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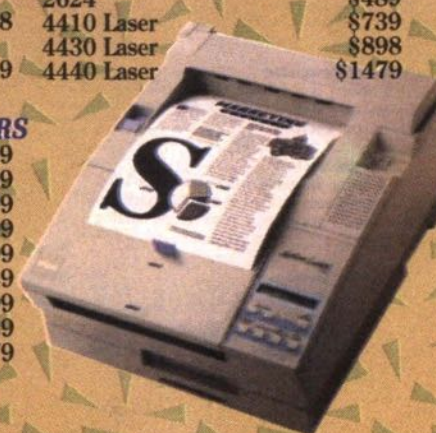
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486DX/2-50 INTEL	4 mb 120 hd	\$1638	\$62/mth
486DX-50 INTEL	4 mb 120 hd	\$1778	\$68/mth
486DX/2-66 INTEL	4 mb 120 hd	\$1838	\$70/mth

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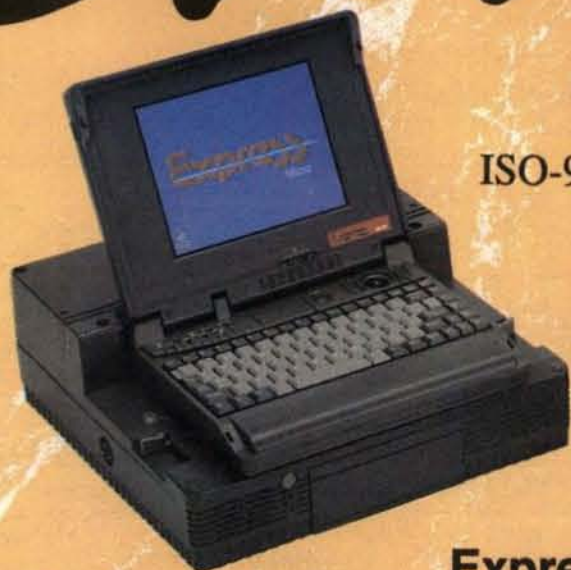
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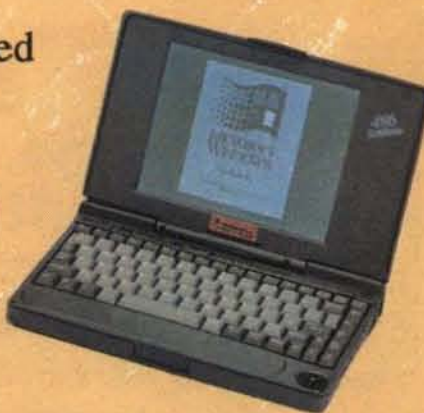


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Screen Size	14"	14"	14"	15"	17"	15"	17"	20"	21"	
Dot Pitch (mm)	0.28	0.28	0.28	0.28	0.28	0.28	0.27	0.28	0.25	
Flat Square Screen				✓	✓	✓	✓	✓	✓	
Horizontal Freq. max. (KHz)	31.5/35.2	31-60	31.5/35.2	31-60	30-64	30-64	30-82	30-82	30-82	
	/35.5		/37.9/48.4							
Vertical Scanning Freq. (Hz)	50-100	50-90	50-100	50-90	50-90	50-90	50-120	50-120	50-152	
Tilt and Swivel	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Resolutions (max.)	•800X600 NI •1024X768 I	•800X600 NI •1024X768 NI VESA 72Hz	•800X600 NI •1024X768 NI	•800X600 NI •1024X768 NI VESA 72Hz	•1024X768 NI VESA 76Hz •1280X1024NI	•1024X768 NI VESA 76Hz •1280X1024NI	•1024X768 NI •1280X1024NI VESA 76Hz •1600X1280 NI	•1024X768 NI •1280X1024NI VESA 76Hz •1600X1280 NI	•1024X768 NI •1280X1024NI VESA 76Hz •1600X1280 NI	
MAC II Compatible				✓	✓	✓	✓	✓	✓	
Mac Quadra Comp.				✓	✓	✓	✓	✓	✓	
User Control	Analogue	Analogue	Analogue	Digital	Digital	Digital	Digital	Digital	Digital	
User Programmable Modes				16	13	13	13	21	21	
ViewMatch™ Colour Control				✓	✓	✓	✓	✓	✓	
Low Radiation DHHS	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Low Radiation MPR II				✓	✓	✓	✓	✓	✓	
Power Supply	Manual	Manual	Manual	110V	Auto	Auto	Auto	Auto	Auto	
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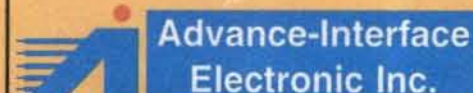
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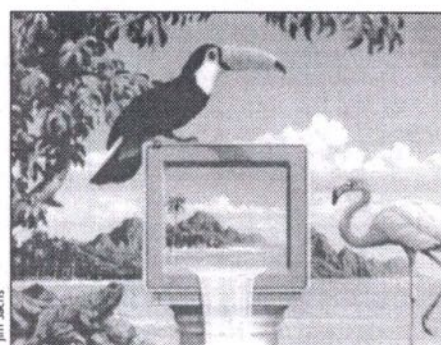
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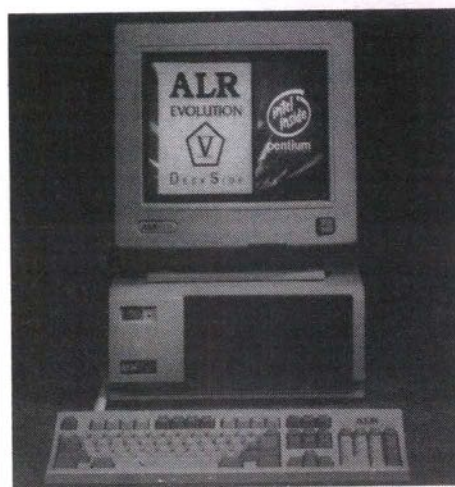
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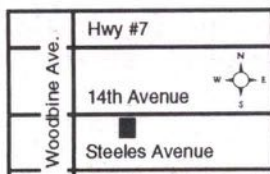
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**CONTRIBUTING WRITERS** Graeme Bennett  
Gord Goble  
Joan Horal  
James MacFarlane  
John Mulvihill  
Keith Schengili-Roberts  
Geoff Wheelwright

**NEWSBYTES**  
**CANADIAN EDITOR** Grant Buckler

**PRODUCTION**  
**PRODUCTION MANAGER** Kit Griffin  
**PRODUCTION STAFF** Jana Kolar  
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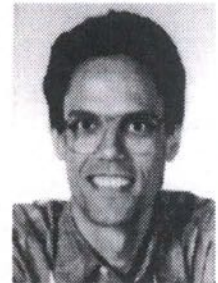
## A Parent's Nightmare Before Christmas

This editorial letter is intended as a warning to parents and people who care. By the time your kids are tucked in and dreaming of sugar plums, they may have seen the latest in sensational computer games. And they will love it. —You may not.

The harbinger of this "latest" crop of games is called *Doom*.

### Doom Is A Gift That Bites Back.

*Doom* is captivating. A press release and demo software of this new computer game



## From the Editor

arrived in our office this month. It generated a lot of controversy among our staff. *Doom* has an amazing "virtual reality" feel to it. The player moves through a well-rendered 3-D space in pursuit of nasty people. The hood ornament that guides the player through space is a loaded gun. Whenever one of these unfortunate souls comes into view, the idea is to press a button which fires the

gun. The people fall down bleeding and dead. Corpses litter the floor in the 3-D space. The game is remarkable for the quality of its graphics and ease of movement through space. It has an amazingly addictive quality to it.

But *Doom* is not a game of discovery nor of a noble quest. *Doom* is a kill or be killed shoot-em-up. It is mortal combat. *Doom* shows only the first-person viewpoint of the protagonist watching the carnage. And die, they do — in fountains of blood.

This game is not the only such game, it is just one of the best examples of slick graphics combined with ugly violence. Other recent examples include games called *Castle Wolfenstein* (fighting Nazis in a German castle—featuring scenes of grisly torture) and *Mortal Kombat* (in which you get to literally rip the spine out of your opponent). The better computer game makers get at their craft, and the more powerful the computers, the more we will have to deal with the issue of combining an enjoyable visceral experience with something that may be inciting violence in the real world.

### NIMPC

The line between *playing at* shooting another person and *actually* shooting another person blurs further in this game than any before it. If one wanted to train a child in guerilla warfare or to prepare him to survive a firefight in a war-zone, *Doom* is a realistic simulator. For me, however, No Thanks — Not In My PC.

### Amusing Ourselves To Death

While I am not advocating the censorship of these types of games, it would seem worthwhile that people take a good look at what they are doing in their spare time. If we as a society don't want crime in the streets, if we don't want people to seek violent solutions to their problems, what are we doing using games like these? Although it may take the social scientists years to find the link, I believe there is a relationship between these types of games (as well as movies and TV) that glorify violence and what people see as

viable solutions to their problems.

If you have kids or know young people that you care about, take a look at their PC game collection. Is it creating the values that you would like to see in our society? Ask your kids to consider the alternatives.

### A Free Puppy?

What makes *Doom* doubly invasive is the method of its distribution. *Doom* comes to you for free. It is shareware — the type of software that developers encourage you to try before you buy. In many cases, it will be downloaded via modem or passed around on diskette with no money being exchanged.

No messy packaging or diskette labels for parents to check out. It is being offered to you and yours like a free puppy. Unfortunately, this may be a sick puppy.

Our goal in all this is not to become the morality police, just to get you to think about what you and your loved ones might be playing with on some snowy evening soon.

On a lighter note — enjoy the issue. We hope you will find some great ideas for Christmas gifts to share with your friends and families that will bring more laughter and light to the world. Season's greetings from all at *The Computer Paper*.

We also encourage you to participate in our Reader Survey on page 85-86. It's your chance to tell us who you are and what you like in the paper. Fill out the questionnaire and you will be entered in a draw to win one of three great prizes: an Impulse notebook, a Lexmark laser-quality printer or a copy of the leading desktop publishing software, Aldus Pagemaker (your choice of Mac or PC). You only get one chance, the survey will only be run in this month's paper. The draw will be held in January.

Douglas Alder  
Publisher/Editor

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## Setting Traps

Thank you for reviewing our newest member of the Aldus suite of products, PageMaker 5.0. However, there is one issue I would like to clarify as a result of your August '93 article and that is trapping.

Trapping is a complex issue. Traditional trapping has historically been performed by the printer or prepress shop, and today with the advent of desktop publishing, designers have had the option to create their own basic traps in their page-layout or illustration

software package.

However, recent surveys in the prepress market have told us that 95-98 percent of traps that designers have created themselves in current software applications have needed to be re-trapped by the printer or prepress

house, often at an increased cost to the client.

Designers have told us that they want to stay away from trapping and leave that responsibility to their printers. Prepress houses, service bureaus, and print production departments overwhelmingly concur and tell us if they want to be responsible for the trapping.

Consequently we have a professional trapping product called Aldus TrapWise that rivals capabilities found on dedicated systems. Current page-layout and illustration software programs cannot address all the trapping requirements on a page because of the limitations inherent with PostScript object-based trapping. Hence Aldus TrapWise, which is the most powerful desktop software trapping product on the market today. It is device-, computer-, and application-independent (able to trap PageMaker, FreeHand, QuarkXPress, Adobe Illustrator files) and since it examines pages pixel by pixel and is not object-based, TrapWise can trap everything on the page, including vignettes to vignettes.

Due to the special requirements of prepress professionals, Aldus Corp. now has a prepress division dedicated to meeting their needs. Aldus TrapWise, Aldus PressWise and Aldus PrePrint are products that are developed and marketed by our prepress division.

We also recognize that there are designers who will still want or need to implement their own trapping and that is why we have included basic trapping functions within PageMaker 5.0, such as the ability to design using common-color libraries to minimize the need for trapping; to set global ink-level overprinting; to selectively overprint PageMaker-drawn objects: lines, ovals and boxes; and the new Keyliner addition which provides accurate and rapid keylining for objects.

As a final note we are shipping PageMaker 5.0 with over 20 free Aldus additions including an addition called Build Booklet for re-arranging pages to correspond with printing signatures or for multi-page spreads. For more complex page-imposition jobs we recommend our professional page-imposition product, Aldus PressWise.

I hope this helps clear up one of the many issues within the publishing market and as always I appreciate *The Computer Paper's* impartiality and honesty towards reviewing competing products.

Kevin Jampole,  
Aldus Canada

## What About Those Corel Fonts, Eh?

A while ago, you did a DTP article in which a service bureau operator was quoted as saying (something to the effect of) "AAARGGGH, CorelDRAW! fonts!"

How can I get the most high-quality bang for the buck when it comes to fonts? Unlike Aldus magazine, I can't spend US\$200 for the latest, ravishing font per project.

Thanks!  
Janet Wilson,  
via MindLink

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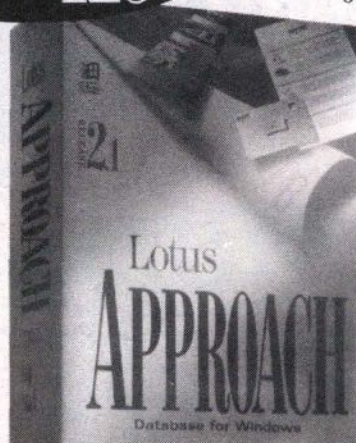
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**Graeme Bennett replies . . . CorelDRAW!**  
4.0's fonts improved dramatically over earlier CorelDRAW releases. The package now includes a large collection of high-quality PostScript and TrueType fonts from Bitstream (not to mention 15,000 pieces of high-quality clip art). Microsoft also markets a low-cost selection of high-quality TrueType fonts from the Monotype foundry for both the PC and Mac. Even Adobe is getting into the act with its under-\$100 Font Packs. See the Seybold Report in this issue for more news from the fonts frontier.

#### Free And Fair Trade A Moral Issue

Regarding your Letter From the Editor in the November '93 edition of *The Computer Paper*. I have two points I would like to make. The first is about family lifestyle changes and the second is about our moral responsibilities.

Families are having fewer children. Mothers are going to work while the children are still young. When these children reach the age of employment, they are entering the work force without leaving (home) to raise their own families, or leave for only

**is it fair for someone to get a fraction of our wages and then compete against you? This becomes a moral question rather than a political or economic one.**

a short time. Canada and other industrial nations are feeling the effects of this change.

My second point is that the effects of trading with underdeveloped countries takes its toll on employment, as you pointed out

in your editorial. The question I would like to raise is, is it fair for someone to get a fraction of our wages and then compete against

*Continued on page 11*

## Debra Aldridge turns 600, and discovers she can do things she's never done before.



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As the owner of a small business, the big news for Debra is the LaserJet 4P's new flat-paper-path which allows her to print her company's

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## LETTERS

Continued from page 9

you? This becomes a moral question rather than a political or economic one. Before you make a judgement about this question, ask yourself how you feel about the wages and benefits that politicians and corporate leaders make, wages and benefits that at times reach into the six- and even seven-figure range.

Next draw an analogy between your annual family income and the income of the families in developing nations. If you are interested at all in your fellow humans then you must agree that we need a great equalizer like "free trade." I will concede, it must be gradual. It must be fair and equal on both sides.

Lyle Green  
Port Coquitlam, BC

**Doug Alder Replies . . .** Good comment. My editorial was not necessarily anti-free trade. I see it as largely inevitable.

## Canadian Content?

In Dana Blankenhorn's editorial (See "Teach Your Neighbors, They're Not Dummies, *The Computer Paper*, November, 1993) I noted a number of points which were either inaccurate or misleading.

In the article, the author makes a number of global generalizations such as purchasers of the book *DOS For Dummies* as being those who feel they should be "leading edge." As a former reseller of hardware, those (to whom) I recommended, and who purchased this book were not yuppies in three-piece suits, trendsetters or mad scientists, but everyday people who wanted to know how to operate this thing called a computer beyond flipping the "on" switch.

"They see client-server networks taking away their jobs." Uh huh. And if they knew the term "client server network," then "they" would obviously be a bit more computer literate than Aunt Bea or deputy Barney.

Fear, no. Ignorance — perhaps. Only the cave dwellers in modern society are truly scared of computers. The rest, I believe, are more afraid of not learning the new technology.

As a final point, I must admit, maybe I'm not quite in tune with Blankenhorn. After reading the article, referring to Americans and PTA meetings, I realize this article was directed at an American audience. Perhaps I would relate better to a Canadian author in "Canada's Computer Information Source, *The Computer Paper*."

Eric Fox,  
Brampton, Ont.

**David Tanaka Replies . . .** I decided to run that editorial fully aware that it was written by an American author and primarily for a U.S. audience. Granted, some of the author's specific examples are not relevant to Canadians, and his use of terminology is often imprecise. For example, the people who want to be "leading edge" in his terms seem to be the same as those to whom you would have recommended the books.

However, Blankenhorn's essential thesis — of the responsibilities of people in the industry to speak and write in plain English — is as valid here as it is south of the border. The uncertainty, lack of understanding and unease with new technology experienced by some of my friends, neighbors and family here in Canada are not unlike

the experiences described by Blankenhorn.

As to your disagreement with some of his arguments, it is, after all, an editorial and meant to provoke debate.

## Give Us OS/2, Too

I have just finished reading the November issue of *The Computer Paper*. As usual there is very little mention of OS/2 despite its growing popularity. Just a reminder of what I would like to see covered in the paper in the future.

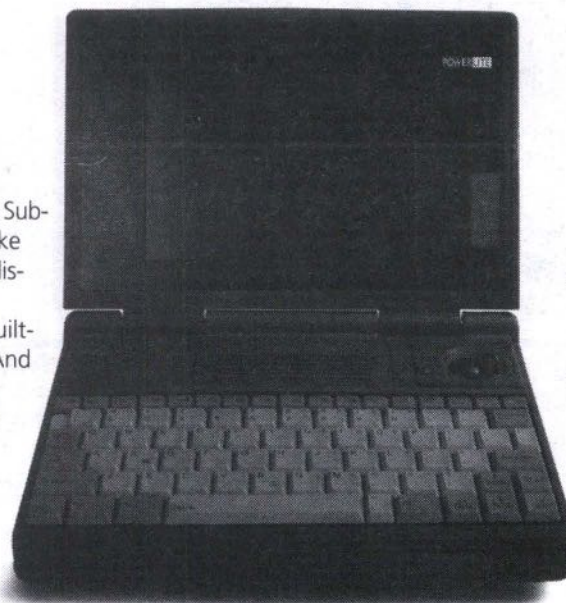
Doug Shields,  
Vancouver

**David Tanaka replies . . .** At TCP we plan to increase our coverage of this environment. We concur with your observation that OS/2 is growing in popularity — some reports suggest sales of about 300,000 copies per month. And we have included OS/2-related articles in the past; for example Graeme Bennett reviewed OS/2 2.1 in the August '93 issue.

But frankly, apart from utilities and developer's tools, there hasn't been that much new in the way of desktop software. Products from Lotus, Corel, Describe and Computer Associates operate under OS/2, but have been around for some time now.

However, new products are coming: WordPerfect Corp. recently shipped WordPerfect 5.2 for OS/2, and Lotus Canada has SmartSuite for OS/2, including a new-from-the-ground-up 32-bit version of the Ami Pro 3.0 word processor. Both of these will be reviewed in our Jan '94 feature on Word Processors. ■

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## SHOW PREVIEW

# The World of Commodore

BY GRAEME BENNETT

Who: Commodore dealers, manufacturers, developers and users  
What: World of Commodore Amiga '93  
When: Dec 3-5  
Show hours: 10 am-6 pm Fri. & Sat.; 10 am-5 pm Sun.  
Where: International Centre  
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arcade area featuring Commodore's newest product, the CD32 — with the often-discussed-but-seldom-seen MPEG "full-motion video" module. A Commodore spokesman said that some "video CDs" of music videos will show off the module's motion-picture expertise.

Of course, Commodore will also show its other products, including the spectacular AGA graphics of its recently released Amiga 1200 and 4000 models.

Its no secret that a lot of Amiga owners are artistically inclined. That's one reason you should make it a point to stop by the art exhibit and contest at the show. A variety of prizes, including color printers and graphics software packages, will be offered as prizes for the best Amiga art at the fair.

### New Products

Canada's own Readysoft Inc. (416-731-4175) is expected to show off Amax IV, the latest incarnation of its Macintosh emulator for

On December 3, 4 and 5, Toronto's International Centre will be site of The World of Commodore Amiga '93, an exhibition and sale of hardware, software and accessories for Commodore computers. Expect a strong turnout from the area's Amigoids, many of whom started on the road to computer guru-hood back in the days of the PET, VIC-20 and the venerable C-64. Admission is \$8 for adults; \$6 for students and seniors.

Commodore, these old-timers may recall, started out in the Toronto area more than 25 years ago selling typewriters, calculators and filing cabinets.

This year's WOC show will include an

Continued on page 15



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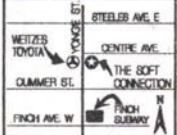
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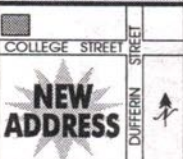
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## CD-ROM EXPO

IBM Titles Include *Karaoke Macbeth*

BOSTON, MA (NB) — At CD-ROM Expo, IBM's Multimedia Publishing Studio (MPS) rolled out eight new interactive CD-ROM titles, including a space encyclopedia, four volumes of specialized digital imagery, and online editions of *The Lawnmower Man*, *Macbeth*, and *Star Trek*.

MPS has been producing multimedia software since 1991 and CD-ROM titles since late 1992, officials said during a news brief-

ing at the show. But the new market entries are the first to emerge from MPS' new Affiliated Labels Program, an effort in which IBM is teaming up with third-party developers.

Of the eight new CD-ROM joint productions, four run on Windows as well as Macintosh. These are Rick Doyle Digital Imagery and Sound Source Unlimited's *Lawmower Man*, *Star Trek: The Original TV Series*, *Star Trek: The Next Generation*.

Two titles — Plum Productions' *Shapes, Volume Two: Design in Nature*, and *Shapes, Volume Two: Man-Made Design* now operate on the Mac only. The other two — Andromeda Interactive's *The Interactive Space Encyclopedia* and Animated Pixels' *Karaoke MacBeth* — are currently for DOS only.

"But the ultimate intent is for all eight titles to run on Windows and Macintosh," stated Terry Jenkins, a communications consultant to IBM.

The two *Shapes* titles are much more than mere collections of images, suggested Norman Clark, a partner in Plum Productions, a company based in Brockenhurst,

Hants, UK.

The 100 source images in each volume are supported with three variants that are overlaid with a wide variety of creative effects, meant to show the graphic possibilities of image manipulation, said Clark, also at the briefing. Further, the images are accompanied by text captions aimed at helping users analyze the composition of the natural and man-made environment.

*The Interactive Space Encyclopedia* also deals with the natural and man-made environment, but in this case, the environment is that of outer space.

The disk contains over 1,000 text documents, with interactive keywords, along with 2000 photos and 150 3-D animations illustrating scientific concepts and moonwalks, space launches, and other spectacular events, Jonathan Taylor, president of Alameda, CA-based Andromeda Interactive, explained at the briefing.

After the briefing, Newsbytes viewed *Interactive Space Encyclopedia* and *Karaoke MacBeth* on the exhibition floor at CD-ROM Expo. Mike Cox, creative producer, showed how the new encyclopedia lets users conduct an online exploration of outer space from a wide range of perspectives, including timelines, maps of the solar system, and searches for words, still images, and animation. The title is narrated throughout by Patrick Moore.

Newsbytes also saw how *Karaoke Macbeth* permits users to play the roles of Macbeth, Lady Macbeth, Macduff, the Witches, and other key characters in the famous Shakespearean drama. Up to 10 users can take part at once, enacting their roles against the voices of professional actors on the disk.

*Karaoke Macbeth* is replete with other audio effects, as well, including blaring trumpets and the sounds of the crowd at London's Globe Theatre. On the visual front, graphics and animation are both to be found.

Among the other newly announced titles, the two *Star Trek* titles and the virtual reality-oriented *Lawmower Man* all present full-motion video clips and sound bytes from their movie and TV namesakes.

In addition, each comes with a utility that lets users assign the clips to system events and other computer functions. You might start up your computer to a clip in which Spock announces, "Computing now, Captain," for example — or delete a file to the sound of a photon torpedo blast. "It's quite a way to liven up your desktop," Jenkins pointed out.

Digital Imagery, on the other hand, is a volume of sports photos by Rick Doyle, an internationally known photojournalist whose credits include cover photos for *Sports Illustrated* and *Surfer Magazine*. The photos were scanned in on a high-end Hell 341 drum scanner and saved in TIFF formats.

Also according to Jenkins, IBM's upcoming, internally developed *The Playboy Interviews* and *Adventures of Curious George* and the ABCs will be released within the next two to three weeks. "The other internally developed titles will be out by the end of the year," he added. *Curious George* and the ABCs could be the first of a series of *Curious George* titles, he revealed.

Another title under internal development, *Biosphere 2*, will take users inside of the innovative Biosphere 2 ecological research program, for an exploration of the program's technology and basic research results.



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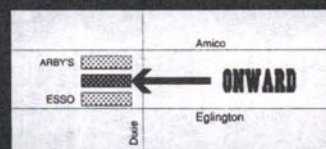
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# Apple Media Tool Upgrade

Apple is previewing the initial upgrade to an object-oriented, crossplatform multimedia authoring environment known as the Apple Media Tool.

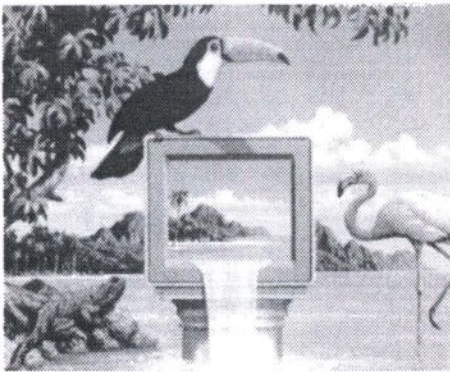
In an interview with Newsbytes, Steve Sklepovich, product marketing manager, said that the upcoming Version 1.01 will bring three new features to the new development tool for non-programmers, adding up to greater speed and multimedia functionality for title creators.

First launched in September as one of two components of the Apple Media Kit, the Apple Media Tool is aimed at letting multimedia designers use the Macintosh to assemble media for Mac and Windows titles and add interactivity, all without scripting.

Media elements can include Quicktime movies, PICT images, AIFF or WAVE sound files, and editable or non-editable text in rich text format (RTF).

If Apple's speech technology, sprite animations, conditional branching, or other highly sophisticated interactivity is desired, the project can be saved as a text program and brought into the Apple Media Tool Programming Environment, the second component of the Apple Media Kit. ■

Continued from page 12



Produced by Jim Sachs on an Amiga using Brilliance software

the Amiga. With Amax IV, expected to sell for under \$500, Amiga owners will be able to multitask Macintosh and Amiga programs in up to 24-bit color (provided, of course, they can find the ever-elusive Mac ROMs).

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Expert Services will display its Picasso II graphics board for the Amiga. This card supports 24-bit color at resolutions of 800x600, and 16-bit color up to 1280 x 1024.

At various times during the show, seminars will showcase exciting new products and technologies.

GVP, one of the leading Amiga hardware developers, will demonstrate what it calls "the premier image processing package for the Amiga" — ImageFX.

DTP aficionados will want to check out PageStream 3.0 from SoftLogik and the Colburst Hand Scanner and Migraph OCR from Seattle, Washington-based Migraph

Inc. For spectacular 24-bit images, Migraph now has a new flatbed color scanner as well.

Jim Sachs, a well-known Amiga artist, will be on hand to demo Digital Creations' new paint and animation software, Brilliance.

Sachs created the artwork for a number of Amiga games (remember Defender of the Crown?)

Multimedia fans will undoubtedly enjoy the presentations by Scala, Inc., Rombo and Axiom Software.

Amiga music buffs have reason to smile, too. After allowing DeluxeMusic to languish for several years, Electronic Arts has finally

released DeluxeMusic 2.0, which adds the ability to open multiple documents, AREXX support, a stand-alone Player module, and other new features.

In addition to seminars on digital imaging, Photo CD and videographics, a technical clinic will provide a forum for users to ask questions of Commodore's staff. For its part, the company will present Lew Eggebrecht, VP of Engineering of Commodore International, to discuss the company's future directions.

All in all, it promises to be an exciting show. We'll present a roundup of show highlights in an upcoming issue. Stay tuned! ■

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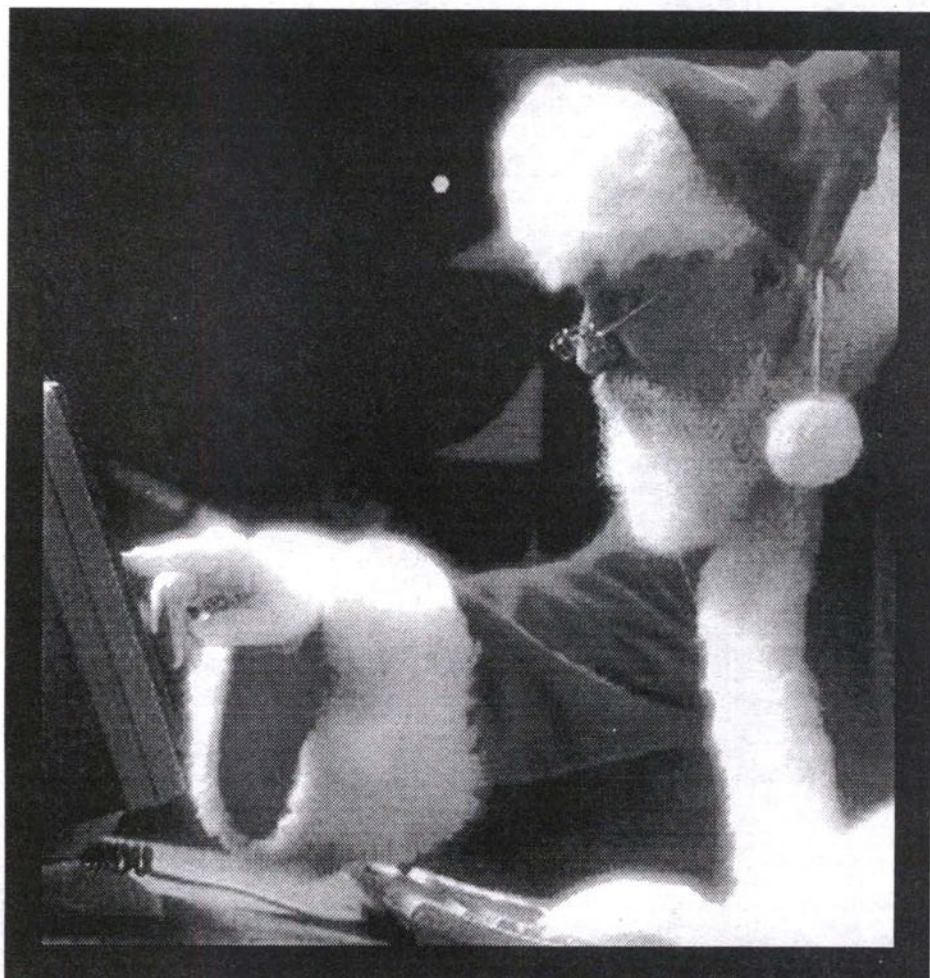
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# GIFTS

## FOR COMPUTER USERS

BY LINDA RICHARDS



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When I was between 5 and 15 years old, my mother probably got nine lipsticks from me for Christmas gifts. It wasn't very imaginative but it always seemed well-received. Though, truly, I would likely have gotten a similar reaction with a can of Spam. "Just my color! How did you know?"

In the same period my father got an eclectic collection of ties — some of the truly awful ties disappeared into that place where truly awful ties go — and bottles and bottles of really interesting after shave (bottles shaped like horses, Christmas trees and others — all containers for truly fine men's cologne...not).

Times have changed. A visit to a friend's house last Yuletide season produced a green wave of envy from me. "Come, Linda...look what Bartholomew got me!" And there under the tree was a large tower 486 with 20 megs of RAM and over a gig of storage. The perfect gift, thought I, from a thoughtful husband to his loving wife. And welcome to the '90s!

Electronics in general and computers in particular have opened up fabulous possibili-

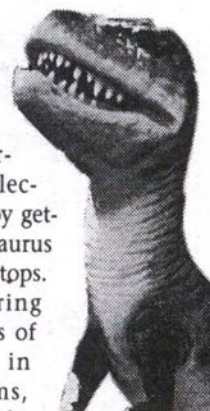
ties for gift giving for just about everyone and in all price ranges. Husbands, wives, lovers, sons, daughters and even Aunt Mildreds will all find interesting options in all price ranges — gifts assured of inspiring "Ahhs," and "Oohs" on Christmas morning, some of them by their very weirdness alone.

They run the gamut. There are electronic gifts to suit every taste, tendency and pocket-book, and gifts to produce everything from delight to guffaws. Following is a swathe of Christmas gifts for electronic and computer buffs. The mind will boggle, the senses reel but the tough will get shopping.

