points out, a clone offers more features (faster processor, more RAM, bigger hard-drive, etc.) while still maintaining that pricing gap.

"Those price differences are largely a deliberate pricing strategy," Gagnon explains, "And, since the clones come from smaller companies, our overheads aren't even comparable to IBM's — they have to keep fairly high margins to make any kind of money. That gives us a big advantage.

"And, of course, IBM spends millions and millions of dollars on advertising and people pay for that because it's built into the price of the machine. Clone companies like Seanix have a much more conservative budget so, in our case, we advertise only in daily newspapers and concentrate even those modest campaigns during the Christmas season. We also have a co-operative advertising arrangement with our dealers in which we'll pay half of their advertising costs where Seanix

SELECTED SYSTEMS	486DX-33 w.256KB cache	486DX2-66 w.256KB cache	486DX4-100 w.256KB cache	PENTIUM-75 w.256KB cache	PENTIUM-100 w.256KB cache
BUS	3 VESA LB slots + Pentium socket	3 VESA LB slots + Pentium socket	3 VESA LB slots + Pentium socket	3 PCI LBus slots & ISA slots	3 PCI LBus slots & ISA slots
MEMORY	4MB, max 32MB	4MB, max 32MB	4MB, max 32MB	8MB, max 192MB	8MB, max 192MB
IDE HARD DRIVE	540MB with cache	540MB with cache	540MB with cache	540MB with cache	540MB with cache
N.I. 14" SVGA MONITOR 0.28	\$1199	\$1299	\$1399	\$1899	\$2199

All systems come with: 14" SVGA .28 dot pitch non-interlaced monitor, 1MB SVGA video card, 101 enhanced keyboard, mouse, 1.44MB 3.5" floppy disk drive, mini tower case, 230W power supply, 2 serial, 1 parallel and 1 game ports.

R e n t

Computers

Notebooks and 486, 386, 286 systems
with the monitor and hard drive
capacity of your choice.

Printers

Dot-matrix printers and excellent
Laser printers for
top quality documents.

**Systems upgrade: XT, 286, 386--->386, 486. Memory and Hard drives upgrade.
Local Area Network Installations, Programming, Repairs.**

<h2 style="font-size: 1.5em;">Compumemories</h2> <p>TEL: 416 232 2777 FAX: 416 232 2401 malutki@maloca.com</p>	<p>3088 Bloor Street West Toronto, Ontario, M8X 1C8 North-East corner of Bloor and Montgomery Rd, two blocks west of Royal York Rd. Open: 10-19, Saturday: 10-18</p>
--	--

<h4>MOTHERBOARDS</h4> <p>Trade your 30pin module for 72 pin Trade your 1MB module for 4MB Trade your memory for EDO Memory Trade your 486 CPU for faster 486 or Pentium CPU</p> <p>Our Pentium motherboard includes EIDE & FDD controller, 16550, 2S & 1P P100 ASUS Triton 256KB PCI.....1085 Pentium100 256/512KB, PCI.....985/1095 Pentium 90 256/512KB, PCI.....845/945 Pentium 75 256/512KB, PCI.....725/825 Pentium 66 256KB VLB.....625 486DX4-100 256KB, PCI.....499 486DX4-100,256KB cache, VLB.....429 486DX2-66 256KB, PCI & VLB.....429 486DX2-66 256KB cache, VLB.....369 486DX-33 & 40 256KB c., VLB.....245 486SX20/25/33 256KB.....195/215/225 386DX40 128KB cache.....149</p> <h4>VIDEO CARDS</h4> <p>ATI XL 24 bit ISA 1MB.....115 ATI Mach32 VLB/ISA/PCI 1MB.....145 ATI Mach64 1MB PCI or VLB.....195 ATI Mach64 2MB PCI or VLB.....315 ATI Mach64 4MB PCI or VLB.....625 Real Motion Lite MPEG.....249 Real Motion Pro MPEG Board.....325 Some CD-I Movies avail.....40 Matrox & #9 Video cards.....call Memory upgrade for Mach64 2MB...299 S3 Vesa Local Bus 1MB/2MB.....99/179 1MB memory upgr. for Video card.100 TRIDENT 1MB/2MB VLB.....90/170</p> <h4>HD CONTROLLERS</h4> <p>IDE VESA Local Bus HDD/FDD.....49 Enhanced VESA LBus IDE & I/O.....70 IDE VESA LBus HDD/FDD 16550.....70 IDE VESA LBus 4 HDD/FDD.....70 Adaptec1520/1522 SCSI HDD/FDD.109 Adaptec VESA LBus SCSI OEM.....175 FutureDomain TMC3260 PCI SCSI.179 UltraStore 15C caching IDE ISA.....185 PCI SCSI HDD controller.....95</p> <h4>HARD DRIVES</h4> <p>WESTERN DIGITAL - IDE 850MB (12ms/64KB cache)(IDE).....355 1.2GB (10ms/64KB cache)(IDE).....499 QUANTUM - IDE 540MB (12ms/128KB cache).....265 730MB (12ms/128KB cache).....335 MAXTOR - IDE 540MB (12ms/64KB cache).....265 850MB (12ms/64KB cache).....335 1.2GB (9ms/256KB cache).....499 SEAGATE - IDE 420MB (12ms/128KB c.).....245 528MB (12ms/128KB c.).....265 850MB (12ms/256KB cache).....385 1.08GB (12ms/256KB cache).....425 CONNER - IDE 540MB (9ms/256KB cache).....265 850MB (9ms/256KB cache).....335 1.2GB (9ms/256KB cache).....499 IBM - IDE 548MB (12ms/128 KB cache).....285 1GB (9ms/256 KB cache).....445 CONNER - SCSI 1.06GB (9ms/512KB cache).....695 QUANTUM - SCSI-2</p>	<h4>TAPE BACKUPS</h4> <p>Conner 420MB Int/Ext.....275/495 Conner 850MB Int/Ext.....395/650 Colorado 350MB Int/Ext.....245/465 Colorado 700MB Int/Ext.....345/545 Colorado Travan 800MB Int.....325</p> <h4>External Hard Drive or CD Drive for Notebooks & computers without hard drive bay.</h4> <p>Our unique design Hard Drive or CD Drive allow to connect to the parallel (printer) port so you can use them on your notebook or desktop without using any slot (like your IBM PS/2) 540MB Hard Drive External.....535 Instant Technology CD 2x speed.....395</p> <h4>CD ROMS</h4> <p>ACER double speed.....149 Mitsumi/Teac Quad speed.....265 Panasonic CR562 double speed.....169 Panasonic Quad Speed SCSI.....445 SONY CDU55s double speedSCSI.285 Toshiba Quad speed.....295 SoundBlaster Schoolhouse.....325 SoundBlaster Discovery Quad.....465</p> <h4>MONITORS</h4> <p>Magitronic 14" SVGA n.i. 0.28.....305 Magitronic 15" SVGA n.i. 0.28.....425 TTX 15" SVGA n.i. 0.25.....435 Sony 17" SVGA n.i. 0.25.....1425 IBM 13"/15" (used).....155/225</p> <h4>LASER PRINTERS</h4> <p>Hewlett Packard 4L.....759 Hewlett Packard 5P.....1295 Hewlett Packard OfficeJet.....945 Lexmark Optra R.....1995 RAVEN LP410-1 w 1MB memory.....495 1MB Mem. upg. LP410/KX-P4400...75</p> <h4>TONER CARTRIDGES FOR MOST PRINTERS. Memory upgrades for most printers.</h4> <h4>INK JET PRINTERS</h4> <p>Hewlett Packard DESKJET 540.....415 CANON BJ 200e.....325 Canon BJ-70519 Canon BJ 4000.....495 Epson Stylus 800+.....319 Epson Stylus color.....725 Lexmark ExecJet IIC.....465</p> <h4>DOT MATRIX PRINTERS</h4> <p>FUJITSU DL700 24pin.....235 Memory Buffer Panasonic/Raven...10 CITIZEN GSX-230 24pin/color option.....299</p> <h4>NOTEBOOKS</h4> <p>HyperData 486dx4-75 w.CD.....3995 HyperData Pentium75 4/340MB...3695 Toshiba 2100CS 2-50 4/330.....3095 Toshiba 2150CS 4-75 4/500/CD...4195</p> <h4>SOFTWARE</h4> <p>ACCESS 2.0 upgrade.....159 CadKey Light.....135 Central Point AntiVirus f. Win 2.0...89 Central Point Emergency f. Win.....39</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;"> Central Point Speed Tools f. Win.....39 Close up.....109 DBase 5 for Windows upgr.....165 DBase 5 for Windows full Ver.....250 Delphi by Borland V 1.0 Win.....269 DOS 6.2 step up upgrade.....15 EXCEL 5.0 Win upgrade.....159 FastBack for Dos or Win.....99 FoxPro 2.5.....75 FoxPro 2.6 for Windows full Ver.....135 Internet in a Box Cnd.....135 Lotus 123 Win V5.0 upgrade New...135 Lotus AMI PRO upgr.....119 Norton Backup for Win.....99 Norton Commander for Dos 3.0.....59 OFFICE 4.2 upgrade.....365 OS/2 V 3.0 Warp.....89 PARADOX 5.0 Win upgr.....165 PARADOX 4.5 Win full Ver.....145 PerfectOffice upgr.....275 Quicken Canadian Win 4.0 New.....59 Smart Suite V 3.0 upgr.....325 Turbo C++ Visual 3.1.....115 Turbo Pascal for Windows 1.5.....145 Visual C++ Pro V1.0.....99 Window WORKS V2.0 PFS.....75 WINDOWS 3.1 full version.....129 Windows 3.11 upgrade.....59 WinFax Pro Win.Ver 4.0.....99 WORD 6.0 Win upgrade.....159 Word Perfect 6.1 Dos/Win upgr.....119 WORKS for Windows.....75</td> <td style="width: 33%;"> Rise of Robots.....33 Rebel Assault.....34 SimCity Enhanced.....29 Talking Dictionary.....20 The Virtual Body (Mayo Clinic).....24 Tuneland.....30 Tornado.....17 Wing Commander Privateer.....23</td> <td style="width: 33%;"> LAVA 16550 Serial card.....29 Fax/Phone Ident-A-Call switch.....95 AST/Cardinal 24/96 modem/fax.....35 ATI 14.4 Fax/modem internal.....125 Boca 28.8 Fax/modem Internal.....250 GVC 14.4 Fax/Modem Int/Ext.....95/149 GVC 28.8 Fax/Modem Int/Ext.....259/279 Supra 14.4 Fax/Modem Int/Ext.145/165 Supra 28.8 Fax/Modem Int/Ext.285/305 Satisfaction 400 Internal.....425 US ROBOTICS 14.4 f/m Int/Ext.145/165 US ROBOTICS 28.8 f/m Int/Ext.299/329 Zoltrix 14.4 Fax/modem/voice.....149 Zoltrix 14.4 F/M internal.....95 Zoltrix 28.8 Int/Ext V.34.....199/229</td> </tr> </table> <h4>FAX & MODEM</h4> <h4>AUDIO CARDS</h4> <p>Gravis UltraSound..Max.....245 512KB Memory upgrade for Max.....50 Sound Blaster AWE 32.....385 Sound Blaster ASP 16 CD.....265 Sound Blaster 16.....145 Yamaha speakers YST-M10.....119 Memory Upgr. 4MB for Monterey...265</p> <h4>SCANNERS</h4> <p>Logitech Scanman 256 w. OCR.....149</p> <h4>MEMORY UPGRADE &...</h4> <p>Trade your 30pin module for 72 pin Trade your 1MB module for 4MB Trade your memory for EDO Memory Trade your 486 CPU for faster 486 or Pentium CPU</p> <p>EDO 4MB SIMM module 70ns.....265 4MB SIMM module 70ns.....225 4MB SIPP module 70ns.....265 4MB Memory upgrade for HP4/4P..265 1MB SIMM module 70ns.....53 1MB SIPP module.....65 1Mb DRAM Memory chip.....8 Memory upgr. for Video Cards.....call HP II/III/IIIIP/IIIIP 1/2/4MB.109/165/295 IBM 4019 Memory 2MB.....210 OKI 400/400e mem.upgr 1MB...129/169 Panasonic/Raven Buffer KX-P43.....10 8MB Module ThinkPad 700-720C...499 14.4 Modem ThinkPad 700-720C.....155</p> <p><i>Please fax inquiries (232 2401) about memory for printers, notebooks & systems: Apple, AST, AT&T, Bondwell, Brother, Canon, Compaq, DEC, Dell, Epson, Fujitsu, Hewlett Packard, IBM, NEC, NCR, Okidata, Olivetti, Packard Bell, Panasonic, Sharp, Star, TEC, TI, Toshiba & others</i></p> <p>Toner cartridges for Laser Printers French Keyboard.....35 Intel Ethernet network card.....155 GVC Ethernet Card.....95 LAVA Printer - parallel port.....29 Syquest 44MB/88MB cartridge.....75 Selection of cables & switch boxes</p>	Central Point Speed Tools f. Win.....39 Close up.....109 DBase 5 for Windows upgr.....165 DBase 5 for Windows full Ver.....250 Delphi by Borland V 1.0 Win.....269 DOS 6.2 step up upgrade.....15 EXCEL 5.0 Win upgrade.....159 FastBack for Dos or Win.....99 FoxPro 2.5.....75 FoxPro 2.6 for Windows full Ver.....135 Internet in a Box Cnd.....135 Lotus 123 Win V5.0 upgrade New...135 Lotus AMI PRO upgr.....119 Norton Backup for Win.....99 Norton Commander for Dos 3.0.....59 OFFICE 4.2 upgrade.....365 OS/2 V 3.0 Warp.....89 PARADOX 5.0 Win upgr.....165 PARADOX 4.5 Win full Ver.....145 PerfectOffice upgr.....275 Quicken Canadian Win 4.0 New.....59 Smart Suite V 3.0 upgr.....325 Turbo C++ Visual 3.1.....115 Turbo Pascal for Windows 1.5.....145 Visual C++ Pro V1.0.....99 Window WORKS V2.0 PFS.....75 WINDOWS 3.1 full version.....129 Windows 3.11 upgrade.....59 WinFax Pro Win.Ver 4.0.....99 WORD 6.0 Win upgrade.....159 Word Perfect 6.1 Dos/Win upgr.....119 WORKS for Windows.....75	Rise of Robots.....33 Rebel Assault.....34 SimCity Enhanced.....29 Talking Dictionary.....20 The Virtual Body (Mayo Clinic).....24 Tuneland.....30 Tornado.....17 Wing Commander Privateer.....23	LAVA 16550 Serial card.....29 Fax/Phone Ident-A-Call switch.....95 AST/Cardinal 24/96 modem/fax.....35 ATI 14.4 Fax/modem internal.....125 Boca 28.8 Fax/modem Internal.....250 GVC 14.4 Fax/Modem Int/Ext.....95/149 GVC 28.8 Fax/Modem Int/Ext.....259/279 Supra 14.4 Fax/Modem Int/Ext.145/165 Supra 28.8 Fax/Modem Int/Ext.285/305 Satisfaction 400 Internal.....425 US ROBOTICS 14.4 f/m Int/Ext.145/165 US ROBOTICS 28.8 f/m Int/Ext.299/329 Zoltrix 14.4 Fax/modem/voice.....149 Zoltrix 14.4 F/M internal.....95 Zoltrix 28.8 Int/Ext V.34.....199/229
Central Point Speed Tools f. Win.....39 Close up.....109 DBase 5 for Windows upgr.....165 DBase 5 for Windows full Ver.....250 Delphi by Borland V 1.0 Win.....269 DOS 6.2 step up upgrade.....15 EXCEL 5.0 Win upgrade.....159 FastBack for Dos or Win.....99 FoxPro 2.5.....75 FoxPro 2.6 for Windows full Ver.....135 Internet in a Box Cnd.....135 Lotus 123 Win V5.0 upgrade New...135 Lotus AMI PRO upgr.....119 Norton Backup for Win.....99 Norton Commander for Dos 3.0.....59 OFFICE 4.2 upgrade.....365 OS/2 V 3.0 Warp.....89 PARADOX 5.0 Win upgr.....165 PARADOX 4.5 Win full Ver.....145 PerfectOffice upgr.....275 Quicken Canadian Win 4.0 New.....59 Smart Suite V 3.0 upgr.....325 Turbo C++ Visual 3.1.....115 Turbo Pascal for Windows 1.5.....145 Visual C++ Pro V1.0.....99 Window WORKS V2.0 PFS.....75 WINDOWS 3.1 full version.....129 Windows 3.11 upgrade.....59 WinFax Pro Win.Ver 4.0.....99 WORD 6.0 Win upgrade.....159 Word Perfect 6.1 Dos/Win upgr.....119 WORKS for Windows.....75	Rise of Robots.....33 Rebel Assault.....34 SimCity Enhanced.....29 Talking Dictionary.....20 The Virtual Body (Mayo Clinic).....24 Tuneland.....30 Tornado.....17 Wing Commander Privateer.....23	LAVA 16550 Serial card.....29 Fax/Phone Ident-A-Call switch.....95 AST/Cardinal 24/96 modem/fax.....35 ATI 14.4 Fax/modem internal.....125 Boca 28.8 Fax/modem Internal.....250 GVC 14.4 Fax/Modem Int/Ext.....95/149 GVC 28.8 Fax/Modem Int/Ext.....259/279 Supra 14.4 Fax/Modem Int/Ext.145/165 Supra 28.8 Fax/Modem Int/Ext.285/305 Satisfaction 400 Internal.....425 US ROBOTICS 14.4 f/m Int/Ext.145/165 US ROBOTICS 28.8 f/m Int/Ext.299/329 Zoltrix 14.4 Fax/modem/voice.....149 Zoltrix 14.4 F/M internal.....95 Zoltrix 28.8 Int/Ext V.34.....199/229			



*Custom Designed
Peak-Performance Computer Systems*

TEL (416) 449-0311 - FAX (416) 449-0596

**Tornado P75/90/100/120 Line
Pentium Based Workstation**

- Intel Pentium 75MHz with Intel Triton Chipset
- 4x 64-bit PCI Bus & 4x 16-bit ISA Bus Slots
- 8MB RAM, 256KB Cache (max. 1MB)
- 3.5" 1.44MB FDD & 1.0GB 12ms Enh. IDE HDD
- 64-bit PCI Enh. IDE, 2x Uart Serial & 1x EPP
- 64-bit PCI ATI Winboost Mach64 w/2MB DRAM
- 15" Digital Monitor, 1280x1024 NI, 72Hz, 0.28
- 101 Honeywell Enh. Keyboard & Mouse
- 3 Years Parts & Labor Warranty

Only \$2,495

OPTION PACKAGES:

- 1) Pentium 90MHz Upgrade: \$ 149
- 2) Pentium 100MHz Upgrade: \$ 349
- 3) Pentium 120MHz Upgrade: \$ Call
- 4) Basic Multimedia: \$ 399
 - Sound Blaster 16 Value
 - 4x Speed CD-ROM, Stereo Speakers
- 5) Advanced Multimedia: \$ 1,299
 - SB AWE32 with ASP & Microphone
 - Speech Recognition Software
 - 4x Speed Internal IDE CD-ROM
 - 17" Nokia 447L with integrated Speakers
- 6) Graphic Lite: \$ 1,999
 - 16MB RAM, 512KB Cache
 - ATI Graphics Pro Turbo w/4MB VRAM
 - 17" Nokia Multigraph 447X (0.25)

**Hurricane P100/200 Line
Pentium Professional Power Series
with Dual-Processor Technology**

- 2x INTEL PENTIUM 100MHZ WITH NEPTUNE CHIPSET
- 3x 64-BIT PCI BUS & 4x 32-BIT EISA BUS SLOTS
- 32MB RAM (MAX. 768MB), 512KB CACHE
- 3.5" 1.44MB FDD, PLEXTOR 6x SPEED SCSI-2 CD-ROM
- ADAPTEC 2940W PCI TO FAST WIDE SCSI-3 CONTROLLER
- 2.1 GB SEAGATE 8MS FAST WIDE SCSI-3 HDD (20MB/S)
- PCI ATI GRAPHICS PRO TURBO MACH64 w/4MB VRAM
- 17" NOKIA MULTIGRAPH 447X MONITOR, 0.25
- 101 HONEYWELL ENH. KEYBOARD & MICROSOFT MOUSE
- 2x 16550 UART SERIAL AND 1x ENH. PARALLEL PORT
- TRIPLE COOLING TECHNOLOGY
- 3 YEARS PARTS & LABOR WARRANTY



nels. This is another advantage over IBM because a good retailer can help the customers immensely, especially when it comes to warranties.

"You'll find that most clone companies will still have warranties as good as IBM whether they deal directly with the end users through mail order or through retailers like we do. Basically, reputable manufacturers ensure that the customer can get direct support from the dealer where they bought the computer while they'll also have access to a 1-800 tech support line. And I think a three-year parts and labor warranty is what most people can expect from the good companies, no matter which one they buy from.

"Getting back to the question, the advantage over IBM is that I believe clone companies will give a faster response when their customers are in trouble. I think IBM deals with

third-party organizations... As far as I know they contract with a third party to dispatch a technician on-site. Now, many Seanix dealers also offer on-site service too, but you can see that clone customers are getting the same quality of warranty as IBM but they're still paying a lot less for their computers."

Gagnon goes on to discuss the delicate subject of upgradeability, noting the fact that IBM clones are often more IBM compatible than IBMs themselves. Where you'll occasionally find some kind of proprietary something on an IBM (Microchannel slots and PS/2 mice come to mind), clone companies seem to make a point of making sure their systems always adhere to industry standard flexibility — no special proprietary RAM chips, interfaces or components.

"This is an important point," he says, "because anybody can buy our systems for a lower price and those savings continue when they want to upgrade. Sometimes, you know, people compare only the purchase price of computers at the store without considering the cost of upgrading later on... and that can make a very big difference overall. That's one of the reasons we're very careful about who we select to sell our computers, we choose only reputable retailers."

"Like many clone companies are starting to do," says Gagnon, expanding on this strategy, "Seanix sells through independent retailers and we recently started dealing with a few large distributors who are now selling our products through their own retail chan-

nel. This is another advantage over IBM because a good retailer can help the customers immensely, especially when it comes to warranties.

"The first thing someone should look at when buying a computer," Pietramala kicks in, "is what that computer will cost them over the next five years, not just the initial purchase price. According to the Gartner Group [a leading independent market research firm for the PC industry], the real cost of computing must be calculated over the life of the machine. They've divided that

IBM

Pete Pietramala has a lot to say along the same lines but, of course, touting his company's machines:

"The first thing someone should look at when buying a computer," Pietramala kicks in, "is what that computer will cost them over the next five years, not just the initial purchase price. According to the Gartner Group [a leading independent market research firm for the PC industry], the real cost of computing must be calculated over the life of the machine. They've divided that

486SLC-33 \$889

- 4MB RAM
- 420 MB Hard Disk Drive
- VGA Card w/256K
- VGA Mono Monitor

486 PCI Local Bus

- 486DX2-66 \$1,579
- 486DX4-100 \$1,679

- Intel CPU
- 256K Cache
- 8 Mb RAM
- 540Mb Hard Disk Drive
- PCI BusIDE Controller
- PCI Bus SVGA Card w/1MB
- 14" Non-interlaced SVGA Monitor

486 VESA Local Bus

- 486SX-33\$1,249
- 486DX2-66 AMD...\$1,289
- 486DX2-66\$1,329
- 486DX2-80 AMD...\$1,309
- 486DX4-75\$1,339
- 486DX4-100 AMD \$1,349
- 486DX4-100\$1,429

- Intel CPU
- 256K Cache
- 4 Mb RAM
- 540Mb Hard Disk Drive
- VL Bus SVGA Card w/1MB
- VL Bus IDE I/O Card
- 14" Non-interlaced SVGA Monitor

Pentium PCI Local Bus

- P5-60 MHz\$1,949
- P5-66 MHz\$1,989
- P5-75 MHz\$1,999
- P5-90 MHz\$2,129
- P5-100 MHz\$2,289

- Intel CPU
- 256K Cache
- 8 MB RAM
- 540 MB Hard Disk Drive
- Built-in PCI IDE Controller
- 2 Hi speed Serial Ports
- 1 Parallel Port
- PCI Bus SVGA Card w/ 1 MB
- 15" Non-interlaced Monitor

All Systems Include: 1.44 MB Floppy Drive; 2 Serial, 1 Parallel, 1 Game Ports; 101 Enhanced Keyboard; Mouse; MS-DOS 6.22; Mini-tower Case with LED

IDE Hard Drives

- 420MB225
- 540MB240
- 850MB315
- 1.2 GB475

Sound Cards

- Sound Blaster 16 Value OEM105
- Sound Blaster 16 Vibra IDE OEM 110
- Sound Blaster 16 SCSI-2 OEM169

Fax/Modem

- 14.4K/14.4K Internal w/Voice Mail99
- 14.4K/14.4K Internal75
- 14.4K/14.4K External120
- 14.4K/28.8K Internal w/ V.34189
- 14.4K/28.8K External w/ V.34265

CD-ROM Drives

- Toshiba 3601Quad Speed SCSI449
- Toshiba 5302 Quad Speed IDE285
- TEAC CD-55A Quad Speed249
- NEC CDR-500 3X w/ LCD SCSI269
- Sony 55E 2X Speed IDE160
- Panasonic 562 2X Speed145

Tape Back-up

- Conner 420 MB Internal239
- Colorado 680 MB Internal275
- Conner 850 MB Internal365
- Colorado Trakker 350 External380
- Conner 420 MB External445
- Conner 680 MB External475
- Conner 850 MB External565

Note: Prices subject to varying Market Conditions. All prices are cash discounted.

KEHTRON COMPUTER INC.

461 Alden Road, Unit 22
Markham, Ontario L3R 3L4
Tel: (905) 513-8359 Fax: (905) 513-0973

Cherry Hill, NJ
King of Prussia, PA
Wilmington, DE
Norwalk, CT

Mountain Electronics

7 Coxwell Ave. Toronto 416-806-6880
Computer Sales, Upgrades, Parts, New or Used.

Multimedia Ad Ons

ACER Dual Speed CD-Rom, 16 bit sound card, true stereo speakers \$269.00

Fun Fun Fun Fun Fun Fun Fun Fun Fun Fun

Quad Speed CD-ROM 16 bit sound card stereo speakers comes with CD titles: M.S. BookShelf, M.S. Works, Money Publisher, Entertainment Pac \$429.00

Upgrade your 286s and 386s to 486 DLC40

(includes 4 MB of RAM) **\$500.00**

Hard Drive Upgrades also available, call for details.

OPENING SPECIALS

DX2-66 -- \$1299.00

- 4MB RAM, 420 Meg Hard Drive
- 1 Mb VLB Video, VLB Controller
- Keyboard & Mouse
- 1.44 Floppy
- DOS or Windows preloaded
- Hi-Com 1024 x 768 K.L. 14" SVGA comes with system.
- DOS \$51
- Windows \$71



IBM VS THE CLONES

cost into different areas, calculating that the initial purchase price amounts to only 17 percent of the total cost within a business environment and only about 30 percent for home users. The rest of the costs are made up of support costs, compatibility problems, reliability, software, user education, etc.

"Of course, some of those costs we can't influence," Pietramala continues, "everybody has to pay the same for their software. But IBM minimizes the costs where we can. You can go out and buy the cheapest machine you can find for say... \$1,000, but if it's going to cost you \$4,000 for support and fixing compatibility problems and for lost opportunities due to down-time, it wasn't the cheapest computer out there for you after all — because those long term costs weren't considered.

"Though they cost a little more to buy, IBM computers have been consistently ranked among the top makes for reliability. We recently received top marks in a national magazine survey which put us as one of the best manufacturers for reliability, repair and technical support. The survey rated the performance of companies over the past four years and some manufacturers were good for certain things in the past but not now — or the other way around. But IBM ranks in the top class consistently. That's what most people expect when they buy IBM, and this kind of survey simply gives credence to those beliefs."

In contrast to what Julian Gagnon suggests, Pietramala says IBM has achieved such an admirable record through a combination of more stringent quality control and employing better components than their competition: "A lot of our competitors will go out and spot-buy the cheapest components," says Pietramala, "whether it's the processor chip, or the video chip or whatever. IBM signs long-term agreements with certified suppliers for our parts. Clone companies go out into the open market and get the least-cost products, then assemble their machines. So, if you compare machines built one year apart, for example, you'll find that the clones are very different inside while IBMs will be more or less the same.

"The result is the kind of reliability record I quoted in that survey," he continues. "In another survey, Reliability Ratings — which is an independent research firm out of the U.S. — ranked our Value Point as the second most reliable system in the market place, first place being taken by our PS/2. They measured such things as dead-on-arrival [DOA] rate and annual failure rate. Where we topped the list with a DOA rate of one-third of one percent,

one competitor had an unbelievable DOA rate of 106 percent — not only was their test machine inoperative when it arrived, but the replacement was too!"

When asked about the actual physical quality of IBM computers, Pietramala points out that their consistently solid "feel" is intimately tied to their manufacturing process: "IBM was awarded the most computer oriented patents in 1994," he says, "which gives you some indication of the amount of dollars we spend on research and development. Whether it's memory patents, drive patents or our new "Butterfly notebook," we develop and patent many of those technologies. We developed the "TrackPoint" pointing device for notebooks — which we license to clones now — and we came up with the 10.4" active matrix display. IBM is also the first and only manufacturer to have MPC II compliance on our notebooks with the new 755CD."

IBM product testing is equally innovative, involving a system called GUARDBAND which, according to an IBM document, "is a test tool combining data collections, stress testing and statistical analysis to allow analytical and predictive assessment of components, sub-assemblies and system interaction." They use a number of different environmental chambers to test the effects of extreme levels of temperature, humidity and altitude as well as employing acoustical chambers for testing noise levels. Of all these, perhaps the most unique are IBM's Federal Communications Commission certified semi-anechoic electromagnetic compatibility chambers—which is a convoluted way of saying they have rooms to test the computer's electronic emissions and susceptibility to interference.

Turning to compatibility, Pietramala says that's no longer an issue in the industry. He says that compatibility is mostly dependent on the BIOS used by each machine and most of the BIOS systems on the market now are pretty well standardized. IBM currently uses the SurePath BIOS which was jointly developed between IBM and Phoenix with the aim of reducing compatibility problems even further.

"But even though the BIOS is the major factor in compatibility," Pietramala explains, "there is so much going on in a computer that other things have to be taken into account too. So, companies that manufacture peripherals — CD-ROM drives, memory, sound cards, etc. — choose to test their products on an IBM PC because they want to

Continued on page 53

Autodesk 3D Studio Student Version 4.0 \$775

SPECIAL with this AD and Student ID Regularly \$850

Upgrade from version 3 to version 4.0 \$395
3D Studio Version 2.01a students only \$280
3D Studio Version 4.0 full commercial CALL

Autodesk
Authorized Dealer

2 & 3D Animation & Modeling Full Package with all Manuals, Disks, CD & Hardware Lock

PC to TV ENCODER

HIGH QUALITY

FLICKER-FREE & 16.7 Million Colours

\$275

Notebook, laptop, desktop with VGA output to TV, Colour smear filter, Supports composite and S-Video output All cables 640 x 480 (NTSC) Flicker-Free image in 16.7 million

NEW! Autodesk Animator Studio 24 bit colour, AVI, sound and a full suite of 2D animation tools Upgrade from Animator Pro plus \$25 Processing \$299*

IC

3D Studio Animation Targa+ Cards PC Video Multimedia Video Grab DPS-PAR

Technology (416)633-5884

NEW ADDRESS & SHOWROOM! 330 Rimrock, Downsview, Ont.

3D STUDIO TRAINING SPECIAL

Hands-on introductory 2 Day 3D Studio animation course. Learn the basics of 3D Studio by producing your own animation sequence. Our step-by-step training will lay the groundwork for developing your 3D Studio expertise. \$359 Call for next start date

DIGITAL

VIDEO

PC Video Editing Boards and Systems

LOW COST Non-Linear digital video capture and playback systems for VHS, S-VHS and BETACAM Quality on the PC! Full Screen, Full Motion Video production on your PC. Create special effects, playback or combine animation and record to your VCR in real-time.

MIRO FAST VIDEO Targa2000 DPS-PAR ADDA RAZOR PREMIERE ANIMATION MASTER TRUESPACE Hardware & software from \$995.

DEC ALPHA SYSTEMS - 233 Mhz

Genuine Intel Motherboards Lightwave 4.0 Animation



Tricon

Technologies(Canada) Ltd.

25 Milliken Blvd. Unit A9, Scarb, Ont. M1V 1V3
Tel (416) 609-9939 Fax (416) 609-8770

540Mb TEAC Removable Harddrive

Low Radiation MONITOR

SVGA

NON INTERLACED

EASY TO USE

SMART FROM IN AND OUT

GUARD AGAINST DATA PRIVACY

MULTI-OPERATING SYSTEMS IN A COMPUTER

HIGH MOBILITY TOO!

- 850Mb Conner IDE harddrive
- 1.27 Gbyte Conner IDE harddrive
- 1.08 Gbyte Conner SCSI harddrive
- TEAC 4X CD-ROM
- External CD-ROM printer - port sub-system for notebook

.....& many others

TEAC

CONNOR

WESCOM

designed by FRANK LAU

Super Large Output

Windows 3.11

We can output any PC files.

- CorelDraw specialist
- No surcharge for long processing time
- Colour laser output
- Four colour separations
- Friendly, fast and reliable services

Lino Depot Inc. (416) 588-8799 • Satisfaction guaranteed

Print poster-sized film or RC paper from PC PageMaker, QuarkXPress or CorelDraw

WIN 3.11 COREL APPROVED!

DMI

CD-Recording Store
4155 Sheppard Ave, E. Scar, ON
Tel : (416) 609-2388 Fax : (416) 609-2106

The Best Quality in the market
even for a 6X CD-Recorder

Mutsui CD-R

Reg \$ 35.00
Now Only \$ 17.50
(No Minimum)

We Carry :

CD-Recorder & CD-R Disc,
CD-ROM Tower, Jukebox,
Mini-changer &
CD Network Accessing System

- Volume Discount
- Dealers Welcome

Distributed By : INSTAR Corporation
Agent : Digital Multimedia Information

Beneath the Label

Peeking Inside IBM and Seanix PCs

BY ROSS MACDONALD

I asked both IBM and Seanix Technology to send me anything at all that they would market as an "economy" system so I could poke around for myself to determine just what you might get in that category. Mustering as much high-school Stanislavsky as I could possibly recall, I assumed the role of "typical consumer" and took a quick look at what a novice... or casual purchaser — the most likely candidates for a budget system — might notice.

IBM PC 330



\$3499 + monitor), the "300" series is IBM's lowest priced line and this model sits at the lower end of that. And, at 14 inches, we already know the monitor well suits a "lower end" designation despite its uptown price.

However, consistent with IBM's long established reputation for quality, there's nothing cheap about the physicality of either component. The computer itself is suitably heavy and the metal cabinet will give you lots of confidence in terms of bangability — especially if you've got kids or over enthused teenaged gamers in the house. The peripherals all hook up to solidly seated I/O ports and the power button, though a bit wobbly, yields a solid metallic "clunk" when pressed. The cabinet has a handy — and lockable — sliding panel to prevent industrial spies (and little peanut buttery fingers) from gaining access.

Likewise, the 14 V monitor is a hefty piece of hardware in its heavy plastic housing. The door which hides the digital mode controls (that means push-button instead of knobs) is confidently hinged and the controls themselves are highly responsive under their protective plastic cover-sheet. It only took a bit of fiddling to get the edge-to-edge image I prefer and the picture was just as bright and clear as you'd expect from a 14-inch monitor laboring under a \$709 price tag.

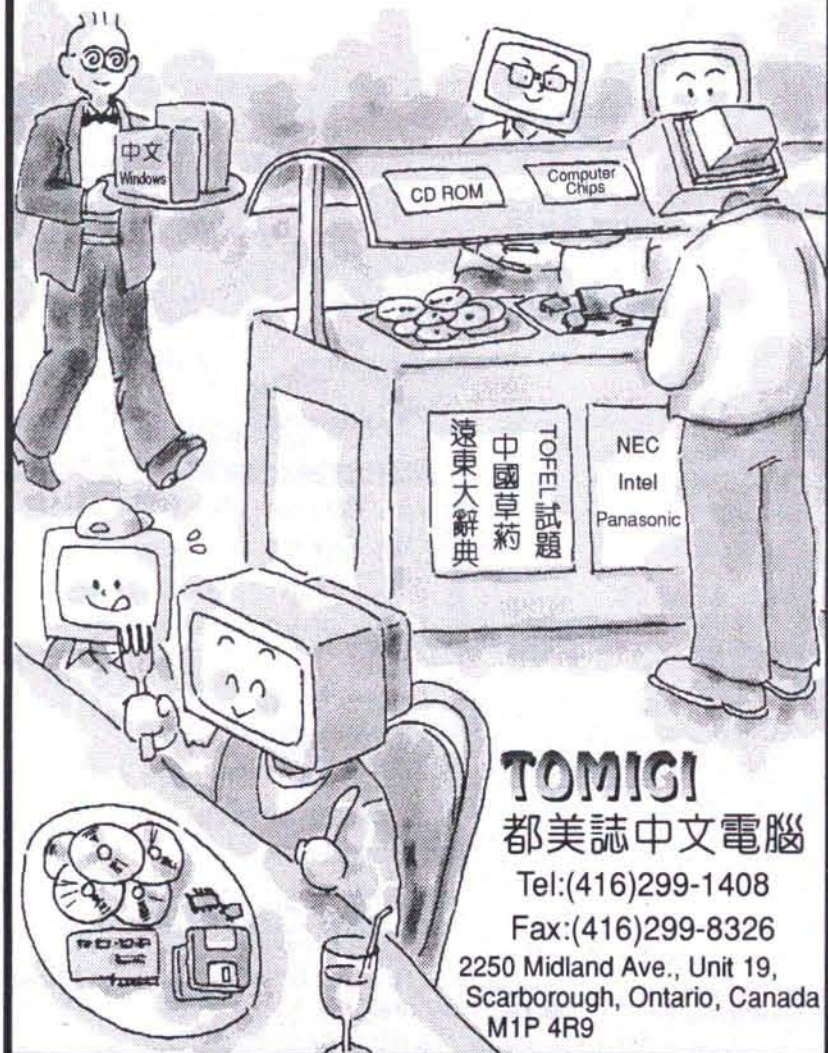
A quick peek inside the computer showed three empty expansion slots — two ISA and one VLB — along with a pair of 72-

IBM sent its attractively christened PC 330 450 DX2, a flat-cased desktop model driven by an Intel 486 DX2/50 processor. The package includes a standard IBM keyboard and mouse, 12 MB of RAM, a 1 MB video card and a 270 MB hard drive, plus pre-installed PC DOS 6.3, Windows 3.1, some utility software and an extensive set of on-line documentation and tutorials. In keeping with the economic nature of my request, this modest machine was accompanied by IBM's 14 V, a 14-inch, .28 dot pitch, non-interlaced color monitor.

The suggested price for this test system was \$2,292 plus \$709 for the monitor making the total price \$3001. You, of course, will get it retail for somewhat less.

Despite some inevitable cross-over due to the various chips and configurations available (you can go as high as a Pentium 90, 540 meg HD version with an MSRP of

Computer Buffet



TOMIGI
都美誌中文電腦
Tel:(416)299-1408
Fax:(416)299-8326
2250 Midland Ave., Unit 19,
Scarborough, Ontario, Canada
M1P 4R9

Designed by IN Concept

EXPERT SERVICE FOR HP, OKIDATA, PANASONIC & RAVEN



LASER PRINTER REPAIR

- quality, reliable service
- preventative maintenance
- fast on-site service
- laser supplies and cartridges

O.P.M. OFFICE PHOTOCOPY MACHINES & BUSINESS SYSTEMS

(905)275-3022

CALL FOR A FREE ESTIMATE

pin RAM cards occupying two of the four RAM slots. I couldn't spot brand names on any of the components but the sticker on the power supply told me it was made in Taiwan in March of '94 while the 3-1/2-inch floppy came from Malaysia. I couldn't see the hard-drive at all because it was buried under too many other things and the I/O card seems to be integrated onto the motherboard instead of a separate item.

Ambitious expansionists might beware of anything in the "300" series, though, because IBM's idiosyncratic nomenclature tells us that this model — the 3-3-0 — has three bays and three slots, the hard and floppy drives occupying two of the bays. I don't know what the zero means but it might as well stand for your chances of adding more than one device that requires user access (CD-ROM, tape drive, second floppy, PCMCIA adapter, etc.). The high end of this series uses the "350" designation but that still means three bays (two occupied) and five slots... plus the zero.

However, on the expansion upside, IBM has added a new technology to all of its PCs called SelectaBus which allows you to custom configure the few slots you do have from ISA to VESA or ISA to PCI by adding an optional riser card. The only thing you should remember, though, is that you're still dealing with a 32-bit, 25 MHz bus on this model which will cripple any 64-bit PCI cards you might want to add.

But a courteous, highly appreciated and ultimately practical feature on my demo machine is that IBM stuck a basic schematic and jumper table for the motherboard inside the computer case so I was able to determine that the RAM is expandable to 32 MB and there are nine cache memory sockets that can hold up to 256 kilobytes.

The reason I needed that chart to figure things out is that IBM is trying a new documentation strategy that involves the complete lack of a standard owner's manual. Instead, you ostensibly get all the information you'll ever need about your system through an on-line Welcome Centre that pops up after you get the computer going. And, yes, there is a paper brochure to tell you how to do that.

The Welcome Centre is rife with information, utility packages and tutorials and even includes something called the Diskette Factory which lets you make sets of diskettes for any of the software on the system. According to Windows' File Manager, this whole array takes up 107.5 MB of hard-drive space, but that includes the pre-installed Windows and DOS.

It didn't take more than about five minutes to get all the bits and pieces hooked up and switched on, at which point it hummed nicely to life and began functioning in the customary manner.

The general impression, as expected, is that the IBM PC330 450 DX2 is a solid machine yielding no surprises in terms of performance on either the bad or good sides of the fence. The 14 V, on the other hand, is one of the best 14-inch monitors I've seen.

Seanix ASI 9000



Seanix Technology's version of an economy system was exceptionally different from IBM's. It consisted of an AM4DX4/100 driven mini-tower from their popular ASI 9000 series. This came with 8 MB of RAM, an NMB Technologies standard keyboard, a Microsoft mouse, a whopping 853 megabyte hard-drive, and a 1 MB video card. The system also includes a disappointing 14-inch ASI .28 dot pitch, non-interlaced, low radiation monitor (actually manufactured by reputable Acer) that's encased in a cabinet suspiciously similar to that of a GVC monitor I recently had.

But, as if to make up for that, Seanix has benevolently thrown in a quad speed CD-ROM drive along with a 16-bit sound card and a pair of CS 905s amplified speakers.

Boosting that considerable bonus even further, four Microsoft CD-ROMs were also in the box — Works, Encarta '95, Dangerous Creatures and Golf — a pretty good assortment covering CD-ROM categories that include utility, reference and recreation.

Pre-installed software, however, was singularly lacking. Besides the necessary drivers and stuff needed to actually make the machine go, all I got was Windows 3.11 and MS-DOS 6.2 along with the relevant manuals.

But again, Seanix makes it easy to forgive such economies as the price for all

Fuser Assemblies



Dealer parts for:

- ALPS, EVEREX, IBM, QMS, CANON, NEC, APPLE, OLIVETTI, HP, BROTHER, FUJITSU, QUME, PANASONIC, KYOCERA, OKIDATA, MANNESMAN TALLY, COMPAQ, EPSON AND MANY MORE!!!

\$79.00
Rebuilt from

Prices subject to change without notice

with 4 month warranty

Call for incredible prices on most laser printer parts and accessories!

Setting new standards for price and quality



Commercial Laser Technologies (416) 633-6566

ALPHA COMPUTER CONNECTIONS
2050 Steeles Ave., W. Unit 2
FAX: (905) 738-1570
TEL: (905) 738-0744

Alpha SYSTEM

ALPHA EXECUTIVE SERIES

intel 486DX2-66 \$1738	Pentium 75 \$2068	Pentium 100 \$2368
intel 486DX4-100 \$1838	Pentium 90 \$2198	

486 includes:

- Gigabyte 486 PCI/VLB Main Board, w/256K cache
- Enhanced IDE I/O Controller
- Standard Features: 8MB 72pins Simm Memory, ATI Mach32 PCI / VLB Windows Accelerator with 1Meg(Max. 2Meg), Quantum 540MB IDE HDD, 96K Cache, 12ms
- Magitronic 15" 1280 x 1024 0.28dp XGA Non-Interlaced, Green Monitor. Digital Control, MPRII
- NEC 1.44MB Floppy Drive
- Honeywell 101 Enhanced Keyboard
- CD Midi Tower Case with 230watt Power Supply
- Logitech 3 Buttons Serial Mouse

Pentium includes:

- Gigabyte Pentium 64bits PCI Main Board, w/256K cache, ZLI
- Built-in PCI Enhanced IDE, 2 x 16550 Fast I/O
- Standard Features: Pentium 64bits PCI Main Board, w/256K cache, Triton Chip set, support EDO Ultra Fast Memory
- Built-in PCI Enhanced IDE and 2 x Ultra Fast 16550 I/O

AMD 486DX4-100 \$2288
intel 486DX2-66 \$2268
intel 486DX4-100 \$2388
AMD 486DX2-66 \$1698
AMD 486DX2-66 \$1718
AMD 486DX2-66 \$1778
AMD 486DX4-100 \$1748

COMPAG Authorized Dealer
Please Call for Special Price Dealers Welcome

Executive / Premium series upgrades:

- MAG DX17P 17" 1280 x 1024 0.28dp XGA Monitor .add. \$ 530
- Viewsonic 17" 1700 x 1024 0.27dp XGA Monitor .add. \$ 895
- From ATI Mach32 to Mach64 w/1MB D-Ram .add. \$ 50
- From ATI Mach64 1Meg to 2Meg D-Ram .add. \$ 50
- From ATI Mach64 2 Meg D-Ram to 3 Meg V-Ram .add. \$ 110
- From 540MB to 650MB IDE HDD .add. \$ 85
- From 850MB to 1.05GB IDE HDD .add. \$ 80
- From 1.05GB to 1.2GB IDE HDD .add. \$ 50
- Cannon BJ-100 .add. \$ 270
- Cannon BJC-4000 .add. \$ 495

ALPHA PREMIUM SERIES

intel 486DX2-66 \$1738	intel Pentium 100 \$2368
intel 486DX4-100 \$1838	AMD 486DX2-66 \$1718
intel Pentium 75 \$2068	AMD 486DX4-100 \$1748

Monthly Special

- 14.4 int. Fax Modem \$75
- BitFax. 16550
- Boca 28.8 V.34 int. Fax Modem \$219
- GVC 28.8 V.34 Int. Fax Modem \$253

Multimedia Kit \$273

- Parasonic C185a2 Dust Speed CD-Rom
- Creative Lab Sound Blaster 16
- CP-85 Speakers
- Compton's 95 Encyclopedia
- Teac 4X CD Rom (64K, 195ms, 600Kbps)
- Creative Lab Sound Blaster 16
- MW6881 Stereo Speakers
- M.S Encarta 95

\$99 Voice Mail/Fax/Modem
\$269 Voice Mail / Fax / 16 bit sound
- Auto detect & Switch Voice and FAX
- Deliver MSG to Cell Phone, Pager etc
- Built-in FAX on DEMAND

\$149 Network starter's kit
2PCs share HD, CD-ROM, Printer, etc.
- 2 ethernet NE2000 standard card
- 2 Ts+BNCs+ Terminators+10' cable
\$149 2set Novell DOS+NetWare,FBkp

We do upgrade, MAC, IBM PC, Laser printers & Notebooks

\$50.....For each 1MB RAM
\$499.....486DX to Pentium
\$149.....CPU frm 486SX to 486DX
\$299.....frm 386DX to 486DX2-66
\$249.....HDD frm 40M to 540M
Call...Memory for Printer & NoteBook
387DX Math Co-processor.....\$45
486M/BPCI+SCSIctrl+Intel chipset\$169
External 2x CDROM.....\$199
2x CDROM+ Sound Card,spks.....\$239
3.5" / 5.25" FDD.....\$42/ 55
Mini,Mid,Tower case.....\$56/66
ATI Mach32/64.....\$139/199
CorelDraw 3.0 / 4.0.....\$79 / 159
BJ4000 Cannon.....\$359

* All Price are Cash Discounted and subjected to change without Notice

CTC COMPUTER TELENET CANADA Ltd.
2950 Kennedy Rd. Suite#202, Scarb. N.of Finch, Mon-Fri/Sat 11-7/5 Tel: (416) 297-6773 Fax/Voice Mail : 297-9482

MultiMedia with Encycl. 95 + MS Works + MS Money + more

486DX2-66.....\$38/mth 1,399 4M RAM, 530M HD, 3.5" FD, 128kc
14"SVGA .39, 1M VLB SVGA card
Minitower, Mouse, K/B, 2S/P/G ports

DX4-100.....\$44/mth 1,499 2x CD-ROM, Sound Card, speakers

Pentium-66.....\$58/mth 1,999 8M RAM, 850M HD, 3.5" FD, 256kc

Pentium-75.....\$61/mth 2,099 15" FS .28, ATI Mach32 PCI video
PCI Enhanced IDE, 2x16550 hi-sp ports

Pentium-90.....\$64/mth 2,199 HoneyWell Keyboard, CDTower 230W
Microsoft J-mouse. (DOS+Win \$99)

NoteBook \$999.....486slc-33MHz, 4M, 120M HD, FaxModem

Price base on Cash carry or certified check, no credit card, exclude mthly pay

Compac Computer Systems

2370 Midland Avenue, Unit A-15, Scarborough, Ontario M1S 5C6
Tel: (416) 609-3034 Fax: (416) 609-3843

Motherboard:	
BT LI Green PC 486DX P24T VLB 128K	\$ 120
BT ZP Pentium 60/66 PCI 256K w/ VO	\$ 245
BT ZP Pentium 75/90/100 PCI 256K w/ VO	\$ 296
Keyboard:	
101 enhanced	\$ 19
Fujitsu 487D 101 enhanced	\$ 39
Modem:	
DSI 14.4/14.4 Int. fax modem (BitFax & Bitcom for Windows)	\$ 80
Video & Interface Cards:	
Triton T9440 PCI w/1mb	\$ 111
Triton T9440 VLB w/1mb	\$ 107
IDE I/O (2x, 1p, 1g)	\$ 16
IDE I/O w/2-16650	\$ 35
VLB enhanced IDE I/O	\$ 36
VLB enhanced IDE I/O w/16550	\$ 52
PCI enhanced IDE I/O	\$ 55
CD-ROM:	
Panasonic CR-562 2x CD-ROM	\$ 162
Teac 55A 4x CD-ROM	\$ 258

**Intel 486DX2-66
OR
AMD 486DX4-100**

486VLB/128K/Green PC
4mb 72pin Ram
Mini tower case w/p.s.
IDE I/O (2x, 1p, 1g)
VLB SVGA video w/1mb
14" SVGA NI Monitor .28
1.44mb Floppy
Maxtor 540mb H.D.
101 enhanced K/B
Mouse + Pad

\$ 1299

Pentium 60

Pentium 60 VLB/PCI/ISA
256K cache w/CPU fan
8mb 72pin Ram
Med tower case w/p.s.
Built-in IDE I/O (2x, 1p, 1g)
PCI SVGA video w/1mb
14" SVGA NI Monitor .28
1.44mb Floppy
Maxtor 540mb H.D.
101 enhanced K/B
Mouse + Pad

\$ 1780

Price subject to change without notice

June Special

Maxtor 850mb IDE \$299.99

Sound Blaster 16 Basic \$100

this is equally economical at \$2,315 for the computer and \$350 for the monitor — a grand total of \$2,665. And, unlike many clone manufacturers who deal exclusively with their customers by mail order, Seanix Technology sells through retailers so that, as with IBM, you just might get this system for somewhat less when you're ready to actually fork over the dough.

The ASI 9000 has been a popular product, largely because of the value for money that our checklist so prominently demonstrates. But there are other aspects to this machine that have kept it consistently close to the top of many a magazine's list (you know... "Editor's Choice", "Winners", "Top Picks", "Super Systems", "What We Liked", etc.).

The first thing you're going to notice is that you get most of the documentation you're supposed to get (but rarely do) from anyone else. I got manuals, charts and/or driver diskettes for not only the computer but also for the video card, the audio card, the IDE CD-ROM interface, the CD-ROM drive itself, the I/O card, the monitor and even the motherboard. I understand that most people regard some of these booklets as impossibly technical but, if you ever have a problem, whoever you decide to pay to figure it out will be grateful beyond measure for the information they contain — as will your wallet at fifty bucks an hour!

Such literary largesse meant I didn't have to open the machine to learn I had a Winjet VL Premier video card, a Super-16550 enhanced IDE Pro VLB I/O card, a Creative Technologies SoundBlaster VIBRA 16 sound card, a Mitsumi FX400 IDE Quad Speed CD-ROM drive, and an ARVIDA Technologies Yukon S895 motherboard with three ISA slots and three VLB slots. In keeping with their "Made In Canada" philosophy, the motherboard, graphics card and IDE controller are all manufactured within the Dominion by Seanix Technology itself.

I did, however, open the machine anyway — just 'cause I'm like that — to find one ISA slot holding the sound card and two of the VLB slots occupied by the I/O and video cards. There were four RAM slots with a single 8 meg RAM card occupying the first one. The CPU comfortably languished under an AVC chip fan — and out of the way of the longer VLB slots — and I was able to determine that the hard drive was a Western Digital Caviar 2850. The power supply and the 3.5-inch floppy

drive bore no markings other than those "Guarantee void if removed!" stickers and some other stickers filled with incomprehensible manufacturer's codes.

Despite lots of empty space inside the generous mini-tower, all components were firmly seated and there was at least some attempt to neatly bundle the inevitable rat's nest of necessary wiring. The front panel of the cabinet is attractively laid out and features a lock (which stops the keyboard from working) as well as turbo and reset buttons with indicator lights for all three along the top.

But all of that's behind a clear plastic panel that the sausage fingered are going to find maddening because the holes in the panel that are supposed to give access to the buttons have been designed with only the most digitally delicate in mind. I also discovered that the CD-ROM drive tray actually knocks the keys out of the lock when opening and my lock was not only installed backwards, but its LED didn't work either.

But the weakest point of this system — albeit one you can probably fix with some judicious flexing of the pocket book — is the 14-inch ASI monitor. As 14-inch monitors go, it seems like a pretty good one. But I guess I've gotten spoiled by many of the features you can take for granted with most displays these days.

First, and most disappointing, is that this is about as far from a flat screen as you can get. The "lens", as it were, gives the distinct impression that you're looking at the side of a highly reflective sphere. Next, the image controllers — horizontal and vertical image position, vertical and horizontal image size, brightness and contrast — are all analog. And, I suppose it's because of the curvature of the screen, there are none of those corner stretching doohickies that allow you to fill the screen without distortion. I wouldn't not buy this system because of this monitor, but I wouldn't buy this monitor either.

As expected, I hooked everything up, flew around inside the machine, installed Encarta and played around with that, and everything (but that keyboard lock LED) worked famously.

Again we have a high quality system with only a few flaws but with lots of extras we'd expect to find on less economical terms. It's clear that, as a representative of the clone industry, Seanix Technology ought to have Big Blue seeing red. □

What's New & Hot

3FT. 6 PAK (6CDs) FOR CHILDREN \$28.80

Putt Putt Fun Pak • Basic Spelling Trick • Lenny's Music • Cinderella • Kids Play • Our House

5FTA VOL 2 \$36.80

• Sherlock Holmes Consulting Detective • Space Quest IV • Battle Chess Enhanced • PC Karaoke Family Fun • Rock, Rap N' Roll • Microsoft Multimedia Jumpstart • Movie Select for MPC • Home Medical Advisor • Arts & Letters War Birds • 2000 Forts by Fantasia

10 Hottest CDs For only \$44.50

• Blue Force • Ringworld • The Family Doctor • Kids Can Read: Aesop's Table • Red Baron • The Magic Death Virtual Murder 2 • The First Emperor of China • Inca II • Hilarious • World Literary

American Heritage Talking Dictionary \$19.80

• A dictionary that actually pronounces the words for you • Find words instantly • Great for puzzle lovers • Enrich your vocabulary • Over 200,000 words are instantly at your fingertips, complete with full definitions, parts of speech, proper usage, hyphenation, idioms, synonyms, homographs, pronunciations, and inflections, abbreviations, and sample sentences

Middle School Suite (box) \$18.80

• Comprehensive, targeted coverage of middle school level math and English grammar • Self-help tutorials in over 100 key math and grammar subject areas • Over 1,000 exercises with step-by-step solutions

The Complete Algebra \$18.80

• Provides comprehensive coverage of first year algebra I & algebra II • Easy-to-follow self-help tutorials in 100 key subject areas • Over 1,000 practice problems with step-by-step solution

7th Guest	\$23.50
Alien Logic	\$28.80
Alone in the Dark	\$29.99
Alone in the Dark II	\$39.99
Blown Away	\$24.00
Body Works 3.0	\$34.99
Chinese Dictionary w. Sound	\$49.80
CICA MS Windows February 95'	\$24.99
Compton's Interactive Encyclopedia 95'	\$19.80
Cyclones	\$28.80
Dawn Patrol	\$28.80
Dragon Lore	\$34.99
F-14 Fleet Defender	\$39.00
Grolier Encyclopedia 7.04 (95')	\$24.99
Hell	\$29.95
Hobbs OS/2 March 95'	\$22.99
IndyCar Racing	\$24.99
Infopedia	\$28.80
JFK Assassination	\$22.50
Learn to Speak English	\$48.00
Library of the Future	\$26.50
Linux Developer's Resource (4CDs)	\$28.80
Lode Runner	\$32.50
Mathematics Library	\$22.50
Mayo Total Heart	\$24.99
Mayo Pharmacist	\$24.99
Mighty Morphin Power Ranger	\$22.00
Out Post	\$24.00
Panzer General	\$28.80
Police Quest IV	\$24.99
Prince Interactive	\$39.99
Quicken 4.0 Deluxe	\$54.99
Ravenloft	\$28.80
Rabel Assault	\$35.00
Return to Zork	\$19.99
Subwar 2050	\$34.99
Under the Killing Moon	\$66.80
Video Casino Games (box)	\$26.80
Virtual Vegas Black Jack	\$29.99
Wings Commander 3	\$59.99
World Atlas 5.0	\$19.99



and many others unlisted titles... Chinese Titles Available!

Multimedia CD ROM Software Multimedia Hardware

media CD SHOP
Mon-Sat: 10:00-6:00
20 Crown Steel Drive, Unit 12,
Markham, Ontario L3R 9X9
Tel: (905) 940-1502
All prices are 3% cash discounted. We accept cash, cheque or debit card only.

Just for Kids

Arthur's Teacher Toruble	\$19.99
Barney Bear Goes to School	\$14.99
Barney Bear Goes to Space	\$14.99
Buster's First Thunderstorm	\$14.99
Carmen San Diego	\$19.99
Children Encyclopedia	\$29.99
Dinosaur & Space Adventure	\$26.50
Dr. T's Sing-A-Long	\$18.80
Forever Growing Garden	\$29.50
Just Grandma & Me	\$19.90
Kid's Zoo / Undersea & America Adventure	\$26.50
Mavis Beacon Typing for Kids	\$28.80
Ozzie's World	\$19.90
Playing Language in Games: French	\$24.99
Real World Math	\$24.99
The Cat Came Back	\$ 9.99
Webster's Dictionary for Kids	\$28.80

multimedia solution

MULTIMEDIA SYSTEM \$CALL

CD ROM DRIVE & SOUND CARDS

Toshiba 5302B 4X	\$395.00
Sound Blaster Vibra 16 bit enhanced IDE, CP 55 Speaker, Compton's Encyclopedia 95'	\$389.99
Teac 55A 4X	\$389.99
Sound Blaster 16 bit, CP 55 Speaker, Compton's Encyclopedia 95', World Atlas, U.S. Atlas, Chessmaster 4000 Turbo, Mavis Beacon, Teachos Typing	\$315.00
NEC CDR-510 3X	\$299.00
SCSI II, 195mb/256K	\$299.00
Sony BBE 2X IDE CD-ROM Drive	\$258.00
Creative Labs Sound Blaster 16 Bits, Compton's Interactive Encyclopedia 95', CP 55 Speaker, World Atlas, U.S. Atlas, Mavis Beacon, Teachos Typing, Chessmaster 4000 Turbo.	\$258.00
Panasonic 562-B 2X	\$149.99
Sound Blaster 16 bit, CP 55 Speaker, Compton's Encyclopedia 95'	\$149.99
W/ Audio Cable + Data Cable	\$149.99
Toshiba 5302B 4X Enhanced IDE	\$279.99
150ms, 600kba, 256K Cache	\$169.99
Sony 55E 2X	\$169.99
250ms, 256K Cache w/ Audio Cable.	\$249.99
Teac 55A 4X	\$249.99
195 ms / 600 kba transfer rate	\$105.00
W/ Audio Cable + Data Cable	\$99.00
Sound Blaster MCD16 (OEM)	\$105.00
Sound Blaster Vibra (OEM) Enhanced IDE16	\$99.00

CALL FOR THE BEST PRICE IN TOWN

PIONEER MULTIMEDIA KIT
Pioneer IDE Quad Speed CD-ROM Drive, 16 Bit Secondary IDE Interface Sound Card \$429.00
W/ Western Interactive Encyclopedia, Sam & Max Hit the Road, Indy Car Racing Special Edition, Lawnmower Man

SOUND BLASTER BUNDLE
Discovery CD New Edition
Includes Sound Blaster 16, a double-speed CD-Rom Drive, Speakers and 18 Applications for adults and Kids alike.

SOUND BLASTER VALUE CD
Includes Sound Blaster 16, a double-speed CD-Rom Drive, Speakers and 12 Multimedia Applications at a very attractive price.

SUMMER MADNESS
Hundreds of Hot CD Titles From \$4.99 Don't Miss It!

SALES & SHOWROOM



DEALERS WELCOME!

Tired of High Phone Bills?

Save up to \$1300 on phone bills each year!

Share 3 devices on one line with separate phone numbers.

Telephone Line from Wall Jack

Telephone Set

Fax Machine

Computer with Modem

IDENTA-SWITCH
Automatic Intelligent Telephone Line Switch
CRESTLINE
Made In Aurora, Ontario, CANADA.

Sale Price \$20 OFF!

Hundreds of uses:
Home Office
Fax Machine
Computer Modem
Childrens Phone
Easy to Install

Only \$149.95!

Sale Price \$129.95!
With this Ad.

14 Day Trial Period
5 Year Warranty

CRESTLINE TECHNOLOGIES INC.
Contact: (905) 727-7978

The Canadian File

Continued from page 39

The report, Education and the Information Highway, was backed by the telecommunications committee of the Canadian Educational Network Coalition — which includes representatives of universities, teachers' unions, school boards, telephone companies, and related groups — the National Advisory Board for the SchoolNet national educational network, and the Stentor consortium of regional telephone companies.

Canadian educational institutions have been treated as businesses in the past for purposes of telecommunications rates, so they pay the same higher rates as businesses do for everything from single phone lines to more advanced services. "Until recently, this arrangement was quite innocuous," says the report, "since most educational institutions generally made unexceptional use of telecommunications in their activities." Now, however, the Internet and services such as audio and video conferencing are playing

a growing role in education.

The report lists access to public networks, private educational networks, distance learning, and multimedia-based "tele-learning," among the benefits of new telecom technology to education.

An example is SchoolNet, a national network linking more than 3,000 elementary and secondary schools. The report notes that most of the participating schools today are in urban and higher-income areas, and raises the concern that without changes in telecom rates it may not be accessible to others.

The group calls on the government to let Canada's telephone companies create a new rate category for education, so that they can set up rate structures more suited to these institutions. This would mean lower rates but also different rate structures, for instance addressing schools' and universities' need to predict costs precisely so they can stay within their budgets. Only non-profit, public educational institutions accredited by government would be eligible for these rates, the report proposes.

Continued on page 75

IBM VS THE CLONES

The Eternal Question

Continued from page 49

make sure their products work on a machine that has proliferated in the marketplace. They can't test it on everything. So they use IBM because, if it works on an IBM, it will likely work on most other makes. Compatibility issues haven't been eliminated, but they have definitely been minimized by such policies."

Like Gagnon for Seanix, Pietramala proudly touts IBM's warranty: "When you buy an IBM PC, it's covered internationally. If something goes wrong with your machine, you get international support. IBM basically has an office in every major city in the world. So, if traveling is important to you, then the IBM definitely has the edge because our competitors certainly don't have the number of offices around the world that we do."

"Suppose you buy a notebook from a clone manufacturer, for example, and you've gone to Montreal and all of a sudden you get memory errors. What do you do if you need a new memory chip? A clone manufacturer isn't going to help you in Montreal, whereas we can. And it's kind of the same for our desktops too. Because no matter where you might move to, anywhere in the world,

there's going to be an IBM office somewhere nearby."

Pietramala also boasts of IBM's 24-hour 1-800 technical support number to assist you in resolving even software problems: "We know that both business and home users often work late into the evening, so we're set up to accommodate that. We also have an international support network that links all our technical people. If an unusual problem comes up, they can search that data-base for 'hits' and maybe find a quick solution. That Reliability Ratings survey I mentioned earlier also states that 93 percent of surveyed users would buy from IBM again... I wonder how many clone companies get results like that."

The Envelope Please

There you have it. Next time you're reading those ads or shopping for a new computer, keep all of those arguments in mind. Both seem to offer similar warranties and both are claiming the ultimate in component quality and reliability. However, since both agree that purchase price isn't the main issue for either side, it appears to boil down to a battle between the flexibility and personalized service of the clones versus the security afforded by juggernaut corporate infrastructure and budgets. The next move is yours. □



MICROJACK Video Producer

Integrate the graphics & editing power of VGA with the presentation power of VIDEO

Hardware Includes:
MicroJack 2000
MicroJack VGA Pro
MicroJack HQO Pro

Bundled Software: Deputy CG

- Editing tools and Special Effects
- Single page or continuous display playback
- Six Colour Cycle variations per page including Flash
- Transitional Effects: Cut, fade, roll, crawl, slide, corner pull, reveal, random blits; variety of wipe patterns
- Special effects: ease, bounce, sling-shot, fly-by. Transitional speeds.

Software Transitions
 Software transitions include simple wipes, page tears and wallpaper effects. Create your own transitions with Autodesk .FLC files from 3D Studio or Animator Pro.

Multiple Live
 Display two simultaneous video sources on screen. Combine remote video with the local feed.

Over-the-Shoulder
 Scale a live video window on top of another full-screen source.

Plus many more features!

MICROJACK
MULTIMEDIA SERIES
Bridging the Worlds of Video & PC

(905) 946-0908
(416) 321-2259

MIT Computer Supplies Co. Ltd.
 40 Shields Court, Unit 1-2
 Markham, ON L3R 0M5
 Fax: (905) 946-8749
 Toll-Free Fax: (800) 463-3186

Scanning · Postscript film output · Design · Photo editing · Special effects · Proofs

Spectrum

Imaging

In today's world, you can't afford to miss out on the revolutionary new **desktop publishing** and **color technology**. From newsletters, graphics, presentations, posters, short-run **customized color** brochures, all the way to traditional four **color printing** and color separations, we can help you **make it happen!**

This month featuring:

Canon CLC700

Fiery color output

from your files (IBM or Mac): as low as \$0.99 per page!
 First page RIP charges: \$8.00 each.

Hi-Res Film Output

up to 3000 dpi AGFA Accuset Technology: \$10 per page!
 Based on 8.5"x11" at 1200dpi. 2400dpi \$12/page; 3000dpi \$14/page.

Hi-Res Scanning

up to 2400 dpi: as low as \$8 per grayscale scan!
 Grayscale scans any size starting at \$12. Color high quality scans start at \$25.

Certain Restrictions Apply. Please check with the store for details.

SERVICE BUREAU

Go Digital!

180 Bloor Street West, Concourse Level, Toronto, Ontario M5S 2V6
 Tel. (416) 923-4819, (416) 920-3040 • Fax. (416) 920-5050

Mac/PC · CorelDraw 5 · PageMaker 5 · QuarkXPress 3.31 · Photoshop 3.0.1

ACT Computech (Canada) Ltd.