*(Because most of the following products are generally available at computer retail, office supply, or electronics stores, TCP has chosen not to print contact names and numbers except where there might be a problem finding the item. — Editor)*

### Under \$100,000

What would Christmas be without a peek at Neiman Marcus? This year the electronic buff might enjoy getting a baby Tyrannosaurus Rex or an adult Triceratops. These moving, roaring dinosaurs are replicas of the same featured in exhibits in museums, parks and zoos worldwide. The robotic reptiles are the creations of Dinomation, a corporation dedicated to promoting education and research in dinosaur paleontology. The Baby Rex is 6'1" high and 8'4" long and sells for US\$63,000. The Triceratops is 6'8" high and 12'10" long and sells for US\$93,000. Taxes, shipping and gift wrapping are extra. Neiman Marcus mail order division, PO Box 2968, Dallas, Texas 75221-2968. 1-800-825-8000.



### Around And Over \$1,000

#### PDA's



The acronym stands for Personal Digital Assistant and different versions of the same idea are being introduced to a market that's long been waiting for this technology. Essentially, the PDA is a handheld "intelligent" interface

whose input device is generally a pen-based tablet capable of learning the user's handwriting. The technology is hot and new and seems to still be defining and refining itself. Look for PDAs from Apple, IBM, Sharp, NEC, Amstrad and others starting at around \$1,200.

#### Casio CP1000 Board Copy

Casio CP1000 Board Copy is a new portable combination business tool that takes pictures like a camera and produces instant copies of three-dimensional objects, or information written on large, flat objects such as whiteboards and blackboards. This new product is equipped with auto focus and digital zoom features that allow the user to point and shoot at objects for clear 8.5 x 11" thermal paper copies. Suggested Canadian retail is \$1,195.



### \$500 to \$1,000

#### Logitech Fotoman



Snap live photos anywhere and upload them directly to your PC with no film and no waiting. The Logitech Fotoman lets you take photos that you can edit on your computer instantly. Suggested retail is \$699.

#### CD-ROM Drives

Drive, speakers and software in an extremely stocking-friendly package. This all-in-one buy puts the power of CD-ROM into your computer now. In the case of the NEC model



illustrated, you get an MPC-Compliant CD-ROM reader drive by NEC, self-amplified stereo speakers, and SCSI



interface; four batteries are included. Six CD-ROM software packages worth in total over \$1,000 are included as well. The package is available at street prices of around \$499. Other manufacturers have similar products at similar prices.

## \$200 to \$500

### DrawingSlate



DrawingSlate is a full-featured, low-cost digitizer for templates, drawing

and tracing. For graphic arts applications, DrawingSlate offers capabilities like a pressure-sensitive cordless pen, fast ADB interface for Mac systems and a thin lightweight design. Four models are available, from a 6"x9" model with pen for \$399 to a 12"x12" model with pen for \$579.

### Seiko Smart Label Printer

For every office or home office that still has a typewriter lurking around just to print labels...the Seiko Smart Label Printer Plus and Label Printer Pro print fast, attractive labels directly from your computer. Seiko Label Printer Plus: \$249; Label Printer Pro: \$390.



### COMRAD

COMRAD is a new wireless data link that enables users to communicate with one or more other computers, laser printers, plotters and other devices without direct writing, cables or networking systems.

COMRAD's suggested retail price per unit is US\$429.95. It is available from Communi-

cations R&D Corp of Indianapolis, Indiana (317) 290-9107.

### Tape Backup Systems

Remember when a 40MB hard drive was cavernous? Those days are long gone; the capacity of a "normal" hard drive becomes bigger and bigger each day.

People who diligently back up their drives know what a drag it can be to feed dozens of floppy drives into their machines in the interests of protecting their 200MB cargo on the hard drive,—precious GIFs, shareware and all those other things that "you never know when I might be able to use."

Tape backup systems range from the low \$200s and up. Ideal for the packrat computer user.

## \$100 to \$200

### Panamax Powerbars

Panamax surge-protector power bars are backed by a lifetime warranty: if a surge should damage your properly connected equipment, Panamax will repair or replace the equipment. Couple this with an attractive design and good quality construction, and you have a gift they'll appreciate for a long time. Max 4: \$89; Max 6: \$99; Telemax 4: \$109.

Other manufacturers make comparable products at similar prices.

## \$50 to \$100

### Meet the Wild Zeep

A CD-ROM storybook that aims to teach reading skills and "stick-to-it-iveness" to kids in the pre-kindergarten to fourth-grade age groups by taking them along on the adventures of Zeep.

Zeep plays 72 violins, and children are able to hear them all. Graphics and animation used in the title were rendered in 3-D, 24-bit color software on an Amiga, before being brought to the Macintosh and the MPC (Multimedia PC) Windows platforms, where they are seen in 8-bit color.

The title contains a text version of the tales, as well as full voice narration. Children can check out the meaning of difficult words, and hear them pronounced, by highlighting the words. Slated for release December 1, Zeep! is priced at \$59. Westwind Media, tel 800-937-8555.



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486 DX-50W/128 Cache VESA Local Bus .....	\$639
486 DX2-66W/128 Cache VESA Local Bus .....	\$690

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- SVGA Card w/1MB
- SVGA Colour Monitor (28DP)

### 486 ISA System

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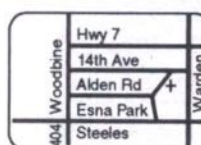
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### Moriarty's Return

Mysterium Tremendum presents *Moriarty's Return*, a Sherlock Holmes game for the Macintosh. The package has been designed to enhance users' knowledge of world history, geography, and cultures. The aim is for players to trace criminals around the world — trying to gather maximum information and clues from city to city to define the criminal's appearance, location, and identity.

During the game, players can create a picture of the villain, using the built-in "Sketch-a-Wretch." And that is not all. Crooks can behave differently, depending on their physical appearance. They can also be disguised, the company claims. *Moriarty's Return* ships in both color and black-and-white versions on the same disk. The package requires a Mac Plus or better equipped with System 6.0.5 or later. The color version needs two megabytes (MB) of memory. Suggested retail is US\$59.95.

### Glare/Guard



Hours spent squinting at a computer screen make the need for some kind of glare protection apparent. Blurred vision, headaches and general eye strain and irritation can all result from dealing with the glare from a CRT. The OCLI Glare/Guard is a high-quality option at a reasonable price. Available from \$100.

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### Theseus

*Theseus*, a Greek mythological tale on CD-ROM, is targeted at grades 5 through 12. Through text, narration, originally composed music, and hundreds of hand-drawn illustrations, viewers trace the journey of Theseus on the Road to Athens. Along the way, the hero meets and conquers a pair of evil men, and also encounters Ariadne, a young woman in search of independence, and Ariadne's teacher, Daedalus.

By clicking with a mouse, kids can bring

## One Size Does Not Fit All

BY LINDA RICHARDS

What gift you buy depends partly on who you are buying it for. Following is a tongue-in-cheek look at computer archetypes.

### The Power User

You can identify the power user by the fact that they seem to have and know everything. Fortunately for the gift giver, neither can be true. The nature of the beast is such that even the fastest, quickest and smartest machine won't stay that way for more than a few minutes. And there is always a new goody to set the Power User's mouth to salivating.

### The DTP Crowd

Portrait of the desktop publisher: desks are buried under a scanner; fonts and clip art make them drool... This is an easy bunch to buy for, and the lower reaches abound with fun stuff for computer users of this persuasion.

### Desk Jockeys & Small Business Users

Business users are really power users of another type. They're most concerned with using their computer as a super-employee and peripheral brain: one that will do the things they don't have time for or do better the things they can't do well themselves.

### Game Phreaks

Their hands are molded to the shape of a joystick and their eyes glaze at the mere mention of a lemming. Give the game phreak what they want: food for the never-ending hunger for more and more and still more games.

### Ivory Tower Worshipers

They want education and they want it now. Savants to the call of knowledge usually have a CD-ROM unit or want one, which can make the whole process somewhat simpler. The quest for knowledge is easily fed...if you know where to look.

### Cyber Travelers

The telecom set can be recognized by the blinking red lights on the modem and the high-pitched whine that accompanies the fix (from the phone, not the user). Telephone-appropriate computer add-ons can be found in many price ranges.

### Professional Geeks

The computer professional is in some ways the hardest to buy for: they know exactly what they want. And in some ways the easiest: they want everything. ■

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up genealogical charts of Greek gods and heroes, maps, a glossary and index, and other background information and reference tools. *Theseus* is scheduled to ship December 1, at a price of \$59. The title runs on the Mac and MPC Windows. Westwind Media, tel 800-937-8555.

#### Turtle Tools For Multimedia

Turtle Tools includes everything needed to take full advantage of a Windows 3.1 compatible sound card or multimedia computer. Turtle Tools includes WaveTools for wave audio recording, editing and playback; Midisoft Session, a MIDI sequencer for developing or editing musical compositions; SoundAttach, attaches MIDI and/or WAV sound files to all Windows actions; MIDI Tune-up, which is a file editor for non-musicians; KeyPlayer lets you play and record music using just your PC keyboard, and SoundBank, with over 300 sound effects and musical pieces in different WAV formats. Turtle Tools is just \$89 from Turtle Beach Systems of York, PA. 717/843-6916.

#### DOS For Dummies Upgrade Package

Microsoft and IDG books have gotten together to market a package to give confidence to neophyte DOS users and an item for everyone's Christmas list. Released just in time for the gift-giving season, the MS-DOS 6.2 Upgrade for Dummies combines MS-DOS 6.2 with a special edition of the best-selling *DOS For Dummies* book.

The MS-DOS 6.2 Upgrade for Dummies Package is being distributed in Canada by Macmillan Canada and will be available in book and computer stores for around \$60.

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##### A Zillion Kajillion Rhymes

Eccentric Software produces *A Zillion Kajillion Rhymes*, a rhyming dictionary for the Macintosh and Windows-based personal computers.

*A Zillion Kajillion Rhymes* appeals to a much broader audience than just the poets and lyricists who need it, since everyone rhymes their words from time to time. The company says it appeals to teachers, school kids, lovesick lawyers, singing psychology professors, and several Grammy and Tony award-winning songwriters.

The software comes on one 3.5-inch high-density floppy disk and has a suggested retail price of \$49.95, but Eccentric is offering it for \$39.95 if you order directly from the company. The program requires less than one megabyte of hard disk space. Eccentric Software, 206-628-2687 or 800-436-6758, fax 206-628-2681.



##### Sicos Fancy Mouse

Designed (by the designer of the *Swatch Watch*) to add color as well as efficiency to the desktop, the Sicos Fancy

Mouse is for computer users who want their computing to be fun as well as fruitful. Suggested retail is \$49.95. Sicos also has the Colani ergonomic mouse, a hand-hugging model for Macs and PCs in left-(PC only) and right-hand models for under \$100.

#### Memberships

Computer users with modems might like a membership to one of the many commercial on-line information services such as CompuServe or GEnie, if they don't already have one. Membership fees are sometimes included free with some software packages, other-

wise, they are usually under \$30. But remember that most have some parts of the service that are charged on a time-used basis.

An example of a very specialized membership is The Institute of Electrical and Electronics Engineers Computer Society, which bills itself as the world's leading organization for computer professionals. The 100,000 members are offered publications, meetings and technical educational activities. Headquarters is at 1730 Massachusetts Avenue, N.W. Washington, D.C. 20036-1992. Call them at (202) 371-0101. Annual membership is \$61.

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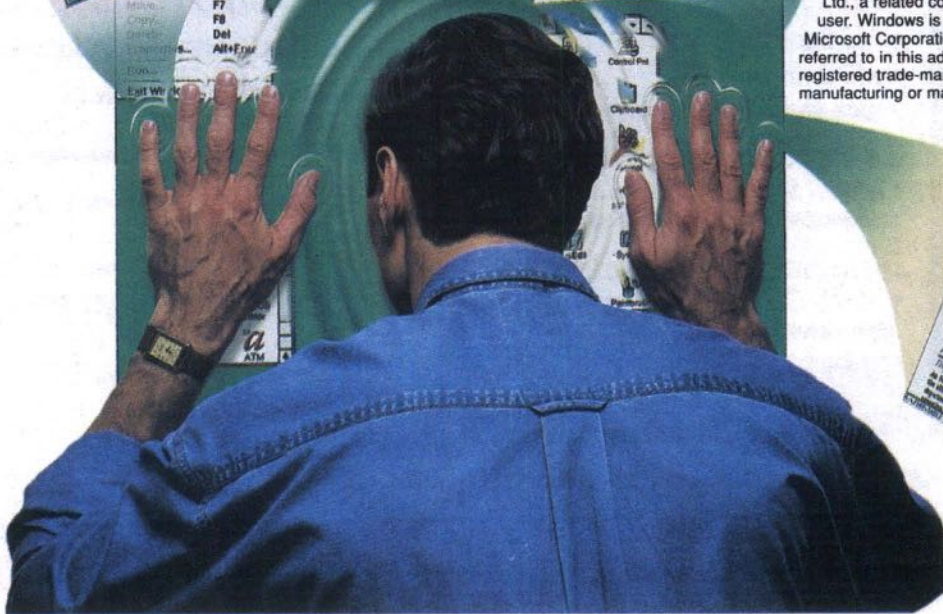
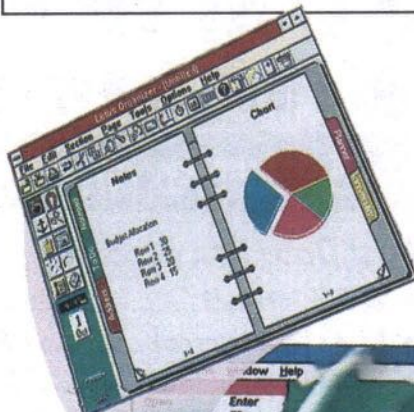
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#### KeyFonts Pro CD

This CD contains 303 PostScript and TrueType-compatible fonts from SoftKey. The extensive collection includes 216 classic typefaces and 87 specialty display fonts. Available for Windows or Macintosh. Canadian suggested

retail is \$49.

Continued on page 21





## What To Buy?

BY LINDA RICHARDS

Is your mind boggling? Are your senses reeling? And this just from the possibilities? How then to discover what your loved one really wants or — better still — what they don't even know they want... yet, but really can't live without?

If you live with a computer aficionado you've likely already heard some whining. "I wish I had a 14.4. Then I'd be taller." Or, "If only I could get an optical scanner. Then I'd get good grades." All you, the gift giver, have to do is figure out what these things are, if they're in budget and you're away!

If the obvious isn't happening, try some of these handy-dandy gift-probing tips. One, or a combination of a few, might just work for you.

**1. Make a list. Check it thrice.** Do an

inventory to figure out what's there and then buy something that isn't. This is not the easy route. The fact is, there may be a reason a certain something isn't in the system — like, it's not wanted. Also, if you're not a computer geek and you're buying for someone who is, you might feel like you're in a little over your head. Some non-computer types positively get hives when faced with mountains of official-looking gear. But go for it. Hold your nose and jump in. Just leave all the cables where you found them.

**2. Ask for a list.** It worked for mom, after all. The list you get will depend on the nature of your beloved geek as well as their level of expertise. You'll either get very vague requests ("Something to make my video better and faster") or very specific ones ("An

XYZ Super Turbo Macho Video Charger Booster"). Either way, don't be afraid to look for translations. Your neighborhood computer store will likely be happy to read your list and make suggestions in your price range.

**3. Sleep with a pen.** This method is for nuptially blissful computer couples only. Listen carefully during the night for sleep requests. This is a risky method. The mumbles you make notes of might be for add-ons that don't yet exist; or things wished for but not yet patented. Be careful! If you hear, "I want a Mariposa Component to make my computer fly!" you'll have to move on to Plan B. Computers do many things, but they don't fly — at least this season.

**4. Think about things this person would like.** Base your thoughts on

their likes and personality, rather than the needs which may be more difficult for you to determine. There are so many non-technical computer peripherals available that there is quite a selection. Things that are fun. Things that are humorous. Things that add to the aesthetics of the computer. Even things that are useful but don't directly attach, like disk holders and drive cleaners, magazine subscriptions and club memberships. It takes little technical knowledge to purchase any of these.

**5. Think about things that you'd like.** This is my favorite. It's a total win-win. After all, even if your geek isn't nuts about the present, you get to play with it. Actually it might be worse if they do like it. Then you'll get to play with it less. ■

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## Gifts

Continued from page 19

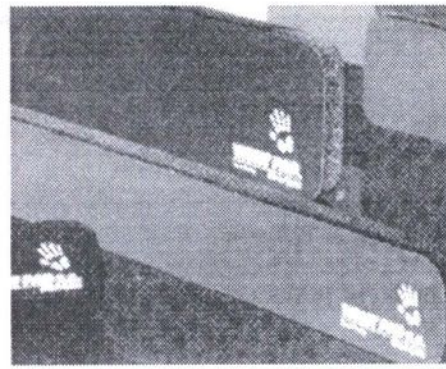
### Energizer Bunny Screen Saver

The rabbit with rhythm entertains while preventing images from burning permanently into monitor phosphors. The radical rabbit darkens the screen and marches resolutely through hare-raising adventures on land, sea and air. Available for Macintosh and PC from most software retailers. Suggested retail price is US \$29.95.

Diet is published by Peachpit Press of Berkeley, California and sells for \$10.95 in Canada. Look for it in the Windows category of your local bookstore.

### Wrist Pads

Wrist Pads are ergonomically designed to cradle the computing wrist. Available in several sizes and configurations in a color to suit every mood and personality type, wrist pads are manufactured by Silicon Sports and Wrist Doktor and vary in price from \$16 to \$20.



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If you're laboring under a very tight Christmas budget, or just want something inexpensive to round off the gift-giving edges, why not give some shareware? Contact your local shareware vendor and see how much \$10 (or \$20 or \$30) will purchase in this vast market. Check the back pages of this issue of *The Computer Paper* for a shareware vendor near you. ■

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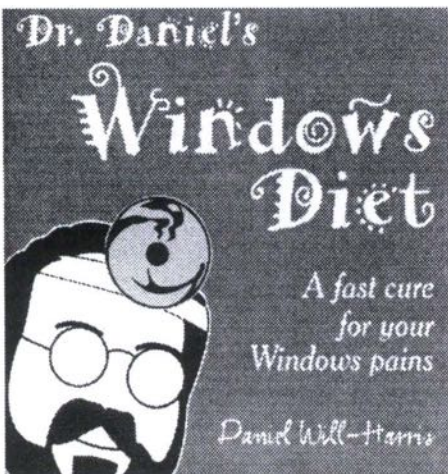
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### Dr. Daniel's Windows Diet



This happy pocket book by Daniel Will-Harris bills itself as "A fast cure for your Windows pains." Laid out in a friendly and incredibly accessible manner, *Dr. Daniel's Windows Diet* is a pocket book that is short on long-winded explanations; it dishes out information in an easily digested style. Stocking stuffer-sized, *Dr. Daniel's Windows*



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# The Best PC Games Of 1993

BY GORDON GOBLE

*Faster than the collapse of Kim Campbell's government, the evolution of the computer gaming environment is boldly taking us where no fleet-fingered computer whiz has gone before. Less than 20 years ago, video competition was confined to the dual-paddled world of Pong or the barren battleground of Tank, and those that tookup the challenge knew darnwell that their television screen would soon be forever scarred with visual reminders of their favorite game.*

## Editor's Note

We face a dilemma in publishing this article, particularly in light of this month's Letter From The Editor (P 7). *The Computer Paper* has a clear policy against giving space to games and other programs that promote violence, racism, sexism or otherwise unsavory attitudes — we simply don't publish such things.

A few of the games in the review are on the border. The author worked closely with us to make sure no games depicted blood and gore or contained obvious, direct acts of violence against human figures. However, buildings get blown up; flying craft get destroyed.

Some might argue that destruction at a distance is the more insidious influence, since we neatly avoid having to confront face-to-face, the horrors of violent conflict.

Using this metric, we would be forced to censor a large part of the entertainment available to us on TV and in the movies. That's hardly realistic, and besides, as was stated in the Letter From The Editor, we are not the morality police.

Moreover, we realize that by pointing a finger at products such as these, we may be doing nothing more than increasing their sales and their profile.

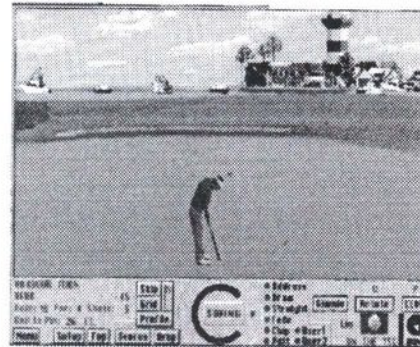
So we publish this with a caveat: if you are concerned, take the Letter From The Editor to heart.

—DT

Colecto, Atari and Mattel then entered the fray, each with dozens of new games set to destroy television screens of all shapes and sizes. The video arcade was henceforth thrust upon us, and while taking a terrible financial toll on its willing victims, it not only freed the home television, but offered a whole new world of graphical stimuli. On the whole, though, the video game remained a showcase for quick reflexes, and required for the most part, a total suspension of belief.

But in the shadows lurked a new player on the scene: the home computer. The computer keyboard offered a mind-boggling myriad of options, variety, and commands for us to transfer to our on-screen alter-egos. Soon, elaborate adventure games requiring more brain than brawn sprung to life. Then realistic simulations put one in control of a fighter jet or baseball team. Pac-Man just didn't cut it anymore.

Today, as we all know, the PC has become an irreplaceable business tool, and a post-nuclear (we hope!) boon to, and savior of, all mankind. Yet the "frivolous" computer game remains a prime motivator and sometimes the sole reason behind a computer purchase. Whether or not it is a good thing that a legion of computer users waste countless and otherwise productive hours striving to rescue the computerized image of a lemming from oblivion is not ours to judge. But a guide to the best in gaming software may aid somewhat these lost souls in their quest for digital delight. In this spirit comes the following, my Top Ten PC Games of 1993, in no particular order.



## LINKS 386 PRO

Publisher: Access Software

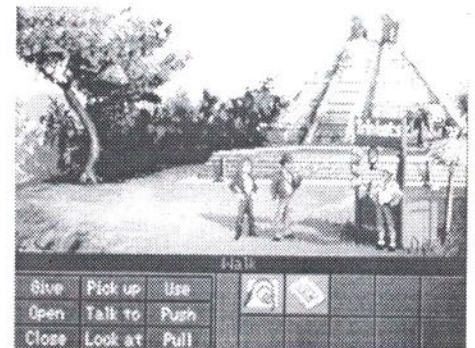
A warm Sunday morning. The smell of freshly cut grass. Birdies — those that tweet, and those that lower one's score. The crisp whack! of a solid drive. Subtle club and swing modifications that raise one's game to a new level. The spirit of golf. One must experience this pastime live and in person in order to understand just what captivates the millions who do play.

Unfortunately, like the opening sentences of the preceding paragraph, golf simulations have long been incomplete. One may indeed have a hard drive on the fairway, but to place golf on one's hard drive has been a questionable notion. Until now.

*Links 386 Pro* is a class act, from its beautiful product packaging to its smooth interface. On screen, Links captures much of the essence of the game, conveying in sweeping detail many of North America's top courses. Various fully customizable windows display standard, top, and reverse views of each shot and the surrounding terrain, while scorecards, club distance charts, terrain profiles and other information (including a "profile view" that displays elevation changes

between the ball and the pin) are accessible at the mere click of a mouse. Needless to say, the approach, force, and style of each and every swing is completely adjustable.

Entire games may be saved and replayed, then downloaded to disk and given to other game owners, who may then not only view, but compete shot for shot with that round! Head-to-head tournaments may be conducted on a single computer, and most every statistic can be printed out. Add-on courses enhance the scope of *Links 386 Pro*, and currently include such stellar settings as Pebble Beach, Firestone, Pinehurst, and Canada's own Banff Springs, making Links a gimme for every rainy-day golf simulist.



## INDIANA JONES AND THE FATE OF ATLANTIS

Publisher: LucasArts

Adventure gamers are a hard lot to please. Some like their games with a lot of action and rapid rodent-clicking. Others enjoy Sherlocking their way through complicated puzzles and mazes, while another group prefer a conversational interaction with characters

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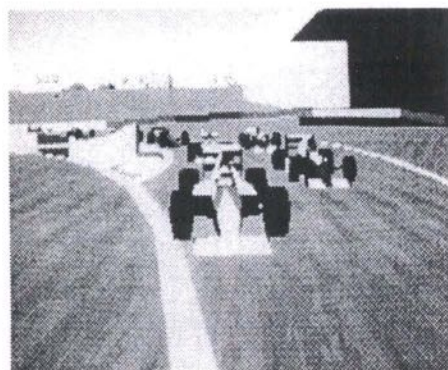


encountered during gameplay. LucasArts has shown with their latest Indiana Jones adventure, *The Fate of Atlantis*, that sometimes you can please all the people at the same time.

As in previous incarnations of the Indy series, the Fate gamer will battle evil Nazis, solve ancient archeological riddles, rescue distressed damsels and generally follow our long-suffering hero through more scenes than any of the Spielberg movies could ever have afforded.

A unique twist to Fate is the path option. Just a hop, skip and a jump into the game, one is presented with an option to follow three distinct and very different gameplay choices. The Fists, Wits or Team paths will respectively allow the gamer to fight, think, or converse their way through the situations, rooms, mazes and villains that the game throws at them. This is a brilliant idea that effectively gives us poor computer fiends three games for the price of one.

Humorous, engrossing, challenging and addictive are adjectives that best describe *Indiana Jones and the Fate of Atlantis*. Lucas Arts has produced an adventure gamer's cornucopia in this, one of two productions that have placed in this year's Top Ten listing.



## WORLD CIRCUIT

Publisher: Microprose

There is a certain something to the Formula One race circuit. Steeped in history, this realm of speed and money has for years showcased its circus of fast cars, pompous drivers, hangers-on, devotees, and paparazzi at exotic locations spanning the globe.

In 1993, Microprose brought some of the speed and handling of the world's foremost race cars to the home computer, and digital racing fanatics from Vancouver to Capetown have been captivated ever since. Bulletin board services are constantly flooded with tips, suggestions, and electronic conversations, and fast lap times are communicated with bravado.

In *World Circuit*, the British wing of Microprose Software has accomplished what countless others have not — it has built a better racing simulation. Far exceeding *Grand Prix Unlimited*, *Mario Andretti*, or anything else released in the last five years, *World Circuit* even has the nerve to crack and break away the armor surrounding 1988's much-revered benchmark *Indianapolis 500 - The Simulation*.

For the first time since Indy, speed fanatics have a consistent performer with which to do on-track battle. A *World Circuit* car acts and reacts much like the real thing, swooping gracefully through perfectly carved corners, yet will slide off track when pushed past the limit.

Graphically, *World Circuit* shines like no

other race sim (although Virgin's *IndyCar Racing*, is currently perched ominously on the horizon). Not only do fellow on-track steeds actually resemble real cars in both their actions and their graphic presence, but each of the 16 Formula One courses offered with the program mimics almost to perfection their real-life counterparts — right down to precise corner radii and angles.

If one tires of driving against computer-controlled machines, head-to-head human competition is available through built-in modem options. And once one has annihi-

lated his or her animate rival, one may rub said rival's face in it by presenting them with a printed copy of qualifying results, race fast laps, and finishing race order.

Many of us own and operate a motor vehicle, and several of us fancy ourselves as being competent car jockeys. But rarely in our mundane lives can we tap the abilities of the family Dodge, never mind a 700-horsepower Ferrari. Therein lies the continuing success of racing simulations, and the release of *World Circuit* took this genre to new plateaus in 1993.

## COMANCHE — MAXIMUM OVERKILL

Publisher: Novalogic

NovaLogic calls it "Voxel Space."

What Voxel Space does for the graphical element of computer simulation is akin to what *Sgt. Pepper's Lonely Heart's Club Band* did for modern music. Advertised as "a totally new graphics 3-D imaging system...that's over 500 times faster than traditional poly-



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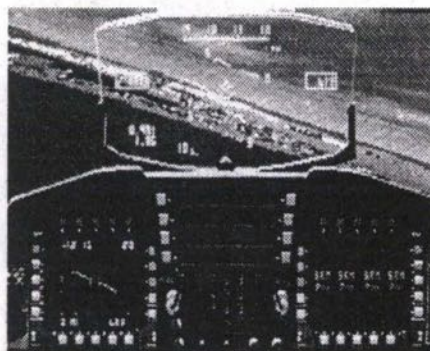
gon imaging systems," Voxal Space got its public overture in NovaLogic's *Comanche — Maximum Overkill*.

In *Comanche*, PC pilots are asked to fly an ultra-modern chopper through various hostile environments, locating and destroying enemy targets, including other aircraft. But the similarity between *Comanche* and countless other violent and like-minded games ends there. The real virtue of *Comanche* lies in its tempting visual smorgasbord.

Gone are small triangles representing small hills, larger triangles indicating larger hills, and odd-looking flying sticks playing the part of other aircraft. Instead, *Comanche* navigators will wind their way through grassy valleys, pop over craggy abutments, and encounter astonishingly real-looking enemies and targets. Admittedly, this new-found imaging has a bit of a ghostly feel to it (often it's not easy to tell where the open sky ends and hard ground begins while operating this low-flying whirlybird), but the overall effect has most definitely served as a wake-up call to others in the industry.

Low-techies beware: *Comanche* runs at its full potential on an upscale 386 or 486 only, with a minimum recommended 4 MB ram and the preclusion of anything but a VGA display.

*Comanche — Maximum Overkill* is worthy of Top Ten status for its introduction of textured environment and 3-D imaging. It has changed forever our computer skies.



## F-15 STRIKE EAGLE III

Publisher: Microprose

One of the most active areas in the gaming world over the course of the last year has been in the realm of aircraft simulation. It's not easy to tell one plane from another these days, and although there have been the good (*Strike Commander*), there have been the ugly (*Dogfight*), and the semi-bad (*Birds of Prey*). Then there has been the excellent, and that is where one will find *F-15 Strike Eagle III*.

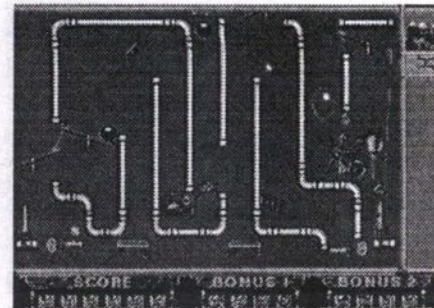
In *F-15*, Microprose has built a game that jumps right to the head of the class. The flight modeling may not be quite sophisticated enough for the liking of a Gulf War pilot, but this little quibble is more than made up for by other goodies in the package. As with a host of high-end games released in the past year, the depiction of a

realistic environment was obviously a prime focus for *F-15* engineers, and their success is ours to behold.

Real-life terrain from three world-wide hot spots (Iraq, Korea and Panama) are rendered in sumptuous detail. Cockpit instrumentation is so extensive and accurately presented that three different screen refreshes are needed in order to view everything (the *F-15* is a two-seater, after all). Oh, did I mention that anyone with a 386 or slower machine has two options: 1) Forget about this game, or 2) Buy a new computer.

One gets a much stronger feeling of being there when piloting *F-15* than with any other flight sim on the market today. Fluffy clouds (pink-hued at dawn and dusk), spectacular pyrotechnics (ground targets explode into blazing infernos complete with vision-obscuring smoke!) and a modem play option (permitting head/wingman/back-seater link-ups) make this sim a very unique and special experience indeed.

The performance of this program surpasses today's suddenly skyrocketing standards, and the recommendation from this corner is to strap on a G-suit and fly the not-so-friendly skies of *F-15 Strike Eagle III*. They are a visual masterpiece.



## THE INCREDIBLE MACHINE

Publisher: Dynamix

Personal opinion: Computerized puzzle games are extremely nifty and can become quite obsessive...when they work as advertised. An inconspicuous firm called Psygnosis assaulted us with *Lemmings* in 1991 and *Oh No! More Lemmings* in the following year, thereby successfully converting a tremendous number of productive person-hours into the same amount of useless fun!

Each year, a new type of Lemming appears out of the void, and 1993's pet addiction took the face of *The Incredible Machine*. An innocent — one might say harmless — little program, *T.I.M.* consists of various animate and inanimate objects that, if combined in the right manner, will allow the player to set in motion a machine that will perform, in a most outrageously complex manner, a simple task. You know...sort of a digital Mousetrap.

Candle ignites rocket, rocket lifts off and hits switch, switch turns on fan, fan blows basketball off ledge, and so forth. One is given the option of solving an elaborate pre-generated puzzle (87 in all) or entering the "free-for-all" mode, and designing a completely original machine to one's own discretion.

*T.I.M.* offers children the opportunity to learn all about physics and analytical problem-solving and, as such, can be rationalized to one's "significant other" as an educational program. However, when the sun rears its ugly head at 5 am after an all-nighter of puzzle-solving, it's a different story.

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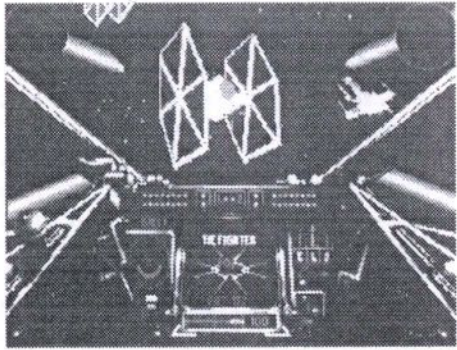
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zle-solving and machine design, one would be prudent to have some good excuses as to why the household budget remains in shambles.