PENTIUM - PCI WORKSTATION

100 DUAL CPU	\$3,188
90 DUAL CPU	\$2,998
100 MHZ	\$2,258
90 MHZ	\$2,108
75MHZ	\$1,988

- INTEL Pentium CPU
- PCI Green Main Board w/256K Cache
- 8 MB 72-pin FAST memory
- 540 MB Hard Drive
- PCI Enhanced IDE W/I/O port
- PCI ATI MACH 64 Video Card w/2 MB DRAM
- 14" Green SVGA Monitor .28 dp N.I. (1024 x 768)
- 3-1/2" 1.44 MB Floppy Drive
- Mid Tower w/230w Power Supply
- 101 Enhanced Keyboard
- MS-Compatible Mouse w/Pad

POWER 486

	VESA	PCI
DX4-100	\$1,299	\$1,359
DX2-66	\$1,199	\$1,259

- 486 DX CPU
- VLB/PCI Green Main Board w/128K Cache
- 4 MB 72-pin FAST Memory
- 540 MB Hard Drive
- VESA PCI E-IDE & I/O (2S/1P/1G)
- VLB/PCI FAST SVGA Video Card w/1 MB
- 14" Green SVGA Monitor .28 dp N.I. (1024 x 768)
- 3-1/2" 1.44 MB Floppy Drive
- Mini Tower w/230 P. Supply
- 101 Enhanced Keyboard
- MS-Compatible Mouse w/Pad

UPGRADES

From 540MB HD to 850MB HD/1.2 GB	+\$100/+\$260
15" (1280x1024) LR .28dpi	+\$120
17" (1280x1024) LR .26dpi	+\$585
MID Tower w/230 watt P. Supply	+\$20 from Mini.
FULL Tower w/250 watt P. Supply	+\$80 from Mini.
ADD ONS:	
14.4 Fax/Modem: GVC/Cardinal/USR	+\$89/\$105/\$135
28.8 Fax/Modem: Cardinal/USR	+\$210/\$299
Speakers: 40/80 WATTS	+\$45/\$85
Printers: Canon BJ200e/BJC-4000	\$285/\$485
We also carry HP/Lexmark/Brother/Epson/Tektronics/QMS/Xante	

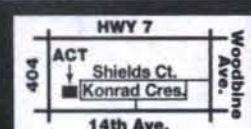
MULTIMEDIA

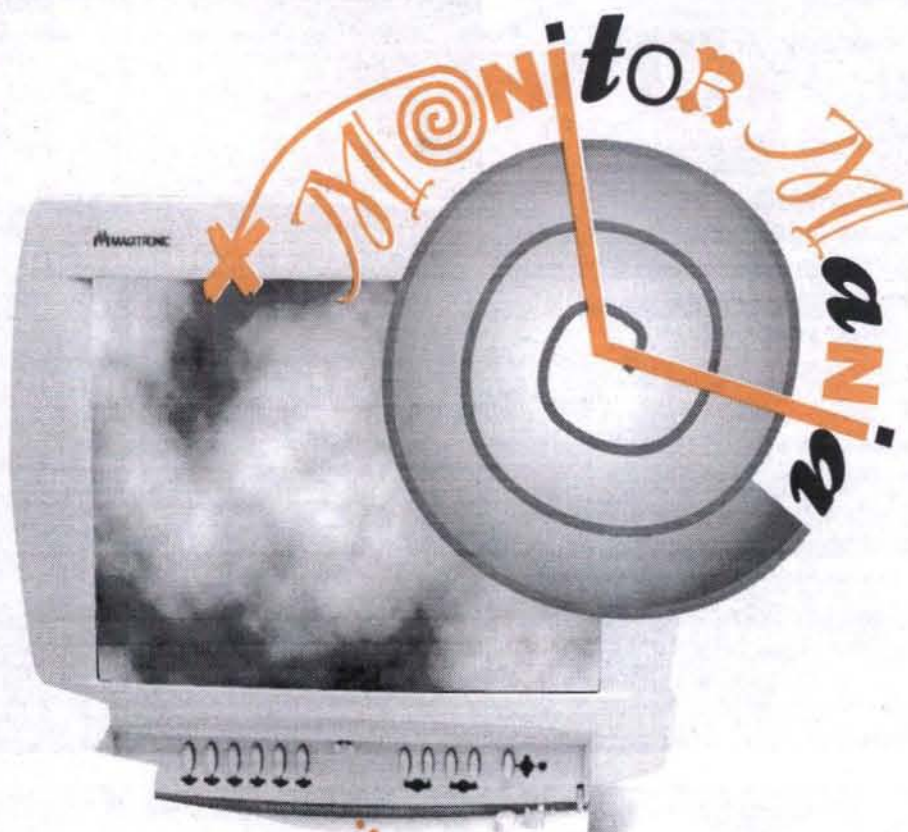
\$299.00	\$399.00
2X	4X
PANASONIC 2X OR TEAC 4X INTERNAL CD-ROM	
Creative Labs Sound Blaster 16 Sound Card	
Pair of shielded stereo speakers	
SOFTWARE TITLES INCLUDED:	
MS Encarta '95 CD	
MS Works 3.0 & MS Money 3.0 CD	
Entertainment Pack For Windows Diskette	
MS Sampler CD	

48 HOUR BURN-IN TEST GUARANTEED
2 YEAR LABOUR & PARTS WARRANTY

GOVERNMENT & CORPORATE P.O.'S WELCOME
 STORE HOURS MON.-SAT. 10:00AM - 6:00PM

250 Shields Court, Unit 19, Markham, Ontario L3R 9W7
 TELEPHONE: (905) 415-0990
 FAX: (905) 415-0113





Good monitors are practically invisible. We might occasionally, briefly, notice our personal computer's monitor when we sit down at the computer and press the monitor's power-on button. If someone else has been using the computer, we might have to tilt the monitor to a more comfortable viewing angle.

BY JEFF EVANS

Then, our attention is taken by the view into the workings of the computer that the monitor provides, and in short order we're in the usual semi-hypnotized computer user's state, unaware of our surroundings, or of the visual medium by which we interact with the computer. The monitor only reasserts itself in our consciousness when something goes wrong: adverse lighting causes reflections, a video cable comes loose, or we notice eyestrain or a headache from too many hours before the screen.

The Bad Old Days

Monitor technology has advanced in tandem with the increases in computer CPU speed, graphics card technology, and applications software. Early computers could only produce sluggish, low resolution, text-oriented displays, and computer monitors matched those needs. As well, computer monitors originally shared a lot of features with NTSC television monitors. Most of them had low 15.75 KHz frequencies, and interlaced video displays. This meant that they flickered so badly that they were extremely difficult to watch for any length of time.

Ergonomic Evolution

Monitors are worth a bit more attention than we usually give them, however, especially if you are looking to buy a new computer system or upgrade your existing one. A good monitor makes a big difference in user comfort and productivity, by showing more data, more clearly and accurately, by reducing eyestrain and neckstrain, and allowing longer, healthier use of the computer.

This survey will look at about 70 of the most common models of 14-inch, 15-inch, and 17-inch non-interlaced color monitors currently available for PC users in Canada. Now is a good time for such a survey, because there have been rapid changes in the technology and features of mainstream computer monitors over the last couple of years.

What To Look For

A decent monitor in 1995 should meet or surpass a minimum set of features. First, the phosphor dots or stripes that define the images on the screen should be .28 mm or less, that number referring to the distance from the center of one dot to the center of the next. That "dot pitch," as it's often called, produces an effective resolution of nearly 100 dots per inch on the screen.

The image should be flicker-free, bright, clear and crisp with even small text and single pixel lines clearly visible from a normal viewing distance of 18 to 24 inches. Screen colors should be close to the

colors of hard copy output (in desktop publishing terms, the monitor's colors should be closely matchable with Pantone CMYK colors) and, if the monitor is to be used for graphics, there should be color calibration options to allow the user to adjust the color display on the monitor.

The monitor screen should have an anti-glare coating to reduce annoying reflections. It should automatically scan an extremely wide bandwidth of possible incoming video signals from the PC. The monitor should be compatible with all the output frequencies of the video card that it is supposed to work with, and should be able to display a stable, non-flickering image with a vertical refresh rate of at least 72 Hz. At 72 Hz, most users will find the screen display stable and reasonably comfortable to watch for long periods. If the monitor (and/or the graphics card) won't support at least 72 Hz, then the user is more likely to have eyestrain problems.

There should be a simple to use control panel on the front of the monitor with controls that allow a user to adjust the image area, degauss or demagnetize the cathode ray tube, and adjust the image to suit individual preference.

The monitor should have factory-installed settings to allow it to accurately display the most common resolution modes, plus the ability to allow the user to set and save custom resolution settings.

The monitor should have a good tilt swivel base

See the future, today...



Diamond Pro 15FS
Professional Quality Expert

Diamond Scan 17FS
Enlarge Your View

Diamond Pro 17TX
For Power Users

Diamond Scan 20H
Affordable CAD

Diamond Pro 21TX
Designer's Dream

See us at COMDEX Booth # 1846

Mitsubishi has a line of high performance monitors designed to meet all your needs whether personal, general business or high-end professional. Our sharper, brighter, superb image quality is best demonstrated in the new DIAMONDTRON series... a complete reinvention of CRT technology.

For more information and the Mitsubishi dealer nearest you call (905) 475-7728.

MITSUBISHI
INFORMATION TECHNOLOGIES GROUP

4299 14th Avenue, Markham, Ontario L3R 0J2



to allow the user to adjust the angle of viewing to the most comfortable position. The monitor should have Energy Star power saving features (a so-called "Green" monitor) to reduce power consumption, and conform to the Swedish MPR-II low radiation emission standard.

What They Say Is Not Necessarily What You Get

One major irritation when assessing monitors is the discrepancy between the claimed monitor size (the diagonal measurement of the video tube) and the actual viewable size. In the case of a 14-inch monitor, the viewable area may actually be no more than 13 inches. A so-called "17-inch" monitor may actually have a diagonal viewable size of only a little more than 15 inches.

Readers might ask why most 14-inch monitors don't support resolutions above 1024 by 768 pixels. The simplest reason is that the detail in higher resolution screens would be too tiny to see clearly on a small monitor, so there's no point. If you really need fine, high resolution text and graphics display, then you should look at a 17-inch monitor, where 1280 by 1024 or higher resolutions are commonly available. On a 17-inch monitor, the extra detail will actually be useful.

How We Tested The Contenders

All the monitors tested here were connected to an IPC Select CD/FX PC equipped with an ATI Turbo Graphics Pro video card, and running Microsoft Office Professional, Adobe Photo Shop 3, and Corel Draw 5. We tested the ability of the monitor to display screen resolutions up to 1280 by 1024 pixels (many monitors, particularly 14-inch monitors, older models, and lower priced models, top out at 1024 by 768). We also assessed the monitors' ability to clearly and accurately display a range of graphic screen types, including color and grayscale images, text, and line graphics.

Assessments of monitor image display quality must contain an element of subjective,

but the basic criteria were crispness and readability of text and line graphics, color and grayscale accuracy, comfortability of viewing, and stability of black text on a white "paper" background.

The Test Of Time

One warning to any monitor owner: a video monitor inevitably degrades over time, with the image display gradually becoming less sharp, often with less accurate color registration and duller colors. The monitor's life can be maximized by common sense measures such as the user taking good care of the product and turning it off when it is not in use for long periods. A good warranty is some protection against the outright failure of the monitor. All the monitors described here performed as they were "out of the box." Over time, their performance may change.

The Contenders

ADI: We tested 14-inch (3V), 15-inch (4V) and 17-inch (5EP) monitor models (see table), and found this brand to be a generally decent quality, inexpensive, and well featured line. The monitors have a good viewable diagonal size, non glare screens, and good, flicker free refresh rates (72 Hz, 76 Hz, and 76 Hz, respectively). The 5EP allows the user to manually adjust the red, green and blue electron guns to give precise color registration on screen.

AOC: Another line of inexpensive, decent monitors, the 14-inch AOC 4N tops out at 1024 x 768 resolution (non interlaced) at 60 Hz, while both the 15-inch 5Hlr and the 17-inch 7Hlr will display up to 1280 x 1024 at 60 Hz. All the models tested were energy star compliant, thought the 14-inch 4N was not MPR-II compliant. These monitors are acceptable for most ordinary use, but the relatively low refresh rate (60 Hz) would not be ideal for high resolution text and graphics work.

Acer AcerView: The 14-inch 34T and 15-inch 55L models are typical entry level budget monitors: no MPR-II, and a maximum display resolution of 1024 by 768.

the used computer store

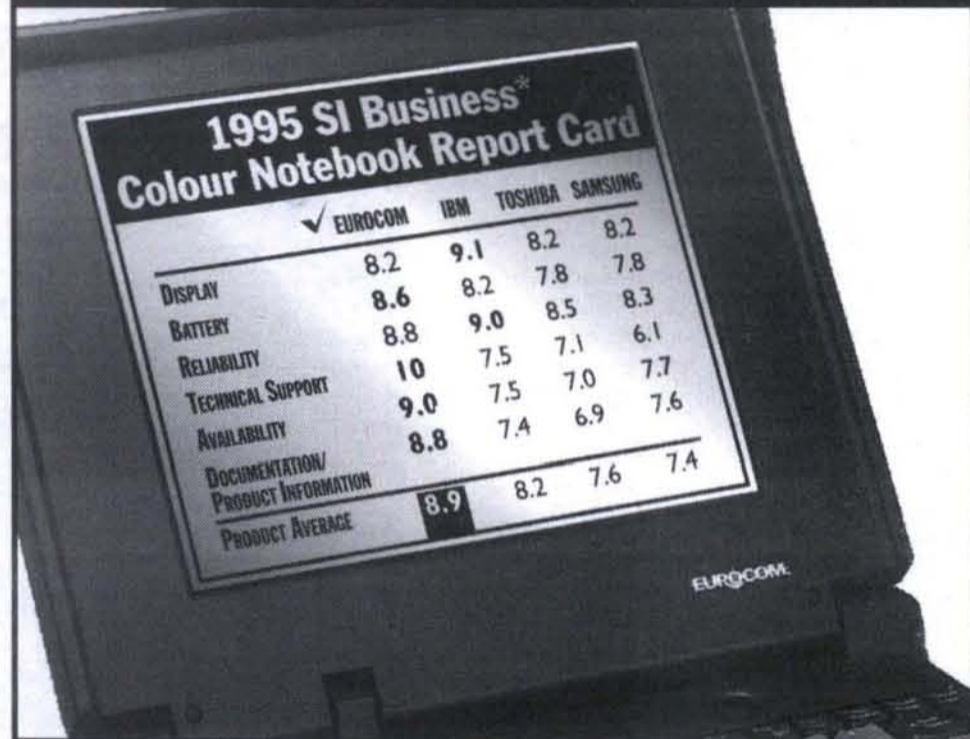
489 Queen Street, West
Toronto, Ontario M5V 2B4
Tel: (416) 504-9357 Fax: (416) 504-9359
South side, just west of Spadina Ave.

Grand Opening

Friendly Staff
Parts • Service
Windows • DOS • Mac

**BRAND NAME USED COMPUTERS
CALL FOR GREAT PRICES**

EUROCOM: First In Its Class



EUROCOM
tel (613) 224-6122
fax (613) 722-2767

IMPAQ Technology
tel (604) 261-1800
fax (604) 263-9201

MICROSOURCE
tel (514) 332-1999
fax (514) 332-8930

EUROCOM
The best thing going.

*SI Business Magazine, May 1995



Technologies (Canada) Inc. 500 Alden Road, Suite 205, Markham, L3R 5H5
Tel: (905) 475-9921 Fax: (905) 475-5350

Mon-Fri 9-7
Sat 10-4

Celebration for being
APPLE VAR

Crazy Price!!!

On Site Upgrade & Repair

Pentium Systems			
Pentium-75	\$1705	Pentium-90	\$1850
Pentium-66	\$1635	Pentium-100	\$1995
System includes: Pentium board /PCI, 8Mb RAM, IDE I/O Card, ATI PCI Mach32/1MB, 540 Mb Hdd, 1.44 Mb Fdd, Mid-Tower case /230w, 101 Keyboard, Mouse.			
486DX Systems			
486DX2-50	\$859	486DX2-66	\$879
486DX2-80	\$945	486DX4-100	\$988
System includes: 486DX4 board/128K, 4Mb RAM IDE I/O Card, Video Card/1Mb, 540 Mb HDD, 1.44 Mb FDD, Mini-Tower case/230w, 101 Keyboard, Mouse.			
Monitor Extra for the Above Systems			

Monitor	
AOC 14" .28 NI/Green	\$269
Proview 14" .28 NI/Green/LR	\$275
GVC 15" .28 NI/Green/LR/Dig.	\$399
Daytek 15" .28 NI/Green/LR	\$390
Daytek 17" .28 NI/Green/LR	\$769
Daytek 20" .28 NI/Green/LR	\$1299
Fax Modem	
14.4K fax modem (Int)	\$69
14.4K fax modem voice (Int)	\$88
US Robotic 28.8, INT	\$320
Printer	
Canon BJC-4000 (Color)	\$465
Canon BJ-100 (360 DPI)	\$279
Pana. Laser kxp6100 600dpi 6ppm	\$595

Hard Drive	
420MB	\$229
540MB	\$239
850MB	\$349
1.26GB	\$429
1.0GB(Scsi)	\$649
2.1GB(Scsi)	\$1449
Multimedia	
CD-Rom 2x	\$135
Multi Kit2x	\$249
Toshiba 4x	\$265
16 Bit S.B.	\$115
MISC	
1.44FD(10)	\$4.5
Speaker	\$15

Upgrade	
4Mb RAM	\$199
8Mb RAM	\$398
386 to 486DX2-66	\$249
386 to 486DX4-100	\$349
386toPCI486DX4-100	\$399
Pentium M.B.+CPU	
Pentium75/256K	\$670
Pentium90/256K	\$859
Pentium100/256K	\$989
Video Card	
ATI Mach64/2M	\$245
ATI Mach32/1M	\$133
1MB/VLB	\$89
CIRRUS/VLB/1MB	\$99

Apple Products	
Mac LC 475 4Mb/250Mb	\$1219
Mac LC 630 8Mb/350Mb	\$1969
P Mac 6100/66 8Mb/350Mb	\$2809
P Mac 7100/80 8Mb/500Mb	\$4299
P Mac 8100/100 16Mb/1 Gb	\$6899
P Mac 8100/110 16Mb/2 Gb	\$9499
Other parts of Macintosh	Call
BLOW OUT !!!	
486DX2-66 CPU	\$129
486DX4-100 CPU	\$239
486DX4 Main Board/Green	\$119
Max850 Mb HDD (IDE)	\$299
8Mb to 16Mb Upgrade	\$299
Acer CD-Rom 4x Quad	\$249

Ambra: IBM's Ambra PC line come with their own line of monitors. The 15-inch FST MPR-II is a very good mainstream monitor, with, as the model name suggests, low energy emission, a good set of controls at the front, and a very comfortable, bright display.

CTX: We only tested one CTX model, the 17-inch 1785GM. It is one of the best products we tested, beautifully designed, with extremely well laid out controls, and excellent, vivid true colors. Its combination of quality at a reasonable price is very attractive. One nice feature, of more importance as a monitor ages, is individual controls for the red, green and blue electron guns, to allow for adjustable color registration.

Daytek: The Daytek line is one of the more popular and commonly encountered brands in Canada, and the numerous models tested shared decent image quality, a moderately good feature set, and very attractive prices. In general, these monitors are a good choice for the average computer user. The 17-inch models are among the most affordable in that size category.

Digital: A brand name that we had not encountered in the monitor market before, the Digital 14-inch PCXBV-PF (a romantic name, if ever there was one), is a typical monitor of its class: maximum resolution of 1024 by 768, exceeds Energy Star standards on power saving, but does not meet MPR-II radiation emission standards. The image quality is reasonably good, making this a competitive entry level monitor.

GoldStar: The model 1515 we reviewed is a good entry level RGB monitor, which complies with Energy Star and MPR-II standards, has a flat, non-glare screen, a good tilt swivel base, a maximum refresh rate of 87 Hz, and a maximum display resolution of 1024 by 768. Image quality is fairly good.

MAG/Innovation: The MAG monitors we

looked at are among the best we encountered.

Image quality, particularly of the MXP17F is excellent, and the feature set includes pixel resolutions up to 1600 by 1280 supported by the MXP 17F (1280 by 1024 on the DX17F), and a very large maximum diagonal viewing area. For demanding graphic display needs, the MXP 17F and DX17F rate at the top of the scale.



Magitronic: The 3 models that we tested from this manufacturer were reasonable quality, and very well priced. The styling on the 17-inch model is extremely nice, with good maximum resolution (1280 by 1024), and a high refresh rate of 87 Hz in 1024 by 768 resolution. Image quality is fairly good, though not at the level of the Nokia and Sony models. For PC users looking for a value priced entry level monitor, this is a good choice.

Magnavox: The units we tested, the 15-inch C-SV1501P and the 17-inch CM4018,

were good entry level monitors, with good resolution and fairly good image quality.

Mitsubishi: This company was one of the PC monitor industry leaders in years past, but had subsequently been somewhat overshadowed by the advances made by other manufacturers. Despite many innovative features, such as Diamond Match color calibration, the judgment of many industry analysts was that the image quality was lagging. The Diamond Pro 17TX we tested, however, was very good in display quality, with an unusually fine .25mm dot pitch, and

15 Inches Good, 17 Inches Better

The venerable 14-inch monitor was pretty much the PC standard for several years (and on the Mac, 13-inch or smaller displays were the norm), but in the current PC market, the position of the 14-inch monitor is diminishing quickly, as the price of 15-inch monitors has continued to decrease. Fourteen-inch monitors are still common in budget PC configurations. Many of the 14-inch monitors remaining on today's market are indeed extremely well-priced, but they may lack current features such as Energy Star power saving and MPR-II low radiation emission, and have fewer display control options on the front panel.

Fifteen-inch monitors vary more widely in features and options, from no-frills budget models to fully featured, quite expensive models. Seventeen-inch monitors, which were formerly very expensive (often in the \$2,000 range) have continually decreased in price over the last couple of years, and are rapidly increasing in popularity as more models approach or break the \$1,000 price barrier.

Depending on the quality of the video tube and other features, 17-inch monitors are extremely well suited to demanding graphic display requirements, such as CAD, desktop publishing, animation, video, and spreadsheet use.

pecial "dynamic beam forming" to minimize the usual distortion at the corners of the viewable screen area. This monitor is compatible with almost any computer system, and is a good choice for demanding graphics applications.

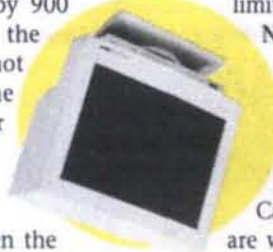
NEC: Ready To Plug And Play The NEC XP 15-inch model in the survey was one of a select group, in terms of being Windows 95 Plug N Play ready (we did not test this claim, as the final release of Win 95 and Plug N Play graphics cards are still to come). In the realm of verifiable claims, however, both the Multi-

sync XP 15 and 3V models are leading edge monitors. Resolutions up to 1024 by 768 are supported (a special 1152 by 900 pixel mode is claimed, with the use of a special cable (not included)). NEC is one of the leading innovators in monitor technology, and the only reservation one could have in recommending the product has traditionally been the higher prices. NEC has lowered their premium prices considerably in recent years,

making them a more affordable option for the PC owner with demanding needs but a limited budget.

Nanao: Another brand that turned out to be impressive, the Nanao F2-15, F2-17 and F2-17TS have excellent image quality, and many advanced user features.

Nokia: A relative newcomer in the Canadian market, Finland based Nokia are well known for their digital cellular phones as well as for their monitors. To put it simply, these are superb monitors. IBM



Editors agree— Claris beats out of Microsoft.

CLARISWORKS
THE INTEGRATED SOFTWARE PACKAGE
RATED #1 BY MAJOR
MACINTOSH
PUBLICATIONS.

From MacWorld and MacUser, to Mac Home Journal, the editors unanimously agreed: ClarisWorks beats Microsoft, hands down. And now the best-rated, best-selling** works program just got better. Introducing ClarisWorks 4.0.

In addition to full-featured word-processing, spreadsheet, database, graphics, painting, and presentations capabilities, ClarisWorks 4.0 now offers over 100 new features. Features that customers requested most—Assistants for home finances and mailing labels, time-saving features such as stylesheets, ReadyArt™ Libraries with 500 images, database List View, and plenty of others. Best of all, ClarisWorks 4.0 isn't a pig of a program, hogging up megabytes of memory and disk space—it's still compact and speedy. No wonder it's the works package of choice for home, office and education.

So pick up the latest version of the works package that the choosy mothers chose—ClarisWorks 4.0. For more information, educational pricing, or upgrade details, visit your nearest reseller, or call 1-800-361-6075, ext. C35.



Top: Use the drag-and-drop ReadyArt Libraries to add clip art to any document.
Bottom: Answer a few simple questions and in seconds you'll have perfect labels.

CLARIS®

Simply powerful software.™

uses Nokia as a supplier for some of their top of the line monitor models. Sometimes appearing under the slogan, "The European Monitor," these would make excellent monitors for Canadians, too.

Optiquist: With image quality a cut above the budget priced brand names, the Optiquist monitors we tested are a highly acceptable, mainstream monitor option. The viewable size of the 17-inch monitor is 16 inches, a very good ratio, yielding a very fine, high resolution display.

Orchestra: The memorably named Trumpet 14-inch, French Horn 15-inch and Tuba 17-inch are mainstream products with good features and performance, at a good price. The Tuba 17-inch supports very high resolution (1600 by 1280), offers Mac compatibility, and has a decent maximum refresh rate of 76 Hz. The French Horn II has good maximum resolution (1280 by 1024).

Packard Bell: This 15-inch monitor is an excellent "House Brand" model, with a very crisp, bright display and it will also accept the Packard Bell stereo speaker system. There is no reason for even the pickiest user to unbundle Packard Bell's "default" monitor from the CPU.

Panasync: The PanaSync C-1791E is a very good 17-inch monitor, with high resolution (1280 by 1024), Mac compatibility, and low magnetic emissions, though it has a slightly low refresh rate of only 60 Hz. Despite that, image quality is good, and the monitor is very pleasant to use. We would have liked to have a look at other products from this company, but the C1791E was the only one available within our deadline limit.

Continued on page 61

What About This Radiation Thing?

The notion that monitors give off radiation is not a comforting one. There has been a lot of concern about, and research into, the possibility that sitting one or two feet in front of a video display terminal every day might be bad for one's health. At this time, there is no conclusive proof that the electromagnetic emissions from a PC or a monitor cause any large, immediate amount of harm. The most immediate dangers to computer users relate to more mundane hazards such as repetitive strain injury, lower back pain, neck pain, eyestrain, and the hazards of electrical shock or dropping computer components onto the user. Most of these hazards can be reduced by improved ergonomic equipment and training in safer computer operation.

Nevertheless, there has been a concerted move to reduce electromagnetic emissions to a very low level. The so-called MPR-II (Swedish) standard means that monitors that conform to this standard emit very little electromagnetic radiation. One point worth noting is that every device that uses electricity, from stoves to VCRs, emits a low level of radiation. There is concern that low level emissions pose a subtle, long term risk to people – but MPR-II compliant monitors may not be any more dangerous than the clock radio next to your bed. Doesn't that make you feel better?

MONITOR BUYERS' GUIDE

Diagonal, in. Dot Pitch, mm Maximum Res. @ freq. Plug&Play Adv. Color Mgmt. Screen Coating Refresh Rate Ease of Res Change Picture Quality Contact Price Warranty

14-Inch Models

ADI MicroScan 3V	13.3	0.28	1024 x 768 @ 60Hz	No	No	DT, NG	56-90Hz	Good	Good	(408) 944 0100	\$425, 395*	2 Years, limited
AOC Spectrum 4N	13.0	0.28	1024 x 768 @ 60Hz	No	No	N/A	50-90Hz	Good	Fair	(905) 513 5777	\$335, 298*	3 Years
Acer AcerView 34T	13.0	0.28	1024 x 768	No	No	DT	50-90Hz	Good	Fair	(800) 565 ACER	\$450, 305*	1 Year
Daytek DT-14 SN1E	13	0.28	1024 x 768 @ 60 Hz	No	No	DT	40-90Hz	Good	Fair	(905) 940 1128	\$340, 310*	1 Year
Daytek DT 14XVB	13	0.28	1024 x 768	No	No	DT	40-90Hz	Good	Good	(905) 940 1128	\$370, 340*	1 Year
Digital PCXBV-PF/PH	13.2	0.28	1024 x 768 @ 75Hz	No	No	AG, AS	50-80Hz	Good	Good	(905) 479 8822	\$300, 275*	1 Year
Magitronic C-5V 1448P	13	0.28	1024 x 768	No	No	AG	50-90Hz	Good	Fair	(800) 665 LIUS	\$340, 310*	2 Years
Orchestra Trumpet	13.2	0.28	1024 x 768 @ 85Hz	No	No	AG	50-90Hz	Good	Fair	(905) 625 7783	\$309, 280*	1 Year
Princeton Ultra 14 NI	13.1	0.28	1024 x 768	No	No	NG	50-90Hz	Good	Good	(714) 751 2008	\$300*	3 Years, Limited
Tatung CM14 UAE	13.1	0.28	1024 x 768	No	No		50-90Hz	Good	Good	(905) 475 5177	\$328, 299*	1 Year
TTX 5450G	13.1	0.28	1024 x 768 @ 60Hz	No	No		to 72Hz	Good	Fair	(905) 238 6610	\$399, 360*	2 Years

15-Inch Models

ADI Microscan 4V	13.5	0.28	1280 x 1024	No	No	DT, NG	76Hz	Good	Very Good	(408) 944 0100	\$560, 520*	2 Years
AOC Spectrum 5HLR	14	0.28	1280 x 1024 @ 60Hz	No	No	IS, AS	50-90	Good	Very Good	(905) 513 5777	\$510, 453*	3 Years Parts and Labor
Acer AcerView 55L	13.5	0.28	1024 x 768 @ 70 Hz	No	No	NG DT		Good	Good	(800) 565 ACER	\$700, 655*	1 Year
Ambra 15: FST MPR-II	13.5	0.28	1280 x 1024 @ 60Hz	No	No	AG, AS	60-72Hz	Good	Very Good	(905) 316 9000	\$649, 550*	3 Years
Daytek DT 1501BAI/MPR	14.1	0.28	1280 x 1024 @ 60Hz	No	No	AG, AS	60-75Hz	Good	Good	(905) 940 1128	\$510, 475*	3 Years
Daytek DT 1530	13.5	0.28	1280 x 1024 @ 60Hz	No	No	AG, AS	60-75Hz	Good	Fair	(905) 940 1128	\$460, 425*	3 Years
Goldstar 1520	13.9	0.28	1024 x 768	No	No	DT, NG	56-87Hz	Good	Good	(905) 620 0650	\$410*	2 Years
Magitronic C-5V15-1P	13.75	0.28	1280 x 1024	No	No	AGRAS, NG	55-90Hz	Good	Good	(800) 665 LIUS	\$450, 420*	2 Years
Magnavox CM 2015	13.5	0.28	1024 x 768 @ 87Hz	No	No	DT, NG	56-90Hz	Good	Good	(800)387 0564	\$579, 475*	1 Year labor, 3 Years Parts

Notes and Explanations

All monitors rated as Energy Star compliant except Magnavox CM 2015
 Low Radiation Rating: All 17-inch models; all 15-inch models except AcerView 55L, Packard Bell 1511; All 14-inch except AOC, Acer, Daytek DT-14SN1E, Magitronic, Orchestra and TTX
 Extra Features: Ambra 15 has built-in mic and speakers; Philips Autoscans 17 has built-in audio
 Dot Pitch Note: T indicates Trinitron tube, measurement is of Aperture Grill
 Coatings Notes: DT = Dark Tint; AG= Anti-glare; NG=Non-glare; IS= Invar Shadow Mask; SC SuperErgoCoat; AGRAS= proprietary name
 Color Matching Notes: CM= ColorMatch; Co= Colorific; VM=ViewMatch
 Pricing: Figure followed by asterisk * indicates estimated street price; pricing supplied by manufacturers, please check with your nearest dealer for current prices.

ACM COMPUTER SYSTEM 4800 Sheppard Ave. East, Unit 109 Tel: (416) 298-6646
 Scarb., ON M1S 4N5 (North of 401, East of McCowan) Fax: (416) 298-6302

MULTIMEDIA

Creative Labs

- Value CD16 \$269 Discovery CD16 NE \$349
- Discovery CD16 4X \$459 Digital School House \$299
- Edutainment CD16 \$549 Multimedia Home 4X \$565

IBM AMBRA 486DX2-66Mhz/4M/420M/14" Monitor
 2x CD-ROM & 16Bit Sound Card
 w/ USR 28.8 V34 External Modem
\$2,100

HEWLETT PACKARD Printers
 HP DeskJet 540/660C/320SF \$409/689/499
 HP LaserJet 4L/5P/5MP \$769/1289/1929
 HP 4V/Laser Colour \$2949/8000
 Canon BJC-70 Colour New \$499
 Canon BJ100/200ex/230 \$275/335/495
 Canon 4000 Colour \$469
 Canon LBP 430W Laser \$639

NEW Products from Hewlett Packard

- | | |
|------------------------------|---|
| HP 5P & 5MP | HP ScanJet IIIc Colour Scanner |
| • 6 Pages Per Minute | • 600 Optical Res. (Enhanced 2400dpi) |
| • 2MB on 5P, 3MB on 5MP | • 30 bit colour internal for greater detail |
| • True 600x600 dpi | • DeskScan II Scanning Software |
| • Infrared Wireless Printing | • Calera WordScan OCR Software |
| • Multipurpose + Letter Bins | • Corel PhotoPaint 5 Image Editing |
| • 5MP - Adobe Postscript L2 | |

ACM Multimedia System \$1,699

- AMD 486DX2-80 CPU
- 4 Meg Ram
- 1.44M Floppy Drive
- 14" 0.28 NI SVGA Monitor
- Mid Tower Case w/ 230W PS
- Panasonic 2X CD-ROM
- Microsoft Encarta Encyclopedia
- Choice of Two 6-Game-Titles
- Vesa Local Bus MB w/ 128K Cache
- 540 Meg IDE HD
- IDE I/O (2S/1P/1G)
- 1 Meg Vesa Local Bus Video (Max 2M)
- 101 Enhanced KB + MS Comp Mouse
- Sound Blaster 16 + 4W Labtec Spks
- Microsoft Works 3.0 & Money
- Microsoft Dos 6.22 & Windows 3.1

ACM COMPUTER SYSTEMS SPECIALS

486DX2 System \$1,229

- AMD 486DX2-80 CPU
- Vesa Energy Star MB
- 128K External Cache
- 4 Meg Ram
- 540 Meg IDE HD
- 1.44M Floppy Drive
- IDE I/O (2S/1P/1G)
- 14" 0.28 NI SVGA Monitor
- 1 Meg Vesa Video (Max 2M)
- Mini Tower Case w/ Display
- 101 Enhanced Keyboard
- MS Comp. Mouse • No Software

486 System Options:

- AMD 486DX4-100 \$1,275
- INTEL 486DX2-66 \$1,259
- INTEL 486DX4-100 \$1,369
- 15" 0.28 NI Low Radiation +\$130
- PCI MB w/ EIDE +\$39

MULTIMEDIA 2X Bundle + \$285

- Panasonic 2x CD-ROM
- True 16Bit Sound Card + 4W Spks
- MS Encarta '95 / Works / Money
- MS Creatures & Entertainment Pack

Pentium 75Mhz System \$2,149

- INTEL Pentium CPU w/ CPU Fan
- PCI Motherboard w/ 256K Cache
- PCI Enhanced IDE I/O
- 2x16550S/ 1 Parallel Ports On-Board
- 8 Meg Ram
- 850 Meg HD
- 1.44M Floppy Drive
- 15" 0.28 NI LR Monitor
- ATI Mach64 PCI 2 Meg DRAM
- Mid Tower Case w/ 230W & Display
- 101 Enhanced Keyboard
- MS Comp. Mouse • No Software

Pentium System Options:

- Pentium 90Mhz \$2,289
- Pentium 100Mhz \$2,429
- Gigabyte Triton Pentium MB + \$80
- Intel Triton Pentium MB + \$200
- Mag DX17F 17" 0.26 +\$500
- Microsoft Dos 6.22 +\$50
- Microsoft Windows 3.11 +\$45

MULTIMEDIA 4X Bundle + 419

- Toshiba Quad IDE CD-ROM
- True 16 Bit Sound Card + 4W Spk
- MS Publisher / MS Bookshelf
- MS Money / Scenes

All Systems Comes with 1 Year Parts & 2 Years Labour Wty.

Network Hardware

MS Workgroups 3.11 \$99	LANtastic 6.0 2 User Kit \$320
Rg45/Rg58/ Rg62 \$1.95	Terminators 50 Ohms \$3.49
T-Connectors \$4.95	Rg45/Rg58/Rg62 Cable \$0.40/ft
NE2000 Compatible \$59	SMC Elite 16C Ultra \$149

New Installations, Upgrades, Service & Repairs
 Quick Turn-Over & Professional Service

Motherboards & CPUs Upgrades

- AMD 486DX2-80/4-100 on DX4 VLB - 128K \$289/349
- i486DX2-66/4-100 on VLB DX4 - 128K \$329/429
- AMD 486DX2-66/4-100 on PCI DX4 MB-256K \$375/435
- i486DX2-66/4-100 on ASUS PCI DX4 - 256K \$455/555
- Pentium 75/90 on Acer PCI - 256K \$719/859
- Pentium 90/100 on Gigabyte Triton PCI - 256K \$885/1045
- Pentium 90/100 on Intel Triton MB - 256K \$999/1150

Monitors & Video Cards

- MAG DX15/DX17/MXP17 \$499/\$899/1349
- NEC XV15/XV17/XE21 \$669/1099/2995
- Nokia 17" 447X/21" 445X \$1599/3750
- Samsung 15GL/17GL/17GLs \$549/1049/1169
- SONY F5SF1/17SF1/17SE1 \$639/1279/1499
- ATI Mach32 1 Meg DRAM (Max 2M) \$135
- ATI Mach64 2MB DRAM/VRAM (OEM) \$259/379

Storage Components

- Maxtor/Quantum/WD 540 Meg HD \$235/\$235/\$289
- Quantum 850/WD 850/1.2Gig EIDE \$339/\$339/\$459
- Quantum730/Conner 1Gig/ 2Gig SCSI \$375/\$729/\$1349
- Conner 250/420/850 Backup w Tape \$199/\$265/\$399
- Colorado Trakker 250/350/700M \$399/\$449/\$599
- Syquest 105/200/270 Removable-Int \$375/\$599/\$645
- Adaptec 1522/1542CF/2940 PCI \$115/\$269/\$389

CD-ROMs & Sound Cards

- Panasonic 562B 2X/Sony 55E CD-ROM \$149/155
- Teac/Toshiba 4X IDE CD-ROM \$249/269
- Sony 55S 2X SCSI/Toshiba 3601 4.4X SCSI \$375/\$599/\$645
- Creative Labs Sound Blaster 16 (OEM) \$99

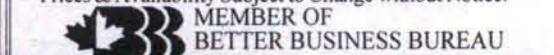
Scanners - HP & Microtek Authorized Dealers

- HP ScanJet 3p/3C Flatbed \$669/1325
- Microtek II HR-600x1200dpi w/ Photoshop 3.0 \$1599

Fax Modems

Boca 28.8 V34 \$249	Ext. \$289
Practical Peripheral 28.8 V34 \$289	Ext. \$325
USR Sportster 14.4 \$129	Ext. \$159
USR Sportster 28.8 V.34 \$299	Ext. \$325
Zoltrix 14.4/14.4 Voice \$65/\$89-	
Zoltrix 28.8 V.34 \$185	

Note: All prices are 3% CASH DISCOUNTED. For other form pymt, +3%
 Prices & Availability Subject to Change without Notice.



• Vinyl Cutting & Sign Making Computer Systems Available - Come in for a demo! • Hours: M-F: 9:30-7:30 Sat: 9:30-6:00 Sun: 11:00-4:00

MONITOR BUYERS' GUIDE

Diagonal, in. Dot Pitch, mm Maximum Res. @ freq. Plug&Play Adv. Color Mgmt. Screen Coating Refresh Rate Ease of Res Change Picture Quality Contact Price Warranty

15-Inch Models, cont'd

Mitsubishi Diamond Pro 15FS	13.8	0.28	1280 x 1024 @ 60Hz	No	Yes, CM	DT	50-90Hz	Good	Very Good	(905) 475 7728	\$649*	3 Years Parts and Labor
NEC Multisync XP15	13.5	0.28	1280 x 1024 @ 60Hz	Yes	Yes*	AG, AS	50-90Hz	Excellent	Very Good	(905) 795 3524	\$1028*	3 Years
NEC Multisync 3V	13.6	0.28	1280 x 1024 @ 60 Hz	No	No	AG, AS	50-90Hz	Good	Good	(905) 795 3524	\$695*	3 Years
Optquest 2000DS	13.6	0.28	1280 x 1024	No	No	DT, NG, AS	50-100Hz	Good	Good	(909) 468 3750	\$499*	2 Years parts, 1 Year labor
Optquest 1562A	13.6	0.28	1024 x 768	No	No	AG, AS	50-100Hz	Good	Fair	(909) 468 3750	\$445*	2 Years parts, 1 Year labor
Orchestra French Horn II	13.8	0.28	1280 x 1024	No	No	AG, AS	50-90Hz	Good	Good	(905) 625 7783	\$450, 405*	1 Year
Nanao FlexScan F2/15	13.5	0.28	1280 x 1024 @ 66Hz	Yes	Yes, Co	IS	55-120Hz	Excellent	Excellent	(905) 479 2223	\$999, 700*	3 Years parts and labor
Nokia 449E	13.7	0.28	1280 x 1024	No	No	AG, AS	48-100Hz	Excellent	Excellent	(905) 479 2223	\$575*	3 Years parts and labor
Packard Bell 1511/1252	13.5	0.28	1280 x 1024 @ 60Hz	No	No	AG, AS	50-120Hz	Good	Good	(905) 564 1122	\$520, 470*	3 Years
Philips Brilliance 15A	13.5	0.28	1280 x 1024	No	No	AG, AS	60-90Hz	Good	Good	(800) 387 0564	\$749, 600*	3 Years parts and labor
Princeton Ultra 15	13.7	0.28	1280 x 1024	No	No	IS	50-120Hz	Good	Very Good	(800) 827 3998	\$625*	3 Years
Samsung SyncMaster 15GLE	13.7	0.28	1280 x 1024	Yes	No	AG, AS	50-120Hz	Excellent	Very Good	(905) 542 3535	\$588*	3 Years
Samsung SyncMaster 15GLI	13.7	0.28	1280 x 1024	Yes	No	AG, AS	50-120Hz	Excellent	Very Good	(905) 542 3535	\$684*	3 Years
Samtron CS-528UXL	13.5	0.28	1280 x 1024	No	No	AG, AS	50-100Hz	Good	Good	(310) 537 7000	\$525, 399*	3 Years parts, 2 years labor
Sony Multiscan 155F	13.75	0.25 T	1280 x 1024	No	Yes	AG	50-120Hz	Excellent	Excellent	(416) 499 1414	\$880, 648*	3 Years
Spectrum/AOC 5HLR	13.5	0.28	1280 X 1024 @ 60Hz	No	No	AG, AS	47-120Hz	Good	Good	(905) 513 5777	\$510, 453*	3 Years parts and labor
TVM 5D	13.7	0.28	1280 x 1024 @ 60 Hz	No	No	NG, DT	50-120Hz	Good	Good	(604) 276 0096	\$499, 429*	2 Years
TTX Series 5000/5500	13.8	0.28	1280 x 1024 @ 60Hz	No	no	NG,	50-90Hz	Good	Good	(905) 238 6610	\$659, 469*	2 Years
Viewsonic 15 ES	13.5	0.28	1024 x 768@ 76Hz	No	No	NG, AS	50-100Hz	Good	Good	(800) 888 8583	\$469*	3 Years
Viewsonic 15 G	13.6	0.28	1280 x 1024	No	Yes, VM	AS, AG	50-90Hz	Yes	Very Good	(800) 888 8583	\$589*	3 Years

17-Inch Models

ADI Microscan SEP	15.4	0.28	1280 x 1024	No	RGB	NG	50-100Hz	Good	Very Good	(408) 944 0100	895*	2 Years, parts and labor
-------------------	------	------	-------------	----	-----	----	----------	------	-----------	----------------	------	--------------------------

Notes and Explanations

All monitors rated as Energy Star compliant except Magnavox CM 2015
 Low Radiation Rating: All 17-inch models; all 15-inch models except Acerview 55L, Packard Bell 1511; All 14-inch except AOC, Acer, Daytek DT-14SN1E, Magitronic, Orchestra and TTX
 Extra Features: Ambra 15 has built-in mic and speakers; Philips Autoscan 17 has built-in audio
 Dot Pitch Note: T indicates Trinitron tube, measurement is of Aperture Grill
 Coatings Notes: DT = Dark Tint; AG= Anti-glare; NG=Non-glare; IS= Invar Shadow Mask; SC SuperErgoCoat; AGRAS= proprietary name
 Color Matching Notes: CM= ColorMatch; Co= Colorific; VM=ViewMatch
 Pricing: Figure followed by asterisk * indicates estimated street price; pricing supplied by manufacturers, please check with your nearest dealer for current prices.

STD Computer Inc. is a dynamic, Canadian owned computer company with manufacturing, distribution, sales and service centres across Canada. Committed to customer satisfaction, the company maintains 11 service and support centres nationwide. In addition to manufacturing and distributing its own brands of systems, STD manufactures components for a number of well-known computer vendors.

STD is one of the largest micro computer manufacturers in Canada with headquarters in Markham, Ontario, and operations in Vancouver, Edmonton, Calgary, Regina, Winnipeg, Saskatchewan, London, Ottawa, Montreal, Quebec City and Dartmouth. Each of these locations maintains sales and service facilities staffed with knowledgeable technical support teams.

Since 1984, the company has grown into a sophisticated and highly successful organization committed to consistently providing high quality products and excellent service.

STD STD COMPUTER INC.

20 Konrad Crescent, Markham, Ontario L3R 8T4
 Tel: (905) 477-0388 Fax: (905) 477-0117

JULY SPECIAL

1) 486DX2-66 VLB System

- * VLB M/B with 128K Cache
- * 4MB RAM (Expandable to 64MB)
- * Mini Tower Case with Power Supply
- * 1.44MB Floppy Drive
- * 420MB Hard Drive
- * 2 Serial, 1 Parallel and 1 Game Ports
- * 1MB SVGA (Expandable to 2MB)
- * 14" .28 SVGA Monitor
- * 101 Enhanced Keyboard

\$1099

2) Intel Pentium 60MHz PCI System

* Same as above

\$1599

MONITOR BUYERS' GUIDE

Diagonal, in. | Dot Pitch, mm | Maximum Res. @ freq. | Plug&Play | Adv. Color Mgmt. | Screen Coating | Refresh Rate | Ease of Res Change | Picture Quality | Contact | Price | Warranty

17-Inch Models, cont'd

AOC Spectrum 7HLR	15.5	0.26	1280 x 1024 @ 60 Hz	No	No	NG	47-120Hz	Good	Very Good	(905) 513 5777	\$975, 867*	3 Years
Acer AcerView 76i	16	0.27	1280 x 1024 @ 60Hz	No	No	NG	50-120Hz	Good	Very Good	(800) 565-ACER	\$1,500, 1179*	1 Year
CTX 1785GM	16	0.26 T	1280 x 1024 @ 60Hz	No	No	AG, AS, AR, INVAR	50-110Hz	Good	Excellent	(604) 273-8088	\$1,199, 1055*	3 Years parts and labour
Daytek DT 1701 MPR	15.8	0.28	1280 x 1024 @ 60Hz	No	No	NG	40-90Hz	Good	Good	(905) 940 1128	\$1080, 995*	3 Years
MAG/Innovision DX17F	16	0.26	1280 x 1024	No	No	IS	50-100Hz	Good	Very Good	(800) 827 3998	\$875*	3 Years
MAG/Innovision MXP 17F	16	0.26	1280 x 1024	No	No	IS	50-120Hz	Very Good	Excellent	(800) 8273998	\$1075, 865*	3 Years
Magitronic C-SV1701P	16	0.28	1280 x 1024 @ 60Hz	No	No	AGRAS	55-90Hz	Good	Good	(800) 665 LIUS	\$793, 709*	2 Years
Magnavox Magnascan CM4018	15.8	0.28	1280 x 1024 @ 60Hz	No	No	AG, AS	50-130Hz	Good	Good	(800) 387 0564	\$1199, \$985*	1 Year
Mitsubishi Diamond Pro 17TX	16	0.25 T	1280 x 1024 @ 75Hz	No	Yes, CM	AG, AS	50-152Hz	Excellent	Excellent	(905) 475 7728	\$1,699*	3 Years parts and labor
Mitsubishi Diamond Scan 17FS	15.5	0.28	1280 x 1024 @ 74Hz	No	Yes, CM	AG, AS	50-130Hz	Very Good	Very Good	(905) 475 7728	\$1,365*	3 Years parts and labor
Nanao F2 17	15.5	0.28	1280 x 1024 @ 66Hz	Yes	Yes, Co	IS	55-120Hz	Excellent	Very Good	(905) 479 2223	\$1,595, 1325*	3 Years parts and labor
Nanao T2 17	15.5	0.25 T	1600 x 1200 @ 66Hz	Yes	Yes, Co	SC	55-160Hz	Excellent	Excellent	(905) 479 2223	\$2,325, 1,825*	3 Years parts and labor
Nokia 447L	15.5	0.28	1280 x 1024 @ 60Hz	No	Yes	AG, AS	48-100Hz	Very Good	Very Good	(905) 479 2223	\$1,199, 995*	3 Years
Nokia 447X	15.4	0.25 T	1280 x 1024 @ 75Hz	Yes	Yes	AG, AS	50-110Hz	Excellent	Excellent	(905) 479 2223	\$1,935, 1,710*	3 Years
Optique 4500DC	16	0.28	1600 x 1280	No	Yes	IS FST	50-100Hz	Very Good	Very Good	(800) 843 6784	\$950	2 Years parts, 1 year labor
Orchestra Tuba	15.6	0.28	1600 x 1200	No	No	AG, AS	50-90Hz	Good	Good	(905) 625 7783	\$890, 825*	1 Year
Panasonic Panasyne C-1791E	15.5	0.28	1280 x 1024 @ 60Hz	No	No	AG	50-90Hz	Good	Good	(416) 624 5010	\$1,599, N/A	2 Years
Philips Autoscan 17B	16	0.28	1280 x 1024 @ 60Hz	No	Yes	AG, AS	50-130Hz	Very Good	Very Good	(800) 387 0564	\$1,499, 1199*	2 Years
Philips Brilliance 17A	15.8	0.27	1280 x 1024 @ 76Hz	No	No	AG, AS	50-120Hz	Good	Very Good	(800) 387 0564	\$1,699, 1,325*	3 Years
Samsung Syncmaster 17GLS1	15.7	0.26	1280 x 1024	Yes	Yes	AG, AS	50-130Hz	Good	Excellent	(905) 542 3535	\$1,505, 1,300	3 Years
Samsung Syncmaster 17GLI	15.5	0.28	1280 x 1024	Yes	Yes	AG, AS	50-120Hz	Good	Good	(905) 542 3535	\$1,190, 1,050*	3 Years
Samtron SC-726DXL	15.75	0.26	1280 x 1024 @ 76Hz	No	Yes	AG	50-120Hz	Good	Very Good	(310) 537 7000	\$1,200*	3 Years
Sony Multiscan 17SE	15.75	0.25 T	1280 x 1024 @ 75Hz	No	No	AG	50-150Hz	Very Good	Excellent	(416) 499 1414	\$2020, 1640*	3 Years
Sony Multiscan 17SF	15.75	0.25 T	1280 x 1024 @ 60Hz	No	Yes	AG	50-120Hz	Very Good	Excellent	(416) 499 1414	\$1680, 1498*	3 Years
TTY 7765GM	15.9	0.28	1280 x 1024 @ 60Hz	No	No	IS	50-110Hz	Good	Very Good	(905) 238 6610	\$1,149, 950*	2 Years
TVM 17 AS6E	15.7	0.28	1600 x 1280	No	No	AS	47-120Hz	Good	Good	(905) 507 8500	\$899, 859*	
Tatung CM 17 MCR	15.6	0.28	1280 x 1024	No	No	IS, AS	50-100Hz	Good	Good	(905) 475 5177	\$975*	2 Years
Tatung CM 17 MKR	15.6	0.26	1600 x 1200 @ 60Hz	No	No	DT AG	50-120Hz	Good	Very Good	(905) 475 5177	\$1,059*	One Year
Viewsonic 17GS	15.7	0.27	1280 x 1024	Yes	Yes, VM	DT, AS, ARAG	50-160Hz	Excellent	Excellent	(800) 888 8583	\$1099*	3 Years
Viewsonic 17	15.7	0.27	1280 x 1024	No	No	DT, IS	50-160Hz	Excellent	Very Good	(800) 888 8583	\$1299*	3 Years

Notes and Explanations

All monitors rated as Energy Star compliant except Magnavox CM 2015
 Low Radiation Rating: All 17-inch models; all 15-inch models except Acerview 55L, Packard Bell 1511; All 14-inch except AOC, Acer, Daytek DT-145N1E, Magitronic, Orchestra and TTX
 Extra Features: Ambra 15 has built-in mic and speakers; Philips Autoscan 17 has built-in audio; Nokia monitors have built-in speakers
 Dot Pitch Note: T indicates Trinitron tube, measurement is of Aperture Grid
 Coatings Notes: DT = Dark Tint; AG= Anti-glare; NG=Non-glare; IS= Invar Shadow Mask; SC SuperErgoCoat; AGRAS= proprietary name
 Color Matching Notes: CM= ColorMatch; Co= Colorific; VM=ViewMatch
 Pricing: Figure followed by asterisk * indicates estimated street price; pricing supplied by manufacturers, please check with your nearest dealer for current prices.

ACCESS Business Centre
 ...enterprise wide solutions

(416) 630-3497

955 WILSON AVENUE, UNIT 3,
 DOWNSVIEW, ONTARIO. M3K 3A8



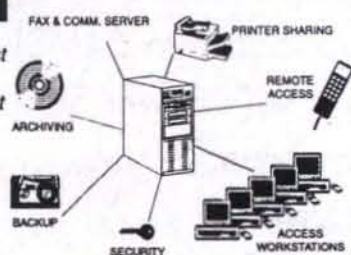
NETWORKS

CALL US TODAY FOR A
TURN-KEY NETWORK SYSTEM

To tailor a solution that best
 satisfies your enterprise
 technology requirements at
 competitive prices.

Services

- Installation
- Training
- On-Going Support
- Maintenance
- Agreements



We have been delivering and
 supporting customized computer
 systems for large and small
 companies for 15 successful years.

DYE-SUB COLOUR PRINTERS

FARGO PRIMERA

Affordable, Photo-quality
 color printing!
 Dye-sub & Wax Thermal
 IBM and Macintosh models available
 203X203dpi

\$875

FARGO PICTURA 310

Affordable, Large-format Photo-quality
 color printing!
 Dye-sub & Wax Thermal
 24 bit color Full-bleed 11"x17"
 IBM and Macintosh models available

ID CARD PRINTER

FARGO
PERSONA
 &
PERSONA PLUS

Affordable Photo ID or Access Control Cards !!
 Prints directly onto plastic cards plus, optionally
 magnetically encode them in one single step !!
 Dye-Sublimation & Resin Thermal Transfer
 IBM and Macintosh models available
 CALL TODAY !!

WIDE FORMAT DOCUMENT SCANNING

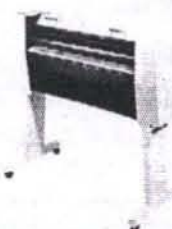
SCAN COPY UPDATE STORE PRINT

- SCAN** Images up to 36" wide
Engineering documents, maps, line art & drawings up to E size
- COPY** Engineering documents A-E size enlargements and reductions as paper copies or scanned copies
- UPDATE** Make minor update revisions on your drawings - dimensions, names and dates
- STORE** On floppies, Colorado tape back-up, CD-ROM, syquest
- PRINT/PLOT** On bond or mylar
- Convert scanned raster image to various vector file formats...
- CONVERT** Raster: CALS, TIFF, PCX, IMG, RLE, INT, BMP, RLC
Vector: DXB, DXF, ADS

WIDEFAX 36" High Speed Scan...Plot...Copy...Fax
 Wide format documents with superior image quality
 True 200 & 400dpi models available
 0 to compressed E-size files in 32 seconds

The fastest wide format scanner in the world !!!

Eliminate costly courier charges...
WIDEFAX allows you to fax blueprints
 from Toronto to Hong Kong in just
 minutes !!



PLANT MAINTENANCE SOLUTIONS

**MAINTENANCE SOLUTIONS WITH
 MACOLA'S MANAGEMENT SOFTWARE**

AN ESSENTIAL ELEMENT OF A SUCCESSFUL ENTERPRISE

BENEFITS

- REDUCE DOWNTIME
- OPTIMIZE PARTS INVENTORY
- IMPROVE PRODUCTIVITY
- MANAGE DRAWINGS

**TO PLAN AND MANAGE THE ACTIVITIES, RESOURCES
 AND RESULTS OF YOUR MAINTENANCE DEPARTMENT**

MACOLA'S MAINTENANCE MANAGEMENT SOFTWARE

- CREATE WORK ORDERS SCHEDULED / UNSCHEDULED
- TRACK COSTS LABOUR & MATERIALS
- TRACK INVENTORY PARTS AND MATERIAL
- EASY TO USE W/ SECURITY LEVELS
- CREATE P.O.'S OR REQUESTIONS
- MULTIPLE USERS ON LAN

MACOLA SOFTWARE BUILDING MAINTENANCE MADE EASY

PINNACLE RCD - 1000

Affordable Recordable 2x CD-ROM system for Mac, DOS, Unix & Windows.
 Master data & audio, over multi-sessions then play them on any 2x CD-ROM drive.
 Great for low-cost distribution, backup or mastering
 Supports major CD-R formats.

\$2795

SCANNERS

MICROTEK ScanMaker II

Affordable 24 bit colour scanning
 IBM or Macintosh
 600 x 300, 1200 DPI interpolated
 Bundled with ImageStar II & OmniPage Direct OCR

\$725

MICROTEK ScanMaker II SP

Price / performance breakthrough
 Single-pass color, DCR color calibration
 600x300dpi, 1200dpi interpolated
 IBM or Macintosh
 Comes with ImageStar II & OmniPage Direct OCR

\$795

Monitor Mania

Continued from page 57

Philips: The 3 Philips monitors reviewed, the Brilliance 15A, 17B and Brilliance 17A are excellent products in a great many respects, from the appealing ergonomic styling and easy to use controls, to the high resolution and high refresh rates (up to 120 Hz for the Brilliance 17A). The display quality is very good.

Princeton: This brand, a subsidiary line from MAG/Innovation, offers a bright, detailed image, though with slight flicker in some resolutions, and good controls. A very reasonable monitor for mainstream applications.

Samsung: State Of The Art. This was the

first time we'd seen the current, just released line of Samsung monitors, and we were impressed. They are all Plug N Play compatible (as with the NEC model, a claim that awaits complete verification), have the full range of current features and resolution options, and are nicely designed and laid out. Image quality is very good. With onscreen display controls and sophisticated color control, Samsung has a strong position in the no compromise monitor market.

Samtron: Samtron sent one model, the 15-inch SC-528UXL. It is a very nicely designed model, with a sensibly laid out set of controls on the front, a very limber tilt swivel stand, and very acceptable image quality. A good entry level monitor.

Sony: The Sony Trinitron video tube is the world standard for high quality video display. Other monitor manufacturers (such as Apple) use Sony Trinitrons as the basic building block for their high end monitors.

TVM: The 2 models we looked at had good feature sets for their size categories: the 15-inch 5D has a wide range of control options, including degaussing (demagnetizing) and Pincushion control (which allows the user to control the bending of the image area).

TTX: The TTX monitors had uniformly high refresh rates (72 Hz for the 14-inch 5450G, allowing a very stable non flickering image), and the 15-inch 5500 model has very high resolution (1280 by 1024), and many sophisticated features, such as on screen display.

Tatung: Although the 14-inch models we tested were not MPR-II standard, the larger models were, and all these monitors are well

priced, and have fair image quality. Tatung is a commonly seen brand for entry level computers - its popularity is based on unspectacular but acceptable feature sets and good price/performance.

Viewsonic: Image quality of the Viewsonic models reviewed was uniformly very good, and the feature sets and overall quality are very impressive. The 15-inch 15 ES model has an excellent 76 Hz refresh rate. The 17GS model has excellent image quality, with an 86 Hz refresh rate, and maximum resolution of 1280 by 1024. This model is also one of the few Plug N Play models, and has OnView onscreen controls, and ViewMatch color control. Although the price is higher than the entry level brands, the quality is extremely impressive across the entire line. Viewsonic also gets points for being the only manufacturer to admit up front that the actual viewable area is less than the tube size, and they list this on the exterior of the box. A class act all the way.

Summary

Three things became clear in the course of this monitor survey. First, monitors are enormously better now than they were six or seven years ago. They are much easier on the eyes, have much higher resolution, and are generally cheaper and offer better value for the lower prices. Secondly, this very competitive market is not just driving price decreases - it's causing all the vendors to adopt similar, advanced feature sets very quickly, to avoid being left behind.

Energy Star low power options are now virtually standard. MPR-II is not far behind: only the low end models don't have it. All

To BNC Or Not To BNC

The usual 15 pin video cable is capable of transmitting a fairly good video signal from the PC to a typical monitor. However, if you need especially good image display quality, a breakout cable, which terminates in four BNC style connectors, will give a slightly better quality of video input to the monitor. Some of the higher end monitors support either BNC or standard video cable connections.

manufacturers report the rapid decline of the 14-inch monitor, and the rapid growth of 17-inch monitor sales.

For the consumer, the trend is to choose larger, more easy to use monitors. Finally, the main thing holding back the quality of monitors seems to be the basic quality of the cathode ray tube which is the biggest component, in terms of size, weight and cost, in any monitor. Monitors that use Sony, Toshiba or other high quality tubes are simply better than those that use run-of-the-mill, bargain tubes. In spite of this continuing quality gap between bargain priced monitors and high quality ones, the overall

Continued on page 62

Magnetic Hazards

Monitors are very sensitive to external electromagnetic interference. The screen image can be distorted by the Earth's magnetic field, a monitor cable that is too close to a power cable, the close proximity of another monitor or other electrical device, or even a passing electric streetcar or subway train. A "degaussing" option is very useful to undo the distortion caused by electromagnetic interference.

Light WAVE

3D

Windows NT Workstations

- Windows 3.1/95
- Windows NT
- Silicon Graphics

EV5 21164 266MHZ
 Windows NT Workstation
 2 MB Cache @ 8ns
 0 - 512 MB DRAM
 Open GL video engine
 * Up to 10 times faster than a 90Mhz Pentium

Video Disk Recorder
 Non-Linear Video system
 Windows NT Support
 4:2:2:4 Digital Video
 4:1 Compression Ratio
 Razor Non-linear Support
 9 pin VTR Software Emulation
 SCSI II Drives Support
 Betacam I/O

AmiWare
DESKTOP VIDEO AT ITS BEST
 455 Cochrane Drive, Unit 21
 Markham, Ontario L3R 9R3 **[905] 940-6840**

* Call for spec sheets

RAINBOW COMPUTER

HARDWARE & SOFTWARE

電腦系統 中英文軟件

SELL
UPGRADE
SERVICE

BUSINESS 商業
ACCOUNTING 會計
EDUCATION 教育
MULTI MEDIA 多媒體
DESKTOP PUBLISHING 排版
ENTERTAINING 娛樂

McNICOLL

UNIT 121A & 113A
SCARBOROUGH
M1W 3Y3
TEL (416) 499 3078
FAX (416) 499 3136

2466 EGLINTON AVE E
UNITS
SCARBOROUGH
M1K 5J8
TEL (416) 266 6133
FAX (416) 266 2744

DMI

CD-Recording Store

Suite 208, 4155 Sheppard Ave., East, Scar., ON
Tel : (416) 609-2388 Fax : (416) 609-2106

Intro Price
\$ 850

Only \$ 199 with
Reg. Price : \$ 8,199
Special : \$ 5,499

CD-Recorder :

Pinnacle RCD-1000 w/Software \$2,995
Plasmon RF4102 2X Recorder \$3,950
w/ Corel CD Creator
Yamaha CDR100 4X Recorder \$6,675
w/ Gear MM Premastering
Philips CDD522 2X Recorder \$4,850
w/ Gear MM Premastering

CD-R Disc :

3M, TDK, Mitsui Toastui from \$17.50

CD-ROM Tower & Jukebox :

CD Tower 2X/4X with 3 Drive & Up \$ Call
Pioneer 6 Disc 2X/4X Minichanger \$ Call
Pioneer 500 Disc CD-ROM Jukebox \$ Call

System /Lease to Own :

486/DX2-66	\$1,250 or \$46/mo
486/DX4-100	\$1,350 or \$49/mo
Pentium 60	\$1,470 or \$54/mo
Pentium 75	\$1,570 or \$58/mo
Pentium 90	\$1,750 or \$64/mo
Pentium 100	\$1,850 or \$68/mo

All System : 4 Mb Fast Ram, 14" Mon., NI 540 HD, 1.44 Floppy, 1 Mb Video Card, Mouse, 101 Enh. Keyboard, Mid-Tower

CD-ROM BackUp Service :

Backup Tape, CD,
Hard Drive, ... \$ Lowest Price

Complete CD-Recording System

Pentium 75 System :
8 Mb Ram, 15" Monitor, 1.0GB SCSI HD,
4X CD-ROM, Sound Blaster16, Mid Tower

CD-Recorder :
Pinnacle RCD-1000, SCSI Adaptec,
Premastering Software, Cable

CD-R Media :
10 CD-R Media

All Lease to own are O.A.C.

Monitor Mania

Continued from page 61

level has risen. Even so-so quality CRTs look much better than those from several years ago.

So, there it is: monitors offer continually better quality and ease of use, with improving affordability, and no end in sight to the continued improvement in display technology.



of the day, you get what you pay for, and the difference is literally plain to see.

So, the Editor's Choices of this survey will simply go to the best examples of monitor we encountered in each size class. For those who want the increased productivity, comfort and health that a good monitor can offer, here are the best that we encountered.

17-inch Monitor

In the 17-inch class, the Editor's Choice is a tie between the Nokia 447X and the Mitsubishi Diamond Pro 17 TX. They both had a fabulous image, with perfectly square display in the corners, superb, easy to use controls, and wide compatibility with a broad bandwidth of video signals. Very close to the 447X and the 17TX, and deserving of praise, were excellent products from Sony (Multiscan 17SE), MAG (MXP17F), Nanao (T2 17) and Samsung (SyncMaster 17 GLSI).

15-inch Monitor

In this class, there were some superb monitors which are closer to the budget of the average home/office PC or Mac user. The Editor's Choice goes to the NEC MultiSync XP15. Other worthy contenders were models from Sony (15SF) and Samsung (Syncmaster 15 GLI).

14-inch Monitor

Since this category of monitor is being de-emphasized as the desktop PC market shifts decisively to 15-inch and 17-inch models, no Editor's Choice was awarded. The general gap in performance between 14-inch and 15-17-inch models was too great. There were still some worthy examples of budget monitors here, though. If you need a decent, inexpensive monitor for basic DOS or Windows applications, you could look at Daytek, TTX, Princeton or Tatung. Potential purchasers should note, however, that these 14-inch monitors typically can't display at the highest resolution levels and refresh rates that a current graphics accelerator can produce. □



And The Winners Are...

This particular survey was a revelation to those who participated in it. Like most folks who are involved with personal computers on a daily basis, we've gotten used to "ordinary" monitors — mostly 13-inch or 14-inch, moderate quality displays that cost under \$500.

These mass market mainstays are okay, and once we send all the nifty evaluation units back at the conclusion of this survey, that's the class of monitor that we'll be using for our own day to day work in the office. But the overwhelming impression that one gets from looking at over 70 monitors side by side over a period of a couple of weeks is that there IS a difference between a "Fair" monitor and an "Excellent" one.

Put simply, an excellent monitor gives a rock solid, bright, highly detailed, easy to read image, and can accept a signal from most any graphics card, in any resolution up to 1280 by 1024 or higher.

The energy saving, auto scanning, and display management "smarts" are widely available to all current monitors, but the essential quality of the cathode ray tubes that different monitors are based on varies enormously. One clue to quality: any monitor that has a Sony Trinitron tube has a big advantage right from the start. Careful additional attention to ergonomics, engineering, built in electronic smarts and good software adds further value. But, at the end

Tyler Computer

142 Willowdale Ave., 2nd Fl., North York, Ontario TEL: (416) 223-3357, FAX: (416) 223-2249

Mother Board w/CPU	SVGA CARD & Monitor	MultiMedia
486DX2-66 VESA 256k AMD \$300	ATI Mach32D VESA 1MB \$140	TEAC 4x CD ROM \$250
486DX4-100 VESA 256k AMD \$360	ATI Mach32D VESA 2MB \$205	Toshiba 4x CD ROM \$255
Pentium 75 PCI 256k w/PCI IO \$660	ATI Mach64D PCI 2MB \$260	Panasonic 2x CD ROM \$155
Pentium 90 PCI 256k w/PCI IO \$790	ATI Mach64V PCI 2MB \$375	Sony 55E 2x CD ROM \$165
Pentium100PCI 256k w/PCI IO \$930	S3 VESA1MB (max2MB) \$99	ACER 2x CD ROM \$145
Pentium120PCI 256k w/PCI IO call	Magitronic 15" 1280 .28 NI \$420	Sound Blaster 16 \$105
Call for detail specification	Magitronic 17" 1280 .28 NI \$750	S.B. Digital School House \$340
Memory SIMM	MAG 15" 1280 .28 NI \$499	S.B. New Discovery 18 Titles \$360
30 Pins 1M/4M \$52/\$180	MAG 17" 1280 .26 NI \$880	MultiMedia Bundle \$299
72 Pins 4M 70ns \$195	PRINTER	2x CD ROM, 10 CD Titles
72 Pins 8M 70ns \$395	Lexmark Optra R, 1200x1200 \$2049	16 bit Sound Card, 2 AMP speakers
72 Pins 16M 70ns \$620	Lexmark Execllc color 600x300 \$429	FAX MODEM
Hard Drive & I/O Card	HP 660C 600dpi color \$680	14.4 Zoltrix Int w/Voice \$89
540MB Enhanced IDE \$240	Canon BJC4000 Color, 720dpi \$469	14.4 Cardinal Ext. \$99
850MB Enhanced IDE \$325	Canon BJC-70 Color, 720dpi \$499	14.4 Boca Int/Ext \$111/\$139
1 GB Enhanced IDE \$430	Upgrade & Trade In	28.8 USR Int/Ext V.34 \$299/\$330
VESA Enh. 4xIDE/2x16550/1p/1g \$45	welcome	28.8 GVC Int/Ext V.34 \$260/\$280
VESA 4xIDE 2s/1p/1g \$25	labour charge \$20	28.8 Supra Int/Ext V.34 \$279/\$299
ISA 2x16550/1P/1G \$35		28.8 Zoltrix Int V.34 \$199

<p>486DX2-66 VESA \$1,230</p> <p>486DX4-100 VESA \$1,290</p>	<p>Pentium-75 PCI \$1,870</p> <p>Pentium-90 PCI \$1,990</p> <p>Pentium-100 PCI \$2,140</p>
--	---

- * 3xVESA, 4xISA, 256k cache
- * 4MB Ram (70ns)
- * Panasonic 1.44M Floppy Drive
- * 540MB Enhanced IDE Hard Drive
- * S3 32 bit VESA SVGA 1MB (max 2MB)
- * VESA 32 bit Controller Card, 4HD
- * 2 Serial, 1 Parallel, 1 Game Port
- * 14" SVGA 1024x768 N.I., .28mm Green
- * Mini-Tower Case w/230W Power Supply
- * Keyboard, Mouse, Mouse Pad

DOS 6.22+Windows 3.11	\$105
4MB upgrade to 8MB	\$190
14" upgrade to 15"	\$150

- ATI 1MB upgrade to 2MB \$60
- 14" upgrade to 17" \$630
- 8MB upgrade to 16MB \$390

2 years labour & 1 year parts warranty for systems; All prices are cash discounted & subject to change without notice

Basic Tips for Buying Monitors

BY GEOFF WHEELWRIGHT

It is surprising how little attention people pay to their monitors. The 14-15 inch screens are what many of us will sit and stare at for hours at a time, yet we often spend less time considering which monitor to buy than in choosing almost any other major component of a desktop PC system.

But buyers are having to get smarter because computer manufacturers are becoming less and less willing to do the job of choosing a monitor for them. A brief scan through the summer sale ads for many major computer retailers will make you intimately familiar with the phrases "monitor extra" or "display not included."

This is partially a reflection of the fact that retailers want to be able to advertise the lowest possible price for the PCs. Cutting the monitor out of the package makes this possible. It is also, however, an indication of the fact that monitors have grown up. The market for displays is now much less of a "one size fits all" affair, with multimedia monitors, energy-saving displays, displays designed for desktop publishing and professional graphics work, and space-saving LCD flat screen displays for desktop computers.

Now, more than ever, the type of monitor that is right for you depends entirely on what you want to use it for. To make an informed choice of the appropriate display, you may wish to consider the following issues.

Match the Display Adapter

What is the display adapter in your computer capable of showing? For those

with existing PCs and a desire to improve the quality of their display, this has to be the starting point. There is no point in buying a display whose capabilities go well beyond anything your computer's display card is able to show. If you have an older PC, (ie. anything more more than two years old), you may well find that you need to buy a new display adapter card at the same time as you buy your monitor. Many of the old monochrome display adapters, for example, are just not worth having anymore. In fact, it is not really worth buying a monochrome display anymore except in very rare circumstances (perhaps industrial applications). Look for a display adapter with a minimum of 1 MB of RAM and capabilities to display at least standard SVGA resolutions. If you are buying a new computer, just make sure that the computer's display capabilities match those of your display and meet the previously-mentioned minimum requirements.

How big a display do you need?

The amount of screen real estate you need is dependent on several factors: budget, desk size and desired resolution. The less money you have to spend, the smaller the monitor you will be able to afford. Today's minimum standard SVGA display typically offers a 14-inch or 15-inch screen, but 20 inches or beyond are available for those who need more space and higher resolution. The resolution issue works like this: the dots (or pixels) that make up the images on your computer screen become smaller and smaller as you up the resolu-

tion but if your screen doesn't increase in size, then you end up looking at very small dots, small icons, small text, etc. So if you need high resolutions (such as 1280 x1024) you should consider a larger display. It is possible to get smaller screens that will give you the resolution, but the resulting images will often be so small as to negate any of the benefits of the higher resolution.

What does it look like to you?

Before you buy a display, spend some time actually looking at it and see whether or not you think you could realistically spend many hours a day actually staring at it. Tilt it, swivel it, bring along a flashlight and shine it at the screen to get an idea of how it handles glare - and make sure the place you buy it is willing to exchange it for something else within a reasonable period. Displays are very personal and you don't want to end up being stuck with something you find hard to look at every morning.

There are many, many other technical and practical issues to consider in buying a display. If you start with the three listed above, however, it will point you in the right direction to consider many of the more esoteric issues. Use your common sense - don't buy anything so cheap and nasty that you get headaches from it, but also don't feel compelled to spend so much that thinking about making payments on it gives you a worse headache. You will be living - and working - with your decision for a long time to come. □

GIGANTIC SUMMER SALE

LOWEST PRICES YOU EVER SEEN!

MULTI-MEDIA UPGRADE KITS

- 16 bit sound card, 2x CD ROM, microphone speakers & Game CD\$199
- Aztech wavetable sound card, external 2x CD ROM, mic., speakers & 9 CD Titles....\$299
- Creative lab sound blaster value CD package\$249
- Turtle Beach wavetable soundcard, 4x CD ROM, mic., speakers & Game CD\$379
- Medivision 3D SRS sound card, speakers, mic., SCSI 4x CD ROM plus 8 Hot CDs.....\$429

PENTIUM DREAM MACHINE CHECKLIST

- Intel Triton Chip Set
- Mother Board support up to 200 mhz Pentium CPU
- P6 (686) Overdrive Ready
- Support both ASY Cache & Pipeline Burst SYN Cache
- Support both Page Mode & EDO Memory

120MHZ
JAGUAR \$4999

WE HAVE THE DEMO RUNNING.
COME & CHECK IT OUT! CALL US FOR DETAILS!

- VisionTech** PENTIUM
- PENTIUM 60 SYSTEM.....\$1499
 - PENTIUM 75 SYSTEM.....\$1599
 - PENTIUM 90 SYSTEM.....\$1699
- CALL US FOR DETAILS!

486 HOME PC PROMO

- 486 DX2 66 SYSTEM.....Vision.Tech.....\$1099
 - 486 DX2 80 SYSTEM.....BUDGIE.....\$1199
 - 486 DX4 100 SYSTEM.....BUDGIE.....\$1259
- All systems come with 4MB, 540 MB Hard Disk, 1.44 MB FD, 101 Keyboard, SVGA Monitor.

INTERNET STARTER PACKAGE \$199

- 100 hrs. Surf on Internet
 - Internet reference Book
 - Internet Software
- FREE U.S.R 1414 INTERNAL MODEM**
Limit time offer

INTERNET PROMO 30% OFF INTERNET BOOKS

100's of Retail/OEM CD HOT GAMES for you to Choose!

- RETAIL PACKAGE with Gift Box**
- HARD BALL 4\$42.99
 - NHL 95\$39.99
 - DESCENT.....\$41.99
 - MAGIC CARPET\$55.99
 - FULL THROTTLE\$55.99
- OEM PACKAGE**
- NASCAR RACING\$29.99
 - RISE OF ROBOT\$35.99
 - MYST\$48.99
 - 7TH GUEST\$27.99
 - GROLIER ENCYCLOPEDIA.....\$29.99

(416) 292-8693

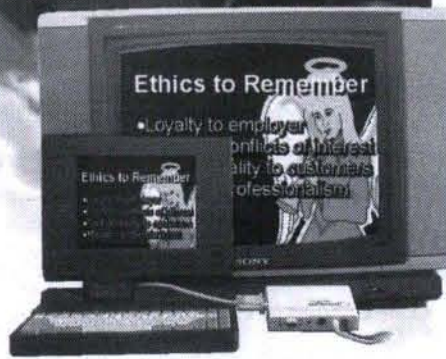
COMPUTER TOWER

OUR GUARANTEE: THE ABSOLUTE LOWEST PRICES, EVERYDAY!

2330 Kennedy Rd., Unit 6, Scarborough.
(Kennedy Rd. & Sheppard Ave. E.)
Mon-Fri: 10 am - 7 pm Sat: 10 am - 6 pm
Closed Sundays

Show them.

KROLMAN goPresent!
Notebook-to-TV Converters



Xt might just be the easiest way ever to make great presentations on-the-road. That's because Krolman goPresent! has the power to instantly send sharp colorful images onto any television directly from your mono notebook. And it's much more portable than any LCD projection panel. Now you can choose from three models of Krolman goPresent! and "show them" like never before.

LCD panel quality at one-tenth the cost.
The most portable notebook-to-TV converter available: 5 x 3 x 1" and only 8 oz. Comes with ZFT stabilization filter plus 16 million colors and TV/notebook simultaneous viewing capability. goPresent! 2.0 \$389.99

Astound with sound.
Wake up your audience with 16-bit sound clips from the TV's speakers -- as loud as you want. Just connect the audio cable to the "audio-in" ports on the back of the TV. Accepts microphone and line input from other audio devices. goPresent! 3.0 Blaster \$439.99

Enlarge your points.
They won't squint any more at even your most detailed slides. Use the remote to magnify by 2 x and pan to any position. And with "freeze-frame" you can work on your notebook while still displaying your last slide. goPresent! 4.0 Zoom \$589.99

Look Who's Using goPresent!
3M • Bell Canada • Canada Life • EDS • Honeywell • Intel • Kodak • McGill University • Microsoft • NASA • Nike • Ontario Hydro • RCMP and many more...Maybe you should too.

For more info call our automated Fax-back system at (416) 502-0266 and request document no. 210. (You must call from your fax machine).
To Order Call (416) 502-0404 or Fax (416) 502-1593
MULTIMEDIA EFFECTS Your Authorized **KROLMAN** Dealer

The Quest For Great Sound

It's time to face the music. A computer without sound just isn't a computer. Long gone are the days of beeps and squawks, and if you haven't already joined the audio revolution, you're like, square, man. Silent and square.

BY GORDON GOBLE

Only a little less square, though, is the audio output end of today's typical "multimedia" computer package. Invariably sporting at least a halfway decent sound card and CD player, MM computers offer a starting point for solid audio. Unfortunately, very little importance or care is placed upon the middle and end points — the amplifier and the speaker. A typical solution these days is a powered set of speakers, but for some strange reason (can you say economy?) the amplification is usually weak and the speakers, weaker still.

We've all experienced these, they're everywhere. You'll find them lining the shelves of computer mega-warehouses, department stores, and in any number of pre-packaged systems.

These small rectangular objects will indeed reproduce the audio essentials, but surely the galactic explosions of TIE Fighter, the roaring front straight of Indy, the latest Chili Peppers cut — and even the spoken word — deserve a better fate. It's the same old story that we computer buffs have heard time and time again, the chain is only as good as its weakest link.

Lately, some speaker manufacturers are beginning to catch on, and waking up to the fact that the buying public is hungry for

more than the constrained and "transistor radio" sound produced by most inexpensive (sub \$100) systems.

Here's a representative sample of what's available.

YST-SS1010 Powered Speaker System

Manufacturer: Yamaha
Type: Satellite/Subwoofer
Price: \$300



Specifications

Satellites (2): Enclosure size (Width x Height x Depth in inches): 4 x 8-3/4 x 6-3/8. One 3-1/2-inch magnetically shielded full range driver with spruce cone in each enclosure, producing a frequency response of 80 - 20,000 Hz. LED power indicator, power

switch, presence (treble) and volume controls on front of right speaker.

Subwoofer: Enclosure size: 11 x 8 x 10. One 6-1/2-inch magnetically shielded driver with spruce cone producing a frequency response of 35 - 250 Hz. Front-mounted LED power indicator, power switch (independent of satellites), high cut and volume controls.

The Yamaha YST-SS1010 system provides good full response of both music and digital sound effects, but is a tad lacking in the mid-range. There is enough power (10 watts per side) in the satellites to get ear-rippingly loud at close range before distortion arises. The subwoofer, on the other hand, although also powerful enough at 25 watts, begins to distort above half volume. Fortunately, half volume is more than enough to produce thundering lows, and the high cut switch can be activated to kill the lowest frequencies, leaving enough effective woofing.

Totally independent power and volume between subwoofer and satellites can be a real advantage when you want to tailor or completely kill an aspect of the sound. The minor disadvantage to this is the extra wiring, one more electrical outlet is needed for operation.

All controls are conveniently placed on the front of both component types. Unfortunately, the satellites are so light that even depressing the power switch will push them across the desktop. Yamaha has come as close to perfection as any of the units here by mounting audio controls on the front of the subwoofer, and even a careful light kick will activate or deactivate the unit (and an automatic on/off function makes things even easier). Exterior made of plastic, available in black or computer gray.

MM3 Powered Multimedia Loudspeaker System

Manufacturer: HTP International
Type: Satellite/Subwoofer
Price: \$400



RELIABILITY HAS ITS PRICE

(AND IT'S LESS THAN YOU'RE PAYING NOW)



Remanufactured Toner Cartridges and Inkjet Refills
Available for most laser printers, faxes, personal copiers and inkjet printers

On-site and depot laser printer repair

Dependable and cost effective

100% GUARANTEED

CANADIAN GENERAL STANDARDS BOARD APPROVED



LaserSpeed

265 RIMROCK ROAD, UNIT 2, NORTH YORK
Tel.: (416) 638-0975 Fax: (416) 638-0977

486 VESA LB System With 8MB

- 486DX2-66 MHz Processor
- Built-in 486DX Math-Coprocessor
- 8MB Memory 70ns / 128K Cache
- 540 MB Hard Disk
- 3.5" Floppy Drive
- 14" SVGA Color Monitor .28 dp NI
- VESA LB SVGA Card W/1MB
- VESA LB IDE Controller W/2S/1P/1G
- 101 Enhanced Keyboard
- Mini Tower Case w/230W
- Mouse & Mouse Pad

486DX2-66 486DX2-100

\$1399 \$49⁹⁵/Mth \$1499 \$52⁹⁵/Mth

CREATIVE LABS MULTIMEDIA KIT \$275
SoundBlaster 16 Bit, Double Speed CD-ROM, 12 CD Titles including Groliers Encyclopedia Speakers

MEMORY SPECIAL

4MB 72 Pin \$180
8MB 72 Pin \$380
16MB 72 Pin Call

Sheppard Ave.	
Hwy. 401	
Duncan Mill Rd.	
Lesmill	
York Mills Rd.	
Don Mills Rd.	

Pentium•75MHz PCI System

- Pentium-75MHz Processor
- 8MB Memory 70ns / 256K Cache
- 540 MB Hard Drive
- 14" SVGA Color Monitor .28 dp NI
- PCI 1MB Graphic Accelerator
- On Board PCI Enhanced IDE Controller
- 3.5" Floppy Drive
- 101 Enhanced keyboard
- Mini Tower Case w/230W
- Mouse & Mouse Pad

\$1890* \$66/Mth



*Monthly payment based on 36 month. Down payment 20% of the total purchase price by credit card. Instant approval.

HVM Computers

101 Duncan Mill Rd., Suite G1 Don Mills, Ont. M3B 1Z3
Tel: 416-446-0535 Fax: 416-446-0591
Store Hours: Mon-Sat 10:00-6:00

BRING STUNNING PICTURES FROM VIDEO INTO YOUR PC

SNAPPY is an incredibly easy way to bring high-quality images into your PC, literally in seconds. Simply plug this pocket sized device into the parallel printer port of your PC or Laptop. Plug in your Camcorder, TV, VCR or any other video source and simply click "SNAP". The results are truly astonishing - watch SNAPPY grab images in 1/60th of a second with up to 1,500 x 1125 resolution in 16.8 million brilliant colours. Even the price is incredible - SNAPPY is available at fine dealers across Canada for around \$300 - So Get SNAPPIN!!!

"SNAPPY produces the best video stills I've ever seen..."

-Video Magazine-

"Brilliant new product..."

-Mobile Office-

"...a must have PC peripheral..."

-PC Magazine-

EASY AND FUN TO USE, SNAPPY IS PERFECT FOR:

Desktop Publishing and Photo Retouching

Multimedia Presentations Product Catalogues and Spec Sheets

Scientific, Medical, Legal, Real Estate Security and Insurance Imaging

Store your photo albums digitally in your computer

- On screen makeover using Fauve Matisse (included)
- Morph friends and family with Gryphon Morph (included)
- Capture any 3-D image or texture, anything you can see!!!
- Literally 1,000's of other uses!!!

INCLUDES approximately \$400.00 of Award Winning Software GRYPHON MORPH & FAUVE MATISSE

ADVENTURE ELECTRONICS

BLACK'S

VISTEK

APLUS SOFTWARE

biz

MISCO

HOME COMPUTING

HENKYS

CompuSmart

OSHAWA CAMERA

foto source

WISE GUY COMPUTERS

PROVINCIAL PRODUCTS inc. CANADIAN DISTRIBUTOR

In Toronto Tel: (905) 629-3737 Fax: (905) 629-1982

Outside Toronto Tel: (800) 267-4686 Fax: (800) 665-1982

Buying Computer Speakers: Sound Rules Of Thumb

BY GORDON GOBLE

Specifications

Satellites (2): Enclosure size: 5 x 8-3/4 x 5 3/4. One 1/2-inch domed tweeter, and one 4-1/2-inch mid range driver in each enclosure, both with magnetic shielding, producing a frequency response of 150 - 18,000 Hz. Rear-mounted tweeter level controls on both satellites. Removable cloth grilles.

Subwoofer: Enclosure size: 8 x 12-3/4 x 11. One 6-1/2-inch magnetically shielded driver producing a frequency response of 45 - 150 Hz. LED power indicator on front, top-mounted master volume and balance controls, rear-mounted power switch. Removable cloth grille.

True 30 watts per channel and black hand-finished wood enclosures make this a powerful, professionally appointed system. Sound is very full, strong in the mid-range, and the relatively large drivers in the satellites mean some bottom end will come from the desk top - a nice touch. Very little noticeable distortion occurs at any level. Sadly, design restrictions mean that all the circuitry and wires reside within the air chamber of the subwoofer, resulting in an annoying and consistent vibration or rattling at mid to high volumes.

Control positioning also leaves something to be desired. The power switch mounting, especially on the rear of the subwoofer, means simply activating the unit is inconvenient. Also, it is impossible to increase volume on one component without affecting the other, as there are no independent volume controls between sub and satel-

Continued on page 66

There's no escape — you're going to have to spend some money for quality audio. The systems reviewed in the accompanying article run from \$200 to \$400 dollars and that, by no means, is the ceiling. There are lots of inexpensive low grade powered speakers that come pre-packaged with computer systems, and even more that sell separately. But consider \$200 as a starting point for good sound. Here are some other tips.

Sound Amplifiers

If you want a little power, you've got to buy speakers with amplification. Sound boards, even the best of them, come with just a few watts of power, and that's just not enough. There's no hard and fast rule as to wattage requirements, just make sure your salesperson has no qualms about cranking the volume level. Any distortion may as easily be the result of an underpowered amp as bad speakers.

Interestingly, you may notice that high end systems often declare a lower wattage output than some of the cheaper stuff. That usually means a different rating system was used when taking the figures. Low powered systems are sometimes rated by their "peak" rather than their "continuous" output, thereby enhancing their stated performance in the eyes of the uninitiated.

This sort of deception is perfectly legal, and it's not unusual to find that a system advertised as packing 80 watts is brought to its knees by a 15 watt unit. Be careful and ask to hear before buying.

The Importance of Shielding

If you're planning to place the speakers within four to five feet of your monitor, make sure you see the word "shielded" on the package (most purpose-built speaker systems are shielded). Shielding inhibits the magnetic field surrounding the speaker magnet (via another reverse polarity magnet and/or punched steel "can" surrounding the speaker magnet), and thus prevents damage to the monitor. An unshielded speaker will at first cause strange colors to appear on a monitor, then as time goes on, inflict permanent damage.

Don't Succumb To Marketing Hype

Don't be fooled by smart marketing. Just because something looks great with a high tech wrapping, it won't necessarily sound any better. Ask to hear each system that appeals to you, and make sure there's nothing else hooked up that will enhance the sound (such as additional amplifiers or other speakers — this does happen).

Also, don't let buzzwords influence your decision. These days, the word "multimedia" on the package often translates to "We can sell these small ineffective speakers for inflated prices because the consumer is fooled into thinking they're really something special." Remember, aside from a built-in amp and some shielding, there are no differences between the speakers you buy for your computer and those attached to your living room stereo.

Woof Woof — Feel That Sound

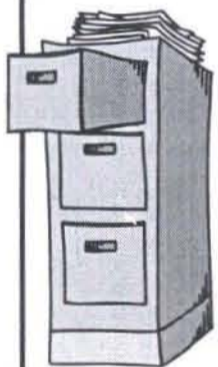
Although available space is certainly a consideration, don't let that dominate your decision. There is no substitute for the bigger sound delivered by a bigger speaker, especially in the lower frequencies. Dinky just won't do. Most of the units reviewed in the accompanying article are three piece systems: two "satellites" that supply the mid to high frequencies and one "subwoofer" that pumps out the bottom end.

The subwoofer is usually three to four times the size of the satellites, and although that means a larger space requirement, said subwoofer can be plunked down on the floor virtually anywhere. As low end frequencies are omni-directional, you won't need to worry that it faces this way or that. Just remember that the closer its proximity to a corner or wall, the more "boom" to the sound.

Not For PCs? So What

If you've got tons of space, and don't feel the need to have speakers on either side of the monitor, there's a whole world of options out there. Personally, I like big sound — the kind you get from sizeable speakers and a good amp, and I don't mind used equipment.

Thus, I was able to purchase a 50 watt Technics receiver and a pair of quality 24 x 14-inch Advent speakers (someone else's former home stereo, no doubt) for a couple of hundred bucks. Now I've got house-filling computer sound and AM/FM capabilities to boot. And remember, nowhere did it say "multimedia." □



ACCOUNTING PROBLEMS?

LET'S GET SERIOUS!

- ... with a real computerised inventory control system
- ... with a real order processing and invoicing system.
- ... with unmatched reporting capabilities

OUR SOLUTION

... a comprehensive, fully integrated accounting system including:

- ✓ General Ledger
- ✓ Accounts Payable
- ✓ Accounts Receivable
- ✓ Bank/Cheque Reconciliation
- ✓ Inventory Control
- ✓ Purchase Orders/Receiving
- ✓ Order Entry/Invoicing
- ✓ Import/Export
- ✓ Point-of-Sale
- ✓ Detailed reporting

Looking for more out of your accounting system? Call 1-800-728-7776 and we will send you information on the benefits of converting to our accounting and management information software. And by the way, it doesn't cost as much as you think—honestly.

FOREMOST TECHNOLOGIES INC.
"we're serious...about business"

Suite 309, 1716-16th Ave., N.W. Calgary, Alberta T2M 0L7
Phone 1-800-728-7776 Dealers Enquiries Welcome

Plug & Go Universal CD-ROM Reader



- Great for Notebook or Desktop Computers
- Quick and Easy Installation
- Supports IBM Parallel, SCSI & Mac SCSI

Mindflight Technology Inc. • 1995 Boundary Rd • Vancouver, BC V5M 3Y7
Tel: (604) 294-6465 • Fax: (604) 294-1301 • Sales: (800) 263-3888

SPECIAL!
INTEL 486DX-11-66
Motherboard w/CPU
\$295.00

HD 850 MB
\$339.00

1 MG SIMMS
\$46.00

4 MG 72 PIN
\$189.00

NEC 15" MONITOR
\$499.00

We Buy & Sell Computers & Computer Parts

• New & Used • Upgrades • Trade-ins
• Repairs • Parts Galore

Monitors, Hard Drives, Cases, Power Supplies, Motherboards, Tape Drives, Modems, Video & I/O Cards, Memory, Software, Books, Cables, Gender Changers, Ribbons, Paper, Labels, Disks, etc.

Brampton Electronics Components
22A Strathearn Avenue, Unit 1A,
Brampton, Ont.
(905) 793-9111

Notebooks— Super cheap!

The Quest for Great Sound

Continued from page 65

lites. (Without a doubt, someone somewhere will soon realize that kickswitches on a subwoofer make good sense.) On a positive note, the tweeter level control on satellites does the job without adding any unwanted tinniness.

A surround-sound version of this system is available for \$50 extra.

ACS300.1 Computer Speaker System With Subwoofer

Manufacturer: Altec Lansing
Type: Satellite/Subwoofer
Price: \$400

Specifications

Satellites (2): Enclosure size: 5 1/4 x 3-3/4 x 7. One 1/2-inch domed tweeter, and one 4-inch mid-range driver in each enclosure, both with magnetic shielding, producing a frequency response of 120 - 20,000 Hz. Front-mounted power, volume and mixer (for two inputs) on left satellite, and balance, hi (treble) and bass volume on right. LED power indicators on both. Clam-shell (flip-top) design.

Subwoofer: Enclosure size: 10-1/4 x 5 x 6-1/2. Two 4-inch long throw drivers, NOT shielded, producing a frequency response of 35 - 120 Hz. No controls.

This is one of many entries in the multimedia market from speaker veteran, Altec Lansing.

Overall sound seems somewhat contained, although evenly distributed, and with 18 watts for the satellites and another 18 for the subwoofer, this system can get quite loud. Dual 4-inch drivers in the subwoofer unit mean no shortage of sound, but the deep bass tones present in both the previous systems just can't be had here. Satellites produce an even range of sounds from light bottom end to screeching highs. Not much here in the way of distortion unless volume is really cranked. Once again, as in the HTPs, interior vibrations in the subwoofer become annoyingly noticeable at 12 o'clock and higher on the volume dial.

Innovative "pop-up" design of satellites permits placement options. Very functional myriad of front-mounted controls, again on the satellites, permits convenient sound tailoring. Unshielded subwoofer necessitates

distance between it and monitor. Plastic enclosures are colored computer gray.

The suggested retail price is a little high. Check for point of sale discounts.

VS127 PerfectSound Multimedia Speakers

Manufacturer: Viewsonic
Type: Fullrange Two Piece Unit
Price: \$230.00



Specifications

Enclosures (2) size: 2/5 x 10-1/5 x 8-3/4. One 4-3/4 x 1-3/5-inch mid/high driver and one 2-3/5-inch low end driver in each enclosure, both with magnetic shielding, producing a frequency response of 40 - 20,000 Hz. Front-mounted power, volume, bass and treble controls and LED power indicator on one of the two speakers. Tall, "slim tower" design with mounting bracket so entire unit may be "strapped" to monitor.

Subwoofer: None.

Tonal qualities, as with all other products here, are much superior to that of basic department store fodder, and a small low frequency driver produces a surprising amount of bottom end. Still, this is nowhere near any of the trio of three-piece units above. Very quiet system means either the stated amplifier output of 14 watts "RMS" (supposedly the true measurement of continuous power) is generous or speakers are extremely inefficient (do not convert supplied power well). Using the non-amplified SoundBlaster output, volume was very weak, while using the pre-amplified SoundBlaster output, volume was very weak, while using the pre-amplified output produced immediate, heavy distortion from left speaker at even moderate levels.

With both treble and bass controls set to minimum, sound was poor relative to other \$200 plus systems, while cranking both to maximum increased bottom end output to acceptable levels, while high end remained tinny, with no crisp peaks. Capability of monitor attachment adds to appeal. Available in computer gray.

Continued on page 70

486 GREEN VESA

2 Years Parts and Labour Warranty
Intel Inside
32 Bit VESA L.E.

486DX2-66 \$1288
486DX4-100 \$1399
PCI SYSTEM ADD \$90
MS DOS 6.22 & Windows 3.11 with diskette and manuals
\$99 with system purchase

PENTIUM PCI

2 Years Parts and Labour Warranty
Intel Inside
64 Bit PCI L.E.

DX-60 \$1999
DX 90 \$2229
DX-75 \$2099
DX 100 \$2399

Multimedia

Creative Lab Value CD	\$349
Creative Lab Discovery CD	\$379
Creative Lab Digital School House	\$349
Creative Lab Discovery CD 4X	\$459
Creative Lab Multimedia Home 4X	\$569
Sound Blaster 16 Value (OEM)	\$99
Sound Blaster 32 AWE	\$389
Panasonic 562 2X speed CD ROM	\$149
Toshiba 4X speed IDE CD ROM	\$269
Mitsumi 4X speed IDE CD ROM	\$269
Teac 4X speed CD ROM	\$259
Plexitor 4X speed SCSI CD ROM	\$579
Toshiba 3501i 4X speed SCSI CD ROM	\$479
Microsoft Home CD bundle 4 titles	\$79
Microsoft Home CD bundle 6 titles (with CD ROM purchase)	\$99

Networking

Novell Personal Network 2 user kit	\$349
Novell Personal Network 5 user kit	\$569
Lantastic 6.0 2 user kit	\$389
Lantastic 6.0 5 user kit	\$839
Novell Network 3.12 5 user	\$939
Novell Network 3.12 10 user	\$2149
Novell Network 4.1 5 user	\$959
Novell Network 4.1 10 user	\$2169
DLink Ethernet Coax 16bit	\$69
DLink Ethernet Combo 16bit	\$89
Dlink Ethernet Combo PCI	\$189
3COM 3C509 Etherlink III ISA	\$189
3COM 3C590 Etherlink III PCI	\$249

Video Card

ATI Mach32D 1MB VLB, PCI or ISA	\$139
ATI Mach32D 2MB VLB, PCI or ISA	\$219
ATI Mach64D 1MB VLB, PCI or ISA	\$195
ATI Mach 64D 2MB VLB, PCI or ISA	\$259
ATI Mach 64V 2MB VLB, PCI or ISA	\$389
Cirus Logic 5429 1MB VLB	\$109
S3 1MB VLB	\$99

Monitor

Orchestra 14" NI 60Hz EPA 0.28	\$299
Daytek 14" NI 72Hz EPA 0.28 LR	\$309
Daytek 15" NI 75Hz EPA 0.28 LR	\$409
MAG DX15F NI 76Hz EPA 0.28 LR	\$499
Sony 15SF NI 76Hz EPA 0.25 LR	\$669
Viewsonic 15ES 76Hz EPA 0.28 LR	\$529
Viewsonic V15 76Hz EPA 0.27 LR	\$619
MAG DX17F NI 76Hz EPA 0.26 LR	\$919
Sony 17SE1 NI 76Hz EPA 0.25 LR	\$1499
Viewsonic 17GS 76Hz EPA 0.28 LR	\$1149
Viewsonic V17 76Hz EPA 0.28 LR	\$1299

Main Board

Pine 486 DX4 VLB 128K	\$109
Gigabyte 486DX4 VLB 256K	\$149
Gigabyte 486DX4 PCI EIDE 256K	\$369
Asus Pentium 100 Intel Triton 256K	\$339
Gigabyte Pentium 100 ALI 256K	\$289
Super Pentium 120 OPTI 256K	\$379
Super Pentium 133 Intel Triton 256K	\$469
Intel 486DX2-66 CPU 5V	\$199
Intel 486DX4-100 CPU 3V	\$309
Pentium 75 CPU 3V	\$399

Scanner

Logitech Scanman 256	\$129
Logitech Scanman Easy Touch	\$189
Logitech Scanman Color	\$269

Printer

Brother HL641 300dpi 512K 6ppm	\$579
Brother HL660 600dpi 2MB 6ppm	\$789
Canon BJ100 360x360 dpi	\$289
Canon BJ4000 720x360 dpi color	\$479
Canon LBP430W 300dpi 1MB 4ppm	\$649
Epson Stylus 800 720x720 color	\$729
HP Deskjet 540 600x300	\$409
HP Deskjet 560C 600x300 color	\$679
Lexmark Execjet II C 600x300 color	\$469
Lexmark Winwriter 200 300dpi 512K	\$659

Harddisk

Maxtor 420MB 12ms 32K	\$219
Maxtor 540MB 12ms 32K	\$239
Quantum 540MB 12ms 128K	\$259
Seagate 730MB 12ms 256K	\$329
Maxtor 850MB 12ms 64K	\$309
Western Digital 850MB 10ms 64K	\$339
Western Digital 1.2GB 10ms 64K	\$499

Modem

Boca SoundExpression 14.4Vsp	\$249
Modem Blaster 19.2 Voice	\$169
US Robotic Sportster 14.4 internal	\$139
US Robotic Sportster 14.4 external	\$159
US Robotic 28.8 internal V.34	\$289
US Robotic 28.8 external V.34	\$329
Zoom 14.4 internal voice	\$179

Tape Backup

Colorado Jumbo 350 internal	\$229
Corner 420 internal with tape	\$239
Corner 850 internal with tape	\$389

LYLYSS COMPUTER & ELECTRONICS
3111 Dundas St. W. (West of Keele St.) Tel: 416-766-8954 Fax: 416-766-0802

BOARDS & CPUS	MAXTOR 540 MB	PENTIUM 75M
486DX2-80M AMD.....\$275	\$229	\$1899
486DX4-100M AMD.....\$319		
486DX2-66M INTEL.....\$290		
486DX4-75M INTEL.....\$299	4M RAM 72 PIN	\$180
486DX4-100M INTEL.....\$409		
PENITUM 66M INTEL.....\$599		
PENITUM 75M INTEL.....\$649	8M RAM 72 PIN	\$360
PENITUM 90M INTEL.....\$779		
PENITUM 100M INTEL.....\$979		
HARD DRIVES	FLOPPY DRIVES	FOR OTHER SYSTEMS PLEASE CALL!
MAXTOR 540MB.....\$229	SONY 1.44M.....\$45	
MAXTOR 850MB.....\$309	PANASONIC 1.2M.....\$55	
IBM 1GB.....\$429		

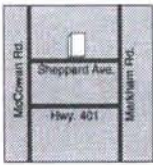
Softec business computer

(905) 477-9838
1-800-507-6226
FAX: (905) 477-7887

Mon-Fri: 9.30am to 7.00pm Sat: 10am to 5pm
7170 Warden Avenue, Unit 19, Markham, Ont., L3R 8B4 All prices are 3% cash discounted

SCARBOROUGH

4800 SHEPPARD AVE. E.
UNIT 120. M1S 4N5
TEL: (416) 321-0413
FAX: (416) 321-0429



ABC

MARKHAM

7170 WARDEN AVE.
UNIT 15A. L3R 5M8
TEL: (905) 946-1613
FAX: (905) 946-1957



*ALL PRICES ARE ALREADY 4% DISCOUNTED FOR CASH, MONEY ORDER & CERTIFIED CHEQUE ONLY.

*PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

INTEL PCI LOCAL BUS SERIES

\$2399 Pentium 100 Mhz • Maxtor/Connor 1.2 G HD

\$2099 Pentium 90 Mhz • Maxtor 850M HD

\$1919 Pentium 75 Mhz • Maxtor 540M HD

SYSTEM INCLUDES:

- Intel CPU & PCI Local Bus MB, 256K ext. cache (up to 1M)
- Math Co-processor & CPU fan
- 8 M RAM 72 Pin 70ns
- 15" 0.28 NI 72 Hz SVGA Acer Monitor
- PCI SVGA 1 M Card (up to 2M)
- On board PCI Enhanced IDE 25/IP
- On Board 16550 High Speed I/O
- Acer 101 key Enh. KB (150-9002 Certified)
- 1.44 M Floppy Drive (Japanese)
- Mid Tower w/LED Display
- FREE Logitech Mouse
- Upgrade to Intel Motherboard +\$150



ALL SYSTEMS
INCLUDE
2 YEAR PARTS &
LABOUR WARRANTY

Intel 80486 DX4-100 Mhz
\$1399 • Maxtor/Quantum 540M HD •
(AMD CPU \$1319)

Intel 80486 DXII-66 Mhz
\$1269 • Maxtor/Conner 420M HD •

SYSTEM INCLUDES

- VESA Local Bus Motherboard •
- 128K External Cache •
- Built-in Math-Co-processor •
- 4 M RAM 70ns •
- ATI Mach 32 1M Vesa Local Bus SVGA Card •
- 14" .28 dp 1024 x 768 N.I. SVGA Monitor •
- 1.44M 3.5" Floppy Drive (Japanese) •
- VL Bus 32 Bits Enhanced IDE I/O Card 2S,1P,1G •
- Mid Tower Case w/LED Display •
- ACER 101 Enhanced Keyboard •
- FREE Microsoft Compatible Mouse/Pad •

COMPETITIVE VESA LOCAL BUS SERIES

\$89.00 DOS 6.22 & WINDOWS 3.11 (with System Purchase)

PENTIUM STARTER SYSTEM

Intel Pentium 75 MHz CPU w/cooling fan
Acer PCI Motherboard w/256K cache (up to 1M)
Maxtor/Connor/Quantum 540 MB HD
1.44 3.5" FD (Japanese)
8M PAM, 72 Pins, 70ns
PCI SVGA Card W/1M (up to 2M)
101 Enhanced Keyboard
14" .28 N.I. (1024x768) SVGA Monitor
Built in 16550 FAST I/O Port
Mini Tower Case w/200W. P.S.
FREE 3 Button Mouse & Pad

\$1799

MULTIMEDIA COMPUTER SYSTEM

PROFESSIONAL SERIES
80-486 DX4-100MHz

VL Bus MB w/128K Cache
4M RAM-70ns Exp. to 64M
Maxtor 850 MB HD
1.44 3.5" FD (Japanese)
VL Bus SVGA Card W/1M RAM
VL Bus IDE w/1P. 25. 1G
Mini Tower Case w/200 w.p.s.
14" .28 N.I. SVGA Monitor (1024x768)
101 Enhanced Keyboard
FREE MS Compatible Mouse & Pad
TEAC 4X CD-ROM
IDE 4X CD-ROM, SB16 MCD
Compton '95 Ency. Stereo speakers

\$1699

ENTERTAINMENT SERIES
80-486 DX2-66MHz

VL Bus MB w/128K Cache
4M RAM-70ns Exp. to 64M
Maxtor/Quantum 540 MB HD
1.44 3.5" FD (Japanese)
VL Bus SVGA Card W/1M RAM
VL Bus IDE w/1P. 25. 1G
Mini Tower Case w/200 w.p.s.
14" .28 N.I. SVGA Monitor (1024x768)
101 Enhanced Keyboard
FREE MS Compatible Mouse & Pad
Panasonic 2X CD-ROM, SB16 MCD
Compton '95 Ency. Stereo speakers

\$1429

PCI 486 SYSTEM

\$1,299 80-486
100 MHz

PCI local Bus MB W/128K cache
4M (72pin) 70 NS ext to 128M
Built in enhanced IDE W/16550.
Maxtor/Conner 420M HD
1.44 FD (Japanese)
PCI SVGA Card w/1M (up to 2M)
(Upgrade to ATI Mach 32 1M + \$40)
Built in enhanced IDEW/16550
Built in 1P/1G
Mini Tower case w/200 W.P.S.
14" 0.28 N.I. SVGA Monitor (1024x768),
101 Enhanced Keyboard,
Free M.S. DOS compatible mouse and pad

* ALL PRICES ARE ALREADY 4% DISCOUNTED FOR CASH, MONEY ORDER & CERTIFIED CHEQUE ONLY • PRICES SUBJECT TO CHANGE WITHOUT NOTICE •

THIS MONTH'S SPECIAL

IDE 4X CD-ROM, SB 16 MCD,
Microsoft Encarta '95, Speakers\$389
Panasonic 2X CD-ROM, SB 16 MCD,
Compton '95 Ency., Speakers\$245
(Upgrade Encarta '95 Ency. + \$25)

Canon BJ-200EX Printer\$329
16 Bit Sound Blaster Card MCD\$109
16 Bit Sound Blaster Card Basic\$99
Enhanced VL Bus IDE Card\$33
Mid Tower Case w/LED\$62
Full Tower Case w/LED\$79
PS/2 Power Supply 250w\$45
Trident 9440 SVGA CARD w/1M RAM (up to 2M)\$99
PCI SVGA Card w/1M Ram (up to 2M)\$99
ATI Mach 32 1M RAM\$139
ATI Mach 64 2M DRAM\$269
ATI Mach 64 2M VRAM\$385

HARD DRIVES MAXTOR, QUANTUM, SEAGATE WESTERN DIGITAL, CONNOR

540 MB\$225
850 MB\$285
1.2 GBCALL

MEMORY

30 Pin SIMMCALL
72 Pin SIMMCALL

FAX/MODEM

14.4 INT\$69

BOCA RESEARCH

INT. 14.4\$135
EXT 14.4\$185

US ROBOTICS

14.4 BPS INT SPORTSTER\$135
14.4 BPS EXT SPORTSTER\$158
COURIER 16.8 BPS INT\$685

COURIER 16.8 BPS EXT\$745
COURIER HST/DS INT\$969
COURIER HST/DS EXT\$1,039

MATH CHIPS

80387SX 25/33/40CALL
80387DX 25/33/40CALL

KEYBOARDS

ACER\$21
ENHANCED 101\$18
KEYTRONIC 101\$45

CONTROLLERS

ISA AT I/O\$16
ISA IDE I/O\$20
VL Bus IDE I/O\$30
ISA IDE I/O w/16550\$49
VL Bus IDE I/O w/2 x 16550\$49

ADAPTEC

1522 SCSI HD/FD CARD ONLY\$105
1542 KIT SCSI CARD,S/W,CBL\$345
2940 SCSI PCI\$420

MONITORS

14" 28 1024 x 768 Non-Interlaced\$279
15" 28 F/S N.I. 1024 x 768\$399

SONY

15" FS 1280x1024 .26 N.I. Green\$645
17" FS 1280x1024 .28 N.I. Green\$1440
20" FS 1600x1280 0.26 N.I. Green\$2589

NEC

3V\$625
4FGE\$919
5FGE\$1,639
6FG\$2,969

MOTHERBOARD

INTEL 486DX-33 VESA LB, 128K\$199
INTEL 486DX2-66 VESA LB, 128K\$299
Pentium 90 PCI 256K cacheCALL
Pentium Cooling Fan\$25
486 Cooling Fan\$12

PRINTERS

RAVEN

RP9100 9 PIN\$180
RP2405 24 PIN\$225
RP2406 24 PIN OPT. COLOR\$279
RP2420 24 PIN 256CPS\$369
PR9606 9 PIN WIDE\$496
PR2465 24 PIN WIDE\$475
LP470PS 4PPM LED SLIM\$679
LP410 4PPM LASER 1M\$499
LP530 5PPM LASER 1M\$929
LP570PS POSTSCRIPT 2M\$1,475
LP1030 10PPM LASER 1M\$1,375
COLOR KIT FOR 2406,9105\$55

CANON

BJC-4000\$479
LBP-430W\$629
BJ-30\$349
BJ-100\$279
BJ-230\$479

Portability & Performance in a Petite Printer

BY MARTIN P. WATERMAN

Canon BJC-70 Color Bubble-Jet Printer

From: Canon Canada Inc.
Price: \$500-\$600 (est. street price)

Most people who see the BJC-70 for the first time are surprised at its petite size. The unit measures a scant 6.2 by 11.8 inches and its height when the unit is closed is a mere 2.2 inches. The entire unit, including the power supply, weighs about three pounds.

With the BJC-70, Canon has created a bubble jet printer that has 360 x 360 dpi color and 720 x 360 dpi monochrome (with smoothing) and is extremely portable. There is also an optional NiMH battery pack (NB-300) so that you need not be near a power outlet to be printing high quality color documents, envelopes or transparencies.

An optional universal Adapter (AD350U) allows you to plug in the machine in countries that don't use North America-style outlets. For these reasons, Canon designated this printer as "The First Virtual Office Color Printer" suggesting that it is light enough, small enough and versatile enough to be used anywhere.

Bubble Bubble Toil and Trouble

When the BJC-70 arrived, I found that set up was fast and easy, and I was printing documents within 20 minutes of opening the box. Normally, my workhorse printer is a 9-pin dot matrix machine that refuses to die. It produces good quality letters so this is the one that I use 95 percent of the time. For my desktop publishing needs — or whenever I need very high quality output — I use a friend's laser printer; therefore, the urge to upgrade had started to manifest itself. (On the other hand, because of electronic communications that are now available, I find that the vast majority of my output is either sent electronically or saved to disk, a fact that should make any tree hugger pleased.)

Besides its portability, the BJC-70 has solved one major criticism of color inkjets, namely the quality of the blacks. The BJC-70 prints true black because you either run the BC10 High Capacity Black cartridge or both the smaller BC11 color and BC10 cartridges in tandem. The black cartridge produces a richer black than can be achieved by mixing inks from the color cartridges. Another benefit is that the more expensive color cartridges will last much longer. Anyone who prints documents that use a combination of black text and color graphics will appreciate this. In addition, if you have kids using the printer, the cost savings will be substantial.

My first task for the BJC-70 was my resume, which I created in PageMaker 5 for Windows. It was all text except for a one inch by one inch photograph of myself. I had tried to print this document on my dot printer and the text looked great. However, the photograph had a faded look — imagine looking at a picture of the Shroud of Turin and you'll get the idea.

On the BJC-70, the resume came out clear and beautiful, especially the photograph which surprised me because of the small size. While I was admiring the handsome guy in the photograph, I noticed a fine white line that streaked across near the bottom of the page where the printer had skipped. The document I was printing had margins of only a quarter of an inch so I reformatted the document for half inch margins and the problem disappeared.

After about three dozen resumes, the BC-10 print head went dry. Looking at the spec sheet I read that this cartridge should have a life expectancy of approximately 170 pages at five percent coverage. I called up Canon's 24 hour help line at 12:45 a.m. (I like to call technical support at odd hours when I review products, to see how well it functions) and I was surprised to get someone immediately. He

Continued on page 70



HARD DRIVES

The NEW Performance Standard for Hard Drives IDE SCSI

Seagate 3 Year Warranty			
545MB	13ms	\$279	\$ Call
850MB	12ms	369	N/A
1.0GIG	12ms	499	799
WESTERN DIGITAL 3 Year Warranty			
425MB	13ms	259	
540MB	11ms	429	
850MB	10ms	349	
1.0GIG	10ms	479	
1.2GIG	10ms	529	
Quantum 2 Year Warranty			
540MB	12ms	\$299	\$329
730MB	12ms	339	399
850MB	14ms	Soon	Soon
1.08GIG	12ms	Soon	Soon
FUJITSU 3 Year Warranty			
350MB	12ms	\$269	\$299
530MB	12ms	299	349
Enhanced IDE VLBUS Controller PROMISE 3 Year Warranty \$99			

SCSI GIG+ DRIVES

Seagate 5 Year Warranty			
1.05GIG	8ms	\$799	
2.1GIG/3.5"	9ms	1399	
4.2GIG/3.5"	9ms	1999	
9.08GIG/5.25"	11ms	3999	
BARRACUDA 7200RPM			
1.0GIG/3.5"	8ms	\$1099	
2.1GIG/3.5"	8ms	1629	
4.1GIG/3.5"	8ms	2269	
Want the ULTIMATE in Hard Drive Performance? Ask about Seagate's NEW WIDE-SCSI Drives Up to 20MB per second!			
MICROPOLIS 5 Year Warranty			
Int. AV*			
2.0GIG	10ms	\$1599	\$1699
3.0GIG	13ms	1999	2099
4.1GIG	8ms	2499	2699
9.0GIG	12ms	3899	4399
FUJITSU 5 Year Warranty			
1.0GIG	10ms	\$799	
2.0GIG	10ms	1499	
3.0GIG	10ms	1899	
adaptec SCSI Controllers			

Bare Kit			
1505 Total CD-ISA	\$ N/A	\$129	\$210
1522-ISA		269	379
1542-VL-BUS		329	399
2940-PCI		389	469
2940W-PCI Wide SCSI		N/A	
2742-EISA		699	
2742W-EISA Wide SCSI		649	
1640 PS/2 MCA 32-Bit		499	
T260-PS/2 MCA 16-Bit		279	
T348-Parallel Bidirectional		249	
T358-Parallel EPP		299	
AD460 PCMCIA-to-SCSI		349	

Need Help with Installation???

We install Hard Drives, CD-ROMs and Multimedia Kits for \$50. Basic Memory for \$25. Motherboard Upgrades and Trouble-shooting \$50 Hour. All Hard Drive installs include: Mounting, Formatting, and Data Copying (if required). Some limitations apply. Call for Quote!

MICRO DRIVES CANADA

See Us at COMDEX Canada, Toronto Skydome, July 12-14.

REMOVABLES

zip 100 **LOWEST COST per MB EVER!**

100MB Removable Hard Drives

SCSI External / Parallel / Cartridges \$29
with PC/Mac Drivers / 3-Pak \$85 / 10-Pak \$225

*Includes: One 100MB Cartridge; 1 Year Drive Warranty; 5 Year Cartridge Warranty

SyQuest 5.25" 200MB/88MB/44MB 20ms Cartridge Drives for PC/Mac \$Call

3.5" 270MB/105MB 15ms Cartridge Drives

FUJITSU 230MB BREAKTHROUGH! Internal Parallel \$999 \$1199

Includes: M/O Drive, Mounting Hardware, Manual + 2 - 230MB Optical Cartridges

PINNACLE MICRO Tahoe 230MB 3.5" External Parallel \$1599

Tahoe PC Drive + 16-Bit SCSI Controller \$1599 Tahoe-MAC Drive + SCSI Cable \$1249

We are Your Full Line Pinnacle Source! Ask about 1.3GIG & Up Solutions

CD-ROM DRIVES

Nobody Makes Multimedia This Easy!

Sun Moon Star

Sony 55 2X Drive 100KB/250MB/256K Cache \$179 \$249

55E Drive Kit \$279 Call

55E + 16-Bit Sound Card \$319 Call

55E + Sound Card + 6 Titles \$319 Call

Ask About Our "Super 10" and "Give Me Five" CD-Paks

QUAD-Speed CSD-76 676KB SCSI-2 4X Drive \$449

Sony High-Speed 250ms Enhanced-IDE MPC-2 \$279

CD-ROM Drives 256K 4X Drive + Interface

PORTABLES

Hardpac Double-Speed Parallel		399
Panasonic Double-Speed PCMCIA		529
4X68K		
Toshiba 3501 Quad	600KBs/190ms/256K Cache/SCSI	\$499
Teac 55A Quad	600KBs/195ms/64K Cache/Interface	279
Teac 55A Quad	600KBs/195ms/64K/Interface/Windows Pak	429
Plextor 4PLEX	600KBs/170ms/256K Cache/SCSI-2	449
Plextor 6PLEX	900KBs/145ms/256K Cache/SCSI-2	899

QUAD-Speed Ultra-High-Speed SCSI-2 4.4X Drive \$449

PIONEER 4.4X CD-ROMs Enhanced IDE 4.4X CD-ROM Drive \$279

MV-2200 Multimedia Kit Includes: Internal 600KBs/Sub-200ms/XA Compatible QUAD CD-ROM + 16-Bit Wavetable Sound Card & Speakers + 8 Hot CD Titles with 50 Games + 24hr Support \$499

Creative Labs HOME 4X Drive/SB 16 Sound Card/24 of the Hottest Titles \$599

Creative Labs DISCOVERY 4X Drive/SB 16 Sound Card/18 Top Titles \$529

CD CHANGERS

Pioneer 6-Disc Double-Speed Changer	307KBs/300ms/256K Cache/SCSI	\$659
Pioneer 6 & 18-Disc Quad-Speed Changers	614KBs/300ms/256K Cache/SCSI	Call

RECORDABLE CD 100-1000/1MB Cache from

PINNACLE MICRO Blank CDs Only \$19.99

Supports ISO 9660/HFS/CD-Image/Audio Disc Formats. Ideal for: Low Cost Mastering! Limited Data Distribution! Random-Access Backup & Archiving! 1-Off Discs Readable by Standard ROMs!

PC or Mac Kit: PC Kit includes SCSI Controller & Recording Software \$2999

Mac Kit includes SCSI Cable & Recording Software

YAMAHA CO EXPERT Multi-Speed (4X-2X-1X) Multi-Session (up to 99) SCSI-2 CD Recorder for PC or Mac \$4999

TAPE BACKUP

QIC Internal Parallel		CORNER Internal Parallel	
250MB**	\$179 \$329	350MB	\$259 \$499
420MB**	349 399	700MB	399 699
1.7GIG**	499 649	1.4GIG	\$599
**DOS Software 1 Year Warranty		**DOS Software 2 Year Warranty	
**DOS Windows Software 3 Year Warranty		**DOS Software 2 Year Warranty	

DAT EXABYTE 8MM 3.5-76MB Int. Ext. \$2499 \$2699

30MB/min. - Fastest Tape Drives Available! 7-14GIG \$3499 \$3699

DAT for MAC 2.5-10GB! \$1199 \$1299

Win Tape Backup Software for PC/OS/2 Mac Networks \$Call

UPGRADE YOUR MOTHERBOARD 4 FASTER PERFORMANCE

Pentium PCI Motherboards with CPU 486 Motherboards

Intel Pentium 100MHz 75MHz/256K Cache \$849

Intel Pentium 100MHz/256K Cache \$999

Intel Pentium 100MHz/256K Cache \$1399

Intel Pentium 100MHz/256K Cache \$899

Intel Pentium 100MHz/256K Cache \$1299

486 VLBUS Motherboards with CPU

AMD 486/60MHz/256K Cache \$199

AMD 486/60MHz/256K Cache \$299

AMD 486/60MHz/256K Cache \$399

Intel 486/60MHz/256K Cache \$299

Intel 486/60MHz/256K Cache \$399

Intel 486/60MHz/256K Cache \$529

Prices of Motherboards & CPUs Subject to Change Without Notice; Call for Current Quote

(905) 840-6476

(905) 840-6560

For Your Convenience We Accept: All-Canadian Warranty-Free Warranty * 30-Day Satisfaction Guarantee

Unlimited FREE Technical Support for ALL Our Products

* Fast Delivery Anywhere in Canada * Government Approved Supplier * 6 Years Experience Serving ALL YOUR STORAGE NEEDS

18 Regan Rd., Unit 31, Brampton, Ont. L7A 1C2 Hwy 7 West (Bovaird Dr.) & Hwy 10

All Products Cash Discounted; Prices & Availability Subject to Change Without Notice; E. & O. E.

TECHLINE 1900/451-3036

Power of Choice COMPUTERS & PRINTERS

ALR AST EPSON HEWLETT PACKARD LASERMASTER

Canon LEXMARK NEC INSTRUMENTS Panasonic

TOSHIBA NOTEBOOKS IBM

AST Ascentia 900N DX2/50 - 434MBDS	\$2799	Toshiba 2100CS DX2/50-4350MBDS	\$3207
IBM Thinkpad 360CS/360CE Notebooks	\$Call	Toshiba T2150CCT DX3/75-8520/1FT/CD	\$5206
IBM Thinkpad 755CE DX4/100-8540/1FT	\$Low	Toshiba T2450CT DX4/75 - 8500/1FT	\$4482
IBM Thinkpad 755CD DX4/100-8540/1FT	\$Call	Ti TM4000M DX2/50-4/340VDS/Media	\$2751
NEC Versa V DX2/50R - 4340MBDS	from \$3072	Ti TM4000M DX2/50-4/455/1FT/Media	\$3074
NEC Versa V DX4/75C - 4340/1FT	from \$3849	Ti TM4000M DX4/75-4/455/1FT/Media	\$3394
NEC Versa M DX4/75C-8540/1FT/Media	\$Call	Ti TM4000M DX4/100-4/524/1FT/Media	\$4483
NEC Versa M DX4/100C-8540/1FT/Media	\$Call	Ti TM5000M P/75 - 8540/10-4/DS/Media	\$6888

Terms: Cash or Cheque w/ID Hours: Mon-Fri 9:30-6:00, Sat. By Appt.

Compatibles Plus Inc.

Ph:(416)487-5050 Fax:(416)487-5579

138 Redpath Ave., Toronto ON M4P 2K4 2 blocks East of Yonge, North of Eglinton

Texas Instrument Multimedia Notebook

Ti TM4000M DX4/75D-Color \$Call

Intel DX4/75MHz(3y) Processor, 4mb RAM, 1.44mb FDD, 455mb, 16-bit Stereo, Built in Mic/Speakers, Audio In/Out Jacks, 2-PCMCIA slots, Connector for CD Docking Station, 1mb Video RAM, 5.0" Dual Scan Color Passive Display, EPP, Serial, Ext. SVGA Monitor, Mouse/Kybd/Midi, SCSI-2 Port, Power Management, One Year P & I Warranty.

Ti TM4000M CD-Docking Station \$1125*

Internet Access Available, Call for Details eMail Address: Cplus@Maple.net



Throne Computer Systems

Summer Special !!

4810 Sheppard Ave. E.,
Unit 224, Scarborough
Ont. M1S 4N6

Tel: (416) 609-1668

Mon - Sat 10 am - 6 pm

Sunday: **CLOSE** for Summer



** Leasing option available

Power Value Package

- AMD 486DX2-66...\$1280.-
- Intel 486DX2-66...\$1319.-
- AMD 486DX2-80...\$1299.-
- AMD 486DX4-100...\$1349.-

Special Package include:

- 128K cache VESA bus Green motherboard,
- 4 Meg 72 pins 70ns memory,
- 540 Meg IDE Hard Drive
- Japanese 1.44M Floppy Drive
- Mitsumi 101 enhanced keyboard
- Med-Tower, 230W CSA Power Supply
- VESA Enhanced IDE Controller
- 1 Parallel, 2 Serial and 1 Game ports
- 2 years labour & 1 year parts depot warranty

PCI Upgrade Options:

- PCI 256K cache motherboard
- PCI Enhanced IDE controller
- 2 Fast 16550 serial ports
- Trident PCI 1M SVGA card, exp. to 2 Meg

\$90.



Pentium Special Package

- Pentium 66...\$1769.-
- Pentium 75...\$1859.-

Package include:

- CPU Heat-Sink Fan included
- 8 Meg 70ns memory, 256K cache
- 540 Meg IDE Hard Drive,
- PCI Enhanced IDE Hard Drive Controller
- Japanese 1.44M Floppy Drive
- 2 Serial (16550), 1 Parallel ports
- Mitsumi 101 enhanced keyboard
- Med-Tower, 7 bays & 230W Power Supply
- Trident PCI 1 Meg SVGA Card, exp to 2M
- 14" .28 Non-Interlaced 'Green' Super VGA color monitor
- Mitsumi MS compatible mouse
- MS DOS 6.22 with manuals & disks
- 2 years labour & 1 year parts depot warranty

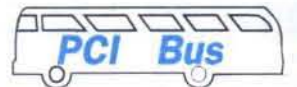


Pentium Professional Systems

- Pentium 75...\$2139.-
- Pentium 90...\$2279.-
- Pentium 100 \$2469.-

Package include:

- 256K cache
- CPU Heat-Sink Fan included
- 8 Meg 70ns memory
- Maxtor 850 Meg IDE Hard Drive,
- PCI Enhanced IDE Hard Drive Controller
- Japanese 1.44M Floppy Drive
- 2 Serial (16550), 1 Parallel ports
- Keytronic 101 enhanced keyboard
- Med-Tower, 7 bays & 230W Power Supply
- ATI Mach 32 PCI 1 Meg Super VGA Card
- 15" .28 Non-Interlaced Flat Screen 'Green' Low Radiation Super VGA color monitor
- Logitech Mouseman or Microsoft J-Mouse with pad
- 80 Meg shareware programs
- MS DOS 6.22, Windows 3.1 with manuals & disks
- 2 years labour & 1 year parts depot warranty



Super VGA Multimedia Systems

Multimedia 486

- 4 Meg 70ns memory, 128K cache VESA Bus
- 540 Meg IDE Hard Drive
- Japanese 1.44M Floppy Drive
- VESA Enhanced IDE w/ parallel, 2 serial, game ports
- Mitsumi 101 enhanced keyboard
- Med-Tower, 7 bays & 230W Power Supply
- Cir Logic/Trident VESA 1 Meg Super VGA Card
- 14" .28 Non-Interlaced SVGA color monitor
- Sound Blaster Vibra 16 bits stereo MCD sound card
- Panasonic Double Speed CD ROM
- Mitsumi MS compatible mouse,
- Stereo Amplified Speakers

PCI Upgrade Options:

- PCI 256K cache motherboard
- PCI Enhanced IDE controller
- 2 Fast 16550 serial ports
- Trident PCI 1M SVGA card exp. to 2 Meg

\$90.



AMD 486DX2-80
\$1659.-

AMD 486DX4-100
\$1689.-

Intel 486 DX4-100
\$1789.-

- Software include:
- 80 Meg Shareware Programs
- MS DOS 6.22, Windows 3.1 w/manuals & disks

- Microsoft Home CDs Bundle:
- 1) Encarta 95 (Encyclopedia CD)
- 2) Works 3.0
- 3) Money 3.0
- 4) Golf
- 5) Entertainment Pack (Floppy Disk)
- 6) MS Home CD Sampler

2 years labour & 1 year parts depot warranty

Upgrade Options:

1. 14" to 15" .28 flat screen Green Low Radiation SVGA monitor \$130
2. 486: 4 Meg to 8 Meg RAM..... \$188
3. 486: 4 Meg to 16 Meg RAM \$463
4. Pentium: 8 Meg to 16 Meg RAM \$375
5. 540 Meg to 850 Meg Hard Drive \$ 85
6. 850 Meg to 1.26 GB Hard Drive \$145
7. Panasonic 1.2M floppy drive \$62
8. Less: MS DOS 6.22 - \$43
9. Less: MS Windows 3.1 - \$32

Multimedia Upgrade Kits

- Creative Labs Sound Blaster
- 16 bits stereo sound card
- Stereo Speakers
- + with Panasonic 2X CD ROM \$230.
- OR
- with Panasonic 4X CD ROM \$375.
- Microsoft Home CDs Bundle: \$89.
- Purchase with MPC Kit only:

** All prices are already 3% discounted for Cash, Money Order, Certified Cheque or Direct payment (Interac). VISA, Master Cards or Government P.O. are on regular prices (Regular price = Cash discounted price + 3%). Government, educational institutions & corporate p.o. are welcome. shipping cost is extra. Prices are subject to change without notice.

CASES with Power Supply

- Desktop 5 bays 230W \$ 74
- Mini-Tower 5 bays 230W \$ 57
- Med-Tower 7 bays 230W \$ 74
- Tall Tower digital 10bays 250W \$135
- Power Supply 230W \$ 42
- Power Supply 250W \$ 62

DRIVES & CONTROLLERS

- IDE Maxtor 540M \$ 239
- IDE Maxtor 850M \$ 308
- IDE Maxtor 1.26GB \$ 426
- IDE Quantum Maverick 540M \$ 243
- IDE Quantum Lightning 730M \$ 325
- IDE Quantum TrailBlazer 850M \$ 358
- SCSI Quantum Lightning 730M \$ 347
- SCSI Quantum Fireball 1.09G \$ 670
- SCSI Quantum Capella 2.2G \$1220
- SCSI Quantum Atlas 2.15G \$1355
- SCSI Quantum Gr. Prix 4.3G \$1595
- IDE Samsung 560M \$ 229
- IDE Seagate 540M \$ 265
- IDE WD 540M \$ 289
- IDE WD 850M \$ 335
- IDE WD 1.26GB \$ 485
- IDE WD 1.6GB \$ 860

- Conner Int 420M Drive (Free tape included limited time only) \$ 235
- Conner Ext.420M Tape Drive \$ 455
- Jumbo Int 350M Tape Drive \$ 199
- Jumbo Int 700M Tape Drive \$ 299
- Trakker Ext.350M Tape Drive \$ 389
- Trakker Ext.700M Tape Drive \$ 469
- Tape DC2120 250M Formatted \$ 22
- Tape DC2120XL 350M \$ 29
- Tape 420M 2/Pack \$ 62
- Tape 700M \$ 55

- Panasonic 5 1/4" 1.2M \$ 62
- Fujitsu 3 1/2" 1.44 \$ 44
- IDE FD&HD 25er/1P/1G cntr \$ 23
- IDE FD&HD & 16550/1P/1G \$ 54
- IDE Enhanced IDE & 16550 \$ 65
- IDE VESA Enhanced IDE & 1/OS \$ 34
- IDE VESA Enhanced & 16550 \$ 55
- SCSI Adaptec 1522 for DOS \$ 109
- SCSI Adaptec 2940 PCI kit \$ 385
- AT I/O 2Ser/1P/1G 16550 \$ 25

MOTHERBOARDS & CPU

- 386SX-40 \$ 92
- 486SX2-66 128K, AMD/vesa \$ 231
- 486DX2-66 128K, Intel/vesa \$ 307
- 486DX2-80 128K, AMD/vesa \$ 289
- 486DX4-100 128K, AMD/vesa \$ 322
- 486DX4-100 128K, Intel/vesa \$ 419
- * All PCI motherboards built-in Enhanced IDE & two 16550 serial *
- 486DX2-80 256K, AMD/PCI \$ 373
- 486DX4-100 256K, AMD/PCI \$ 402
- 486DX4-100 256K, Intel/PCI \$ 499
- Pentium 66 256K PCI \$ 575
- Pentium 75 256K PCI \$ 662
- Pentium 90 256K PCI \$ 790
- Pentium 100 256K PCI \$ 960
- Cooling Fan for 486 CPU \$ 12
- Cooling Fan for Pentium CPU \$ 25
- Intel 486 DX2-66 CPU (5v) \$ 197
- AMD 486DX2-80 CPU (3v) \$ 179
- Intel 486 DX4-100 CPU (3v) \$ 305

KEYBOARDS

- BTC 101 keys \$ 19
- Digital 101 - PS/2, Bilingual \$ 36
- Keytronic E05105 \$ 43
- Keytronic E03600 \$ 28
- Mitsumi model 'Z' \$ 48
- Mitsumi model 'Z' \$ 23
- Mitsumi model 'R' AT/XT \$ 36
- Microsoft Natural Keyboard \$119

CD ROM

- Panasonic int 2x 320ms 64K \$128
- Panasonic int 2x 320ms Kit (Drive, Card & two cables) \$153
- Panasonic int 4x IDE 200ms 256K \$274
- Panasonic int 4x SCSI 200ms 256K \$430
- Toshiba int 4x IDE 190ms 256K \$285

VIDEO & SOUND

- SoundBlaster Pro compatible \$ 49
- SoundBlaster 16 Vibra MCD \$ 98
- SoundBlaster AWE 32 Value \$330
- Speaker (Basic) \$ 10
- Speaker CP-18 5W \$ 39
- Bondwell 30W speaker system \$ 65
- Active 80W speaker system \$ 99
- Yamaha YST-M10 \$129

MEMORY & MATH CHIP

- * Please call to confirm prices.
- Static RAM 32Kx8 \$9.50
- DRAM 44256-70 \$9.50
- SIMM 1M-70, 30 pins (call) \$ 52
- SIMM 4M-70, 30 pins (call) \$183
- SIMM 4M-60, 72 pins (call) \$208
- SIMM 4M-70, 72 pins (call) \$192
- SIMM 8M-60, 72 pins (call) \$402
- SIMM 8M-70, 72 pins (call) \$380
- SIMM 16M-70,72 pins(call) \$655
- SIMM 16M-60,72 pins(call) \$675
- SIMM 32M-70,72pins(call) \$1340
- IIT/ULSI 387DX,25/33/40 Mhz \$ 44

LASER & LED PRINTERS

- Canon 430W 4ppm 512k, 300dpi 648 \$ 648
- Canon 430W 4ppm 1.5M, 300dpi 728 \$ 728
- HP 4L 4ppm 1M, 300dpi \$ 755
- HP 5P 6ppm 2M, 600dpi \$1265
- HP 5MP 6ppm, 600dpi \$1500
- HP 4+ 12ppm 2M, 600dpi \$1999
- HP 4M+ 12ppm 6M, 600dpi \$2800
- Lexmark Optra R, 12ppm 1200dpi 2049 \$ 2049
- Oki 410e 4ppm 2M 600dpi \$ 769
- Oki 410e/ps 4ppm 2M 600dpi. \$ 1100
- Postscript, Appletalk \$ 1100
- Raven LP 410-1, 1M 4ppm \$ 485
- Raven LP 410-1 with 2M \$ 559
- Raven LP 430-1, 1M (HP3) \$ 719
- Raven LP 470PS-2, 2M, 4ppm \$ 719
- Postscript, No Appletalk \$ 679
- Raven LS-3, 6ppm \$ 585

MOUSE & NETWORKS

- Mitsumi mouse MS compatible \$ 15
- Microsoft mouse v2.0 \$ 37
- Logitech Serial Mouseman \$ 63
- Logitech First Trackball \$ 83
- Logitech Trackman Vista \$119
- Optical Glass Filter \$ 32
- GVC 16 bits ethernet card \$ 89
- Ethernet Cable RG58 \$ 0.55/ft
- Ethernet Cable 10 Base T \$ 0.55/ft
- 10 Base T Connector \$ 5
- BNC Connector \$ 5
- Terminator \$ 5

Canon, Hewlett Packard, Okidata, Citizen, Panasonic, Raven, Samsung Authorized

SCANNERS

- HP ScanJet 3P \$ 498
- HP ScanJet 3C, color \$1298
- Logitech Scanman 32 w/OCR \$ 109
- Logitech Scanman 256 w/OCR 150 \$ 150
- Logitech Scanman Color w/OCR 269 \$ 269

DOT & INKJET PRINTERS

- Samsung SP2412, 24pins \$ 195
- Canon BJ-100 \$ 279
- Canon BJ-200ex \$ 319
- Canon BJC-4000 Color \$ 479
- HP DeskJet 540 \$ 399
- Color Kit for Deskjet 320/540 \$ 59
- HP DeskJet 660C color \$ 695

LASER ACCESSORIES

- Canon BJ-100/200 Ink Cart. \$ 32
- Canon BJC4000 small black ink \$ 20
- Canon BJC4000 small color ink \$ 40
- Canon BJC4000 large black ink \$ 48
- Canon 430 memory 1M \$100
- Canon 430 memory 4M \$235
- Hp 2p,3p,3.3d 1M \$155
- HP 4,4p,4mp,4m memory 4M \$235
- HP 4+ 4p,4mp,4m+ memory 8M 470 \$ 470
- HP Toner for II/IIIP/4IIP \$ 95
- HP Toner for III/III/IIID \$109
- HP Toner for 4/4M \$149
- HP Toner for 4L/4M/4p/4mp \$ 85
- HP DeskJet Black/Color Ink Cart \$ 39
- HP 660C Black Ink Cart. \$ 45
- HP 660C Color Ink Cart. \$ 47
- Oki 400e 1M memory \$165
- Oki 400e/410e legal size tray \$120
- Oki Image Drum OL400/800 \$295
- Oki Image Drum 400e/410e \$219
- Oki 400/800 Toner \$ 35
- Oki 400e/410e Toner \$ 34
- Pana 4400/Raven 410 1M \$ 85
- Pana 4400/Raven 470PS 2M \$250
- Pana 4400/Raven 410 Toner \$ 45
- Pana 4400/Raven 410 Drum \$140
- Pana 4410/Raven 510 Toner \$ 49
- Pana 4410/Raven 510 Drum \$148

FAX MODEMS

- Zoltrix 14.4 Int \$ 65
- Zoltrix 14.4 Int with Voice \$ 95
- GVC 14.4 Int \$ 89
- GVC 14.4 Int w/Voice v42 v32 \$139
- GVC 14.4 Ext v42 v32 \$129
- GVC 14.4 Ext w/Voice v42 v32 \$159
- GVC 28.8 Int v34 \$260
- GVC 28.8 Ext v34 \$285
- USR 14.4 Int v42 v32 \$135
- USR 14.4 Ext v42 v32 \$158
- USR 28.8 Int v34 \$305
- USR 28.8 Ext v34 \$327
- IO card with one 16550 port \$ 25

VIDEO CARDS

- Monographics \$ 25
- Cir Logic ISA 512K/1M \$9/89
- Cir Logic VESA 1M/2M \$109/189
- Cir Logic PCI 5430 1M \$ 110
- Trident ISA 512K/1M \$9/89
- Trident VESA 9440 1M/2M \$98/175
- Trident PCI 9440 1M \$109
- ATI Gr Wonder 1M VESA/PCI \$135
- ATI Gr Wonder 2M ISA/VESA/PCI \$215
- ATI WinBoost 1M PCI \$195
- ATI WinBoost 2M VESA/PCI \$250
- ATI Gr Xpression 2M VESA/PCI \$269
- ATI Gr WinTurbo 2M PCI,VRAM \$379
- ATI Gr WinTurbo 2M VESA,VRAM \$425
- ATI Gr WinTurbo 4M PCI,VRAM \$650
- ATI Gr ProTurbo 2M V/P,VRAM \$455
- ATI Gr ProTurbo 4M V/P,VRAM \$650

MONITORS

- 14" Datas Mono SVGA \$ 157
- 14" Daytek 1024 .39 \$ 249
- 14" Daytek .28 NI Green \$ 289
- 14" Megalmage .28 NI Green \$ 295
- 14" Tystar .28 NI Green \$ 295
- 15" GVC 1280 .28 \$ 429
- 15" Mag Data DX15F 1280.28 \$ 498
- 15" Megalmage .28 \$ 399
- 15" NEC XV15 1024 .28 \$ 660
- 15" Sony 15SF1 1024 .25 \$ 665
- 17" Mag Data DX17F 1280 .26 \$ 920
- 17" NEC XV17 \$1140
- 17" Sony SF1 1280.25 \$1270
- 17" Sony SE1 1600 .25 \$1510

ACCPAC Plus Accounting Software

- Windowing System Manager \$ 155
- General Ledger and Fincial Reporter v6.1 \$ 575
- Account Payable v6.1 \$ 575
- Account Receivable v6.1 \$ 575
- Inventory Control v6.1 \$ 575
- LanPak v6.0B \$ 270
- Order Entry v6.1 \$ 575

GAMES CD discs unless specified

- 5 foot 10 pak \$ 48
- 7th Guest \$ 24
- Aces over Europe \$ 39
- Allens Ate My Babysitter (3.5) \$ 30
- Automobile Registry 95 \$ 33
- Bioforce \$ 79
- Black Thorne \$ 58
- Bloodnet \$ 43
- Blown Away \$ 24
- Corridor Allen Invasion 7 \$ 34
- Cyber Race \$ 23
- Dark Force \$ 78
- Descent \$ 69
- Dragon Lore \$ 34
- Encarta 95 (w/hardware pur.) \$ 45
- Family Doctor 3rd Edition \$ 23
- HardBall 4 \$ 59
- Iron Helix \$ 35
- Leisure Suit Larry \$ 22
- Magic Carpet \$ 71
- Mega Race \$ 25
- MYST \$ 45
- Nas Car Racing \$ 42
- Outpost \$ 25
- Power Ranger \$ 29
- Rebel Assault \$ 38
- Rise of the Triad \$ 55
- Rise of the Robots \$ 38
- Star Reach \$ 67
- Star Trek 25th Anniversary \$ 29
- Swim Suits \$ 16
- Tornado \$ 25
- Total Heart \$ 33
- USA Ticonderoga \$ 28
- Video Gambling \$ 63
- Voice Blaster (3.5") \$ 50
- Wing Commander 3 \$ 89

**Attention End Users
& Hardware Resellers**

**Novell Certified
Network Engineer
Services Provided**

- V2.x, 3.x, 4.x
- Installations
- Upgrades
- Troubleshooting

Computer Dept. Ltd.