*The Incredible Machine* and its baby brother, *The Even More Incredible Machine* (incorporating twice as many individual puzzle pieces), are co-winner's of this year's "Most Insanely Addictive Game" trophy.



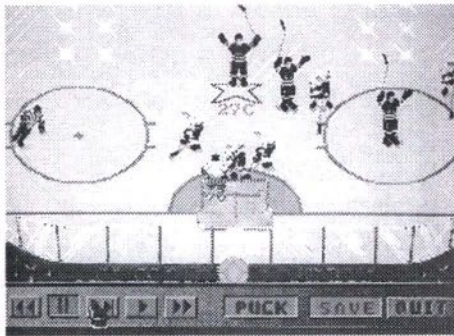
## X-WING

Publisher: LucasArts

Considering the popularity of the George Lucas "Star Wars" trilogy of films, it is somewhat surprising that it took until 1993 for a computer game simulation based on the saga to hit the store shelves.

The wait is over as LucasArts (who else?) has produced *X-Wing* for every wannabe Han Solo who owns a 386 two-megged computer. Unlike previous spaced-out adventures (the "Wing Commander" series being the most notable), *X-Wing* is a pure simulator. Other than some interesting (and well-crafted) cinematic scenes updating defenders of the faith on the success of their campaign against the Empire, most game-time will be spent at the controls of an X, Y, or A-Winged fighter.

Since space simulations do not need to paint complicated scenery backdrops (space is a nice DOS shade of black, after all) *X-Wing* can devote most of its efforts to rendering superb, fully shaded spacecraft models. The program gives budding star pilots everything they could ask for: multiple campaigns, training simulators, awards and promotions, as well as spectacular visual effects and sounds. *X-Wing* is state-of-the-art space combat.



## NHL HOCKEY

Publisher: Electronic Arts

Surely one of the prerequisites for Top Ten consideration is the addictive qualities of a given game, and Electronic Arts' *NHL Hockey* is guaranteed to trigger obsessive behavior in any sports-simulation fan.

Actual NHL players and teams with accurate talent levels, the ability to contest a full season (including playoffs), the best individual player control ever to grace a hockey simulation, and EA's attention to detail are just some of the reasons behind the success

of this product.

Of even greater importance, one will come away from a bout with *NHL Hockey* with the feeling that he or she has just been immersed in a real hockey game. Which players should be matched up against the other team's best line? Who is currently "on a roll"? Is the opposition goaltender a slap-shot sieve, or will he become unglued, unraveled and unnerved by crowds in his goal-crease? What is the most effective offensive strategy when playing the Buffalo Sabres: tic-tac-toe passing or "in your face"

roughhousing? Needless to say, the very difficult, yet necessary task of concurrently putting the gamer into the heads and bodies of both coach and each and every team member has met with successful results in *NHL Hockey*.

Pre-game listings of various team strengths and weaknesses and scratches, national anthems, referees that skate with the players and provide proper hand signals, blistering drives that may shatter panes of glass, between-period statistical updates, out-of-town highlights, and post-game Three

Star Selections add to the visual ambience. Meanwhile, crowd noise, horns and goal-signaling sirens, thuds, bonks and UUGHS! as players, pucks and boards meet with great force, a variety of arena-distinct music, and the voices of P.A. announcers will greet the ears.

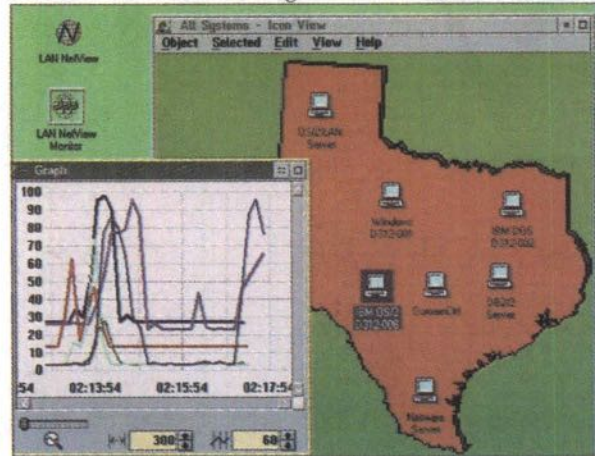
Complete stats are compiled throughout each season, and a decision to bench a certain player may well rest on his plus-minus rating, not his total points. At season end, trophies will be awarded to the most profi-

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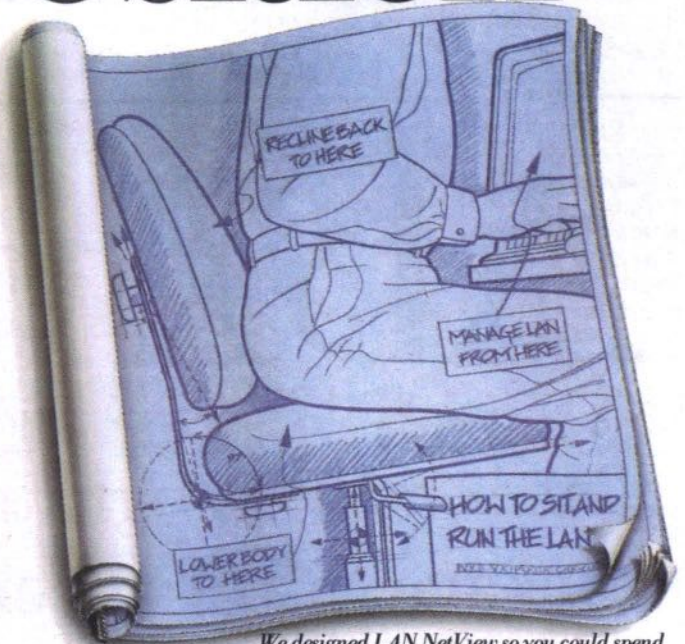


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cient individual performers in various categories, and the march to the Stanley Cup will then begin.

NHL Hockey has been endorsed both by the National Hockey League and the N.H.L. Players Association (undoubtedly one of the few things in which those two organizations can agree), and its many breakthroughs make it well worth its ticket price.



### INDYCAR RACING

Publisher: Virgin Games

"What's this?", you say, "a Top Ten review featuring two games of the same ilk?" That's right, race fans, 1993 will be remembered as a year in which auto-racing simulations took one giant leap forward, and the soon-to-be-released *IndyCar Racing* will pick up right where *World Circuit* left off — in the winner's circle.

Where W.C. a product that finally got the formula right, *IndyCar Racing* tears the script apart and rewrites it. Produced by the familiar cast at Papyrus Design Group (the

folks who brought us *Indianapolis 500 — The Simulation*), *IndyCar Racing* takes us down a road no joystick jockey has gone before.

Like a landlocked *Comanche*, the *IndyCar Racing* world is thoroughly "3-D textured" and bitmapped. Practically everything on the screen is textured, creating an illusion of depth and — dare I say — an environment that is virtually real. Track, grass, trees, barriers and billboards all benefit from this advanced technology, but visually, the most impressive advancement is in the look of the cars themselves, now resembling actual racing machines (complete with corporate logos) as opposed to wheeled pyramids.

Collisions will produce fiery explosions, "laying rubber" will result in tire smoke that may, on occasion, fill the cockpit, and a "groove" will be indicated on screen as digital pavement tears digital rubber from the digital tires that pass over it. Lengthy replays will be available at the push of a key, and critical moments can be viewed from any of six authentic camera angles: TV, In-Car, Gearbox, Chase, Sky, and Blimp.

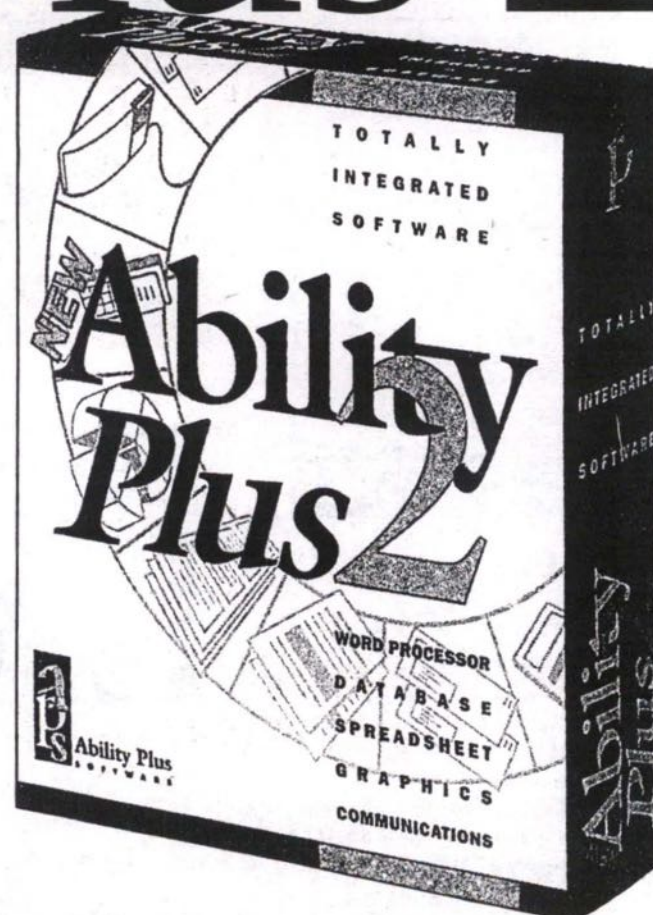
Breathtaking sights aside, does *IndyCar* perform? The answer is yes, with one small reservation. Certainly car set-up options have never been more plentiful, with one being able to adjust intricate elements such as tire pressure, fuel mixture, brake bias and spark advance. In addition, *IndyCar Racing* car-handling characteristics are far more advanced than anything yet developed (including the effects of gravity at the crest or base of hills!).

But do *IndyCar*'s advancements in handling and imaging sacrifice pure fun in its quest for realism? Certainly as in real life, an *IndyCar* car is difficult to drive, and, although

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a joy to witness, 3-D texture mapping removes some of the clean lines of say, a *World Circuit*. These questions will be answered purely on an individual basis — but to this reviewer, *IndyCar Racing* receives a much deserved Top Ten ranking.



## STAR CONTROL II

Publisher: Accolade

Like the cinematic world, sequels of prominent computer games can travel in one of two directions, either improving and building on the first installment or, without a fresh approach and innovation, into never-never land.

In 1990, the science fiction epic *Star Control* was released to mostly positive reviews. It chronicled its own galaxy-wide "war of the worlds" between the forces of good and evil and set the stage for 1993's wonderful sequel, *Star Control II*. In this case, role-playing and science fiction fans coming back for seconds were well rewarded.

*S.C. II* is a mesmerizing meld of the two

genres, taking voyagers on a quest throughout the darkest corners of hyperspace in efforts to help free peoples and planets (including earth) from the villainous and powerful "Ur-Quan Hierarchy." Conversations with the extremely imaginative creatures met on route may result in strong bonds, or just as easily in battle. Options are plentiful, and more often than not, a well-turned phrase might mean just as much as a well-aimed "Chmmr laser."

Plots, sub-plots and strategic twists will serve to confuse the mind and maintain intensity as Star Controllers explore planets and creatures of varying origin and make-up, all the while looking over the shoulder for dreaded Ur-Quan loyalists. The senses will be showered with both visual and audible treats, yet both take a back seat to the intriguing writing inherent in this excellent example of hybrid gaming.

### A Word To The Wise

1993 was a year in which the high-end of the computer gaming industry stopped bowing to the lowest common denominator. Increasingly, games, simulations and adventures are built to fit only the latest and greatest in computers, and to get much of the new gaming breed running at its full potential (or running at all), a fast 386 or preferably 486 is mandatory material. As well, compact disc-based games are no longer an oddity.

It would behoove those who wish to experience computerized entertainment at its best to lay out the bucks on a speedy and total package and end the frustration of incompatible equipment. In the world of computer games, the future is here. ■



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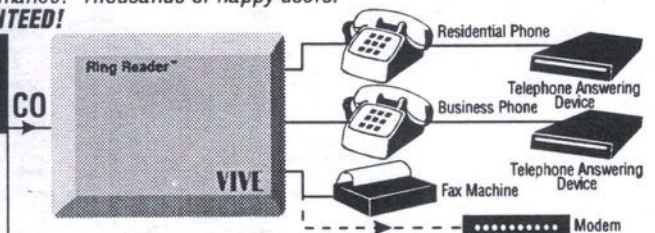
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MILPITAS, CA (NB) — Dolch Computer Systems is billing its new PAC-586 as the world's first Pentium-based portable.

The company was scheduled to show it and A-PAC, a stereo sound version of the system at Fall Comdex in mid-November.

Operating at 47 MIPS, the Pentium-based machines are the fastest mobile PCs to be available yet, officials maintained.

The new PAC and A-PAC models offer five full-length open slots, three VESA (Video Electronics Standards Association) local bus slots, and 275 watts of system power. The platforms will also accommodate a combination of three drives, selectable from among a floppy drive, a hard drive up to 1 gigabyte (GB), and a 5.25-inch drive, such as a high-performance CD-ROM or Bernoulli drive. Each unit weighs in at under 20 pounds.

The A-PAC, in particular, is aimed at presentation professionals, the company said. Users can order the model as a ready-to-go system with CD-ROM, AVI (Video for Windows), and DVI, JPEG or MPEG video compression and playback, in addition to built-in stereo sound.

The Pentium-based portables come with a choice of four flat panel displays: active matrix color TFT (thin film transistor), passive matrix color dual-scan STN (SuperTwist Nematic), monochrome EL (electroluminescent display), or color touchscreen. The

active matrix display shows 256 colors, from a palette of 185,000 colors, at 640-by-480 resolution, according to Dolch. Contrast ratios exceed 60:1.

A 101-key keyboard is included with the unit. A trackball system is optionally available for integration into the front panel.

Officials stated that the company's liquid cooling system makes it possible to include Pentium and other high-speed CPUs (central processing units) in a relatively small amount of PC real estate.

In contrast to most mobile PCs, which use a plastic inner chassis, Dolch's chassis is made of metal, the company explained. Heat is conducted from the CPU through a highly transmissive fluorocarbon liquid to a proprietary heat sink that, in turn, conducts the heat into the inner chassis. The metal chassis acts much like a radiator in dissipating heat.

Dolch is now taking orders for both the PAC-586 and the A-PAC, with deliveries running four to eight weeks after receipt of order. The PAC-586 is available in ISA configurations with 60 and 66 MHz Pentium processors. A-PAC models are available with 386 and 486 processors as well as the Pentium processors. Pricing starts at about US\$6,000 for a PAC-586 and about \$4,000 for the A-PAC models. ■

Contact: Dolch, 408-957-6575

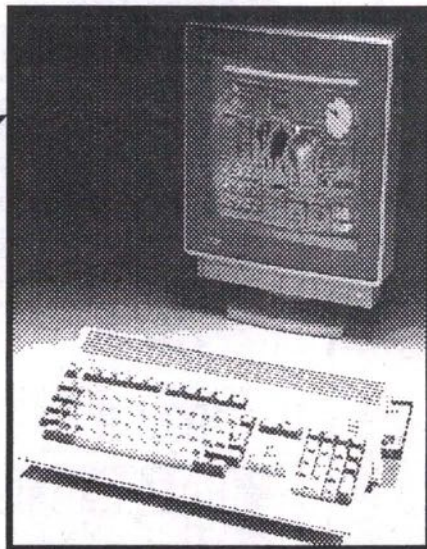


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# New Canadian Telecom Act Here

BY GRANT BUCKLER

OTTAWA (NB) — Although the nine-year reign of Canada's Progressive Conservative party ended with an unprecedented electoral drubbing, the defeated government left behind one legacy generally popular in telecommunications circles. Its new Telecommunications Act came into effect October 25, replacing an 85-year-old law and almost unifying a balkanized regulatory system.

The bill asserts federal jurisdiction over telecommunications across Canada, although one province — Saskatchewan — will be allowed to keep provincial regulation for five more years.

In the past, most of Canada's telephone companies were provincially regulated, while those in Ontario, Quebec, British Columbia, and the Northwest Territories were regulated by the federal government. Some provincial phone companies have accepted federal jurisdiction in the past three years, since a 1989 court decision that said the federal government had the right to regulate all telecommunications companies.

**'the law acknowledges that we are on the threshold of major telecom transformations'**

That decision included companies owned by lower levels of government, but said Ottawa must first assert its authority in law. The new act does this. However, the act gives Saskatchewan — which owns its own phone company and has staunchly resisted federal regulation — a five-year grace period before it comes under federal control.

Joseph Schmidt, president of the Canadian Business Telecommunications Alliance (CBTA), a lobby group of major telecommunications users, earlier criticized this provision, saying it gives the province "five more years to shut out competition." But Schmidt said his group is pleased with the law overall, and accepts that some compromises were necessary.

The Information Technology Association of Canada (ITAC), also supported the bill. A statement from ITAC said the law "acknowledges that we are on the threshold of major telecom transformations, and that Canada intends to be a leader in telecom internationally."

Under the new law, the CRTC can decide not to regulate areas of telecommunications where it judges there is enough competition to serve as an alternative to regulation.

The act also removes regulations on companies that resell telecommunications services, though all those that own their own networks continue to be subject to regulation.

The law as introduced in February, 1992, would have required all telecommunications carriers in Canada to obtain licenses from the federal government. It has since been

amended to remove the licensing provision, instead giving the Canadian Radio-television and Telecommunications Commission (CRTC) authority to enforce a rule limiting foreign ownership of licensed carriers to 20

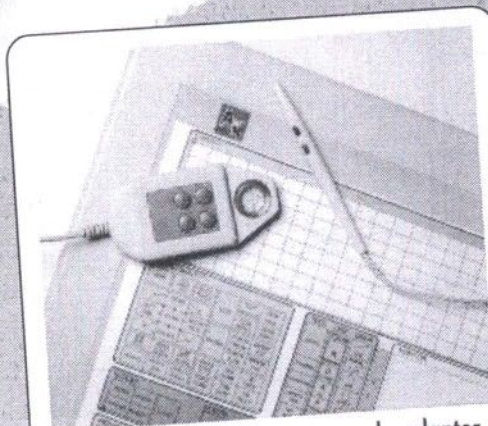
percent.

Earlier, Toronto telecommunications consultant Eamon Hoey said the 20-percent limit on foreign ownership would effectively shut out foreign investment, since no

investor would want to pour money into a venture in which it cannot hold a controlling interest. Therefore, he forecast, no new telecommunications competitors will appear. ■

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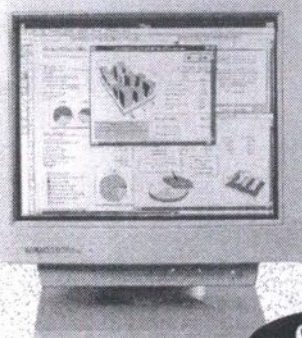


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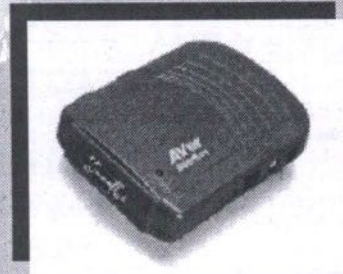
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## PAYROLL

# Annual Survey of Canadian Payroll Software

BY JOAN HORNAL

*Fourteen Canadian payroll programs have been reviewed in this survey. All except Checkmark (Macintosh) were installed and tested using DOS 6 and Microsoft Windows 3.1 on a 486/33 system with a color monitor; all performed well in this environment. Many simple programs will run as well on slower systems using earlier versions of DOS. Canadian payroll software continues to improve; user interfaces are becoming more consistent, and most of the products contain new features and have become more flexible.*

**ACCPAC PLUS CANADIAN PAYROLL.** Few changes have been made to Version 6.0E. It provides for a combined total of 32 user-defined earnings, taxable benefits accruals and non-statutory deductions per employee.

Payroll items can be calculated from user-defined formulas and earning types can be grouped for these calculations. Recurring time sheets containing standard earnings and deductions provide for fast payroll processing. A General Ledger account can be associated with each earnings code and earnings codes can be assigned to specific T4 boxes. A pay period and yearly maximum can be assigned to earnings and non-statutory deductions. Timesheet entries can be imported from non Accpac Plus programs using the new Import Timesheets function. Employees can be assigned to General Ledger departments for departmental costing, or time and payroll burden can be posted to a job for job costing.

You can choose either to interface with the Accpac Plus Jobcost module, or select payroll cost reporting, which will include job-costing information on the time sheets and cost-center reports. You can also allocate benefits to different jobs or departments (company portion of UIC/CPP will not be allocated to a specific job, however). The program automatically calculates the TD1 cost-of-living adjustment and modifies the employee master file.

A new feature of version 6 is that the payroll register summary now subtotals employee and employer unemployment insurance contributions by UIC rate. The program also checks for errors in T4 boxes before printing the T4s and allows the user to make corrections before printing. Canadian Payroll can be linked to Dynaview to access information regarding General Ledger account and department information and payroll register details for employees included in the current payroll run.

This comprehensive and flexible program is a good choice for businesses requiring complex earning and deduction calculations, job-cost data and automatic posting to Accpac Plus General Ledger.

**ARMOUR PREMIER CANADIAN PAYROLL.** This is the first year this program has been included in the survey though it has been available for several years. It is also known as Excalibur Plus.

Armour Payroll is extremely flexible so is more difficult to use than simple payroll sys-

	Hours	Rate	Amount
Regular	0.00	0.00	0.00
OverTime	0.00	0.00	0.00
DblTime	0.00	0.00	0.00
Sick	0.00	0.00	0.00
Vacation	0.00	0.00	0.00
Holiday	0.00	0.00	0.00
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**Checkmate Canadian Payroll's** calculate command computes wages, other income, deductions, taxes and net pay for the current month period.

tems. All earnings and deductions can be calculated from formulas supplied by the user. The system does not provide for extra tax deductions and other entries from the TD1 form. The program does job-cost reporting and workers' compensation calculations. It does not prepare a Record of Employment or maintain a file specifically for the preparation of this extremely important form.

A utility is available which allows you to modify the format of reports supplied by the system. You can add or delete text, suppress data elements and copy or move text within a section. The screens and menus are reminiscent of older mainframe applications.

**CHECKMARK CANADIAN PAYROLL** is one of the few products available for the Macintosh.

It is very simple to set up and to use. It provides for seven hourly earnings and two other income or benefit categories that apply to any or all employees. In addition it has one selectable earning or benefit per employee.

There are six user-definable deductions for any or all employees and one selectable deduction for each employee. The program retains hourly timesheet data from one pay period to the next to speed up data entry. It has a department distribution feature that distributes wage amounts to departments or jobs and calculates and distributes the relat-

ed employer's portion. There is also a feature to import or export employee information to or from a text file. Reporting is adequate but more user-definable reports would be welcome.

**DACEASY INSTANT PAY** is a new payroll system for small businesses with less than 20 employees.

The program is supposed to be easy to install and to use but I was unable to install the program using the instructions in the manual. Once I figured out how to install it I discovered it requires a telephone call to Toronto between 8:30 and 5:00 Toronto time, Monday to Friday to obtain a code word before the program will work.

The program was very easy to set up and to use. Pay information for each payroll run is entered to each employee and a cheque is printed. The program does not do Records of Employment.

**DACEASY PAYROLL** version 4.3 is similar in setup and processing to InstantPay.

It also requires a code word before using. It also contains fields to track some personnel management data such as hire dates, review dates and it prints Records of Employment and tracks employee information by department. DacEasy payroll is very easy to set up and to use and is thus a very cost

effective system for a small payroll.

**EASYPAY** was not reviewed this year but last year's review has been repeated.

It is an easy-to-use program in the mid-price range. It handles a good variety of earnings, benefits and deductions so would be good for some union payrolls. Advanced features include on-line cheque reconciliation and recurring timecards, both timesaving features. Reporting is very comprehensive and flexible. Simple job costing can be obtained using departments. The program interfaces with many General Ledger products. The manual is well laid out and very easy to use and on line help is good.

**ESI PAYROLL** is also new to the survey this year.

It is an inexpensive, simple, easy to set up and use program. Its pricing is unique in that it does not charge for the program disk but charges for updates and a copy of the manual. Its history retention is good and T4's can be prepared from this year's data or last year's data. It does not do UIC Records of Employment reporting so it should only be used by those companies ready to prepare them manually.

**GRANDMASTER II** is a good choice for large companies with many earning and deduction types, companies considering downsizing from mainframe systems, companies with union contracts, and nonprofit organizations.

Grandmaster II, with its Windows-type user interface, has become easy to set up and use while retaining all the features and flexibility available in its predecessor. It provides 50 user-definable earnings and 50 deductions and benefits which are linked. Calculation formulas can be assigned to both earnings and deductions. Grandmaster provides a user-definable matrix-type table of wage rates such as you would find in a union agreement. The table cell coordinates can be entered in the employee's file. Global rate changes are entered to the table and all employees' files are updated. There are quick-entry features for entering timecards with multiple rates of pay dates and account numbers.

A sample company is available and context-sensitive help is always available to assist in the set up and use of the software. The program provides an extensive cost

*Continued on page 33*



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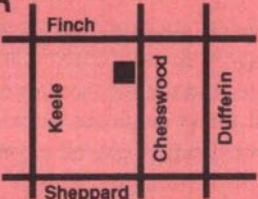
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- ANCIENTS- The Deathwatch** (HG 225) A fantastic 3-D D&D adventure WOLFENSTEIN style !! One of the best !! VGA
- GOLF- Jack Nicklaus** (HG 227) (2 DISKS) The best golf game we have seen yet with full sound card support and the best in graphics, overhead and thruway views ETC.. VGA
- MAJOR STRYKER** (HG 231) (2 disks) APOGEE again !! Fantastic space action as you defend earth from invasion. Full sound card support with incredible graphics !! VGA
- OVERKILL** (HG 234) EPIC MEGAGAMES !! Defend your homeland against hordes of evil aliens. Blow them out of the sky with your atomic battlecraft, Sound card !! VGA
- SOLAR WINDS** (HG 235) (2 DISKS) FANTASTIC !! our personal favorite game from EPIC !! GREAT graphics and sound blaster support. WING COMMANDER. As Jake Stone, fearless bounty hunter, explore the galaxy !! The ultimate adventure that will keep you glued to your seat for days !! VGA
- NOVA 9** (HG 236) (3 disks) The music and 3-D graphics are simply incredible !! Full sound card support
- RED HOOK'S REVENGE** (HG 245) As the most dreaded pirate of the seven seas, you brave storms, fight fierce battles, discover treasure, & visit mermaid island in this great adventure. Superb art with SB support. VGA
- JETSONS** (HG 248) Play the role of elmo, George or Astro in this great graphical adventure to save Cogswell's factory. Killer robots lurk at every corner !! A Fantastic spoof of the original television series. VGA
- The Perfect General** (HG 249) A fabulous game for all you strategists out there. Great graphics and Sound Blaster support. Use all your skills to win the war for the allies or the enemy in WWII. A strategy classic. SB support.
- WOLFENSTEIN - Street Fighter** (HG 251) (2 disks) The BEST need we say more ?? VGA
- MORE WOLFENSTEIN** (HG 253) (2 disks) New Shareware episode of this years #1 game !! Created by a user with new levels, layouts, & graphics. Sound card and tons of enemy scum to be blown away. VGA
- WOLFENSTEIN - 60 levels** (HG 255) 60 custom designed floors on 6 new levels. Some are totally redone, some have been given face lifts. You'll be amazed at all the new twists, adventures, and challenges. Wolf required !!
- SPACE CHASE** (HG 264) (2 disks) As The hero Jason Storm you must reach the command centre of station alpha and capture members of Evil Guys Inc. Adlib/SB sound with stunning graphics. VGA
- NINJA RABBIT** (HG 265) (2 disks) Fight greuling battles against the international crime ring S.L.I.M.E. Use all your karate moves against your opponents. GREAT !! VGA
- STAR TREK Battle with the Borg** (HG 268) The next generations battle with that ugly evil cube. High res animated of the enterprise through warp. VGA
- STAR TREK Combat Simulator** (HG 269) The ultimate combat simulator for you trekies !! Control the starship Enterprise while battling it out with all sorts of federation enemies!! Sound card support and great graphics !! VGA
- The Incredible Machine** (HG 271) BY SIERRA !! For all you crazy puzzle solvers out there !! The best in graphic thinking games, place objects around a screen to make an event take place properly !! SB support. VGA req.
- KAEON** (HG 273) Incredible graphics and sound with more motion and animation than you can shake a stick at !! Pilot your fighter through endless scenarios blasting the enemy. 32-bit game with Adlib/SB support. 386+ & VGA
- EXECUTIONERS** (HG 275) (2 disks) Disgusting bloody gory combat similar to Street fighter. NOT FOR CHILDREN !! The greatest graphics and Adlib/SB sound. Get this !! VGA
- ONE MUST FALL** (HG 276) The best in KARATE fighting !! Sound card support with stunning graphics, battle the computer or a friend for honor. If you like street fighter, you'll love this one !! One of the best. VGA
- STAR TREK - Combat Sim.** (HG 269) The ultimate combat simulator !! Full Adlib/SB music effects in this fabulous game where you control all aspects of battle from the enterprise bridge. VGA
- BARON BALDRIC** (HG 280) THE GRAVE adventure. Discover the ghost of a slain milkmaid in this hilarious horror spoof with stunning graphics and Adlib/SB support. Definitely get this one !! VGA
- BIO MENACE** (HG 281) (2 disk) APOGEE !! Reclaim metro city from evil disgusting mutant scum that shot you out of the sky. One of the best games with full Adlib/SB support. VGA
- KEN'S LABRYNTH** (HG 285) (3 disks) BETTER THAN WOLFENSTEIN !! 3-D graphics, Adlib/SB support. Brave the labyrinth for fame, glory & fun. Many enemies, secret rooms, monsters, and evil creatures. The best in graphical 3-D adventure gaming (we're not kidding !!) VGA, and 386+ computer required.
- ZONE 66** (HG 287) (3 disks) EPIC MEGAGAMES !! The newest 32-bit game with full Adlib/SB support. Fly your super fighter through 360 degree playfield blasting enemies in the most spectacular game ever. 386+ computer & VGA required to play the most graphical and awesome game ever !!
- MONSTER BASH** (HG 289) (3 disks) HORROR by APOGEE !! Scary Adlib/SB music & effects in Apogee's biggest and best game ever. Young hero Johnny Dash journeys through the domain of count chuck to save his dog Tex. Face countless horrors in the domain of count chuck, monsters, zombies, & more !! VGA
- INDIANA JONES - Fate of Atlantis** (HG 238) (2 disks) Help Indy find the lost city of Atlantis in this game similar to KING'S QUEST with sound card support. VGA
- JET PACK** (HG 296) Search for fame fortune and SPACE BABES in this action adventure. Strap on your jet pack and journey through hundreds of danger filled levels to discover their hidden secrets & horrors. Sound Blaster Support. VGA
- GATEWORLD - The Speedship** (HG 297) (2 disks) Captain Klondike vs GORG. Stop an evil machine in charge of a run away asteroid. Explore underground caverns, avoid traps, evil creatures, security defenses & more. Full Sound Card Music with great graphics make this one game to beat. VGA
- Dungeons of Daloman** (HG 307) The ultimate in AD&D type games, similar to Gauntlet in style. Roam the haunted evil caverns in search of adventure and treasure. Battle evil wizzards and horrible evil creatures. VGA
- XYPHER** (HG 309) UNBELIEVABLE !! Fantastic audio and visual. Control the most powerful and agile space vehicle in the galaxy & defend. Encounter countless enemies, organic, insect, metallic. VGA
- MARBLE MADNESS** (HG 314) Ball Game II is the ultimate in hand eye co-ordination games for the PC. Use all your skills with gravity and a score of other objects as your enemy. FANTASTIC !! One of our favorites. VGA

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# MARCOM COMPUTERS CANADA

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# Canadian Payroll Software

## BASICS

Product Name	ACCPAC PLUS Canadian Payroll	ARMOUR PREMIER Canadian Payroll	CHECKMARK Payroll	DACEASY INSTANT PAY	DACEASY PAYROLL	EASYPAY	ESI PAYROLL SYSTEM
Version	V 6.0E	V. 3		7-01-93	V. 4.3	V 7.000 Multicompany	V. 1.3 (July 1993)
Company Name	Computer Associates	Armour Systems Inc.	BusinessCare	Dac Easy Canada Inc.	Dac Easy Canada Inc.	Vikusic Consulting	ESI Software Inc.
Address	Canada Ltd 1770 Burrard St. Vancouver, BC V6J 3G7	324 North Orlando Ave. Maitland Fl. 32751	Box 189 Thornhill, Ontario L3T 3N3	20 Steelcase Road West Markham, Ontario L3R 1B2	20 Steelcase Road West Markham, Ontario L3R 1B2	1733 Heritage Way Oakville, Ont L6M 3A2	# 201- 1544 Marine Dr. West Vancouver, BC V7V 1H8
Telephone	604-733-2343	407-629-0753	416-731-0744	416-940-3314	416-940-3314	416-825-8020	604-926-7801
Fax	604-733-4129	407-629-1401	416-731-5861	416-940-0308	416-940-0308	416-825-9660	604-926-0442
Help line				416-940-3314 ext 501	416-940-3314 ext 501		604-926-7885
Operating Systems	OS/2 or DOS 3.1 or >	DOS, Xenix, Sun OS 4	Macintosh	Dos 2.0 or >	Dos 2.0 or >	DOS 2.1 or >	
Minimum Hardware Requirements	Windows 3.0>						
	PC	PC	Macintosh	PC	PC	PC	80386SX PC
	512K RAM & Fixed Disk	512K RAM & Fixed Disk	Single Drive or Fixed Disk	512K RAM and Fixed Disk	512K RAM & Fixed Disk	512K RAM & Fixed Disk	2MB RAM & Fixed Disk

## COST

Program	\$1200 List	US\$695	\$395	\$59.95	\$195.	\$495	Class A - no charge Class B - \$49 inc. manual
Updates & Maintenance	\$295 per yr	Included with support	First free/\$50 after	\$50.00	\$99.95	\$195 per yr	Class A - \$95 per yr included with updates
Support	\$225	US\$125 for 6 months	No charge	Included	Included	No charge	Manual costs \$25.00

## HELP

On Line Help	Y	Y	Y	Y	Y	Y	Y
Tutorial or Sample Company	Y	Y	Y	N	Y	N	Y
Telephone Support Available	Y	Y	Y	Y	Y	Y	Y
Sample Reports in Manual	Y	N	Y	N	Y	Y	Y
Install & Training Available	Y	Y	Y	N		Y	Y

## FEATURES

Multiple Companies	Y	Y	Y	N	Y	Y	N
General Ledger Departments	Y	Y	Y		Y	Y	Y
Job Costing	Y	Y	N (See text)		N	N (See text)	N
Multi Provincial	Y	Y	Y	Y	Y	Y	Y
Multiuser/Network	Y	Y	-	N	Y	N	Y
Multi UIC Rates per Company	Y	N	Y	N	Y	Y	Y
Password Protection	Y	N	Y	Y	Y	Y	Y
Interfaces with General Ledger	Y	Armour Premium	Y	DacEasy and Quicken	Y - DacEasy	Y	Y
Number of Items per Employee							
Earnings	32 Earnings	32,767	7 Hourly		10	5+	6
Taxable Benefits	and	Y	2 + 1 Selectable	2	5	20	2
Nonstatutory Deductions	Deductions	32,767	6 + 1 Selectable	4	10	20	9
Automatic Calculation Formulae							
for Statutory Deductions	Y	Y	Y	Y	Y	Y	Y
for Earnings	Y	Y	Y	Y	Y	N	Y
for Taxable Benefits	Y	Y	Y	Y	Y	Y	N
for Nonstatutory Deductions	Y	Y	Y	Y	Y	Y	N
for GST on Taxable Benefits	N	N	N	N	N	N	N
Manual Cheques	Y	Y	Y	Y	Y	Y	Y
After the Fact Pay	Y	Y	Y	N	N	Y	Y
Tracks Advances	Y	N	N	N	N	Y	Y
Tracks Accruals	Y	Y	Y	Y	Y	Y	Y
Banks Hours	N	Y	Y	N	Y	Y	N
Tracks Workers' Compensation	N	Y	Y	N	N	N	N
Report Generator Available	Additional Module	N	N	N	N	Y Extra Module	N
Automatic Indexing	Y	N	N	N	N	N	N
Retains payroll history for prior years	N	Unlimited history		N	N	Y	N
Allows Extra Tax Deduction	Y	N	N	Y	Y	Y	Y
Customized Cheques and Advices	Y	N	Y	N	N	Y	Y
User Update to Tax Tables	N	Y	Y	N	N	-	N
Direct Deposit Interface	N	Y	N	N	N	Y - Extra software	N
Calculates Pension Adjustment for T4s	N	N	N	N	N	N	N

## PRINTING AND REPORTS

Prints Cheques for:							
Employees	Y	Y	Y	Y	Y	Y	Y
Receiver General for Canada	N	N	N	N	N	N	N
Other Deductions	N	N	N	N	N	N	N
T4's T4A	Y	Y	Y	Y	Y	Y	Y
T4 Summary Form	N	N	Y	N	N	N	N
Record of Employment Form	Y	N	Y	N	Y	Y	N
Releve 1	Y	Y	Y	Y	Y	Y	N
Cheque Register	Y	Y	Y	Y	Y	Y	Y
Payroll Journal or Register	Y	Y	Y	Y	Y	Y	Y
Employee's Detail Pay History	N	Y	N	Y	Y	Y	Y
Access Audit Trail	Y	Y	Y	N	N	Y	N
Month End Report for G/L	Y	Y	Y	N	Y	Y	Y
Employee's Year to Date Report	Y	Y	Y	Y	Y	Y	Y
Employee Profile	Y	Y	Y	Y	Y	Y	Y
T4 Summary Report	Y	Y	Y	Y	Y	Y	Y
Insurable Earnings Report	Y	N	Y	N	N	Y	N
Statutory Deduction Report	Y	Y	N	Y	Y	Y	Y
Other Deductions Report	Y	Y	Y	N	Y	Y	Y
Job Cost/Department Report	Y	Y	N	N	Y	Y	N
Direct Deposit Report	N	Y	N	N	N	Y	N
Cheque Reconciliation Report	N	N	N	N	N	Y	N
Statistics Canada Report	N	N	N	N	N	N	N

## PERFORMANCE

Auto Install of Software	Y	Y	Y	Y	Y	Y	Y
Ease of Setup	Complex - somewhat difficult	Complex for Calculations	Very simple	Easy	Easy	Easy	Easy
Ease of Use	Easy	Moderately Easy	Very easy	Easy	Easy	Easy	Easy
Ease of Adjustment	Easy	Easy	Very easy	Easy	Easy	Easy	Easy
Programmed Backup	N	Y	Y	Y	Y	N	Y
Menu Appearance	Clear, logical organization	Cluttered and confusing	Macintosh	Clear	Good - Clear	Good	Clear
Data Entry Screen Appearance	Good	Cluttered and confusing	Macintosh	Clear - some clutter	Clear, easy to follow	Cluttered	Clear
General Flexibility	Excellent	Excellent	N/A	Good	Good	Good	None
Reporting Flexibility	Good	Good	Good	None	None	Good	None

## Table Legend

The accompanying chart represents an attempt to compare costs, services, features and options for the programs. Where information was not available the cell contains a dash. Some features are described here for clarification.

**On Line Help** means the product provides the user with additional information during data entry if a key or combination of keys is pressed.

**Tutorial** refers to training material either on disk or in a training section in the manual.

**Telephone Support Available** means the user can call the software company, usually at the user's expense, and ask for assistance. Many companies now provide a fax number for written requests for help.

**Install & Training Available** means this service is provided either by the software company or a third party whose name and telephone number are available from the company.

**Multiple Companies.** If 'Y', the payroll can be processed for more than one company; otherwise the user is restricted to a single company.

**Job Costing** means that the program will record units of time and amounts to a job and provide job-cost reports. The more complex products also calculate and expense benefits and other overhead to the job.

**Multi UIC Rates per Company** means the program can calculate more than one UIC rate per company; more than one Revenue Canada number is required.

**Exports to General Ledgers.** Most payrolls provide a General Ledger report or a General Ledger interface text file that contains journal entries summarized by account number, department number and amounts.

**Number of Items per Employee.** Many products have a limited number of earnings, benefits and non-statutory deductions available per company or employee.

**Automatic Calculation Formulae** are user-definable formulae for the calculation of earnings such as vacation accruals, commissions or piece work and non-statutory deductions which are calculated on selected earnings or groups of earnings or other amounts.

**Manual Cheques.** Many payroll programs provide for the entry of manual cheques which have been prepared between payroll runs.

**After the Fact Pay.** This feature provides for entry of data after a manual cheque has been written.

**Tracks Advances and Tracks Accruals.** Programs that track advances and accruals maintain a record of an advance paid or an accrual such as holiday pay until it is deducted or paid out.

**Banks Hours.** A feature in some programs is the capability of banking hours or units for sick pay or time off.

**Tracks Workers' Compensation.** Some payrolls will calculate the amount due to Workers' Compensation.

**Automatic Indexing.** Automatic indexing of employees TD1 claim by the annual cost-of-living adjustment is now a feature included in some payrolls.

**Direct Deposit Interface.** A file can be sent to the bank for direct entry into the bank's direct deposit system.

**PRINTING AND REPORTS.** Some payrolls will not print directly on all government forms. As an alternative they print a report that can be transcribed onto the government form.

**Detailed Pay History Report.** This report lists each earning and deduction for each employee by pay period and totals to the year to date total.

**Access Audit Trail.** This report details every change in the employee records.

**Year to Date Report.** This report shows the year to date amount of all earnings, benefits and deductions for each employee.

**Employee Profile** is a report showing employee name, address, birth date, start date and other personnel information.

**Direct Deposit Report.** Some payrolls prepare a report for the bank showing the amount of the deposit and the employee's bank account number.

**Auto Install of Software.** If 'Y' there is a program on the program disk that creates the sub-directories and copies the program files onto the fixed disk.

**Ease of Setup.** When a payroll is easy to set up the user can quickly configure the pay frequencies and the earnings and deductions or they are pre-configured.

**Ease of Use.** In easy-to-use payroll programs the process of entering time sheets and calculating the payroll is very simple and straightforward and look-up boxes are available for the selection of data to enter.

**Menu Appearance.** Pull-down menus are features of the newer products. They are easy to use and easy on the eyes. Color is also considered here.



## Payroll

Continued from page 30

breakdown by department and extremely flexible cost reporting.

The product's special features include the ability to associate each employee's earnings and deductions with multiple General Ledger accounts and departments. Where an employee's deductions exceed his earnings the program will keep track of any excess or arrears automatically and will deduct the amount automatically from the next pay. Files are created for direct deposit interface with bank systems. An employee can have more than one bank account.

Grandmaster II provides an interface with most General Ledger applications through its import and export feature. A report generator is included in the program to enhance the flexibility of reporting. This is the only program in the survey to calculate the pension adjustment and print it on the T4 and prepare the reports required for Statistics Canada. It is the most comprehensive program we have reviewed for the PC environment.

**GREAT PLAINS CANADIAN PAYROLL** is a powerful, flexible payroll program.

Its most notable feature is the unlimited number of earnings, deductions and taxable benefits which can be calculated and tracked. I liked the setup of "Employee pay type authorization" where the codes are already predefined and you just have to select them (as compared to Accpac where you have to define them all and then assign each one to appropriate employees). The

item descriptions and directions for their use were sketchy, both in the manual and on the help screens. Recurring transactions can be stored, eliminating re-entry of data each payroll. A second level of on-screen help is available and can be configured by the user.

We found "Help" to be of little assistance when setting up employees. Also, set up is complex. I needed to use both the Getting Started manual and the Reference manual to perform the set-up functions. The reference manual is organized in screen number order and is difficult to use. The Getting Started manual provides detailed checklists with the proper task order for installation and setup. Excellent and detailed reporting compensates for this. The program retains and can print an employee's entire pay history for the year. This report and other audit trails are excellent.

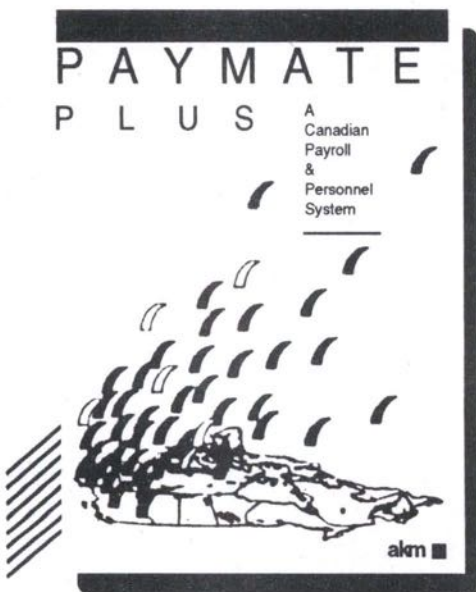
Great Plains is excellent for job costing, as it tracks both the hours and the amount by job, expenses the company portion of the expense to the job and performs automatic overtime calculations. Great Plains Version 7 Canadian Payroll will interface with Great Plains' new Dynamics program.

**HELP CANADIAN PAYROLL** is a moderately priced product that provides a lot of features.

Help does not require an annual fee for tax-table updates. The user must update the statutory deduction tables before setting up the payroll. Help can import time cards from other programs. Other features include the easy entry and accumulation of daily time-cards, easy modification of statutory deduc-

Continued on page 36

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## Payroll Made Easy

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# Canadian Payroll Software

## BASICS

Product Name	GRAND MASTER II PAYROLL SYSTEM	GREAT PLAINS CANADIAN PAYROLL	HELP	KIS PAYROLL FOR WINDOWS	MAP6	PAYCHEQ CONTROLLER IV	PAYMATE	POWERPAY
Version	Oct/93 V1.5	V 7.0	V 5.05	V2.1 July 1993	Ver 3.4	Plus and 20 - Ver 5.34	V 2.21 (1993)	
Company Name	Canpay Computer Software Ltd.	Great Plains Software	Help Software Services Ltd.	KIS Information Systems Inc.	Micro Global Systems c/o M. Noia, Unit 1	Asian Microsystems	AK Microsystems	PowerSoft Systems Ltd. Vancouver and Toronto
Address	9-1329 Niakwa Rd. E. Winnipeg, Man R2L 2A5	1701 Southwest 38 St Fargo North Dakota, 58103	5487 Kingsway Burnaby, BC V5H 2G1	202-2871 Olafson Ave. Richmond, B.C. V6X 2R4	10 St. Albans Rd. Etobicoke, Ontario M9B 1A1	402-30970 Wheel Ave. Abbotsford BC V2S 5W6	201-80 Fulton Way Richmond Hill, Ont. L4B 1J5	103-14888 104th Ave. Surrey, BC V3R 2Y9
Telephone	204-254-4726	701-281-0550	604-435-6268	604-244-8781	416-239-0977	604-852-7323	416-969-8156/71-1155	604-582-7488/416-886-1688
Fax	1-800-665-5129	701-282-4826	604-435-4707	604-244-8771	416-239-9919	604-852-7376	416-771-1344	604-582-7399/416-886-2650
Help line				604-244-8781	416-239-9919			
Operating Systems	DOS, OS/2, Unix	DOS 3.1>, OS/2, MAC, UNIX XENIX, Windows 3.0>	DOS 2.0>	Windows 3.0 >	DOS	DOS, Xenix, Unix	DOS 3.3>	DOS 2.0>
Minimum Hardware Requirements	386 or > PC 4 MB extended/15 MB disk	PC or MAC 640K RAM & Fixed Disk	PC 256K RAM Fixed Disk	PC Fixed Disk	PC 128K RAM & 2 disk drives	PC 640K RAM, Hard Disk	PC 640K RAM, Fixed Disk	PC 512K RAM & Fixed Disk

## COST

Program	\$1495.00 Direct Deposit \$195	\$960	\$349.95	\$495	\$695	\$695 Single User \$1095 Multiuser	\$ 59 < 10 employees \$189 10-20 Employees \$489 >20 employees	\$89 Single \$250 Multiple Co.
Updates & Maintenance	\$395 /\$49 per yr	\$330	\$50 if required	\$99.00 per year	\$99 per year	\$269 Support N/C	\$49 <10 / \$95 10-20 \$195 >20	\$50 Single/\$150 Mult
Support	1 Year Free	Various plans	Free	Support is free	Free			No charge

## HELP

On Line Help	Y	Y	Y	Y	N	Y	Y	Y
Tutorial or Sample Company	Y	Y	N	Y	Y	Y	N	N
Telephone Support Available	Y	Y	Y	Y	Y	Y	Y	Free Phone Support
Sample Reports in Manual	Y	Y	Y	N	Y	N	Y	N
Install & Training Available	Y	Y	Y	Y	Y	Y	Y	Y

## FEATURES

Multiple Companies	Y	Y	Y	Y	Y	Y	N/Y/Y	Y
General Ledger Departments	Y	Y	Y	Y	Y	Y	N/Y/Y	Y
Job Costing	Additional Module	Y	N	N	N	Y	N/Y/Y	N
Multi Provincial	Y	Y	Y	Y	Y	Y	Y	Y
Multiuser/Network	Y	Y	N/Y	N	Y	Y	N	Single User
Multi UIC Rates per Company	Y	Y	N	Y 2	N	Y	N/Y/Y	N
Password Protection	Y	Y	Y	Y	N	Y	Y	N
Interfaces with General Ledger	Y	Y	Y	Y	N	Y See text	Y - Many	N
Number of Items per Employee								
Earnings	50	Unlimited	10	20	7	Unlimited	8/Unlimited	9
Taxable Benefits	50	Unlimited	6	5	7	Unlimited	2/Unlimited	6
Nonstatutory Deductions	50	Unlimited	10	11	5	Unlimited	3/Unlimited	9
Automatic Calculation Formulae								
for Statutory Deductions	Y	Y	Y	Y	Y	Y	Y	Y
for Earnings	Y	Y	Y	N	N	Y	Y	N
for Taxable Benefits	Y	Y	Y	N	N	Y	N/Y/Y	N
for Nonstatutory Deductions	Y	Y	Y	N	N	Y	N/Y/Y	N
for GST on Taxable Benefits	N	N	N	N	N	Y	N	Y
Manual Cheques	Y	Y	Y	ADVANCES ONLY	Y	Y	Y	N
After the Fact Pay	Y	Y	Y	N	Y	Y	Y	N
Tracks Advances	Y	Y	Y	Y	N	Y	N	Y
Tracks Accruals	Y	Y	Y	Y	Y	Y	Y	Y
Banks Hours	Y	Y	N	N	N	Y	N	N
Tracks Workers' Compensation	Y	Y	N	N	N	Y	N	Y
Report Generator Available	Y	Y	N	N	N	Y - Extra software	N	N
Automatic Indexing	N	Y	N	N	N	Y	N	N
Retains payroll history for prior years	Y	Y-Summary, 1year	Y-cheque	Y	N	N	N	N
Allows Extra Tax Deduction	Y	Y	Y	Y	Y	Y	Y	Y
Customized Cheques and Advices	Y	Y	Y	Y	N	Y	N/Y/Y	N
User Update to Tax Tables	N	N	Y	N	Y	N	N	N
Direct Deposit Interface	Additional Module	Additional Module	N	N	N	Y	N/N/Extra module	N
Calculates Pension Adjustment for T4's	Y	N	N	N	N	N	N	N

## PRINTING AND REPORTS

Prints Cheques for:								
Employees	Y	Y	Y	Y	Y	Y	Y	Y
Receiver General for Canada	N	N	Y	N	N	N	N	N
Other Deductions	N	N	Y	N	N	N	N	N
T4's T4A	Y	Y	Y	Y	Y	Y	Y	Y
T4 Summary Form	N	Y	N	Y	N	N	Y	N
Record of Employment Form	Y	Y	Y	Y	N	Y	N/N/Y	N
Releve 1	Y	Y	Y	Y	N	Y	Y	N
Cheque Register	Y	Y	Y	Y	N	Y	Y	Y
Payroll Journal or Register	Y	Y	Y	Y	Y	Y	Y	Y
Employee's Detail Pay History	Y	Y	Y	Y	Y	Y	Y	Y
Access Audit Trail	Y	Y	N	N	N	Y	N	N
Month End Report for G/L	Y	Y	Y	Y	N	Y	Y	Y
Employee's Year to Date Report	Y	Y	Y	Y	Y	Y	Y	Y
Employee Profile	Y	Y	Y	Y	N	Y	Y	Y
T4 Summary Report	Y	Y	Y	Y	Y	Y	N	N
Insurable Earnings Report	Y	Y	Y	Y	N	Y	Y	N
Statutory Deduction Report	Y	Y	Y	N	Y	Y	Y	Y
Other Deductions Report	Y	Y	Y	N	Y	Y	Y	N
Job Cost/Department Report	Y	Y	Y	N	N	Y	N/Dept/JobCost	N
Direct Deposit Report	Y	N	N	N	N	Y	N	N
Cheque Reconciliation Report	Y	N	N	N	N	Y	N	N
Statistics Canada Report	Y	N	N	N	N	N	N	N

## PERFORMANCE

Auto Install of Software	Y	Y	Y	Y	N	Y	Y	Y
Ease of Setup	Easy considering flexibility	Moderately difficult	Y	Easy	Easy	Difficult	Extremely easy	Easy
Ease of Use	Easy	Easy	Easy	Easy	Easy	Easy	Extremely easy	Easy
Ease of Adjustment	Easy	Easy	Easy	Easy	Easy	Easy	Easy	Easy
Programmed Backup	Y	N	N	N	N	N	Y	N
Menu Appearance	Good	Clear, but unattractive	Good	Good	Plain, Functional	Clear - Easy to select	Excellent / Pull Down	Clear
Data Entry Screen Appearance	Clear efficient layouts	Clear but crowded, outdated	Good	Good	Dull, cluttered	Clear - Easy to use	Very Clear	OK
General Flexibility	Excellent	Excellent	Good	Some	Poor	Excellent	Some	None
Reporting Flexibility	Excellent	Excellent	Good	None	None	Some	Limited	None



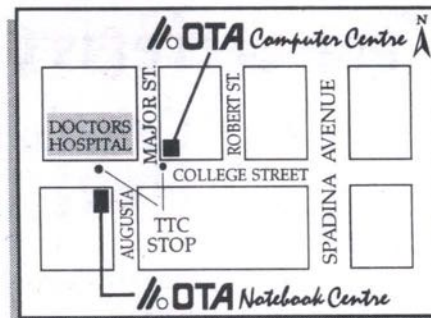


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PowerLite	486 DX/66	TFT Colour	\$5195
CompuBook	486 SLC/33	10" Mono	\$2095
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486 SX/25	4	120*	\$2245
486 DX/33	4	120*	\$2619
486 DX2/66	4	120*	\$3049

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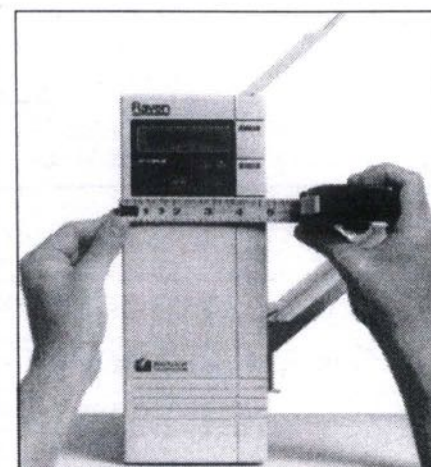
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## Payroll

Continued from page 33

tion calculations, simple customization of the cheque advice and good facilities for locating and correcting errors. It can record costs by department, by code and by job (groups). HELP provides General Ledger interface files for many general accounting programs and provides a concise month-end report for manual General Ledger postings. It prints a variety of reports and forms, including T4's and the Record of Employment. The manual is very easy to follow and fun to use as it takes a humorous approach to the set up of a company's payroll.

**KIS PAYROLL FOR WINDOWS** has taken full advantage of the Windows interface.

Employee #	Employee Name	Status	Category
AM155	Able, Thomas W.	Calc'd	Hourly
BM0980	Brown, Charles J.	Error	Asst/Occasional
DEK114	Davies, Peter W.	Calc'd	Hourly
JAC009	Jacobs, Rene Y.	Calc'd	Piece Work
LIN076	Lincoln, Allison K.	UIC	Commission
MAN087	Manley, Janis P.	Calc'd	View Pay Advice
ODC980	Oberg, Walter D.	UIC	Override
RED334	Redding, Barbara J.	Held	Put "On Hold"
SAM991	Samuel, Robert D.	125	
TIM155	Timmins, Harold E.	UIC	

KIS Payroll for Window's List box displays the status of each employee's end of period cheque.

It uses a Windows control menu for all the payroll operations. Set-up is very easy and fast using dialogue boxes for the entry of employees to the master file. Earnings and deductions are preconfigured so the user need simply click the mouse on the selected options. Time cards and additional earnings are entered quickly and easily to dialogue boxes, which retain the data from the previous payroll run as a default to speed up data entry. A payroll may be recalculated,

amounts can be overridden and cheques can be printed as often as necessary for the payroll to be correct.

You select reports and audit trails for viewing or printing by clicking the mouse. Reports are difficult to read and there is no report prepared specifically for the preparation of payroll remittances.

Help is available both by using the Help function from the control menu, and through a feature called "Advisor" on the control menu. Advisor guides the user through the set-up procedures and the steps necessary for a payroll run. It also advises the user starting the program of procedures that should be completed before the next payroll run. There is also an excellent manual to guide the user through all the payroll operations.

**MAP6** is a new addition to this survey.

It was very easy to install and I had it up and running in no time. The program can be used in two ways. The user can enter payroll data after using the tables and calculating the pay and the program prepares the pay stub, records the data and prepares the T4s. Map6 can also be used as a regular payroll program where the program calculates the deductions and net pay and prints a pay cheque. It can prepare and print T4s but does not prepare a Record of Employment.

**PAYCHEQ CONTROLLER** is a complex, flexible payroll product designed to interface with Real World, Accpac Plus and Timberline accounting and job-cost systems.

The screens and keystrokes are similar to those of Real World software. Menus and data-entry screens are not user-friendly. There are no lookup features for locating employees or codes. Screen prompts and help have been improved since the last

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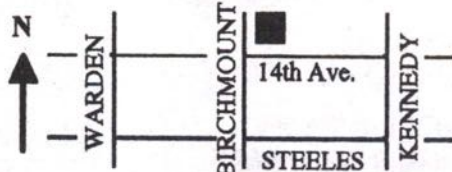
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Overtime	120.00	22.00
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Benefit 2	22.00	22.00
Health	50.00	22.00
Medical	50.00	22.00
Dental	50.00	22.00
Life	50.00	22.00
Regular Rr	50.00	22.00
Overtime Rr	120.00	22.00
Benefit Rr	22.00	22.00
Health Rr	50.00	22.00
Medical Rr	50.00	22.00
Dental Rr	50.00	22.00
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Powerpay's cheque detail report.

review but are still poor. There was no help available with the demo sent for review.

The manual is complete and easy to use and a good tutorial is provided with the system. Earnings, benefits and deductions are unlimited and totally user-definable and as a result the program is very powerful but the setup is hard work because no predefined earnings or deductions have been supplied. Paycheq Controller produces all the reports a business would require as well as Records of Employment, T4s and a direct-deposit interface.

**Paymate's T4 screen.**

Employee: 00000002  
Surname: ABCDEFGH  
Given Name: JANE  
S.I.N.: 999-999-999  
Tax Province: ON

Employer's Address: 18 Fairbank St.  
Scarborough, ON  
M7R 7Y7

14: Employment Income	26,32.00	30: Board & Lodging	0.00
15: CPP Contributions	56.77	31: Travel in Pre. Area	0.00
16: QPP Contributions	0.00	34: Employer's Auto	0.00
18: UI Premiums	78.56	36: Low Interest Loans	0.00
20: RPP Contributions	0.00	38: Stock Option Benefits	0.00
22: Income Tax	567.53	40: Other Taxed Benefits	32.00
24: Insurable Earnings	26,32.00	42: Employer's Commissions	0.00
26: CPP Pensionable	26,32.00	44: Union Dues	0.00
28: CPP/QPP Benefits	0.00	46: Charitable Donations	0.00
30: UI Benefits	0.00	48: Payments to SPSP	0.00
32: Pensionable	0.00	50: Pension Adjustment	0.00
Pension Registration #	0.00		

Paymate's T4 screen.

**PAYMATE** is available in three versions depending on the number of employees to be paid.

Paymate Plus and Paymate 20 provide formulas for the calculation of earnings and deductions. Paymate is compatible with most popular accounting packages. A calculator and notepad are available in all versions. With the new pull-down menus, Paymate is extremely easy to set up and to use. The screens are clear and easy to use and contact-sensitive help is available.

The program also has an on-line manual; simply press Alt M and view the complete manual on the screen. The pay is calculated as the timesheet is entered and can be reviewed on the screen for errors. This product will batch timecards for quick setup and review of payroll entries.

Reporting is very comprehensive with good pay history retention. Personnel information such as benefit plans, due dates for salary reviews and increments, and education and skills information can be added to Paymate 20 and Plus. Job Costing has been added to Paymate Plus this year. Payroll costs can be marked up to include benefit costs and overhead costs can also be added. Paymate Plus is one of the most flexible and easy-to-use products I have reviewed.

**POWERPAY** is an easy-to-use payroll program for a single company.

A multiple-company version is also available. The names of four taxable benefits and six deductions can be defined in addition to those assigned by the program. Payroll can be calculated individually by employee or by pay-period groups. There is good contact-sensitive help. There is no provision for entering manual cheques or after-the-fact

pay. Adjustments to the payroll are limited to adjusting the opening entries at startup and deleting and re-entering a pay record. Powerpay does not prepare a Record of Employment. It does, however, calculate the workers' compensation liability for each employee covered. The program prints T4s but does not produce a T4 summary report.

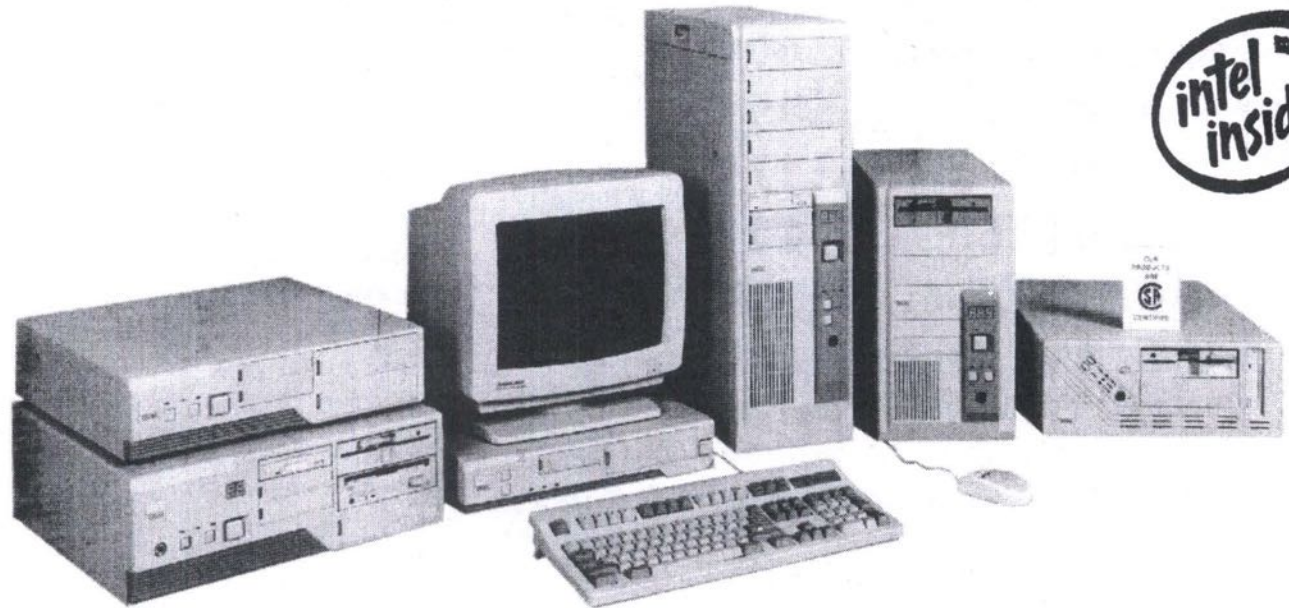
**PAY-CALC** is available in three versions: a single-company version for less than 50 employees, a single-company version for

more than 50 employees and a multi-company version.

Employees' bank account numbers can be entered for automatic deposits. A time-sheet calculator is available to enter and total employee timesheets using daily starting and ending times. There is an unposting feature available to correct errors found after posting of the payroll and a mass change feature is also available to change amounts. The program will track apprenticeship hours. Earnings, benefits and deductions are easy to set

up. Ten fields of personnel information can be entered to an extra-employee screen. Pay-history retention is good and the reporting is flexible. ■

Prepared by Joan Horal, BSc, CGA, and Nancy Hamm, of Joan V. Horal & Co. Inc., a public accounting practice serving small businesses in Vancouver. The firm provides accounting and tax services and consulting services in the selection and installation of microcomputer software accounting and related training and support.



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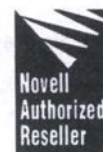
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# Seybold Report

BY GRAEME BENNETT

*The Seybold San Francisco Conference and Exposition is a mecca for designers, computer graphics enthusiasts, desktop publishers, prepress professionals and Information Systems (IS) managers looking to better understand the newest trends in communications technologies.*

This year's conference, held at the Moscone Convention Center (right next to the spectacular new Museum of Modern Art), was an event characterized by exciting developments in color, imaging, workgroup and multimedia publishing, electronic document distribution, type and output technologies.

The event comprised a series of conferences and a trade show, where over 275 of the most important companies in graphics communications showed their wares.

## Computer-assisted Art

There were also several "art galleries" on the show floor, showcasing a wide variety of art, in styles ranging from traditional to outlandish. In one particularly, uh, weird exhibit called the Interactive Gallery, giant robotic tentacles hung from the ceiling. When showgoers held a hand or a foot near motion sensors at the end of a limb, the machine "awoke" and eerily began to follow the observer's movements.

Another provocative display featured a cushioned tube in which passersby were encouraged to insert a hand. Inside the tube, a small handle-like object pulsed and throbbed as you squeezed it. This device was connected via wires to another such tube on the other side of the exhibit. There, another participant was feeling sensations transmitted by your body motions. It brings a whole new meaning to the phone company's slogan, "Reach out and touch someone." We can imagine what that technology will lead to.