Tel: 535-9130
Fax: 535-5595

*Providing Business Systems,
Integration and Support*

Canon BJC-70

Continued from page 68

did not have a solution and took down my two areas of concern to pass along to a technician.

When technical support returned my call, it blamed PageMaker for the skipping. The reason for the sudden demise of the cartridge was that some cartridges will die early and every once in a while you will get one with a short life, I was told. I mulled over technical support's answers.

I was not totally satisfied with the answer from technical support, blaming the streaking problem on Aldus PageMaker, so I reformatted some WordPerfect 6.1 documents to have quarter inch margins. The streaking again

appeared at the bottom of the page. I called technical support back and they could not offer an explanation, but advised that I take it in for servicing since the printer should not be doing streaks.

I also tested the BC color and the BC11 black cartridges. The BC11 black cartridge is supposed to print approx 45 pages at five percent coverage. I figured my resume was near 10 percent coverage. I printed 30 resumes, 20 letters and about 50 e-mail messages before it died. This surprised me, but other cartridges I have since used all exceeded their stated longevity.

To test the color output I did several things. First, I added color to my resume in the form of blue borders. Then, I went in search of high quality color photos to print. Overall, the color photographs came out with very respectable color. The more I used the BJC-10 the more I was impressed with it. However, the streaking problem continued to haunt me.

Conclusions

There are a lot of great things about this little printer. It is quiet and, unlike the noisy dot printer, the kittens don't feel that they have to attack it. The unit is also very portable. The included replacement warranty gives you a two year, to your door replacement warranty. Technical support is also free and available 24 hours, although if you have some really heavy questions, you would be best to call during business hours. The printer sells for between \$500 and \$600 and, as with all computer equipment, you can expect it to be discounted after the product has been on the market for a few months. Canon throws in both color and black ink cartridges along with a container to store your ink heads so they don't dry out when not in use.

As for the streaking problem, it seems to be diminishing and is not as bad as it was at first. One of the best things about Canon seems to be its support network. If the problem persists, they have offered a replacement unit. They made a sincere effort to resolve my problems — and that was without them knowing I was reviewing the product. It is refreshing to talk to support people who are actually solution oriented. □

Contact: Canon Canada Inc., 6390 Dixie Road
Mississauga, ON L5T 1P7, 905-795 2111

The Quest for Sound

Continued from page 66

The Best Of The Bunch

In terms of convenience, the Yamaha unit wins hands down. Its front-mounted controls, independently adjustable between subwoofer and satellites, are a joy to use. This was also the only three piece system that had not an ounce of inner vibration, although the subwoofer would distort at high output levels.

The HTP system produces a bigger, fuller sound, especially in the mid-frequencies, and its components are certainly built to take the heavy going, yet both it and the Altec Lansing revealed that annoying and ultimately frustrating component vibration. Meanwhile the two-piece Viewsonic just was not in the running against such talented competition, leaving the Yamaha as the economically sensible choice of the lot.

Of course, this is just a sampling of what is quickly becoming a large arena. So remember, take your time, and don't be afraid to crank it before you buy it. □

486DX4/100

- 486 VL-BUS Mother board, 256K Cache
- 486DX4/100 CPU
- CPU Cooling Fan & Heatsink
- 8 MB RAM
- 540 MB HardDrive, 3.5" Floppy Drive
- VL-Bus SVGA Card with 1 MB RAM
- VL-Bus Controller
- Mini-tower Case
- 14" 0.28dp N.I. Monitor
- 101 Keyboard
- MS Compatible Mouse

\$1,599

SPECIAL

- 14.4 Internal fax/modem \$62.00
- Quad Spin CD-ROM \$265.00
- 16 Bit Sound Card \$89.00
- Canon BJ4000 color Ink-jet Printer \$479.00
- 3.5 Diskette \$4.49

Call for Pentium Systems

All Prices are subject to change without notice
All Prices are 3.5% Cash Discounted

GigaTrend Computers & Elec. Inc.

1670 Kingston Road, Unit 3A, Pickering, Ont. (Brock & HWY 2)
Tel : (905) 686-9872 Fax : (905) 686-7413

**IN FULL SUPPORT OF A PROUD
AND POWERFUL
AMIGA HERITAGE**



Wonder Computers includes:

Canada's largest Amiga-only retail chain.
Four Commodore™ Authorized service centres.
Lazarus Engineering, a software and hardware engineering division.

Wonder Computers features:

NewTek™ products that make your Amiga's video Fly.
PC-Task™ to open new Windows™ of opportunity.
PSION™ Palmtops which link your Amiga to portability.

Wonder Computers would like to thank all of the dedicated Amiga owners, dealers, and developers who have persevered through the Commodore™ liquidation. Let's work together to recapture the Amiga magic.



**WONDER
COMPUTERS INC.**

Canada's
Home of
Amiga!

- | | | |
|----------|---------------------|----------------------------------|
| OTTAWA | Tel: (613) 596-2542 | 1315 Richmond Rd. |
| TORONTO | Tel: (416) 286-0001 | 371 Old Kingston Rd. Scarborough |
| MONTREAL | Tel: (514) 279-0002 | 130 Laurier St. West |
| LONDON | Tel: (519) 681-0004 | 395 Wellington Rd. |

**Apple®
Certified
Courses™**



**Qualify as an
Apple Technical
Specialist or
Systems
Engineer**

**1-800-714-5714
or fax 1-800-714-5711**

- | | | |
|---|--------|--------|
| Mac System Administration & Troubleshooting | 3 days | \$1245 |
| Mac Networks: Build, Manage & Troubleshoot | 3 days | \$1525 |
| AppleScript Programming Fundamentals | 2 days | \$875 |
| Multimedia: A Practical Introduction | 2 days | \$875 |

Courses delivered by Simon/Ross+Associates Inc.

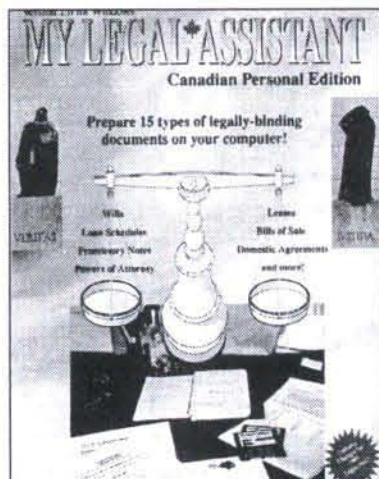
VANCOUVER · CALGARY · TORONTO · MONTRÉAL

Software Helps Write Standard Agreements

BY ROD LAMIRAND

My Legal Assistant, Version 2.0 for Windows

From: MLA Systems Inc.,
P.O. Box 51036, Orleans, ON K1E 3W4
M.S.R.P.: \$39.95



"Come, agree, the law's costly" reflected the quick mind of Jonathan Swift in 1738. Now, 250 years later, MLA Systems Inc. might beg to differ. While their software continually warns that "No software, can replace the training and experience of a lawyer who practices the particular area of law," they still think there are a few forms we could fill out ourselves to save a couple of dozen clams.

So, if torts and liens don't make you queasy, roll up your sleeves and open My Legal Assistant, Version 2.0 for Windows, and get to work. Don't forget the law lives on paper!

Need to write up a bill of sale, perhaps something about liens and encumbrances, or a warranty you'd like to give to your friend on that used hard drive? Got it! How about a promissory note for the money you need to borrow from dear old Dad? Got it! Residential lease, sublet agreement, termination lease? Got it, Got it, Got it!

In all, there are eight categories ranging from living will and last will and testament to power of attorney and domestic agreement. Many of the categories contain two or three forms. For example, domestic agreements has templates for cohabitation, marriage contract, amendment to domestic agreement, and termination to domestic agreement.

My Legal Assistant will work on any machine that will run some flavor of Windows. It takes up 3 MB of your hard drive and needs 4 MB of RAM to run well. Installation is simple and straightforward. Usability is good, with a set of eight legal texts used as the metaphor to access the forms.

There is little in the program to complain about. It is broad rather than deep. The program uses the interview approach to gather the data, which it then places in the appropriate form. MLA Systems Inc. is based in Orleans, Ont., near Ottawa, and My Legal Assistant is written

for Ontario law. The company states that most of the documents are valid in other provinces, but advises that you should check with a lawyer to be sure.

A nineteenth century American writer, Ambrose Bierce, defined litigation as "a person about to give up his skin for the

hope of retaining his bones." My Legal Assistant makes it possible to keep your skin while retaining the shirt on your back. My Legal Assistant was available in most of the computer retail outlets I visited. □

Contact: MLA Systems; 613-834-5164

MICROJACK

MULTIMEDIA SERIES

Bridging the Worlds of Video and PC

VGA TO VIDEO CONVERTER

JACK Selection

Run your VGA or MAC display on your TV!

- Supports Windows 3.0 and 3.1
- Built-in Flicker-Free filter
- Supports all IBM standard video modes and Hi-color modes (256/32K/64K colours)
- Resolution up to 640 x 480 in NTSC TV system or 800 x 600 for PAL TV system
- Underscan/Overscan and TV brightness control
- Input: Standard VGA
- Output: Composite Video, S-VHS Video, RGB (15KHz) and VGA (31 KHz)



\$275

VGA TO VIDEO CONVERTER

MICROJACK III

The latest video converter –
with more features and flexibility!

- Second generation Flicker-Free filter
- Supports all IBM standard video modes & high colour modes (256/32K/64K colours) resolution up to 640 x 480 in NTSC and 800x600 in PAL
- Supports Macintosh standard modes (640x480, 31 or 35 KHz)
- Full Underscan and Overscan
- Output: Composite RCA Connector, S-Video Connector
- Input: VGA D-Sub Connector
- Directional Panning with zoom
- Screen Freeze/Unfreeze



800 x 600

\$545

FULL-MOTION VIDEO CAPTURE & DISPLAY

MICROJACK Video Commander

Record & display full-motion video on your computer!

- Inputs: Three selectable composite NTSC/PAL video inputs
- Supports IBM standard video modes and Hi-color modes (256/32K/64K colours)
- Output: Standard VGA signal
- Real time two-dimensional panning
- Fractional zoom up to 1024 x 1024 pixels
- Flexible memory configuration allows easy setup and prevents conflicts with system RAM or other peripherals



\$385

VGA TO VIDEO OVERLAY

MICROJACK TitleMate

Add captions and graphics to
your video presentations

- Supports two video modes: Computer—displays video data in memory; Overlay—displays external video overlaid with on board memory video data
- Displays 256 of 256K colours
- Overlay: 1 of 256 colours
- Display resolution: 640 x 480 (NTSC), 640 x 512 (PAL)
- 512 KB on board memory
- Video Input: Composite Video with RCA connector
- Video Output: Composite Video with RCA connector



\$399

VGA TO VIDEO OVERLAY

MICROJACK VGA Pro

Professional quality video titling

- VGA built-in with ET-4000 VGA chip
- All video source Overlay/Genlock capability
- 6 video display modes: VGA, Genlock, External Video, Color-Key Overlay, Half-Tone and Mixed
- Flicker-Free broadcast-quality video output
- 256/32K/64K true-color output
- Video output: 640 x 480 (NTSC) 800 x 600 (PAL)
- Input: S-Video, Composite Video
- Output: S-Video, Composite, VGA
- Multiple cards operation, up to 16 cards in one system
- Optional editing software



MICROJACK Video Producer

Integrate the Graphics and Editing Power of
VGA with the Presentation Power of VIDEO

Hardware:
MicroJack 2000
MicroJack VGA Pro
MicroJack HQO Pro

Bundled Software: Deputy CG

- Editing tools and Special Effects
- Single page or continuous display playback
- Six Colour Cycle variations per page including Flash
- Transitional Effects: Cut, fade, roll, crawl, slide, corner pull, reveal, random blits; variety of wipe patterns
- Special effects: ease, bounce, sling-shot, fly-by. Transitional speeds.





Scanners

256 Gray Scale

- Supports GIF, PCX, TIFF, BMP, TGA
- Auto-Scan Merge
- Editing and Special Effects: Brightness/Contrast adjustment, Gamma correction, Colour map editing, sharpen and smooth
- TWAIN and SPI compatible



includes software!

256 Color

- Supports GIF, PCX, TIFF, BMP, TGA
- Editing and Special Effects
- TWAIN and SPI compatible



Digitizers

TABLET w/ Stylus pen,
puck, adapter, AutoCAD
templates, Windows,
Pen extension,
ADI Drivers



18x12 surface 399.00
12x12 surface 299.00



COMPUTER SUPPLIES CO. LTD.

40 SHIELDS COURT, UNIT 1-2
MARKHAM, ONTARIO L3R 0M5

Monday to Friday 9:00 AM - 6:00 PM

TEL: (905) 946-0908 or (416) 321-2259
FAX: (905) 946-8749 or 1-800-463-3186

MicroJack is a registered trademark of MIT Computer Supplies Co. Ltd. All other trademarks are property of their respective owners.

ONTARIO EDITION THE COMPUTER PAPER JULY '95 71

SERVICE & REPAIRS

FLAT RATE CHARGES

Monitors, Terminals, Laser Printers, Dot Matrix Printers,
Ink Jet & BubbleJet Printers, Component & Part Repairs, Dealer Parts,
Accessories, Fuser Assemblies, Toner Cartridges, Drum Units

In-house or
On-site Repairs,
All makes and models,
Refurbished parts,
Repaired Parts,
Pick up and delivery,
Dealer parts and pricing.

**"Reliable
Available,
Convenient"**

Hewlett Packard,
Canon, Okidata,
Qume, Kyocera, QMS,
Toshiba, Epson, Panasonic,
IBM, NEC, Texas Instruments,
Sharpe, Ricoh, Roland,
USA Felix, Data Products
and many more!

KompuKare
Services

80 West Beaver Creek,
Unit #12, Richmond Hill

(905) 709-1122

Utilities Add Value To PC-DOS 7

BY CUB LEA

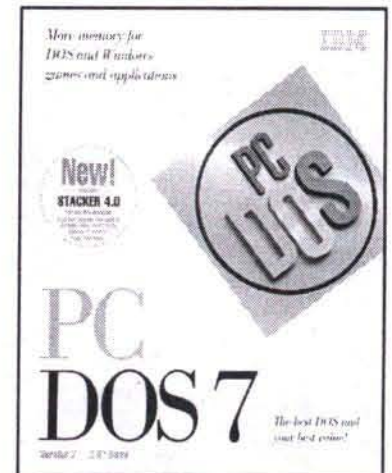
PC-DOS 7

From: IBM Canada
Suggested Price: \$130; upgrade, \$79

Ratings:
Installation: ***
Uninstallation: *
Ease of use: * (No DOS will ever get more than one ease-of-use star from me)

Quality of add-ons: ****
Support: ****
Value: Subjective

(All recent DOS packages are excellent values considering the mass of utilities they include, but usually unnecessary if you're happy with your current DOS.)



Now that Windows 95 and OS/2 offer both a DOS and a graphical operating system in the same package, selling a new DOS version is less a quest to create a better operating system than it is an exercise in marketing a product bundle. Each successive version of Microsoft, Novell and IBM's DOS packages have been more complete and robust as all-around utility packages. Novell DOS 7.0 was the value leader for the last couple of years — a better all-around buy than Microsoft and IBM's version 6.x's — but IBM's new PC DOS 7.0 now takes top spot.

First the basics: DOS is DOS. PC DOS 7.0 is about as compatible as a non-Microsoft DOS can get. It will run virtually anything you might want to throw at it, games included, without argument. It has all the goodies you'd expect from a mid-90's DOS package: classic command-line utilities, complete online help for all commands, mouse-driven backup and antivirus for DOS and Windows (mouse-driven everything it seems), "baby network" using INTERLNK/INTRSRVR, memory management, text editor, hard disk optimizer, deleted file protection, and more.

The real question is: how good are the add-ons and do they merit the price of the package?

Installation of the five disks was quick and painless. Uninstallation is another

matter — it has to be done manually. The full installation ate up 20MB, most consumed by the antivirus, backup and disk compression software. IBM was kind enough to include a text file outlining the purpose of every file in the package, so it's a fairly simple matter to manually trim the installation back to under 4MB, but it's time that all operating system and utility packages had modular uninstallation available.

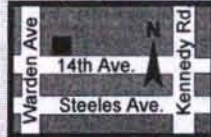
Its memory management software, RAMBOOST, is superior in speed and efficiency to Microsoft's MEMMAKER, and can access unused ROM address space much like QEMM's Stealth. It's blazingly fast and very user-friendly. It reoptimizes memory automatically after every system change, includes a DPMS server (licensed from Novell!), and offers pooling of EMS/XMS for running memory-hungry DOS programs such as CAD and spreadsheets from within Windows. It came very close to QEMM 7.05's performance, except for a problem loading MSCDEX.EXE into upper memory. It took two hours of hacking, a 15-minute service call and hunts through the manual and five online databases to discover that MSCDEX.EXE is not to be loaded high with PC DOS...and another hour of fiddling to learn that it will...provided the DMA buffers aren't eating up all of your excess upper memory.

Connell

Toronto
111a Queen Street East
Tel: (416) 360-6368
Fax: (416) 360-0487



Markham
Unit 112, 18 Crown Steel Dr.
Tel: (905) 475-8000
Fax: (905) 475-0866



Pentium

75Mhz
\$1888

90Mhz
\$1998

100Mhz
\$2198

- Intel Pentium Processor
- 3 PCI Bus and 4 ISA Bus Mother Board 256K Cache
- 8MB Ram 70ns expandable to 128MB
- On-Board PCI Enhanced IDE Hard Drive Controller
- Samsung 560MB IDE Hard Drive 12ms 128K Cache
- Panasonic 3.5" 1.44MB Floppy Drive
- 14" SVGA 1024 X 768 Non-Interlaced Monitor .28dp Low Radiation, Energy Saving
- ATI Mach32* PCI Bus 1MB Video Card
- 2 (16550) Serial / 1 Parallel Port
- 101 Key Enhanced Keyboard
- Tower Case (7 Drive Bays) 230 Watt Power Supply
- Microsoft DOS 6.22* Installed with Disks & Manual
- Microsoft Compatible Serial Mouse



*OEM. Intel Inside logo is a registered trademark of Intel Corporation. Prices and configuration subject to change without notice. All prices are cash or certified cheque only.

486DX2/66	\$1,829/64mo	Built-in Math Coprocessor
486DX4/100	\$1,929/67mo	2 Serial w. 16550**/1 Bi-Directional LPT
Pentium 60	\$1,999/69mo	256K L2 Cache, 3 PCI & 4 ISA Slots
Pentium 75	\$2,199/76mo	PCI E-IDE 4X Controller
Pentium 90	\$2,349/81mo	850Mb E-IDE 11ms 256KC Hard Drive
Pentium 100	\$2,485/85mo	8Mb 72pin 70ns RAM
		1Mb S3 Trio64 PCI 64bit Accelerator
		15" Samtron N.I. 76Hz, Monitor 1280X1024 .28dp
		1.44 Panasonic Floppy Drive



NOT EXACTLY AS SHOWN

Prices are cash discounted. * Desktop/Tower systems only
E. & O. E. ** Pentium technology - standart, 486 - optional.

Tel. (416) 920-3252 Fax. (416) 921-8940
1255 Yonge St. 102 Toronto Ont. M4T 1W6

ALL SYSTEMS INCLUDE:
HEATSINK & FAN FOR CPU
101K ENHANCED KEYBOARD
MID TOWER 230W PS CASE
LOGITECH DEXXA 400DPI MOUSE & PAD
2 YEAR PARTS & 3 LABOUR WARRANTY
BBS(416)633-1865

NOTEBOOKS

IBM Thinkpad 701CT - 4DX2/50, Act, 360Mb 4Mb	\$6,799/146mo
IBM ThinkPad 701CT - 4DX4/75, Act, 500Mb, 8Mb	\$7,969/146mo
AST Accentia - 4DX2/66, DS, 510Mb HD, 8Mb	\$3,399/114mo
AST Accentia - 4DX4/75, DS, 510Mb HD, 8Mb	\$4,299/146mo
Toshiba 2400CS - 4DX2/50 DS, 320Mb HD, 4Mb	\$3,099/104mo
Toshiba 4800CT - 4DX4/75 Act, 500Mb HD, 8Mb	\$4,549/146mo
Toshiba 4900CT - Pentium 75 Act, 500Mb HD, 8Mb	\$7,949/146mo

IBM Lexmark OPTRA R 1200dpi, PS, 10Mb, 12ppm Laser Printer **\$2,549**
SAMSUNG 17GLs .26 17", 1280X1024@76Hz, LR, ON-SCREEN, DIGITAL, FLAT **\$1,199**
Practical Peripherals 28.800 V.34 Fax/Modem External **\$329**

Yeuko Computer parts & service(1988)*Union Computer & Electronic

3241 Kennedy Rd., unit 5, Scarborough (south of Steels) * 2076 Yonge St. Toronto (south of Eglinton) s195

Tel: 416-321-3018 Fax: 416-321-8558 M1V 2J8 * Tel: 416-488-9293 Fax: 488-5085 M4S 2A3

All prices are cash discounted and subject to change without notice YEUKO 10AM-7PM SAT 11AM-6PM**UNION 11AM-7PM SAT 11AM-6PM

Hard Drives (We provide customer do-it-yourself area)

IDE 260/420/540/850/1000M	\$139/229/249/309/449
Parallel-port IDE HD/CD-ROM Kit (notebooks)	\$189
SCSI-2 540/730/1.0/2.1G	\$289/339/629/1229
SCSI-2 4.0/9.0G	\$2089/3869
SCSI-3 1.0/2.1/4.0/9.0G	\$895/1375/2479/4379
SCSI-AV 2.0/3.0/4.0/9.0G	\$1599/1850/2479/4419

Ram Memory

1M/4M SIMM 30 pin 70 ns	\$52/\$189
4M/8M SIMM 72 pin 70 ns	\$199/\$399
16M/32M SIMM 72 pin 70 ns	\$649/\$1249
60 ns SIMMs (for Pentium 100)	Call
Cache Memories (SRAM)	Call

I/O Cards & Controllers

ISA AT I/O 2 ser, 1 par, 1 game w/cable	\$15
ISA Hi-speed AT I/O 2S/1P/1G 1x16550	\$35
ISA IDE HD/FD I/O, 2ser, par, game	\$15
ISA Enhanced IDE, FD 2X16550 I/O, 1P, 1G	\$49
HD Caching controller ISA/VLB/PCI	\$189/189/199
VLB 4IDE HD/FD, 2S, 1P, 1 Game	\$25
VLB Enhanced 4IDE, 2FD 2X16550/1P/1G Intel	\$59
Promise VLB Enhanced 4IDE, 2FD 2S/1P/1G	\$30
Promise VLB Enh 4IDE/2FD 2x16550 1P/1G	\$99
PCI Enhanced 4IDE/Caching controller	\$35/199
PCI Enhanced 4IDE/FD, I/O 2S, 1P, 1Game	\$48
PCI Enhanced 4IDE/2FD, 2X16550, 1P, 1G	\$69
PCI SCSI controller / caching controller	85/350
ASUS PCI SCSI controller	\$109
Adaptec ISA 1522 SCSI-2 HD, FD	\$105
Adaptec ISA 1542CF SCSI-2 HD, FD	\$279
Adaptec PCMCIA 1460 SCSI-2	\$299
Adaptec VLB 2842 SCSI-2 HD/FD	\$339
Adaptec PCI 2940 SCSI-2, 2940W SCSI-3	\$339/369
CMD VLB/PCI Enhanced 4IDE/FD Controller	\$59
GS1 ISA 4x2.88FD, Enhanced IDE Accelerator	\$109

Tape Backups

HP 4mm DAT 2G/4G with software	\$1185/1299
EXABYTE 4mm DAT 2-4G	\$1220
4mm DAT cleaning tape	\$39
Colorado 250/350 internal	\$229/259
ColoradoTrakker 250/350 parallel port ext.	\$439/499

Main Boards

FIC / Biostar 486 DX/SX VESA 128K	\$99
SIS 486DX4 VLB 128K	\$119
Acer 486DX4 VESA 256K (World's Best Seller)	\$149
Microstar 486DX4 PCI/EIDE/Fast I/O 256K	\$219
Gigabyte 486DX/SX VESA ZIF 128K SIS	\$139
Gigabyte 486DX4 PCI-VESA ZIF 128K UMC	\$189
IBM 486SLC2-66 VLB w/CPU & Math-co 64K	\$219
ASUS 486DX4/SX VESA ZIF 128K SIS	\$159
ASUS 486DX4 VESA-PCI EIDE/Fast I/O 128K	\$209
ASUS 486DX4 PCI/SCSI/EIDE/Fast I/O 128K	\$349
ASUS P60/66 PCI/EIDE/Fast I/O256K intel	\$329
Acer Pentium75/90/100PCI/EIDE/FastI/O256K\$309	
Microstar Pen-60 /66PCI/EIDE/FastI/O256K \$279	
Intel Pentium 60/66 PCI/EIDE/Fast I/O 256K	\$399
Intel Pentium75/90/100PCI/EIDE/FastI/O256K\$459	
MicroStar P75/90/100 PCI/EIDE/Fast I/O512K\$369	
Gigabyte P75/90/100 PCI/EIDE/Fast I/O256K\$289	
ASUS P75/90/100 PCI/EIDE/Fast I/O256K SIS\$319	
ASUS P75/90/100PCI/EIDE/FastI/O256KTrion\$349	
ASUS P100PCI/EIDE/VOTrionPipelinedBurst\$449	
ASUS Pentium75/100Dual-CPU PCI Neptune	\$549
SUPER USA P5-120/P6-150 EDORAM Trion\$549	
MYLEX USA 486DX2-66 PCI with CPU	\$650
MYLEX USA 486DX4-100 PCI with CPU	\$1390
MYLEX USA Pentium 60 PCI with CPU	\$1800
MYLES USA Pentium 90 PCI/EIDE/Fast I/O	\$579
MICRONIC USA 486DX4 VL EIDE/Fast I/O	\$299
MICRONIC USA P-60 PCI EIDE/Fast I/O	\$475
MICRONIC USA P-90 PCI EIDE/Fast I/O	\$559

CPU's

Intel 486DX2-66/DX4-100 OD(5V)	\$229/369
Intel 486DX4-100 (3V)	\$309
AMD 486DX2-66/80/100 (3V)	\$179/189/249
AMD 486DX2-66/80/SX2-66 (5V)	\$209/219/119
Cyrix 486DX2-66/80 (3V)	\$139/169
Pentium 60/66/75/90/100	\$299/419/409/539/689
CPU cooling fan 486/Pentium	\$10/14

Motherboard + CPU Bundle

386SX-33/386DX-40	\$49/129
486SLC-33ISA/66VLB	\$109/209
486DX2-66CPU + SIS VLB Motherboard (3V)	\$239
486DX2-80CPU + SIS VLB Motherboard (3V)	\$269

Floppy Drives & Tape Backups

TEAC 1.2M/1.44M	\$75/47
Panasonic/Fujitsu 1.2m 5.25in.	\$56
Panasonic/Sony/Fujitsu 1.44m 3.5in.	\$42
Epson/TEAC dual floppy drive(1.2+1.44)	\$139/169

Keyboards

BTC/Daewoo/Acer/Acer Pro	\$18/24/26/35
Keytronic/Honeywell/Fujitsu	\$49/39/59
Microsoft natual	\$129

Multi-Media Systems

Pentium 60 PCI	\$1825
Pentium 75 PCI	\$1900
Pentium 90 PCI	\$2050
Pentium 100 PCI	\$2200
486DX4-100 Intel	\$1849
486DX2-66 Intel	\$1749
486DX2-66 AMD	\$1700
486DX4-100AMD	\$1800
486SX2-66 AMD	\$1600

Basic configuration

ASUS mainoard, 256K cache, 4M RAM, Quantum 540 HD
1.44M Panasonic FD, ATI Mach64 1M video card
Daytek 14" Non-interlaced 0.28 monitor, IBM mouse
Acer double-speed CD-ROM, Soundblaster 16 bit card
Acer 101 Keyboard, Minitower case 230W power supply
Sound Blaster 16 Sound Card with speakers
1 Year Parts, 3 Year labour warranty
Upgrades: 850M HD-\$95, 1000M HD-\$219, 4M RAM \$199
15" Daytek monitor-\$119, Mid-tower case--\$10

The backup software is Central Point's venerable CP Backup for DOS and Windows, supporting virtually all current media formats. Virus software is also CP-licensed. Virus software is a sore spot with all the new DOS', and Microsoft has recently chosen to stop including antivirus with its operating systems. Updates, an absolute must for anyone who regularly downloads, trades floppies or connects with a network, are not freely available for PC DOS. You must purchase the full IBM Antivirus at \$59.95 to get access to them. With excellent programs such as F-Prot offering full registration and free updates as low as US\$1 per user, antivirus' bundled with any current DOS can be considered dead weight for anyone with a modem.

Disk compression software is Stacker 4.0 for DOS and Windows — the full version of the fastest, most robust and most efficient disk compression on the market. Stacking a Windows-only partition on a 486-DX266 more than doubled its storage capacity and produced no slowdown in disk reads and writes. Impressive. Not impressive was its refusal to allow access to stacked drives from an MS-DOS boot disk. This Stacker works only with PC DOS 6.1 and higher, and may not be Win95-compatible without a patch from IBM or Stac.

Amateur programmers no longer get GWBASIC with PC DOS. Instead IBM offers a DOS-based implementation of REXX, IBM's answer to the need for a simple, friendly, expandable programming language. REXX can run under MS-DOS, may soon be ported to UNIX and Win95's DOS, and IBM plans to make it a full-fledged object-oriented programming language for the everyday user. About all PC DOS' REXX can't do is control the GUI's in OS/2 or Windows.

The bundled file synchronization, based on Travelling Software's LapLink, allows quick copying of files and directories to and from another computer such as a notebook. "File shuttle" cables can now be had from almost any computer supermarket for under \$10, making file sync cheap as well as easy. IBM's File Update Utility is not as simple to set up as Filelink (included with Novell DOS 7.0), but it's faster, and a far cry from using MS-DOS' INTRLNK/INTRSRVR.

The help engine? It's about what you'd expect: a typically cryptic and cumbersome techno-jock's recipe card. The editor? Better than in MS-DOS, but that's still not saying much. The undelete utility? It's the enhanced, mouse-driven Central Point undeleter which will unerase directories from within Windows. It's a vast improvement over Microsoft's limited monstrosity.

The package includes 60 days of free technical support, free access to IBM's bulletin board system (major centers only), and several Web and ftp sites offering software updates and product news.

The differences in look and feel between this and MS-DOS' standard utilities do not make this a good product for the user who struggles with MEMMAKER and Drivespace. Power users with two or more computers may prefer Novell DOS. But for knowledgeable or ambitious DOS users who don't already have QEMM or Stacker, this is a superb value. □

Cub Lea is a consultant, troubleshooter and trainer living in Bunaby, BC. He can be contacted at 604-298-6415 or via email: cublea@yvr.cyberstore.ca or rshrier@direct.ca

Getting Connected With Warp

BY GRAEME BENNETT

Product: OS/2 Warp Connect
From: IBM Canada
Price: \$299; Rebates available for upgrades from OS/2 2.1 (\$25) & z Warp fullpack (\$50)

options in the manuals and on-screen. Warp correctly identified our S3 video card, Adaptec SCSI interface, and Toshiba CD-ROM drive, and let us choose our network interface card from a lengthy list of supported models. We had been especially careful to configure our Warp system with mainstream cards and peripherals, so we were optimistic about our chances of success.

Warp Connect provided us with our best OS/2 experience yet — but we're still not giving away cigars. The installation from two boot floppies and CD-ROM went smoothly on our test system, and we were (mostly) impressed at the helpful information and lucidly described

Unfortunately, it did not acknowledge our network card (an NE2000 clone) or the sound card (Microsoft Sound System). Worse,

Warp For WorkGroups

IBM is billing OS/2 Warp Connect as a "one-box" networking solution, and is aiming the product at small businesses and departmental workgroups. Warp Connect includes requesters for IBM Lan Server and Novell NetWare. IBM says Connect is also compatible with other network operating systems like Windows NT, Windows for Workgroups, Banyan Vines and Artisoft Lantastic. Included in Connect is the ability to create a mini lan by connecting two computers with a parallel or serial cable, thus allowing the computers to share resources like printers or hard drives. A remote access feature based on IBM LAN-Distance will allow mobile users to dial into a network with a modem. Like other versions of Warp, Connect includes the BonusPak, a set of OS/2 applications and utilities. But unique to Connect is the inclusion of a client version of Lotus Notes for OS/2. Connect is a "fullpack" release, meaning that Windows 3.1 code in the form of WinOS2 is also included. A version without WinOS2 code will be available this summer. — DT

UPGRADE YOUR HP LASERJET 4 To 1200 DPI



- ☐ Upgrades Your Existing HP 4 Printer to a 1200DPI PostScript powerhouse.
- ☐ Ultra fast Windows Direct Mode.
- ☐ Easy to install.



Try Thunder B/TE Risk Free!
 Call now to Order your TBAV 30 day trial pack for free* and start enjoying the ultimate anti-virus protection.

* \$10 Shipping & Handling Extra (applicable to purchase price).

WORRIED ABOUT COMPUTER VIRUSES?



Every day computer viruses cause thousands of dollars of damage to computers and their data. Don't become a victim yourself. Get the most powerful anti virus utility available on the market today. ThunderBYTE! Rated best in class by ANTI VIRUS Bulletin.

"One of the smartest weapons in the antiviral arsenal... ThunderBYTE can detect even previously unknown viruses"
 - INFO WORLD July 18, 1994

Thunder B/TE
 Anti-Virus Utilities

BA 1-800-268-3676
 DATASYSTEMS
 In Toronto (905) 475-3766
 25 Royal Crest Ct Unit 10, Markham, Ontario L3R 9X4

- Your Networking Source:
- OS/2, Windows & MAC
 - LAN Server 4.0
 - Network Faxing ● Internet
 - Novell ● LANtastic
 - ONEAC UPS

ROCKET COMPUTER SYSTEMS

23 Milliken Blvd., Unit B9, Scarborough, Ontario FAX: (416) 609-2491, TEL: (416) 609-0946
 Monday / Friday 10:30-7:00 Saturday 10:30-6:00

LASER PRINTERS	
HP 4L, 300dpi, 4ppm, 1mb	\$720
HP 5P, 600dpi, 4ppm, 2mb	\$1269
HP SMP, 600dpi, 4ppm, 6mb, PS	\$1559
HP 4Plus 600dpi 12ppm 2m	\$1989
Canon LBP-430w 300dpi, 4ppm, 1mb (3 Yr.)	\$699
Lexmark Optra R 1200dpi 12ppm 2m PSL2	\$2049
BUBBLE JET PRINTERS	
HP DeskJet 660C 600dpi 4ppm Color (1/2/1/1)	\$680
HP OfficeJet 600dpi (Printer/Fax/Copier)	\$999
Canon BJ-100, 360dpi 4ppm	\$279
Canon BJ-230, 360dpi 4ppm	\$479
Canon BJC-4000 Color, 720dpi 5ppm	\$469
Canon BJC-70 Color 720dpi 4ppm (Portable)	\$499
SCANNERS	
HP ScanJet IIIP 300/1200dpi	\$670
HP ScanJet IIIC Color 600/2400dpi	\$1299
UMAX PowerLook Color 30bit 1200/9600dpi	\$3399

MONITORS	
WES-COM 14" N.I. LR, 1024, .28	\$260
AOC 14" N.I. Green Pin Cush. 1024, .28	\$279
HI-COM 14" N.I. Green Pin Cush. 1024, .28	\$289
MegaPlus 14" N.I. Green 70Hz 1024, .28	\$299
MAG DX15FE 15" N.I. Green LR, 1280, .28	\$499
MAG 17" N.I. Green LR, 1280, .28	\$880
MULTIMEDIA	
Digital School House (20 Titles)	\$299
Microsoft Home Multimedia Kit	\$399
(Toshiba Quad CD-Rom, True 16bit Sound Card, 5 Microsoft HomePad Titles CD)	
TEAC Quad Speed Internal CD-ROM	\$255
Panasonic Double Speed CD-ROM	\$145
Panasonic Double Speed CD-ROM (OEM)	\$110
Sound Blaster 16bit Sound Card (MCD)	\$99
Multimedia Sound Card Pro 16bit (MCD/IDE)	\$89
Computer Hi-Fi Speakers w/AMP. 100W	\$95

*** Pentium Intel Triton NEW Chip**
 Motherboard w/256K From P75 \$330
*** IBM ThinkPad 360CSE** \$3499
 486DX2-50, 4M Ram, 340M HDD, PCMCIA 10.3" DSTN Color display NOTEBOOK

HARD DRIVES & CONTROLLERS	
420MB IDE	\$225
540MB Enhanced IDE	\$249
730MB Enhanced IDE	\$329
850MB Enhanced IDE	\$349
1.0GB Enhanced IDE	\$459
Conner SCSI 1.06GB 9ms	\$680
VESA Enhanced 4IDE with 2S/1P/1G	\$35
VESA Enhanced 4IDE+ (16550) 2S/1P&1G	\$55
VESA IDE Enh.(16550) 2S/1P & 1G	\$39
PCI Enhanced 4 IDE+ (16550) 2S/1P	\$55
Adaptec PCI SCSI 2940	\$390
3M Tape 250M *Special*	\$18

Motherboard & CPU	
486DX2-66 PCI / VESA 256K AMD	\$339 / \$279
486DX2-80 PCI / VESA 256K AMD	\$359 / \$299
486DX4-100 PCI / VESA 256K AMD	\$389 / \$339
486DX2-66 PCI / VESA 256K Intel	\$399 / \$329
486DX4-100 PCI / VESA 256K Intel	\$499 / \$429
Pentium-75 PCI 256K Intel	\$669
Pentium-90 PCI 256K Intel	\$799
Pentium-100 PCI 256K Intel	\$949
Pentium-90 PCI 256K Intel Triton new chip	\$869
SIMM MEMORY	
SIMM 4M-70ns, 72 Pins	(Call) \$195
SIMM 8M-70ns, 72 Pins	(Call) \$385
SIMM 16M-70ns, 72Pins	(Call) \$635
SIMM 32M-70ns, 72Pins	(Call) \$1139
FAX MODEMS	
Zoltrix 14.4 Internal w/Voice RPI	\$89
Zoltrix 28.8 Internal v.34	\$199
GVC 28.8 Internal v.34	\$279
GVC 28.8 External v.34	\$299
Hayes ACCURA 14.4 Internal	\$135
Hayes ACCURA 14.4 External	\$165
Supra 14.4 Internal	\$135
Supra 14.4 External	\$160
Supra 28.8 Internal v.34	\$279
Supra 28.8 External v.34	\$299
USRobotics 28.8 Internal v.34	\$299
USRobotics 28.8 External v.34	\$320

486DX2-80	\$1,269
486DX2-66	\$1,239
486DX-33	\$1,199
* VESA L.B. Green Motherboard	
* 128K External Cache	
* 4MB Ram (70ns,)	
* Panasonic 1.44M Floppy Drive	
* 540MB Enhanced IDE Hard Drive	
* S3 VESA L.B. SVGA Card 1M (Ext. 2 MB)	
* VESA L.B. IDE Controller Card	
2 Serial, 1 Parallel, 1 Game Port	
* 14" SVGA NI Color Monitor (1024, .28 dpi)	
* Mini-Tower Case w/230W Power Supply	
* 101-Enhanced Keyboard	
* Serial Mouse, with Mouse Pad	

i486DX2-66 PCI	\$1,769
i486DX4-100 PCI	\$1,929
A486DX2-66 VESA	\$1,639
A486DX2-80 VESA	\$1,669
* PCI / VESA L.B. Green Motherboard	
* 256K External Cache	
* 4MB Ram (70ns, 72 pins)	
* Panasonic 1.44M Floppy Drive	
* 540MB IDE Hard Drive (Seagate)	
* PCI / VESA SVGA Card 1MB (Ext. To 2MB)	
* PCI / VESA Enhanced IDE Controller Card	
(PCI w/Fast 2S/1P/1G), (VESA w/2S/1P/1G)	
* 14" SVGA N.I. Monitor (1024, 0.28dpi)	
* CD-Tower Case (7 bays) w/230W P/S	
* 101-Enhanced Keyboard	
* Serial Mouse, with Mouse Pad	
* 14.4 Internal Fax/Modem	
* Canon BJ-100 Bubble Jet 360dpi 3ppm	

Pentium-100 PCI	\$2,469
Pentium-90 PCI	\$2,299
Pentium-75 PCI	\$2,199
(Intel Triton new Chipset Pentium Board Pentium75/90/100/120/132MHz Systems)	
* 256K External Cache	
* 8MB Ram (70ns, 72 pins)	
* Panasonic 1.44M Floppy Drive	
* 850MB IDE Enhanced Hard Drive	
* ATI Mach64D PCI L.B. 1MB SVGA Card	
* PCI Enhanced IDE Controller Card	
2 x 16550 Serial, 1 Parallel, 1 Game Port	
* 15" SVGA N.I. Monitor (1280, .28 dpi)	
MPR-II Low Radiation, Energy Saving	
* Med-Tower Case (8 bays)	
with 230W Power Supply	
* Keytronic 2000 101-Enhanced Keyboard	
* Microsoft J-Mouse, with Mouse Pad	

Multimedia System:	
486DX2-66	\$1,999
* VESA L.B. Motherboard	
* 256K External Cache	
* 8MB Ram (70ns, 72 pins)	
* Panasonic 1.44M Floppy Drive	
* 540MB IDE Hard Drive (Seagate)	
* S3 VESA SVGA Card 1MB (Ext. 2MB)	
* VESA IDE Enhanced Controller Card	
2 Serial, 1 Parallel, 1 Game Port	
* 14" SVGA N.I. Green Monitor (1024, 0.28dpi)	
* CD-Tower Case (7 bays)	
with 230W Power Supply	
* Keytronic 2000 101-Enhanced Keyboard	
* Serial Mouse, with Mouse Pad	
* Quad Speed CD-ROM	
* Sound Blaster 16bit MCD Sound Card	
* CP-18 Stereo (AMP) Speakers w/24W	
* FREE: CD	

2 years labour & 1 year parts warranty for systems; All prices are cash discounted & subject to change without notice

SOFTWARE

the system completed its install process, but hung after rebooting, apparently getting stuck at the network card enabling step — despite an on-screen message telling us that the network card detection and initialization had been successful.

After cycling the power, we checked the IRQ and memory addressing on our network card, to no avail. Even booting to an OS/2 command line and attempting to edit the config.sys file resulted in another lockup. Could an OS/2 expert solve this problem? Undoubtedly, but we think that Warp needs better plug and play support, or at least an easier way to skip over troublesome startup files. We pulled the network card, checked its jumpers and DIP switches, changed the IRQ and memory settings to known-to-be-available values, carefully writing down the IRQ, I/O base, and memory addresses, and began

the entire 90MB Warp installation over again.

After a few hours of fiddling around with IRQ and memory address values on our network interface card, we were up and running, delighted to see Warp Connect's support for the long file names on our Windows NT server. This product is clearly superior to LANtastic for OS/2, which we reviewed in the May edition of TCP. Although we originally thought the paltry 92-page manual for Connect's network-related features was vastly inadequate, our easy successes at getting up and running suggest otherwise. One complaint: although we installed Connect from CD-ROM, the installer asked us for "Disk 10" when we tried to enable Win-OS2 network support. Oops. □

Contact: IBM Canada, 905-316-2251

The Canadian File

Continued from page 53

"In almost every case," reads the report, "the educators and the Stentor companies are struggling to make the 'square peg' of business telecommunications services fit the 'round hole' of educational needs. The mismatch includes features, flexibility and reach as well as pricing rates and structures."

The report also asks that telephone companies be given more freedom to work with educators, as it says cable television operators already are. And it suggests that government subsidies may be needed to help schools in remote communities afford the same telecom services that those in larger centers can.

"Many Canadian educators ... look with envy at announcements from Bell Atlantic, Pacific Bell, and other American carriers who have announced major levels of support for schools and colleges, with the backing of state regulators," says the report.

The Education and the Information Highway report concludes that "a well-implemented telecommunications program in the educational sector will help create a better educated and more cohesive population, increased employment opportunities and improved global competitiveness."

Grant Buckler is Canadian editor for the Newbytes news service.

ARONIC TECHNOLOGY

555 RICHMOND ST. WEST, SUITE 1103,
TORONTO, ONTARIO M5V 3B1
TEL.: (416) 504-2190
FAX: (416) 504-2193

DOWNTOWN LOCATION SUBURB PRICING

SONY CD ROM

CDU55E IDEBUS

ACCESS TIME: 250MS

CDI DISK READABLE

CR504
QUAD SPEED
SCSI CD ROM

NOW
AVAILABLE

TEAC CD ROM

CD55A QUAD SPEED

ACCESS TIME: 195MS

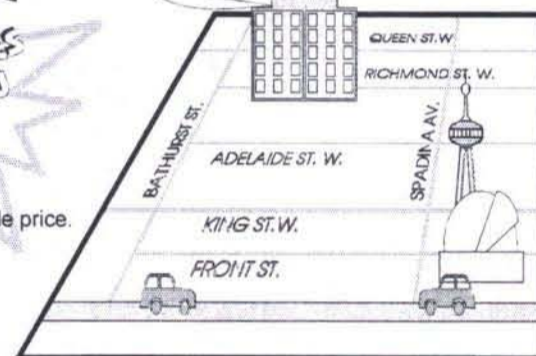
ARONIC TECHNOLOGY
555 Richmond St. W.
Ste. 1103

Your Toronto Downtown
Computer Distributor.....

OVER 40 CD TITLES
IN STOCK NOW!

Please call for the latest available price.

DEALERS ONLY
P.S.T. # REQUIRED



6/95



COMPUTER

SALES & SERVICES

PROUDLY ENTERING THE 17TH YEAR IN BUSINESS

SUNIX 486DX2-66

VLB SYSTEM \$1458.

- * 128k Cache w/INTEL CPU
- * 4 Mb Memory * 1.44 Mb Floppy Drive * 530 Mb Hard Drive * VLB IDE w/I.O.
- * VLB 1M Video card
- * 14" SVGA .28 N.I. Monitor
- * Mini tower case
- * Enhanced keyboard
- * Serial mouse
- * M.S. DOS 6.22 & Windows 3.11
- * 3-year labour and 1-year parts warranty

UPGRADES :

- 486 DX4-100, INTEL.....+ \$158.
- PENTIUM 75, PCI.....+ \$478.
- PENTIUM 90, PCI.....+ \$628.
- 8 MB MEMORY.....+ \$218.
- MULTIMEDIA KIT :
(16-BIT SOUND CARD, SPEAKERS,
6 M.S. CD TITLES) W/ 2X CD ROM...\$338.
W/4X CD ROM...\$438.

PRINTER UP-GRADE

Trade-in any junk-printer for a brand new :

- * CANON Bubble Jet, BJ 100.....\$269.
- * CANON Colour, BJ 4000.....\$459.
- * CANON Laser, LBP 430W.....\$599.
- * RAVEN LED,\$479.

- * PANASONIC LED, 5400.....\$679.
- * OKI LED, 410e.....\$749.
- * OKI LED, 410e/PS.....\$1019.

WARRANTY DEPOT FOR :

- * OKI.....LED Printer, 400e, 410e
- * Panasonic.....Impact/Laser Printer
- * Star.....Impact/ Laser Printer
- * SHARP.....Laser Printer/Notebook
(Proof Of purchase required)



Flat service rates (Parts extra) :

- * IBM Compatible Computer.....\$50.
- * VGA Monitor.....\$80.
- * Laser Printer.....\$90.
- * Dot-Matrix Printer.....\$45.
- * Inkjet/Bubble Jet Printer.....\$55.
- * Office Equipment.....\$75.
(Copier, Fax, Answering Machine, or Projector)
- * Retail Equipment.....\$75.
(P.O.S. Machine, Cash Registrar, Bar Code Scanner)
- * Home Entertainment Equipment \$65.
(HI-FI Equipment, Karaoke, T.V., VCR)
- * Camcorder.....\$90.

KEYBOARD PROBLEM ?

Trade-in any junk-keyboard for a brand-new :

- * 101-KEY ENHANCED\$25.

SUNIX INC.

COMPUTER ELECTRONICS
SERVING YOU SINCE 1978



PC HARDWARE

TRAINING

For job-search, job advancement, self-employment & personal hobby !



Our hands-on and experience-emphasized courses are specially designed for Computer Enthusiasts, new Graduates, Consultants, Entrepreneurs To-be, Unemployed, New Immigrants, and Retirees desiring for the required knowledge and experience demanded by most employers, or to adapt the experience to their business, or as a hobby.

#1 HANDS-ON PC ASSEMBLY / (UPGRADE) TECHNIQUE

Learn how to configure, assemble, setup and test a PC from scratch. Upgrade, setup and test a CD ROM, Sound Card, Fax/Modem, and Tape back-up.

12-Hours : 2 Saturdays or Weekdays

\$295. + G.S.T.
Scarborough & Woodbridge

#3 LAN INSTALLATION AND ADMINISTRATION

Basic Concepts & Topologies
Raising Servers
Preparing Work Stations
Raising Routers / Printer Servers
Cabling, Printer Installations, Administrations
Answering CNA Sample Questions
Video Demonstrations

40 Hours : 10 days \$495. + G.S.T.
Scarborough & Woodbridge

#2 PC DIAGNOSIS/TROUBLE - SHOOTING / REPAIR (Demos, Hands-on, and Assignments)

Learn and understand the basic functions of components in a PC and their associated problems, and the techniques of solving and repairing the faults.

20-Hours : 5 days
\$ 395. + G.S.T.
Scarborough

#4 PC TECHNICIAN

Learn how to : Assemble a PC, Upgrade a PC, Trouble-Shoot a PC, Repair a PC, Maintain A PC, Protect Data in PC, Manage Memory and many more.

Class-Room Lectures and Hands-On Practical Training.

120 Hrs. : 6 weeks (4-hrs. daily)
\$1450. + G.S.T. Scarborough

WOODBRIDGE
3850 STEELES AVE., W., #5
(at WESTON RD.)
(905) 856-2222 FAX (905) 856-3136

SCARBOROUGH
2691 MARKHAM RD., #4
(north of FINCH)
(416) 292-0588

BUSINESS HOURS
Monday to Friday 10 - 6
Saturday 10 - 5
All prices subject to change

The Straight Goods:

A Science CD-ROM for Children and Other Oblivious Humans

BY ROSS MACDONALD

The Eyewitness Encyclopedia of Science CD-ROM

From: Dorling Kindersley Multimedia through:
General Publishing 30 Lesmill Road Don Mills, ON
M3B 2T6 416-445-3333
MSRP: \$109.95

Dorling Kindersley has become the purveyor of some very upscale CD-ROMs of late — though, alas, with prices to match. Now, from their as yet underdeveloped multimedia catalogue comes The Eyewitness Encyclopedia of Science, a CD-ROM intended for children 10-and-up. "And-up" is the operative descriptor here, however, because this disk is actually useful to anyone who's managed to ripen beyond their teens without retaining anything from junior high.

This is a particularly apropos production because science is big news these days... as anyone who succumbed to Ted Rodgers' recent jack-booting of new cable packages can attest. The Discovery Channel has been squeezing multitudes of imported science magazine shows between monkey movies ever since they hit the air, while The Learning Channel has been a constant source of simple science for several years.

Even the "normal" networks are lately pushing "Beakman's World" and "Bill Nye The Science Guy" so it's no surprise that strictly science CD-ROMs are appearing on the market with ever more frequency.

But, where Beakman and Bill are threateningly deliberate in making damn sure you think science is fun — or funny — the Dorling Kindersley Eyewitness Encyclopedia of Science is the straight goods.

Life must have been simpler when I was 10-and-up because the section on how to calculate the various geometries of a circle reminds me more of graduate calculus than grade seven. Still, despite the terrors that observation may evoke, the audio and text explanations throughout this disk are clear and they're

helped enormously by the abundant illustrations and animations.

However, try as I might, I just couldn't sweat any fun out of this disk.

Though prescribed for 10-and-ups, you may be getting the idea that The Eyewitness Encyclopedia of Science is equally ideal for 20-and-ups and 30-and-ups who stopped paying attention in school once reproductive biology became clarified.

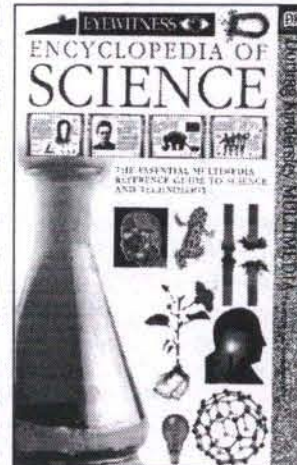
I'm actually happy to get some straight science in this manner because I've gotten tired of the current mania for camouflaging absolutely all knowledge within some kind of "fun-pak" — the producers apparently figuring that's the only way anybody's going to go for it. Sometimes I just want to be able to look something up or spend time exploring, without having to role-play, win points or watch gratuitous cartoons.

The more broadly based general CD-ROM encyclopedia — like Compton's, Grolier's and Encarta — have been around for some time now and are the only straight references to have achieved any genuine universal popularity in the CD-ROM world. Now we have the Eyewitness Encyclopedia of Science for more specialized interests.

All in all there are 1,700 entries here including 20 video clips and 66 animations. Everything is organized into five main categories — Chemistry, Mathematics, Physics, Life Science and a Who's Who of Science.

The Who's Who is actually a good idea but, unfortunately, gives only thumbnail sketches — and badly bitten ones at that — of a number of familiar figures from science history. The immeasurable contributions of Nikola Tesla, for example, have been boiled down to a mere 45-second audio biography that tells us almost nothing. A more complete life story can be found elsewhere on the disk, but it's presented in text only... which kind of defeats the CD-ROM aspect as far as I can tell.

Once you've finished absorbing all this basic knowledge — and believe me, this is basic



DeskJet/ BubbleJet Ink Refills

FROM AS LOW AS
5/\$49!!

BJ4000, Black 10/\$89: col. 8/\$109.
BJ800, Black 2/\$35: col. 2/\$42.
BJ600, Black 3/\$21: col. 3/\$23.
Epson Stylus, Black 8/\$76: col. 12/\$90.

REMANUFACTURED
Laser Cartridges
FROM \$49!!

IMAGE CONTROL ETOBICOKE INC.
62 Mimico Ave., Etobicoke, Ont. 416-251-3370
Visa, M/C, AMEX
Delivery available

Increase Your Networking Skills !!!

Try out different hardware
& software combinations
Check out our demo client services
OR
bring your software & test it out !

Windows 95, NT, Workgroup
Netware 3.x & 4.x, Lantastic 6.x
Linux (Unix compatible) & more ...

Come Join Us & Use Our Lab !!

T: 905.940.0352 F: 905.940.0729

BICMOS TRADING INT'L

BICMOS 486DX2-66MHz	BICMOS 486DX2-80MHz	BICMOS 486DX4-100MHz
\$ 1215	\$ 1235	\$ 1285

All above systems including:
4MB Ram(70ns), 1.44M Floppy Drive, 560 MB IDE Hard Drive,
1M VESA Video Card, VESA IDE Controller, 14" SVGA N.I. Monitor,
101 Enhanced Keyboard, Mini Tower Case, Mouse & PAD
** 2 years parts & labour limited warranty **

Pentium 75/90/100MHz System Included :

- On board PCI hi-speed IDE I/O
- 850M IDE Hard Drive
- PCI ATI Mach64 w/1M
- 8M Ram
- Mid Tower Case

Pentium 75	\$2018
Pentium 90	\$2140
Pentium 100	\$2263

- 1.44M Pre-formatted Disk	\$ 3.99	- TEAC 4X CD Rom	\$ 260
- 14.4K Int. Fax Modem w/Voice	\$ 95	- Acer 2X CD Rom	\$ 150
- 28.8K Int. Fax Modem V.34	\$ 210	- Panasonic 2X CD Rom	\$ 136

486DX2-66/50/DX4-75
Active/Passive Colour Notebooks
Price from \$ 3899
Please ask for details !!

Multimedia cd-ROM package:
Sound Blaster 16-bit Sound Card
Magnetically Shielded Amplified Stereo Speakers
Deluxe Microphone
Acer Double Speed CD-ROM
MS Encarta 95, Works, Money, Entertainment **\$335**

Mississauga Branch:
2550 Goldenridge Road, #64
Mississauga, Ont.,
L4X 2S3
Tel: (905)-279-5038
Fax: (905)-279-9241

Markham Branch:
151 Amber St. Suite 5,
Markham, Ont.,
L3R 3B3
Tel: (905)-470-2625
Fax: (905)-470-2201

Special of the Month !
Pentium 66MHz
- 256K External cache, 8MB RAM
- Enhanced PCI IDE w/2S/P/G
- 1M Trident 9440 PCI Video Card
- 1.44M FD, SVGA Color Monitor 28dpi
- 560M Hard Drive, 101 Enhanced Keyboard
- Mini Tower case, Mouse & Pad
- Heat Sink & CPU Fan

ONLY \$1839
2 years parts & labour limited warranty

LIMITED QUANTITY !

* Prices are subject to change without notice. FINANCING AVAILABLE NOW !!

VINA COMPUTER

1162 COLLEGE ST.
Tel. (416) 531-3698
Fax. (416) 531-3260
Toronto, Ontario

MOTHER BOARD	
486DX2-66/OK/CYRIX/VL-BUS	\$195
486DX2-80/128K/AMD/VL-BUS	\$285
HARD DRIVE	
QUANTUM 540Mb/128K/12ms	\$245
CONNER/MAXTOR 850Mb/64K/12ms	\$325
CONNER/MAXTOR 1.2 Giga Byte/64K	\$485
MONITOR	
ACER 14" SVGA, NI, GREEN, 0.28	\$299
ACER 15" SVGA, NI, GREEN, LR, 0.28	\$425
ACER 17" SVGA, NI, GREEN, LR, 0.27	\$875
VIDEO CARD	
CIRRUS LOGIC 1Mb, 5429, VL-BUS	\$99
CIRRUS LOGIC 1Mb, 5430, 32-BIT, PCI	\$120
CIRRUS LOGIC 1Mb, 5434, 64-BIT, PCI	\$140
ATI MACH32, 1Mb DRAM, VL-BUS/PCI	\$145
ATI MACH64, 2Mb DRAM, VL-BUS/PCI	\$250
KEYBOARD	
ACER ENHANCED 101-KEY	\$25
HONEYWELL 101-KEY	\$35
FLOPPY DRIVE	
PANASONIC 1.44Mb	\$45
PANASONIC 1.2Mb	\$55
MOUSE	
LOGITECH DEXXA 2-BUTTON	\$15
LOGITECH MOUSEMAN (OEM)	\$45
MISCELLANEOUS	
SUPER IDE & I/O PORTS, ISA BUS	\$15
ENHANCED IDE & I/O PORTS, VL-BUS	\$30
CASE	
MINI/DESKTOP CASE, 230W	\$55

Cyrix 486DX2-66Mhz/OK/VL	\$195
AMD 486DX2-80/128K/VL	\$285
SOUND BLASTER-VALUE CD KIT	\$275
CONNER 850Mb/64K/12ms	\$325
QUANTUM 540Mb/128K/12ms	\$245
CONNER 420Mb/TAPE BACKUP	\$225
CIRRUS LOGIC 5430/1Mb/PCI	\$120
ENHANCED IDE/I/O/VL	\$30

Prices & availability subject to change without prior notice - Limited quantity on some items
9AM-7PM * Tel. (416) 531-3698 - (416) 588-5012

INTEL P75

INTEL Pentium 75Mhz/256K/PCI
8Mb SIMM Memory/70ns
QUANTUM 540Mb IDE Hard drive
1.44Mb Panasonic Floppy Drive
ACER 14" SVGA 0.28 NON-INT/GREEN
Cirrus Logic 5430/1Mb/PCI
Enhanced IDE 32-Bit, 2x16550 Ser/1 Par.
Acer 101 Keyboard
Mini Tower Case/LED/230W

\$1799

486DX2-80

AMD 486DX2-80Mhz/128K/VL-BUS
4Mb SIMM Memory/70ns
QUANTUM 420Mb IDE Hard drive
1.44Mb Panasonic Floppy Drive
ACER 14" SVGA 0.28 NON-INT/GREEN
Cirrus Logic 5429/1Mb/ VL-BUS
Enhanced IDE 32-Bit, 2 Ser/1 Par/VL-BUS
Acer 101 Keyboard
Mini Tower Case/LED/230W

\$1245

A Little Lost, A Little Found

BY GORDON GOBLE

Lost Treasures Of The World

From: Follgard CD Visions Inc., Calgary, Alta.
Phone: 403-640-4777
Retail Price: \$49.95

A constant in an ever-changing world, our obsession with ancient treasures, buried and sunken fortunes, and untold riches beyond the imagination continues to lead men and women through deserts, jungles and on life-long journeys spanning the globe. Occasionally, the motherlode is unearthed; more often, it is not.

Alberta's Stan Grist is one such person. While treasure hunting hasn't driven him completely to distraction in his 20-odd year love affair with what might be out there, he has seen his fair share of the world while searching for the big hit. And now, Calgary's Follgard CD Visions is using Stan's knowledge and experiences as the basis for their Windows/Mac release, *Lost Treasures of the World*, their attempt to bring the history and lure of treasure hunting to a computer near you.

The first installment in something dubbed the "Adventure Quest Series," *Lost Treasures* is graphically and audibly pleasing and packed with enough variety and substance to keep interested parties interested. But if you're not a fan of the genre, you may or may not become one after sampling the offerings of *Lost Treasures*.

Resembling a talking book and nothing more in most spots, most of the interaction in this program comes through flipping video "pages" and moving from subject to subject. Although some of the material is quite interesting and

well-researched and the program beautifully displayed through photographs and drawings, too much of *Lost Treasures* is based around the somewhat common Mr. Grist (whose Indiana Jones-type headpiece must be for effect only).

Crashes and blackouts were not uncommon during testing of the PC version, until the all-knowing technical support department raced to the rescue. Also, QuickTime video clips were sometimes jerky and scratchy (despite being confined to a two inch window), and often were out of sync with the audio.

On the plus side, following a gorgeous introduction that literally drips with intrigue, we are introduced to our host, and the entire program is but a few points and clicks away. *Lost Treasures* is divided into five separate areas, Meet Stan, Treasure Teach, Treasure Tales, 5000 Treasures, and Treasure Tools. Each area must be approached separately.

Treasure Teach is one of the more interesting components of the program. Scores of helpful topics from wet gold panning techniques to GPS (global positioning system) equipment are explained in detail.

Treasure Tales involves 60 lean but exciting stories of lost treasure lore, complete with narration. 5000 Treasures, meanwhile, supplies semi-detailed data on thousands of known or suspected treasures around the world, sub-categorized and indexed by treasure type, value, geographic location, and numerous other parameters. I had just one question while gazing at all this uncovered wealth: "Why is this stuff still in the ground?"

there's a "hot-spot" that will take you to the relevant section of the disk. But still, there's no narration, no bells, no whistles, no sound effects, no nothing but the knowledge you may — or may not — have acquired.

I wonder how many 10-year-olds will sit still for that!

The Eyewitness Encyclopedia of Science is a useful and comprehensive reference tool, but only for basic stuff. The newly reduced Suggested Retail Price is still an ambitious \$109.95 up here in Canada so, as with most Dorling Kindersley disks, you have to be somewhat committed to the topic. It will sell for less in stores, but I can assure you — through my inside-the-industry secret sources — that you won't get it for less than 70 bucks. Still, that's not a bad price, I suppose, for the straight goods on science. □

The Straight Goods

Continued from page 76

no matter what the Algebra section makes you think — they've thrown in a game of sorts called "Quiz Master," which tests how much of it all you've retained.