Another room featured an Amiga-based Mandala system (from Toronto-based Very Vivid). When showgoers moved around the room, they "tickled" the system's overhead sensors and produced a voice. With the right motions, participants could "tickle" or "arouse" the voice. There were several other similarly kinky interactive exhibits.

## Conference Speakers

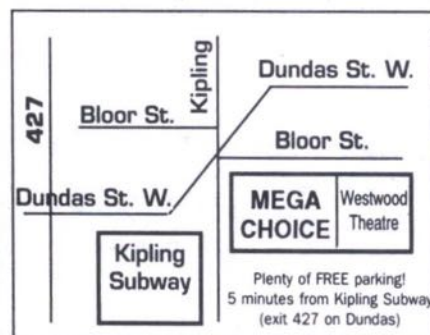
This year's conference lineup included sessions with industry leaders and luminaries such as Microsoft CEO Bill Gates, Quark founder Tim Gill, Adobe head John Warnock, new Apple CEO Michael Spindler, former Aldus CEO (and still chairman) Paul Brainerd, Efi Arizi (of EFIcolor fame) and many other big names in the computer and publishing field. At what might be remembered as the publishing supersession of the decade, Gates (who made his first appearance at Seybold in four years), Brainerd, Warnock, Gill, and Arizi discussed "Publishing in the '90s" in a session moderated by Jonathon Seybold himself. It was suggested that the PC platform had at last arrived as a viable platform for desktop publishing, and that in the coming decade, publishing need not necessarily be paper-based as the boundaries between multimedia communications and the written word are eroded. It is widely expected that the next generation of Power-

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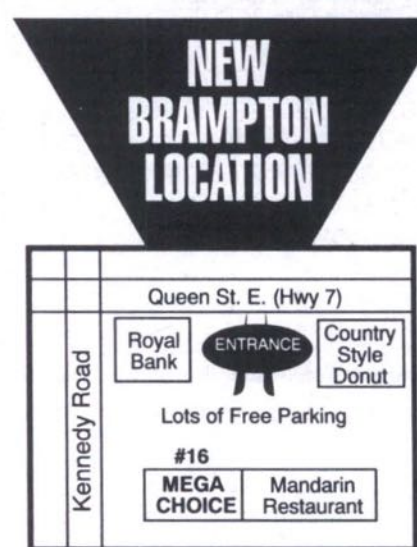
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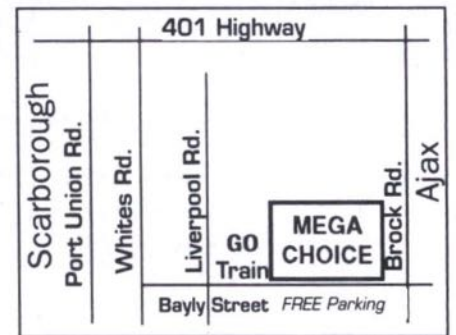
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PC and Pentium desktop computers running true 32-bit operating systems will finally obsolete DOS and the current generation of machines.

Seybold SF is one of two such expos held each year by the Seybold organization, named after founder and head honcho Jonathon Seybold. The organization also publishes several trade journals, including Seybold Reports on Publishing Systems, Desktop Publishing, and Digital Media. They aren't cheap (US\$699 gets you all three), but they are prized by those "in the biz" for their technical depth and advertising-free impartiality.

In the type arena, there are two new products likely to make a dent in the fortunes of the major vendors. Elseware Inc.'s Infinifont and Ares Software's Font Chameleon are both technologies that can synthesize a virtually infinite number of fonts from one master "metafont" and a library of point-and-curve descriptors.

Although the two technologies are superficially similar, they are really quite different, explained Ares Chairman and General Man-

ager Rob Friedman, whom I spoke to at the show. The main difference is that the Ares product is currently a Macintosh product, while the Elseware offering is PC-based. Font Chameleon allows more fiddling with a typeface. Not surprisingly, given Ares' strong background in type utilities (FontMonger, FontMinder), Font Chameleon can be used as a type utility to interpolate between existing fonts, whereas Infinifont is more systemic in nature and behaves in many ways like Elseware's earlier Panose 1.0 and Panose 2.0-font matching systems.

Unlike the Panose system, which allows programs like PageMaker 5.0 to make intelligent substitutions for missing fonts, Infinifont is intended to replace entire font libraries. It's no wonder that Friedman, a founder of Bitstream, left that company to join Ares.

No matter which technology wins out (and we see no reason why they cannot both thrive in the marketplace), there's one thing for sure: the major font vendors of yesteryear had better watch out, there's a new generation on the way. ■

## Common Ground Eyes Acrobat Turf

SAN FRANCISCO (NB) — Newcomer No Hands Software is challenging Adobe Systems in the electronic document distribution arena. No Hands Software's Common Ground for Macintosh shipped in May 1993. At the Seybold Conference and Exposition '93, No Hands Software announced the Windows version of Common Ground, which will ship in December for a list price of US\$189.95.

Acrobat and Common Ground allow users to send formatted documents created on their computers to any other computer — even if it uses a different operating system and even if the recipient has neither the original software nor the original fonts.

Adobe Systems' Acrobat Reader allows users to view, navigate, and print documents in the Acrobat Portable Document Format (PDF). Acrobat Exchange allows users to annotate files as well as view, navigate and print them. Acrobat Distiller translates PostScript language files into PDF files.

The Common Ground Maker converts any document into Common Ground's DigitalPaper format. The Common Ground Viewer lets users navigate and print documents, and supports Microsoft's Object Linking and Embedding (OLE) 2.0 as a server. ■

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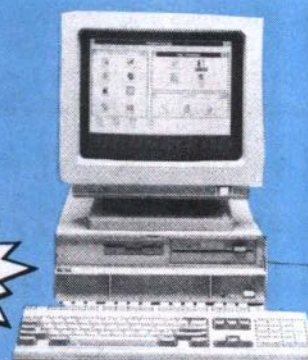
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BY GRAEME BENNETT

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Recently, though, it looked as though the tide had turned at last. Illustrator 5.0 leapt ahead of FreeHand 3.11 in several key areas, including the previously unexplored area of special effects such as the distortions and envelope-shaping effects so loved by CorelDRAW users on the PC.

For years, FreeHand led Illustrator with its ability to edit drawings in "preview" mode. Illustrator users, on the other hand, long touted their favorite's speed and editable EPS (Encapsulated PostScript) output. After all, Adobe invented the PostScript language — it's no wonder Illustrator speaks it so fluently.

Virtually all of the key advantages that previously distinguished FreeHand are now present in Illustrator 5.0: multiple layers, true gradient fills, preview-mode editing, pressure-sensitive tablet support and more. Was the jig up for Aldus?

#### FreeHand

In a remarkable example of version-numbering restraint, Aldus recently countered Adobe's move with FreeHand 4.0. The new release will please longtime FreeHand buffs, and may sway a few Illustrator users over to the Aldus camp at last.

Although the gap has narrowed, FreeHand 4.0 can still claim to lead Illustrator in a number of areas. Refer to the table below for details.

FreeHand maintains superiority in its support for TIFF images (Illustrator requires grayscale and color bitmaps to be saved as EPS files); integrated color separations (Illustrator continues to rely on a separate utility, if you'll pardon the pun).



Illustrator 5.0's new texthandling features include text wraparound.

The new FreeHand also bests Illustrator in text handling — a major turnaround for FreeHand, which has been roundly criticized in recent years for its lackluster text support. Illustrator, mind you, is no slouch in the text department — it's just that FreeHand's text handling went from "fairly okay" to "incredible!" in one great leap.

Ironically, FreeHand's method of linking text boxes resembles that of QuarkXPress more than it does Aldus' flagship product PageMaker. The program's text-handling prowess allows multiple-page documents,

Continued on page 44



# Freehand vs. Illustrator

	FreeHand 3.11	Illustrator 3.21	FreeHand 4.0	Illustrator 5.0
Maximum # of pages	1	1	unlimited	1
color separations	Y, integrated	Y, separate utility	Y, integral	Y, separate utility
Tabs in text	-	-	Y	-
Columns	-	-	Y	-
Text Import/Export	-	Both	Both	Both
Composite paths	Y	Y	Y	Y
Path operations	-	-	Y	Y2
Distortion Effects	-	-	-	Y
Edit in Preview Mode	Y	-	Y	Y
preview selected objects	-	-	-	Y
CD-ROM version available	-	-	-	Y
Bundled fonts	-	-	Y	Y3
3-D object creation	-	-	-	Y*
TIFF support	Y	-	Y	-
EPS Support	Place, Save As	Place, Save As, Edit	Place, Save As	Place, Save As, Edit
Create Editable EPS	N1	Y	Y1*	Y
PostScript on Clipboard	Y	Y	Y	Y
Save as previous version(s)	-	Y	Y	Y
"Fetch aware"	Y (v3.1 was not)	-	Y	-
Read Illustrator files	1.1, 88 (3.x1)	1.1, 88, 3.x	1.1, 88, 3.x	1.1, 88, 3.x, 4.0 (PC), 5.0
Save as Photoshop EPS	N1	Y	Y1*	Y
Network copy protected	Y (v3.1 was not)	-	Y	Y
Tutorial	manual, disk	manual, disk	manual, disk, video	movies on CD-ROM
Acrobat Distiller compatible	N	Y	Y1	Y

\*bundled

1 requires EPS Exchange from Altsys

2 requires FPU (floating point unit) math coprocessor

3 The Adobe Basic Font set is included on CD-ROM with Deluxe Edition

One thing the table cannot adequately show is the advancements in user interface that both programs have made. It is in this area that both titles are most improved. In my opinion, Illustrator has advanced the most (as, some would argue, it needed to!).

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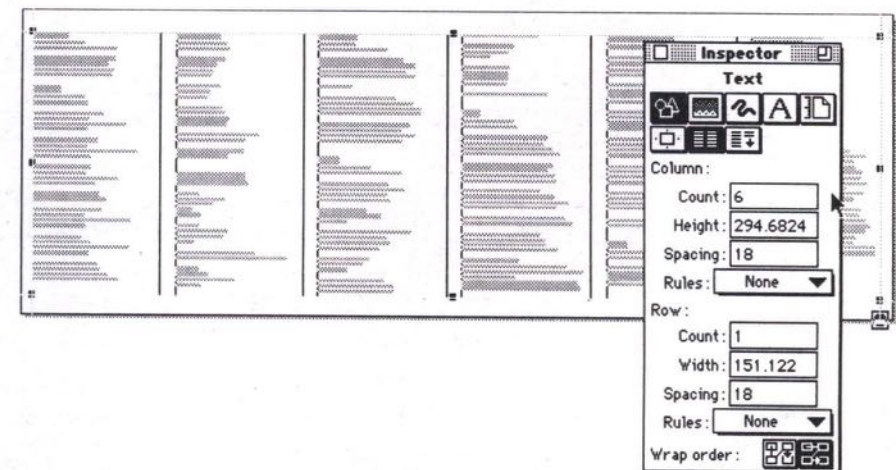
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## Freehand vs. Illustrator

Continued from page 42



Freehand 4.0 supports such features as multiple columns (shown above), text box linking, tabs and drag-and-drop color.

even those with different orientations and page sizes.

Some users may find FreeHand's new user interface mildly disconcerting, though. For example, it eschews the standard "Document Setup..." option found in the File menu of most programs entirely, opting instead to provide a similar service as a pop-up selection in the "Inspector" palette. While this may indeed be a fine place for it, it is unusual.

Illustrator, on the other hand, offers superior "special effects." Although FreeHand includes several of the most important path-based manipulations (combine objects, offset path, etc.), Illustrator offers a greater variety of effects. It is unfortunate that Illustrator requires a math coprocessor (FPU) for its Pathfinder functions to work. A growing number of Macintosh models, including the popular Centris 610 and the new Quadra 605, lack the FPU chip required.

Illustrator also excels in PostScript support, providing compatibility with a previously undocumented feature of Adobe's Photoshop and Dimensions products: PostScript on the Clipboard. This allows you to copy and paste paths, outline art and other object-oriented data between the three programs at

will, without having to import and export disk-based files.

## In the Future

Jim Clark from Altsys informed me that Altsys and Aldus recently agreed to roll EPS Exchange into the FreeHand 4.0 release. This will allow FreeHand 4.0 to save and load files in the Illustrator Encapsulated PostScript (EPS) file format. Among other benefits, this permits FreeHand users to export artwork in a form that can be loaded into Adobe Photoshop and rasterized (turned into a bitmap) at any resolution. Currently registered owners of EPS Exchange need not despair, though. Clark says that a new version is being developed that will convert files to and from Adobe Illustrator 5.0 format — something the version bundled with FreeHand will apparently not do.

At the Seybold Expo, it was broadly hinted that the upcoming PC version of FreeHand 4.x would be able to read CorelDRAW files. We hope that Aldus adds this capability to a future Mac version as well. ■

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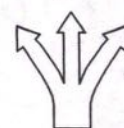
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PC REVIEW

# Adobe Photoshop 2.5 for Windows

BY JOHN MULVIHILL

*A lot of praise attributed to the Mac's power as a publishing workstation is really due to this program. Like Shakespeare, Photoshop not only has no equal; it has no second.*

At this writing there's nothing close to it in the bit-map software spectrum, though rumor has it that the new versions of Micrografx Picture Publisher and Aldus PhotoStyler are worth investigating.

Photoshop performs two critical functions exceedingly well. It allows you to adjust scanned color and b/w photos to professional levels. And it enables you to create complex bit-mapped artistic images that are the life-blood of process color design. Because of these virtues, Photoshop (or a competitor's product with equal abilities) is a must-have program for the desktop publisher, worth every cent of its \$750 street price.

## Scanning Replaces The Printer's Camera

Soon, the desktop publisher will no longer hand over photos to the printer for conversion to halftones by way of an old-fashioned camera, and stripping into keylines. Instead, photos will be converted into scanned images via one of these processes (presented in descending order of quality): Photo CD; high-end flatbed; or low-end flatbed.

A word about Photo CD: It's a revolutionary process, turning 35mm negatives into high-resolution scans and saving them to compact disc — at a bargain price. Some people are bad-mouthing Photo CD because it cuts into their profits. Don't listen to them. Photo CD, or its big brother Photo CD Pro, can provide the quality levels required for any publishing project. Seeing is believing, and your Photo CD output bureau can provide you with plenty of samples to show your clients.

## Becoming A Photo Retouching Whiz

No matter how generated, no scanned image is ready to just pop into your DTP program. It must be adjusted to remove the darkening effects of the scanning process, and whatever mistakes the photographer may have made. Doing this takes powerful software and a fast computer with lots of memory.

The software must carry out two functions: correction and retouching. Correction includes adjusting brightness and contrast, removing color casts, sharpening blurred images, and resizing. Retouching takes in the reshuffling of elements within the photograph: removing an unsightly telephone pole, or unwanted shine from someone's forehead.

With its powerful gamma correction abilities and built-in densitometer, Photoshop has no equal in photo correction. It even tells you when you've gone too far with sharpening and clipping will occur, or when your color choice is out of gamut (beyond the range of colors supported by the output device). It shows you a color image in multiple renditions, and the effects on all of them caused by changes in saturation or a color element. It lets you work on process separation layers independently. In short, it replaces the printer's camera for half-toning.

## The right video system for the job

Photoshop imports images directly from Photo CD and your scanner, and offers different levels of adjustment controls, depending on your expertise. You may require training in photo correction to complement the reading you'll do (and Photoshop's excellent documentation). There's a lot to learn. But don't pay attention to scare stories about image manipulation being the domain of a few high priests of prepress.

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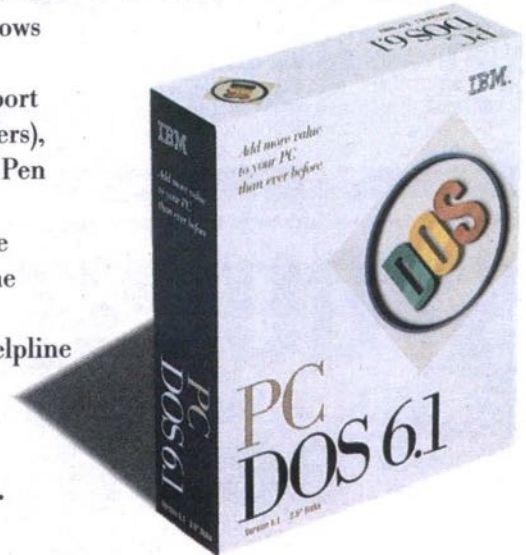
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And there's one more reason that goes beyond the software—PC DOS 6.1

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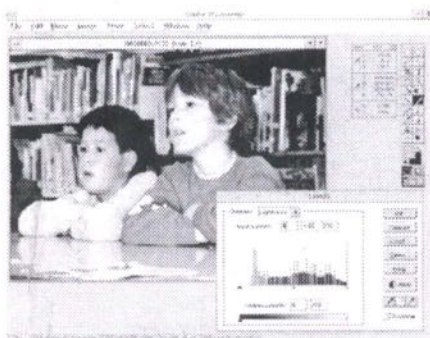
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Photoshop's image correction tools rival those of proprietary prepress systems. The built-in densitometer remains active while doing gamma correction using the Levels histogram, and shows you the current density of any portion of the image, before and after correction.

With the right graphics board and software, you too can create great halftones.

My NEC 5FG monitor and ATI Graphics Ultra Pro video board (with 2 MB of VRAM) impress even jaded professionals with their faithful reproduction of scanned images and colors (both Pantone and process) created in CorelDRAW!, PageMaker, or Photoshop. Exact representation of reflective colors by a projection device is never possible, but with careful calibration and some experience, a setup like this will let you do professional-level color correction work.

#### Switching Channels With Photoshop

There's a lot to go get to know in Photoshop. Masks, alpha channels, selections, filters . . . these and more new concepts must be absorbed before you can create Photoshop's

spectacular artistic effects.

The effort is worthwhile. Working with process color gives you tremendous design opportunities; Photoshop lets you exploit them. You can merge and overlay images, combine them with type, and have images appear as a translucent screen over other images. Have an interesting piece of colored fabric you'd like to use as a background? Scan it and use it! Import text from CorelDRAW! or other applications, along with vector graphics.

I encountered only two weaknesses with the PC version of Photoshop. First: its inability

to export clipping paths. The bug is being worked out, and may well be fixed by the time you read this. In the meantime, I have found a way around it with Aldus Freehand.

Then, I noticed Photoshop's tendency to crash when other programs were running, or even when running alone with large image files. It wasn't for lack of RAM or disk storage.

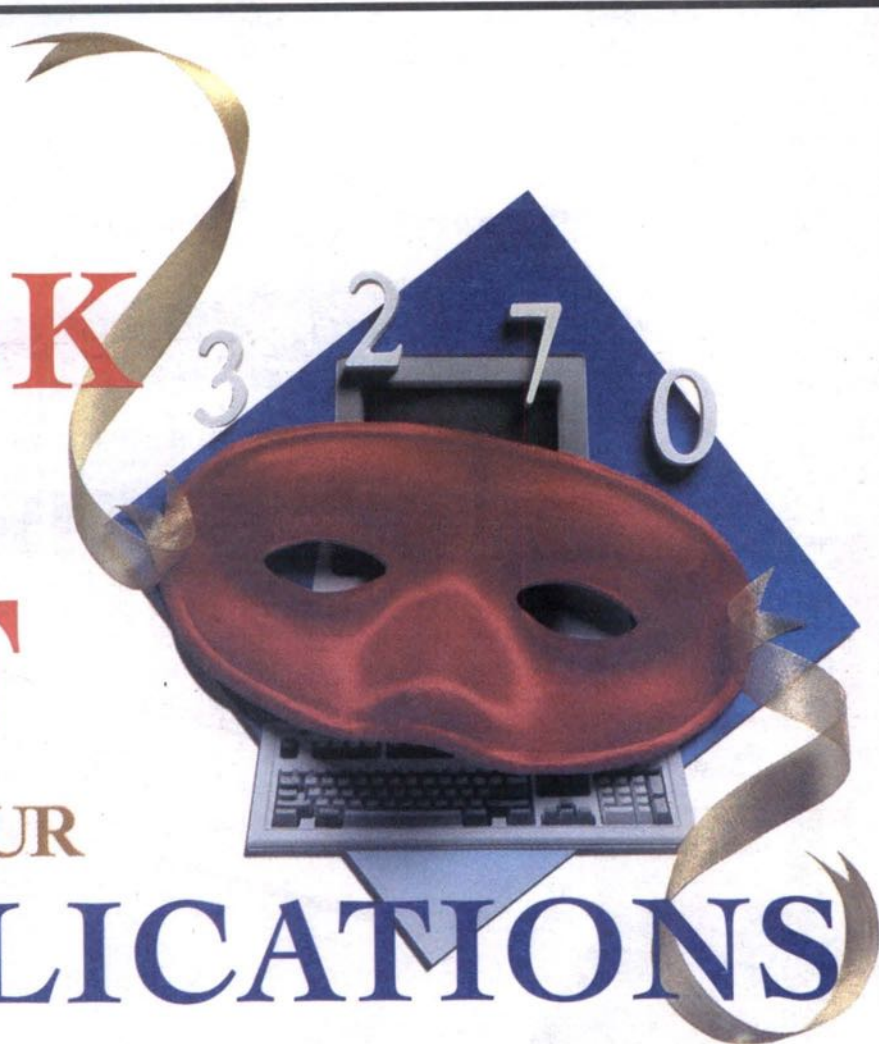
According to Adobe on CompuServe, the problem is reduced when you use a different logical drive for Photoshop's own swap file, and the Windows swap file. I tried this, but still get more crashes than I would consider acceptable — though nowhere near enough

to make the program unusable.

Photoshop lacks the object-layering feature found in the upcoming Micrografx Picture Publisher, but if you're new to this type of software, you'll probably be too busy grasping a hundred other concepts to miss it. We can only hope that Adobe, Aldus and Micrografx continue to push each other to new heights of excellence in bit-map software. ■

John Mulvihill is a partner at Riverhill Micropublishing in Vancouver (604-684-3214)

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#### COUNTERPOINT

##### PhotoStyler 2.0 Keeps Pace

At the Seybold Expo in San Francisco (see report, p. 39), Aldus went to great lengths to demonstrate that its PhotoStyler application was not just an also-ran in the image-retouching race.

The company distributed copies of a document that detailed "76 ways Aldus PhotoStyler 2.0 Beats Adobe Photoshop 2.5."

This document, of course, doesn't detail some of the areas in which Photoshop maintains a decisive edge, such as in its support for PostScript Level 2's JPEG-compressed EPS, rasterizing of Encapsulated PostScript files, and object-oriented drawing tools — all areas where Adobe, as the developer of PostScript, has a decided advantage. Nevertheless, PhotoStyler bests Adobe's offering in several key areas:

- Built-in color management system
- Multiple previews for changes
- Ability to load and edit portions of an image
- Built-in image management tools
- Multiple transformations at once
- OLE Support
- Multiple Undos
- Support for math coprocessors

Adobe Photoshop 2.5 offers none of these Aldus PhotoStyler 2.0 features.

We also note that, out of 93 benchmark tests performed, PhotoStyler was faster than Photoshop in two-thirds of the functions. On an 8-megabyte test image, PhotoStyler proved to be an average of 33% faster than Photoshop in the application of filters and effects.

— Graeme Bennett

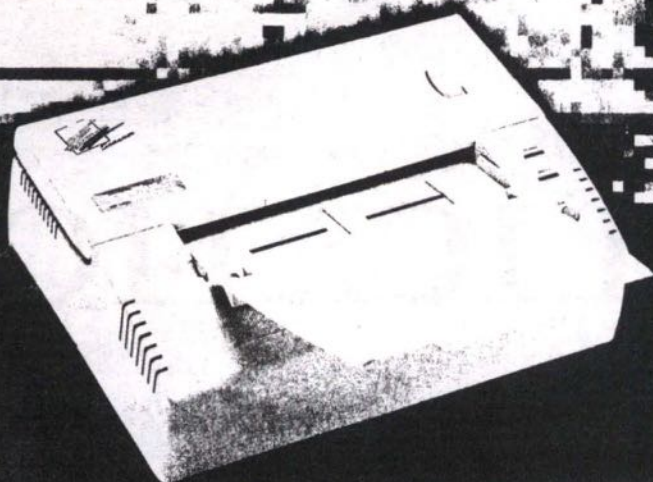


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\*\* Can only scan 8.5" X 11" letter size page, ADF Capacity only 25 sheets for IIP

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- limited width of image
- Susceptibility to human error
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### Sheetfed

- Affordable
- cannot scan book directly, copy needed

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- Not cost effective
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Recognita (4 languages)	\$235	\$299
TextPert OCR(32 languages)	\$79	\$Nil
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Photostacker	\$129	\$149
XFormer (Raster to vector)	\$199	\$399
Remark Office OMR	\$199	\$399

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# FirstClass

## BBS And Conferencing Software

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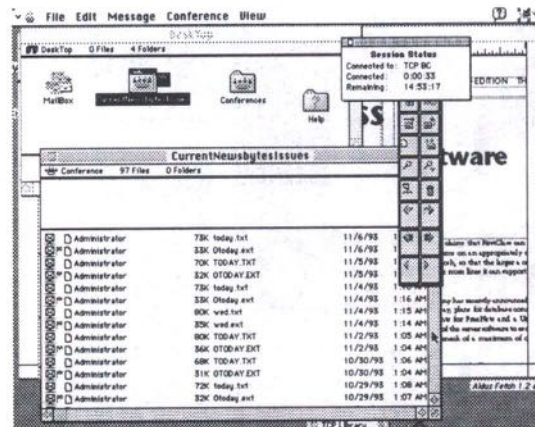
BY DOUGLAS ALDER

**Product:** FirstClass  
**Publisher:** SoftArc Inc, 805 Middlefield Rd., Suite 102, Scarborough, ON Canada M1V 2T9 Tel: 905-299-4723, Fax: 905-754-1856, FirstClass BBS: (416) 609-2250

**Requirements:** MacPlus or better, hard drive, 20 MB 2400 baud modem, telephone line.

**Price:** FirstClass Macintosh Server \$95; five regular users \$395; Regular User Pack \$595 (10 users); Telecom User Pack \$395 (50 users); \$595 (100 users). Educational and hobbyist BBS pricing are also available from SoftArc.

**Available:** from MacWarehouse in U.S. 1-800-255-6227 or The Mac Store in Toronto 1-416-466-8107.



ca Online's interface, both of which stop you dead in your tracks as soon as the system goes off to do something, such as get the mail, or download a file.

#### Setting up a FirstClass System

From a system administrator's perspective, FirstClass is a delight to work with. Setting up and maintaining a system is very easy. Although not flawless, most things are very easy to do and actually work, which is itself a rarity in the world of telecommunications. Gateways between systems are particularly useful and though a tad arcane to set up, are very dependable once established.

#### FirstClass for Windows

The good news about FirstClass is that the company has recently brought out client software for Windows, so that Windows users can log on to a FirstClass system, with the same relative ease as a Mac. In theory at least. In reality, getting a Windows system working with a modem has proven to be more complicated than getting most Mac systems up and running, but once working both users get the same basic interface. There are some minor differences, including no support for styled text on the PC as well as no support for a PICT viewer on the PC.

#### More than just a BBS

SoftArc, although extremely successful in penetrating the market for an easy-to-set-up-and-use BBS, has been focusing its efforts more on the corporate E-mail, conferencing, workgroup area. It views its competition as Lotus Notes. If you think about it, this makes sense — you can sell a lot more E-mail systems than BBS systems, because almost any business with over four people can justify E-mail.

The bonus of going with FirstClass is that it adds conferencing capabilities to the system, and opens the system to remote users. If a company has sales people on the road, a system like this can pay for itself almost immediately in improved communications between the office and the field. If a company has branch offices in other locations, FirstClass' gateways are a way of giving almost real-time communications between offices without paying for a dedicated telephone line.

Although FirstClass, in the current version, 1.6, lacks some of the finesse of packages like QuickMail, CC: Mail from Lotus and Microsoft Mail, it makes up for these shortcomings by being built on a more robust telecommunications foundation (translation — the gateways actually work) and offering the benefits of multitasking, while online.

The company is promising a new version before the end of 1993 that it claims will address many of the issues around E-mail polish. SoftArc claims that FirstClass can run up to 22 modems on an appropriately configured Macintosh, so that the larger a company grows, the more lines it can support.

#### Future Plans

The company has recently announced an Internet gateway, plans for database connections, discounts for FreeNets and a Unix-based version of the server software to escape the Mac-bottleneck of a maximum of only 24 lines.

#### Improvements We'd Like to See

FirstClass is a visionary product and as such suffers from a few hair-brained ideas about a user interface. SoftArc promises to address some of these issues with V 2.5, a free upgrade scheduled to ship in mid-December.

It is difficult to log onto multiple FirstClass systems, as the client software lacks any kind of phone-book management.

The software, when used on a network, will frequently log off when a resource-intensive application such as QuarkXpress is running in the foreground. This results in a 30-50 second delay, while the software sorts out over the network what has happened. The company blames this on Apple, but we do not see this behavior in other network applications.

FirstClass supports styled text in messages. The company created its own method of doing this, instead of adapting an existing system such as RTF. This makes it difficult to create a batch of styled messages. The product also offers the capability of displaying text messages and PICT graphics, by Option-double-clicking an attached message. We would like to see this function expanded considerably to include TIFF and EPS as well as support for the Claris translators, so that virtually any word processing file could be viewed in this manner. It is a great concept that needs a wider execution.

#### Conclusion

This description only scratches the surface of what FirstClass can do. Suffice to say that if you are considering a corporate E-mail, conferencing system or a BBS and Macintoshes, or if ease of use is an issue, you should look at FirstClass closely.

A bonus is that this is made-in-Canada software, and if you buy it, some of your cash can stay home. ■

#### Macintosh BBS Market

For years, the Macintosh has been the poor cousin in the bulletin-board software market. Although Mac users were active in the online community, most people did not use Macintoshes as servers. Even Macintosh user groups would often use IBM-PCs and software like the Major BBS, PCBoard and TBBS to deal with their Mac membership.

That has all changed in the last couple of years with the advent of FirstClass, which seemingly overnight has become a standard for many Mac user groups, as well as many businesses. People are actually buying Macintoshes just to run the user-friendly FirstClass software. People who never would have considered attempting to deal with the complexities of a DOS-based BBS are happily using FirstClass. According to SoftArc, the software currently can support as many as 24 phone lines, 6,000 users and a 98-percent activity ratio. Toronto's own MAGIC BBS is one of the larger FirstClass systems.

#### What You See . . .

FirstClass software is a "user friendly" GUI-type front-end for online communication. Instead of logging on to the usual text-only, line-based system that many people assume to be the only way of communicating with BBSes, you connect to a FirstClass system and see file folders and icons representing conference areas and message files.

#### Multitasking, Multithreading

In addition, everything in FirstClass is multithreaded; that is, if you open a conference with many messages, the message list will continue to download, but you can immediately double-click and start reading messages you are interested in. The same applies to downloading and uploading. A proficient FirstClass user might log on to a system, start a download, switch to the message area, start reading and responding to his or her mail, start an upload, switch to another conference and so on. Everything keeps moving in all the areas.

There is a slight slowing down obvious as the system focuses on one or other task, but once you have tried a FirstClass system, you may find it frustrating to go back to something like CompuServe's CIM or even Ameri-

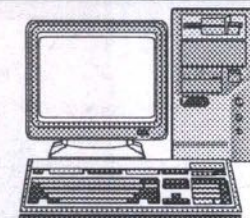
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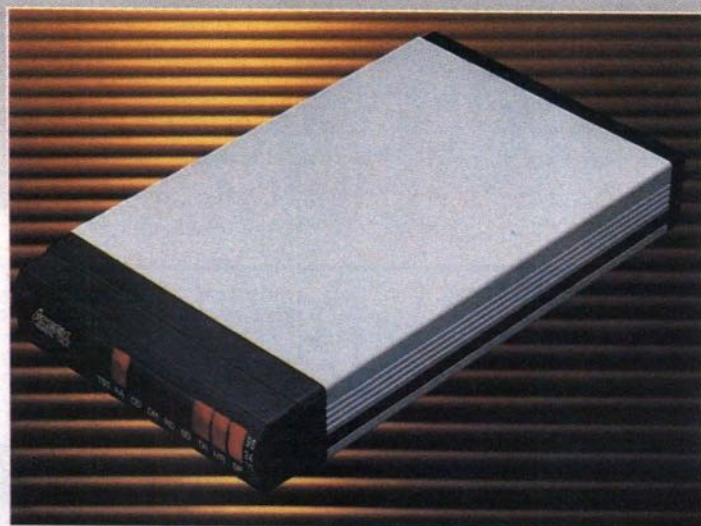


**commtalk** BY JAMES MACFARLANE



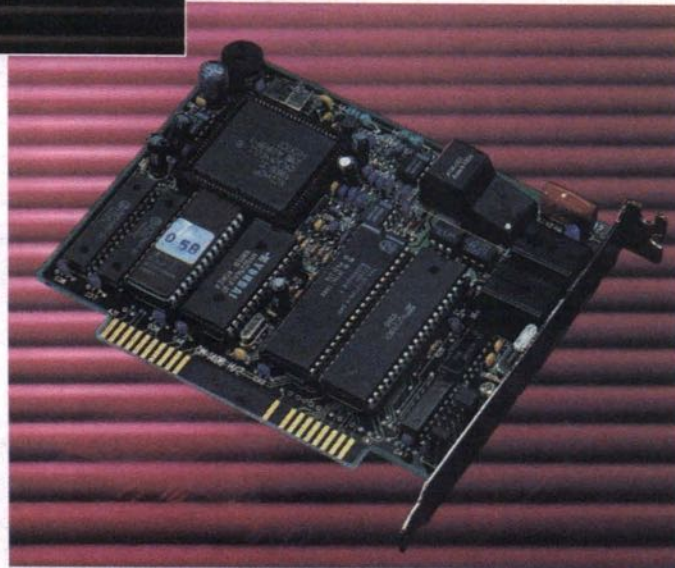
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Whether you're a veteran BBSer or an Internet neophyte, learning some on-line street skills can make your on-line time more productive and enjoyable. I've been BBSing for over 10 years now and I like to believe I've developed some good on-line habits.

When going on-line you have to know how to navigate both your communications program and the many BBS programs you end up connecting to. For a beginner this can be a confusing and frustrating task unless you know some simple shortcuts.

### Surfing The Learning Curve

Remember: What you can't remember your computer can remember for you. My best advice is to capture everything you do to disk. Every logon, every chat, every Email session. I'm careful to do this every time I log onto a BBS. I name my files with that day's date: "oct1293.txt", so when I want to call something up later, I have a better idea of where to find it.

Saving everything can be useful because information often passes by on your screen that you find comes in handy a week later — like that 1-800 tech support number for the software package you need help on or the address for the book publisher you're looking for. Maybe it's a good joke, or a good quote that you want to remember. If you capture everything to disk it will always be there when you need it.

Another great benefit of capturing everything is that you don't have to keep going back to the Help menus over and over again. On the shelf over my monitor I've got several "cheat notes" taped up. I've gone through my captured data and made handy reference charts by simply cutting and pasting bits of Help menus. It's much faster and easier to find something on a big piece of paper than scrolling through screen after screen of Help files.

### Gasp! I've Been Hacked!

Unfortunately BBSes have unjustly gained a bad reputation for spreading software viruses. Yes, it does happen, but not on the scale that you would imagine.

There are ways to protect yourself: Ensure that the BBS you use either scans its downloads or obtains them from a pre-scanned source such as a CD-ROM. Check which virus-scanning software they're using. Is it up-to-date? If the system runs on a PC, how do they scan Mac software? Can they? Do they?

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own virus protection. Take the precautions you feel will give you peace of mind, which usually means investing in your own virus-protection software.

After running several BBSes I've discovered how incredibly careless people are with their passwords. I've received membership applications where people use the same word for both their username and password. This is plainly stupid. I've also seen people's accounts hacked because they use a family member's name as their password.

"Well, it's something I can remember," one might argue. It's something someone else is going to remember, too. Don't do it.

Most of the time people's accounts are hacked because they're plainly careless about typing in their password in front of co-workers, classmates or friends. One user of a BBS I used to run called me up because his password didn't work anymore. A classmate of his had logged on using his password and after downloading several megabytes of files, changed his friend's password, effectively locking him out of his own account.

Another bad habit is to use the same password on every BBS. All it takes is one hacker or one dishonest sysop to get you in trouble. Choose a unique password for every BBS you call. If you're a sysop, don't use the "your mother's maiden name" method of password verification either. You aren't the only person in the world who knows it and it's also on public record.

The best thing to do is choose a random password containing both numbers and letters. Make the password at least six characters long. If you enter it in a public place frequently, like in the workplace or classroom

it's a good idea to change it frequently. Cheat notes can help but keep them hidden.

#### Information Overload

Every day 70 megabytes of messages appear in the Internet newsgroups. That's enough data to fill a 2,000-page notebook. Of course it would be silly to try to digest all of this information in one day, or even a year. Even by scanning messages selectively I still end up sifting through 150K worth of stuff every morning.

Protecting your sanity from information overload is no easy task. We want to stay current and informed, but at the same time we want to skip over the information that's not immediately useful. Finding a balance can be difficult. Once again, capturing everything to disk is helpful. If you come across something that's not of immediate interest, just let it scroll by and get to the next message.

Often the BBS software (or off-line mail reader) you use can help in eliminating the "noise" found in a lot of on-line newsgroups and conferences. The most powerful method for sorting through the information is something called "threading."

When someone writes a message, someone usually replies to it. The link created between the two messages is called a thread. As more messages are written new threads are created. As more replies are written the interconnectedness of the threads becomes more complex. Although threads can become extremely complicated we have the help of software to present the messages in a simple, organized manner.

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## CommTalk

Continued from page 51

Once you realize how simple the organizational structure is, you can start to use threading to both ignore the messages you don't want and to quickly locate the ones you do. Exactly how you do this depends on the system you're connected to. On the sys-

tem I use, Internex Online, I get a choice of several different news-reading programs. I choose to use one called "threaded news reader" or TNR.

TNR allows me to both read messages sequentially or switch to threaded mode. When reading sequentially I get the messages in the order they were written. This means they're not in the order according to

thread. While reading sequentially I can choose to "junk" any unwanted threads. The news reader will go through and ignore all of the messages contained in that thread.

If I'm searching for a specific topic in an area with hundreds of messages I usually choose Threaded mode. I get to see the list of topics in each thread. I can then choose to follow each thread individually.

Threading allows me to cut my message-reading time in half. It also reduces the frustration of sitting through meaningless flames and arguments that often spring up between individuals.

### Tools You Will Need

Sometimes you need to locate something that you've captured, but it's buried with megabytes worth of other stuff you've captured. You should try to obtain a good file-and-string search program. I use one called "Li". It's a Windows shareware program (US\$20 — Third Millennium Technologies, P.O. Box 852382, Mesquite, TX 75185) that allows you to search your entire drive or branches of directories for strings. It allows you to perform Boolean operations as well (search for files containing "cd-rom" and "Amiga" etc.). A string-search program can quickly locate information that you've captured without you pulling out your hair. It's well worth the investment.

Another item I came across is a service that sells archives of Internet newsgroups on CD-ROM called NetNews On CDs. This can be really useful for doing all kinds of research.

For example, suppose you're trying to get your BBS program running with a certain door module but keep running into errors. Pop in a CD-ROM and scan for the name of the program you're using and chances are, someone else has already run into that same problem — and someone else has already come up with the answer. It sure beats sitting on hold paying long distance charges for technical support.

The NetNews on CD products consist of two series of CD-ROMs, known as the "general" and "specialized/regional" series. The general series contains the mainstream USENET newsgroup hierarchies including the alt newsgroup hierarchies. The newsgroup hierarchies included in this series are alt, comp, misc, news, rec, sci, soc, and talk.

The specialized/regional series contains other specialized newsgroup hierarchies and the various regional newsgroups hierarchies: bionet, bit, biz, ddn, gnu, hiv, ieee, k12, pubnet, sura, u3b, uunet, and vmsnet. The regional newsgroup hierarchies included in this series encompass the various U.S. and International regional hierarchies.

Each issue of NetNews on CDs contains approximately 600 megabytes of news. All issues are produced as soon as the sufficient amount of news is collected, and shipped within 30 days of the last day covered by the disk. With the current (April/93) daily news volume, it has been estimated that each issue in the "General" series would cover a period of approximately two weeks, while each issue in the "Specialized/Regional" series would cover a period of approximately four weeks.

The CD is currently being published in the standard ISO 9660 format. News-reading software for the Unix and Macintosh platforms is currently included on the disk. Other platforms which support the ISO 9660 CD format (such as DOS with MSCDEX) are also capable of retrieving the data contained on the disk. DOS platform news-reading software is currently under development and will be made available in the near future.

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## ANALYSIS

# The Talkin' Listenin' PC

BY GEOFF WHEELWRIGHT

*Star Trek has a lot to answer for. Since the famous science-fiction television and film series was first shown in 1966, the public has come to expect that it should be able to control computers by talking to them — and having them talk back.*

Even the evil and murderous HAL computer in Stanley Kubrick's film *2001: A Space Odyssey* helped users get used to the idea of a listening, talking computer.

But now that sound- and speech-recognition capabilities are finally becoming common to desktop personal computers as sound boards and microphones are added to office PCs, the question arises: Do you really want your PC to listen to you — and have it reply?

When this trend started a few years ago, there wasn't a great deal of software to support these sonic appendages. In recent months, however, enough new voice-handling software has been introduced to the market that users can realistically think about picking up that microphone sitting at the side of the PC and actually using it.

The most popular application for this is "command and control," whereby common keyboard commands

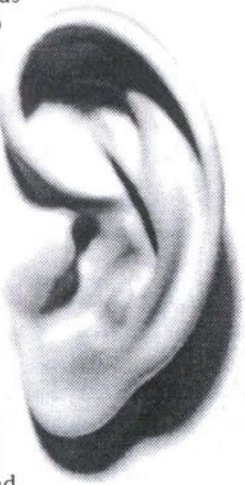
can be "spoken" to the PC rather than you having to type them. In principle, this is a fine idea. Manufacturers have been trying hard to make it a reality since the days of the old Apricot PC portable (a non-PC-compatible system introduced in 1984 that offered limited speech input).

Trouble is, computers just aren't very good at recognizing what people say. They have a hard time with the fact that 10 different people can pronounce the same word 10 different ways. The method around this is to "train" the PC's sound system to recognize a given voice by building a stored "profile" of the way individual users say their commands.

This is the way the command-and-control recognition system in Microsoft's Windows Sound System — along with a number of other popular sound systems — works. It is far from perfect, but for those who really want to be able to control their PCs by voice, it is a reasonable "halfway house" between keyboard or mouse-only data entry and full voice recognition.

The biggest problem with this application of voice technology is that it requires users to spend far too much time training the voice recognition system. You have to sit in front of your PC, endlessly speaking all the commands you want it to recognize — while looking and feeling like a complete idiot.

And even when the system has been trained to recognize your voice, it can often be thrown off by background noise. If someone outside is using the photocopier, the fax machine is beeping or the air-conditioning has suddenly been switched on, the back-



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Thursday	January 20	11:00 a.m. - 6:00 p.m.



Continued on page 55





# Throne Computer Systems

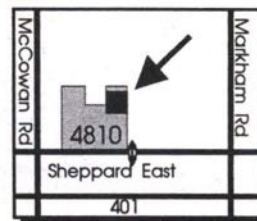
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512K 16 bits Super VGA Card  
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Sound Blaster compatible card  
Built-in math co-processor in 486DX  
Mitsumi CD ROM Drive  
Keytronic mouse, Speakers

#### Software include:

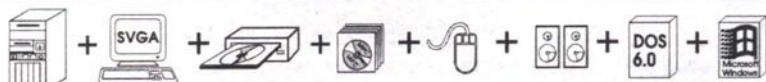
75 Meg Programs (see below)  
MS 6.0, Windows 3.1 with manuals & disks  
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World Almanac, Roget's II, Quotations,  
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2 years labour & 1 year parts depot warranty

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486-66DX2, VESA Local Bus \$1999.-



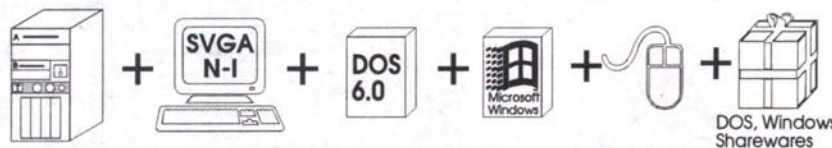
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Mini-Tower with 230W CSA Power Supply  
512K 16 bits Super VGA Card  
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**\*\* Free MS DOS 6.0, Windows & 75 Meg of Programs \*\***



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Jumbo Int 250M Tape Drive \$ 235  
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Panasonic 3 1/2" 1.44M \$ 55  
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WP 6.0 Windows upgrade \$ 176  
WP 6.0 Windows full version \$ 400  
WP 6.0 DOS comp. upgrade \$ 176



## Talkin' PC

Continued from page 53

ground sound may become different enough to confuse the system.

The best way to eliminate this problem — and that of having to move close to the microphone every time you want to use the voice system — is to wear a telephone operator-style headset that includes headphones to listen to the sound system and a wrap-around unidirectional microphone that sits only inches from your lips.

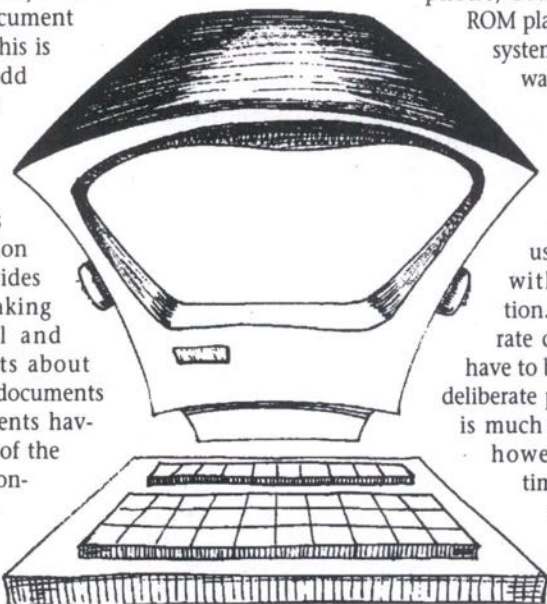
Recognition under these circumstances is actually quite good. You will, however, have to get used to the idea of being tethered to your PC. Get up quickly and you'll find your headset, microphone — and anything else you may be wearing from the neck up — being dragged off your face.

Voice control does offer huge advantages for certain applications, particularly for visually impaired, blind and physically challenged users. The fact that marketing departments of large software and hardware companies think there is a general-interest market for voice-based PC add-on products does a great deal to drive the quick development of innovative new voice products.

### Voice Annotation

The second major area where voice is expected to make major inroads is that of document voice annotation. This is where users can add voice "notes" to their documents for review by others.

The idea here is that voice annotation of documents provides a quick way of making pointed, personal and accurate comments about the content of the documents without the comments having to become part of the textual or graphic content of the document. Thus changes can be



requested to a document without users having to type out those changes.

Voice annotation is expected to be particularly useful in workgroup situations where a number of people might be collaborating on a single document, with a single person designated to co-ordinate and make the changes. By simply using voice annotation as the document is passed around the workgroup over an electronic mail system, the project co-ordinator can make all the changes at once without having to worry about using specialized "versioning" software to keep track of them.

Voice annotation is also supposed to be useful in making confidential comments about financial figures in spreadsheets or making comments on marketing presentations before they are completed. Any situation where, in the past, you might have dictated a note to be typed up and attached to a document you are reviewing is thus a candidate for voice annotation.

Just how well voice annotation eventually works is likely more of a cultural issue than anything else. In the short term, technology will be the limiting factor as not all systems will have sound capabilities and microphones. But in the PC world's desperate search to "add value" to their systems, this will not last long. Within two years, most PCs will come with speakers, a microphone, built-in sound, CD-ROM players and operating system-level sound software.

As the number of PCs with these capabilities ramps up, more users will start to use and experiment with voice annotation. But in the corporate community, it will have to become a matter of deliberate policy before there is much change. After all, however much extra time it takes, there is a certain amount of comfort to be

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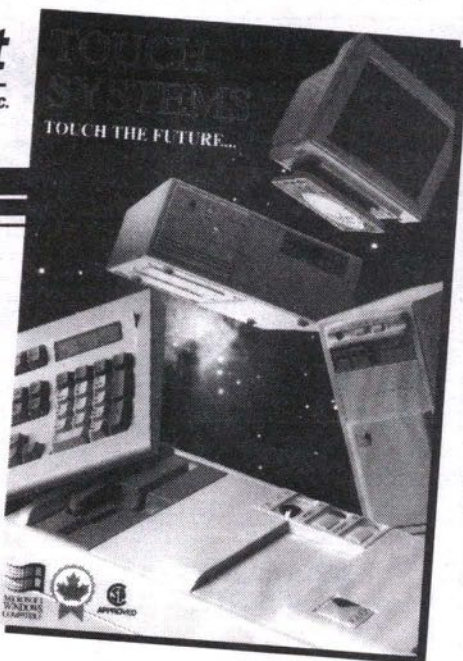
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## Talkin' PC

Continued from page 55

gained from knowing that all internal memos, documents and communications have to be typed, copies made and records kept. If these simply become electronic audio "Post-It" notes that can be deleted as soon as they are played, the questions of audit-trailing, accountability and responsibility come into play.

And until those questions are answered, voice annotation can never become a key part of the way people do business in the 1990s.

### Voicemail And Answering Machines

One immediate use for voice technology in PCs becomes clear when you marry it to data communications equipment. With the right software and a modem, you can use your PC to answer the phone, then have the PC's voice system play your stored outgoing message to callers and finally record the voice of the caller as a message on your hard disk.

The technology to do this is not particularly clever or difficult, and provides an instant and useful purpose for having voice functions on a PC. It is not, however, a cheap alternative to a tape-based answering machine nor always an effective one to a corporate-wide voicemail system.

Traditional answering machines can now be had for less than \$100. Meanwhile, increasingly popular corporate voicemail systems provide a much richer set of "drill-down" and transfer functions than you will get from the "answering machine" capabilities of this kind of PC-based voice-handling software.

It must also be pointed out that, at least for the moment, recording human voices on your hard disk is not a very effective use of disk space. If you have ever played with the voice-recording functions in Microsoft Windows or the Apple Macintosh, you will know that even short voice messages can often take up an inordinate amount of room on the hard disk.

### Microsoft At Work

One of the best bets for use of voice technology lies with Microsoft's Microsoft at Work operating environment. Microsoft at Work is what Microsoft calls "a new software architecture to make a wide range of office tasks easier to perform and more cost-effective to accomplish." At its launch in June, the initiative was supported by more than 40 companies representing the office automation, communications and computer industries.

Products based on the Microsoft At Work architecture are being developed and market-

ed by providers of fax machines, copiers, printers, handheld devices, telephone systems, network services, semiconductor chip sets, PC peripherals (such as fax and fax/modem PC add-in cards) and third-party software. Partners announced by Microsoft include Compaq Computer Corporation, Hewlett Packard, Muratec (formerly Murata), NEC Corporation, Northern Telecom, Ricoh, Xerox Corporation and 33 other companies.

It doesn't take a lot of imagination to see how the voice-handling capabilities of Windows might be harnessed when linked to Microsoft at Work-based systems. For example, Microsoft says that telephones based on the architecture will have easy-to-follow graphical point-and-touch screens to replace the complex button-and-code combinations needed today for common tasks such as transferring calls or checking for voice-mail messages. These telephones will be "interoperate" with Windows-based personal computers, printers and other peripherals.

This is a key element in the Microsoft strategy as it means that Windows PCs will be able to "hook into" office equipment based on Microsoft at Work technology and communicate with it. You would, for example, be able to use this facility to tell which of the telephones throughout your department were busy so that you could route calls to an appropriate person.

"Software technology is the key to making the features of office products easy to use and to getting the information to the user when, where and how the user needs it," said Microsoft chief, Bill Gates, at the New York launch of Microsoft at Work in early June. "We are combining our expertise in operating systems with partners who are technical and market leaders in related product areas. Together, we are working to establish a broad and open software platform on which companies can base innovative new

Continued on page 58

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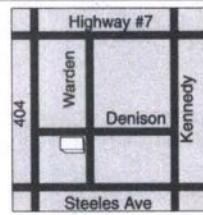
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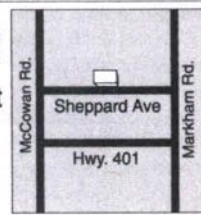
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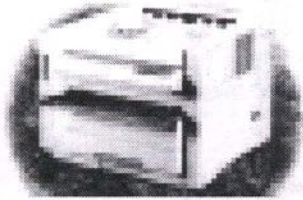
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## Talkin' PC

*Continued from page 56*

products and business solutions to meet customer needs."

He also stressed that this new software architecture is compatible with existing office devices. "Microsoft At Work is a very practical, pragmatic and evolutionary approach," said Gates. "People can start with today's machines, add one or two new devices based on Microsoft at Work, integrate them into an existing work environment and continue to build from there."

It should be made clear here that Microsoft at Work is not Windows — or even a subset of Windows such as Modular Windows. It is a multitasking operating system in its own right that will allow Windows Messaging and Telephony APIs (Applications Program Interfaces known as MAPI and TAPI) to exert external control of some of its functions.

## True Voice Recognition

Microsoft at Work, however, will only go so far to make voice functions on PCs actually useful and relevant. The Holy Grail of voice computing, however, is likely to remain complete voice recognition — where you can actually dictate word processed documents to your PC word by word.

In order to actually make this work, it is going to require huge "look-up" dictionaries so that the PC can match up the voice pattern it hears to the word to which it corresponds. These will have to be very exact as there are many words that sound so similar but have hugely different meanings (e.g., "loaf" instead of "life" might be the kind of

substitution an ill-trained PC would make). The PC will also have to understand context so that it doesn't use "wear" instead of "where" or "weight" instead of "wait."

Finally, it will also have to be able to understand accents — and this is where it's hard to see how an extensive voice-training component can ever be eliminated from true voice recognition systems. And it will have to go a lot further than "You say tom-maw-toe and I say to-may-toe." A broad understanding of accents will also require some familiarity with idiomatic expressions.

Some highly praised work has been done in this area and resulted in innovative products from a number of firms including Dragon Systems, IBM and Kurzweil Applied Intelligence. None of these systems yet offers complete and totally reliable recognition at dictation speeds, but they do suggest that within a few years this should be possible.

## Conclusion

It would appear from these trends that the use of voice technology may have started to find its niche with both speech-embedding and command and control systems. It is demonstrably useful to be able to embed speech messages in some documents and it is also quite helpful to be able to bark a limited set of commands accurately to your PC through a microphone.

If speech-embedding technology continues to use better compression (so that messages don't take up so much disk space) and voice-command systems can further improve on their accuracy of recognition, while cutting down on the "training" time of the system, then these two applications may drive voice technology to final success in the PC market after more than a decade of experimentation. ■

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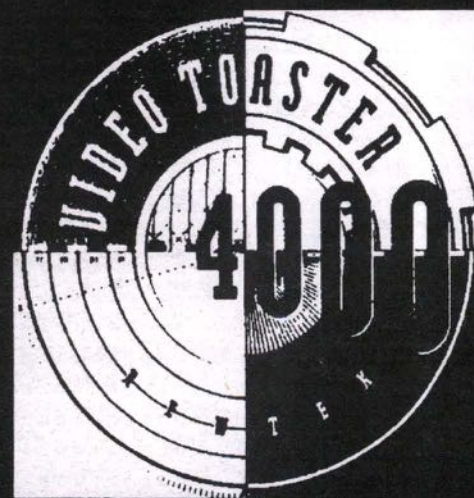
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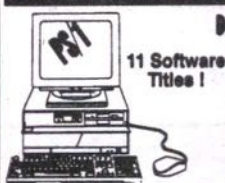


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## MACINTOSH VOICE RECOGNITION

# Centris 660AV

BY GRAEME BENNETT

The Macintosh Centris 660AV and 840AV are Apple's "multi-media Macs." These computers include greatly enhanced audio and video capabilities (hence the "AV" in the name) including speech recognition and synthesis, and the ability to digitize both video and CD-quality audio.

To provide these features, Apple made a bold move. It gambled that it could make sweeping changes to the tried-and-true Macintosh design and still maintain a reasonable level of compatibility. Happily, the gamble paid off. Apple's new computers are sure to please multimedia fans, computer musicians, videographers, power freaks and gadget-lovers everywhere.

### Under the Hood

To allow for these innovations, Apple made numerous improvements to the computer's system architecture, increasing the speed of the computer's bus, providing better support for high-speed storage devices (Apple calls it "asynchronous SCSI").

Both AV models support Direct Memory Access (DMA). Serial (including LocalTalk and a new high-speed connection option called GeoPort), SCSI, Ethernet, floppy, and audio are all supported with DMA drive.

### Look Who's Talking

One of the most exciting options of the new models is the inclusion of speech recognition. Although I don't hold out much hope for this technology taking hold in the office market (can you imagine a large office with everybody talking to their computers at once?), it is a delight to use if you believe, as Apple has always suggested in its advertisements, that computers should be easy and fun.

Apple's implementation of speech recognition, which it calls "PlainTalk," is very easy to use, and requires no training. Well, it could be said that it trains you. PlainTalk works best when you talk to it in relaxed, even tones — not so good on those high-stress days!

The system comes configured with a number of common phrases pre-defined. You can, for example, say, "Computer, what time is it?" or, "Computer, what day is it?"

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and hear the answer spoken in a fairly realistic female or male voice. You can command the computer to "Open the fonts folder," or "Empty the Trash." If you ask the Macintosh to "Shut down," the voice will ask you if you are sure you want to. If you reply, "Computer, no," the computer sounds rather relieved. "Well, never mind, then," it intones.

The female voice bears an uncanny resemblance to that of Lal, the android "daughter" of Data on *Star Trek: The Next Generation*. The optional male voice seems to have a vaguely Scandinavian accent and, like the female voice, wouldn't fool many people into thinking they were listening to a real person.

When you want to add your own speech commands, Apple's implementation starts to look nothing short of brilliant. There is a folder called "Speakable Items." By simply dropping an item in this folder (or in the Apple Menu, if you prefer), you add the file name to the Mac's vocabulary. Using the Mac's ability to have file names up to 32 characters long, you can name files in descriptive ways. Rather than uttering a terse command like "Control Panels," you can rename the command to something more descriptive, like "Open the Control Panels Folder."

PlainTalk understands the names in menus in all programs, and understands the names in buttons in most dialogs. It does not understand sub-menus, but can be configured to work with macros programs (a demo version of CE Software's QuickKeys is included) that can easily work around this limitation. The speech recognition works amazingly well — far better than I had expected it to. At a demo here at *The Computer Paper*, the conversation went like this:

GB: Computer, hello!

Mac: Hello, welcome to Macintosh.

GB: Computer, what time is it?

Mac: Eleven-thirty exactly.

GB: Computer, open E-mail.

[the computer launches our FirstClass E-mail system]

GB: Computer, open unread.

[a list of unread messages appears on-screen]

GB: Computer, open unread.

[the first unread message appears]

GB: Computer, select all.

[the text is highlighted]

GB: Computer, copy.

[the text is copied to the Clipboard.]

GB: Computer, quit.

[the program quits]

GB: Computer, run Microsoft Word.

[nothing happens]

GB: Sorry computer. Open Microsoft Word.

[the word processor opens a new document window]

GB: Computer, paste.

[the copied text is pasted into the document]

GB: Computer, select all.

[the text is highlighted]

GB: Computer, 14 point.

[the the font size changes to 14 points]

GB: Computer, Helvetica.

[the typeface changes to Helvetica]

GB: Computer, Times!

[nothing happens]

GB: Computer, Times.

[the typeface changes to Times Roman]

GB: Computer, save.

[The Save File Dialog opens]

GB: Computer, paste.

[the first 31 characters of the file are pasted into the filename text-entry box]

GB: Computer, desktop.

[the desktop folder is selected as the current directory]

GB: Computer, okay.

[the "OK" button is clicked and the file is saved]

GB: Computer, shut down.

Mac: Are you sure you want to shut down?

GB: Computer, yes.

Mac: Goodbye!

[the word processor quits and the computer shuts down]

This entire procedure was accomplished without touching the keyboard — at which point I was given a round of applause by the crowd of onlookers that had gathered to watch!

All of this finesse comes at a price, however. The speech functions consume vast quantities of memory. For example, an 8 MB Centris 660 running System 7.1 with a small assortment of third-party system extensions (Access PC, Now Utilities, etc.) left the computer with 5,300 K of available RAM. Turning

on speech recognition and the female "compressed" voice reduced this to 2800 K. Switching to the compressed male voice required another 400K, while the higher-quality "uncompressed" female voice stole a further 1.6 megabytes! By the time I had configured the computer to speak with the uncompressed male voice, my computer was down to 800 kilobytes of free memory! Clearly, 8 megabytes of RAM is the bare minimum for an AV Mac; 20 megabytes or more is a



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more functional "basic system."

### Compatibility Issues

Overall, compatibility is excellent — better than expected, considering the problems Apple has introduced in the past, when it made large-scale changes to the Mac architecture, such as when it released the Mac II in 1987, the Mac IIx in 1990, or more recently, System 7. A few system extensions I tried didn't work, including Dayna's DOS Mounter 3.02 and, surprisingly, Apple's own PC Exchange and Easy Open extensions. Hooking up a third-party (Toshiba) CD-ROM drive was problematic as well. I tried several third-party CD-ROM drivers without success, including those from Tran-tor and MacPeak. At this point, if you want to use a CD-ROM drive with an AV Mac, you are best off with Apple's internal CD-ROM drive.

### Cutting Costs

I was a little disappointed to discover that an AV without an internal CD-ROM drive has a gaping hole in the front of the case where the CD disc caddy would otherwise have been inserted. Couldn't Apple have splurged and provided a blank faceplate for non-CD-equipped AVs?

This frugal sensibility shows up in other areas as well. For example, Apple has eschewed the power-on-from-the-keyboard and shutdown-turns-the-power-off features of other high-end Macintosh models in favor of a power switch. The "power key" on Apple keyboards is not totally useless, though. If you press this key

while the power is on, the 660AV asks you if you want to shut down.

The 660AV, like other recent models (according to sources at Apple, those manufactured after September 1993), lacks the automatic "inject" mechanism that grabs a disk and pulls it into the

disk drive on earlier Macs. The 660AV also lacks the ability to expand the video RAM beyond the "thousands of colors" level. Although these cost-cutting measures may disappoint long-time Mac fans, none of these issues are likely to pose undue hardships for most users.

I suppose these are the niceties Apple engineers were forced to leave out in order to deliver the AV Macs at such aggressive (i.e., "PC-competitive") prices.

### Très Bien Ensemble

The 660AV and 840AV are the first Macs to include a digital signal processor (DSP) chip as standard equipment. This chip provides them with greatly improved audio capabilities over earlier models, allowing true recording and playback of 16-bit sound output. Although the audio sampling rate is 44.1

KHz (the same as that of an audio CD), the 84dB signal-to-noise ratio is somewhat lower than that of a good-quality CD player. Nevertheless, the AVs are the best-sounding Macs ever.

Either model can be configured with an optional GeoPort adapter, which allows it to function as a fax/modem, and answering machine.

The computers come with an array of

software to maximize the hardware capabilities. The bundled software includes fax-to-text conversion, video and audio digitizing (including the ability to record directly off an audio CD in the internal CD-ROM drive), scripting ("macros") and more. You can even add cool sound effects to your beep sounds, including reverb, flange and chorus effects. Big fun.

### Conclusion

Anyone shopping for a new Macintosh should give the AV models a close look — even if they don't plan on exploiting the audio/video capabilities. These models have the highest-performance serial, network, SCSI and NuBus implementations available from Apple, and do so at a price that is only a few hundred dollars higher than other, less capable Macs. Best of all, the designers somehow managed to maintain a high degree of compatibility with existing software, despite that fact that many aspects of the new AV Macs are vastly different from any previous model.

Apple has taken its share of heat lately for releasing some lackluster products, and repackaged rehashes of older technology. This is not the case with the AV Macs. These machines suggest that speaker-independent voice recognition is, or at least will soon be, a viable technology for next-generation desktop computers. Although far from the level of *Star Trek*, where crew members interact with a computer by talking to it, the AV Macs have begun to *make it so*. ■

Software mentioned: Access PC 2.01, Insignia Solutions, 1-800-848-7677 or 415-694-7600

Now Utilities 4.01p, Now Software, 1-800-374-4750 or 503-274-2800



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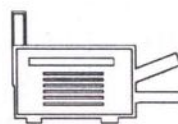


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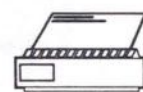
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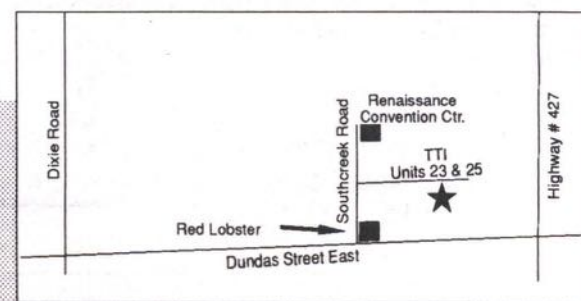
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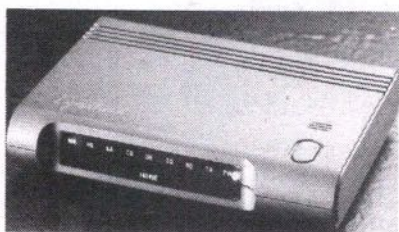


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## bookreview

### A Beginner's Guide to Beginner's Computer Books

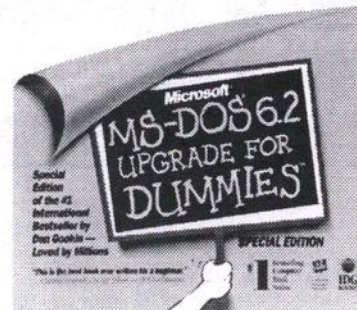
BY KEITH SCHENGILI-ROBERTS

Ever been in this situation? Your job has just been computerized, and your boss wants you to use your computer to prepare a report before the end of the week, but you're not sure where the ON button is. Any manuals available seem to be written in an extra-terrestrial language, and you don't have the time to take a course at school.