Using an interface not unlike a Vegas-style one-armed bandit, random questions spin and stop on the screen for each of the disk's main categories.

But, in a frighteningly existential fashion, there's nowhere to register answers, no multiple choice, no scoring, no nothing. Either you draw some sort of self-affirming gratification from knowing that you knew the answer, or you get bored and quit. Of course, if you don't know the answer to a particular question (which I found, occasionally, to be the case)

WE MAKE HOUSECALLS!

Repairs
Upgrades
Tutoring

DISCOVERY COMPUTERS
(Certified Technicians)
(905) 294-3258

**3.5" Floppy Disk
Reliable & Durable**

- We are a manufacturer under license of Sony Corporation.
- Our disks are all 100% Tested & Certified Error Free with Guaranteed Clipping Level.
- Available products: 2HD, 2DD, video tape, CD jewelry box
- Our own brand MEGA, OEM or bulk pack are also available.
- Duplicators & Wholesalers welcome.

YHC Cassette Ind. Ltd.
75 Sainsbury Square,
Scarborough, Ontario
M1V 3K1 Canada.
Tel: (416) 321-1179 Fax: (416) 321-8451

Inmark Industrial Ltd.
1A Man Foong Ind. Bldg.,
7 Cheung Lee Street, Chai Wan, Hong Kong
Tel: (8522) 5582203 Fax: (8522) 8973700

486DX2/66 \$1159
486DX2/80 \$1179
486DX4/100 \$1229

Includes:

- VLB Mother Board w/-128k cache
- AMD CPU with fan
- 4MB RAM
- VESA IDE Controller
- 2 x Serial / 1 x Parallel / 1 x Game Port
- VESA 1M Video Card
- 420MB Hard Drive
- Panasonic 1.44MB Floppy Drive
- Mini Tower
- 14" SVGA Monitor 1024x768 resolution
- Enhanced 101 Keyboard
- 3-button Mouse
- 1-year parts & 2 year labour warranty

Upgrade to

256K Cache	+\$20
8MB/16MB	+\$199/\$450
Mid Tower	+\$15
540MB/850MB	+\$20/\$120
14"/15" .28NI SVGA Monitor	+\$55/\$200

Pentium-60 \$1689
Pentium-75 \$1839
Pentium-90 \$1959

Includes:

- PCI Mother Board w/- 256 K cache
- INTEL CPU with fan
- 8MB RAM
- PCI Enhanced IDE Controller
- 2 x 16550 Serial / 1 x Parallel Port
- ATI (64) 1M - PCI Video Card
- 540 MB Hard Drive
- Panasonic 1.44MB Floppy Drive
- Mini Tower
- 14" .28 NI SVGA Monitor
- Enhanced 101 Keyboard
- 3-button Mouse
- 1-year parts & 2-year labour Warranty

Upgrade to

ATI Mach 64 PCI 2M	+\$65
16MB	+\$399
Mid Tower	+\$15
850Mb/1.0GB	+\$100/200
15"/17" .28NI SVGA Monitor	+\$145/\$560

Options:

- Fax Modem -Zoltrix 14.4 Int +\$70
- -Acces 14.4 Int +\$85
- DOS 6.22 w/Manual & Disk +\$45
- Windows w/Manual & Disk +\$45
- Panasonic 1.2MB Floppy Drive +\$60

CD Rom Multimedia Kit (with System Purchases)

Panasonic CD Rom double speed plus

- Sound Card 16 bit Plus
- One pair of stereo speaker

\$199

All prices quoted are cash discounted and subject to change without notice. We reserve the right to limit quantities.

OA COMPUTER

(Division of 1096014 Ontario Inc.)

Tel: (905) 629-3333 Unit 8, 991 Matheson Blvd. East
Mississauga, Ontario
Fax (905) 629-3323 Canada L4W 2V3

Hwy #401	
Matheson Blvd. E	Tomken Rd.
OA Computer	Dixie Rd.

CANADA OA Comp Inc. 4907-99 Street, Edmonton, Alberta Canada T6E 4V1 Tel: (403) 430-0811 Fax: (403) 436-9963	USA OA COMP (LA) 17134-A Collins Road, Hacienda Heights CA 91745 Tel: (818) 854-5850 Fax: (818) 854-5849	HONG KONG OA Comp Shop 18, Block B, 2/F., New Trade Plaza 6 On Ping St., Shatin, NT, H.K. Tel: (852) 637-1082 Fax: (852) 648-8952	TAIWAN OA Comp (Taiwan) Ltd. 1/F, No. 33, Lane 89, Pao Ching St. Taipei Tel: 02-7535406 Fax: 02-7535406
--	--	---	---

Multimedia has never been more at home than it is right now!
Multi-fun . . . multi-purpose . . . multi-use . . . multi-features . . . multi-benefit . . . multi-talented

Aptiva 350

- 486DX2/66MHz
- 540MB hard drive
- 4MB memory w/memory upgradable
- IDE CD-ROM, 16-bit audio card and stereo speakers
- Fax modem
- SVGA colour monitor*
- 3 year Express warranty

Aptiva 535

- 486DX2/66MHz processor
- 540MB hard drive
- 8MB memory
- IDE CD-ROM, 16-bit audio card and stereo speakers
- 14.4 Fax modem
- SVGA colour monitor*
- 3 year Express warranty

*Optional 15" and 17" monitors available

BIG BOSS 10111 YONGE STREET • RICHMOND HILL • 883-0115

Get Ready for Windows 95!



Upgrade your System!

At **SoftComp** we'll make sure that your system is ready for Windows 95. We **guarantee** that our systems and upgrades will have you up and running **Windows 95** in no time. Call for more information or see Windows 95 run on our **instore demo**.

"The Leaders in Windows 95 Solutions"



Call for more information

Tel: (416) 967-7894 Fax: (416) 967-9243

46 St. Clair Ave. E., Toronto M4T 1M9 Hours: 10 - 6 Mon. - Fri. 10 - 5 Sat.

OptiMicro Technologies Inc.

The Easiest Way to Add a Hard Drive And/Or a CD-ROM

Presenting ...

pPhD
(Parallel Port Hard Drive)
1.0Gb \$699.

CD
(Parallel Port CD ROM Drive)
Quad Speed \$499.

**New Models:
Smaller and Lighter.**

- Perfect for Notebooks and Laptops
- Easy to Setup and Install
- Assembled in Canada
- Plug into ANY PC's Printer Port
- Extra Port for Printer Connection
- 1 Yr Warranty

Networking Solutions

* LANs * Remote Access * LAN to LAN Connections *

NOVELL Network 5 user/10 user \$ 899./\$1929.
16/32 bit NE2000 Comp. ISA/VESA Network Card \$ 69./\$ 169.
8 Port Stackable Ethernet HUB \$ 199.

NOVELL® Personal Network LAN Starter Kit
 Including everything you need to connect two computers.
 (Network interface cards, software, cable and connectors.) **ONLY \$269.**

Microsoft® Workgroups Package **CALL**
 or **NOVELL LAN Systems (Complete Installation)**

Other network configurations available.
 Talk to our network engineers and we'll customize a network solution for your company.

We also do:

- Voice Mail Systems
- Fax-on-demand Systems
- Backup to CD and Mastering
- Custom Software

* larger office may require additional charge for cabling.
 PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL PRICES ARE CASH DISCOUNTED.
 7170 Warden Ave. Unit 15, Markham, Ontario L3R 8B3 Tel. (905) 470-7016 Fax. (905) 470-8975 (Just N. of Steeles)
 Business Hrs: Mon. to Fri. 9:30 a.m. to 6:00 p.m., Thu. 9:30 a.m. to 8:00 p.m., Sat. 10:00 a.m. to 4:00 p.m.

Confessions Of An Online Junkie

BY JAMES MACFARLANE



CommTalk

I've been suspiciously missing from the pages of *The Computer Paper* for the last few months. My editor has been sending me polite little notes asking whether I'm still writing for the paper or not. I kept reassuring him that I was — and I intended to — but I got so caught up in the Neat Stuff that's going on in Cyberspace that I didn't have time to stop to think about it, never mind write something.

There's a whole new generation of online technology emerging right now and I decided to put myself right in the middle of it. So I did. Here's what I discovered:

BBSes Are Dead

BBSes will always be around, but as a commercial entity, they're toast. BBS software developers are pretty clueless when it comes to understanding what the future is all about: global connectivity, graphical user interfaces, open systems, object-oriented design. Hence, the people who try to make a profit from running a commercially-attractive BBS are stuck in the 80s.

There are far too many cool, free resources out there in the Internet to ignore. BBSes — while they have netmail — are islands unto themselves, unable to allow the user to explore what's going on in the rest of the world. Every attempt I've seen to add Internet capabilities to BBS software has been kludgy — a sad attempt to patch together pieces from the past into the tool of the future.

Sure, BBSes are easier to understand than the Internet (unless the BBS is really poorly designed, and I've seen a few) but they'll never be able to bring you the richness of what you can get when using tools like Netscape. BBSes promise that Real Soon Now they'll be able to do this stuff too, which usually involves a long wait of faith that results in half-baked proprietary

software and/or hardware.

Meanwhile, over on the Internet...I used to be terrified of UNIX. It was some foreign, huge, complex monster that used to reside in mainframes, carefully tended by an army of ex-hippies in white lab coats and sandals. But it must be good for something, it runs the whole Internet.

I've learned to embrace it, and for good reason: it's a multi-user multi-tasking operating system with built-in networking for both local-area and wide-area applications. It's also modular, meaning you can add features to it to suit your needs. Given proper attention it doesn't have to be ugly or scary. You can even throw a graphical interface on it if you wish, be it X-windows or Netscape running on your Mac. UNIX is the Internet. BBSes just can't cut it anymore.

Format This!

One of the problems with electronic documents is how to make them universally viewable. The World Wide Web, with its HTML (hypertext mark-up language) was the first to break through into platform independent rich documents. This meant that you could create documents that included images, formatted text (sort of) that could as easily be read on a Mac as they could on a PC or UNIX machine.

All you needed is a WWW browser like Mosaic, or preferably Netscape, and you were on your way to finding all sorts of cool stuff on the net.

One of the shortcomings of HTML is that it's about as flexible as word processors were 10 years ago. If you want text to wrap around an image, too bad, it can't do it. If you want to make an online newsletter with three columns of text, forget it. HTML, aside from its hypertext capabilities, is as linear as it gets. (The state of this art is rapidly changing. Netscape users can view multiple columns and text wrapping on a Web page. Check out <http://tcp.ca/gsb/webtricks>. — Ed)

COMPUTER SYSTEMS

	Price	Low Monthly Payments
486 DX/2/66 MHz (VESA)	\$1245	44.30
486 DX/4/100	\$1345	47.66

- 540 MB Hard Drive
- 4MB RAM (70ns) & 72 Pin
- 1.44 Floppy Drive
- Built-in math co-processor
- SVGA 0.28 DPI NI Monitor
- 1 MB video card (32 bit VESA)
- 101 enhanced keyboard, mouse & pad
- 32-bit VESA IDE Controller, 2S, 1P, 1 Game Port
- Mini-tower or desktop case with digital display
- Microsoft compatible mouse & pad
- MS-DOS 6.22 \$50.00, WIN 3.11 \$60.00

Pentium 586-60MHz	\$1879	65.59	Pentium 586-75MHz	\$2019	70.29
Pentium 586-66MHz	\$1929	67.27	Pentium 586-90MHz	\$2139	74.32

- Quantum 730 MB HD, 11ms, Lightning Series
- 8 MB RAM (70ns) & 72 Pin
- 14" SVGA 0.28 NI Monitor
- PCI Motherboard, PCI Controller
- ATI 2 MB MACH 32 PCI Video Card
- 101 Enhanced Keyboard
- Tower Case, MS Compatible Mouse & Pad
- 1.44 Floppy Drive

Monthly payments based on 20% down on VISA or MC 36 months payment plan. No credit checks. For additional prices please call. FOR UPGRADES PLEASE CALL

SYSTELLIGENCE SYSTEMS INC.
 TEL: 905-272-1927 FAX 905-272-1661
 PRICES SUBJECT TO CHANGE WITHOUT NOTICE

One organization, Adobe, has been expert in how to transmit and format text in almost any conceivable fashion. After all, they invented PostScript, the language that high-end desktop publishing software uses to transmit complex page layouts to printers.

The light went on in someone's head at Adobe — what if we treat someone's screen as a PostScript printer, and transmit the document over the Internet! We could display almost anything, with as many pictures and complex formatting as we wanted! They called the product Acrobat.

One problem: PostScript files are huge. No one is going to want to download a 5 MB file by modem just to read their club newsletter. It would take forever. Adobe realized that a lot of the finer capabilities, like complex kerning (a standard technique for spacing letters so they're more visually pleasing, e.g., the letters "AV" are actually overlapped a bit so there isn't a huge space between the diagonals) weren't really needed. After all, we aren't typesetting the thing.

Adobe made the smartest move ever — they made the document viewer available for anyone to download free of charge.

Adobe Acrobat .PDF files are fairly compact and offer very rich formatting capabilities. To make the files, you need Adobe Distiller. It converts your document into the .PDF format. This is the piece of the puzzle that they do charge for.

Go check it out for yourself: <http://www.adobe.com>.

Compression Blues

Data compression is the holy grail of electronic communication. With limited bandwidth, both on the net and via our modems, compression is an important technology to make things possible, as anyone who's used GIF, ZIP or Compaq Pro will attest. Without it files would move far too slowly to be usable.

Compression comes in two flavors: lossy and lossless. Lossless compression is used to store things that need to be identical to the uncompressed file. This is used for software, text files etc. Lossy compression, on the other hand, is used for things which need to be only perceptually the same as the original file. Things like audio recordings and images. If there's a one per cent error (distortion) rate no one is going to complain if the file happens to be 50 percent smaller. JPEG is a prime example of a lossy compression technique.

Three lossy compression techniques are

in the spotlight these days: fractal image compression, wavelet image compression, and one new product that you should really check out — RealAudio. It can transmit audio in real-time over a 14.4 modem. The sound quality is what you'd expect from an AM radio, but this is a breakthrough in its own right.

The RealAudio player, available for Mac and Windows, allows you to play audio files embedded in regular HTML files. So if you're using Netscape, you can just click on a link, and out comes a recording from your speakers (Windows users need a sound card). Right now the system is still in beta testing, but you can fill in a form and get a free copy of the player. <http://www.realaudio.com>. If you fill in another form you can even get the compression utility that converts .WAV files to RealAudio files. I tried it; it's not bad. (Check out *The Computer Paper's* weekly radio program audio file, "The Computer Program" at <http://tcp.ca/Program/Program.html>)

For images, both Fractal and now Wavelet compression (<http://harc.edu>) promise to compress images beyond 100:1. The problem is that, unlike the Adobe philosophy which guarantees lots of people will use the product because the viewer is free, the folks who make fractal image compression (Iterated Systems) and wavelet compression (Huston Advanced Research Center) feel it's necessary to licence, and charge you for, every copy of the viewer.

This almost guarantees that it will never catch on except in niche vertical markets (read: proprietary closed systems). We net citizens can forget our dreams of ever using it until they smarten up.

After all, the commercial users are the ones publishing the information, why not charge them for the compression tools and let the rest of us view and read the stuff they produce without having to pay for special software. The marketability of compression software increases when the number of potential consumers of the compressed product grows. The market will never grow as long as they expect consumers to keep paying every time a new compression technology comes along.

Electronic Money

Buying things online is something a lot of us want to do. I'd buy software online, and a whole lot of other things too. Unfortun-

Continued on page 85



G.C. SYSTEMS

TEL. (905) 890-0253 TOR. (416) 616-9399 FAX. (905) 890-1076

151 BRUNEL RD., UNIT 13, MISSISSAUGA, ONTARIO CANADA L4Z 2H6

LIMITED TIME OFFER WHILE QUANTITIES LAST!

Main Board W/CPU

CYRIX 486 DX2-66 W/128K CACHE.....	\$209.00
CYRIX 486 DX2-80 W/128K CACHE.....	\$255.00
AMD 486 DX4-100 W/128K CACHE.....	\$311.00
INT 486 DX2-66 W/128K CACHE.....	\$292.00
INT 486 DX4-100 W/128K CACHE.....	\$396.00
INT 586 P75 W/256K CACHE.....	\$608.00
INT 586 P90 W/256K CACHE.....	\$721.00

Hard Drive

Maxtor 540MB IDE.....	\$225.00
Maxtor 850 MB IDE.....	\$295.00
Maxtor 1.2 GB IDE.....	\$440.00

VOLUME DISCOUNTS & FREE DELIVERY ALSO AVAILABLE • PLEASE CONTACT OUR SALES OFFICE FOR DETAILS • PRICES SUBJECT TO CHANGE WITHOUT NOTICE DEALERS ONLY

• SPECIALS! •

"FREE is FREE"

Modem (416) 663-7786

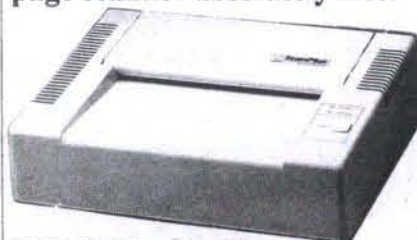
BBS Voice Support (416) 663-9446



- All Lines 28,800 V.34 Modems
 - Multi-Line Games (Trade wars 2002, Doom, Doom II, & Many Many More!!)
 - Chat-Group Chat/Adult/One-On-One
 - OnLine Shopping Mall • Full Internet Access
- Isn't It Time You Joined - The Club*

FREE Scanner

Buy Wordscan OCR V3 (listed US\$299) at **\$299.99**
Get a 256 Grayscale 1200dpi page scanner absolutely free.



HP & Twain Compatible
1 pass, 1200dpi, sheetfed type straight paper path scan 8.5 to ~ replace typing, fax and copier.

Authorized Dealers:-

- Honson (Toronto) 416-967-9333
- Systemlogic (Toronto) 416-769-0201
- 123 (Brampton) 905-451-6769
- 123 (Mississauga) 905-712-9197
- Kolmex (Concord) 905-669-6692
- APLUS (Pickering) 905-420-9830
- Redbaron (Whitby) 905-668-3487
- Yorktech (Oshawa) 905-579-0359
- Ancaster Computer (Ancaster) 905-648-0101
- Computan (Thorold) 905-984-8388
- Comtronic (London) 519-679-2922
- Computer System (Guelph) 519-824-3429
- SD Computer (Cambridge) 519-622-7302
- The Board Exchange (Waterloo) 519-747-5510
- Computer Dynamic (Stratford) 519-273-0414

PlustekTel:905-890-9300/8088
Fax:890-9802 Resellers welcome!

ScanFX

"Not Just a Scanner"
One key Copier, Fax, Image, OCR, BCR, Translate (Pro version only)*
- Send faxes in Color or B/W
- 10 pages document feeder
- WordScan OCR, Photoimage, Business Card Reader included.
* Integrated with your computer printer, fax/modem.

\$769

The scan quality of ScanFX is as good or better than scanners costing hundreds more.....PC Magazine

24bit color scanner \$549
IPhoto and WS included.

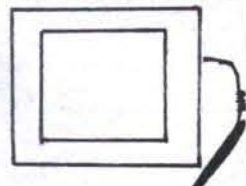
手寫輸入 \$299

中文 MS Windows 3.1 \$185
中文 TrueType 字型由 \$129

MPEG Card
True color with 1 CD\$449
full screen/motion video for Dos&Win

Pen Tablet/Digitizer
Replace mouse, for CAD, DTP, Image editing etc.

- 6"x9" \$239
- 6"x6" \$189
- 3"x3" \$139



7 DAY BLOWOUT SALE!!!
COMPUTER LIQUIDATION CENTRE

NOTEBOOKS & LAPTOPS	
ASSORTED MEMORY MODULES AS IS	FROM \$39.00
EPSON LAPTOP 20MB HD LCD + MODEM/GRID PEN BASED NOTEBOOK	FROM \$49.00
ASSORTED NOTEBOOK HARD DRIVES 40 TO 250 MB AS IS	FROM \$79.00
436 CHIP CPU CYRIX	FROM \$99.00
DELL 386SX COLOUR NOTEBOOK, 4 MB RAM, 60MB HD	FROM \$499.00
AT+7INCR 386SL NOTEBOOK, 6MB RAM, 80MB HD, 14.4 FAX, DOS + WIN	FROM \$699.00
COMPAQ 486SX NOTEBOOK, 4MB RAM, 80MB HD, DOS	FROM \$799.00
LEXMARK 486SX NOTEBOOK, 4MB RAM, 80MB HD, DOS	FROM \$799.00
LEXMARK 486SX NOTEBOOK, 4MB RAM, 120MB HD, DOS + FAX	FROM \$899.00
COMPAQ 486SX NOTEBOOK, 4MB RAM, 170MB HD, DOS	FROM \$899.00
TEXAS INST. 486SX NOTEBOOK, 4MB RAM, 120MB HD, DOS	FROM \$899.00
ZENITH 486/33 NOTEBOOK, 4MB RAM, 200MB HD, PCMCIA, DOS	FROM \$999.00
IBM THINKPAD 486 SLC NOTEBOOK 4/120, DOS + LCD VGA DISPLAY	FROM \$1,099.00
ZENITH 486 DX 50 NOTEBOOK, 4MB RAM, 200MB HD, PCMCIA, DOS	FROM \$1,499.00
NCR 486SL ACTIVE COLOUR NOTEBOOK, 4/170 MB, PCMCIA	FROM \$1,499.00
COMPAQ 486SX/33 COLOUR NOTEBOOK, 4MB RAM, 170MB HD, DOS	FROM \$1,499.00
IBM LEXMARK 486DX/50 ACTIVE COLOUR NOTEBOOK, 4/170 MB	FROM \$1,599.00
COM WORKS 486DX/50 COLOUR NOTEBOOK, 4/250MB, PCMCIA + FAX	FROM \$1,699.00
NCR 486SL ACTIVE COLOUR NOTEBOOK, 4/170 MB, PCMCIA	NEW \$1,799.00
IBM LEXMARK 486DX/50 ACTIVE COLOUR NOTEBOOK, 4/250 MB	FROM \$1,799.00
COM WORKS 486DX/50 ACTIVE COLOUR NOTEBOOK, 4/250MB, FAX	FROM \$1,999.00
NEC VERSA/NCR 486DX/33 ACTIVE COLOUR NOTEBOOK, 4/180MB	FROM \$2,399.00
AMBRA 486DX/475 COLOUR NOTEBOOK, 4/340MB, SOUND, PCMCIA	FROM \$2,399.00
NCR 486DX/475 COLOUR NOTEBOOK, 4/350MB HD PCMCIA	FROM \$2,499.00
NEC VERSA 486DX/40 ACTIVE COLOUR NOTEBOOK, 4/340MB HD	FROM \$2,799.00
NEC VERSA/NCR 486DX/33 ACTIVE COLOUR NOTEBOOK, 4/180MB	NEW \$2,799.00
TOSHIBA T2400CT ACTIVE COLOUR NOTEBOOK, 8/250MB, SCSI-2	FROM \$2,899.00
DESKTOP & ACCESSORIES	
PACKARD BELL 9600 FAX MODEM	NEW \$49.00
14.4 POCKET FAX MODEM	FROM \$79.99
COMPAQ PCMCIA FAX MODEM	NEW \$79.00
IBM LASER QUALITY NOTEBOOK PRINTER	FROM \$99.00
COLORADO JUMBO 250MB TAPE BACKUP UNITS	FROM \$119.00
NCR 486SX DESKTOP, 4/170MB HD, DOS + WIN	FROM \$499.00
IBM PR2 386 DESKTOP, 4MB RAM, 80MB HD, VGA + FAX	FROM \$399.00
486 DX 66MHZ DESKTOP, 4MB RAM, 340MB HD, SVGA, DOS + WIN	FROM \$799.00
DIGITAL EQUIP 486DX 66MHZ 8/540MB HD, SVGA	FROM \$1,199.00
GATEWAY PENTIUM/66, 8/540MB, DOS, WIN, CDROM, SVGA	FROM \$1,799.00

LIMITED QUANTITIES AVAILABLE. PRICES SUBJECT TO CHANGE.

2601 MATHESON BLVD. EAST, UNIT 6 MISS., ON (905) 602-6077
5320 FINCH AVENUE EAST, UNIT 6 SCARBORO, ON (416) 609-2655

Weaving Your Own Web Site: Part II

Netscape-isms

BY KEITH SCHENGILI-ROBERTS

By now you have mastered some of the basics of HTML, and are looking to further refine the code for your Home Page. You have no doubt also discovered the severe limitations of HTML, but have come to appreciate its flexibility too. You are ready to enhance your Home Pages, and want to use the Netscape extensions you've heard about.

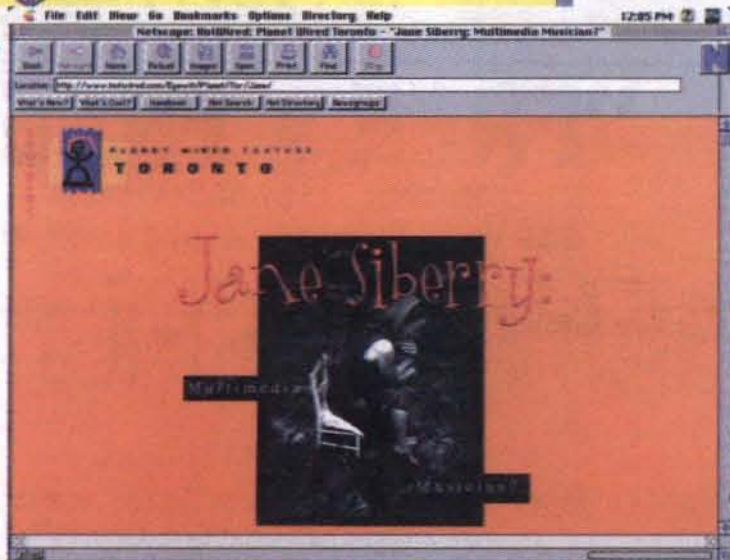
Netscape Communications included extensions to the basic HTML set of tags with the release of their first Netscape Navigator Web browser, and with the release of Netscape 1.1 have added the ability to add backgrounds and tables, and embed documents in Web pages. This article covers many of the major HTML tag extensions and changes introduced by Netscape Communications, but for a full list of some of the minor changes, try going to one of Netscape's many pages on the topic at: http://home.netscape.com/assist/net_sites/html_extensions.html.

HTML Standards

Currently, the majority of the Web browsers use the HTML 2.0 specifications outlined by the Internet Engineering Task Force (IETF). The IETF is an international standards body which has the task of describing and defining the ways tags should work for all Web browsers. Not only do they have to take into account new and desirable HTML tags, but they also have to deal with issues relating to compatibility with previous HTML specifications and relating new tags to other standards like the Standard Generalized Markup Language (SGML) — of which HTML is considered a subset.

There are also considerable international considerations to be factored in that will allow browsers to correctly interpret international character sets, such as Japanese. These considerations, and the inevitable sloth-like nature of international bureaucratic organizations, have meant that progress on the proposed HTML 3.0 specifications has proceeded slowly. (If you are interested in finding out more about the HTML 3.0 specification, check out: <http://www.w3.org/hypertext/WWW/MarkUp/MarkUp.html>).

Not everyone is willing to wait forever for the IETF to make up its mind on new specifica-



Learn how to add background colors to pages to grab your reader's attention.

Part I of this article appeared in our May issue. This piece was originally scheduled to run last month, but was not completed in time, due to unforeseen appendicular circumstances encountered by the author. — Ed

INTERNET CONFUSION NO MORE

Still confused or overwhelmed about the INTERNET.
Still not quite sure of where to start or how to navigate the information superhighway

We have some great news for you!

To celebrate the opening of our 'state of the art' INTERNET training school, we cordially invite you to attend one of our courses.

**INTERNET TRAINING
ABSOLUTELY FREE!!**

for a limited time only

We will provide the missing link for computer owners who want to immediately access the INTERNET without the frustration of trial and error. The courses are designed and conducted by INTERNET experts and guarantee that every student no matter how inexperienced will be 'surfing the net' before the end of class. Each student is provided with a computer for hands-on instruction. Whether you are novice, intermediate or advanced; you will certainly benefit from these courses.

These three hour courses include a course workbook, PPP, SLIP, E-Mail, FTP, Telnet, Mosaic, Archie, Ping, Finger, Talk, Netscape plus other valuable information and navigating techniques.

CONVENIENTLY HELD ON EVENINGS AND WEEKENDS - TO RESERVE YOUR SEAT CALL:

(416) 756-2000

150 CONSUMERS RD. SUITE 500 TORONTO, ONTARIO M2J 1P9
(HWY. 404 AND SHEPPARD AVE. EAST)



tions for HTML tags, and Netscape Communications in particular is pushing ahead with their own standards.

When using Netscape tags, remember that not everyone uses Netscape as a browser. While Netscape Communications is by far the most popular Web browser — used by an estimated 70 percent of all Web users — it is not used by everybody. That means when you use Netscape tags in your Web documents, a significant number of people who will be viewing your Web pages will not see what Netscape users see.

In most cases the differences are minimal and the browser will simply not display the desired effect, but the viewer will still be able to read your Web page. It is always a good idea to read your Web pages against at least a couple of Web browsers to see how they will appear to different viewers.

Text Formatting Tags

The text formatting tags in Netscape are the easiest to use and understand. The font size tag allows you to change the size of the font being displayed on-screen. This tag behaves similarly to the header (i.e. <H1> ... </H1>) tags in the regular HTML specification, that allow you to change the size of a font that it encloses in a header.

Unfortunately, the header tags also introduce a large separating space above and below the line designated as a header. This is how headers are supposed to work in the typographic world, but if all you intend to do is to emphasize some text, the annoyingly larger header spacing above and below the text can ruin the effect you are trying to get. The Netscape font size tag is probably just what you are looking for.

The font size tags work in a more intuitive fashion than the header tags. The smallest header set of tags begins at <H6> ... </H6> and goes up to the largest header <H1> ... </H1> set of tags. The font size tags operate in the opposite manner, with roughly equal to the size of the "regular" text on your Web document, while displays a much larger font. Close off each font size tag with an end tag.

Unlike the header tags, you can nest the font size tags effectively in your text. If you try to use more than one header tag in a line of text, each string of text within the header will be displayed on a different line. This makes for a pretty ugly Web page.

You can nest any number of font size tags within your text — even within a single word — while keeping everything on the same line.

Remember that while you can specify the size of the font displayed on the viewer's screen, you cannot specify the type of font displayed, as this setting is controlled exclusively by the viewer.

This is in keeping with the general rule that HTML should determine the general structure of a document, but not its specific layout. If you were able to specify the specific font that a document uses, a viewer who doesn't have that font on their system would have serious problems viewing your Web document.

One of the simplest Netscape tags is the center tag. It centers text on a page, relative to the viewer. Used sparingly, it is a very effective tag, and can definitely enhance the design of a Web page. Another simple Netscape tag is the blink tag, which causes text to blink on and off.

Not everyone in the Web community appreciates this particular tag, and it does tend to get annoying very quickly when over-

used on a page. (Hint for Netscape users: change the Blinking option in your NETSCAPE.INI from "Yes" to "No" to permanently disable the function of the blink tag on your browser). Both the center and the blink tags follow typical beginning- and end-tag rules. For example, if you want to center a line of text on the page, just type <center> text </center> in your Web document.

What's Behind the Background

One of the most significant tag additions are the extensions added to the standard Body

tag, which allow you to add a picture in the background, change background color, and specify the color of text on your Web pages.

Add the Background extension to your Body tag at the beginning of a Web page to place a background image behind the text. Add the reference of the picture's URL, and the image will then be loaded and tiled on your Web page. A typical use of this tag looks like this:

```
<BODY BACKGROUND="picture.gif">
Rest of the Web Page </BODY>
```

The image specified in "picture.gif" would be retrieved and tiled behind the text of the rest of the Web page. The URL specified does have to be local to your Internet Service Provider — it can be located off site. When you specify an image file to be used in the background tag, make sure it is not too large — before Netscape can display the Web page, it has to download and process the whole background image file. The smaller the image, the shorter the delay for displaying the Web page.

CRS ONLINE FRONTIER

THE INTERNET IS JUST THE BEGINNING

EASY ... POWERFUL

- ◆ Installs in minutes like any other Windows application
- ◆ Get a head start with Frontier's built-in list of suggested sites
- ◆ Click and go to Paris, the NASA archives, the Library of Congress, etc.
- ◆ View weather maps, the Mona Lisa, and the Canadian constitution with Frontier
- ◆ True Internet connection for full Internet access
- ◆ Offline capabilities — mail is automatically transferred and databased at login
- ◆ Multitasking
- ◆ 28,800 bps V.34 modems
- ◆ All Internet tools in one package (FTP, Gopher, Telnet, WWW, News, Mail, etc.)

Call CRS Online for a free information package on Frontier
1-800-563-2529 • Tel: (416) 213-6000 • Fax: (416) 213-6038

CRS ONLINE Ltd. 12 Steinway Blvd. Unit 24, Etobicoke, ON M9W 6M5

Database and Programming Courses

- **Visual Basic 3.0 - Windows Programming**
 - Introductory
 - Advanced
 - Client Server (ODBC)
- **Access 2.0** intro to advanced
- **FoxPro 2.6** intro to advanced
- **SQL & Relational Database Design**
- **Microsoft Office**

We provide quality training courses geared to either the end user or programmer. Unlike many training providers our courses are focused on databases and Microsoft programming products. Professional instructors and course material.

For information, call: (416) 381-4063

Aisys Technologies Inc.
 1370 Don Mills Rd. Suite 300 Toronto, Ontario M3B 3N7
 Phone (416) 381-4063 Fax (416) 441-0591

This particular tag has already been defined under the current draft of the HTML 3.0 specification, so you can be relatively certain that this tag will become an accepted standard. Significantly, this tag can also be read by the latest version of NCSA Mosaic, a rival browser to Netscape.

If you don't want to specify an image file to change the background color of your Web page, you can use the background color tag in Netscape. It also works in conjunction with the standard Body tag, and looks like this:

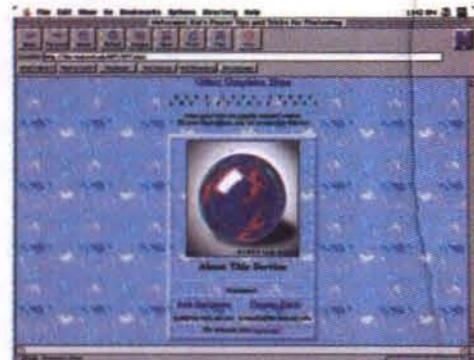
```
<BODY BGCOLOR="#rrggbb"> Rest of the Web Page </BODY>
```

The "#rrggbb" specifies the background color by the amount of red, green and blue to be mixed together to produce the desired color. Unfortunately, the color values have to be specified by their hexadecimal equivalents. This generally means that you'll have to do some experimentation to get the color you want, but here's a brief color guide to help you:

Color Hexidecimal Equivalent

White	#FFFFFF
Black	#000000
Grey	#C0C0C0
Red	#FF0000
Blue	#0000FF
Green	#00FF00
Yellow	#FFFF00
Magenta	#FF00FF
Cyan	#00FFFF

A fairly comprehensive list of background color values can be found at: <http://www.infi.net/wwwimages/colorindex.html>.



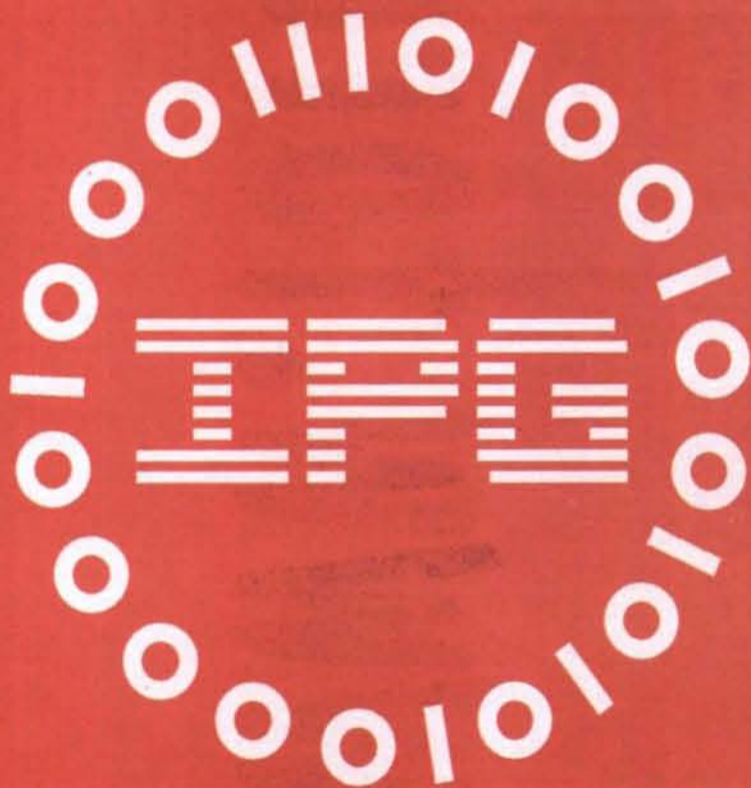
Combining background color and picture with a table.

If you are changing the background color of your Web page, you may also want to change the color of the font used on your page so that people can read your text. If you specify a black background without changing the color of your text, you are going to end up with an unreadable, black Web page. The Text Color attribute uses the Body tag, and like the Background Color tag, specifies the color of the text by using a hexadecimal equivalent. A combined Background Color/Text Color tag looks something like this:

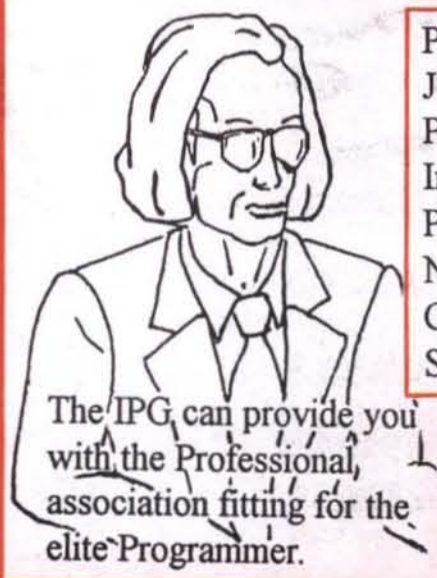
```
<BODY BGCOLOR="#000000" TEXT="#FFFFFF"> Rest of the Web Page </BODY>
```

In this case, the background color is black, with white text.

Using similar methods you can also specify different colors to be used for the types of links displayed on your Web page. So far this particular Netscap-ism doesn't seem to have really caught on, but is necessary if



FULL INTERNET ACCESS



- Professional Index
- Job Referrals
- Prof. Code of Ethics
- International Registry
- Prof. Certification
- Networking
- Career Development
- Seminars & Workshops

The IPG can provide you with the Professional association fitting for the elite Programmer.

On-line (905)824-4731
 Membership (905)824-7947
 1-800-318-0745

The International Programmers Guild

**YOU'VE TRIED ALL THE REST
 CONNECT WITH THE BEST!**

newsgroups
 homepage design
 world wide web
 e-mail
 gopher
 archie
 telnet
 ftp
 mud

CALL: 416-291-3643

Email: info@unicom.org
 28.8k V.34 Lines
 Modem: (416)291-4705

UNICOM
 ONLINE
 The Internet Provider

Magical Secrets
 The Incredible Virtual Magic Shop!

Explore our wonderful world of conjuring & illusion at the world's first webstore devoted to the Magical Arts:

<http://www.magical.com/secrets>

**INTERNET ACCESS
 CONNECT TO THE INTERNET**

- Low cost connection
- Training
- First 10 hrs free
- Dial up & dedicated access

Business Users • Use the net to advertise your products/services (Web presence).
 • For Novell Sites - we can connect your LAN to the Internet at lowest cost.

3i1 (416) 361-1836 • FAX (416) 361-1551

you created a Web page using a background color (like red or purple) which is usually reserved for indicating a link to another page. For more information on the usage of background tags in Netscape, check out Netscape's own Web pages on the topic at: http://home.netscape.com/assist/net_sites/bg/index.html.

Designing an effective background for your Home Page is not as easy as it might first appear. While implementing the actual background tag is fairly simple, actually getting your page to look good and remain readable is not. Some people have been known to go overboard, and have used colors or images that make the text on their Web pages unreadable, and look like a dog's breakfast.

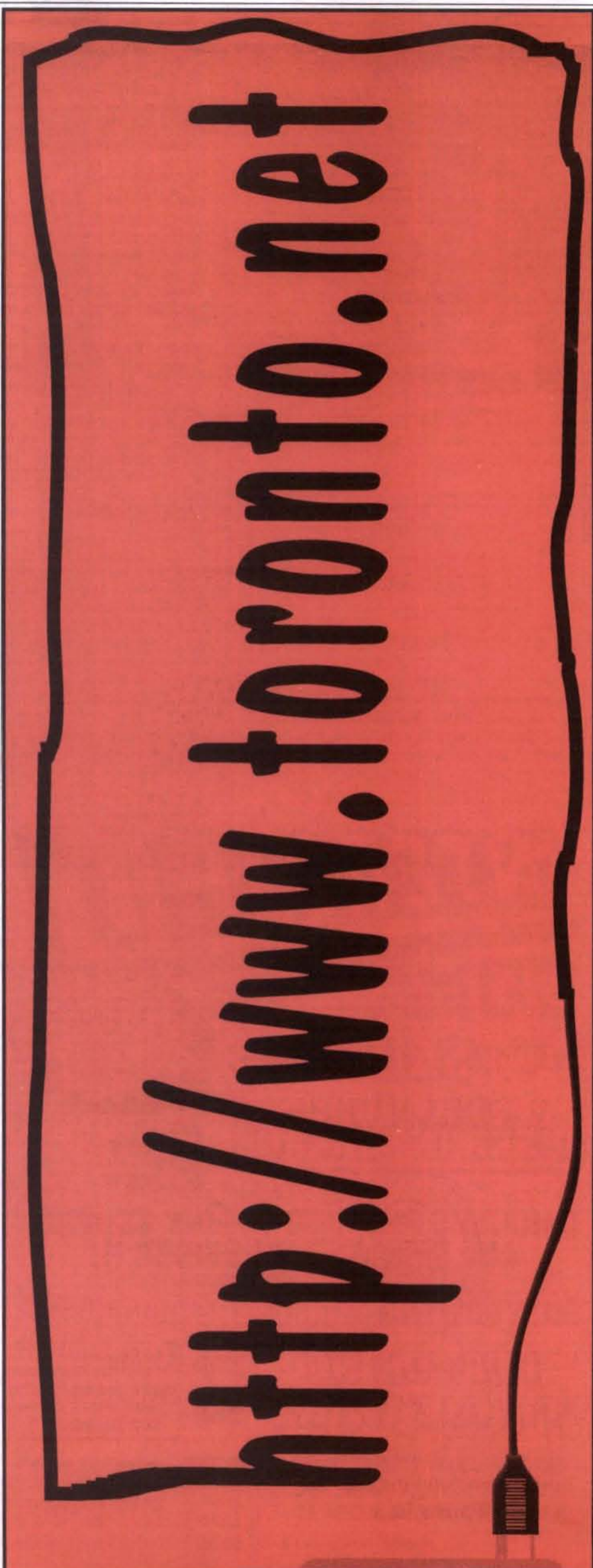
If you want to start using these tags, make sure you experiment with different color schemes first. It is generally a good idea to use completely different colors for the background and text color tags. While a red background with pink letters may look fine on your monitor, chances are it will be unreadable on somebody else's monitor. It is best

not to get carried away with these tags, and to use wild color schemes only when they fit in with the content of your Web page.

Virtual Tables

Another significant addition to Netscape 1.1 was the introduction of a set of tags that let you put tables on your Web pages. The set of table tags is relatively easy to master, and takes the guesswork out of creating good-looking tables. Previous to the advent of these tags, the only way to create a table on your Web site was to clip and embed a large image of a table taken from a spreadsheet program, or patiently create a table using a whole bunch of dashes.

All tables in Netscape have to be enclosed by the <TABLE> ... </TABLE> set of tags. If you want borders for your table (and most people will) alter the beginning tag so that it reads <TABLE BORDER> instead. Next, you have to specify the beginning of the first table row with the <TR>. You then enclose individual table data within a set of table data (<TD> ... </TD>) tags. Once you've inserted all of the table data for that row, end



**ALL THE STATS, ALL THE SCORES,
ALL THE STORIES, ALL THE TIME!**

SPORTSNET
On-Line Services Inc.

• **SPORTSTICKER**

North America's leading instant sports news, stats & information service



• **REUTERS**

World Soccer & International Sports Report



• **TORONTO MAPLE LEAFS**

News, pre-game notes, stats, photos, bio's..



• **TORONTO ARGONAUTS**

Press releases, stats, photos, bio's, records..

• **MOLSON INDY**

Team and driver profiles, photos, press releases, ticket info. & history..



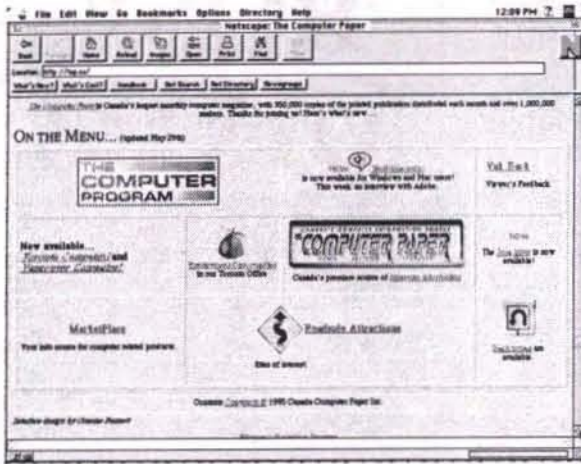
• **COMING SOON...**

Toronto Blue Jays, Bell Canadian Open, & the du Maurier Ltd. Open!

• **WINDOWS & MACINTOSH**

Graphical user interface, all lines connect up to 28.8 baud!

FOR YOUR FREE TRIAL CALL TODAY
416-223-2250
MODEM LINE ~ 416-223-2463



The Computer Paper Home Page. Here is an example of a table on a web page

the row with the end row tag (</TR>). A table composed of two rows and columns would look like this:

```
<TABLE BORDER>
<TR>
<TD> Data #1</TD><TD> Data #2 </TD>
</TR>
<TR>
<TD> Data #3 </TD> <TD> Data #4
</TD>
</TR>
</TABLE>
```

When this is viewed by somebody equipped with Netscape 1.1, they will see a neatly composed table on their screen. Keep in mind that not everybody uses Netscape. In this case, anybody else viewing this table will only see a jumble of data on-screen.

text within cells. For more information on these tags, check out the extensive Web pages Netscape has created on the subject at http://home.netscape.com/assist/net_sites/tables.html and the table sampler at http://home.netscape.com/assist/net_sites/table_sample.html.

Embedding — OLE!

Another enhancement in Netscape 1.1 is the ability to embed OLE documents in your Web pages. So how does this differ from making a link to a file that can simply be downloaded? By double-clicking on the OLE embedded object, it will actually launch the application associated with the file on the viewer's machine.

The Embed tag is very simple to use: simply reference the filename source you wish to embed, like this:

```
<EMBED SRC="myfile.txt">
```

The viewer will be given ample warning that an embedded file is contained on the page. The first time they ever run across such a file on a Web page, a big warning sign will come up, and the actual link will stand out as a small graphic sheet of paper bearing an icon of the program it is associated with. It will then run the program that the file is associated with on the viewer's computer.

So far this particular tag hasn't gained much popularity and it is rarely seen on the Web — for good reason. First, you have to assume that the person has the application that the file is associated with on their system. If they don't they will simply see a "broken graphic" icon when they view the page. Since OLE is a Windows-based function, anybody using a non-Windows version of Netscape will not be able to open the object. Paranoid Netscape users may not get past the dire warning screen Netscape presents when coming across an embedded file, as it warns (correctly) that launching an embedded file could launch a virus on your system, or cause Windows to crash.

Despite this, there are advantages to using embedded files on your Web pages. If you embed an object associated with a program found on most users' systems (like a bit-mapped image file, or an audio player typically used in conjunction with Netscape) you can really spice up your Web pages. This may also point the way in which new features will be added to future browsers.

The Future of Netscape-isms and HTML?

While the IETF continues to hash out the specification for HTML 3.0, Netscape Communications keeps planning to add new features for the next generation of their browser. Netscape Communications recently announced that they will be licensing Sun's Java programming language, which will provide new security features, advanced networking capabilities and the ability to run small programs written using the Java programming language.

It is likely that some of Netscape's tags will eventually be adopted into the official HTML 3.0 specification, but it is unlikely that they will all be accepted, which will reduce the longevity of any Web pages that make extensive use of Netscape tags. However, what Netscape has going for it is their overwhelming acceptance in the Web browser market.

It remains to be seen whether international standards bodies, like the IETF, or market forces will decide the ultimate fate of the HTML standard. However, it is safe to say that the longer the IETF takes to develop the HTML 3.0 specification, the less relevant it will be, as other software manufacturers begin adopting the Netscape tags, and start to add refinements of their own. □

INTERNET

\$15 Full SLIP
Per MONTH
NO OTHER CHARGES

YOUR OWN ADDRESS

FREE
TRIAL
ACCOUNTS

FULL SLIP ACCESS
GRAPHICAL USER INTERFACE

MOSAIC
NETSCAPE
OS/2
& MORE !!

CANADA'S PREMIER ONLINE SERVICE AND INTERNET PROVIDER !!!

FIND OUT WHY OUR USERS LOVE US !!

FEATURING TRADE WARS

THE ABSOLUTE BEST
IN ONLINE GAMING
WITH THE LARGEST
TRADE WARS GAME
AND UNIVERSE !!

GOPHER, FTP, TELNET, TALK, WWW, ARCHIE, E-MAIL, IRC, NEWSGROUPS, & MORE !!

CALL: Using your modem
Set to 8,N,1
(416) 638-9797

ALL INFORMATION IS AVAILABLE ONLINE !! VOICE: (416) 638-8028


If It's Gimmick free, NO Hassle, Full Service Internet Access you seek...

TCN Systems Group Inc.

Low user to line ratio gets you on, and out on your schedule not someone else's. Outstanding personal support at our site(s) or over the phone at no extra charge.

Business services ranging from dedicated connection and web page authoring to a complete site server setup and installation.

Reliable and dependable systems giving you uninterrupted access via 28.8 connections. Rates for all budgets.



Providing UNIX OS support services, custom programming in a wide variety of disciplines since 1988.

Authorized SCO business products, BSDI UNIX and Progress Applications Partner.

Call 1-800-616-7716

Seek no further

HTML Improvement Needed

BY JACQUELINE EMIGH

NB — For commercial publishing to become more pervasive on the Web, HTML (hyper-text markup language) must be made "more robust," argues a spokesman for a company that makes online authoring software.

Right now, HTML is "everyman's markup language," says Kent Summers, director of marketing for Electronic Book Technologies (EBT). But, he adds, although HTML is relatively easy to use, it is unable, for example, to handle tables and equa-

tions, which SGML (standard generalized markup language) can do. (HTML is defined as an SGML application, or sometimes as a subset of SGML — Ed.)

"(HTML) formatting is 'fixed,' hard-coded to Web browsers. Commercial publishers don't like this because, to them, presentation is in many cases as important as content in differentiating their products," he asserts.

HTML permits only relatively small files, Summers says. To expand an electronic document, extra hyperlinks must be created, he added. "The effort required for maintenance can be rather daunting."

Recognizing that improvements are called for, a variety of forces are "pushing the HTML standard forward," including SGML Open, the World Wide Web Consortium, the Internet Engineering Task Force (IETF), and many individual vendors, he says. Now heading from versions 2.1 and

2.2 into version 3.0, HTML has complied with the SGML standard ever since HTML 2.0.

Meanwhile, he notes, customers of EBT's DynaText SGML authoring product are using EBT's new DynaWeb product to convert their structured SGML documents into HTML for use on the Web.

Novell, for instance, has employed DynaWeb to convert more than 1,000 pages of NetWare, UnixWare and NetWare SDK (software developers kit) documentation manuals from DocBook, an SGML DTD (document type definition), into HTML, according to Summers.

Novell's conversion process took four days, he says. Users can employ any Web browser to access content converted from SGML into HTML via DynaWeb. □

Contact: EBT, 401-421-9550

Commtalk

Continued from page 79

nately, being a member of Generation-X means my student loan wiped out any possibility of me obtaining a credit card. Right now, buying things online means Visa, Mastercard or get lost. This is bad business, since many people my age are the computer-literate, credit-lacking, would-be customers.

Along comes a Dutch company called DigiCash, which devised a scheme for doing financial transactions online. It works a lot like using an Interac debit card, except you don't need a card swiper, or even a card for that matter.

Here's how it works: you have a piece of software (which also happens to be one of those cool Netscape-capable doo-dads) that acts as your electronic wallet. You can take money out of your real bank account, and keep it in your wallet.

The bank generates electronic coins, which are downloaded into your computer using a public key encryption technique. Each coin, inside the encrypted packet, has a serial number, so coins cannot be copied, even if they are just a file.

When you purchase something online, your wallet pops up and you approve the transfer. The retailer then uploads the coins you sent to his or her bank, where they are decrypted and put into their

account. Simple. Secure electronic money transfer without cards of any kind. If you want the finer details of its working, check out <http://www.digicash.com>.

While Digicash isn't ready for market yet, sources say they're in the middle of negotiating with various banks who wish to adopt the scheme.

There are dozens of test sites currently accepting Digicash. Those who signed up were given \$100 in test money to go spend as they wished. One of the "cyber-shops" is an erotic gallery in Amsterdam which seems to be quite popular. They have various exhibits by different artists and photographers. You pay \$1 to enter each of them.

Hang on to your wallets, cyberpals. □

— TAKE — COMMAND of the INTERNET

With a FULL DAY,
HANDS-ON course for
only \$225.00
including UNLIMITED
SUPPORT!

Learn everything
from the WORLD
WIDE WEB to E-MAIL,
plus how to make
LONG DISTANCE calls
through the internet,
for FREE!

416-920-6982
NETWORK TRAINING SERVICES

NTS Training is our
middle name!
TORONTO

Do you offer hassle-free Full Internet Access?

At a reasonable rate?

What about technical support?

Will I get busy signals all the time?

How are your Business services?



Good Questions.

Good Answers. At TerraPort Online we want to make your Internet connection accessible, affordable and enjoyable. And we're here to help. Here's how:



- Full internet Access, Email and Usenet News
- Technical support for Windows, Mac and OS/2
- A Ten to One user to line ratio
- 28.8K modems on every line
- Business connections and Web Page services
- Discounts on Internet Classes

Good rates

Package	Monthly	Free Hours	Additional Hours
Investigator	\$0	none	70 cents
Explorer	\$5	10	50 cents
Individual	\$20	100	30 cents



It's time to call
TerraPort Online
Metro Toronto's complete Internet Solution

191 Ravel Road North York (416) 492-3050 fax: (416) 492-3255
Email info@terraport.net or visit <http://www.terraport.net> for information

ROSE MEDIA BBS

Your High-Speed
Access
to the Information
Super Highway

Set Your Modem to
8-N-1 and call

416-733-2285

Voice Line: 905-731-8805

**Don't Get Caught In The Web....
Use It To Your Business Advantage.**



**Put Your Business On The Internet's World Wide Web.
Call Us Today To Explore The Possibilities.**

idirect.com

(416)233-7150
email: comsales@idirect.com

A Division of **INTERNET & DIRECT**

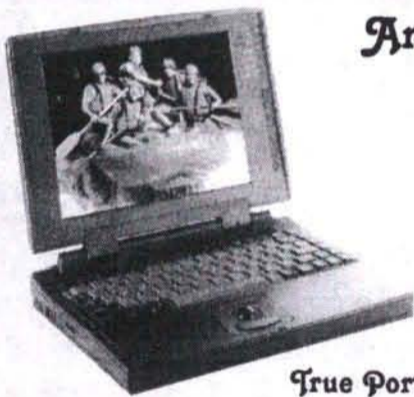
**JETBOOK
Symphony**

Do It...

Video Capture

MultiMedia
16-bit Sound

Local Bus Video
and Hard Drive



**Anywhere or
Anytime**

**You can even
do it with your
Video Camera!**

True Portable Freedom!

the **PORTABLE SPECIALISTS**
It's All We Do, that is why... We Do It Better!

Complete line of portable product and solutions, call for price list.

Canadian Distributor & Wholesaler of:

Parallel CD ROM
and Hard Drives

SMARTBOOK

JETBOOK

New Media PCMCIA

Touch Screen
upgrades

Limited Stock

Special

Smartbook (Sound) Mono: 33 / 4 RAM / 170 HDD	\$1795 ⁰⁰
Smartbook (Sound) DSTN: 66 / 4 RAM / 256 HDD	\$2695 ⁰⁰
Smartbook (Sound) Active: 75 / 4 RAM / 340 HDD	\$3995 ⁰⁰

Including built-in 16bit sound card and is upgradeable: 32MB RAM & 810MB HDD

Plus save an additional 8%, call for details!

Award winning notebooks and accessories:



Prices and availability may change without prior notice, pricing is GST out and FOB Richmond BC



Pacific Royal Enterprises Ltd.
#383 - 13988 Cambie road,
Richmond, BC, V6V 2K4
Tel:(604)279-8731 Fax:(604)279-8739
(800) JETTA - 1 - 2



*All logos and trademarks are registered trademarks of their respective companies.

Will Write For Food

Job Hunting On The Net

BY ROBERT EARLEY

It was a joke at the radio station where I worked half time as a news reporter and half time writing commercials. I would push my chair and typewriter from one office to the other down the hall crying out "Will write for food, writer for hire."

And then one day, a hand in a corporate head office thousands of kilometres away, poised over a list. A decision was made. Striking Robert Earley from the roster was a way to increase profits in a corporate reshuffle.

Now I really was looking to write for food.

After a few days of phone calls, re-drafting my resume and reading newspaper help wanted ads, I decided to see what the Internet could do for me.

I had surfed the Net. Been to Australia, Japan and criss-crossed Europe. Looked for relatives and friends. But I had never really done anything with this vast source of information. It had to be good for something, and I was about to put it to the test — could I find a job using the Internet?

I began by searching the ab.jobs (Alberta) and can.jobs (Canada) newsgroups on my local server. With a little more looking I found misc.jobs.misc, misc.jobs.offered.entry, sci.research.careers and sci.research.postdoc.

I noticed right away that there sure are a lot of jobs for people with computer programming knowledge. Duh-h-h!!! Surprise! Surprise!

The largest users (in my unofficial survey) on the Net are university computer departments and computer companies. That might explain why most people posting help wanted ads are looking for computer specialists of one sort or another.

But there are other sources with more diverse leads. On the World Wide Web, a good place to go job hunting is Yanoff's Connections under "employment." There's a whole page of sources, ranging from general employment to specialized areas such as Academic Position Network and MedSearch

America. And of course, more computer jobs. But as of this writing they are mostly American jobs.

You will also find several sources in Yanoff's Connections that will do word searches for a job title or other keyword. (No hits, by the way, on reporter.)

The best appears to be Online Career Centre. You can search the United States by region, state and city. They have international listings, including a separate section for Canada.

And there's also Career Magazine which has a searchable careers database composed of job postings from major Internet jobs newsgroups.

But back in Canada. What about the federal government, Human Resources and Development Canada? Surely they would have a listing on the Net of all the jobs available in this country. Well, let's see. News releases, fact sheets — but no jobs. And what about provincial governments? Very few list civil service jobs.

Some freenets have employment listings. And many university career centres post job listings on their gophers.

The biggest and most versatile employment listing I found on a freenet was on the Victoria Freenet. Some of the sources — Career Magazine and Online Career Centre — are ones also found on Yanoff's Connections. There is a large segment of British Columbia jobs, both public and private sector, on the BC Employment and Job Opportunities Gopher. And there's also the Canadian Job Bank which is searchable using keywords.

But overall it seems most freenets have not caught on as a good source for both employers and people looking for jobs. The Edmonton Freenet recently had one posting, and the application deadline had already passed.

To me a freenet would be the ideal and logical place for an employer to find local workers.

Can I Drop Off My Resume?

There are also newsgroups where you can post your resume. One is misc.jobs.resume where I have mine posted. And check Yanoff's Connections.

In some locations, such as the People Bank, you can post for free, with employers paying the tab. Others charge you for making your resume available on their service.

ONLINE SPORTS

- 24 Hour News Wire Via Satellite
- Fantasy Sport's Leagues
- Stats, Injury Reports, Transactions
- Fido, UseNet, GamblersNet, Nanet & More

416-928-3339

the Wire

Your Windows & Mac Specialists!

GRAPHICALLY INTERFACED INTERNET From 44¢/hr.

WE PUT OUR MONEY INTO EQUIPMENT AND SERVICE — NOT INTO HALF-PAGE ADVERTISEMENTS

Join Us to Build Your Part of the World-Wide-Web

(416) 214-WIRE

It's not uncommon to find several resumes posted in the jobs offered newsgroups. Such inappropriate postings can be found in most newsgroups, and are a topic for constant debate.

However, in this case the repercussions may go beyond flame mail. Posting your resume on a positions-available newsgroup may not make you look too bright. And you might lose a potential job. As with any newsgroup, find and read the file that explains what you can and should not post on the newsgroup.

Conclusions

After a week of searching for a job I reached several conclusions. As mentioned earlier, there are lots of vacancies for people with computer backgrounds.

And there are plenty of offers that could be scams. How about "Earn \$50,000 a month...send \$10 for more information." My favorite is "make as much money as a doctor." These get rich quick offers are another topic of much debate on the job newsgroups.

The shortage of non-computer job listings, I believe, is simply because many employers either don't have access to the Net or don't realize it's an opportunity to find good, qualified people.

But, as with most of what is happening on the Internet, the whole area of matching an employer with an employee is still evolving. As more non-computer companies come on-line I'm sure they will see the potential of using the Net to find workers.

Meanwhile, I'm still surfing the Net with my resume in hand, willing to write for food. ☐

Robert Earley is a freelance writer in Alberta. He can be reached at earlr@augustana.ab.ca

The Best Service & Great Prices !!!

LANCE COMPUTERS

• **Communications** • **Internet Services** • **Accessories**

(905)566-8325

2325 Hurontario Street, Mississauga, Ontario L5A 4C7 - Unit 18A

INQUIRIES (905) 566-8325
 OUT OF TOWN ORDERS 1(800) 661-2319
 CUSTOMER SERVICE (905) 566-0031

Business Hours: 10 am to 7 pm Mon to Fri & Sat till 6 pm
 Prices are cash discounted
 Subject to change without notice
 MasterCard/American Express Accepted



(if you can read this newspaper, you can use the internet)

We'll change the way YOU view the Internet
 THE FASTEST WITH CLEANEST LINES
 Don't get wired until July 95'

HARD DRIVES

IF YOU DON'T SEE THE HARD DRIVE YOU WANT HERE CALL FOR A PRICE QUOTE



SEAGATE
 3660A IDE 528MB.....\$289
 3550A IDE 452MB.....\$279
 IDE 1.08GB.....\$449

WESTERN DIGITAL
 540MB IDE 13MS.....\$305
 850MB IDE 12MS.....\$375

MAXTOR
 540MB IDE 12MS.....\$285
 850MB IDE 12MS 64K.....\$385

CONNOR DRIVES
 850 IDE.....\$375

QUANTUM DRIVES
 540 IDE 11MS.....\$275

VESA-LB VIDEO CARDS

TRIDENT ISA 1MB SVGA... \$ 82
 CIRRUS LOGIC 1M-2M..... \$119
 (32 BIT ACCESS/1280X1024/2MB)
 ATI PRO TURBO 2MB OEM.....\$399
 ATI ULTRAPRO 2M VLB OEM\$249
 ATI XPRESS'N 2MB OEM.....\$299
 ATI VLB XL24.....\$199
 #9 GXE 64 1MB PCI.....\$199
 MATROX MGA/2.....\$525

CONTROLLERS

AT IDE VLB SUPER I/O..... \$ 29
 E-IDE VLB 2s/2p I/O..... \$ 79
 HIGH SPEED SERIAL Single \$ 29
 IDE VLB 2X16550 1P..... \$ 59

ADAPTEC
 1542C KIT SCSI.....\$369
 1542C BOARD SCSI.....\$279
 2842 VLB SCSI KIT **FAAST**.....\$348
 2940 PCI SCSI KIT.....\$348

ADVANSYS
 PCI BUS MASTER SCSI KIT LIFETIME WARRANTY.....\$278
PROMISE
 EIDE 2300 PLUS.....\$ 89

KEYBOARDS &

BTC ENHANCED 101 KB.....\$ 24
 FUJITSU JUNIOR PRO.....\$ 39
 FUJITSU PROFESSIONAL.....\$ 77
 KEYTRONIC 2000 101KB.....\$ 49
 Z-NIX SERIAL MOUSE 3BTN \$ 19
 MS V2.0 ERGO SERIAL MOUSE \$ 49
 MS V2.0 ERGO PS/2 MOUSE.. \$ 49

MONITORS

SVGA 17" 1280X1024 N.I. LR\$939
 SVGA 15" 1280X1024 N.I. LR \$419
 SVGA 14" 1280X1024 N.I.....\$364
 SVGA 14" 1024X768 N.I.....\$319
 SVGA 14" 1024X768 INT.....\$299
 VGA 14" PAPER WHITE.....\$149

MOTHERBOARDS

INTEL PENTIUM PCI/ISA 256K 90MHz WITH CPU \$1399
 ACER P/75/90/100 MB 256K C/W ENH. I/O..... \$ 349
 PINE DX4 VLB GREEN 128K 72PIN..... \$ 159
 GIGABYTE 486DX4 3VLB 128K 72PIN..... \$ 189
 486DX4 3.3V/5V VLB MAINBOARD 128K..... \$ 154
 INTEL 486DX-xx AMI 256K 72 PIN OEM..... \$ 199
 ASUS 486DX-xx AWARD 256K EISA/VLB 30PIN.. \$ 299

MOTHERBOARD SPECIAL

MAIN 486DX , 3 VLB, 7 ISA
 AWARD/AMI BIOS, 0 K CACHE
\$ 119
 72PIN 4MB MODULE \$ 200 WITH MB PURCHASE
 72PIN 8MB MODULE \$ 420 WITH MB PURCHASE
 72 PIN 16MB MODULE \$ 680 WITH MB PURCHASE

CD-ROMS & TAPE DRIVES

TEAC QUAD (4X) CD-ROM.....\$ 279
 MITSUMI (2X).....\$ 219
 PANASONIC (2X).....\$ 179
 SONY (2X).....\$ 199
 NEC SCSI 3X SPIN.....\$ 649
 OMNI 2X C/W PHOTO STYLER.....\$ 299
 4mm DAT 2 GIG SCSI INT.....\$ 898
JUMBO 350 (COLORADO).....\$ 299
 IOMEGA TAPE 250.....\$ 166
 IOMEGA PARALELL 250.....\$ 399
 COLORADO TRAKKER 250.....\$ 499

SOUND BOARDS

GRAVIS ULTRASOUND.....\$ 169
 GRAVIS ULTRASOUND MAX.....\$ 244
 GALAXY NX-PRO 16 BASIC.....\$ 189
 ATI VGA STEREO F/X 1024X768 VIDEO with sound & mouse.....\$ 199
 SOUND BLASTER 16 CD ASP.....\$ 179
 SOUND BLASTER 16 MCD ASP.....\$ 289
 SOUND BLASTER CD OEM.....\$ 137

PRINTERS & MODEMS

HP DESKJET 560C.....\$ 675
 HP LASER 4L.....\$ 979
 HP LASER 4P.....\$1429
 CANON BJC4000.....\$ 499
 US Robotics 14.4 Fax/Modem.....\$ 149
 US Robotics 28.8 V.34 S/R INT.....\$ 329
 ZOL. 14.4 INT S/R FAX/DATA.....\$ 74
 ZOL. 14.4 INT S/R VOICE FAX.....\$ 144
 GVC 14.4 INT S/R VOICE FAX DATA.....\$ 159
 GVC 14.4 EXT.....\$ 159
 GVC 28.8 INT/EXT. V.34 S/R FAX.....\$ 279

NETWORK CARDS & ACC...

WIN WORK GROUPS STARTER KIT.....\$ 279
 LANTASTIC 6.0 STARTER KIT.....\$ 289
 NOVELL CERTIFIED NE2000 COMBO JUMPERLESS CARD.....\$ 55
 TERMINATORS 50 OHm.....\$ 4.99
 BNC CONNECTORS.....\$ 4.99
 25' COAX CABLE C/W BNC.....\$ 17
 COAX CABLE CUSTOM CUT LENGTHS \$.30/FT
 WIN WORKGROUPS 3.11 OEM.....\$ 99
 INTEL ETHEREXPRESS 16BIT.....\$ 159
 D-LINK 16 BIT COAX D.....\$ 99

SPECIAL PRICES!

BASE SYSTEMS®

MINITOWER/DESKTOP CASE, AT IDE VLB SUPER I/O
 3.5" HD, 101 KEY ENHANCED, VLB 1MB SVGA,
 .28 14" SVGA N.I., 540 MB HARD DISK, 4 MB RAM

486 DX2-66 \$ 1,199

486DX4-100 \$ 1,349

UPGRADE TO 17" SVGA ADD \$ 500

WHILE QUANTITIES LAST CASH & CARRY ONLY

FREE (\$ 110 VALUE)

STACKER 4.0 FOR WIN/DOS

with the purchase of a Hard Drive or System
 WHILE QTY'S LAST

SPECIALS! WHILE QTY'S LAST!

CONNER 1GB SCSI II 5 YR WARR. \$ 699

FUJITSU 1GB FAST SCSI II \$ 709

IBM 1GB FAST SCSI II \$ 709

4MM 2GB DAT DRIVE \$ 898

TOSHIBA 4X CD-ROM KIT
 TRUE 16BIT SOUND - 4 CD-TITLES
 ENCARTA 95, GOLF.....\$ 434

UPGRADES! WHILE YOU WAIT!

250MB TO 350MB TAPE DRIVE
 UPGRADE KIT C/W 2XL TAPES \$ 89

Back up your Hard Drive to
 DAT or QIC Tapes to CD \$ 69
 SOME RESTRICTIONS APPLY



\$ 119
PLANTRONICS
PLX-400

Call for complete
 Commercial Grade
 Headset Tops
 & Adaptors



Portable Hard Drive



- Keep the current HD in the system
- Connect to the printer/parallel port
- Configure as primary or secondary HD in the system
- DOS & Windows compatible
- Made in the USA

Portable Hard Drive

Transporting & data sharing between computers
 Configured as primary or secondary hard drive
 Go through printer port 170MB/540MB \$449/579
 Chain up to 4 units 730MB/850MB \$650/695
 Made in USA 1.08GB/1.20GB \$850/895

Bestop Computers

4058 Cambie Street

Vancouver, BC V5V 2X8

Phone: (604) 879-4688 Fax: (604) 879-0223
 COD Only

From Apple...

...to Zenith!

All brands, all models!
 Portable Power from
 Canada's number one
 source of quality
 replacement batteries.

BATTERY NETWORK
 POWER THAT GOES THE DISTANCE...

BATTERY NETWORK (CANADA) INC.,
 290 Datura Place,
 Vaudreuil (Quebec) Canada J7V 7N3
 Tel.: (514) 651-3366/1-800-431-1220
 ***Fax: (514) 651-6830

\$16 /month
90 hours*



e-mail
www
news

ALL SYSTEMS GO
Internet Connections

Everything You Want
On the Internet

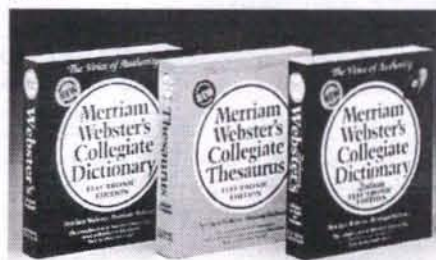
- Personal Subscriptions*
- Business Subscriptions
- World Wide Web Presence

Call All Systems Go:
(416) 961-7399

software
graphics
music
alternative
discussion

for info:

Merriam-Webster Dictionary/Thesaurus CD Ships • MerriamWebster is shipping the first CD-ROM version of its Collegiate Dictionary, Tenth Edition and Thesaurus as a hybrid Macintosh/Windows product. The company also recently introduced an online dictionary reference and information service for America Online.



Web Dating Through LoveNet • Knowledge Computing, an information technology publisher in the UK, has branched out onto the Internet with LoveNet. Ian Tresman, the company's managing director, claims that the set of World Wide Web pages represent the UK's first computer dating service on the Web. LoveNet, as the service is known, is located on a set of Web pages on the Direct Connection's Internet service. The URL is <http://www.knowledge.co.uk/xxx/lovenet> and, according to Tresman, includes a good selection of graphics and humor, along with a series of dating ads.

IBM Canada Buys Footprint Software • IBM Canada Ltd. has announced its acquisition of Footprint Software Inc., a Toronto-based software company whose product line includes banking software and an integrated software package that ships in IBM's OS/2 Bonus Pack. Terms were not disclosed.

Games For Girls • While multimedia developers compete to offer 12 to 16-year-old boys the latest and fastest violent games, Patricia Flanigan is turning 180 degrees to stand-up and say it is time for young girls to have multimedia titles developed expressly for them. Games for Her, a division of American Laser Games, intends to develop an entire line of multimedia software for teenage girls.



"McKenzie & Company," the first title from Games for Her should be available this fall. To make sure she is covering all the bases, Patricia Flanigan, the visionary for Games for Her, says this new title will be available for IBM/compatibles, Apple Computer Macs, 3DO consoles, and the new Sony PlayStation.

Law, Order and Espionage • The US National Security Administration (NSA) and Federal Bureau of Investigation (FBI) want to be able to read people's mail in cyberspace, ostensibly to enforce the law. That's what they're telling us, at least, but documents obtained through the US Freedom of Information Act reportedly make it clear that law-enforcement is far less interesting to these government bureaucracies than good, old-fashioned espionage.

Anti-Microsoft Group To File Consumer Fraud Charges • A fledgling US consumer lobby group has announced it will file consumer fraud charges against Microsoft Corp. in all 50 states in an effort to have the sale of Windows 95 banned.

The group alleges that Windows 95 will not work on computers equipped with four megabytes (MB) of memory, as it is advertised to do. Executive Director Anthony Martin alleges that "very few" PCs in use today are equipped with more than four megabytes of memory. "That means Microsoft will be targeting helpless home users, and trying to sell them an 'upgrade' that simply won't work on their existing machines," said Martin.

"We have said and continue to say if you are currently running Windows 3.1 or Windows for Workgroups on a 386 four megabyte system you will be as happy or happier with Windows 95 on the same configuration," Microsoft spokesperson Greg Shaw countered. Shaw said Windows 95 requires 4MB minimum and the company recommends 8MB.

Continued on page 91

SPECIAL

TRIBUS COMPUTER **243-7456**
FAX: 243-7026, 964 Scarlett Road, Etobicoke
OPEN: MON-SAT: 10AM - 7PM

PENTIUM 75 8 MB RAM 560 Mb Hard Drive SVGA 1024x768 NI 14" Monitor 1 Mb PCI ATI Video Card 1.44 Floppy Drive Mid Tower Case	DX4-100MHz AMD 128K GREEN \$349
	1.2 GIG HDD W.D. (Caviar) \$469
	Zoltrix 28.8 v34 Fax/Modem Int. \$179
	Fujitsu 1.44 Floppy Drive \$42

\$1749
LIMITED QUANTITY!

FOR MORE SPECIALS SEE OUR AD IN TORONTO COMPUTES!
ALL PRICES ARE CASH & CARRY AND SUBJECT TO CHANGE WITHOUT NOTICE. CONFIRM AVAILABILITY

Access  **(416) 630-3497**

Acces Editique
410 St. Nicolas, Suite 515,
Montreal, PQ H2Y 2P5
Tel: (514) 284-2226
Fax: (514) 284-2273
Hours: 8 - 6 Mon. - Fri.

Access Imaging
955 Wilson Avenue, Unit 3
Downsview, Ontario M3K-3A8
Tel: (416) 630-3497
Fax: (416) 630-2625
Hours: 9-6 Mon.- Fri.

INTRODUCING THE
PRESSMATE

**DESKTOP CHEMICAL-FREE
IMAGESETTING**



**2400 DPI DRY FILM PROCESS
COST EFFECTIVE SOLUTION**

SERVICE BUREAU - PC & MAC

**YES! WE DO PC
FILM OUTPUT**

FILM OUTPUT

Up to 12" x 26"

From PC and MAC

LAMINATION

MOUNTING

PROFESSIONAL PHOTO CD

SCANNING

**HIGH RESOLUTION
LASER OUTPUT**

**Big Color
LARGE FORMAT PRINTING**



Output banners and posters from your graphics files (Macintosh and PC), photographs, negatives and CD-ROM in photo quality.

Prints up to 36 inches wide and virtually any length.

Output on matte, glossy, transparent film, or backlit sign material.

DisplayMaker
DIGITAL PRINTING SYSTEM

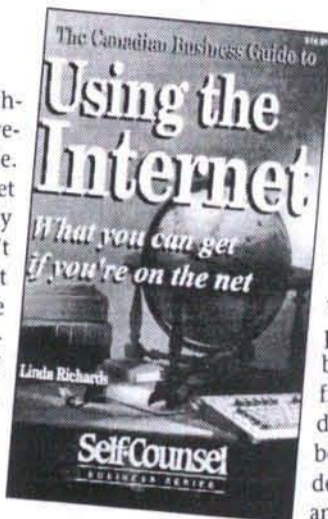
CALL US FOR PREPRESS AND DESKTOP PUBLISHING EQUIPMENT AND CONSULTATION

Counsel Thyself on the Net

BY CUB LEA

The Canadian Business Guide to Using the Internet

Author: Linda Richards
 Publisher: Self-Counsel Press
 Price: \$14.95
 Softcover: 133 pp. 1995



I work regularly with technology-shocked entrepreneurs and business people. The last thing they need is yet another high-tech toy they don't understand and can't use — or a month lost learning how to use it. The Internet can be an unbelievable time and energy drain if it's not tackled with a plan and some prior knowledge.

Linda Richards' work with *Vancouver Computes!* and *The Computer Paper* has always put a human face on high-tech, and it's nice to see business publishers interested in being less business-like about computing topics. I've been looking for a book I can recommend to my clients as a quick and dirty introduction to the net for the corporate climber, entrepreneur, and self-employed professional, and this is it. It has the warm feel of lunchroom middle-management gossip, and provides enough of an overview to save days of hacking, dabbling and browsing.

All the bases are covered, from the equipment and software needed to connect to the

net and service providers to actual net services and setting up your own site. It's light on lists and details, and what lists are included tend to be almost exclusively Canadian and focus on business needs. It includes the obligatory glossary, and strikes a balance between selling the net's adventure and possibilities and its current realities and limitations in terms of marketing, logistics and profit potential.

As a primer, it works. But those looking for specific pointers on how their particular business or career can benefit from Internet access may be disappointed. It would have been nice to see a few chapters devoted to specific businesses and individuals and their experiences with the net, positive and

negative. How much time might a lawyer spend per day on the net? Which manufacturers, wholesalers and brokers have found net access profitable, and how have they done it? What specifically can net access do to streamline the day-to-day activities of a convenience store, a non-profit organization or a freelance graphic artist? Those questions remain unanswered, and unfortunately they're questions my clients usually want answered before they spend a penny on modems, providers and software installations.

Self-Counsel has aimed this book squarely at the Canadian business market and claim that it's the first such book of its kind. It is by no means complete, something which will be obvious from the page count alone, and not a book I'd give to anyone who didn't have at least enough computing confidence to install a new program. But anyone needing help at so basic a level would probably be better off with one-on-one or computer-based training anyway. □

Contact: Self-Counsel Press 604-986-3366

Computer And Laser Printer Rentals

ABS GROUP

(416) 636-2571
 Service/Sales/
 Leasing/Rentals

STARLIGHT COMPUTER SERVICES

286 system Board w/CPU	from \$39
386SX System Board w/CPU	from \$49
386DX System Board w/CPU	from \$79
486SX/DX system Board	from \$69
40MB IDE hard Drive	from \$79
IBM 24/96 Fax Modem	from \$39
MiniTower Case w/230W PS	from \$55
Enhanced 101 Keyboard	from \$18
3 Button Serial Mouse	from \$12
14" Color VGA Monitor	from \$239

286w/640KB System	from \$249
386SXw/2MB System	from \$329
386DXw/4MB System	from \$589
486w/4MB System	from \$689

STARLIGHT COMPUTER SERVICES

SALES OPERATION HOUR:
 MON-FRI 4PM-6PM
 SAT. 10AM-4PM



80 Nashdene road, Unit 76,
 Scar. Ont. M1V 5E4
 Just one Block North of Finch
 off Markham Rd.

New & Used PC Parts for Sale
 Only Starlight has it!
 Hundred 286/386SX/DX/486 Products

123 COMPUTER WAREHOUSE INC.

BRAMPTON LOCATION: 253 QUEEN ST. E., UNIT 2, BRAMPTON, ONT. L6M 2B8
 PHONE: 905 451-6769, FAX: 905 451-9361
 MISSISSAUGA LOCATION NOW OPEN: 400 MATTHEW BLVD., UNIT 1,2,3
 MISSISSAUGA, ONTARIO, L4Z 1N8, PHONE: 905 712-9532, FAX: 905 712-9537

COMPLETE PC SALES, SERVICE AND TECHNICAL SUPPORT. YOUR **ONE STOP** PC SHOPPING CENTRE

<p>AMD486DX2/66, VLB, 8MB, 520 H/D, 14" 28 N/L MINI TOWER, 101 KEYBOARD, DOS/WIN... \$1475.00</p> <p>AMD486DX4/100, PCI 8MB, 520 H/D, 14" 28 N/L MINI TOWER, 101 KEYBOARD, DOS/WIN \$1545.00</p> <p>P66, PCL, 16MB, 520 H/D, 15" 28 N/L MED. TOWER, 101 KEYBOARD, DOS/WIN, 256K... \$2584.00</p> <p>P75, PCL, 16MB, 520 H/D, 15" 28 N/L MED. TOWER, 101 KEYBOARD, DOS/WIN, 256K... \$2669.00</p> <p>P90, PCL, 16MB, 1G H/D, 15" 28 N/L MED TOWER, 101 KEYBOARD, DOS/WIN, 256K... \$3123.00</p> <p>CASE W/POWER SUPPLY</p> <p>MINI TOWER, W/220 WATT CSA \$70.00</p> <p>MEDIUM TOWER, W/230 WATT CSA \$95.00</p> <p>FULL TOWER, W/250 WATT CSA \$175.00</p> <p>MAIN BOARDS, wo/epu</p> <p>486 VLB, W/128KB CACHE \$124.00</p> <p>486 VLB, W/256KB CACHE \$159.00</p> <p>486 PCL, W/256KB CACHE, ENH/IO \$192.00</p> <p>PENT. 60-66 PCL, W/512KB, ENH/IO \$295.00</p> <p>PENT. 75/90/100, PCL, W/512KB, ENH/IO \$364.00</p> <p>CPU'S</p> <p>INTEL 486DX2/66 \$219.00</p> <p>INTEL 486DX4/100 \$325.00</p> <p>AMD 486DX2/66, 3V \$167.00</p> <p>AMD 486DX2/80, 3V \$185.00</p> <p>AMD 486DX4/100 \$235.00</p> <p>INTEL PENTIUM 60 SCALL</p> <p>INTEL PENTIUM 66 SCALL</p> <p>INTEL PENTIUM 75 SCALL</p> <p>INTEL PENTIUM 90 SCALL</p> <p>INTEL PENTIUM 100 SCALL</p> <p>MEMORY</p> <p>1MB, 30PIN, 70NS SCALL</p> <p>4MB, 30PIN, 70NS SCALL</p> <p>1MB, 72PIN, 70NS SCALL</p> <p>4MB, 72PIN, 70NS SCALL</p> <p>8MB, 72PIN, 70NS SCALL</p> <p>16MB, 72PIN, 70NS SCALL</p> <p>HARD DRIVES</p> <p>420MB IDE \$235.00</p> <p>520MB IDE \$259.00</p> <p>720MB IDE \$340.00</p> <p>850MB IDE \$359.00</p> <p>1GIG IDE \$575.00</p> <p>540MB SCSI \$351.00</p> <p>1GIG SCSI \$788.00</p> <p>POINTING DEVICES</p> <p>3BUTTON MS COMPATIBLE MOUSE \$19.00</p> <p>MICROSOFT HOME MOUSE \$49.00</p> <p>MICROSOFT BUS MOUSE \$110.00</p> <p>LOGITEC PLUG AND PLAY MOUSE \$75.00</p> <p>LOGITEC TRACKMAN \$125.00</p>	<p>FLOPPY DRIVES</p> <p>1.2MB, 525" F FLOPPY DRIVE \$65.00</p> <p>1.44MB, 3.5" F FLOPPY DRIVE \$45.00</p> <p>1.2MB, 1.4MB COMBO FLOPPY DRIVE \$180.00</p> <p>2.8MB FLOPPY DRIVE \$115.00</p> <p>CONTROLLERS</p> <p>IDE I/O, W/CABLES \$19.00</p> <p>VLB IDE I/O, W/CABLES \$25.00</p> <p>VLB ENHANCED IDE I/O, W/CABLES \$28.00</p> <p>PARALLEL PORT \$25.00</p> <p>UART 16550 \$49.00</p> <p>PCI IDE I/O, W/CABLES \$49.00</p> <p>PCI IDE I/O, W/CABLES, UART 16550 \$59.00</p> <p>SCSI II SCALL</p> <p>VIDEO CARDS</p> <p>1MB TRIDENT ISA \$84.00</p> <p>1MB TRIDENT VLB UP(2) \$94.00</p> <p>1MB CIRRUS LOGIC VLB UP(2) \$98.00</p> <p>2MB TRIDENT VLB \$163.00</p> <p>2MB CIRRUS LOGIC VLB \$170.00</p> <p>1MB VLB ATI MACH32D \$139.00</p> <p>2MB VLB ATI MACH32D \$207.00</p> <p>1MB PCI ATI MACH32D \$139.00</p> <p>2MB PCI ATI MACH32 D \$207.00</p> <p>2MB VLB ATI MACH64D \$295.00</p> <p>2MB VLB ATI MACH64V \$390.00</p> <p>2MB PCI ATI MACH64D \$295.00</p> <p>2MB PCI ATI MACH64V \$395.00</p> <p>MONITORS</p> <p>14" 28MM N/INTERLACED DAYTEK \$289.00</p> <p>15" 28MM N/INTERLACED DAYTEK \$390.00</p> <p>17" 28MM N/INTERLACED DAYTEK \$575.00</p> <p>15" 28MM VIEWSONIC \$510.00</p> <p>17" 28MM VIEWSONIC \$1074.00</p> <p>15" 28MM NEC XV \$675.00</p> <p>15" 25MM SONY SF \$689.00</p> <p>17" 25MM SONY TRINITRON \$1350.00</p> <p>14" MAG \$360.00</p> <p>15" MAG DXF1 \$510.00</p> <p>17" MAG DXF 26MM \$950.00</p> <p>20" 28MM DATATRAN \$1599.00</p>	<p>KEYBOARDS</p> <p>101 ENHANCED HONEYWELL \$39.00</p> <p>101 ENHANCED KEYTRONIC \$52.00</p> <p>104 ENHANCED MS NATURAL \$139.00</p> <p>MULTIMEDIA</p> <p>C/L DISCOVERY 16 KIT (NEW) \$385.00</p> <p>C/L DIGITAL SCHOOLHOUSE KIT \$315.00</p> <p>SONY 55E IDE CD ROM DRIVE \$175.00</p> <p>TEAC QUAD SPEED CD ROM \$275.00</p> <p>SOUND BLASTER 16 V/E \$132.00</p> <p>SOUND BLASTER 16 MCD \$195.00</p> <p>SOUNDBLASTER 32AWE, V/E \$335.00</p> <p>MODEMS</p> <p>INT. 14.4 ZOLTREX F/M \$70.00</p> <p>INT. 28.8/14.4 ZOLTREX M/F \$159.00</p> <p>INT. 14.4 ZOLTREX VOICE/F/M \$125.00</p> <p>INT. 14.4 US ROBOTICS F/M \$135.00</p> <p>INT. 28.8 US ROBOTICS F/M \$325.00</p> <p>EXT. 14.4 US ROBOTICS F/M \$175.00</p> <p>EXT. 28.8 US ROBOTICS F/M \$349.00</p> <p>PRINTERS</p> <p>EPSON STYLUS COLOR INK \$729.00</p> <p>EPSON STYLUS 800+ \$320.00</p> <p>CANON BJ100 \$295.00</p> <p>HP 540 COLOR UPGBLE INK \$429.00</p> <p>HP COLOR KIT FOR 540 \$69.00</p> <p>RAVEN LP410 LED \$525.00</p> <p>RAVEN LP470 LED \$795.00</p> <p>RAVEN LS 3 LASER \$599.00</p> <p>RAVEN 2405 DOT MATRIX \$220.00</p> <p>RAVEN 2407 DOT MATRIX \$285.00</p> <p>EPSON ACTION LASER 1100 \$595.00</p> <p>EPSON ACTION LASER 1500 \$725.00</p> <p>HEWLETT-PACKARD HP 4L \$749.00</p>
---	---	--

P4000 NOTEBOOK
 \$2685.00
 486DX2/66, 4MB RAM, 340MB H/D, 1.44MB,
 3.5" F/D, DOS/WIN, PASSIVE MATRIX
 COLOR DISPLAY, BUILT IN 16 BIT SOUND
 CARD, 2PCMCIA TYPE II/III SLOTS

PRICES SUBJECT TO CHANGE.
 PRODUCT SUBJECT TO
 AVAILABILITY.

ALL PRICES ONLY VALID UPON PRESENTATION OF
 THIS ADVERT. VALID ONLY FOR JULY 95

SALES!

MEMORY TRADE-IN SPECIAL

FR. 4MB TO 16MB (72 PIN)..... \$449

FR. 8MB TO 16MB (72 PIN) \$299

MAXTOR 540MB \$239

MAXTOR 850MB \$299

TOSHIBA 4X CD-ROM + S.B. 16 +

ENCARTA + SPKR \$369

486DX2-66 MHz (INTEL) 128K/4MB/VLB \$1199

486DX4-100 MHz (AMD) 128K/4MB/VLB \$1299

Pentium 75 (Intel) (INTEL) 256K/8MB/PCI..... \$1699

1.44MB FDD, 420MB IDE HDD, 1MB SVGA Windows Accelerator,
 14" SVGA non-interlaced 1024x768 (0.28dp) Colour Monitor, 2
 Serial, 1 Parallel/1 Game Port, 101 Key Enhanced Keyboard, Mini
 Tower Case, 220W Power Supply. 2 Year Labour & 1 Year Parts

Prices are already 3% Cash Discounted.

MPM Industries Corp.

1875 Leslie Street (South of the 401), Unit 7, North York, ON M3B 2M5
 Tel: (416) 391-4600 Fax: (416) 391-4373

Probing the Digital Age

BY KEITH SCHENGILI-ROBERTS

MEMORY

Diskettes (Canada) Inc.

MANUFACTURER & SUPPLIER OF:

- DUPLICATOR GRADE 3.5" MFD 2 HD DISKETTES
- OEM MANUFACTURER

Head Office:

130 Frobisher Dr., Suite 8
Waterloo, ON N2V 1Z9

OEM Sales Office:

2 Robert Speck Pkwy, Suite 750
Mississauga, ON L4Z 1H8

See Us At Comdex Canada

Booth #7570

Tel: (519) 888-9488

Fax: (519) 888-7271

1-800-224-1217

Being Digital

Author: Nicholas Negroponte

Publisher: Alfred A. Knopf

Price: \$32.00

ISBN: 0-679-43919-6

Hardcover 243 pages 1995

Author Nicholas Negroponte has gained a wide audience through his insightful monthly columns on the state of technology and culture published every month in

his column in Wired magazine. In Negroponte's new book *Being Digital*, the founding director of MIT's Media Lab expands upon many of the ideas first published in *Wired*.

Negroponte's background in computers and technology is impressive. He has had a helping hand in the design of computer graphics, multimedia, and virtual reality systems. He is a legendary pioneer of the computer-age, and in *Being Digital* he takes a long hard look at the ways things are, and takes a look into the near future of computing and how it will relate to our society.

One of the main themes of his book is the fundamental difference between the nature of information technology and the other things in our world.

Information comes in bits, while everything else comes in atoms. When you receive a package from another country, it has had to be transported, be inspected at customs, and arrives at your doorstep days or weeks after it was originally sent. Bits, on the other hand, travel instantaneously and whereas atoms can be stopped at customs, bits are by their very nature transglobal. Negroponte predicts that the implications for

society will be profound: an altering of the ways we are entertained, do business and interact with each other.

In the course of the book he dissects telecommunication firms, multimedia, cable television, software and hardware industries in turn. He looks briefly at the recent takeover of video giant Blockbuster Entertainment by Viacom, and predicts that video rental stores will be out of business within 10 years. His reasoning is as follows: as computers become more powerful and memory storage increases, it will be more convenient to select and retrieve the bits that comprise a movie you want to see than to trek to the local video store and bring a video cassette back home. If there is a situation where bits can take over a role traditionally reserved for atoms (like the atoms that make up a video cassette), the bits will win out.

Negroponte also has a look at computer interfaces — the place where people and computers meet. His opinion is that current interface design is lousy.





Micro View

Microview Systems

486DX2/66 Pentium 75 \$1188
\$1728

Intel CPU
Built-in Math Co., 32bit L.B., P24T
128K Cache (P75 w/256K)
4MB Ram 70ns (P75 w/8MB)
14" SVGA .28dp NI Colour Monitor
32bit L.B. SVGA 1MB Video Card
420 MB IDE Hard Drive
1.44 MB Floppy Drive
32bit L.B. Super IDE Controller (2S, 1P, 1G)
Mini-Tower Case w/ 230w PS
101 Enhanced Keyboard
Free MS-Compatible 3-Button Mouse

With System \$ 245
Sound Blaster 16 MCD
2X CD-ROM
Dual Amplified Speakers
Compton's Ency 95

With System \$ 379
Sound Blaster 16 MCD
4X CD-ROM
Dual Amplified Speakers
MS Encarta 95

14" SVGA Colour \$239
14" SVGA NI \$289
15" SVGA NI \$409

Canon BJ200e \$ 299
Canon BJC4000 \$ 469
HP Deskjet 540 \$ 399

Fax/Modem
14,400 \$69

System Upgrade and Repair

Two Years Parts & Labour

All prices are for cash and bank's cheque and subject to change without notice.

Two Years Parts & Labour

7725 Birchmount Road, Unit 43, Markham Tel: (905) 513-9922 Fax: (905) 513-1165

MPT

MICROCOMPUTERS AND PARTS DEPOT
GOOD SERVICE, GOOD PRICES, ALL THE TIME

2370 MIDLAND Ave. Unit #A10 • Toronto, Ontario • M1S 5C6
Business Hours: 10am - 7pm Mon-Sat TEL: 416-292-0533 fax: 416-292-7711
We are located in the WINCO BUSINESS PARK, exactly 1 traffic light south of Sheppard Ave.

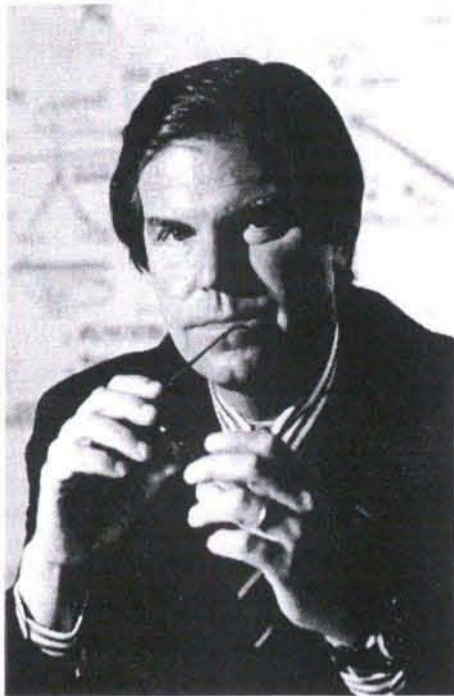
Sheppard Ave
Kennedy Rd.
Hwy 401

↑

MPT
x
Midland Ave

<p>32MB 72pin 70ns simm RAM, parity, 5yr. warr., \$999</p> <p>8MB 72pin 70ns simm RAM, 5yr. warranty, \$388</p> <p>8MB 72pin 70ns simm RAM, parity, 5yr. warr., \$411</p> <p>16bit SCSI/FD controller cards, \$33</p> <p>101key enhanced AT KB, chicony brand, \$17</p> <p>NE2000 Ethernet Novell Certified 16bit cards, \$55 <small>5yr. replacement warranty, T connector included, COAX, terminators \$4. We have cables, ends & term.s to complete your net!</small></p> <p>10' / 15' / 25' / 50' / 100' rg58 cable w. ends, \$9/12/14/24/39</p> <p>540mb SHUTTLE, external portable hard drive, \$488 <small>Ideal for expanding storage capacities of notebooks, attaches to any computer's parallel port in seconds, easily transport data between multiple computers, simple to use, acts just like an internal hard drive, take sensitive data with you - ultimate security. Up to 380KB/s transfer rate through printer port!</small></p> <p>Formatted 1.44MB hd disks (box of 10 w. labels), \$3.99</p> <p>1.44MB floppy drive, 1yr. replacement warranty, \$44</p> <p>HP LASERJET 4, 8ppm, 2m ram, cable, DEMO, \$1188 <small>1yr. warranty on printer. 4mb / 8mb HP 4 memory upgrade available, free install. \$208/415!</small></p> <p>340MB SCSI HDD, 64k cache, 12ms, Con / Fuj, \$249</p> <p>486dx/dx2/dx4, vl board, 30/72p, nocpu, zif, 256k, \$139 <small>Call for our board+cpu+ram bundle prices. We also have video cards, IO cards, and hard drives to complete your workstation.</small></p>	<p>Microsoft ENCARTA '95, OEM, with purchase, \$39</p> <p>Microsoft serial v2.0 JMOUSE w. drivers, \$35</p> <p>ISA Super IO 2ide/2fd/2ser/1par/1 game ports, \$18</p> <p>Promise VLB 2x16550 UART 4xIDE enhanced IO, \$88</p> <p>Conner 800mb TAPE BACKUP, with s/w, \$299</p> <p>1MB HP IIP / III / IIIP / IIID memory upgrade, \$125</p> <p>MINI TOWER case w. 5 bays, 220w csa p/s, \$59</p> <p>External 3.5" / 5.25" SCSI case, 40w, csa, \$99 / \$105</p> <p>14.4k internal v.32bis faxmodem with software, \$74</p> <p>16550 highspeed IO 2ser / 1par / 1game card, \$29</p> <p>6' parallel printer cable, lifetime warranty, \$4</p> <p>Hispeed parallel laplink / transfer cable, \$9</p>
---	---

Many more items in stock! drop by for a full price list
prices are cash discounted and subject to change without notice (hopefully lower!)



Negroponete believes that computers should be designed to make a greater range of human input possible. He looks at the ways humans interact with each other, and picks out the salient details that would translate into better ways in which we can work with our machines.

Currently humans interact with computers by using a keyboard, mouse and video screen, forcing people to interact with computers in ways that computers understand. Negroponete believes that this paradigm should be turned on its head so computers will interact with us in ways that we understand. Interface designs of the near future will enable computers to understand

our gestures, speech and develop other skills to understand us better.

Negroponete also believes we are on the cusp of what he calls the "Post-Information" Age. If the Information Age was characterized by one-to-many communication media (like radio and television broadcasting), computing power will enable us media of the near future to do "single-casting", where everything is made to order and the audience consists of one — you.

In an interesting twist on the famous McLuhan phrase, Negroponete believes that "the medium is no longer the message." In other words, the bits that will be delivered to you will be formless, and it will be up to you how you wish interact with the information you receive.

If there is a drawback to Being Digital, it is the overly-optimistic tone that runs throughout the book. Very little space is devoted to the darker implications of the technologies he describes. There's also a distinct feeling of deja vu for the bright future he depicts — it's hard not to think of the quaintness of "scenes of the future" depicted in old movies from the 1930s and 1950s depicting a shiny new future.

There is little in Being Digital that is actually new (or that he himself has not said elsewhere). What makes Negroponete's book stand out from the rest of the pack is that he is good at supplying the background and context of what are often complex stories and issues in a clear and simple manner. Being Digital is an enlightening and enjoyable read. It comes highly recommended — but to be taken with a grain of salt. □

Contact: Random House of Canada (416) 777-9477

Continued from page 88

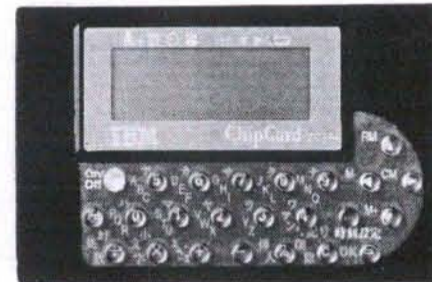
Chinon Plans 8x CD-ROM Drives • Chinon America, which recently announced a strategic partnership with Wearnes Technology Corp., says the new, non-exclusive alliance means Chinon is assured of meeting the heavy demand for quad-speed (4x) drives. The alliance also focuses on future drive developments, which are expected to concentrate on 8x drives. While it may be in limited production and its unannounced price quite high, an 8x drive from Chinon could appear late this year or early next year.

Quantum Intros Big Notebook Hard Drives • "Over the past couple of quarters, users have started requiring their notebook PCs to provide the same functionality as their desktop PCs," said John Hites, product line manager, in a briefing about Quantum's new Europa line of 540 megabyte (MB), 810MB, and 1,080MB 2.5-inch disk drives.

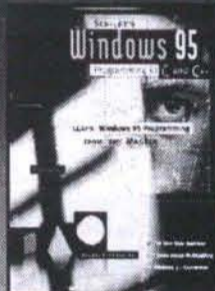
Borland Adds SMART Tool To C++ 2.0 For OS/2 • Borland International Inc. has begun to ship Borland C++ 2.0 for OS/2 bundled with SMART (Source Migra-

tion Analysis Reporting Toolset). Borland C++ 2.0 for OS/2 was originally shipped in January, but adds the SMART toolset for the first time.

IBM Japan To Intro Address Book On A Chip • At the end of May, IBM Japan will begin selling a new type of portable electronic address book that fits onto a PCMCIA (Personal Computer Memory Card International Association) card. The new IBM ChipCard TC-100 crams a microprocessor, memory and battery into the card and also manages room for a small keyboard and screen.



CLIMB THE PEAKS WITH MCGRAW HILL



WINDOWS '95 PROGRAMMING IN C AND C++
Herbert Schildt
Publisher: Osborne
Format: Paper

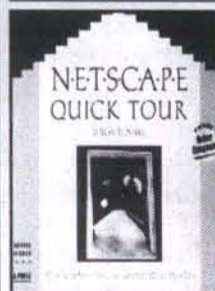
- Learn the basics! Create a skeletal program then move on to managing messages, creating dialogue boxes, menus and bitmaps.
- Great coverage of sophisticated features like multi-threading, custom controls, DDE, drag-and-drop, OLE and much more!
- Whether you're new to Windows programming or a seasoned pro, Herb Schildt will help you get the most out of Windows '95.

0078820812
\$42.95

NETSCAPE QUICK TOUR FOR WINDOWS
Harris & Kidder
Publisher: Ventana Press
Format: Paper

- Jumpstart Netscape with this handy guide!
- Topics covered include the toolbar, the progress indicator and the built-in image decompressor. A basic Web overview is spiced with the author's favourite WWW sights—and sounds!
- Includes a guide to Ventana's ONLINE COMPANION where you'll find a hyperlinked version of the listings chapter plus updated versions of Netscape and other software.

1566042445
\$20.95



THE INTERNET GOLDEN DIRECTORY (1995 EDITION)
Hahn & Stout
Publisher: Osborne
Format: Paper

- Few people can navigate the Internet without a reliable up-to-the-minute directory. That's why *The Internet Golden Directory* has become the reference-of-choice professionals, hobbyists and academics.
- Hahn and Stout repeat their success in this updated 2nd edition which has nearly double the amount of information in the first edition. The offbeat engaging style and lucid phone-book design will keep you coming back to this must-have book.

007882107X
\$39.95

BYTE GUIDE FOR CD-ROM

Michael Nadeau
Publisher: Osborne
Format: Paper + CD-ROM

- Everything you need to know about CD-ROM technology in one comprehensive volume!
- Totally revised and updated, this title is really three books in one: a buyer's guide, a standards guide, and a troubleshooter.
- Covers everything from applications and multimedia to compatibility, front ends and hardware. New information on producing CD-ROM's has been added as well as a peek at new and upcoming technologies

0078821045
\$57.95



TORONTO COMPUTER BOOKS
521 Yonge Street
Toronto, Ontario
M4Y 1Y4
Tel: (416) 925-2088
Fax: (416) 925-3471
E-Mail Address tcb@lo.org

NORTH YORK COMPUTER BOOKS
35-4841 Yonge Street
North York, Ontario
M2N 5X2
Tel: (416) 226-9989
Fax: (416) 226-6212
E-Mail Address nycb@lo.org

WATERLOO COMPUTER BOOKS
1 King Street North
Waterloo, Ontario
N2J 2W6
Tel: (519) 746-6042
Fax: (519) 746-6863
E-Mail Address watbook@hookup.net

MISSISSAUGA COMPUTER BOOKS
1706 Dundas Street East
Mississauga, Ontario
L4X 1L7
Tel: (905) 279-6055
Fax: (905) 279-6239
E-Mail Address mcb@lo.org

1-800-390-8745

Mention this ad, and receive a **15%** discount on all books in this ad
Discount applies for 1 month and no other discounts apply.

486

INTEL	DX2-66	\$1,259
AMD	DX2-80	\$1,229
(3.3volt)	DX4-100	\$1,279

INTEL Pentium

75 Mhz	\$2,049
90 Mhz	\$2,179
100 Mhz	\$2,339
Dual 90 Mhz	\$3,699

FIC VLBus motherboard
128K cache
4 MB 72 pins fast RAM
420 MB floppy drive (Maxtor)
1.44 MB floppy drive (Panasonic)
VLB 32 bits S3 SVGA 1 MB card
VLB 32 bits IDE I/O card
1 parallel 2 serials 1 game
14" 28 NI SVGA monitor (ACER)
Medium tower case with LED/7 bay
ACER 101 enhanced keyboard
Microsoft compatible mouse / pad

ACER PCI Local Bus motherboard
256 K cache (upgradeable to 1M)
8 MB 72 pins fast RAM
850 MB hard drive (Maxtor)
1.44 MB floppy drive (Panasonic)
ATI Mach 32 PCI SVGA 1MB card
On board PCI enhanced IDE 2S/1P
On board 16550 high speed I/O
15" 28 NI 72 Hz SVGA ACER monitor
Medium tower case with LED/7 bay
ACER 101 enhanced keyboard
Microsoft compatible mouse / pad
* 2 years parts & 5 years labour warranty

Prima Computer Inc.

HWY 7 Markham Esna Park Dr Dension Steels Ave. Pharmacy Ave.	Dundas St. W Downtown Art Gallery Spadina Queen St. W	Mississauga Eglinton 401 Bloor Dundas Dixie Cawthra QEWS
---	---	---

170 Esna Park Drive, Unit 6 Tel: (905) 475-7720 Fax: (905) 475-3341
71 McCaul Street, Unit E-9 Tel: (416) 593-2603 Fax: (416) 593-1491
1425 Dundas St E, Unit 11B Tel: (905) 206-9222 Fax: (905) 206-0955

Multimedia package Special

(Panasonic 2X speed CD Rom/ SB 16 /speakers)

\$259 with system purchased

Upgrade to Panasonic 4X speed IDE + \$129

ACER Notebook Special

486SX25	4M mono	120mb	\$1,399
486DX25	4M Active-matrix	210mb	\$2,399
486DX2-50	4M Dual Scan	340mb	\$2,659
486DX2-50	4M Active-matrix	340mb	\$3,999

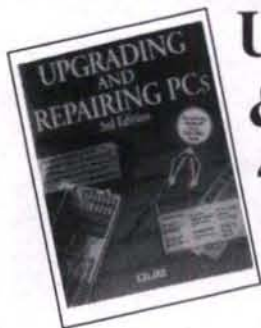
MIs Dos and Windows \$99 (with system purchased)

All prices are already 3.5% discounted for cash, money order and certified cheque. Prices subject to change without notice

COMPUTER BOOK CLEARANCE

45 TO 90% OFF Computer Books

O'Reilly T-Shirts \$9.95
Reg. \$23.95



UPGRADING & REPAIRING PCs

4th Edition

Now \$44.99 Reg. \$53.99

Special This Month !!!

Teach Yourself Series of Books from SAMS all 10% discounted.

Computer Magazines

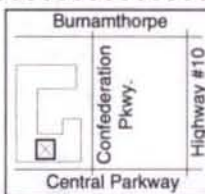
PC Magazine, PC format, Access Advisor, Microsoft Journal, Visual Basic, Data Based Advisor, C + +, Internet World, CD-ROM Multimedia & more...

Mail & Special Orders. Business Accounts Welcome.

*(limited quantities/titles and book condition may vary).

The Computer & Book Centre

325 Central Parkway, West, Mississauga, Ontario



Phone Orders (905) 279-9968 or compbook@astral.magic.ca

East or West Cobol is Best

BY KEITH SCHENGILI-ROBERTS

The Revolutionary Guide to Cobol

Authors: Yevsei Handel and Boris Degtyar
Publisher: WROX Press
Price: \$69.95
ISBN: 1-874416-17-6
Softcover 642 pages 1994
Comes with one 3.5" diskette

For a "dead" language, Cobol is certainly enjoying a revival these days. It was one of the first practical programming languages developed back in the 1950s, and many large businesses still use Cobol applications that were written decades ago.

While languages like C and C++ are used to write most of the programs people use on their PCs at home, Cobol is still used for many mission-critical applications in the corporate world. For that reason it's kind of ironic that this largely corporate-centered programming language found a true home in formerly-communist Russia.

This book reflects that fact, and anybody interested in either learning or enhancing their knowledge of this programming language will find a wealth of information contained in this massive book.

The authors' backgrounds are interesting, and reveal the deep roots Cobol has within Russian programming culture. Boris Degtyar is head of programming at Fakel Co. in Minsk, and the Cobol compiler is written by Dmitry Bronnikov, who works at NICEVT in Kaliningrad, a research computing centre involved with the design of computer languages. Yevsei Handel is the head of the Cobol programming laboratory at the R+D Institute of Control and Management, and has a 20-year history of writing about Cobol.

All of this wouldn't make any difference if the book were poorly written, but it isn't.

Beginning with a short description and background of the Cobol programming language, the authors launch into a detailed discussion of the general structure of the language and how to manipulate data. Everything is described at length, and there are plenty of

examples and diagrams to illuminate the concepts being discussed.

There is plenty of information here on the language, and many of the insights contained within the book come from people who have lived with Cobol for many years, and know how to make it jump through hoops that it was not originally designed for. Even the most experienced Cobol programmer is likely to find a few new ideas in this book. The Cobol compiler that comes with the book is easy to use, and only takes up 1.5 MB of hard disk

space.

One of the reasons why Cobol programming skills have come back into demand recently is because of a glitch in the language that its original designers back in the 1950s never thought of. Programs written in Cobol use a two-digit year code, so a date specified in a Cobol program for this year will be depicted as "95." This is generally not a problem — until you go from one century to another.

As we near the end of the century, expect an increasing demand for programmers experienced in Cobol, as corporations try to convert their payroll, operations and other business-related Cobol programs into a form that will not self-destruct after December 31, 1999. If you are an experienced Cobol programmer, or just a beginner, the Revolutionary Guide to Cobol could very well help you revolutionize your career. □

Contact: Addison-Wesley Publishers Limited
416-447-5101



Wireless Printing

NEW!

GoPrint

Share Printers Without Wires or a Network

Wireless Printer Sharing

GoPrint is as fast as printing through a wired connection and faster than printing over a network. GoPrint saves you the cost of wiring and installing an expensive network. And, since GoPrint is plug-and-play ready, in minutes your printers can now be located where you need them. Even if they are located behind walls or around corners.

- ▲ Up to 8 printers can be used by any number of PCs.
- ▲ Prints up to 500 feet indoors.
- ▲ Works with 100% IBM compatible PCs and printers.
- ▲ Both DOS and Windows.
- ▲ Uses high performance 2.4 GHz Spread Spectrum Radio.
- ▲ Plugs into computer's parallel port and printer's Centronics connector.
- ▲ Adapter required for each PC and printer.
- ▲ No additional software or cards.



TO ORDER CALL MULTIMEDIA EFFECTS (416) 502-0404
49-6A THE DONWAY WEST, STE.1011, N.Y. ON. M3C 2E8 • FAX (416-502-1593)

Computer Technical Services
1182 Queen Street East, Toronto, Ontario M4M 1L4
Tel: (416) 466-7153 Fax: (416) 466-6328

486DXII-66 \$1095
486DXII80 \$1165
486DX4-100 \$1225

4Mb RAM (72 pin) \$195.00
4Mb → 16Mb (72 pin) \$485.00
8Mb → 16Mb (72 pin) \$315.00



CDROM Bundle(Sound Blaster 16 + Speaker)
x2 Speed (Panasonic) \$ 279.00
x4 Speed (Teac) \$ 379.00

Complete with:
128k Cache
4Mb Ram
1.44 Mb Floppy
**540 MB EIDE
Hard Drive
1 Mb VL Bus Video
SVGA Monitor
Local Bus I/O
Mini Tower Case
101 Enhanced Keyboard
Free Mouse

P75 \$1895
P90 \$2045

PROFESSIONAL SYSTEM

8Mb Fast 72pin 70ns RAM, 850Mb EIDE Hard Drive, PCI I/O with 2 16550UART Serials,
1 Parallel, Pentium Motherboard with 256k Cache, PCI 1Mb SVGA Video Card, 1.44Mb Floppy Drive, Mid Tower Case, 101 Enhanced Keyboard, 14" .28 Non-Interlaced Monitor, Mouse & Pad.

Mon - Fri 11am - 7pm
Sat 11am - 6pm

To 15" SVGA Monitor + \$130.00 14.4 Internal Fax Modem + \$75.00

Prices are subjected to change without prior notice. All prices are cash discounted & must be paid by cash, money order or certified cheque.

Neat Effects!

Where Can I Learn That?

I would like a career in computers. I am interested in computer animation, but I have heard a lot about CD ROMs and the Internet. Maybe there are career opportunities in those fields. Oh, by the way I am interested in computer games too. Where should I go to get a good education?

BY MALCOLM WARWICK

I have been asked variations of the above question countless times over the past five years. The answer has never been simple and rarely complete.

The efficiencies to be gained are too great, and the market opportunities for digital product is too promising, for us to ignore. Publishers must join forces with the technologists, for we understand how to develop content. They understand how to support that content with technology.

— Susan Saltrick, Director, New Media, John Wiley & Sons

A quick check of career want ads will tell you that there is a demand for programmers, analysts, network engineers, and the like. Let us assume that these are the technologists Ms. Saltrick is referring to. These honorable professions are well supported by universities and colleges. In most cases this was not the kind of "good education" I was being asked for.

I was being asked where to go to learn how to contribute to the content of the information economy in a more creative way. What technical skills should I acquire? How can I apply them after I get out of school?

#1 Used CD & Software Reseller & More	PC SALES HOME/OFFICE	COMPUTER WORKSHOPS
	PC SERVICE UPGRADES	20 - 70% OFF BOOKS/ VIDEOS
	ON-SITE REPAIRS	TURN YOUR SOFTWARE INTO \$\$\$
(905) 455-8306 239 Queen St. E. (Under the Mandarin Restaurant) Brampton		(416) 233-8435 3749 Bloor St. W. (Next to Westwood Theatre) Etobicoke

Open the door to a new career

- Computer Programming/Systems Analysis
- PC Support/LAN Administration
- Software Developer's Upgrade

If you are seriously looking for a career change and two years is too long to wait – we can make it happen in five months. Attend our Information Seminar. Discover why our unique program and Placement service works.

Phone The Institute at (416) 499-9522 to register for our no-obligation Information Seminar Wednesday, 6:30 p.m.

The Institute for Computer Studies
 Excellence in Education and Career Development

The Honeywell Centre, 155 Gordon Baker Road, Suite 402, North York, Ontario M2H 3N5

SUNNY MICRO LAB

Master UNIX!

PC Unix With Auto-Tutor

A Revolutionary Way to Learn Unix
 Learn Internet Prerequisite at Home

Install Unix on the top of DOS and let our Unix Auto-Tutor guide you step by step to master all Unix survival skills.

The package offers:

A commercial full-featured Linux system specially designed for beginners, 100% compatible to Unix.

- Install it like Windows from any CD drives.
- No need to repartition hard drives.
- Pre-configured X-Windows desktop.
- Internet ready.

Our exclusive Unix Auto-Tutor, a fully interactive, self-paced training system for Unix learners, developed in house.


- 72 Interactive tutorial sessions available.
- Over 90 core UNIX commands introduced.
- Cover Internet basics and the VI editor.
- Play it like a video game. It's fun!
- Much more effective than attending classes.

The package includes two CD's with a 140 page manual. The Auto-Tutor can be sold separately. Special Offer: \$139. (10% discount for students)

Sunny Micro Lab

1300 Britannia Rd. East, Suite #208, Mississauga, Ont. L4W 1C8
 E-Mail: Info@sunni.com

• Phone: (905) 795-9292
 • Fax: (905) 795-9291
 Hours: Mon - Fri 11:00-6:00
 Sat Closed



EXPAND YOUR CAREER OPPORTUNITIES

In less than one year earn a diploma in:

INTERACTIVE MULTIMEDIA

- Multi-media facilities
- Recording studios & MIDI labs
- Limited enrollment
- Classes start soon
- Financial assistance to qualified students

CALL (416) 966-3066
 410 Dundas St. East, Toronto M5A 2A8
 Other campuses in Montreal and Vancouver

TREBAS INSTITUTE
 "developing people for the media professions since 1979"

UNIQUE OFFER!

PC Assembly & Networking

- Building & servicing/repairing a PC
- Installation & configuration of Novell NetWare 3.12
- Workstation installation
- Network administration
- Network printing & more

\$395.00

40 hour courses start every Saturday at 10:00 am

Also available:

- CNA (CBT \$365, Instructor-led \$495)
- CNE (CBT \$1690, Instructor-led \$2200)

MICROBUS

3428 Sheppard Ave. E., Ste 203, 204, 206
N/E of Warden. Tel: (416) 321-0895, Fax: 321-0100
Also available: PC Sales, Upgrading, Networking

There is a vagueness and fluidity with the technologies of the '90s that makes students nervous that they may be learning obsolete skills. Or, if they have the skills and talent, will they be able to market them effectively. They sense a new challenge. Not only does one have to acquire a potentially time sensitive education, one needs to find employment before the value of the education expires.

The most important wealth-creating instrument is the imagination.... Everyone who has an imagination and has figured out how to connect it to the marketplace legitimately will prosper. ... Creativity, innovation and ideas are the economic drivers of the information economy.

— Dian Cohen and Guy Stanley, No Small Change. (Macmillan Canada, 1993)

We all have imagination. The real trick is connecting it to the marketplace legitimately. The new technologies and economy are emerging so quickly it is hard for traditional institutions to respond. Planning and budgets prepared one or two years ago are somehow supposed to anticipate trends next year or beyond. When timely courses are available, the next problem is letting potential students know in time. This is where we hope this directory survey will help.

What follows is a preliminary listing of facilities offering exposure to Animation and Electronic Publishing. If your favorite school or course has been missed, contact the author by e-mail (warwickm@Direct.ca). We will include the tabulated results in a future issue.

On Profit...

These days, the big business lies not in the sale of machines or the software that runs them; ... The real trick is getting quality content and adding value to technology.

— David Guenette, CD-ROM World, Feb., 94

On Creative Studies...

Sometimes talent for using certain media may be obscured for one of a number of reasons. It may be simply because you are a beginner; because certain negative habits are impeding you creative gifts; or because you are going about your studies of animation or whatever the medium is in a

superficial way.

— Shamus Culhane, Animation from Script to Screen. (St. Martin's Press 1990)

Animation Schools

Algonquin College, Ottawa

You can access more info through Algonquin College's web site. The media studies department can be reached at: http://www.algonquinc.on.ca/citizen/media_design/mediapag.html

Contact: Gerry Paquette, e-mail: gerpaq@magi.com.

Applied Multimedia Training Centres

(formerly Computer Multimedia Technology Centre), 491 Portage Ave., Lower Level, Winnipeg, MB R3B 2E4

Program: Computer Graphics and Animation Dates: Jan., April, & Sept. start of eight-month program.

Contact: Joel Burke Tel: 204-772-3434 Fax: 204-772-2896, e-mail: cmtc@escape.ca

Banff Centre for the Arts

Media Arts Department, Postal Box 1020, Banff, AB T0L 0C0

Centre Echo

645, rue Wellington, bureau 215, Montreal H3C 1T2

Contact: George Singer Tel: 514-871-1979

"The World of Tomorrow"

NORTH AMERICAN DESKTOP



- Apple/PC •
- For Everyone From The Professional To The Home User •
- Installation • Support • Maintenance • Repair • Sales •
- Specializing In Desktop Publishing •

Software And Hardware Courses

- ☛ Software
- ☛ Peripherals
- ☛ Networking
- ☛ Back-Up Service (With Fire Safe Storage)
- ☛ Books • Magazines
- ☛ Accessories

- 24 Hours/7 Days A Week Emergency Support •
- On-Site Or Our Classroom •

☛ Since 1989 ☛ We Also Serve The Disabled Community
☛ Dependable Customer Support And Service Is #1 At Reasonable Prices
Voice: 905-889-5311 Fax/Modem: 905-889-8259

SOFTIMAGE, PRISMS

& MULTIMEDIA

TRAINING

F/X Training...
"State Of The Art"
Animation & Multimedia
training facility featuring,
Silicon Graphics (SGI), Pentium & PowerMac
systems. Advanced software includes:

- SOFTIMAGE
- PRISMS
- 3D STUDIO
- DIRECTOR
- AUTHORWARE
- PREMIERE & MORE.

Qualified applicants may be eligible for discounts of up to 50%.

For more information, please call:
Tel: (416) 756-7707 or (416) 756-9500 Fax: (416) 756-1700



COMPUTER TRAINING



- Novell Netware (CNA, CNE, ECNE)
- Internet Training
- PC Assembly & Troubleshooting
- Windows & Applications
- Desktop Publishing
- Kids Program

Free Introduction Seminar For First Time Computer Users



Tel: 416-361-1836 Fax: 416-361-1551

33 HARBOUR SQUARE, SUITE #208, TORONTO, ONTARIO M5J 2G2

A.C.T. ADVANCED COMPUTER TRAINING



"Jimmy, me boy! Troubleshooting takes more than just a little luck. You need the right tools!"

10168 YONGE ST. SUITE #205 RICHMOND HILL ONT. L4C 1T6 (905) 770-7891

FAX: (905) 770-7896 Email: act@idirect.com

HANDS-IN COMPUTER TRAINING

Thinking of upgrading your computer system and your computer knowledge? Why not use our systems and expertise to experiment.

COMPUTER ASSEMBLY: Setup and test an IBM-PC compatible Pentium System; Install peripherals: Fax/Modem, Multimedia Kit w/CD-ROM, Tape Back-up, Memory Upgrade, Master/Slave Hard Drives
2 Saturdays, 10:00 am to 3:30 pm \$275.00

NETWORKING: Install Ethernet Networking Cards; setup and install networking software: Novell Personal Netware, Lantastic and Windows for Workgroups
Tuesday, Thursday Nights 6:00 pm to 9:00 pm \$195.00

INTERNET: Get hooked up to the Information Highway and learn to cruise the World Wide Web, use E-mail and a Usenet News Reader
Wednesday Nights 6:00 pm to 9:00 pm \$95.00

College Inter-Dec

2000, rue Ste-Catherine ouest, bureau 6100, Montreal, PQ H3T 2T2
Contact: Denis Michaud Tel: 514-939-4444

Concordia University

1395, Dorchester Boul. Ouest Montreal.

Emily Carr College of Art and Design

1399 Johnson Street, Granville Island Vancouver, BC V6H 3R9
Contact: Jamie Olsen Tel: 604.844.3800

ICARI

2070 rue Clark, bureau 402 Montreal, PQ H2X 2R7
Contact: Alain Limouzin Tel: 514-982-0922

Information Technology Design Centre

230 College Street, Toronto, ON M5S 1A1
Contact: Isabel Hoffman Tel: 416-978-0631

Institute of Communication Arts

3246 Beta Avenue, Burnaby, BC V5G 4K4
Contact: Niels Nielson 604-298-5400, 800-661-1885

Okanagan University College

2899 30th Ave., Vernon, BC V1T 8G1
Contact: Glen Coulthard 604-545-7274; e-mail: gcoultha.vernview.ouc.bc.ca

National Animation and Design Centre

3510 St-Laurent, suite 314 Montreal, PQ H2X 2V2
Contact: Richard Langevin Tel: 514-288-3447

Seneca College

School of Communication Arts, 1124 Finch West, Toronto, ON
Contact: 416-491-5050 ext 4429

Sheridan College

Visual Arts Department 1439 Trafalgar Road Oakville, ON L6H 2L1
Contact: James Sayers 416-845-9430

Universite Du Quebec a Montreal

2094, Rue Kimberly Montreal

Vancouver Film School

400-1168 Hamilton St. Vancouver, BC V6B 2S2
Contact: Catherine Varela 604-685-5808, 800-661-4101
On Electronic Publishing...

Electronic network publishing is not new. What is new is the RANGE OF CHOICES that the publisher must face because of the changes in many technologies

— Dorothy Phillips @ W.R.I.T.E.'94, Broadband network researcher

On Digital Distribution...

Definitely the electronic system is coming, but CD-ROMs aren't going to disappear and will be around for at least five more years.

— Catharine Arnston @ W.R.I.T.E.'94, Multimedia Marketer

On the Publishing Industry...

Taking these courses doesn't mean it is any easier to get a job and it doesn't mean that you will get more money, but you probably won't get a publishing job at all without them.

— Jan Walter, President Macfarlane Walter & Ross in Quill & Quire March 1995

Publishing Programs

Applied Multimedia Training Centres

(formerly Computer Multimedia Technology Centre) 491 Portage Ave., Lower Level Winnipeg, Manitoba R3B 2E4
Program Title: Multimedia Design & Communication Dates: Jan., April, & Sept. start of 8 month program C
Contact: Joel Burke Tel: 204-772-3434 Fax: 204-772-2896
Email: cmtc@escape.ca

Banff Publishing Workshop

Box 1020, Station 28 Banff, AB T0L 0C0
Course Title: Electronic Publishing Date: Sept 18-30
Contact: Robert MacDonald Tel: 403-762-6183

British Columbia Institute of Technology

3700 Willingdon Avenue Burnaby, BC V5G 3H2
Course Title: Media Studio Intern Program Date: Spring '95
Contact: Robert MacDonald Tel: 604.432.8649


Continued on page 96

FOR COMPUTER & NETWORK TRAINING
COMPUTER MATH & SCIENCE LEARNING CENTRE
416•222•7511

CNA	\$ 399	Windows, Excel, Word, WP6.0, DOS Lotus, PowerPoint	
CNE	\$1800	Do Any Two	\$110
PC Assembly	\$ 179	Do Any Three	\$149

If you are above 45 and have been laid off you may qualify for Govt. Assistance

AutoCAD BY CORRESPONDENCE
Student Edition of AutoCAD available.
For a free brochure write or call:
ACET Department, SAIT
1301 - 16 Avenue NW
Calgary, Alberta T2M 0L4
Phone: (403) 284-7202
Fax: (403) 284-8812



Southern Alberta Institute of Technology

INTERNET-U
DR. ALLAN F. PARK, DIRECTOR
Toronto's Most Comprehensive Program of Internet Training Courses
For a copy of the June '95 Calendar call (416) 214-9473
or send e-mail to: internet-u@the-wire.com
Classrooms Located Downtown and at Glendon College with 1-on-1 PCs Hard-Wired to the Internet

Novell's NetWare Training

- Certified NetWare Administrator 2 wk \$595
- Certified NetWare Engineer 10 wk \$2095

Course material included
Full-Time: 4 hrs/day 5 days/wk
Part-Time, Evening & Weekend Classes
Unemployed, 45 yrs & over - Courses are free if approved.



LAN Network Consultants
CIRCUIT
9011 Leslie St., Suite 305, at Hwy. 7
Tel: 905-709-3466 Fax: 905-709-3460

computer animation courses begin sept 18th 1995

- state of the art Silicon Graphics work stations with Softimage and other leading animation software.
- concentrated, practical diploma program registered and approved by the ministry of education and training.
- financial assistance may be available.
- hands on, result-oriented training at individual work stations
- all courses taught by practicing professionals
- limited enrollment and lifetime placement service

International Academy of Merchandising & Design
Canada's Leading College of Design.

CALL NOW: 416 922 3666 or 1 800 361 6664

SoftTrain Institute 615 Yonge Street Suite 500 (at Yonge & Bloor) 975-0522

Central Campus Only

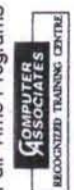
About SoftTrain:
Affordable tuition / 100% hands-on
Low instructor/student ratio
Placement Assistance
Certificate upon completion
Days/Evenings/Weekends
Steps from Subway line
New courses introduced periodically

Short-Term Courses:
C / C++
QBasic
AutoCAD
Essentials of Accounting
ACCPAC Simply Acctg (Bedford)
ACCPAC Plus GLAR/AP/PR
CorelDRAW
PageMaker
Harvard Graphics
PowerPoint
... and more!

Long-Term Programs (2-12 months):
Computerized Office Specialist
Computerized Bookkeeping Specialist
WordProcessing Operator
CAD Specialist
DeskTop Publishing Specialist
Computer Literacy
PC Specialist / Programming
CNE/CNA Preparation
Customized Full-Time Programs

West Campus : NOVELL CNA Prep. Register now!

Central Campus only: PC Assembly, PC Architecture, Configuration and Installation, Trouble Shooting, Unix, Novell, OS/2, Job Search Skills... and more!



CNE & ECNE Training Products

Powerful Windows based, training products at affordable prices!
Practice commands & utilities on simulations built in our
Computer Based Training programs. Multi-user licences for LANs are also available.

CBT's incl Books

DOS & Micro Concepts	\$129.00
Administration v3.1x	\$229.00
Adv. Administration v3.1x	\$229.00
System Manager v2.2	\$229.00
TCP/IP Transport	\$229.00
Service & Support (#801)	\$249.00
3.1 x Install & Config. (#802)	\$229.00

Books

DOS & Micro Concepts	\$29.00
Administration v3.1x	\$59.00
Adv. Administration v3.1x	\$59.00
System Manager v2.2	\$59.00
TCP/IP Transport	\$59.00
Service & Support (#801)	\$79.00
3.1x Install & Config. (#802)	\$79.00
Networking Technologies	\$89.00
Net. v3.11x to v4.x Update	\$79.00

All prices are subject to change without any notice.

Call fax, or write for a free CBT demonstration disk

Tel: (613) 736-5326 • Fax: (613) 736-9614 • 1-800-340-2121
2285 St. Laurent Blvd Unit D-12, Ottawa, Ontario K1G 4Z7



Proficiency Tests

DOS & Micro Concepts	\$19.95
Administration v3.1x	\$19.95
Ad. Administration v3.1x	\$19.95
System Manager v2.2	\$19.95
TCP/IP Transport	\$19.95
Service & Support (#801)	\$29.95
3.1x Install & Config. (#802)	\$19.95
Net. v3.11 to v4.x Update	\$19.95
System Admin. v4.0	\$19.95
Ad. Administration v4.0	\$19.95
Networking Technologies	\$19.95
4.0 Installation Workshop	\$19.95
Printing with NetWare	\$19.95
NetWare Global MHS	\$19.95
Unix OS Fundamentals	\$19.95
Fundamentals of Internetworking & Mgmt. Design	\$19.95

CAPITALIZE
ON THE
EVOLUTION OF A
NEW ECONOMY

The Atlantic Canada Business Computer Show is the computer event of the year for Atlantic Canada's key business decision makers. If you're into hardware, software, peripherals and any aspect of information technology, you've just got to be here!

THE
ATLANTIC
CANADA
BUSINESS
COMPUTER
SHOW

with Client Server
Solutions Day

Halifax Metro Centre
World Trade &
Convention Centre



For exhibiting
information please
call 416/252/7791.

SEPTEMBER 13 & 14, 1995
HALIFAX, NOVA SCOTIA

Neat Effects!

Continued from page 95

Capilano College

2055 Purcell Way N. Vancouver, BC V7J 3H5
Program Title: Infotec (Applied Information Technology)
Contacts: Crawford Killian, Lawrence Wu, 604-984-1727

Centennial College Information Design Centre

951 Carlaw Avenue Toronto M4K 3M2
Course Title: various Dates: Sept. '95
Contact: John King 416-462-8800

Okanagan University College

2899 30th Ave., Vernon, BC V1T 8G1
Course Title: Interactive CD-ROM Publishing
Dates: Summer '95
Contact: Glen Coulthard 604-545-7274; e-mail: gcoultha.vernview.ouc.bc.ca

Ryerson Polytechnic University

350 Victoria Street Toronto, Ontario M5B 2K3
Course Title: Certificate in Publishing Program
Contact: Rosemary Shipton, 416-979-5180

Simon Fraser University

Burnaby, BC V5A 1S6 Course Titles: Undergraduate minor in Publishing, Master of Publishing Dates: Sept. '95
Contact: Rowland Lorimer Tel: 604.291.3689

University of British Columbia

Continuing Studies 5997 Iona Drive, Vancouver V6T 1Z1
Course Titles:

GENESIS Online Courses

E: genesis@cce.ubc.ca
Certificate in Multimedia Studies
Length: 300 hours (approx.)
Date Program Begins: September '95
E: multimedia@cce.ubc.ca. You can access more information through UBC Continuing Studies web site. Home Page http://www.cstudies.ubc.ca/ 604-822-1432; e-mail: information@cstudies.ubc.ca

US Programs

Radcliffe Publishing Course

77 Brattle Street, Cambridge, MA USA 02138
Course Titles: Book & Magazine Publishing
Dates: June 25 - August 4, 1995
Contact: Roz Cummins Tel: 617-623-0319

Stanford Alumni Association

Bowman Stanford Alumni House Stanford, California USA 94305-4005 Course Title: Stanford Professional Publishing Course
Dates: July 16-28, 1995
Contact: Jennifer Watanabe Tel: 415-723-0544

With the help of *The Computer Paper* and its readers I have decided to compile a more satisfying answer to the question posed at the beginning of this article regarding careers in computers. If you have taken training in or have experience with computer animation, CD-ROM or electronic (/Internet) publishing please get in touch with me. For my part I plan to gather information from educational facilities, educators, professionals and the readers of *The Computer Paper* and then report on these findings in a subsequent issue. — MW

PRIME TECH INSTITUTE

(416) 756-9989 255 Consumers Road, Second Floor (Sheppard and Victoria Park) • TTC at doorstep

Software Programmer Diploma

(a 11 month programme)

Curriculum

- Programming in C
- C++ & Object-oriented Programming
- Structured Query Language (SQL)
- Programming in ORACLE
- Client Applications Programming using C on Netware
- Client Applications Programming using PowerBuilder
- Client Applications Programming using Visual Basic
- Client/Server Programming Workshop
- Introduction to Relational DBMS
- GUI Programming with Visual Basic
- GUI Programming with C & Windows SDK
- GUI Programming with C++ & MFC
- Programming in PASCAL
- Programming in 80X86 Assembly Language
- Data Structures
- Software Engineering Concepts
- Data Communications Fundamentals
- Advanced DOS, UNIX, & Novell Netware

Certificate Courses

- Available for PC, Macintosh & AS/400
- Word processing (WordPerfect, Word)
- Databases, Desktop Publishing
- ACCPAC (all modules)
- Under DOS/Windows, OS/2 & UNIX
- Spreadsheet (Lotus, Excel)
- AutoCAD (all levels)
- Programming (most languages).

Computer-Aided Design Specialist Certificate

(a 4-6 month programme)

Curriculum

- AutoCAD Basics
- AutoCAD Intermediate
- AutoCAD Advanced
- Introduction to Engineering Drafting
- Advanced Engineering Drafting
- 3D Solid modelling
- AutoCAD Customization
- AutoCAD Workshop
- Introduction to DOS

Desktop publishing Specialist Diploma

(a 4-6 month programme)

Curriculum

- Typography on the PC and Macintosh
- Layout and design
- PageMaker for Windows
- Illustrator on the Macintosh
- Desktop publishing Workshop on Windows
- Desktop publishing Workshop on Macintosh
- Print production for desktop publishing
- Scanning techniques for the PC and Macintosh
- CorelDRAW for Windows
- Microsoft Word for Windows
- QuarkXPress on the Macintosh
- Photoshop on the Macintosh

Accounting Assistant Diploma

(a 3-6 month Programme)

Curriculum

- ACCPAC Plus hands-on training on General Ledger,
- Accounts Payable, Accounts Receivable, Canadian Payroll, Order Entry and Inventory Control.
- Accounting Theory Intensive training on the essential principals of accounting & bookkeeping to provide the necessary prerequisite for future professional studies.
- Bedford Familiarize students with small-business accounting software.
- Spreadsheet Intensive hands-on training on Lotus 1-2-3 augmented with realistic projects like Cash Flow Analysis and Shift Scheduling Analysis.
- Accounting Workshop This final exam/workshop requires students to combine various software tools to independently solve a complete and complex accounting project, from preparing charts of accounts to handling month-end procedures and bank reconciliations.

PC Support Specialist Diploma

(a 6 month programme)

Curriculum

- Novell LAN Hands-on training as a user and as a network administrator on our Novell 3.1 file server and modem server. Learn about ARCNET, Ethernet, and Token Ring topology.
- PC Hardware Hands-on training on PC assembly and hardware problem determination using diagnostic tools like QA Plus and Norton Utilities. Demonstration of virus detection and removal.
- PC Applications Intensive hands-on training on WordPerfect, Lotus 1-2-3, dBASE and Windows. Learn to install, configure and troubleshoot application-specific problems as well as dealing with memory management issues.
- Operating Systems Hands-on training on DOS, Windows, and UNIX administration and installation and X-Windows.
- Wide Area Data Communications Learn about WAN fundamentals. Optional courses on Modems & asynchronous communications, X.25 Packet Switching, TCP/IP & Internet.
- NETWORKING LABORATORY
 - Install Novell 2.2 & 3.12
 - Setting up dedicated & non-dedicated print server
 - Upgrading from Netware 2.2 to 3.11
 - Tape Backup and Disaster Recovery
 - Install applications on Netware 3.12
 - Setting up multiserver networks
 - Configuring workstations for local & remote booting
 - Using network diagnostics & maintenance utilities (VREPAIR, COMCHECK & HINDFIX)
- CABLING LABORATORY
 - Hands-on experience with coaxial and twisted pair cables
 - Configuring internal and external router for internetwork
 - Set up ARCNET using active and passive hubs
 - Set up Ethernet (10BASE 2 & 10BASE T) using concentrators
 - Planning exercises for large networks
 - Cable fault detection techniques

FINANCIAL AND JOB PLACEMENT ASSISTANCE MAY BE AVAILABLE TO THOSE WHO QUALIFY.