At this point most people go down to their local bookstore and try to find a book on the subject. This area of the book-publishing industry has boomed in the past few years and has had huge sales while the rest of the book industry has been sluggish. These days it's hard to find a bookstore that does not sell any computer books. If anything, there's too much choice, and people end up buying books that aren't suitable for them.

Here's a short (and by no means comprehensive) guide to the most popular beginner's computer books you are likely to find.

#### Idiots and Dummies All Around



It was the Dummies series of books that launched the trend of easy-to-read-and-to-understand books on computing. They found a huge, untapped market of people who wanted to learn how to use their software, but couldn't understand the compu-speak of their software manuals.

Since the series was introduced a couple of years ago almost every other publisher has launched titles in an attempt to grab part of this large market. Fact is, the Dummies books are probably still among the best books you can get in this area, followed closely by the Complete Idiot's guides. A lot of the other

books are poorly written, talk down to their intended audience, or are filled with self-serving tirades against the programs they are trying to teach the reader to handle.

The charm of most Dummies titles is the way they side with the reader over obvious deficiencies in a particular program's operation: despite a program's user-unfriendliness, you can overcome it and become proficient with the program. The Complete Idiot's guides also tend to be straightforward and friendly in their approach to their subject. They are very much the same when it comes to how they approach their subject and layout, providing handy icons to highlight important points or warnings.

Sometime soon there's bound to be a shakedown of these sort of books. To save yourself a lot of confusion over what to get, I recommend you check out the Dummies or Complete Idiot's guides first. They are still among the best in this category, and can easily be read at leisure over lunch-time, or serve as a reference guide when you're trying to do something on your computer.

Contacts: IDG's Dummies books - Macmillan  
Canada (416) 293-8141  
Alpha Books' Complete Idiot's guides - Prentice  
Hall (416) 293-3621

#### Que's Using and Sybex's Mastering series

If you really want to learn a program and learn it thoroughly, you can't go wrong with either Que's Using series, or Sybex's Mastering series. Both series have made a name for themselves over many years by putting out fairly definitive (and large) books on most major application programs. Both series are aimed at beginning to intermediate users, are generally well written (if a bit dry), and treat their subject comprehensively.

There's very little to distinguish between the two series, so when you pick one up you are virtually guaranteed to be getting a comprehensive and useful guide to the program you are trying to use. Both publications go through each part of a program in detail,

Continued on page 67

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## bookreview

## Artifice Imitating Life

BY KEITH SCHENGILI-ROBERTS

Title: Artificial Life Playhouse: Evolution at Your Fingertips  
 Author: Stephen Prata  
 Publisher: Waite Group Press  
 Price: \$33.95, Softcover 179 pages  
 Comes with one 5.25" computer diskette

This is one of the better books in the Waite Group's Playhouse series of books. Written for a general audience, the real gem is not the book but the diskette that comes with it, which contains a half-dozen interesting artificial-life programs.

The book is good for a simple and rudimentary introduction to the concept of artificial life, but most of it is devoted to what you can do with the programs contained on the diskette. The programs include "Life 3000," a Windows version of the classic game of life first designed in the 1950s. Biomurfs allows you to play God and select which computer-generated creatures live and die; you see the

effects of cumulative evolution. Other programs display the effects of predators and parasites on a population, and how simple rules can generate complex behavior — an example of chaos theory in action.

The text gives the reader only a condensed version of the explorations and implications of artificial life. (Anybody interested in further exploring the concepts behind artificial life should check out Steven Levy's *Artificial Life: The Quest for a New Creation*, published by Pantheon Books and reviewed earlier this year in *The Computer Paper*.) It is the software that really stands out here, which will entertain the user while giving you a feel for where the research in this area is going. With the ingredients in this book you can go right ahead and turn the insides of your computer into a primordial soup. ■

Contact: Copp Clark Pitman (416) 238-6074

## Virtual Worlds By The Book

BY KEITH SCHENGILI-ROBERTS

Title: Virtual Reality Creations: Explore, Manipulate, and Create Virtual Worlds on Your PC  
 Authors: Dave Stampo, Bernie Roehl and John Eagan  
 Publisher: Waite Group Press  
 Price: \$48.95  
 Softcover 591 pages 1993  
 Comes with one high-density 5.25" diskette and a pair of fresnel glasses

Following on the success of The Waite Group's release last year of *Virtual Reality Playhouse* comes *Virtual Reality Creations*, which takes you further into the virtual worlds your PC can generate. The book is really more a manual on how to use the programs contained on the diskette that comes with it, which contains the REND386 program along with a number of artificial worlds.

Because this book is so dependent on the program that comes with it, there are some basic system requirements to know about before you even considering buying the book. As a base machine you need at least a 386SX with a VGA monitor. You'll get better performance with a faster machine. If you don't meet these system requirements for your computer, don't bother getting the book.

Having said that, the REND386 program is a very good virtual-reality program to start out with. It comes with its own programming language, and with the instructions and sample source code provided in the book you should be able to create your own virtual worlds in next to no time. Installation is easy, and once you get the hang of it, moving through the virtual worlds provided is easy. The book also comes with a fresnel viewer designed to help you explore stereoscopic virtual worlds, providing good depth of field (if not high resolution).

*Virtual Reality Creations* also gives detailed instructions on how to modify Sega Powergloves so that you can manipulate virtual objects within the REND386 program. There are firms listed that can supply you with other devices you can use in virtual-reality environments.

If you are really interested in virtual reality, this book/program will definitely give you a good taste of it. The program is robust enough to let you do a lot of useful tinkering, and will probably leave you wanting more. A perfect book/program for would-be virtual-reality hackers. ■

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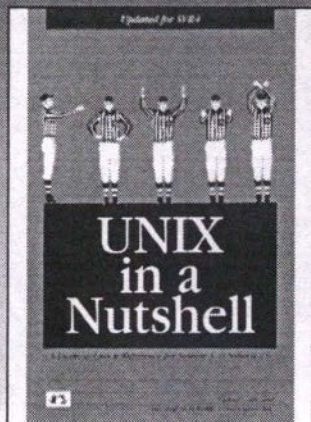
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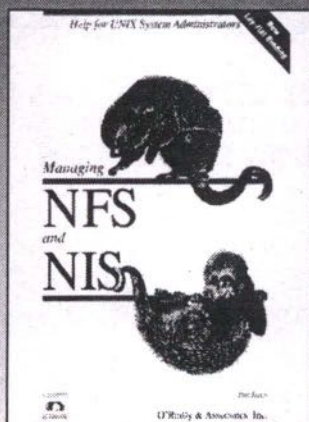
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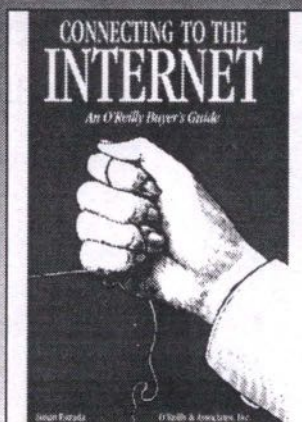
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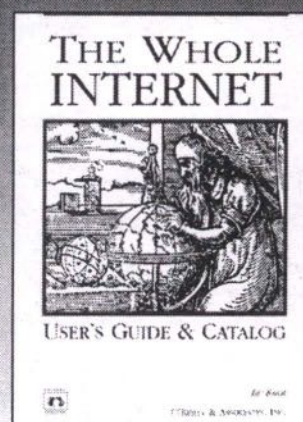
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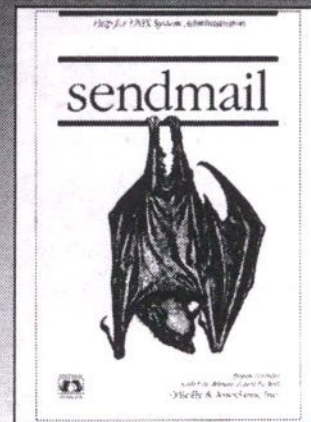
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## Beginners' Books

Continued from page 64

showing you how to use the program properly. They are also good as reference guides to programs, useful when you're having a problem you can't figure out.

Both publishers are often the first to put out comprehensive guides to particular programs — sometimes before the software is even available to the general public! Be careful before buying some of these guides. The race to get to press first often means that the programs are not as thoroughly tested as they should be, and they therefore miss major bugs that are discovered later.

Contact: Que's Using series - Prentice Hall (416) 293-3621

Sybex's Mastering series - Firefly Books (416) 499-8412

## Can't Get Any Simpler Than This

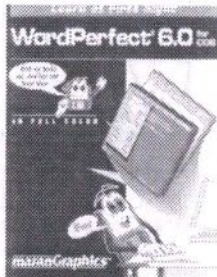
For people who are simply interested in getting a program to do what you want it to do and not having to worry about why the computer does it that way, then look for DDC's series of Quick Reference Guides. They cover most of the popular software programs currently available (including operating environments like MS-DOS, OS/2 and Windows), and

they just run you through the keystrokes needed to do a particular function. That's all. You won't learn the ins-and-outs of the program, but you'll be able to at least get by until you get a better idea of what's going on. Also, the price is right, with most titles selling for around \$10.

Contact: DDC's Quick Reference Guides - Monarch Books (416) 663-8231

## Graphical Books

If you prefer a book to show you how things are done, then there are two good series of books to look for. One is the MaranGraphics series of books, with lots of cute cartoon pictures of diskettes and computers to help you through the basics of the most popular software applications and operating systems. The concentration here is on the pictures and what you should see on your computer screen. I find that the cute pictures sometimes get to me after a while, but this approach is ideal for people looking for a friendly pictorial introduction to computers and software. (MaranGraphics books are written in Canada — Ed.)



Continued on page 68

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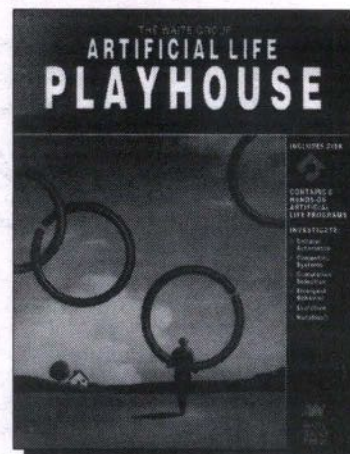
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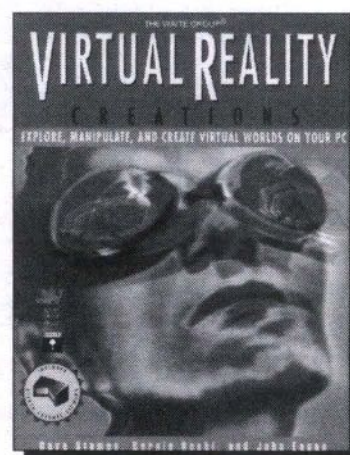


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

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## Beginners' Books

Continued from page 67

My own preference in this line of books is Ziff-Davis Press' series How Computers Work. Based on a monthly graphical essay appearing in *PC/Computing*, the cartoons in these books are not quite so cutesy, are more directly related to what is being explained, and have more text to explain what is going on. However, the topics they cover tend to be more general in scope, telling you how software works, but not necessarily the program you're having problems with.

Contacts: MaranGraphics series - Prentice Hall (416) 293-3621  
Ziff-Davis' How Computers Work series - Copp Clark Pitman (905) 238-6074

There are many more types of beginner's books available out there. There are so many that this reviewer has not had the chance to look at all of them, and there are still new series appearing on the shelves every month.

When you are out searching for a computer book, one of the best things you can do is think about what you are looking for in a particular book. Then, take the time in the store to see if a particular book has the information you want in a form you can easily understand. The last thing you need is another incomprehensible computer book to put beside your computer manuals.

When computer manuals are finally written in English or when your software application can teach you everything you need to know about itself, you won't have to buy any more computer books. Until that time, don't be ashamed to admit that you're a computer Dummy or Idiot at the bookstore, because you are in good company with the millions of people who have made these books bestsellers. ■

# newsbytes

EXCLUSIVE NEWS

## DESKTOP PUBLISHING

### Corel's Ventura 4.2

OTTAWA (NB) — Corel Corp., which acquired the Ventura Publisher desktop publishing software earlier this fall, has put its own stamp on the package by announcing Corel Ventura 4.2.

The new release combines the basic Ventura package with Ventura Database Publisher, a utility that helps users format data for desktop publishing. The whole combination, plus a sizeable library of clip art and fonts, will sell for \$299.

The software runs on Microsoft Windows. Corel also recommends a compact disk read-only memory (CD-ROM) drive.

The package includes Ventura Publisher, Ventura Database Publisher, the Ventura Separator utility for color separations, the Ventura Scan utility, 75 style sheets, and two CD-ROMs loaded with more than 600 TrueType and PostScript Type 1 fonts, more than 10,000 Encapsulated Postscript clip-art images, and 100 royalty-free photos in Kodak PhotoCD format. The clip-art library is the same one supplied with the CD-ROM edition of Corel's flagship graphics package, CorelDRAW.

Corel is offering current users of either Corel Draw or Ventura Publisher the chance to upgrade to a bundle of both packages for \$379. Registered users of Corel Draw can also buy the new Ventura Publisher for C\$129, and users of previous versions of Ventura Publisher can upgrade to the new release for the same price.

Contact: Corel, 800-772-6735

## FAX MAILBOX

### Delrina's While-You-Were-Out Fax

TORONTO (NB) — Delrina Corp. of Toronto and Vodata Ltd., a subsidiary of cellular service provider Vodafone Group plc in the United Kingdom, have announced an alliance in which they plan to offer enhanced message services to simplify personal computer communications.

According to the companies, a new service due to be available in the first quarter of 1994 will let users of Delrina's facsimile software receive incoming faxes while they are away from their offices or their personal computers are switched off.

The service will provide PC users with a fax mailbox to which their faxes can be sent regardless of where they are, said Delrina spokesman Shelly Sofer. They will then be able to call the mailbox and download the faxes to their PCs.

In the UK, users will also be able to have the system notify them via a cellular phone or pager when a fax comes in. Sofer said the companies may be able to offer the same service elsewhere in the future, if it can make arrangements with a cellular carrier or paging company.

The service will be offered to every buyer of the Delrina fax software, Sofer said, but those who want it will have to sign up and pay additional fees.

He said this move is part of a wider strategy that includes the recent formation of Delrina's communications services division and alliances with MCI Communications in the U.S. and Canada's Worldlinx, a Bell Canada subsidiary.

Contact: Delrina, 800-268-6082

## ATI Launches Video Accelerator Chips

MARKHAM, ON (NB) — ATI Technologies has announced a graphics and video accelerator and a video capture controller compatible with the Shared Frame Buffer Interconnect (SFBI) specification developed by ATI and Intel.

The ATI 68800DX Advanced Graphics and Video Accelerator and the ATI 68890 Video Capture Processor are to be available in the second quarter of 1994, the company said.

The ATI-68800DX joins ATI's mach32 line of graphics controllers, which also includes the ATI-68800LX and ATI-68800AX. Unlike the others, it supports SFBI and comes with a video display processor (VDP).

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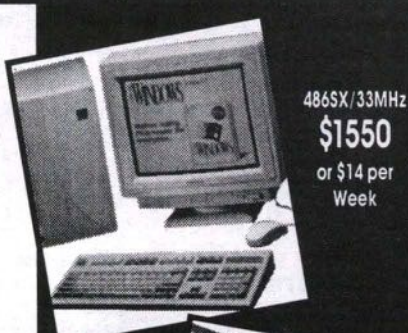
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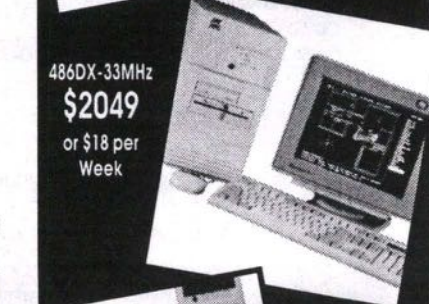
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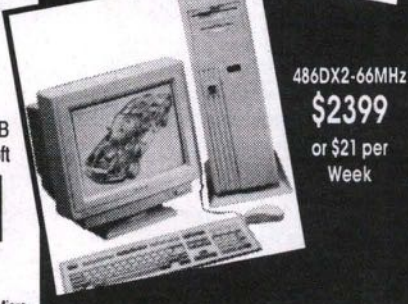
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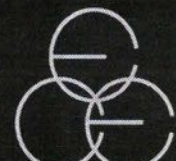
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which improves full-motion video performance and allows full-screen playback without compromising the frame rate, according to ATI.

The ATI-68800DX can also scale an image horizontally and vertically, do color conversions from RGB to YUV and vice versa, and support special effects such as mixing and fading video images, ATI said.

The single-chip controller supports the Industry Standard Architecture (ISA) system bus and the Video Electronics Standards Association (VESA) and Peripheral Component Interconnect (PCI) local buses, ATI officials said.

Contact: ATI Technologies, 905-882-2600 fax 905-882-2620

#### PHONE RESELLER

## Call-Net Becomes Sprint Canada

TORONTO (NB) — Call-Net Telecommunications Ltd., a Canadian reseller of long-distance telephone service, has changed its name to Sprint Canada Inc., reflecting an earlier alliance with the US-based long-distance operator.

The newly named Sprint Canada is one of three subsidiaries of a holding company which will retain the name Call-Net Enterprises Inc. Another Call-Net Enterprises subsidiary is Lightel Inc., one of the companies authorized by federal regulators last year to build its own long-distance telecommunications network and compete with Canada's

regional telephone companies.

Contact: Sprint Canada, 416-496-1644, fax 416-496-2175

#### TELECOM

## Mitel To Make ATM Components

KANATA, ON (NB) — Mitel Corp. said it will develop circuitry to let local area networks carry voice and video signals using asynchronous transfer mode (ATM) technology.

The work will be part of a cooperative venture organized by the Semiconductor Microelectronics Consortium (SMC), an Ottawa-based group that includes many of Canada's microelectronics companies. Under the same initiative, Newbridge Networks Corp., also of Kanata, will develop ATM-based network interface cards, and PMC-Sierra, of Burnaby, British Columbia, will develop other integrated circuits for ATM.

ATM is a high-speed networking technology capable of carrying data, voice, and video information. To date, it has been used mainly for data. However, according to Mitel officials, customers are demanding applications that integrate computing and telephony, and ATM is a way of providing them.

Mitel expects products resulting from this work to emerge by the third quarter of 1994. The company said its circuits will be able to work with the components being developed by PMC-Sierra.

Contact: Mitel, 613-592-2122

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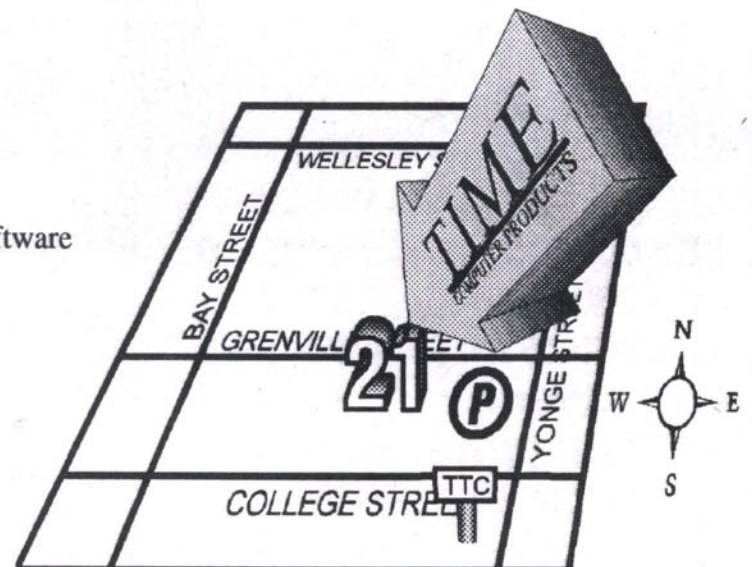
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## CYBER FINGER

## Artificial Hand Uses Neuro Chip

TOKYO (NB) — NTT has developed an artificial hand which simulates the movement of a human hand. The robot is equipped with NTT's top-of-the-line neuro chip, which is expected to be applied to a virtual reality system in the near future.

NTT's artificial hand is called the Cyber Finger and was developed by NTT's Human Interface Laboratory. The neuro chip enables the artificial hand to make realistic hand and

finger movements. A user, wearing a wrist band, is connected to the Cyber Finger through an electric cord, and thereby uses the hand real-time.

After "learning" for two minutes, the Cyber Finger was able to move its fingers according to the instructions given by the laboratory technicians.

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## IBM Canada Aids Educators

MARKHAM, ON (NB) — IBM Canada Ltd. has announced three more in a long-standing series of cooperative projects with Canadian schools, aimed at fostering math and science literacy.

The company has been running the cooperative program since 1982 and has provided about \$60 million worth of products and services to schools under the initiative in that time, said company spokesman Mike Quinn.

The latest projects are in Quebec, Ontario, and Manitoba.

A partnership with the Commission Scolaire de Sainte-Croix (Saint-Croix School Board) and the University of Montreal's Faculty of Education will aim to help children in kindergarten through grade six learn scientific principles through robotics.

IBM will work with the Dufferin-Peel Roman Catholic School Board in Ontario in a project focusing on mathematics education in grades one to three. The program, covering teacher training, classroom implementation and program strategies, will use IBM-developed math curriculum software and color ThinkPad notebook computers.

In Manitoba, IBM is working with the Seven Oaks School Division to set up a classroom computer network with curriculum software and compact disc read-only memory (CD-ROM) software at its Forest Park School in Winnipeg.

IBM Canada typically announces four to five such projects per year, Quinn said, and they run for one to three years.

Contact: IBM Canada, 800-465-1234

## RUMOR

## OS/2 Without Windows?

WHITE PLAINS, NY (NB) — Unhappy at paying royalties to rival Microsoft Corp., IBM is preparing to launch a version of its OS/2 operating system without built-in code to run applications written for Microsoft's Windows operating environment.

Sources said an announcement could be expected by mid-November but an IBM spokeswoman said the company does not comment on unannounced products.

The Windows-less OS/2 would let users run Windows applications provided they already had Windows installed on their PCs. OS/2 would establish where the Windows code was stored and would call on it directly when asked to run a Windows application.

This is a practical idea largely because many personal computer vendors are

bundling their hardware with copies of Windows. That means a fair number of buyers of OS/2 already have Windows on their PCs. By not duplicating the code in OS/2, IBM would not only avoid paying royalties to Microsoft for its use, but reduce the size of its OS/2 package and possibly save disk space for users who don't take the trouble to remove the pre-installed Windows files when they install OS/2.

The company should also be able to pass on to customers some of what it saves on royalties. This would free buyers of PCs with Windows bundled from paying twice for the code — once in the price of the PC and once in the price of OS/2.

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# STUDY

## Canada's High-Tech Marketing Units Shrinking

TORONTO (NB) — Canadian information technology companies have been cutting back their marketing operations in the past two years, relying more on outside contractors and in many cases depending on parent companies south of the border to do more of their marketing for them. This is one conclusion of a study carried out by consulting firm KPMG Peat Marwick Stevenson & Kellogg and the Information Technology Association of Canada (ITAC).

The researchers contacted 150 of Canada's most prominent information technology firms. The response rate was 29 percent, or about 45 companies.

Forty-five percent of those responding said their marketing departments had shrunk in the past two years. Of those, 38 percent — that is 17 percent of all respondents — said their marketing units were less than half the size they had been two years earlier.

To make up for this, a number of companies are relying more on outside contractors to help with their marketing work. However, many are also depending more heavily on the marketing programs of their parent companies in the United States — a decision, the study noted, that means marketing programs are not tailored to the Canadian market.

The study noted that the marketing resources of U.S. parent companies are "now more accessible" than before, presumably a reference to the Free Trade Agreement in place between Canada and the United States.

In general, the study said, marketers in Canada's high-tech sector are being asked to do more with less. As a result, Peat Marwick and ITAC predicted a move toward more focused marketing tactics such as direct mail and telemarketing, and away from trade shows and other general marketing methods.

Contact: Peat Marwick, 416-777-3034; ITAC, 613-256-5060

## STB's Video Card Supports Multiple Displays

RICHARDSON, TX (NB) — STB Systems has announced the release of a composite NTSC/PAL multimedia video card that supports output to various devices, including a standard television set or VCR.

The company says that Channel One is an add-in video card that supports VGA, S-VHS and composite NTSC/PAL video signals. It's based on the Cirrus Logic 5426 video controller chip and comes with up to one megabyte (MB) of 60-nanosecond dynamic random access memory (DRAM) video memory. The chip supports up to 16.7 million colors at a resolution of 640 by 480 and 16 colors at 1280 by 1024 resolution.

NTSC (National Television System Committee) refers to the 525-line standard for television signals in the U.S. and Canada. PAL refers to Phase Alternating By Line and is the 625-line European standard.

STB has added a Sony CXA1145 RGB (red-blue-green) encoder to the board to convert VGA signals to NTSC/PAL video formats.

Channel One comes with a 15-pin connector for VGA, F connector, S-VHS and a VESA-compatible feature connector.

Channel One has a suggested retail price of US\$459.

Contact: STB Systems, 214-234-8750, fax 214-234-1306

## Musicware Piano For Windows Debuts

REDMOND, WA (NB) — Musicware has introduced a Windows-based software program that turns your personal computer into

a piano teacher.

The company says that Musicware Piano for Windows combines proven piano teaching methods with the power and ease of Windows, taking users step by step from the basics to an advanced level of two-hand playing competency.

The program is used in conjunction with a Musical Instrument Digital Interface (MIDI) piano keyboard with four octaves or more and a sound card with built-in MIDI support to provide more than 200 piano lessons. Musicware says that's equivalent to thousands of dollars of music lessons in a traditional teacher/student setting.

Piano for Windows provides instruction in sight reading, ear training, rhythm, and music theory fundamentals. The program includes tests, and tracks each student's progress.

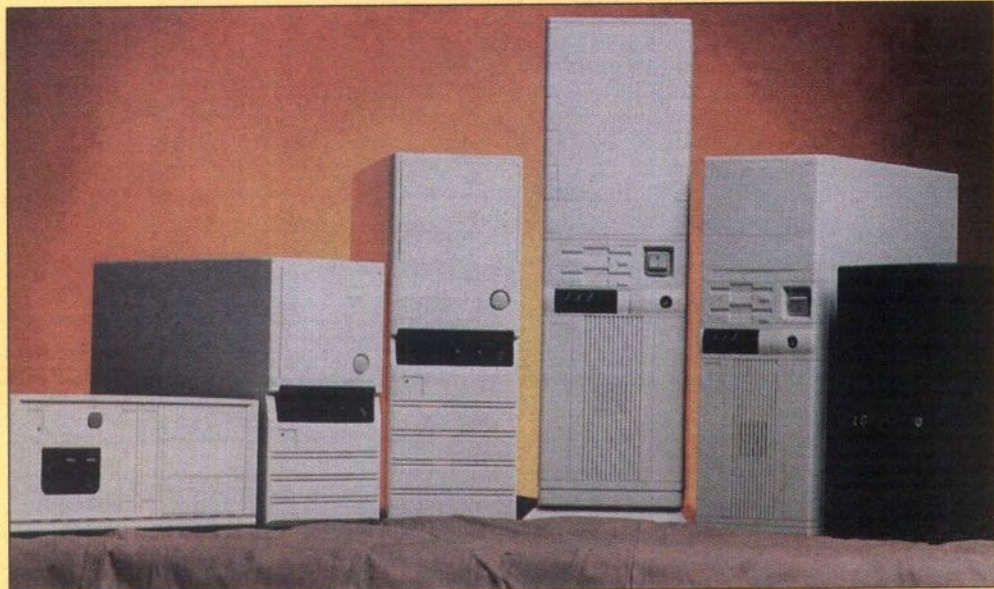
The company says that the package is ideal for novices age seven to adult, or for musicians who simply want to brush up on their piano skills. The software, with a suggested retail price of US\$129.95, comes with all necessary cables.

Contact: Musicware: 206-881-9797, fax 206-881-9664



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OS/2 is a next generation operating system. It is designed to take advantage of 386 class PCs or higher as opposed to DOS which was designed 15 years ago for 8086 class PCs. The differences are dramatic and unappreciated by most PC users. Even dedicated DOS users (not Windows) can benefit greatly by installing a stripped down version of OS/2 and be able to take advantage of multiple concurrent DOS sessions, each with their own config. sys, etc. In this stripped down configuration, it will run very well on 4Mb ram. A full installation including multimedia extensions requires 8Mb and recommended 16Mb ram.

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ASI 9000 486DX33 4Mram 212MbHD	\$1750.00
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## COMPRESSION

### TMM/IBM Deal On Fractal

LOS ANGELES (NB) — Total Multimedia, a company co-founded by the brother of rock star Michael Jackson, and IBM announced a joint marketing agreement at the Society of Motion Picture and Television Engineers (SMPTE) show in Los Angeles October 29. TMM, known for its pioneering work in fractal video compression technology, will move its compression technology, to the IBM Powervisualization parallel processing computer to speed up the image-compression process.

Developed by Iterated Systems of Atlanta, Georgia and exclusively licensed by TMM, the fractal compression technology is a way to mathematically define complex video images and store those images as mathematical equations. Described as "Post-script for Images," the idea is very similar to that of vector-based images used in the computer graphics world.

The implication is that an image compressed and stored as a mathematical equation instead of a bunch of pixels is smaller and can be reproduced in almost any size on almost any computer without the distortion or blockiness that accompanies video compressed in other ways. The company calls the technology "resolution-independent," meaning it can be displayed at any resolution, without special hardware.

In theory, fractal compression can put a full two-hour movie on a single CD-ROM disc. The most that has been placed on a CD-ROM so far is 72 minutes, using Motion Picture Experts Group (MPEG) compression technology and special hardware is required for playback. However, TMM officials readily

admit they haven't done this yet and are pointing to IBM's Powervisualization system as the ticket to getting a full movie on a CD.

One of the problems of fractal compression is that it takes even the fastest single-processor computers days to compress the whopping 162,000 megabytes (MB) of data in a single two-hour video film. However, decompression and display of the image once it is compressed is very fast. The Powervisualization system from IBM, with 32 Intel i860 processors working together in parallel, is intended to solve the compression speed problem, bringing compression speeds into the range of hours instead of days.

The other problem is that playback of an image at higher resolution or larger than it was originally recorded slows the frame rate. The effect is much like that of pressing a slow-speed playback button on a video cassette recorder (VCR). The amount of video information increases so quickly at higher resolution that even the fastest personal computers (PCs) have difficulty throwing the video up on the display fast enough for normal playback.

Taylor Tucker, co-founder and chief technical officer at TMM, says this is because the company is simply ahead of the hardware. The beauty of this fractal compression scheme is the faster new hardware becomes, the better images compressed with TMM's scheme will look, Tucker asserts.

Contact: TMM, tel 604-682-3620

## PROJECTION

### Growth Predicted In 1993 World Chip Market

SAN JOSE, CA (NB) — Growth is the key word in the semiconductor market and the North American market is expected to lead even the Japanese by the end of this year. The Semiconductor Industry Association says personal computers (PCs) and related products will spur 29 percent growth in the 1993 world market to US\$77.3 billion with a continuing climb to \$103.4 billion by 1996.

The North American market will be the strongest player in this semiconductor growth spurt, with \$24.8 billion in shipments in 1993, surpassing Japanese shipments of \$23.7 billion, Asia Pacific shipments of \$14.4 billion, and European shipments of \$11.5 billion.

By 1996, North America is still expected to lead with projected shipments of \$32.5 billion. The Japanese are predicted to be at \$31 billion, the Asia Pacific will hit \$21.4 billion, and the European market will reach \$18.5 billion.

This year will be the first time since 1985 that the North American shipments will be larger than Japan's. The North American rate of growth is expected to be higher as well at 34.5 percent for 1993, compared to 22.3 percent growth for the same period in Japan.

Contact: SIA, tel 408-246-2711, fax 408-246-2830

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# FINANCES

## IBM Loses Less

ARMONK, NY (NB) — IBM has reported a loss of \$48 million in its third quarter, ended Sept. 30, on revenues of \$14.7 billion.

This compares to a loss of \$2.8 billion on about the same level of revenues in the third quarter of last year. Last year's third-quarter loss included heavy restructuring charges; before these charges the company had net income of \$86 million in the 1992 quarter.

The company said its hardware revenues fell one percent year over year, to \$7 billion. Revenues from all other products and services grew 1.5 percent to 7.8 billion.

Revenues from personal computer sales grew significantly, officials said, while revenues in other hardware categories, including mainframes, mid-range computers, and workstations, declined.

Contact: IBM Canada 800-465-1234

## Experimental Macintosh TV In U.S.

CUPERTINO, CA (NB) — Apple Computer has put a television in its Macintosh and will begin marketing the new combination product to consumers. Called Macintosh TV, the product is an experiment on the part of Apple to see which way the consumer electronic wind is blowing.

Macintosh TV is similar to the Performa 460, the low end of the new Performa products introduced in October, but includes a compact disc read-only memory (CD-ROM) drive as well as a television card and is being aimed at the U.S. educational market, Apple said. Apple is introducing the product in U.S. consumer retail stores including Best Buy, Select Video Concepts, Silo Yes, and Tops, through its programs on higher-education campuses, and through the Apple Catalog.