(416) 537-2611

SBI

COMPUTER PRODUCTS

DISTRIBUTION

(416) 537-2611

SOUNDSCAPE WaveTable.S229.
BOCA Sound Expression.S239.
SOUND BLASTER 16.....\$99.
BIGMOUTH...\$209.

SNAPPY
Video Grabber
\$299.

WHOLESALE PRICES

since 1979

COMPUTER PACKAGE DEALS!

SBI DX2 66.\$689

SBI DX2 80.\$709

SBI DX4 100.....\$789

SBI P75 FLYER.....\$949

SBI P90 FLYER...\$1129

SBI P100 FLYER.\$1329

SBI P120 FLYER.\$1799

FREE
INTERNET
ACCESS

SYSTEMS HAVE:

- 4 MB 60ns SIMM
- 128/256/512K Cache
- One 1.44 MB 3.5" Drive
- 101 Honeywell Keyboard
- IDE HD/FDD Controller
- Parallel, 2 Serial, Game
- 230 Watt Power Supply
- Assembled & Tested-48Hr
- Mini Tower Case w LED's
- One Year Warranty, CSA
- **OPTIONAL MONITOR, HARD DRIVE & VIDEO CARD**

ACER 486 NOTE BOOK - \$1299.

COREL DRAW 5.0 \$249.

DISKETTE DRIVES Fujitsu~Panasonic~TEAC

Panasonic 3.5" 1.44 MB Diskette Drive.....\$39. | 3.5" 2.88 MB Diskette Drive...\$99.
TEAC Dual Drive 1.2/1.44 5"/3".....\$159. | Panasonic 1.2 MB 5.25" Drive...\$59.

INTEL DX2/66 OVERDRIVE PROCESSOR - \$199.

HARD DRIVES & CONTROLLERS ~ IDE & SCSI

FUJITSU 530MB 12ms 256K IDE.....\$259.	FUJITSU 1.08 GB 9ms 256K SCSI+2...\$669.
QUANTUM 1.4GB 10ms 256K SCSI...\$899.	EMPIRE 1080MB 9ms 512K SCSI...\$729.
CONNOR 1.06GB 9ms 512K SCSI...\$699.	QUANTUM 730MB 11ms 256K SCSI...\$369.
SEAGATE 850MB 11ms 256K EIDE...\$359.	SEAGATE 1.08GB 12ms 256K EIDE...\$499.
MAXTOR 850MB 9ms 256K IDE...\$329.	FUJITSU 530MB 10ms 256K SCSI+2...\$289.
QUANTUM 540MB 14ms 128K EIDE...\$262.	QUANTUM 2.1GB 10ms 512K SCSI...\$1399.
MAXTOR 1.26GB 11ms 256K EIDE...\$599.	EXTERNAL SCSI HD Parallel Kit w SW...\$189.
IBM 1.08GB 10ms 512K SCSI+2.....\$749.	PROMISE SuperCache VL IDE/FDD...\$149.
WDC 1.05GB 10ms 128K Enhanced IDE...\$469.	ADAPTEC 15/28/29 SCSI-2/3.....\$CALL.

CASES & POWER SUPPLIES & KEYBOARDS

Mini/Medium Tower w 230W CSA...\$69/99. | Full Tower 300W 10 Bays 2 Fans...\$189.
Honeywell/Keytronics 101 Enhanced...\$39/59 | ED120 Ext HD Case HH 45W SCSI...\$169.

MEMORY UPGRADES - COMPUTERS & HP LASERS

4 MB x 9 SIMM 60ns 30 Pin.....\$199. | 1 MB x 9 SIMM 60ns 30 Pin.....\$59.
8 MB x 9 SIMM 70ns 72 Pin x 36...\$469. | 4 MB x 9 SIMM 70ns 72 Pin x 36...\$249.
16 MB x 9 SIMM 70ns 72 Pin x 36...\$749. | HP POSTSCRIPT/MEMORY Upgrade...\$CALL.

PROCESSORS/UPGRADES Intel~Cyril~AMD

Intel Pentium 75/90/100MHz from...\$349. | Cyril 387/SX/DX/33/40...\$79/\$89.
AMD 486 DX 2/80 Processor.....\$189. | Intel 486/DX/2/4, 33 to 100...\$CALL.

MULTIMEDIA/CD ROM & REMOVABLE MEDIA DRIVES

PIONEER 602X 6 Disc Ext CD ROM...\$649. | NEC MultiSpin 4X CD ROM SCSI...\$679.
PLEXTOR 1 CD 220ms 600KB 1M Quad...\$639. | NEC MultiSpin 4XI CD ROM SCSI...\$549.
Game BLASTER CD 16 Int Drive...\$479. | CDX220 Internal IDE 2X CD-ROM...\$149.
Sound BLASTER 16 VALUE CD 12 titles...\$259. | Toshiba 3501B 4X SCSI CD-ROM...\$459.

MODEMS ~ FAX-BACK ~ VOICE MAIL ~ LINE SWITCHES

BOCA SoundExpression 14.4VSp Sound/Voice/FAX/Modem/Phone CD ROM...\$239.
GVC 14.4 Int. S/R FAX/Modem/Voice DOS/Windows V.42/32bis/MNPS 57.6 bps...\$89.
US Robotics 28.8 Internal S/R FAX/Modem DOS/Windows V.34/MNPS 57.6 bps...\$329.
US Robotics 14.4 External S/R FAX/Modem V.42bis/V.32bis/MNPS Group III 57.6 bps...\$159.

TAPE DRIVES Archive~IOMEGA~Colorado~Connor

IOMEGA Ditto 420MB Int Tape Drive.....\$249. | IOMEGA 250MB Int Tape Drive...\$159.

VIDEO / TV CARDS

ATI GRAPHICS PRO TURBO 1280x1024, 64 bit, 100Hz, 4MB, 16.7M Colors, PCI...\$699.00
ATI GRAPHICS XPRESSION 1280x1024, 64 bit, 75Hz, 2MB, 16.7M Colors, ISA...\$299.00
VideoBLASTER FULL-Motion VIDEO/Audio & TV, 2M Colors, Video Animation...\$459.00
SNAPplus 2MB VIDEO/RECORDER w GenLock, FULL-Motion, 16.8M Colors...\$899.00
CREATIVE TVCorder VGA to Video/TVNTSC/PAL Solution 640x480 256 Colors...\$189.00
ATI Graphics Wonder MACH32 Windows Accelerator 1280x1024 1MB, 16M Colors ISA/VLB...\$189.00
CIRRUS LOGIC 1MB, VESA Local Bus, 1280x1024, NI, 72Hz, 16M Colors...\$129.00
ATI STEREO - F/X MultiMedia Stereo Sound Card\$49.00

RAVEN LASER \$629

POINT OF SALE ~ BAR CODE & CREDIT CARD READERS +

KeyBoard Wedge WAND Scanner.....\$329.00 | POS CASH DRAWER w Dual LOCK...\$209.00
STAR 4.5" SERIAL POS PRINTER...\$475.00 | BarCode Print Utility Software DOS...\$29.00
CREDIT/HEALTH CARD READER...\$275.00 | POS KEYBOARD, 44 Key Prog...\$195.00
CCD HAND LASER SCANNER...\$699.00 | POS ACCOUNTING Software...\$275.00

HIGH-SPEED MULTI I/O, MEMORY, FANS, MOUSE

MICROSOFT (OEM) SERIAL MOUSE ERGONOMIC Two Button.....\$39.99
LAVA COMPLETE-55 16 bit IDE, FDD, 2 Serial (16550 UART), 1 Parallel.....\$69.99
UN-1075 AT I/O, 2 Serial, Parallel, FDD, Game, HD IDE, w Cables...\$19.99
QD-6580 VLB Enhanced IDE(4) 2 Serial, Parallel, FDD, Game, w Cables...\$39.99
PROMISE 2300+ VLB 2 High-Speed Serial 1P G FDD FAST ATA Enhanced IDE(4) Cables...\$99.99

NETWORKS ~ NOVELL & LANtastic

SMC Elite 16C Ultra Ethernet Card...\$149. | NOVELL Netware v3.12 (5User)...\$899.
MS Windows WorkGroups Starter Kit...\$169. | MAGIT 16 bit EtherNet Card BNC/RJ45...\$69.

MAINBOARDS~386/486/Pentium (ISA/VESA/EISA/PCI)

PT-319A	486/SIC/33MHz, ISA, SARC, AMI, OK Cache, Exp>16MB, SIMM 6 Slot...\$129.00
MB-317	386/DX/40MHz, ISA, OPTI, AMI, 128K Cache, Exp>64MB, SIMM 6 Slot...\$159.00
486DLC/33	486/DLC/33MHz w487DLC, OK, 128K Cache Exp>32MB, AMISIMM6 Slot...\$199.00
486DX2/66	486/DX/66MHz, OK, 256K Cache, Exp>64MB, UMC, SIMM, 7 Slot...\$269.00
SBI/P60	Pentium, 60MHz, OK, 256K Cache, Exp>128MB, VESA, SIMM...\$529.00
SBI/P75	Pentium, 75MHz, OK, 256K Cache, Exp>128MB, PCI, SIMM...\$569.00
SBI/P90	Pentium, 90MHz, OK, 512K Cache, Exp>192MB, PCI, SIMM...\$788.00
SBI/P100	Pentium, 100MHz, OK, 512K Cache, Exp>192MB, PCI, SIMM...\$959.00
SBI/P120	Pentium, 120MHz, OK, 512K Cache, Exp>192MB, PCI, SIMM...\$1699.00

MONITORS/PANELS MITSUBISHI~NEC~GOLDSTAR~SAMSUNG

NEC Monitors XE/XP15, XE/XP17, XE/XP21...\$CALL.
CSV1448T 14" SVGA .28 1024x768 NI...\$299.
CSV1501P 15" SVGA .28 1024x768 70Hz NI...\$399.
Magitronic 17" SVGA .28 1280x1024 70Hz OSD NI...\$789.
MAG DX15F 15" SVGA .28 FS 1280x1024 70Hz NI...\$529.
MAG DX17F 17" 1280x1024 .26 76Hz FS NI MPRIL...\$899.
DIAMOND PRO 15FS .28 1280x1024 NI 76Hz...\$609.
DIAMOND SCAN 17FS .28 1280x1024 NI 76Hz...\$1299.
DIAMOND PRO 21FS .28 1600x1280 NI 76Hz...\$2599.

PRINTERS ~ SCANNERS ~ FAX

HP FAXJet 900 PLAIN PAPER DeskJet FAX...\$999.
HP PRINTERS DESKJETS/LASERS all Models...\$CALL.
HP ScanJet 3c 16.7M Colors, 2400dpi, PS SE...\$1399.
LEXMARK OptraR Laser 2M PS 12ppm 1200dpi...\$1999.
CANON BJC-4000 Color InkJet Printer...\$499.
HP Office Jet Printer/FAX/Copier 3 in 1...\$1049.
DEC 1152 Laser Printer 4ppm, 2MB, PostScript...\$899.
PANASONIC 1150, 2023, 2123, 2124 ETC...\$CALL.
Golden IMAGE 800 dpi, 256 Gray Scale, OCR...\$179.

SOFTWARE SALE

MS FOXPRO 2.6 Win...\$119.
MS DOS 6.22...\$59.
COREL VENTURA 5...\$199.
COREL GALLERY CD...\$59.
IBM OS/2 V3 Warp...\$99.
MS EXCEL 5.0 Win...\$159.
WINProbe V 3.0...\$25.
MS OFFICE 4.2...\$349.
LOTUS 5.0 Win U...\$119.
MS WORD 6.0 Win...\$149.
WINDOWS 3.11...\$79.
USING INTERNET 2 SE...\$54.
LANtastic 6.0 Win...\$99.
Norton Utilities 8.0...\$79.
Harvard Graphics Win2U...\$110.
WorkGroup 3.11 Win...\$69.
WordPerfect Win 6.1U...\$159.

128 Atlantic Avenue
Toronto, Ontario M6K 1X9
Phone: (416) 537-2611
Fax: (416) 537-1484



SYSTEM BUILDERS INC.

(4 Streets E. of King / Dufferin - Open Saturdays)

Order Desk 1-800-567-2611 InterNet: sbi@passport.ca



128 Atlantic Avenue
Toronto, Ontario M6K 1X9
Phone: (416) 537-2611
Fax: (416) 537-1484

WIN LOTTO!

GAIL HOWARD'S SMART LUCK® LOTTERY SYSTEMS

Won 39 Lotto Jackpots Worth \$79.2 Million Dollars!

The ONLY Systems with documented JACKPOT WINNERS.



Gail Howard is the undisputed authority on lottery strategies used in the world today. Her remarkable success is helping people win big money in Lotto has led to appearances on hundreds of radio and TV shows, including *The Today Show* and *Good Morning America*.

"Last November 8th, I hit the jackpot to the tune of \$1,096 million dollars. I hit one 6-number prize, two 5-number prizes and three 4-number prizes from your system 503. What a joy and excitement! I'm working on my second jackpot because with your system it's very seldom that I don't collect some prizes."

— Marie Cloarec, Canada Lotto 6/49

"After reading Gail Howard's book, I have won 18 prizes to date. In my first week of play, I won seven prizes. In the 2nd, 3rd and 4th weeks, I won one prize each draw, in my 6th week of play, I won the first prize jackpot of \$516,234.80 plus eight other prizes."

— Max Harrell, Canada 6/39 Lottario

LOTTO HOW TO WHEEL A FORTUNE

This 397-page book contains the world's most successful lottery systems including ALL the systems used by Gail Howard's biggest Lotto jackpot winners. Easy to use as A-B-C. US \$19.50 + US \$5.00 S/H

"Gail Howard's program is the market's most comprehensive and incisive... easy to install... technical support is excellent... Advantage Plus meets its claims. For the serious lottery enthusiast, it's the one to buy!"

— Cost Compute magazine

"Advantage Plus™ is the most user friendly software on the market, also the most professional and complete program ever devised for Lotto... the ultimate lottery software for the serious lottery player."

— Computer Monthly magazine

"Lottery guru Gail Howard... can help people beat the odds."

— Family Circle

"Wheeling systems like (Gail) Howard's have the most respectability among critics, since they concede that the wheels off a systematic way of reducing the odds"

— New York Daily News

"Leavelle Carter... and Sherry Jaynes... both won big jackpots by using Miss Howard's system. Mr. Carter bet \$13 and won \$606,023 in the D.C. Lotto game; Mrs. Jaynes hit a \$13.8 million jackpot in the New York state lottery... On August 2, an Indiana couple hit the Canadian lottery for \$516,000. Two days later, 16 co-workers at a Miller Brewing plant in Clay, NY split more than \$1.4 million. All used Miss Howard's system."

— Washington Times

Gail Howard's SMART LUCK® Software for your IBM/Comp. Computer

ADVANTAGE PLUS™

Use ADVANTAGE PLUS™ and you'll trash all your other lottery software. It's the most complete, fastest and easiest to use — in a class by itself. Nothing else can begin to compare!

• COMPLETE drawing results for all Canadian Lotto Games from 1982 to present • Over 50 scientific charts and reports to zero in on winners • Detailed 62 page manual shows how to identify winning patterns • Automatic SMART PICKS™ selects best Lotto #'s instantly • Test past accuracy of SMART PICKS™ with one key stroke • A \$295.00 value. Your introductory price for a limited time only US \$79.95 + US \$5.00 S/H

COMPUTER WHEEL™

Easy to use scientific systems that reduce the odds. Has 252 Lotto Wheeling Systems, each with a specific win guarantee. Guaranteed flawless. Find one system that fails its win guarantee and you get DOUBLE your money back! (COMPUTER WHEEL™ and ADVANTAGE PLUS™ — a winning combination!)

• These systems cost as little as two dollars to play, or you can wheel up to 40 of the 49 numbers in your game • Shows the minimum and maximum number of multiple prizes that can be won with each system • TIMES IN THE WHEEL handicapping feature tells how many times each number position is in the wheel so you can place your strongest numbers where they appear most often • Optimizing feature makes best possible sums of your chosen numbers • Saves up to 500 wheels for win checking • US \$39.50 + US \$5.00 S/H

ADVANTAGE PLUS™ AND COMPUTER WHEEL™

Save \$20! Buy BOTH for only US \$99.95 + US \$5 S/H

We ship IBM/Comp. 5.25". Add US \$1.00 for EACH 3.5" disk (one per program).

1-800-945-4245

SMART LUCK® Software

Dept. P-3, P.O. Box 1519 • White Plains, NY 10602
For information call 914-761-2333

A PROVEN WINNER!



DON'T SETTLE FOR LESS.

Name _____

Address _____

City _____ Province _____

Phone () _____ Zip _____

Visa MC Exp. Date _____

Card # _____

No Canadian dollar checks, please. Our U.S. banks slaughter us with the exchange and fees. U.S. dollar MO's welcome.

USER GROUPS

ATTENTION USER GROUPS. Send in your listing (maximum 120 characters) for the August issue by Monday July 3, 1995. Submissions run for one month only in the local edition. *The Computer Paper* reserves the right not to print submissions which are deemed unsuitable.

AMIGANAUTS MEETING - 2nd Sun. each month, 6-8 p.m., at 2975 Don Mills Rd. West, 2nd floor, Games Rm.

ANIMATORS GROUP For info call (416) 929-8155. For info: 1-800-638-9636.

ARTIFICIAL INTELLIGENCE BUSINESS LINK (A.I.B.L.) association for sharing promoting, researching & networking about practical business AI practices, tools, information & ideas. Fax (416)322-7129 or call 322-0783.

CANADIAN COMPUTER GRAPHICS ASSOCIATION CCGA, 2175 Sheppard Ave. E., Ste 110, Willowdale, ON, M2J 1W8. Fax: 491-1670 Tel:491-2886.

CANAM COMPUTER CLUB - Breakfast meetings every Sat. at WATTS Restaurant in Eglinton Square Mall, Scarb. For info. call Bill Mancini 757-1276.

CASE Computer Aided Software Engineering - BBS 497-5263 (log on if MIS affiliated messages, into Tech 2nd category called CASE). Call Joe Da Silva at 252-1408 or Rob Beckman at 928-2694.

CLIPPER DEVELOPERS ASSOCIATION OF TORONTO. For info call Mike Parente 905-336-5191 ext. 447.

CLUB CUBASE meets at 7:30 pm (last Mon. of every month) at Trebas Institute, 410 Dundas St E. Call 496-9905.

CLUB MAC COMPUTER GROUP OF ONTARIO meets 2nd Tues, Michener Institute, 222 St. Patrick St. Toronto, at 7 pm, infoline 462-1702.

COMPUTER TRAINERS NETWORK Meets 1st Thurs every month to discuss issues related to PC's & training. At: the CBC Building, 25 John Street. For info call Lynn 362-9215. Finch Ave. West, North York ON M3J 3J3.

INTERNATIONAL PROGRAMMERS GUILD Meets every 2nd week at 7:00 pmon Tues PM at the MacCherony, 32 Wellington E., Toronto. For info or a free copy the newsletter, call IPG at 905-824-7947.

INTERNET USER GROUP. Meets 1st Tues of every month at Toronto Western Hospital. Yellow elevators to the 6th floor. at 7:00pm. Call Daniel O'Connell 416-365-1899 or TIUG @ CAMTWH.ERIC.ON.CA.KW-MUG 376 Peel Street, New Hamburg, ON, NOB 2G0, (519) 662-2627.

LOGIC Meetings 1st (Macintosh) & 3rd (Apple II) Tuesday of the month, North Toronto Memorial Community Centre, 200 Eglinton AveWest at 7:00pm.. Messages

416-323-0828, BBS 416-487-9771, FAX 905-737-6159.

METRO TORONTO ADAM GROUP (MTAG). Users contact: (416) 424-1352 or

write to: P.O. Box 165, 260 Adelaide St. E., Toronto, ON, M5A 1N0. Meetings 4th Sat. of each month at the Pape Ave. Community Cnt.

MICROSOFT ACCESS AND VISUAL BASIC USERS GROUP. Meetings held 1st Thurs of every month, 6:00pm at 95 Trinity St. For more info contact Microsoft Info Ctr at 800-563-9048 or Dale Beckles at 416-363-8995.

MISSISSAUGA COMPUTER CLUB - Meets on 1st Wed. of every month at 8pm at the Burnhamthorpe Community Ctr at 1500 Glededen Dr. in Miss. For online info, call our support BBS at (905) 270-3972 or (905) 568-2496.

NORTH AMERICAN DESKTOP - A computer users grp for PC and Apple.Bi-monthly. For info call (905) 889-5311.

OTTAWA BANYAN USERS GROUP (OBUG). Meetings held on the 1st Wed. of every month at Geological Survey of Canada, 601 Booth St., Alice Wilson Hall. (ground floor). For info call Gautam Subra at 613-738-3175.

PCCT (PERSONAL COMPUTER CLUB OF TORONTO) meets 3rd Tues. at 5110 Yonge St, North York at 7:00 pm. Voice info line: (416) 633-6971.

REPETITIVE STRAIN SUPPORT GROUP meets the 2nd Thurs. of every month. For info call 416-493-3641, or 416-252-6471 x299.

TAF - TORONTO ATARI FEDERATION - Meets 7:30pm. 3rd Thurs of month in North York City Centre Library building, 5110 Yonge St. at Park Home. BBS - (300-16.8) 235-0318. Info-Line (416) 22-55-823 CALL-TAF.

THE CANADIAN AUTODESK MULTIMEDIA USER GRP - call Pia Zimperi at (416) 929-8155.

THE CANADIAN INFORMATION PROCESSING SOCIETY - For info call Rick Penton 518-1437

THE DURHAM P.C. USERS CLUB - Meetings on 2nd Thurs. of each month at 7-10 pm (free admission). Held at CAW Local 222 Hall, 1425 Phillip Murray Ave., Oshawa. Contact Linda Netten 905-623-2787 or Bruce Laycraft 905-728-9351.

THE ELITE GROUP OF 3-D PROGRAMMERS For info write to L.T.P.D. c/o (E.G.3D

P), 37 Montye Ave., Box #2, Toronto, ON M6S 2G8.

THE INTERNATIONAL INTERACTIVE COMMUNICATION SOCIETY (IICS) For info call Peter Richardson 416-288-0550 or fax 285-4395.

THE TORONTO COLOUR COMPUTER GROUP meets on the 2nd and 4th Mon of each month. For info, call Larry Osborne at (416) 972-1809.

THE TORONTO GUPTA USERS GROUP (TGUG) - Meetings in Feb, Apr, June, Sept, Nov each year. Call Terry Lewis at 416-620-6565 X639 or 416-620-6913 (fax) for info.

TORCHI (Toronto Region Computer Human Interaction) meets every 2nd Wed of the month at 7:00 pm. Call M. Boshes (416) 448-2697.

TORONTO APL SIG 4th Mon. of every month at 6:30 pm at BCE Place, 161 Bay Street, 10th Floor. Or write: Toronto APL SIG, Box 384, Adelaide Street P.O., Toronto, ON., M5C 2J5. Call Ben Best (416) 862-3193.

TORONTO BORLAND USER GROUP meets 1st (C/C++), 2nd (Paradox) and 3rd (Quattro Pro) Thurs of every month at 6 pm, 5:30 pm and 7 pm respectively. Meetings held at Borland, 5001 Yonge St, 14th Floor. Membership info call David Kirsch 416-967-1660. Free BBS (905) 271-9795.

TORONTO DELPHI/INTERBASE USERS GRP - Meets at the First Canadian Place, on the 1st Thurs. of every month at 2pm. For info call Robert Schieck 410-5166.

TPUG TORONTO PAF USERS GROUP Meets on the 2nd Sat of each month at the Toronto Family History Centre. Contact FRED.WARDELL@canrem.com

(TORONTO PET USERS GROUP, INC.) Commodore users, meets Tues. (1st, 12th, 2nd, Amiga; 3rd, GEOS; 4th, 64), York Public Library. Please call (416) 253-9637.

TRACE Toronto Regional AutoCAD Exchange: Presentations on the last Tues of every 2nd month. At Malton Community Cnt, 3540 Morningstar Drive. For info call Tim Lucas (416) 750-9765.

WORDPERFECT USER SUPPORT GROUP meets the 1st Thurs of every 2nd month. Call (416) 720-4299 or write WPSG, P.O. Box 6503, Station A, Toronto M5W 1X4 for info.

ZIM USERS GROUP Call Fay Rakoff: Phone (416) 979-6216, or Fax (416) 979-4888.

CALENDAR

JUNE

LANDMARK COMPUTER EXHIBITION & SALE. June 16-18. Northside Arena, St. Thomas. For more information contact LCE at (800)265-7081.

JULY

COMDEX CANADA July 12-14, 1995. Toronto, Ontario. For more information call Softbank Comdex at 617-449-6600.

WINDOWS WORLD. July 12-14, 1995. Toronto, Ontario. For more information call Softbank Comdex at 617-449-6600.

CANADA

CLIENT/SERVER SOLUTIONS '95 Seminars. Edmonton June 20, Vancouver June 22, Ottawa September 12, Winnipeg September 14 & Toronto September 26. Members of the public who are interested in registering can call 800-947-7753. Members of the media interested in attending can contact Karin Scott at Strategic/Ampersand (416)961-5595.

INTERNATIONAL

PC EXPO. June 20-22, 1995. New York. PC Expo will encompass the latest in computer hardware and software products, including portable and pen-based computing, multi-media, client/server and networking technology. For more info contact: Annie Scully (ext 145), 201-346-1400.

WINDOWS WORLD. June 21-24, 1995. Tokyo, Japan. Contact: IDG/World Expo Corp. at 508-879-6700.

WINDOWS WORLD/TOKYO. June 21-24, 1995. Nippon Convention Center, Tokyo, Japan. Contact: Matt Mandino at IDG World Expo at 800-545-3976 or 508-820-8624.

OBJECT WORLD/LONDON. June 19-22, 1995. Olympia II, Kensington, London, England. Contact: Deborah Paul at IDG World Expo at 800-545-3976 or 508-820-8661.

COMNET/WARSAW. June 20-22, 1995.

Palace of Culture & Science, Warsaw, Poland. Contact: Theresa Coffey at IDG World Expo at 800-545-3976 or 508 820-8661.

MACWORLD EXPO/SINGAPORE. July, 1995. Hyatt Regency Hotel, Singapore. Contact: Matt Mandino at IDG World Expo at 800-545-3976 or 508-820-8624

PHOTOSHOP CONFERENCE. July 10-11, 1995. New York, New York. For more information call Thunder Lizard Productions at 206-633-3431.

WINDOWS WORLD/TOKYO. July 15-17, 1995. Nippon Convention Center (Makuhari Messe), Tokyo, Japan. Contact: Matt Mandino at IDG World Expo at 800-545-3976 or 508-820-8624

NETWORK + INTEROP. July 17-21, 1995. Tokyo. For more information call ZD Expos at 415-578-6900.

MACWORLD. July 25-27, 1995. Singapore. For more information call IDG/World Expo Corp at 800-225-4698 or fax to 508-872-8237.

MACWORLD. August 8-11, 1995. Boston,

MA. For more information call Mitch Hall Associates at 617-361-8000.

COMDEX. August 14-18, 1995. San Paulo. For more information call Interface Group at 617-449-6600.

PC '95. August 15-18, 1995. Melbourne, Australia. For more information call Information Services at 301-656-2942

CD-ROM HOME & OFFICE WORLD. August 21-23, 1995. New York, New York. For more information call Mecklermedia at 203-226-6967.

COMPUTER WORLD EXPO/WELLINGTON, NZ. August 22-24, 1995. Michael Fowler Centre, Wellington, New Zealand. Contact: Theresa Coffey at IDG World Expo at 800-545-3976 or 508-820-8661

WINDOWS SOLUTIONS. August 29 - September 1, 1995. San Francisco, CA. For more information call 415-578-6900.

COMNET - FENASOFT BRAZIL '95. September 26-29, 1995. Anhembi Exposition Center, Sao Paulo, Brazil. For more information or to register call Cress O'Brien at 1-800-225-4698 or fax 1-508-872-8237

Hello? **BIGMOUTH**

Full Featured PC based Call Processing/Voice Mail That never lets you "down" **Is Always There** Affordable Turn-key Solutions For CUSTOM applications

Complete Line of Voice Mail and Fax-on-Demand Products

NEW Voice Window - open architecture, voice, fax, outdialing, Talking Classifieds, Order Entry, dBase/text file support multi-line, operations under DOS or Windows 3.1 for worry free communications IVR-Interactive Voice Response

Cell-ect Communications Inc. 1411 St. SE, Calgary, Alberta T2G 2J3 Voice: (403) 232-8858 Fax: (403) 232-6331

MAKING ALL THE RIGHT CONNECTIONS For more information, call today.

PRESENTED BY

UNIGLOBE
Travel

CANADA'S COMPUTER INFORMATION SOURCE
The COMPUTER PAPER
NEWS REVIEWS FEATURES

READER SURVEY

Enter to Win a Trip for Two to

Mexico

The Computer Paper wants to know more about you!

Take a few minutes to fill out this survey, mail it to us and you could be on your way to Puerto Vallarta, Mexico! Trip includes airfare and seven nights accommodation for two.



CLIP OUT

How to Enter...



1. Fill out this survey



2. Clip out, put in envelope, attach stamp



3. Mail it to:
Reader Survey
The Computer Paper
Suite 8
3661 West 4th Ave.
Vancouver, B.C.
V6R 1P2



4. Your name will be entered into our draw for a trip to Mexico.

Draw Date:
July 31, 1995

One entry per person, please. One prize will be awarded. Prize must be accepted as awarded, and cannot be exchanged for the equivalent cash value. The winning entry will be chosen from fully completed surveys. The decision of the judges is final. The winner will be required to answer a skill testing question. Winners are financially responsible for travel costs to the closest point of departure (Vancouver, Calgary, Edmonton, Saskatoon, Regina, Winnipeg, Toronto, Ottawa, Montreal, or Halifax). The prize is nontransferable. The trip must be taken before March 31, 1996, but cannot be taken between December 15 - January 6. Restrictions may apply during the spring break months of January and February 1996. Accommodation will be at Canada Computer Paper Inc.'s discretion. Prize does not include meals or spending money. Employees of Canada Computer Paper Inc. and their relatives are not eligible to win. Draw will be held July 31, 1995. Other restrictions, not listed here, may apply.

Sample Question

Please fill in the blank or put a checkmark in the box, as shown.

Sample Question. Are you:

01. Male
 02. Female

Tell us about yourself

1. How old are you? _____

2. Are you:

01. Male
 02. Female

3. What is your highest level of education?

01. Did not complete high school
 02. High school
 03. Some post secondary
 04. University degree(s)

4. How many people are there in your household, including yourself? _____

5. What is your combined household income? (including your spouse or partner)

01. Under 30,000
 02. 30,000-49,999
 03. 50,000-59,999
 04. 60,000-69,999
 05. 70,000-99,999
 06. over \$100,000

Your Work

6. What is your company's main business?

01. (specify) _____
 02. I am not currently employed

If you are not currently employed, skip to Question 12.

7. What is your job function?

01. CEO/President/Owner/General Manager
 02. MIS/CIO/DP/Information Systems/Computer Support
 03. Other Professional Occupation
 04. Other (specify) _____

8. What is your Department/Function? (specify) _____

9. What was your company's total gross sales, volumes or revenues in 1994?

01. Under \$100,000
 02. \$100,000 - \$500,000
 03. \$500,000 - \$1 million
 04. \$1 million - \$9 million
 05. \$10 million - \$49 million
 06. \$50 million - \$99 million
 07. \$100 million - \$249 million
 08. \$250 million - \$499 million
 09. \$500 million - \$999 million

10. \$1 billion - or more
 11. Don't Know

10. How many people are employed full-time in your company?

01. 10 or under
 02. 11-49
 03. 50-99
 04. 100-499
 05. 500-999
 06. 1000-2,499
 07. 2,500-4,999
 08. 5,000-9,999
 09. 10,000 or more
 10. Don't Know

11. Describe your work:

01. Business
 02. Government
 03. Education
 04. Non-profit Agency
 05. Professional Services
 06. Other _____

Your Computer Use

12. Which category best describes your use of a computer? (check one)

01. I don't use a computer, and have no plans to use one
 02. I don't use a computer, but plan to get one soon
 03. I'm a new computer user
 04. I'm an intermediate user
 05. I'm an advanced user

13. Please let us know how you use your computer (check all that apply)

01. Accounting
 02. Application development
 03. Children's software
 04. Communications server
 05. Database
 06. Database server
 07. Desktop publishing
 08. Education/reference
 09. Electronic mail
 10. Entertainment and Games
 11. Graphics and Art
 12. Multimedia applications
 13. Music
 14. Online Access
 15. Order/entry/manufacturing automation
 16. Personal finance & productivity
 17. Presentation graphics
 18. Print and file server
 19. Programming
 20. Project Scheduling
 21. Science/engineering
 22. Spreadsheets
 23. Word processing
 24. Other _____

14. How long have you used a computer?

01. Less than 1 year
 02. 1 year to 3 years
 03. 3 years to 5 years
 04. 5 years to 7 years
 05. 7 years to 10 years
 06. More than 10 years
 07. Don't use a computer, no plans to
 08. Don't use a computer, but plan to soon

If you don't have a computer at home, skip to Question 21

15. How many computers do you have at home? _____

16. Is your home computer a: (check all that apply)

01. Desktop
 02. Portable

17. Which Operating Systems do you use at home? (check all that apply)

01. DOS
 02. Windows
 03. OS/2
 04. Unix
 05. Macintosh
 06. Amiga
 07. Other (specify) _____
 08. Don't know

18. How much RAM does your primary computer have?

01. 4 MB or less (megabytes)
 02. 8 MB
 03. 12 MB
 04. 16 MB
 05. 20 MB
 06. 24 MB
 07. Greater than 24 MB
 08. Don't know

19. What size is the hard drive of your primary computer?

01. no hard drive
 02. under 100 MB (megabytes)
 03. 100 - 200 MB
 04. 201 - 500 MB
 05. 501 MB - 1 GB (gigabyte)
 06. 1 GB - 2 GB
 07. Greater than 2 GB
 08. Don't know

20. What type of processor does your primary computer have?

01. Don't know
Intel / Compatible
 02. 8086, 8088
 03. 286
 04. 386
 05. 486
 06. Pentium

Macintosh

07. 68000
 08. 68020
 09. 68030
 10. 68040
 11. Power PC
 12. Other (specify) _____

21. Do you have a home office?

01. Yes, I bring home work from the office
 02. Yes, I have my own home-based business
 03. No, no plans to have one
 04. No, but I plan to have one soon



Tell us about the computer hardware you currently use or plan to purchase: (check all that apply)

	PERSONALLY OWNED, USE AT HOME	EMPLOYEE OWNED, USE AT WORK	EMPLOYER OWNED, USE AT HOME	NO UNIT, BUT PLAN TO PURCHASE	NO PLANS TO PURCHASE
Computers					
01. 386	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02. 486	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03. Pentium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04. Macintosh	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05. Notebook PC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06. Notebook Macintosh	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Modems					
06. 300 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07. 1200 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08. 2400 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09. 9600 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 14,400 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. 28,800 bps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fax machines					
12. Plain paper: Inkjet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Plain paper: Laser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Thermal paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scanners					
15. 300 dpi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. 400 dpi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. greater than 400 dpi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD-ROM drives					
18. single speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. 2x speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. 3x speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. 4x speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sound card (22)					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speakers (23)					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tape backup unit (24)					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Removable hard drive (25)					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printers					
26. dot matrix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. ink jet (black & white)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. ink jet (color)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. laser printer 300 dpi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. laser printer greater than 300 dpi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. color printer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. How much money do you plan to spend on computers and software personally in the next three months?

- 01. 0-\$500
- 02. \$501-1000
- 03. \$1001-2000
- 04. \$2001-3000
- 05. \$3001-\$5000
- 06. \$5001-\$9,999
- 07. Over \$10,000
- 08. Don't know

23. Do you use a computer at work?

- 01. Yes, a portable computer
- 02. Yes, a desktop computer
- 03. No, no plans for one
- 04. No, but plan to purchase soon

24. Which Operating System(s) do you use at work? (check all that apply)

- 01. DOS
- 02. Windows
- 03. OS/2
- 04. Unix
- 05. Macintosh
- 06. Amiga
- 07. Other (specify) _____
- 08. Don't know

25. Which Network Operating System(s) do you use at work? (check all that apply)

- 01. Appletalk
- 02. Banyan Vines
- 03. IBM LAN Server
- 04. LANtastic
- 05. Microsoft Windows for Workgroups
- 06. Microsoft Windows NT Server
- 07. Microsoft LAN Manager
- 08. New Wave
- 09. Novell Netware
- 10. Novell Netware Lite
- 11. Unix
- 12. Other (specify) _____
- 13. Don't know
- 14. None

26. Do you have influence over the purchase of computer products for your company?

- 01. I make the final decisions
- 02. I specify what to purchase
- 03. I make recommendations to decision makers
- 04. I play no role in the purchase of computer products

27. For how many computers do you have this involvement?

- 01. 1-9
- 02. 10-19
- 03. 20-49
- 04. 50-99
- 05. 100-499
- 06. 500 plus
- 07. No influence

28. What is your department's annual budget for computers and software?

- 01. 0
- 02. \$1-\$999
- 03. \$1,000-\$4,999
- 04. \$5,000-\$9,999
- 05. \$10,000-\$49,999
- 06. \$50,000-\$99,999
- 07. \$100,000-\$499,999
- 08. \$500,000-\$1 million
- 09. \$1 million-\$5 million
- 10. Over \$5 million
- 11. Don't know

29. Which online services do you use? (check all that apply)

- 01. America Online
- 02. CompuServe
- 03. Prodigy
- 04. Genie
- 05. eWorld
- 06. Internet Access from home
- 07. Internet Access from work
- 08. BBS
- 09. Plan to use Microsoft Network (when available)
- 10. Don't use an online service, no plans to
- 11. Don't use an online service yet, plan to soon
- 12. Other (specify) _____

30. Check the Internet services you use: (check all that apply)

- 01. Newsgroups
- 02. Internet Relay Chart
- 03. Gopher
- 04. Electronic Mail
- 05. World Wide Web
- 06. FTP (File Transfer Protocol)
- 07. Other (specify) _____
- 08. None of the above, no plans to use the Internet
- 09. None of the above, plan to get on the Internet soon

31. How "wired" are you?

- 01. what do you mean by "wired"?
- 02. occasional use
- 03. intermediate use
- 04. I have an internet address
- 05. so cool, I have my internet address on my business card
- 06. recent divorce or loss of employment because of online addiction

32. How many of the last 12 editions of The Computer Paper have you read?

- 01. Less than 30 minutes
- 02. 30-60 minutes
- 03. 1-2 hours
- 04. 2 hours or more

33. How much time do you spend reading The Computer Paper each month?

- 01. once
- 02. twice
- 03. three times
- 04. four times
- 05. five times
- 06. six times
- 07. more than six times

35. Have you ever purchased anything from advertising you saw in The Computer Paper?

- 01. No, never
- 02. No, but plan to
- 03. 0-\$500
- 04. \$501-\$1,000
- 05. \$1,001-\$5,000
- 06. \$5001-\$10,000
- 07. \$10,001-\$50,000
- 08. \$50,001-\$100,000
- 09. Over \$100,000
- 10. Other (specify) _____

36. Have you ever purchased any of the following items from advertising in The Computer Paper?

- 01. Hardware
- 02. Software
- 03. Services
- 04. No

37. Why do you read The Computer Paper?

- 01. more for the advertising
- 02. more for the editorial
- 03. both advertising and editorial

38. How many other people read your copy of The Computer Paper?

- 01. One other reader
- 02. Two other readers
- 03. Three other readers
- 04. Four other readers
- 05. Six or more readers
- 06. No others

39. What other computer magazines do you read regularly? (check all that apply)

- 01. No other computer magazines
- 02. Byte Magazine
- 03. CIO Canada
- 04. Computer Dealer News
- 05. Computer Shopper
- 06. Computer Life
- 07. Computer World Canada
- 08. Computing Canada
- 09. Computing Now
- 10. Direct Access
- 11. Home Computing & Entertainment
- 12. Hum
- 13. Info Canada
- 14. Mac Week
- 15. MacUser
- 16. MacWorld
- 17. Monitor (Ottawa)
- 18. Networking World
- 19. Our Computer Player (Vancouver)
- 20. PC Computing
- 21. PC Magazine
- 22. PC Week
- 23. PC World
- 24. PC Sources
- 25. Techno (Montreal)
- 26. The Computer Post (Winnipeg)
- 27. Toronto Computes! (Toronto)
- 28. Vancouver Computes! (Vancouver)
- 29. Windows Magazine
- 30. Windows Sources
- 31. WIRED
- 32. Other (specify) _____
- 33. Was not aware that there are any other computer magazines

Entry Form

Please print clearly.

Name _____

Address _____

City _____

Province _____ Postal Code _____

Telephone (home) _____ (work) _____

PRESENTED BY



Contact UNIGLOBE Network Travel

Tel: 1-800-663-3441

BC CAL EDM SK MB TO OTT MTL ATL

CLASSIFIEDS

ADVERTISING IS FREE FOR INDIVIDUALS. For business, advertising rates are \$7 per line (40 characters). Send in your ad, along with your payment, for the August issue by Monday July 3rd, 1995. Individuals: to qualify for free ad, the ad must be for one-of-a-kind- items of sale. Free ads qualify for one month in the local edition only. All other ads classify as business ads and are subject to the \$7 per line charge. The Computer Paper reserves the right not to print submissions.

BBS

A PLUS BBS Anime Adult+more. 416-250-5408.
 AAP BBS 1 Call today! 416-237-1010 + 9337.
 ACCESS ROUTE CANADA - Internet, Chat, Online Games, Mouse Driven, 16 Lines. 416-234-1234.
 CANNIBAL Bar 'n Grill BBS - Files. 905-820-3156.
 EXXTASY FAIR! The Ultimate Windows BBS! Hot ORIGINAL adult graphics! Full color Previews & The SLICKEST GUI in the CITY! 28.8 USR @ 485-0001/485-4472. It's Cool!
 MEDIA ACCESS - GAMES! GALORE! 1.3 gigs online. Call 498-1855.
 MEET New people on our supercharged Global Chatlink, send/receive Internet E-mail, read about it in our Internet Newsgroups. Get hooked to our on-line games. Find the files you need in our extensive file library of 18 CD ROMS. Quench your inner desires with our sizzling Adult Section. And get ready to submerge yourselves in the inner realms of entertainment the The Colosseum BBS has in store for you. So see ya there 905-850-8711.
 SEED SOWER BIBLE BBS. Busiest and Best Bible BBS. Files, games, echo messages & home of SON-Net. FREE. 416-498-5259/5962.
 THE APARTMENT Building BBS. 2 CDs, over 900 mg, 25 games, over 250 msg bases. 25 mins free. Call 416-243-9357.

EMPLOYMENT

ACCESS 2 PROGRAMMER. We have a summer job for a student with experience in Access. Fax resume 416-782-4430.
 CEGEP Grad looking for employment as a Computer Technician on PC or Mac or a Network Technician with exp on Novell and Lantastic or as a Graphic Artist. Roland at 514-694-4341.
 COMP SCI Student seeks summer job (pref sw design & development). Will settle for modest wage in return for practical work exp. Tam 416-656-8451.
 COMPUTER Support DOS Win hw sw setup tutor Clipper prog dBase custom prog. Steve 609-0469.
 COMPUTER SALES Position wanted. Possibly Markham area. Good basic knowledge of PC hw&sw. Opportunity to learn here most welcome. Call 905-889-5584.
 COMPUTER Consultant seeking FT work. PC repair, DOS, Windows etc. 8 yrs exp. 905-831-0656.
 DESKTOP PUBLISHING OPPORTUNITY: World's most popular restaurant publication now available for licensing in remaining towns/cities in Canada not already served by "Coffee News". Full disclosure of incredibly successful system, plus list of all present licensees. Small towns 1,000-10,000 populations, net \$50,000/yr. Large cities - your ship's come in! Call now (204) 452-7471
 GRAPHIC Designer/DTP. Mac background w/knowledge of Page-Maker, Illustrator, Quark, Word. Reasonable rates for flyers, logos, stationery, brochures etc. 6 yrs exp. Refs avail. Glenn 416-406-0273.
 HIRE AN Exp PC Tech & salesman and receive \$10,000 from "Job Ontario". 416-694-5863.
 INTERNET Service Provider in Markham seeking Intermediat FT Technical Support positions. Experience with Windows, Mac, OS/2 & Unix preferred. Experience providing Internet Tech support an asset. Fax resume immediately to 905-477-7062.
 MAC Artist/Designer looks for ft/pt/freelancer opportunities. 20 yrs in typography. 483-5240.
 MAKE Money at Home! Unique computer based business is simple to run \$5 start-up. Send SASE or \$1 to Friends, PO20170-1395 Lawrence Ave. W, Toronto, ON M6L 3C8.
 ORACLE Analyst seeks work ft/contract. 6 yrs exp in Oracle with Oracle, DEC dealer in M East. VMS, Unix, OSX/1, Dos, PowerBuilder, Access, Cobol, Basic, RDB. Total 10 yrs exp. 416-298-3975.
 PROGRAMMER/Analyst seeks work. MS-Dos 6.2 interface, dBase 4.1, Clipper, Windows setup or will tutor. Don 416-251-5198.
 PROGRAMMER/Analyst CNA knowledge of Access/Visual Basic with 10 yrs exp in Business Basic. 416-633-4976.
 PROGRAMMER Seeks entry level pos in C, Cobol, dBase, FoxPro, Clipper, Access, Informix, Oracle, Windows or LAN. Reasonable rates. Jo 416-291-7902.
 PROGRAMMER Seeks full time emp/con exp Clipper, FoxPro. G. Singh 416-657-0554.
 RECENT Computer programming graduate seeks entry level opportunity. Knowledge of Unix, Cobol, C++ etc. An asset to your organization. Please leave msg at 416-314-0895.
 RECENT College graduate with some experience in FoxPro seeking pt/ft job. Leonard 416-631-6281.
 SW HW Setup & tutor reasonable rates. Windows, Dos, Internet. 962-6911.
 VB Prog/Ntwk consult.DB/Infoproc. Trans. Health, Comms.CNA/CNE avail. Internet exp. 416-709-1776, 72202.2705@compuserve.com
 WINDOWS Dev Visual C++/MFC-ODBC-OLE. Product demo avail. Unix-DBMS-C/C++ also considered. Evng 905-276-3370.
 WWW/HTML. Professional seeking ft summer employment. E-mail yu108789@yorku.ca

HARDWARE

(1) SET of Ethernet & ARCnet boards for ISA & set PS/2 MCA incl 8514 & SCSI card. Eves 905-884-9217.
 1 MB Simm memory 72 pin 70ns. Brand new. \$49 ea or 2 for \$80. Michael 905-883-6211.
 1.2 GIG hd \$450, 2.4 gig hd \$900. 72 pin 4 meg Simms \$180. USR courier dual 28.8k modem \$450, 486DX-50 system \$600. Plus more. 416-757-2891.
 1.44M Flpy 14" vga w/ card mini case with 386DX40&1m ram \$425 386DX33&2m/4m ram \$500/600. New never used. New ATI VLB mach 64 w/2mb v-ram \$360 and other parts. 905-471-0729.
 17" TTX svga mon almost new \$725. 588-3421.
 1MB Simm DRam 30 pin 70 ns. Brand new. \$49 ea or 2 for \$90. 416-816-8186.-1566.
 2 MB Ram IBM compatible 256k ram 72 pin. Almost new in excellent cond. \$60. 905-794-1307.
 2 X CD Rom Panasonic + sw. \$100. Paul 905-832-4406.

200MB SCSI hd Maxtor for \$200. Call between 9-14 at 696-0808.
 28.8 V lc int/fax modem \$140. 416-225-8270.
 286 COMPUTER 640k 40mb hd mono 1.2 fdd WP \$250 and XT system \$95. 905-270-3264.
 286 MOTHERBOARD w/2 mb ram and cpu \$70 30 mb hd w/controller \$40 ext floppy 1.44 w card \$50. Khalid after 6pm at 861-9205.
 286 2mb ram 80mb stacked hd mono vga 1.44 fd mouse adlib sound+spkr sw \$330. Mirek after 6pm 503-2222.
 286-12 Color Mon VGA 1 meg ram 40 meg hd 3.5&5.25 floppy drives&kybd \$300. John 905-472-3153.
 286-12 AT System 1.44 floppy hard disk ega color etc. \$330 obo. 286-10 motherboard 640k mem \$35. 905-884-3166.
 2MB Simm memory 30 pin brand name. \$90 ea. 905-712-3496.
 32 MEG Game Doctor 3 for SuperNintendo \$350 obo. 416-633-3577.
 386DX Televideo 2 meg ram 60 meg hdd 1.44 fd svga color mon kybd mouse Dos&Win \$585. 225-2733.

386DX 2Ram 40 hd 144 fdd kb vga card \$350. 286 640k printer fd col mon \$250. 567-0403.
 386DX25 board & math chip \$120. Sound card ATI fx st \$40. 444-8627.
 386DX33 4mb ram svga 102mb hd 1mb ATI card. Call 398-6218.
 386DX33 52 Mhz 4 mb 122mb hard drive 1.44&1.2mb floppies 512k ATI svga card&mon modem loaded. Sam anytime at 416-490-2626.
 386DX33 120mb hd Conner 1.2 1.44 fop drv 8mb ram svga 14" col mon 4 comm 1 para free tech support for new user \$975. 416-249-0221.

386DX33 with Math copro \$110 without copro \$75. Mathco 80387 \$40. 416-438-1621.
 386DX33 80 meg hd 4 meg ram 1.2 1.44 144 int data/fax modem Goldstar svga mon kybd \$1200. 416-504-5720.
 386DX40 4 m ram 420hd 14" svga 3.5 fd 101 kybd mouse mini tower \$750. 905-712-3869.
 386DX40 4 mb ram 105 mb hd ds to 161 mb 14" Amazing vga mon dual floppy sb prosound card Labtec spkr Panasonic KX-P1123 printer 24 pin dot matrix \$800. After 5pm at 416-398-7161.

Corel CD Office Companion is the perfect complement to your existing office suite. Featuring powerful business graphics, Internet and fax communications, time-management and multimedia software, plus extensive font, clipart, and reference libraries, CD Office Companion incorporates powerful business applications and utilities to let you optimize your office suite.

a 'suite' DEAL

WIN
 the Corel CD Office Companion when you subscribe!

Corel and The Computer Paper have teamed up to offer new subscribers or renewers a chance to win Corel's new Office Companion between May and July 1995.

CANADA'S COMPUTER INFORMATION SOURCE
THE COMPUTER PAPER
 NEWS REVIEWS FEATURES

How to Enter

1. Fill out this form (be sure to tell us which edition you wish to receive)
2. Clip out, mail to The Computer Paper with payment of \$24.95 (VISA, MC, cheque) (Subscriptions received or renewed during May, June, and July 1995 are eligible to win).

Fill out this form & send it with your payment (\$24.95 Canada, \$60 U.S., \$125 Overseas) To: The Computer Paper, Suite 8, 3661 W. 4th Ave., Vancouver, BC V6R 1P2

NAME _____
 ADDRESS _____
 CITY, PROV. _____ POSTAL CODE _____
 PAYMENT ENCLOSED (CHEQUE OR MONEY ORDER) VISA MASTERCARD
 CARD # _____ EXPIRY DATE _____
 NAME ON CARD _____
 SIGNATURE _____ DATE _____

Which edition?
 Ottawa Montreal Atlantic ON Prairies Calgary Edmonton BC

Subscriptions received or renewed during May, June, and July are eligible to win.

CLASSIFIEDS

386SX-16, Math coprocessor 4mb ram 140mb hd 1.2&1.44 floppy 96/24 fax/modem new 14" svga mon 256k video card new mouse \$620. Price neg. 297-1737.

386SX33 2mb Ram 80 mb hd 1.44 fdd mono \$390 obo. 905-273-5202.

386SX40 5mb ram 1.44 1.2 floppies 1 mb vga card 101 kybd 70 mb hd mini tower high resolution mono mouse lots of sw. \$550 obo. After 6pm at 905-624-3183.

486/33 Dell 170hd 4Ram CDROM mon svga warr \$1350. 416-231-2440.

486 VLB Motherboard 128k cache \$80 obo. Paul 905-882-6743.

486DLC 8 meg ram svga 2 floppy 40Mhz math copro lots of games fax modem \$900. 905-272-0087.

486DX Intel CPU, 1mb video card and empty Inkjet printer cartridge. Brian 905-799-2067.

486DX2-66 Intel 4mb ram 1.44 fd 200mb hd 1mg svga card mini tower case with speed display \$900 svga mon extra. After 6pm 905-455-0451.

486DX266 8 meg ram multimedia 2 floppies 540mg hd modem jystck svga mon kybd mouse sw 24 pin printer spkrs. \$100 obo. 382-0592.

486DX33 Intel 4mb ram 125 mg hdd 1.44 fd 256k vga card 14" svga mon. After 6pm at \$875. 905-457-9653.

486DX33 Color Notebook 8mb Ram 120hd trackball 9600 faxmodem \$15550. Andrew 963-9180.

486DX33 16 meg ram 400 hard drive 17" mono mon 32 bit card 100 mg of sw built in network \$2500. Nec multisync col mon \$250. SVGA color mon \$199. Plus more. 789-0353.

486DX33, 130hd, 1mbVFA ATI, 4 ram, B200 pmtr. Sylvia 905-273-5366.

486DX50 8 meg ram 300 mb hd 14" svga color mon kybd mouse \$1250. Nelson at 905-848-1613.

486SLC Patriot 4mb mathco svga ni mon 210 hd warr lots of sw \$850. 416-932-2431.

486SLC33 4 meg Mathcopro 210 meg hd svga col mon .28 Ni mouse tons of sw factory warr. \$890. 416-932-2431.

8 MODULES 256K ram 2mb \$70, mono mon \$25 MS Sound system \$100, 96/24 fax/modem \$30. 416-534-1288.

ACERNOTE 760c DX2/40 4m ram 250m hd warr. \$2800. Wilson 416-321-6830.

AMIGA HardwareSupra Ram 2000 with 4 mb \$150. Opal/Vison card 24 bit + Opal Paint sw \$600 or \$200+ flicker fixer. Books avail. Victor 978-5473.

AMIGA 2000 80 meg hd 2 floppy drives newly cleaned. \$300. 416-925-5468.

ARCHIVE 1.35 GB SCSI tape drive new \$530. 416-724-9195.

AST and Toshiba notebook. AC adapter and 170mb hard disk for IBM. Thinkpad notebook. 222-2545.

AST 486/25 Notebook 4mb ram 170mb hd 14.4 XJack PCMCIA modem Okidata OL400e

laser Sanyo fax case sw. Purchase or assume lease. 18 mnths @ \$115 plus tax. Tom 416-251-7428.

BRAND NEW Sealed with Warr. 1.2 gig Weston Digital hd for sale \$600. 905-848-6624.

C64 1541 Vic 20 manuals \$10, C64 printer interface \$49 2 joys \$10 Amiga to 1541 cable \$49 orig IBM printer stand \$35 new C64 power supply \$49. Rouhi 265-6194.

CDROM AT WHOLESALE! Titles, Drives etc. We will beat any price! Call Now! 905-893-3128.

CITIZEN GSX-140, 24 pin color capable printer. Perfect cond. \$220 firm. Rui evenings at 905-457-3142.

COLOR VGA mon \$175, 8mb 72 pin w/parity module \$385, 150mb QIC tape drive w/card \$225. 490-7878.

COMMODORE Computer, kybd, screen disk drive printer tons sw, game cartridge jystck manuals. Like new \$175. Call 905-683-9629.

COMPAQ Portable computer w/ hard drive for sale. XT 640k 10 megs ega \$125 obo. Zev 416-633-2343.

COMPUTER System 386 complete. Also various system parts. 255-9266.

Device turns computer on/off remotely by phone! send cheque for \$159 to: EMO Inc. Box 52194, 8210 - 109 St. Edm. AB T6G 2T5

EM401 Brother typewriter. New cond. Spell check, memory, +++ options. Greek and writing Daisy wheels incl. \$550. 416-921-7037.

ENHANCED IDE Controller card built in Intel CPU 4 fdd+4 hdd 1m cache expandable to 18m with 30 pin Simms \$180. 416-221-2925.

FAX/Modem 9624 s/r Acceax ext lots of functions like new \$98 obo. Marc 905-508-6320.

FUJITSU DL3400 wide carriage printer 24 pin mint \$400. 905-824-7572.

GENICOM600CPS PTR. Mint. Dave 905-206-9824.

GVC 14.4 ext 6 mnths old under 5 yr warr like new. \$100 obo. Chris 416-222-7998 after 5pm.

HARD Disk Maxtor 127mb \$70. ATI 512k svga with mouse \$40. 905-819-8005.

HP LaserJet IV toner cartridges. 2 brand new in boxes \$80 ea. Scott 905-727-5685.

HP High Speed tractor feed 2934a printer \$550 obo. Integral data system & Prism 132 printer \$175. 922-5777.

HP4 Laser Printer 600DPI 8ppm 6mb as new \$1890. Also a/d, d/a PC I/O board IBM unopened \$225, ATI 9600 modem \$49. 416-769-5223.

IBM PS/2 enhanced memory expansion adapter \$160, 2x2mb memory kit 80ns \$95 ea. 4x1mb memory \$45 each. 416-516-3855.

IBM Compatible comp complete \$300. Printer 9 pin DM \$100. Phil 905-632-3869.

IBM Aptiva 486/33 270hd 4Ram CDROM 1 mth old 3 yr warr. \$1800. 416-231-5566.

IBM XT with hd/1 fd mono monitor amber & sw \$100. Also Fujitsu DX2200 printer \$100. 905-472-9625.

IBM PS2 386SX20 with 387 mathcopro VGA card VGA mon 5 meg ram 70 meg hd full tower \$550 obo. Ventura 905-454-4716.

IBM PS/1 Intel 286, 640k Ram, 3.5 floppy 2400 modem mid/game port + audio card 101 kybd. \$400. 519-621-6839.

IMAGEWRITER II with ThunderScan. Manuals and carrying case. \$200 905-607-7888.

IMPULSE 486SX Laptop for sale excellent cond \$1150 firm. Linda 905-634-9625.

INTEL 386DX33, 128cache 387 chip 2mb ram color vga 101 kybd tower case 1.44 fd \$565 firm. 416-490-8184.

INTEL Pentium 100 Mhz CPU \$650 firm. 416-381-8919 pager.

LEAVING Country Nec P60 3 mths old 8mb ram 450 hd w 14" Nec color mon modem CDROM \$2800 obo. 3 yr warr. Sam 416-698-8415.

MAC 2FX 32-160 \$2700, DayStarCharger Photoshop card \$400, WaCom 12x18 cordless Pen \$400 plus more. 416-226-3631.

MAC C650, 12/210, CD portrait disp books and sw. \$2500 obo. Theo @ 416-497-1964.

MAC LC 475 color mon 4 meg 200 meg hd 101 kybd loaded with programs \$1600 obo. 416-661-9766.

MAC Ilsi 5/80mb Sys75 Nubus card w/mathco Apple. Brand new 14 mnths. ImageWriterII printer extd kybd mouse all for \$1400 neg. 905-686-7604.

MAXTOR 245mb IDE hard drive, 5 mnths old, no bad sectors. Will sell for \$150 cash or trade for int tape backup. Mark 905-822-0106.

MAXTOR 420MB HD IDE. Never used 1 yr warr. Only \$200. Nelson at 905-848-1613.

MB 486DX33 4 mb \$450. MB 486DX2/66 4 mb \$550. Paul 416-665-7221.

MEMORY Modules AST4-1392 \$175, AST8-1392 \$350, 2mb Simms \$70, Amiga500 hard drive and interface \$75. 905-454-8578.

MEMORY NEW 72 pin 70ns IBM parity Gold Simms for IBM PS/2, PS/1, PS/VP systems. Qty 2 - 4mb Simms @\$250 ea. Qty 4 - 8mb Simms @\$600 ea. Info, deliv & inst free upon request. 416-724-5433.

MICROJACK Video Commander TV display & capture board, 24 bit true color Win drive cable manual \$250. 416-221-2925.

NEWTON 110 new condition. Lv msg 416-921-4905.

NOTEBOOK 486DX66, 200mb 16mb ram mono mon \$2500. Cindy 416-484-0578.

NOTEBOOK/486-25 Mhz 84 mb hd 4mb ram mono extra battery case \$999. Majid 416-515-9735.

PANASONIC print head new \$45. 905-946-9615.

PANASONIC KXP1124 24 pin printer like new. \$200. 905-886-7963.

PENTIUM 90 full system 1.26 8m sound blaster pan-cd ATI vcard pci controller enhanced IDE new \$2390. After 6pm 905-940-0005.

PHOENIX ENTERPRISES. Your source for IBM compatible shareware. Games, Educational, Home & Office. For free catalogue please call 705-898-3229.

POWERBOOK 100 \$850, 4 meg ram 40 meg hd 1.44 floppy drive+sw. 534-8899.

PRINTER 24 Pin Star NX2340 excellent cond. Great quality. Box of paper, labels and replacement ribbon. \$175. Wayne 905-773-7867.

SCSI hard drive external grey colored case. A1 condition 9.5x10.5 SCSI ID selector \$48. 924-2697.

SELLING I486DX2/66 with 8mb ram 525 mb hd ATI Mach64 video and many more for only \$650. Call after 4pm Shamez 416-299-6995.

SIMM Memory used 1 meg 30 pin \$40. 4 meg 72 pin \$190. 905-277-9450.

SOUNDBLASTER Pro w midi kit \$75 obo. Super Nintendo w Donkey Kong Country + more. 1 controller \$150 obo. Steve 905-855-3157.

SVGA Color mon for sale 1024x768 28 Ni 1 yr old. \$185 obo. 416-398-5971.

SYMBOL LS2020 Bar code scanner \$550. RS232 4CPU Print Sharer \$200. 905-709-3883.

TURTLE Beach Tropez 16 bit full featured all sw/boxes. \$250 neg. 3 - 1 meg 30 pin Simms for Tropez or computer \$30/ea or \$75 lot or \$50 with Tropez sound card. Stephane 499-2928.

UNIX Systems for PC with C, C++ compiler and installation guide, 20 high density disks only \$29. Call 416-504-3765. C64 \$80, 410D \$80, 1902A \$195, b&w TV \$40, MIA3000 2-terminal server \$600. 416-240-9611.

USED Computer system, peripherals, parts, sw, Chinese/Eng games, DTP. David 905-819-1231 or 416-409-2278.

VGA to TV converter. Microjack selection, external, svhs \$175. 905-524-1188.

VOICE Mail card+software. 905-770-9056.

XT 640K Ram 30m hd 360k fd col mon kb \$150. XT 640k ram, 2x360k fd, mono mon, kb \$70. 416-288-8755.

XT Color system 20mb hd 2 fd mouse printer mint cond. \$200. 416-431-7790.

XT Turbo 20 meg hd 360K fd 640k ram ega video mono mon 1200 bps modem plus lots of sw. Great for wprocessing, small databases, accounts or beginners or kids. \$200 obo. 905-472-9398.

CDROM Game Myst for sale \$35. Includes original manual. 750-9008.

COREL 5.0 CDs \$200, Chess Maniac CD \$40, Home Inventory for Win \$20. Mike at 416-242-5534.

CORELDraw v3 CD and diskettes plus OS/2 Warp \$150. Domenic at 416-743-2378.

CORELDraw 4 3.5+CD unopened and unregistered \$200. 593-4076.

CORELDraw! 5 \$275, MSAccess \$50, MSWord 5.5 \$50, MSWorks \$30, MSQuick C win \$35, Win 3.1 \$40. Call 416-534-1288.

DBASE 4 v2.0 Dos. New unopened sw and manuals. \$70 obo. Michael 905-883-6211.

GAMES & OTHER Pkgs - all original 10 to 50 \$ CD, 3.5 & 5.25 disk. Ask for John 905-513-8690 or evng 705-786-1515.

GAMES ON CD for sale \$29 ea includes hint books, games on 3.5 disks \$24 with hint books. 486SX33 Mhz cpu chip \$99, Labtec speakers \$14, 2400 modem \$19. Ed at 905-454-4493.

HARVARD Graphics for Win 1.02 \$50. Darryl at 905-823-6905.

INTERNET Info, What you need to surf the net 3.5 MSDos disk. Send \$15 to JE Systems, 413 Borland Ct, Newmarket, ON L3X 1E4.

LOTUS Notes 3.2 Server ed for SCO OED 3.0. Never used. \$300. Andrew tel/fax 538-8261.

MICROFOCUS Cobol Workbench 2, CA-Realizer, MS Outer space scenes, Clipper tools. Best offer for any. After 6pm at 416-751-7006.

MICROSOFT Office full manual for Macs \$15. 237-9498.

MICROSOFT Office for Macintosh sw. Never been used. \$400. Bill 265-2608.

MICROSOFT Office Pro 4.3 CD \$200, Corel 5.0 CDs \$200, Chess Maniac 5001 CD \$40, Virginia at 416-258-6140.

MS Windows for WorkGroups. PC Dos 6.1. Best offer. Don 905-820-2574.

NOVELL Netware 3.11 x25 users. Novell 3.12 x25 users, Arc-server, Fax-server. All manuals disks etc. Asking 50% of msp obo. Will sell individually. Adam 783-2233.

NOVELL Netware 4.0 on CDROM includes registration on disks and license disks. Not yet registered. \$460. Contact Shaun at 416-963-9526.

NOVELL CNE Course 508 - Netware 3.1x Administration self-study kit. Brand new. Darren 519-942-3064.

NOVELL CNE KITS. 1100/1101-Dos&Comp, 200-Net Tech 508-31x sys mgr 518 adv, 701-serv&sup, 718-connect. Will sell for \$750. Marcella 905-508-8072.E

PAGEMAKER 5.0 for Mac. Brand new with manuals and registration. \$297. 905-475-3937.

SCO Unix v4.2 (Part no 012-200-916) 2 user lic 22.5 disk orig manuals \$300. 416-221-7020.RVICES

WINFAX Pro 4 \$40, 123/Win 4.01 \$75, Free-lance 2.01 \$100, Procom Plus 2.01 Dos \$40, AmiPro 3.01 \$50. All sw never installed! Make an offer. 416-928-1077.

WORDPERFECT Office standard or professional ver 3.0 CD only \$175 or \$205 new CDROM ver. Terence after 4pm at 905-569-0687.

Advertise in the Classifieds for Free

Private Individuals: FREE. Businesses: \$7 per 40 characters.

- Private Individuals: FREE. Business (regardless of whether they are full-time or part-time business): \$7 per 40 characters.
- FREE Classifieds: maximum number of insertions is 1 per month, running for one month.
- Each letter, number, symbol, punctuation or space counts as a character.
- Please use standard spacing and punctuation. No asterisks, bullets or unusual symbols. Do not use all capital letters. *The Computer Paper* is not responsible for errors in wording if these rules are not followed.
- Send your ad by mail to the below address or fax it—fine mode please

We do not accept FREE classifieds by telephone.

Which Section? BBS Hardware Software Wanted Employment

	\$7
	\$14
	\$21
	\$28
	\$35

Business Classifieds accepted by telephone, fax and mail.

Method of Payment	Ad Charge
<input type="checkbox"/> Cheque <input type="checkbox"/> Money Order	Multiply x No. of Months
<input type="checkbox"/> Visa <input type="checkbox"/> Mastercard	Multiply x No. of Editions
Payment	Subtotal
Card #: _____	Add GST (7%)
Expiry Date: _____	GRAND TOTAL
Name on Card: _____	
Signature: _____	

Free Classifieds accepted by mail and fax ONLY.

Send your classified ad to: THE COMPUTER PAPER CLASSIFIEDS
408 - 99 Atlantic Ave., Toronto, ON M6K 3J8, or fax us (416) 588-8574

Name: _____
Address: _____
City, Prov.: _____ Postal Code: _____
Telephone: _____

SERVICES

C++, Windows, VHDL Programming. Ed 416-785-5938.

COMMERCIAL ARTIST Illustrator, Promotional Expertise, Corel, Pagemaker, Pict. Publishing, Scanning, Freelance, Hnd. Illustrations. 24 yrs exp. Barrie area 705-322-7614.

EXPERIENCED MICROSOFT Access application developer for hire. Call Don at 416-588-7102.

FAX, TV & VCR Repair \$25 +. 905-305-1205.

OVERSEAS video transfer \$3 per hour. Call (416)444-0040.

PC Fixers
For all your
Computer Headaches
We Consult, Trouble Shoot,
Diagnose, Upgrade, Advise and
Fix your Computer problems
Call 416 266-6651

BUY SELL TRADE REPAIR UPGRADE COMPUTER MEMORY HARDDRIVE CPU MOTHERBOARDS CD-ROM SOUND CARD FAX-MODEM KEYBOARDS MOUSE CASES
USED COMPUTERS/PARTS EXCHANGE
COMPUTERS TUNE-UP & VIRUS SCAN
486 dx ii \$999 PENTIUM 90 \$1999
1895 KENNEDY ROAD
SCARBOROUGH ONT M1P 2L8
PHONE: (416) 609-8687 FAX: (416) 609-0335

COMPUTER LAWYER
Protect your inventions!
Limit Liability
call Lisa Abe - Free Consultation
MISSISSAUGA
905-848-6100

SOFTWARE
3D/FX 3d animator \$95, Klik and Play game creator by Maxis \$55, OS/2 Warp \$75 all unregistered. 905-524-1188.

ACCPAC Plus series v5+ complete with hard cover manuals in excel cond six module. 416-744-3968.

ALDUS PageMaker 5.0 for Windows. Full ver incl license (unreg&unused). Best sw for publishing. 416-236-9455.

BORLAND C++ 4.0 in 3.5 disk. Unregistered, complete with manuals \$160. Visual Basic 3.0 STD with manuals orig diskettes \$80. Brand new PCI video card 1mb never used \$120. Paul 905-457-6161.

CDROM Games. Descent and Who Killed Sam Rupert?. Both sealed and unused. 905-771-8778.

WANTED
386/486 system, notebooks. Also mainboards, Simms, IDE HD, 1.44/1.2 fdd, CDROMs, printers, tape drives, modems scanners, video/sound cards & working or not svga mon. 416-466-6067.

486DX33 cpu 1mb video card and empty inkjet printer cartridge. Brian 905-799-2067.

CANADIAN Firm for manufacturing assembling electronic devices computers etc in Russia by virtue of joint venture, investment. Dr. Nikolai Panishev, fax (3511)37-5872, e-mail Z_AS-62 @ Mastak.msk.su

COMMUNICATION Software for Macintosh prefer Crosstalk in exchange for Simms. 9-2pm 416-234-0553.

DESPERATELY Seeking Morrow MD-3 in good working order or any parts. Please call Michelle at 789-4733.

FREE 386 computer systems. Much appreciated. God bless. 905-572-6992.

HP LASERJET Printers For Parts. Any condition, all models. Call 416-804-5355.

I AM Looking for old computer equipment for my home study course on computers. All donations accepted. Helena 613-789-5633 or fax 613-789-0569.

I AM looking for a 100 meg hard drive. 416-495-1482.

IMAGEWriter for Mac must be in excel cond. Latif after 6pm 416-861-9205.

NEED An Intel SDK-85. John at 416-465-6319.

SVGA Card CISA 1/2 mb dram no Trident please. Robocop game IBM ver. Ken after 8 pm 905-890-8118.

TANDY 102 Laptop or Tandy 100. 253-9997.

THE Spartan Expansion unit made for the Commodore 64 computer. Will buy trade or barter for operational unit. 705-454-2133.0

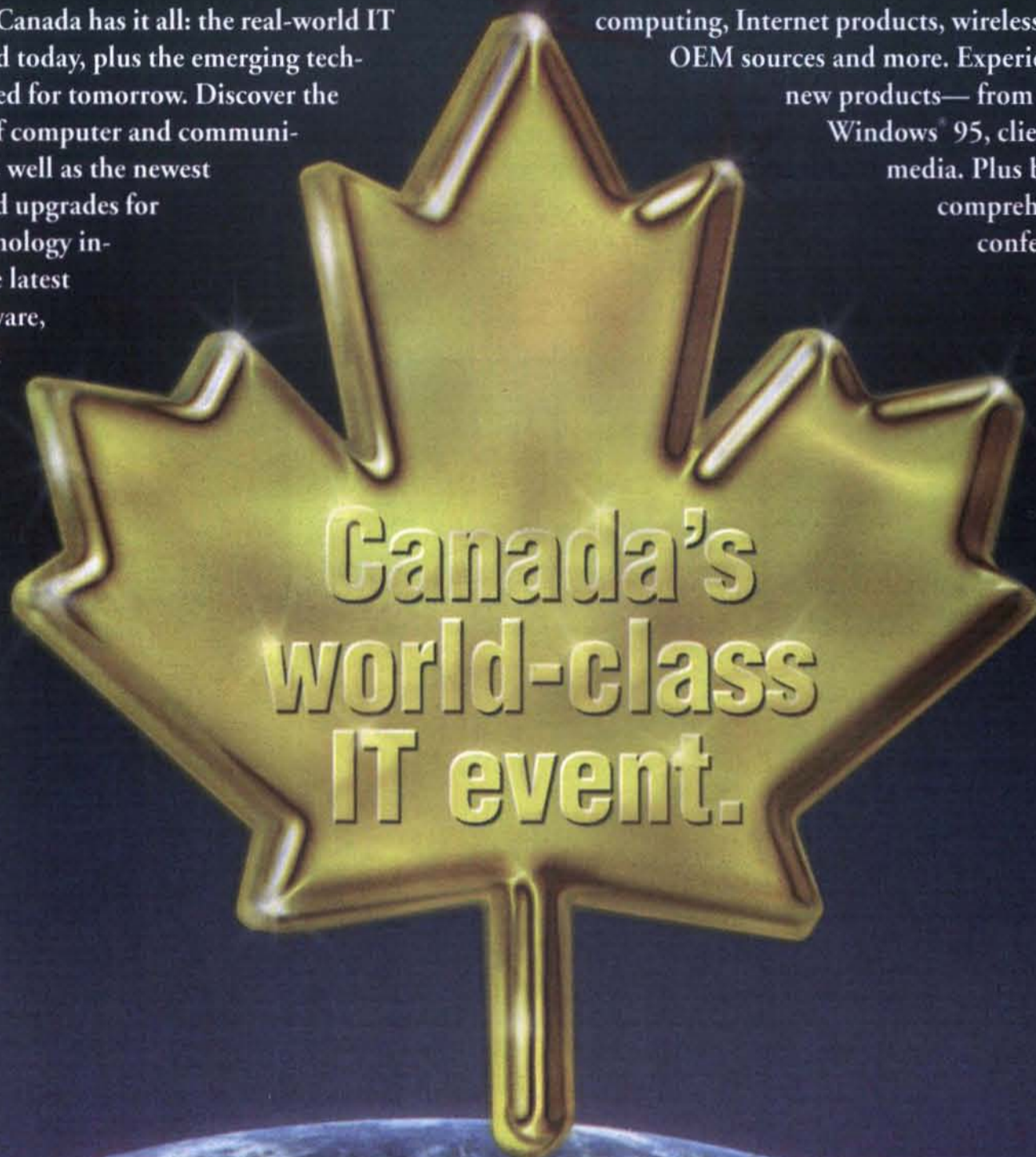
Three shows in one! Over 500 exhibitors and thousands of new products!

COMDEX®/Canada '95

including  WINDOWS WORLD™ and  LANEXPO™

Only COMDEX/Canada has it all: the real-world IT solutions you need today, plus the emerging technologies you'll need for tomorrow. Discover the next generation of computer and communications systems as well as the newest enhancements and upgrades for your current technology investments. See the latest advances in hardware, software, network

computing, Internet products, wireless communications, OEM sources and more. Experience all the hottest new products— from on-line services to Windows® 95, client/server to multimedia. Plus be part of the most comprehensive educational conference in the world of information technology.



Canada's
world-class
IT event.

COMDEX ON-LINE — To register or for the latest information on exhibiting companies, conference speakers and more! **Internet:** World Wide Web URL: <http://www.comdex.com:8000>
OR REGISTER BY FAX! Call 617-449-5554, enter Code 45, and have your fax number ready — we'll fax your registration form within 24 hours!

Canada's #1 Information Technology Marketplace for Resellers and Corporate Decision Makers
July 12-14, 1995 • Metro Toronto Convention Centre and SkyDome • Toronto, Ontario

©1995 SOFTBANK COMDEX Inc. • 300 First Avenue, Needham, MA 02194-2722 USA • Telephone (617) 449-6600
WINDOWS WORLD is a trademark of Microsoft Corporation and WINDOWS and the Windows logo are registered trademarks of Microsoft Corporation.
WINDOWS WORLD and the Windows logo are used by SOFTBANK COMDEX under license from Microsoft.

COMPUTER DIRECTORY

DATA RECOVERY



TAPE DATA RECOVERY
Over 600 Recovery Formats
DAT • 8mm • DC600 • DC2xxx
DC6xxx • DC9xxx • Cassettes

590 Alden Rd. Unit #105
Markham, Ontario, Canada, L3R 8N2 **1-800-551-3917**

NEED DISK DUPLICATION FAST?

NOMI COMPUTER-SENSE is your solution!!



- Small quantities welcome
- Quick turn arounds
- Always under \$1.00 (inc. disk)



Call: (416) 661-7200 Fax: 1-800-582-DISK

GRANTS

If you are a Canadian incorporated private company undertaking product development or upgrades (complete or in progress), contact us for our FREE 18-page guide to receiving your federal/provincial RESEARCH & DEVELOPMENT GRANT MONIES

Iwasan Consulting & Associates
1-800-661-4463 (24 hours)

MONITOR REPAIR CENTRE

SALE, UPGRADE & SERVICE SYSTEMS
MONITORS, PRINTERS & ACCESSORIES

Mon-Fri 9:30am-6pm, Sat. 10am-2pm
After hours and emergency call Stan at (905) 678-6403

J & S Electronics 200 Silver Star Blvd. #308
Scarborough, Ontario M1V 4V7 FAX: (416) 297-5069

LOW RATES (416) 297-5600 FAST SERVICE



MITSUI CD-R

THE BEST CD RECORDABLE MEDIA ON THE MARKET!

Opportunity for Resellers of CD-R Media to capture the trend of the future...

Become an Authorized Reseller



Resellers ONLY Please
PST Exemption No. Required

(905) 624-5198

LASER CHEQUES

For Quicken & other Accounting software

- Standard business cheques also available.
- 40% less than the bank • Shipped within 48 hours!
- Guaranteed lowest price! • Company logo included!

Security features on all our products!

Quick Cheques Inc.

3 Carl Shepway, North York, Ont. M2J 1X3
Tel: 416-499-7201 Fax: 416-499-3870
Toll Free: 1-800-361-5675

CD-ROM

TDK RECORDABLE CDs...\$14.99 any qty.

CD-ROM Recording Service From Your...

Hard Drive...\$49.99 2120 B/U Tapes...\$74.99 CD ROM...\$29.99

PINNACLE MICRO RCD-1000 CD Recorder.....\$2899.99

With SCSI Card, Software, and 5 Recordable CDs !!



PINNACLE COMPUTERS

Volce: (905) 278-2949 Fax: (905) 828-6706

CD Recording 650MB

- Record 650Mb's of Data to CD-Rom.
- Zero-Wait Data Recovery.
- On-Site Backup's available.
- Scanning Documents Service.

Take a step ahead with CD technology.
Excellent for AutoCAD, ClipArt, Dbase,
Zips files, Backups and more...

Micro Solutions Tel:(905)803-0258



COMPUTER HARDWARE SUPPLY

- CD-R (Blank)
- 3.5 DISKETTE Formatted : 20's,10's Pack or Bulk
- CPU: 486DX2-66 / DX4-100, Pentium 75,90,100 Mh
- HARD DRIVE(Conner, Quantum, Western,Samsung)
- MEMORY 30/ 72 Pin Module (1Mb To 32 Mb)

** WHOLESALE PRICE FOR RESELLER

*** WE ALSO DO DUPLICATION ON 3 1/2 FLOPPY DISK

Mikon Technologies Corp.

60 Rivalda Road, North York / Ont M9M 2M3
Tel: (416) 748 7778 Fax: (416) 243 3282

*If you can't always guard your computer?
Protect it with a ProCab alarm system.*

- HIDDEN INSIDE - EASY TO INSTALL -
- MODULAR DESIGN - 103dB ALARM -
- CONNECT TO CENTRAL -

Affordable protection that your computer deserves!

For more information or for a dealer nearest you call us at
(514)426-0707. Dealer enquiries welcome. Manufactured
by a division of MultiCIM Technologies Inc.(Canada).



WHY COME TO US, WHEN
WE CAN COME TO YOU.

We will create your own Multisession CD.

We also do:
Networking, software, hardware installation, database and more.
For more info, call (416) 448-8821

Networks UNIX Internet

On Site Installation

Complete system consulting and installation services including:

- o Site evaluation, needs analysis and written quotation @N/C
- o Turn key system installation (weekends/after hours service available)
- o Complete Internet Host and Client Installation

CJRK Computer Consulting Inc.

T. (416)465-5822 F. (416)465-9841 Email: cjr@inforamp.net

Computer Exchange

ON SITE REPAIRS • CONSULTATION

Used and New Parts
Service - Development

1474 Bathurst St. #2

(Bathurst & St. Clair above the bank)

Tel: (416) 654-7412 Commercial Centre Fax: (416) 636-2309

RENT • RENT • RENT

IBM COMPATIBLES, LAPTOPS & PRINTERS

RENTALS • WEEKLY • MONTHLY • YEARLY

FREE DELIVERY AVAILABLE

STUDENT DISCOUNTS ON RENTALS

ALSO SALES • SERVICE • LEASING • TRAINING

Enjoy Low Rental Rates

Wonimation
Rentals & Service

(905) 829-2155

Oakville, Ontario

MON.-FRI. 11AM - 6PM

SCANETICS

We convert your logo or signature to a
Windows True Type or ATM font.
Making them available at the stroke of a
single key in any Windows software.

* Logo Fonts **1-800-289-4815**

* Icons & Clipart e-mail

* Scanning scanetics@telos.org

Is this the reaction
your Web page gets?



- WWW Page Design
- Multimedia Development
- Authoring Tools

Natural Software 905-468-0068

Visit our Download and Information Center at

<http://www.computan.on.ca/~ksmith/>

DATA RECOVERY



DOS • Macintosh • Novell • Sun
OS/2 • Unix • Xenix • DEC
Diskettes • Hard Drives • SyQuest
Bernoulli • Optical Hard Drives

590 Alden Rd. Unit #105
Markham, Ontario, Canada, L3R 8N2 **1-800-551-3917**

NETWORK INSTALLATION & MAINTENANCE

- Specializing in Novell, Windows, UNIX etc.
- Fast on-site service, service contracts welcome
- Software & hardware training courses
- Laser printer repair training course

ANET COMPUTER CONSULTING

450 Alden Road, Unit 5, Markham • Phone (905) 479-6316

COMPUTER DIRECTORY

NeTwork Services

Novell Netware

Windows NT and Win
Lantastic 6.0 for DOS/Windows

- Network Installation and Upgrade (Operating System and Hardware)
- On-site Trouble Shooting and Maintenance
- Systematic Backup of Your Server and Stations
- Adding Stations, Users, Applications and Security
- Notebook Connection to Lan and Wan
- Remote access to PC and Lan
- Professional Cable Planning and Installation

Free On-Site Initial Consultation.
We carry a full line of NeTwork hardware and software - Novell, Lantastic products including their Upgrades. Guaranteed lowest price in town!

To hire a team of network engineers for less. Please call to negotiate a service contract.

Emergency On-Site Services,
\$60 per Job and Up.

Microsoft®
SOLUTION PROVIDER

Novell
Certified
Network
Engineer

Tel: (416) 720-7176

2357 Finch Ave. W. Unit 7A North York On M2N 2K1
Fax: (416) 747-5325

DATA RECOVERY LABS

"Canada's only choice for full-time professional recovery"

DOS • Mac • Novell • Unix • Xenix • OS/2 • Double space • Stacker
Hard Drives • Diskettes • Syquest • Bernoulli • Optical • QIC Tape

416-510-6990 1-800-563-1167

Email: nmajors@datarec.com

Recommended by Manufacturers - 1,000's of satisfied customers
World Renowned Expertise - Ongoing Research & Development

Software Customizing, Trouble Shooting & Training

PLATFORMS: MS windows, NT, UNIX, X-Window, OS/2, LAN
APPLICATIONS: Visual Basic, Access, PowerBuilder, SQL, Oracle,
Sybase, FoxPro, FoxBase, SQLWindow, C/C++,
Visual C++, Lotus Notes, Paradox, DB2,
PowerHouse, Clipper, dBase, Cobol, Quattro Pro,
Novell NetWare, TCP/IP, X.25, X-Window/Motif

- Weekend and evening services available at an affordable price
- Free estimate and initial consulting.

LINKA LTD. tel: (416) 784-0695,
91 BELGRAVIA AVE., TORONTO, M6E 2M4

Our specialty is...

COMPAQ

Compaq, Registered U.S. Patent and Trademark Office

WE BUY & SELL USED COMPUTERS

PARTS — UPGRADES — REPAIRS

- Notebooks (416) 975-4500
- Desktops FAX (416) 975-4555
- Servers 246 Dupont Street
Toronto (at Spadina)



INTERNET EMAIL - pcoutlet@pcoutlet.com
WEB Site <http://www.pcoutlet.com/pcoutlet>

WE BUY & SELL NEW & USED COMPUTERS

Buy + Sell • Trade In • Trade Up
Used Computers from \$199-IBM Compatible.

DOMINION BUSINESS MACHINES

100 Adelaide St. East

364-2978

364-0191

NEW & USED COMPUTERS • Buy • Sell • Trade-In • Service SPECIALS

486 DX2-66 \$1299

4 MB RAM, 420 MB HD, 1.44 FD,
SVGA Monitor, 1 MB Video Card,
101 Enh Keyboard

Monitors Motherboards
Sound Blaster Cards
CD Rom (Panasonic)

Printers
RAM Memory
Multi Media Speakers
Video Cards

COMPUTER UPGRADE: 386 to 486 from \$175

HIGH-TECH MICRO COMPUTER TECHNOLOGIES INC.

150 BRITANNIA RD., E., UNIT 16
712-2277

MONITOR
REPAIR &
SERVICE

DRAM Module Assembly & Production

Manufacturer
Trison Electronics
1350 Matheson Blvd. E.,
Unit 9 Miss. ON

On board memory chip teardown service
30/72 pins SIMM assembly service
Bare PCB + Parity chip sale
24 hours turn around
Any Quantity
SMD/Thru hole/Mixed

Fax (905) 238 6822 Tel: (905) 238-9251



ON-SITE SERVICES

REPAIR All Models of IBM COMPATIBLES, PS/2, MAC, NOTEBOOKS,
MONITORS, TERMINALS, LASERS, and DOT MATRIX PRINTERS

FAST ON-SITE & DEPOT EMERGENCY SERVICE

- ★ Full/Partial Maintenance Agreements
- ★ Network Configuration & Troubleshooting
- ★ Component Level Repair of Electronic Modules
- ★ Hardware & Software Upgrades, Configuration & Troubleshooting

From **\$35.00** Fonts:
Punjabi
Bengali
Hindi

PCs Xpert Corporation (416) 520-7102

100 Westmore Drive, Unit 11C Voice/Fax: (416) 745-2611

COMPUTER REPAIR SERVICE

Systems • Monitors • Printers

Specializing in Large Screen Monitors

- * For both PC and Mac
- * Free estimates
- * Pickup & delivery service
- * Low price

SPD Technologies 905-470-6326

7321 Victoria Park Ave. #104, Markham, Ont. (Just North of Steeles)

M-F 9:00-6:00 Sat. 10:00-2:00

CD NETWORKING 416-535-7885

CD RECORDING: Hardware and Software to record information to CD-ROM.

CD SERVERS: Your users can access CD's from their Workstations

IMAGING: Document Image Storage and Retrieval solutions for scanning, Data Archiving and Manuals.



Intervision Media Group Inc.

Complete Network solutions for all your CD-ROM requirements
33 Fraser Avenue Suite 212 Toronto, Ontario M6K 1Y7

Sell Your Mailing Lists

Canada - USA

NAFEX buys copyrights to
proprietary mailings lists with fax
numbers on disk in any format

Tel.(604)681-4194 Fax(604)6813965

PC Recycle - Le Centre du PC Recyclé

1150A, Bégin, St.-Laurent, Qc, H4R 1X1

Tel (514) 333-7221 Fax (514) 333-3218

NEW AND RECONDITIONED

Buy Sell Repairs Upgrades for Micro and Network

3Com 3M adds AES, Apple, Arcnet AT&T Canon Citizen, Comterm, Corel, Cybernex, Data General, Daytek, DDTM, Dest, Diconix, Digital Epson, Facit, Gandalf, HDS, HP, IBM, Kimtron, Kyocera, Mannesman, Tally, Memorex, Microtronix, Monitorm, Motorola, Nec, Northern Technologie, Ogivar, Okidata, Olivetti, Phillips, Pine prime, QMS, Qume, Radius, Roland DG, Selanar, Hirez, Sony, Tandon, Tektronix, Televideo, Toshiba, Unisys, Vision, Volker, Craig, Wang, Wyse, Xerox, Zenith.

Index of Advertisers

Accounting		Complete Micro Solutions	10	OA Computer	77	Lottery		Nafex	105
Abacus Accounting	46	Computer Exchange	104	Onward Computer	34	Smart Luck Software	98	Image Control Etobicoke	76
Formost Technologies	65	Computer Tower	63	Optimicro Technologies Inc.	78	Multimedia		Iwasan Consulting & Assoc.	104
Books		Connell Computer	72	OTA Computer Centre	36	CK Movies	25	Kompu Kare	72
Computer & Book Centre	92	Corel	3,11,111	Pacific Royal Enterprises	86	Networks		Linka	105
Toronto Computer Books	91	Corp Computer Centre Ltd.	105	PC Factory	31	Crestline Technologies	52	MultiCIM	104
CD-ROM		CPU Data Systems	42	PC Outlet	105	On Board Systems	37	Natural Software	104
CD-Multi Services	104	CTC Computer Telenet	51	Pinnacle Micro	103	Strategy Internetworking	76	Nomi Computer-Sense	104
Media Mountain	43	CTS Computer Company	92	Pinnacle Computers	104	Online		On-Site Services	105
Micro Solutions	104	Datalife	22	PlusTek Canada	79	All System Go	88	PC Care	105
CD-IT	105	Digital Multimedia Information	50,62	Prima Computer Inc.	91	BIT Group	94	Quickcheque Inc.	104
SanPar Marketing & Dist.	104	Dominion Business Machines	105	Provincial Products Inc.	64	CompuServe	12	SPD Technologies	105
West Dunn	22	E-Tech	24	Quanta Computer	20,21,39	CRS Online	37	Tansen	106
Desktop Publishing		Epson	29	Quest Computers	43	Edwise	83	Tech Well	105
Scanetics	104	Eurocom	55	Rainbow Computer	62	Frontier	81	Service Bureau	
Events		Formgen	22	Rocket Computer Systems	74	Hookup	14	Copywell	106
Atlantic Canada Computer Show	96	Future Shop	41	Samtack	2	Infinity	84	Krishna Copy Ltd.	53
Comdex Canada	103	GC Systems	79	SBI System Builders Inc.	97	InfoRamp Inc.	19	Lino Depot	49
Hardware & Software		GigaTrend	70	Scansource	106	Internet Direct	86	Presentation Edge	106
1 Stop Computer Shop	93	Golden Roc Systems Ltd.	43	Sea Change	25	Interlog Internet	28	Subscription Contest	
123 Computer Warehouse	89	HITS	107	Seanix Technology	109	InterNet Online	27	Subscription contest	101
3A Computer Warehouse	108	HMT Computers	105	Signa Computer	23	Magical Secrets	82	Toner Remanufacturer	
3P Computer & Network Canada	34	HVM Computer	64	Sirus Tech	15	Maplenet	80	Laser Speed	64
Aaronic Technology	75	IBM Canada Ltd.	17	Smart Machine	72	Network Training Services	85	Training	
ABC Computers	67	IC Technology	49	Soft Comp	78	Online Sports	86	Aisys Tech	82
AC Systems	48	ICCT Technologies	55	Softec Business Computer	66	Programmers Guild	82	A.C.T. Advanced Computer Trainin	94
Access Business Centre	60,88	Impulse	7	Starlight Computer Services	89	Rose Media	85	BIT Group	94
ACM Computer System Ltd.	58	Intel	4	STD Computer Inc.	59	SportsNet Online Services	85	Computer Math & Science Learnin	95
ACT Computech	53	Intervision Media Group	105	Steals Direct	79	TCN Systems	84	FX Training Centre	94
Alpha Computer Connection	51	IPC	112	Steals Direct	110	Terraport Online	83	International Academy	95
Amiware	61	J&S Electronics	104	Sunix Inc.	75	The Wire	86	Internet - U	95
Amnet 2000 Inc.	35	Kehtron Computer Inc.	48	Systemelligence	78	Unicom Online	82	Lan Circuit	95
AmPAQ	35,38	Lance Electronics	87	Systematic Electronic	36	Wimsey Information Services	106	Lantec	96
Ashteq Business	24	Lexmark	9	Tecway Technologies Ltd.	6	Power Supply		Microbus	94
Battery Network	87	Lylyss Computer & Electronics	66	The Notebook Store	33	Battery Express	106	PrimeTech	96
Bestop Computers	87	MDG	44,45	Throne Computer Systems	69	Recycling		SAIT	95
BFA Data System	74	Mediatrix	52	Tomigi	50	Centre du PC Recycle	105	SoftTrain Institute	95
BICMOS Trading Int.	76	Memory Diskette (Canada) Inc.	90	Tribus	88	Rental		Sunny Microlab	93
Big Boss Computers	77	Micro Drives Canada	68	Tricon Technologies	49	Compumemories	47	The Institute for Computer Stud	93
Brampton Electronic Components	66	Microview	90	Trillium Computers	46	Wonimation	104	Treas Institute	93
CAAST	8	Mindlight Technology Inc	65	Trison Electronics	105	Service & Consulting		User Friendly Organization	94
Canadian Business Automation	42	MIT Computer Supplies	53,71	Tyler Computers	62	ABS Group	89	Training / Macintosh	
Clarix Canada	56,57	Mitsubishi	54	Ultinet	13	ANET Computer Consulting	104	Simon Ross & Associates	70
CLT/Commercial Laser Technologi	51	Mountain Wholesale Rental	48	Used Computer Store Inc.	25,46,55	CBL Technologies	104		
Compac RBM Systems	52	MPM Industries	89	Vina Computer	76	CJRK Computer Consulting Inc.	104		
Compatible Plus	68	MPT Computers	90	Windows Memory Corp.	106	Computer Dept. Ltd.	70		
		Multimedia Connection	30	Wonder Computer s Inc.	70	Services & Consulting			
		Multimedia Effects	18,63,92	Yeuko / Union	73	Data Recovery	105		
		Mycom Mikon	104	YHC Cassette Industrial Ltd.	77	Discovery Computers	77		
		O.P.M. Office Photocopy Machine	50	Zoltrix	16	Electronic Business Solution	45		

This listing is provided as a client service.
The Computer Paper is not responsible
for any errors or omissions.

PRESENTATION EDGE INC

Suite 200, 138 Huron Street
Toronto Ontario M5T 2B2
599 3869 Fax: 599 8986

**DIRECT PC/WINDOWS OUTPUT
NOW AVAILABLE ON THE INTERNET!**
VISIT OUR SITE AT <http://www.torweb.com/>

- 2400 dpi Paper and Film lino output direct from Windows
- Supporting CorelDraw, Quark XPress, PageMaker, and all major Windows applications
- 1200 dpi Plain Paper output
- 24-bit Colour Printing on a Canon Colour Laser with a Fiery Rip
- Crosfield 4000 dpi Drum Scanner
- Fuji Colour PrePress Proofs

Cross-Platform Experts! Send us your MAC and PC files for outstanding service!

Check Us Out!

<http://www.wimsey.com/>

\$\$\$ BIG cash paid

On the spot for your new or used computer memory SIMMS, RAM, CPU's, HD and components.

"Don't hesitate" to call, we are the buy back leaders. We guarantee the highest buy-back prices. See our ad this issue.

Windows Memory Corporation (619) 454-9701 or Fax 454-9703

DOT MATRIX PRINthead

REPAIRS - SALES EXCHANGES

Ph. (905) 508-1426 Fx: (905) 508-4182

TANSEN COMPANY LTD. - CONCORD, ONTARIO

Locations:

86 Gerrard Street E.
near Church St.
Toronto, Ontario
Mon. - Fri.: 8:45-6:15
Sat 11:00-4:00
416-971-6292
Fax 416-971-6292

185 College Street
near McCaul & St. George
Toronto, Ontario
Mon. - Fri.: 9:00-9:00
Sat 10:00-4:00
416-979-2942
Fax 416-971-1835

5835 Dixie Road, #3
north of Hwy. 401
Mississauga, Ontario
Mon. - Fri.: 8:45-5:30
905-670-COPY
Fax 905-670-2826

4699 Keele Street, #7
across from York University
Downsview, Ontario
Mon. - Fri.: 8:30-5:30
Sat 10:00-4:00
416-665-YORK
Fax 416-665-5680

393 University Ave.
south of Dundas
Toronto, Ontario
Mon. - Fri.: 8:30-5:30
416-599-5899
Fax 416-599-5905

100% Canadian owned



Copywell
plus more...

Head Office:
1999 Leslie Street

Hwy 401 & Leslie
North York, Ontario
Mon. - Fri.: 9:00-5:30
Sat. 11:00-4:00
416-444-8738
Fax 416-444-1663

Opening Soon:
362 Bloor Street West
east of Spadina
Toronto, Ontario

For franchise information call 1-800-COPYWELL

Digital Print Shop

Ask us about using your modem or disk on the PC platform
- black & white printing
on demand or colour printing
using our Canon EFI fiery.

Let our SUPER FAST, LOW COST
Xerox Docutech 600 DPI
digital printer take care
of all your printing needs.

All locations have access
to the Docutech.

Offset printing? We have
5-colour Mitsubishi presses
as well as complete bindery
services

Complete Graphic
& Desktop Service
available (University Ave.
location only)

Volume Discounts
on Corporate Accounts

PRINTER

LASER
DOT - MATRIX
REPAIRS

Ph. (905) 508-1426 Fax: (905) 508-4182

TANSEN COMPANY LTD. - CONCORD, ONTARIO

We speak bar code.

- wands•laser scanners
- portable readers
- label printers
- label printing software
- magnetic stripe readers•

Free delivery anywhere in Canada.
Quality products. Low prices. Resellers welcome.

ScanSource
Canada Ltd. 1-800-665-SCAN (7226)
FAX 1-800-363-SCAN (7226)

COMPUTER BATTERIES & MORE

Batteries for laptop/NB/PB, CMOS, camcorders, cameras,
RC vehicles, toys, cordless phones/drills/shavers,
cellular, remotes, calculators, pet fences.
UPS/LANS, Ni-Cads, chargers etc.

We Rebuild! Call & Ask!
OEM - Industrial - MRO - Wholesale - Retail
We stock what you need! No Minimums!
Visa/MC/AmX/Dicvr/COD/PO#s/U.S.\$

BATTERY EXPRESS

713 Gladstone Street, Parkersburg, WV, USA 26101-5661
Sales: 800.666.2296 Store: 304.428.2296 Fax: 304.428.2297 (24 hrs.)

HITS

COMPUTER & ELECTRONICS

THE LATEST POWER YOU EXPECT



With Any System Purchased
1. Free INTERNET GENie Software
2. Free Online Time Up to \$75

Pentium™ 100 Intel® CPU ATI Mach-64 Video

- Intel Pentium 100MHz CPU with Fan
- PCI Local Bus Main Board 256K Cache
- 16MB RAM, Expandable to 128MB
- Panasonic 1.44MB Floppy Drive
- W.D. 1.08 GB Fast IDE Hard Drive 10ms
- ATI Mach-64 PCI Local Bus Video Adapter with 2MB RAM
- 32-Bit PCI Local Bus IDE Drive Controller
- DAYTEK 17" N.I. Monitor 1280x1024
- Medium Tower with 6 Drive Bays
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible Mouse
- DOS-6 Installed with Manual & Disks
- **Two Years Parts & Labour Warranty**

\$3599

17" DAYTEK Monitor included ◀

Pentium™ 75/90 Intel® CPU

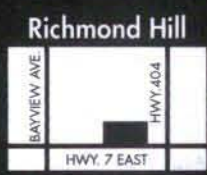
- Intel Pentium 75/90MHz CPU with Fan
- PCI Local Bus Main Board 256K Cache Expandable to 512K
- 8MB RAM, Expandable to 128MB
- Panasonic 1.44MB Floppy Drive
- Fujitsu 530MB Hard Drive 12ms, 256K Cache
- PCI Local Bus Video Adapter with 1 MB (Exp. to 2MB)
- 32-Bit PCI Local Bus IDE Drive Controller
- DAYTEK 15" Flat Screen 72Hz N.I. Monitor 1280x1024 & 0.28dp
- Medium Tower with 6 Drive Bays
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible Mouse
- DOS-6 Installed with Manual & Disks
- **Two Years Parts & Labour Warranty**

\$1999 (Pentium 75)
\$2150 (Pentium 90)

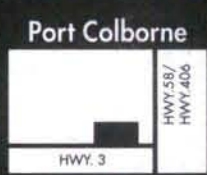
15" DAYTEK Monitor included ◀



419 College Street
 Tel: (416) 603-2283
 Fax: (416) 603-0752



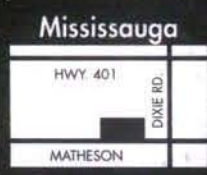
420 Highway 7 East
 Tel: (905) 889-6513
 Fax: (905) 889-3125



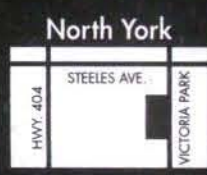
633 Main Street West
 Tel: (905) 835-2244
 Fax: (905) 835-0239



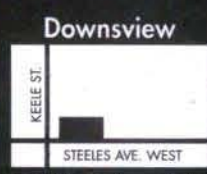
63 Silverstar Blvd, Unit A16
 Tel: (416) 754-8887
 Fax: (416) 754-8380



1350 Matheson Blvd.
 Tel: (905) 238-8701
 Fax: (905) 238-1586



3802 Victoria Park Ave.
 Tel: (416) 499-2889
 Fax: (416) 492-6501



2180 Steeles Ave. West
 Tel: (905) 660-3280
 Fax: (905) 660-4336

486DX2-66 SYSTEM Multimedia

- HITS 486DX2-66MHz VESA Local Bus Motherboard with CPU & Cooling Fan
- 128K External Cache Expandable to 256K
- 4MB 72 Pin SIMM RAM, Expandable to 8/16/20/24/32...64MB
- Panasonic 1.44MB Floppy Drive
- Maxtor 420MB Hard Drive 12ms
- 32-Bit Trident-9440 VESA Local Bus Video Adapter with 1MB (Expandable to 2MB)
- 32-Bit VESA Local Bus EIDE Drive Controller
- DAYTEK 14" N.I. Monitor 1024x768 & 0.28dp
- Mini-Tower Case with 220 Watt Power Supply
- Microsoft Compatible Mouse
- 101 Enhanced Keyboard
- DOS-6 Installed with Manual & Disks
- **Double Speed CD-ROM**
- Sound Blaster 16-Bit Sound Card
- **Sound Blaster CD Bundle (12 Titles)**
- **Two Years Parts & Labour Warranty**

Sound Blaster CD Bundle & DAYTEK Monitor included ◀ **\$1550**



CREATIVE CREATIVE LABS

Sound Blaster CD Bundle Special

Blaster Value CD	• Double Speed CD ROM Drive • 12 Titles/SB-16 Sound Card/Speakers	\$269
Discovery -- New	• Double Speed CD ROM Drive • 18 Titles/SB-16 Sound Card/Speakers	\$379
Digital School	• Double Speed CD ROM Drive • 20 Titles/SB-16 Sound Card/Speakers	\$309
Discovery/4X	• Quad Speed (4X) CD ROM Drive • 18 Titles/SB-16 Sound Card/Speakers	\$460
Multimedia Home/4X	• Quad Speed (4X) CD ROM Drive • 24Titles/SB-16 Sound Card/Speakers	\$555

Normal charges for installation and consultation may apply to special terms • All Pricing is already cash discounted and subject to change without notice • All trademarks are the property of their owners

Products may differ from the illustration

- Brother HL- 641**
- Free ClickBook™ Software (\$69.95 value)
 - 6 ppm Laser Printer
 - 300 dpi Resolution
 - HP LaserJet IIP, IBM ProPrinter XL and Epson FX-850 Emulations
 - 2 Year Warranty

\$549⁹⁹



MONTHLY SPECIALS

Brother HL- 660

- 6 ppm Laser Printer
- 600 dpi Resolution
- 2MB RAM expandable to 10MB with Industrial Standard 72-pin SIMM
- 2 Year Nation-wide Warranty

\$769⁹⁹



HP LaserJet 4L

300 dpi, 4ppm, Enhanced PCL5

\$CALL

HP LaserJet 4MP

600 x 600 dpi, 4ppm, 6MB

\$CALL

HP ScanJet IICX

Flat bed Scanner, 1600 dpi, Color & Gray Scale Scanning

\$CALL

HP DeskJet 540

Color Upgradeable, 600 x 300 dpi

\$CALL

HP DeskJet 1200C

600 x 300 dpi, 300 dpi full color printing, PCL5, 2MB, 6ppm

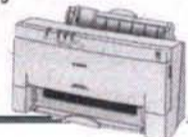
\$CALL

Canon BJC4000

- High-speed, high-quality monochrome
- Brilliant, full spectrum colour printing
- 100 page sheet feeder capacity
- Monochrome printing at 5 ppm
- Four independent print heads

NEW PRODUCT

\$489⁹⁹



DAYTEK MONITORS

- 14" SVGA 1024x768 .28 dp NI Color Monitor **\$291⁹⁹**
- 15" SVGA 1280x1024 .28 dp NI Color Monitor Low Radiation, Green **\$419⁹⁹**
- 17" SVGA 1280x1024 .28 dp NI Color Monitor Low Radiation, Green **\$799⁰⁰**
- 20" SVGA 1600x1280 .28 dp NI Color Monitor Low Radiation, Digital Control, Green **\$1349⁹⁹**
- 21" SVGA 1600 x1280 .28 dp NI Color Monitor Low Radiation, Digital Control, Green **\$1799⁹⁹**

MULTI-MEDIA SPEAKERS (sold in pairs)

KOSS HD10

Amplified Stereo Speakers



\$19⁹⁹

Labtec

CS 180

Amplified Stereo Speakers w/ mounting hangers



\$31⁹⁹

CS 800

High Performance Stereo Speakers



\$49⁹⁹

CS1000

Professional Stereo Speakers



\$129⁹⁹

Robotics Sportster

FaxModem

14,400 with v.42 bis

Internal



\$139⁹⁹

External

\$159⁹⁹

28,800 High Speed

Internal

\$319⁹⁹

External

\$349⁹⁹



Business Hours:

Monday - Friday 9:00 AM to 7:00 PM
Saturday 10:00 AM to 6:00 PM

Prices subject to change without prior notice.

GOVERNMENT & CORPORATE P.O. WELCOME

3A

COMPUTER WAREHOUSE

PCS Pentium PCI LB System



PCS Pentium PCI LB System

- INTEL Pentium CPU
- 256K Cache RAM Exp. To 1MB
- 8MB RAM (72-Pin SIMM) Exp. To 128MB
- PCI Enhanced IDE I/O Controller w/ 16550 UARTs
- 1.44MB Floppy Drive
- 730MB Hard Drive, 12 ms
- 14" SVGA N-I Monitor, 1024 x 768, .28dp, Green
- PCI SVGA 1MB Fast Video Card
- 101-key Enhanced Keyboard
- Mini Tower Case w/ 200W CSA L2 Power Supply
- MS Compatible Mouse
- MS-DOS 6.22 w/ Disks and Manual
- 2 Year Labour & Parts Warranty

90 MHz **\$2199⁹⁹**

100 MHz **\$2399⁹⁹**

PCS 486DX2/DX4 VLB System

- 486DX2/DX4 CPU
- 128K Cache RAM Exp. To 512K
- 4MB RAM Exp. To 128MB
- 1.44MB Floppy Drive
- 730MB Hard Drive, 12 ms
- VL Enhanced IDE I/O (2S/1P/1G)
- VL Bus SVGA 1M Fast Video Card
- 14" SVGA N-I Monitor, 1024 x 768, .28dp, Green
- 101-key Enhanced Keyboard
- Mini Tower Case w/ 200W CSA L2 Power Supply
- MS Compatible Mouse
- MS-DOS 6.22 w/ Disks & Manual
- 2 Year Labour & Parts Warranty

DX2-66 **\$1399⁹⁹**

DX2-80 **\$1439⁹⁹**

DX4-100 **\$1489⁹⁹**

PCS 486DX2-66 VLB Multi-Media Computer

- 486 DX2-66 MHz
- 128K Cache RAM Exp. To 512K
- 4MB RAM Exp. To 128MB
- 1.44MB Floppy Drive
- 540MB Hard Drive, 14 ms
- VESA Local Bus Enhanced IDE I/O
- VL 1MB SVGA Fast Video Card
- 14" SVGA 1024 x 768 Color Monitor
- 101-key Enhanced Keyboard
- Mini Tower Case w/ 200W CSA L2 Power Supply
- MS Compatible Mouse
- MS-DOS 6.22 w/ Disks & Manual
- 2 Year Labour & Parts Warranty
- Double Speed CD-ROM Drive
- Sound Card
- 2 Stereo Speakers
- FREE FaxModem

\$1699⁹⁹

FREE 3 CD Titles
(with purchase of system)

- Jurassic Park
- MS Encarta 95
- Languages Of The World

PCS 486 Budget Package

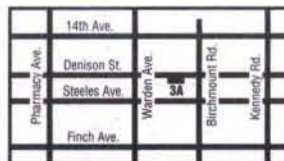
- 486SLC2-66
- 64K Cache RAM Exp. To 128K
- 4MB RAM Exp. To 64MB
- 1.44MB Floppy Drive
- 540MB Hard Drive, 14 ms
- IDE I/O (2S/1P/1G)
- SVGA 512K Video Card
- SVGA 1024 x 768 Color Monitor
- 101-key Enhanced Keyboard
- PC-DOS
- 2 Year Labour & Parts

\$1099⁹⁹

IDEAL FOR STUDENTS

1271 Denison Street
Unit 52, Markham
Ontario L3R 4B5

Tel: (905) 513-1811
Fax: (905) 513-0039



Get a FREE* Sound Blaster Discovery Value CD-Pack

*With purchase of system

Value: \$259⁹⁹

COMDEX SPECIAL

- Double Speed CD-ROM
- Sound Blaster 16-Bit Sound Card
- Stereo Speakers
- 12 Quality Titles

PCS Pentium 75MHz PCI LB System

- INTEL Pentium 75MHz CPU
- Upgradable to Pentium 100MHz
- 256K Cache RAM Exp. To 1MB
- 8MB RAM (72-Pin SIMM) Exp. To 128MB
- PCI IDE I/O (2S, 1P)
- 1.44MB PANASONIC Floppy Drive
- 730MB QUANTUM Hard Drive, 12 ms
- 14" SVGA N-I Monitor, 1024 x 768, .28dp, Green
- PCI SVGA 1MB Fast Video Card
- 101-key Enhanced Keyboard
- Mini Tower Case w/ 200W CSA L3 Power Supply
- MS Compatible Mouse
- PC-DOS 6.3 w/ Disks and Manual
- 2 Year Labour & Parts Warranty

\$2199⁰⁰

MULTIMEDIA UPGRADES

Sound BLASTER



MULTIMEDIA HOME OFFICE 4x

\$559⁹⁹

- Quad Speed 4x CD-ROM
- Sound Blaster 16-bit Sound Card
- Speakers & Microphones
- 24 Top-Quality CD Titles, including Entertainment, Education and Utilities

SOUND BLASTER DISCOVERY CD 4x

\$459⁹⁹

- Sound Blaster 16-bit Sound Card
- Quad Speed 4x CD-ROM
- Stereo Speakers
- 18 Top Quality Multimedia Titles

DISCOVERY VALUE CD

\$259⁹⁹

- Double Speed CD-ROM
- Sound Blaster 16-bit Sound Card
- Speakers
- 12 Titles

SOUND BLASTER 16 MCD

\$189⁹⁹

SOUND GALAXY - 16 (w/ headphones)

\$139⁹⁹

SOUND BLASTER 16 BASIC (OEM)

\$119⁹⁹

SOUND BLASTER 16 VIBRA (OEM)

\$109⁹⁹

LOW \$\$ SOUND CARD

\$59⁹⁹

TEAC/ACER IDE, 4x, 195 ms, 600 Kbs

\$259⁹⁹

PANASONIC 562-J IDE, 2x <320 ms

\$139⁹⁹

ACER IDE, 2x

\$159⁹⁹

TOTAL STORAGE SOLUTIONS

SCSI EXTERNAL BOX

- Ideal for FDD, HDD, CD-ROM, Tape Streamer
- SCSI ID Selector
- Universal Input Power Supply, CSA, UL
- Built-in Cooling Fan
- EMI/RFI Shielding for better protection (3.5" & 5.25" Unixbox only)
- Compatible with PC, MAC, and SUN Systems

Unixbox

3.5" w/ 40W CSA Power Supply

\$85⁰⁰

5.25" w/ 40W CSA Power Supply

\$95⁰⁰

Cubicbox

5.25" w/ 2 Bays, 50W CSA Power Supply

\$129⁰⁰

5.25" w/ 4 Bays, 200W CSA Power Supply

\$169⁰⁰

5.25" w/ 7 Bays, 250W CSA Power Supply

\$289⁰⁰

NEW ARRIVAL



FINALLY, COMPUTERS THAT CAN KEEP UP WITH YOU!

... now and later !

ASI[®]
9000



" In a field of similarly configured PCs with familiar, off-the-shelf components, Seanix Technology (of Vancouver, Canada) offers something a little less pedestrian... "

*Reprinted from PC Magazine, Dec.6.1994
Copyright (C) 1994 Ziff Davis Publishing Company*

See Us At

COMDEX/Canada '95

Canada's #1 Information Technology Marketplace for Resellers and Corporate Decision Makers including

LANEXPO™ and **WINDOWS WORLD™**

July 12-14, 1995 • Toronto, Ontario



" Seanix was an impressive presence in our first benchmark survey (in the January 95 issue of TCP), but the model that was submitted for this month's survey was simply superb... "

Computer Paper, Apr 1995 Page 18



When it comes to personal computers designed and manufactured in Canada, no one can challenge the high degree of Canadian content Seanix puts into each one of its machines, whether it is an **ASI[®] 9000** or a **Sonora[®] PC**.

We've been at it for many years, developing world-class motherboard engineering, building an infrastructure for PC manufacturing right here in Canada, and our customers are now starting to enjoy the benefits of our vision: Seanix's top-performance PCs at affordable prices.

Because of our in-depth understanding of PC technology, we can deliver innovative products and we are able to support these products the way only a true manufacturer can.

That's why more Canadian customers choose Seanix products to manage their business information, educate their children or simply entertain their family.



SONORA
BY SEANIX



VANCOUVER
#140-6631 Elmbridge Way
Richmond BC
V7C 4N1
Ph: (604)273-3692
Fax: (604)276-8179

CALGARY
#201-3740C 11A Avenue,
Calgary AB
T2E 6M6
Ph: (403)291-9141
Fax: (403)291-3916

TORONTO
#18-55 Administration Road
Concord ON L4K 4G9
Ph: (905)660-8829
Fax: (905)660-8840

MONTREAL
2750 Sabourin,
St-Laurent Qué. H4S 1M2
Ph: (514)339-5555
Fax: (514)339-9941

Canon

IBM

DacEasy

HEWLETT PANASONIC TOSHIBA

PACKARD

hp

Raven

Cool Summer Savings

LOGITECH

NEC

Quantum

Maxtor

COMPUTER ASSOCIATES

SAMSUNG

SPC SOFTWARE

Pioneer Quad Speed Kit

- Pioneer Quad Speed CD ROM Drive
- Pro Audio 16Bit Green Sound Card
- Webster's Encyclopedia
- Lawnmower Man
- Indy Car Racing
- Sam & Max Hit the Road

\$419⁸⁸

Sound Blaster Value Kit

- Double Speed CD ROM Drive
- Sound Blaster 16 Sound Card
- Grolliers Encyclopedia & Speakers

\$249⁸⁸

STEALS 486DX2/DX4 Local Bus

- Mini Tower Case
- 200W Power Supply
- VESA Local Bus, Energy Star, Pentium Upgradable
- 128K Fast Cache RAM
- 486DX2/DX4 CPU Processor w/Cooling Fan
- 4MB, 70NS RAM Memory
- 540MB Fast Hard Drive
- 1.44 Floppy Drive
- VESA Local Bus Super IDE Controller Card
- 2 Serial/1 Parallel/1 Joystick Port
- VESA Local Bus SVGA Video w/1MB Exp. 2MB
- Daytek 14" SVGA .28DP NI Monitor
- 101 Enhanced Keyboard

From \$42¹² Per Month*

486 DX2-66MHz \$1179⁸⁸
486 DX4-100MHz \$1319⁸⁸

INCLUDES:

- PC DOS 6.1 w/Disks & Manuals
- 2 Years Parts & Labour Warranty

STEALS PENTIUM PCI Local Bus

- Enhanced Mid Tower Case
- 220W Power Supply
- PCI Local Bus, Green, Pentium MotherBoard
- 256K Fast Cache, Exp. 512K
- Intel Pentium CPU w/Cooling Fan
- 8MB, 70NS RAM Memory
- 540MB, 12MS IDE Hard Drive
- 1.44 Floppy Drive
- PCI Local Bus Super IDE Controller Card
- 2 Serial/1 Parallel/1 Joystick Port
- PCI Local Bus SVGA Video w/1MB Exp. 2MB
- Daytek 14" SVGA .28DP NI Monitor
- 101 Enhanced Soft Touch Keyboard

From \$56²² Per Month*

Pentium 75MHz \$1799⁸⁸
Pentium 90MHz \$1999⁸⁸
Pentium 100MHz \$2159⁸⁸

INCLUDES:

- PC DOS 6.1 w/Disks & Manuals
- Microsoft Compatible Mouse
- 2 Years Parts & Labour Warranty

Raven LS-3 Windows Laser

- 600DPI Resolution
- 6 Pages Per Minute
- SlimLine Design

\$599⁸⁸

HP DeskJet 540

- 600x300 Resolution
- Colour Upgradable
- 3 Year Warranty

\$399⁸⁸

Sound Blaster Discovery Quad Kit

- Quad Speed Sub 200MS
- Sound Blaster 16 Sound Card
- Amplified Speakers, Grolliers & More

\$449⁸⁸

Pioneer 4.4 Speed CD ROM Drive

- 110MS Access Time
- 676KB/S Transfer Rate
- Embedded SCSI-2 Interface

\$349⁸⁸

Steals 486DX2/DX4 Double Speed Local Bus Multimedia

- Mini Tower Case • 200W Power Supply
- Vesa Local Bus, Green, Pentium Upgradable
- 128K Fast Cache Exp. 256K
- 486DX2/DX4 CPU Processor w/Cooling Fan
- 8MB, 70NS RAM Memory
- 540MB, 12MS Hard Drive
- 1.44 Floppy Drive
- VESA Local Bus Super IDE Controller Card
- 2 Serial/1 Parallel/1 Joystick Port
- VESA Local Bus SVGA Video w/1MB Exp. 2MB
- Daytek 14" SVGA .28DP NI Monitor
- 101 Enhanced Soft Touch Keyboard
- Double Speed CD ROM Drive
- Pro Audio 16 Bit Green Sound Card
- Stereo Speakers
- 5 CD Titles

From \$56²² Per Month*

486DX2-66MHz \$1599⁸⁸
486DX4-100MHz \$1779⁸⁸

INCLUDES:

- PC DOS 6.1 & Windows w/Disks & Manuals
- Microsoft Compatible Mouse
- 2 Years Parts & Labour Warranty

Steals Pentium Quad Speed PCI Local Bus Multimedia

- Enhanced Mid Tower Case • 220W Power Supply
- PCI Local Bus, Green, Pentium MotherBoard
- 256K Fast Cache, Exp. 512K
- Intel Pentium CPU w/Cooling Fan
- 8MB, 70NS RAM Memory
- 540MB, 12MS IDE Hard Drive
- 1.44 Floppy Drive
- PCI Local Bus Super IDE Controller Card
- 2 Serial/1 Parallel/1 Joystick Port
- PCI Local Bus SVGA Video w/1MB Exp. 2MB
- Daytek 14" SVGA .28DP NI Monitor
- 101 Enhanced Soft Touch Keyboard
- 150MS Pioneer Quad Speed CD ROM Drive
- Pro Audio 16 Green Sound Card
- Compton's Interactive Encyclopedia
- Amplified Stereo Speakers • 4 CD Titles

From \$75⁷⁰ Per Month*

Pentium-75MHz \$2179⁸⁸
Pentium-90MHz \$2379⁸⁸
Pentium-100MHz \$2539⁸⁸

INCLUDES:

- PC DOS & Windows w/Disks & Manuals
- Microsoft Compatible Mouse
- 2 Years Parts & Labour Warranty

Logitech Hand Scanners

- ScanMan 256 w/OCR \$149⁸⁸
- ScanMan Easy Touch \$254⁸⁸

Colorado Tape Backups

- Jumbo 350 Int. \$239⁸⁸
- Jumbo 700 Int. \$399⁸⁸
- Tracker 350 External \$469⁸⁸
- Tracker 700 External \$559⁸⁸

Keyboards

- 101 Professional Style \$19⁸⁸
- Keytronics Eurotek 101 \$94⁸⁸
- Microsoft Natural \$109⁸⁸

Clearance Books

Save Up to **80% Off**

The Cover Price

COMPONENT CORNER

- Multimedia Desktop Case w/Speakers \$68⁸⁸
- Mini Tower Case \$59⁸⁸
- Mid Tower Case \$84⁸⁸
- 486 ISA MotherBoard w/64K Cache \$48⁸⁸
- 486 VESA MotherBoard w/256K Cache \$129⁸⁸
- ISA Combo Controller \$16⁸⁸
- VESA Local Bus Combo Controller \$24⁸⁸
- Enhanced VESA Combo Controller \$39⁸⁸
- Trident ISA Video Card w/512K \$68⁸⁸
- Trident VESA Video Card w/1MB Exp. 2MB \$118⁸⁸
- Multi CD Controller \$18⁸⁸
- 14" SVGA .39 Monitor \$229⁸⁸
- 14" SVGA .28 NI Monitor \$288⁸⁸
- 15" SVGA .28 NI Monitor \$398⁸⁸
- Cyrix 486 DX2 CPU \$149⁸⁸
- 486 CPU Fan \$9⁸⁸

CD SOFTWARE BLOWOUT

- Assorted Shareware
- CD Quartet (Mavis, World Atlas, Chessmaster)
- Mega CD Software
- Apogee Companion
- Guinness Book of Records
- Secret Weapons
- Loom
- Romance Stock Photos
- Chaos Continium
- Masterblend for Windows
- 48 Game Hit Pack
- Cool Crafts
- Sherlock Holmes
- Monkey Island
- Discoveries of the Deep
- Boss Software
- Better Homes & Gardens Cookbook
- Sandiego Animals
- Always Arthur
- Who Wants Arthur
- Busters Thunderstorm
- Trump Castle
- Game Palace 1,2,3
- Rhyme Time
- Blake Stone Companion
- Doom Companion
- Legal Guide
- Charles Givens on Money

Any 3 For \$28

While Quantities Last!! All Taxes Extra.

All pricing is cash discounted

Price in Effect Until June 30, 1995

While Quantities Last!

Thousands of Items in Stock

Corporate P.O.'s Welcome

• PRICE • QUALITY • SERVICE • SELECTION

MISSISSAUGA (905) 602-8333

MARKHAM (905) 475-3999

BRAMPTON (905) 840-8333

TORONTO (416) 927-7824

NORTH YORK (416) 661-9049

PICKERING (905) 420-1228

COMPUTER STEALS DIRECT SUPERSTORES

MISSISSAUGA	MARKHAM	BRAMPTON	TORONTO	NORTH YORK	PICKERING
1825 DUNDAS ST. E. TEL: (905) 602-8333 FAX: (905) 602-8330	560 Denison St. Unit #7 TEL: (905) 475-3999 FAX: (905) 475-7089	15 Fisherman Drive TEL: (905) 840-8333 FAX: (905) 840-5378	318 College Street TEL: (416) 927-7824 FAX: (416) 927-7641	4630 Dufferin Street TEL: (416) 661-9049 FAX: (416) 661-0670	1732 Liverpool Rd. Unit #8 TEL: (905) 420-1228 FAX: (905) 420-7227
Store Hours Mon.-Fri. 9:30-9:00 Sat. 10:00-6:00 Sun. 12:00-5:00	Store Hours Mon.-Fri. 9:30-8:00 Sat. 10:00-6:00 Sun. 12:00-5:00	Store Hours Mon.-Fri. 9:30-8:00 Sat. 10:00-6:00 Sun. 12:00-5:00	Store Hours Mon.-Fri. 9:30-7:00 Sat. 10:00-6:00 Sun. 12:00-5:00	Store Hours Mon.-Fri. 9:30-8:00 Sat. 10:00-6:00 Sun. 12:00-5:00	Store Hours Mon.-Fri. 9:30-9:00 Sat. 9:00-6:00 Sun. 12:00-5:00

* Some quantities limited. * Some products not exactly as illustrated. * We reserve the right to limit quantities. * G.S.T. and Prov. tax extra. * Prices subject to change without notice. All trademarks and trade names are used to identify articles claiming the marks and names of their products. Steals Direct disclaims any proprietary interest in trademarks or trade names except its own. * All prices are cash discounted. * O.A.C. on approved credit for 36 months. * No rainchecks. * 15 day money back guarantee does not apply to components pricing.

COREL DRAW!™

THE OVERWHELMING CHOICE OF PC USERS!

#1

CorelDRAW NUMBER ONE in ILLUSTRATION

Company	Units	Sales
Corel	7609	1,586,519.83
Adobe	257	73,968.64
Micrografx	380	36,696.38
Deneba	98	15,899.24
Totals	8,344	1,713,083.90

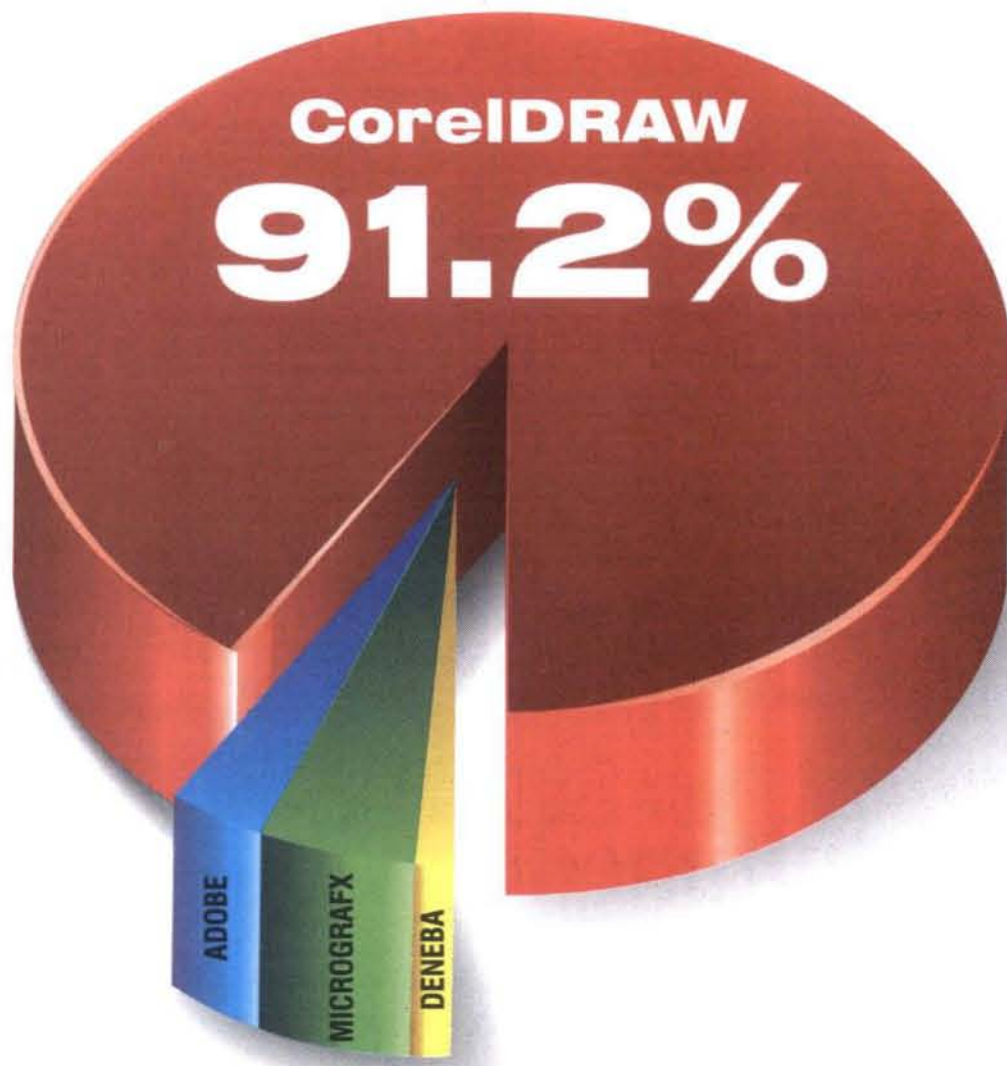
Market Share
Windows Illustration
Software

PC Data,
December Sales, 1994

The results are in!

CorelDRAW is the #1 choice for PC users. Year after year, survey after survey, CorelDRAW continues to dominate the illustration market with the best graphics software available.

Now even the additional applications (Corel VENTURA and Corel PHOTO-PAINT which are bundled in the CorelDRAW suite) are receiving "best of breed" accolades making the overall value unbeatable!



Corel VENTURA* NUMBER ONE in PUBLISHING

#1

Product	S.L.P. (US\$)	Score
Corel VENTURA 5	\$595	6.8
QuarkXPress	\$895	6.7
Aldus PageMaker	\$895	6.2

INFOWORLD
Report Card Rating,
Desktop Publishing Software
March 20, 1995

3.5" disk version

#1

Corel PHOTO-PAINT* NUMBER ONE in IMAGE-EDITING

Product	S.L.P. (US\$)	Overall weighted score
Corel PHOTO-PAINT 5 Plus	\$249	44
Micrografx Picture Publisher 5.0	\$595	42
Adobe PhotoShop 3.0	\$895	39
Fractal Design Painter 3	\$499	38

PC World,
Best Buy Award,
April, 1995

3.5" disk version

FUTURE SHOP
DISCOUNT SUPERCENTERS

CorelDRAW 5
\$629⁹⁹
CD-ROM Version

Visit the location nearest you!

Cdn\$ plus applicable taxes.

COREL®

Call now for faxed literature!
1-613-728-0826 ext. 3080
Document #1071

* Available as standalone products.

All product names are trademarks or registered trademarks of their respective companies.

It's time for your family to meet our family.

NEW LOWER PRICES!!

IPC CD/FX-66

- Intel 486DX2/66MHz processor
- 4MB RAM, internal write back cache
- Pentium OverDrive ready
- VESA / ISA / PCI bus architecture
- 4 PCI & 2 VESA local bus slots
- QUAD speed CD ROM
- 16-bit sound card
- Dual amplified speakers
- 530MB high speed hard drive
- 3.5" high density floppy drive
- 14.4 Voice/Fax/Modem
- 1MB PCI SVGA video card
- MS Mouse and mouse pad
- MS DOS 6.22
- Windows for Workgroups 3.11
- 7 Microsoft Home software packages*
- Three year parts & labour warranty
- First year on-site service*

\$1,999
Or only \$70/month

Monitor included:

- 14" SVGA monitor, 1024 x 768, .28dp'

IPC CD/FX-100

- Intel DX4-100MHz processor
- 4MB RAM, internal write back cache
- Pentium OverDrive ready
- VESA / ISA / PCI bus architecture
- 4 PCI & 2 VESA local bus slots
- QUAD speed CD ROM
- 16-bit sound card
- Dual amplified speakers
- 530MB high speed hard drive
- 3.5" high density floppy drive
- 14.4 Voice/Fax/Modem
- 1MB PCI SVGA video card
- MS Mouse and mouse pad
- MS DOS 6.22
- Windows for Workgroups 3.11
- 7 Microsoft Home software packages*
- Three year parts & labour warranty
- First year on-site service*

\$2,199
Or only \$77/month

Monitor included:

- 14" SVGA monitor, 1024 x 768, .28dp'

IPC CD/FX-575

- Intel Pentium 75MHz processor
- 8MB RAM, 256k cache
- ISA and PCI bus architecture
- 4 PCI & 2 VESA local bus slots
- QUAD speed CD ROM
- 16-bit sound card
- Dual amplified speakers
- 530MB high speed hard drive
- 3.5" high density floppy drive
- 14.4 Voice/Fax/Modem
- 1MB PCI SVGA video card
- MS Mouse and mouse pad
- MS DOS 6.22
- Windows for Workgroups 3.11
- 7 Microsoft Home software packages*
- Three year parts & labour warranty
- First year on-site service*

\$2,299
Or only \$81/month

Monitor not included

IPC CD/FX-590

- Intel Pentium 90MHz processor
- 8MB RAM, 256k cache
- ISA and PCI bus architecture
- 4 PCI & 2 VESA local bus slots
- QUAD speed CD ROM
- 16-bit sound card
- Dual amplified speakers
- 530MB high speed hard drive
- 3.5" high density floppy drive
- 14.4 Voice/Fax/Modem
- 1MB PCI SVGA video card
- MS Mouse and mouse pad
- MS DOS 6.22
- Windows for Workgroups 3.11
- 7 Microsoft Home software packages*
- Three year parts & labour warranty
- First year on-site service*

\$2,499
Or only \$90/month

Monitor not included

* IPC Home and CD/FX systems includes 7 Microsoft Home software titles:
• Encarta '95 • Golf v1.0 • Works 3.0 • Dangerous Creatures • Money • Scenes • Entertainment Pack
* Scenes & Entertainment Pack are preloaded on the hard drive

Multimedia will never be the same again.

When you consider how important a home computer will be for your family, it's great to know that there's a quality line of Canadian built multimedia PCs to choose from.

When it comes to multimedia computing, IPC's CD/FX systems offer outstanding quality at truly affordable prices. And if our three year parts and labour warranty and local service and support across Canada don't make you feel secure, then our on-site service for the first full year should!

Best of all, IPC multimedia PCs are ready to rock 'n' roll.

If you've been looking for a full-blast multimedia system



IPC CD/FX
Monitor not necessarily as shown

with a QUAD speed CD ROM, true 16-bit sound, and amplified speakers for under \$2000, look no further - the CD/FX-66 is here! And it even comes with seven software titles to get you started.

For power freaks, the CD/FX-575 and CD/FX-590 with 8 megs of ram and Intel Pentium processors are dream machines at unbelievable prices. Check them out!

What are you waiting for? Pick up the phone and dial 1-800-567-7413 ext-105, or bring your family to meet our family of IPC CD/FX multimedia systems in person at one of the authorized dealers listed below.

It really is time they met!



TO MEET THE FAMILY OF IPC MULTIMEDIA COMPUTERS VISIT ONE OF THESE AUTHORIZED DEALERS:

Barrie	Barrie Computer Mart	705-739-6866	Irreps Falls	B & M Home and Office	705-222-4532	Newmarket	Ribe Computer	905-895-8117	Pickering	CMCS Systems	905-831-9284	Sudbury	Mapletech Computers	705-524-1759
Belleville	H & H Computers	613-969-4876	Kingston	Canada Computer & Elec.	613-542-8487	North Bay	Nell Communications	705-472-6823	Richmond Hill	PC++ Computers	905-881-3218	Toronto	CompuTec	416-785-8348
Chatham	Thames Computer Centre	519-354-8533	Lindsay	Ridge Computer	705-324-5932	Ottawa	CompuTrend	613-225-9858	Scarborough	Underwood Computer	416-281-0650	Toronto	Computer Kon	416-367-4266
Chelmsford	I & R Computer Services	705-855-7166	London	CompuTrend	519-679-7773	Owen Sound	B.C. Electronics	519-372-1621	St. Catharines	Brock (Uk) Bookstore	905-688-5544	Welland	Carl Damude Ltd.	416-735-8770
Cornwall	Micro Computer Assn.	613-933-0204	Mississauga	Keywest Micro	905-625-2969	Paris	The Sky's the Limit	513-442-1390	St. Catharines	St. Catharines Business	905-685-5451	Whitby	Berbyte	905-725-7454
Hanover	Computer Plus	519-364-7444	Nepean	Compu-sys Micro Solution	613-226-6611	Peterborough	Grandview Computer	705-741-4825	Stratford	Chipon Computers	519-273-1412	Woodbridge	CBA	905-850-3769

IPC Personal Computers are built in Canada by: 3D Microcomputers, 350 Steelcase Road West, Markham, Ontario L3R 1B3 Fax: 905-479-7688

The Intel Inside Logo is a registered trademark and Pentium is a trademark of Intel Corporation. The IPC logo is a trademark of 3D Microcomputers. System not necessarily as shown. *Monitor not eligible for on-site service. On-site service is not available in all areas of Canada. MS DOS and Windows are pre-loaded on the hard drive only. Regional price variances may apply. Prices are cash discounted. Prices and configuration subject to change without notice. *O.A.C. based on 36 month term, first and last payments in advance with a 5% buyback option. Lease rates subject to interest rate changes.