Contact: Apple Computer, tel 408-974-3983, fax 408-974-2885

## Weitek Goes For Captain Crunch

FREMONT, CA (NB) — Media Vision says Weitek, known for its graphics accelerator products, has licensed its Captain Crunch video compression technology for use in the

Video Power processor, which is designed to bring television-quality digital video to personal computers (PCs).

Media Vision says Captain Crunch can playback video in a 320 by 240 window at 30 frames-per-second at compact disc read-only memory (CD-ROM) data rates with 24-bit color. Like other video compression (codec) technologies, it is designed to address the problem of getting video down to a size that makes it transportable by currently available media or communications channels.

The company claims Captain Crunch's advantages over competing Motion Picture

Experts Group (MPEG) or Digital Video Interactive (DVI) compression schemes is that it is one-tenth the expense, can compress as well as decompress in real time, and is scalable.

Scalability, the biggest sales point, means video developed using Captain Crunch allows software-only playback on a 386-based PC or Macintosh IIfx or above without degradation of the picture quality, a common problem in running video on slower computers. Media Vision says users may choose to play smaller pictures or slower frame-rates based on their own system per-

formance without intrinsic loss of picture quality. Media Vision points to video conferencing as one of the applications that will benefit most from its compression technology.

Weitek plans to offer the Video Power chip to third-party board makers in a new 32-bit chip, the Power 9100. With the aid of the Video Power chip, digital video can run full screen at normal speeds of 30 frames-per-second at resolutions as high as 1280 by 1024, Weitek said.

Contact, Weitek, 408-738-8400

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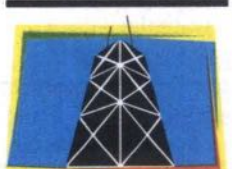
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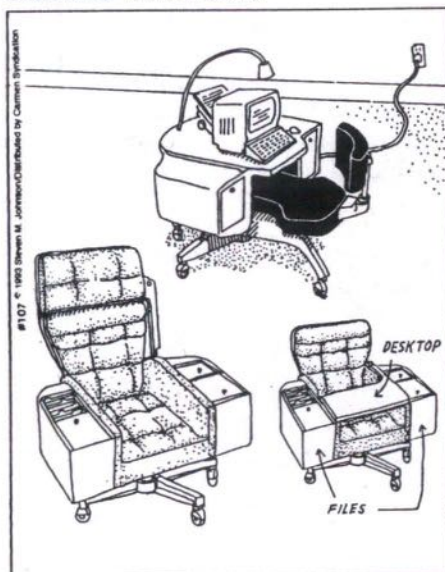
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# SIGHTINGS / Steven M. Johnson



Low Man Furnishings of Chicago has created a line of office furniture for temporary and part-time employees. Chairdesks take up little office space, and allow workers to rove from room to room.



# AMIGA Talk

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## THE WORLD OF COMMODORE AMIGA

It's that time of year again! The WORLD OF COMMODORE AMIGA trade show, will be making its eleventh annual appearance in Toronto, from Friday, December 3rd to Sunday, December 5th at the Toronto International Centre on Airport Road in Mississauga.

Many local AMIGA users consider the Toronto appearance of the WORLD OF COMMODORE AMIGA as a "homecoming". Albeit, now a huge, multi-international Corporation, based in the United States, Commodore's roots originated in Toronto, where it started business in 1958.

The WORLD OF COMMODORE AMIGA also makes annual appearances in the United States (New York City and Pasadena) as well as Australia (Sydney). Nonetheless the Toronto event holds a special place in the hearts of many Canadian AMIGA users, who still regard Commodore as a home-town company.



## NEW PRODUCT AT THIS YEAR'S SHOW

Software and hardware development for the new AMIGA AGA computers (the A1200 and the A4000) has rapidly been gathering momentum during the past year. Recent new releases and pending releases of product are becoming hard for even the dealer to keep up with. At THE WORLD OF COMMODORE AMIGA, software and hardware product from all major developers will be on display, and in most cases you be able to speak to the developers.

In the rapidly evolving world of computer technology, obsolescence is always a concern. AMIGA computers are renowned for their upgradeable architecture. So as always, there will be a lot of upgrade options on display and for sale. Apart from memory upgrades to accelerators, from Workbench 2.1 upgrades to ROM switchers (for those AMIGA users who wish to keep WB 1.3 available on their computers), from hard drive controllers to new video tape back-up systems for hard drives, from genlocks to scanners; the hardware list is endless.

Of particular interest to many show attendees will be all of the new video boards, offering increased screen resolutions, 24-bit graphics, including realtime 24-bit animation playback, and even AGA emulation.

Needless to say, new software titles will be in abundance. Apart from demonstrations at individual exhibitor's booths, an extensive seminar schedule will feature a number of these titles with in-depth demonstration of their features and "tricks of the trade".

## FREE SEMINARS! DEMONSTRATIONS! SPECIAL EVENTS!

Commodore will of course be showcasing their entire AMIGA line, but without a doubt, a star attraction will be the new AMIGA CD32. In addition to an AMIGA CD32 Arcade, there will be demonstrations and seminar discussion of AMIGA CD32 technology including the full motion capabilities of this newest member of the AMIGA product line.

Other special Show events will feature Multimedia Production, Digital Imaging and the AMIGA, a Technical Clinic, CD-Rom Technology, Special Effects, Animation, Desktop Publishing, and Videographics.

Commodore will also be featuring a computer art contest with first prize being the new Fargo Primera Colour Printer. This printer has been met with rave reviews. With an optional upgrade kit, it can be turned into a 24-bit colour dye

sublimation printer. If you don't win first prize, Fargo Electronics will have a booth at the show and you can always buy one!

## VIDEO TOASTER AND AMIGA

To a lot of people, AMIGA and NewTek's Video Toaster have become almost synonymous. THE WORLD OF COMMODORE AMIGA will have a lot of AMIGA Video Toaster specific product on display and for sale. New-Tek's Canadian distributor, MDL Technologies will be demonstrating the new Toaster 4000. Several other companies and developers will also be featuring Toaster specific products.

## BRITISH MAGAZINE DISTRIBUTORS

British Magazine Distributors distribute a plethora of AMIGA software and hardware, as well as British AMIGA magazines. While they are the number one source of British Product for Canadian AMIGA dealers, they are also Canadian distributors for a wide variety of quality North American software and hardware. Their hard work and international connections are responsible for making a huge amount of quality AMIGA product affordably available to the Canadian market.

Look for them at the WORLD OF COMMODORE AMIGA, where they will have the largest (next to Commodore of course) display space under their wing. They have assembled a large group of British developers as well as a number of leading American developers who will all be there to show their product. Space does not permit listing them all, but some well known names include, GVP, Scala, Digital Creations, Expansion Systems and Rombo.

## KEYNOTE ADDRESS FROM COMMODORE

One of the most eagerly anticipated events at each year's Show is Commodore's keynote speech. This is where AMIGA users hear about new product in development, anticipated release dates, general directions of Commodore's corporate planning and all manner of other information about AMIGA.

Commodore International's Vice-President of Engineering, Mr. Lew Eggebrecht, will be delivering this year's keynote address. Mr. Eggebrecht is held in the highest regard by Amiga developers and users. His speeches are informative and quite candid.

## "FINAL WRITER" - A SOFTWARE REVIEW

The prayers of professional writers and even casual users who want high-end features in wordprocessing for the Amiga have been answered by the release of Softwood's "Final Writer." While their other current release "Final Copy" remains an excellent package for most people, this newest effort will please even the most discriminating professional.

This program is beautifully conceived and well thought out. The interface has a new user-definable menu-strip at the top of the screen. A wealth of new items are also found in the pull-down menus. These include Table of Contents, Index and Bibliography generation along with Table of Illustrations and Endnotes. These features have previously been lacking or poorly implemented in Amiga wordprocessors. They are the sign of a truly mature and full-featured program.

The excitement doesn't stop there however. The program allows the user to define separate "sections" in a document, such as chapters in a book. Also definable by the user are "styles" that can be applied globally to any level of the document. Text and font styles are also user-definable and may be applied by a hot-key. Speaking of fonts, the folks at Softwood have generously included over 120 high quality outline fonts with the program. This generosity continues with the 100 pieces of clip-art in EPS format. These features alone are worth the price of admission. Of course Final Writer has the same high quality print output that Final Copy is noted for.

This program is excellent value for the money and should be tremendously popular. Final Writer requires Workbench 2.0 or above, at least 1.5 mb RAM and a hard drive for proper operation. It is fully AGA compatible.

# Amsoft Computer Systems

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## what's new

### Fall Apple Crop Includes 16-bit Color Notebook

Among Apple Canada's fall harvest are a color notebook that Apple claims is the first to offer 16-bit color, a faster Motorola 68040-powered LC, and two Quadras that are actually enhanced and renamed Centris models. The company has also introduced the LaserWriter 360, which it is aiming at the work-group computing market.

The 4.8-pound PowerBook Duo 270c uses an illuminated active matrix screen that will display thousands of colors at 640 x 480 pixels. It is powered by a 33 MHz 68030 CPU and fed by an improved battery that allows the notebook to operate for between two and four hours, according to Apple. Standard are 12MB of RAM (expandable to 32MB) and a 240MB hard drive. Suggested retail price of the PowerBook Duo 270c is \$5,000 - \$5,500.

As part of Apple's strategy to consolidate its business computer lines, it has taken two Centris models, added some speed and features and renamed them Quadra 610 and Quadra 650. Both are powered by the Motorola 68040 processor. Apple says the 650, powered by a 33 MHz chip, is about 25 percent faster than the 610 model which uses a 25 MHz processor.

Both come with 8MB of RAM and a 230MB hard drive. They are being positioned as the mid-range models of the Quadra family.

Suggested retail prices begin at \$3,400 for the 610 and \$4,300 for the 650. Included in

the price are a monitor, keyboard, System 7 and Ethernet capability.

Also powered by the 68040 chip is the latest LC model, the LC 475, which Apple claims offers more than twice the performance of the LC III. Pricing begins at \$2,000.

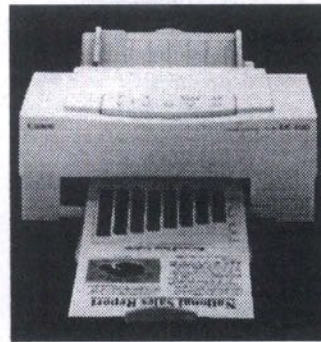
For small Mac and PC mixed networks, Apple is offering the LaserWriter Select 360. The 600 dpi printer is rated at 10 pages per minute, and it supports PostScript Level 2 and Hewlett-Packard's printer language, PCL5.

Model	CPU	Speed	RAM	Cost
LC 475	680LC40	25	4	\$2,000
PowerBook Duo 270c	68030	33	12	\$5,000
4.8 lb., active matrix 16-bit color				
Quadra 610	68040	25	8	\$3,400
Quadra 650	68040	33	8	\$4,300

Contact: Apple Canada 905-513-5111

### Thousand-dollar Color From Canon

Canon Canada's BJC-600 uses a 256-nozzle print head and a bi-directional multipass printing method to produce even, non-banded color, according to the company. The 9.9-pound unit prints at resolutions of up to 360 x 360 dpi on common stock such as plain or recycled bond, labels and overhead transparency film — the company says



the four process colors (cyan, magenta, yellow and black) to be replaced individually. Canon says this is more economical than all-in-one designs where the entire cartridge must be replaced when a single color is depleted. The cartridge is rated for approximately 700 pages in draft mode, and about half that for letter-quality output.

The energy-efficient printer consumes five watts in standby mode and 10 - 15 watts during operation. It comes with a Windows 3.1 printer driver and 25 TrueType fonts. The BJC-600 has a suggested retail price of \$999.

Contact: Canon Canada, 1-800-387-1241; fax 1-800-563-4238

### TrueType and Font Guide From Agfa

Agfa Canada Inc. has introduced the "Discovery TrueType Pack," a collection of 31

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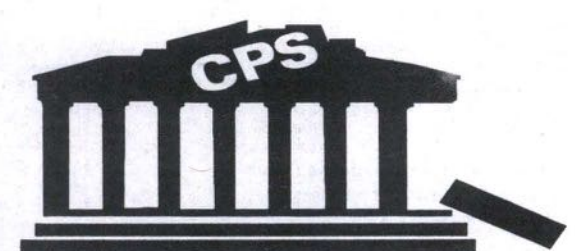
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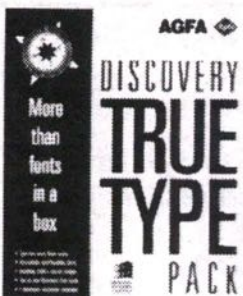
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text fonts and 15 clip-art fonts for Windows 3.1. Included is an on-line document called the Discover Fonts Guide. The guide presents tables displaying the suitability of typefaces for a variety of document types (e.g., reports, forms, signs, manuals). It also presents keyboard maps of the clip-art fonts so that, for example, a person knows what key to press

in the Games & Sports font to produce a baseball symbol.

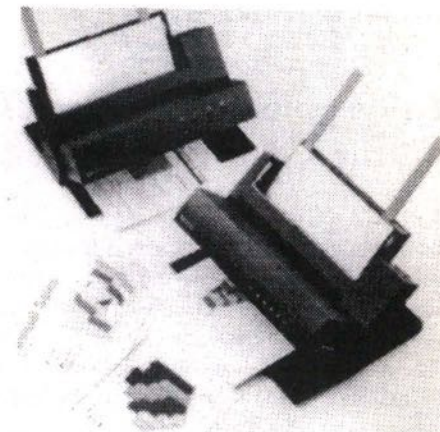
The guide also presents detailed instructions on how to use the clip-art fonts to create borders in PageMaker, or to set up style sheets in Word or WordPerfect. For people who are more comfortable with traditional manuals, any page of the on-line material can also be printed.

The Agfa Discovery TrueType Pack ships with both 5.25-inch and 3.5-inch diskettes. It has a suggested retail price of \$79.

Contact Agfa Canada, 416-241-1110

## HP announces Color Inkjets, Low-cost Laserjets

Hewlett-Packard Canada Ltd. has introduced two 600 dpi laser printers for home and small business users. The LaserJet 4P and LaserJet 4MP incorporate H-P's Resolution Enhancement technology and also use a microfine toner to improve edge smoothness of printing.



HP says it has redesigned the paper path so that users can print on smaller and thicker paper. For example, envelopes will print without wrinkling, and index cards as small as 3 x 5 inches can be fed through without jamming.

The models replace HP's IIIP and IIIP PostScript models. Suggested retail prices are \$1,699 for the LaserJet 4P and \$2,390 for the LaserJet 4MP.

HP has also introduced its first color personal ink jet printers designed for use with laptop computers. Two models have been introduced: the DeskJet 310 for PCs and the DeskWriter 310 for Macintosh computers. Both use thermal inkjet technology for image forming, and will print three pages per minute in black. Each color page takes approximately four minutes to print.

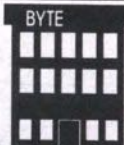
The printers weigh four pounds and are about half the size of a notebook computer. Both have a suggested price of \$506, or \$607 with a cut-sheet feeder.

That price includes only the black-ink cartridge. The color kit is an additional \$62.

Contact: Hewlett-Packard Canada Ltd., 905-206-4383

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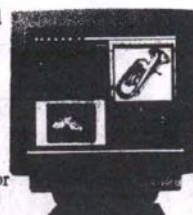
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Something Simple Inc. of Edmonton has introduced an integrated accounting package it is aiming at small business operators. Something Simple Accounting Lite includes a full range of modules including A/R, A/P, O/E, POS, inventory, job costing, and financial reports.

The program will import data from most common accounting packages, and has a multi-user option for use on NetBios-compatible networks. Something Simple Accounting Lite is priced at \$79.99 upgrade price.

Contact: Something Simple Inc. 800-565-6294

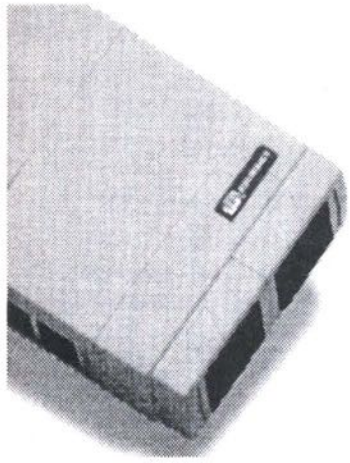
## Sicos Canada Protects Laptops

Theft and accidental damage are the two main concerns of portable computer users, according to Sicos Canada Inc., which says

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## Lexmark's Grand-And-Under Printers

Lexmark Canada Inc., a former division of IBM, has introduced six desktop printers that sell for less than \$1,100.

Included are a five-page-per-minute laser printer, an inkjet model and 9-pin and 24-pin dot matrix models.

The IBM 4037 SE page printer uses a Lexmark electrophotographic print engine and LED imaging technology. The Print Quality Enhancement Technology will produce up to 1500 x 300 dpi output, according to Lexmark.

The 4037 comes with a standard 150-sheet paper tray, and a second 250-sheet tray can be added. It also has a manual-feed straight paper path to accommodate heavier printing stock.

The printer ships with 512KB of memory that can be upgraded to 4.5MB. It is compatible with IBM LaserPrinters and supports H-P PLC4. It ships with its own drivers for Windows and selected DOS applications. Also included are 16 Type 1 fonts and 24 bit-mapped fonts. Suggested retail price is \$1,070.

The ExecJet II uses the company's first internally developed inkjet engine, according to Lexmark. Priced at \$495, the ExecJet prints up to three pages per minute and at resolutions of up to 600 x 300 dpi.



laptop thefts increased 400 percent between 1991 and 1992.

The Langley, BC-based company is offering LapTrax, a surge suppressor that comes with theft and damage insurance.

Manufactured by EFI Electronics Corp. of Salt Lake City, UT, LapTrax protects plugged-in laptop computers against AC line fluctuations, and also protects devices connected to phone lines.

EFI's Triple Crown Warranty includes:

1. a lifetime unlimited-dollar-value replacement guarantee for laptop computers and other devices properly connected to LapTrax;
2. a two-year, renewable unlimited-dollar-value warranty for repair or replacement of connected equipment that suffers accidental damage, including accidental breakage, liquid spill damage or fire damage (called Catastrophic Event Protection); and
3. a lifetime replacement warranty of the LapTrax device.

As well, LapTrax includes two years of theft insurance worth up to US\$2,500 on registered portable equipment. Claims are tied to the submission of a police report.

LapTrax measures 3.55 x 4.75 x 1.5 inches and weighs 11.6 oz. It has a suggested retail price of \$99.90.

Sicos Canada also carries the full line of EFI's power-management products.

Contact: Sicos Canada Inc. 604-533-9255

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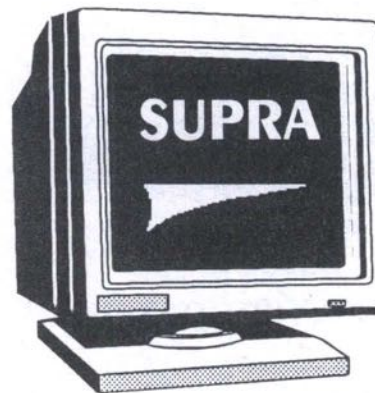
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internally developed inkjet engine, according to Lexmark. Priced at \$495, the ExecJet prints up to three pages per minute and at resolutions of up to 600 x 300 dpi.

Lexmark claims that the printer, which will compete with Hewlett-Packard's DeskJet 500, is faster, smaller and holds more paper than the DeskJet.

The IBM 2300 series of dot matrix printers replaces the PPSII series. Included in the four models are standard- and wide-carriage 9-pin and 24-pin units. They use a nearly straight paper path, which reduces jamming of multi-part forms. Suggested prices range from \$545 to \$815.

Contact: Lexmark Canada Inc. 416-477-2311,  
fax 416-477-3993

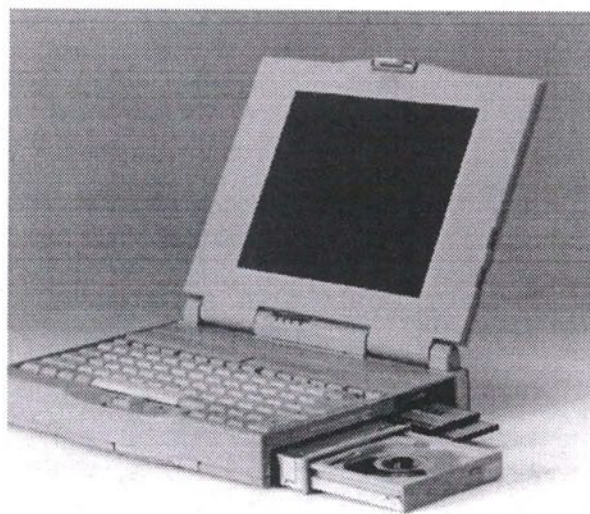
The internal slot that holds the CD-ROM drive will also hold a standard 3.5-inch floppy drive, a second battery or a video tuner that allows TV or videotape viewing on the PC.

A PCMCIA slot will accommodate one Type III or two Type II devices, and a trackball is built in.

The 5.7 lb. notebook PC, which will hold up to 20MB of RAM, is powered by a 40 MHz Intel 486DXII processor. It comes with hard drives of up to 200MB capacity. Pricing was not available.

Contact: Matsushita Electric of Canada Ltd.  
905-238-2185.

## Notebook with CD-ROM From Panasonic



Matsushita Electric of Canada Ltd. has introduced a 486 notebook PC with a built-in miniature CD-ROM drive.

The Panasonic CF-V21P uses a 3.5-inch CD-ROM drive that holds 180MB of data, equal to 21 minutes of motion video, 100,000 pages of text or 600 color images, according to the company.

## Image Club's Fall Collection

Image Club Graphics Inc. of Calgary is shipping the 27th volume of clip-art images, plus its fall collection of typefaces.

Strokes & Sketches comprises 286 images that have a free-hand look to them. The images fit into seven categories: food, animals, nature, musical instruments, human figures, household items and background swatches.

The volume costs \$99 on floppy disk for PCs and Macs. It is also part of Image Club's Art-Room CD-ROM version 6.0 which contains the entire 27-volume clip-art collection.

In its Fall '93 FontPak collection, Image Club has included 11 PostScript and True Type fonts that reflect an "international" flavor.

Improv is based on the title credits for TV comedies of the '60s Wonton is a takeoff on

Chinese calligraphy; East Bloc is reminiscent of Soviet propaganda posters of the 1920s; Paris Flash recreates the radio days of the 1930s; and Mini Pics is an American Sign Language (ASL) font.

Individual fonts in the collection are available for \$19 each, while the 11-font collection costs \$109.



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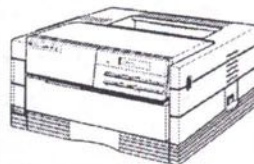


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# training Q&A

## Of Power Management And PCI

BY ROEDY GREEN

### Question

What is the difference between a UPS, SPS and surge suppressor? Which kind of power protection do I need for my computer?

### Answer

Manufacturers frequently and fraudulently call their SPS power protection equipment UPSes.

### What's the difference?

A surge suppressor prevents spikes (large overvoltages) from reaching your computer. Most of them contain only a few 50-cent MOVs (Metal Oxide Varistors.) After a couple of good hits, (perhaps a year later) they burn out, offering no further protection. Unlike fuses, MOVs give no obvious indication they have burned out.

Better quality suppressors have gas discharge tubes, silicon avalanche diodes and baluns which don't burn out. Surge suppressors protect your computer, and smooth out humps that might cause it to hiccup and make errors. However, a surge suppressor can't do much to handle lack of power, either a short term sag, a brownout low voltage, or full blackout. For that, you need an SPS or UPS.

An SPS (Standby Power System) does nothing at all most of the time. When power fails, it quickly kicks in and provides power from batteries. Depending on the size of the batteries, you might have about ten minutes to do an orderly shutdown.

A UPS (Uninterruptible Power System) works all the time. Your computer always runs off batteries, and the UPS continually charges the batteries. There is no direct link between the AC mains and your machine. When you get a power failure, nothing changes. You keep running off batteries just as you always did, you just stop charging them for a while.

A UPS is usually quite a bit more expensive than an SPS since it has a full time duty cycle. Why would you want to pay the extra?

The UPS completely isolates you from flaky AC power, not just power failures. It fully protects you from brownouts, spikes, sags and mini-outages. You might use it for example when your AC power was provided by a diesel generator.

Granted, an SPS may have a built-in surge suppressor to handle spikes, and the ability to kick in even for short term sags, but no SPS provides the rock solid isolation a UPS does.

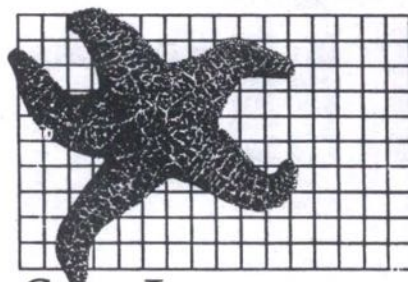
UPSes are expensive, though there is one type that is competitively priced with the SPSes. The PC Power and Cooling Inner-source Power Supply is a UPS where the whole UPS, including the battery, fits inside the power supply inside your computer. An external UPS takes the 12 volt battery power and converts it to 110 volt AC. Then the computer's power supply converts it back again to 12 volt DC. The Innersource is simpler. It runs the computer directly off the battery's 12 volts DC, like a laptop.

Every laptop that can run off batteries contains a true UPS built-in. This is the other economical route to go where you have poor AC power.

### Which should I use?

I always use a surge suppressor such the Electronic Systems Protection's ESP series. If you have problems primarily with short blackouts but otherwise have clean power, use an SPS. If you have really flaky power, like you might find in a third world country, or created by a local generator, then you need a true UPS.

In poor power situations also consider using a portable computer. A UPS keeps you going for only 10 minutes or so after the blackout. A portable is designed to use low power, so might last an hour or more. Further you can swap battery packs to last through long blackouts.



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# training

## Training

Continued from page 79

## Question

Should I wait and buy one of these new PCI bus machines?

## Answer

I always recommend a wait-and-see on any new technology. You never know what is going to take off. Procrastination also helps you avoid the teething pains of newly designed products.

PCI is a way of connecting the CPU and peripheral adapter cards.

### PCI offers the following advantages:

1. PCI automatically configures cards — no more fiddling around trying to figure out which IRQs, RAM address regions, port addresses and DMA channels to use to avoid conflicts — no more trying to find the jumpers to match obsolete documentation.
2. PCI connectors are small and completely incompatible with the older ISA design. PCI

is a clean, fresh start.

3. The PCI bus potentially offers much faster speeds, but in practice is no faster than the current bailing-wire VL-VESA technology.

4. The PCI specification is tight. This means all PCI cards should work together — none of this sloppiness of VL-VESA where you must buy your computer and cards all at once from one vendor to ensure compatibility. With PCI, you are not limited to one or two fast devices the way you are with VL.

5. The PCI specification allows both 5 volt and new low-power 3 volt components to be used.

### PCI has the following disadvantages:

1. There are few peripheral cards available for it yet, though in theory a PCI card could work in a PC, Mac or Power PC machine equipped with a PCI bus. You might end up buying an orphaned design.
2. PCI is more expensive than VL-bus designs. To start, you will find PCI mainly in premium brands like Compaq, Hewlett-Packard and IBM (though that's already changing — Ed). ■

## CALENDAR OF EVENTS

### NOVEMBER

CANADIAN COMPUTER SHOW & CONFERENCE November 22-25, 1993 at the Toronto International Centre, 6900 Airport Rd., Mississauga. The 24th Annual Canadian Computer Show & Conference, The Fall Computing Classic. Canada's premiere computer event, featuring all aspects of the desktop and portable technologies, including the newest in personal computers, notebooks, palmtops, software, networking, open systems, communications, OS/2, Windows, pen-based and wireless technology, multimedia, and more. Contact: Deborah Dugan, G.D.E., Show Manager (416) 252-7791 or fax (416) 252-9848.

### DECEMBER

World of Commodore Amiga December 3-5, 1993, at the Toronto International Centre, 6900 Airport Road. Hours: Friday & Saturday 10 a.m.-6 p.m. Sunday 10 a.m.-5 p.m. Admission: \$8.00 adults, \$6.00 seniors and students, group rates available. Price includes free seminars on multimedia, full motion video, animation, videographics, desktop publishing and more. For more information contact Karen Jewell 416-285-5950 or fax 416-285-6630.

PRE-CHRISTMAS COMPUTER SHOW, DEC 4, 1993. At St. Gabriel's Centre, 672 Sheppard Ave. E. (401 & Bayview). Over 5000 sq ft of Computer Vendors 10am to 5:30pm. Admission \$3.00 adult, \$1.50 child, Seniors free. Produced by Canadian Computer Promotion. For Exhibitor information call Raymond at 416-222-8832.

### INTERNATIONAL

WINDOWS WORLD/Stockholm. Dec 1-2, 1993. Sollentuna International Fair, Stockholm, Sweden. Highlighting the latest in market trends, from networking to multimedia, with a focus on Windows hardware and software. Contact: Chris Blanchard at IDG World Expo at 800-545-3976 or 508-820-8629.

UNIX FAIR '93 TOKYO. Dec 8-10, 1993. Pacifico Yokohama Exhibition and Conference Center, Tokyo, Japan. Contact: Matt Mandino at IDG World Expo at 800-225-4698 or 508-879-6700.

### JANUARY 1994

COMNET '94. Jan 24-27, 1994. Washington, DC. Featuring over 450 exhibitors, 22 in-depth tutorials, over 70 conference sessions, two keynotes, a special plenary session on ATM, Executive Symposium, and the annual Town Meeting. Contact: Eileen Faber at IDG World Expo at 800-225-4698 or 508-879-6700 or MCIMail: 603-9585.

OBJECT WORLD BOSTON. Jan 11-13, 1994. Hynes Convention Center. Boston, MA. Focusing on the commercial and practical aspects of object technology. Contact: Lynn Fullerton at IDG World Expo at 800-225-4698 or 508-879-6700.

### FEBRUARY 1994

MACWORLD EXPO. Tokyo. Feb 17-19, 1994. Nippon Convention Center, Tokyo, Japan. Contact: Susan Leary at IDG World Expo at 800-225-4698 or 508-879-6700.

### MARCH 1994

COMPUTERWORLD EXPO. Auckland, NZ. Mar 23-25, 1994. Contact: Matt Mandino at IDG World Expo at 800-225-4698 or

508-879-6700.

UNIFORM '94. Mar 21-25, 1994. An extensive conference focusing on Open Systems, also offered; over 70 conference sessions, 10 tutorials, 4 hands-on workshops, 3 plenary sessions and two executive symposiums. Moscone Convention Center, San Francisco, CA. Contact: Tonia Ware at IDG World Expo at 800-225-4698 or 508-879-6700.

### SEMINARS

SEMINARS-Flynn McNeil Raheb & Associates are offering a series of information technology seminars free of charge to executives and senior managers:

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ELECTRONIC DOCUMENT MANAGEMENT-March 17, '94. Learn how to get the best value from the use of electronic document management technologies.

RAPID APPLICATION DEVELOPMENT-April 21, '94. Will show you how to develop information systems with a high level of user involvement and support.

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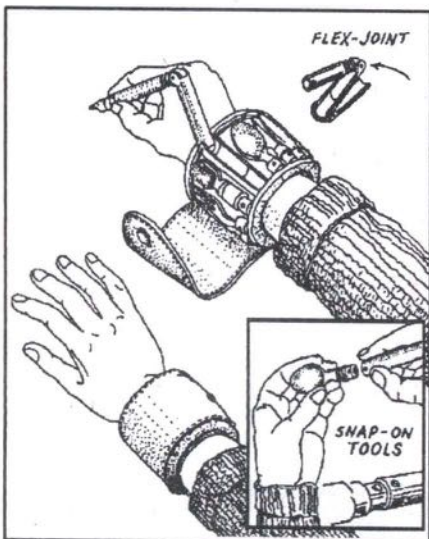
The disc includes demonstration models from companies such as Viewpoint Animation Engineering. All 28 Viewpoint demo models are present, including the yet-unreleased SIGGRAPH '93 set. More demo objects were contributed by Noumenon Labs, VRS Media, Mira Imaging and other commercial modeling companies.

The 3D-ROM is a demonstration of the translation abilities of InterChange Plus, Syndesis' system for converting between 3-D file formats. InterChange Plus translates between AutoCAD DXF, 3D Studio, Digital Arts, Wavefront, Swivel, Sculpt, VideoScape, LightWave, Imagine, CAD-3D, PAGERender and Vista DEM formats. Soon to come is support for StereoLithography, Macromedia 3DGF, Super 3D, Alias StyleGuide, Topas, Softimage, Inventor and Vertigo formats. All material and hierarchy information is preserved as far as possible.

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Mitsubishi Electric's latest neuro board is equipped with 18 units of proprietary neuro LSI chips. These chips have in total 1,800 units of neurons or neuro elements. With these elements, it provides super-fast calculation

speed as well as the fast learning speed of 50 giga times (500 billion times) per second.

This neuro board measures 33.7 x 55 cm. The unit can be connected to engineering workstations via a regular bus. Mitsubishi Electric claims it wants to improve the device and release it for voice recognition systems and graphic processors within three years.

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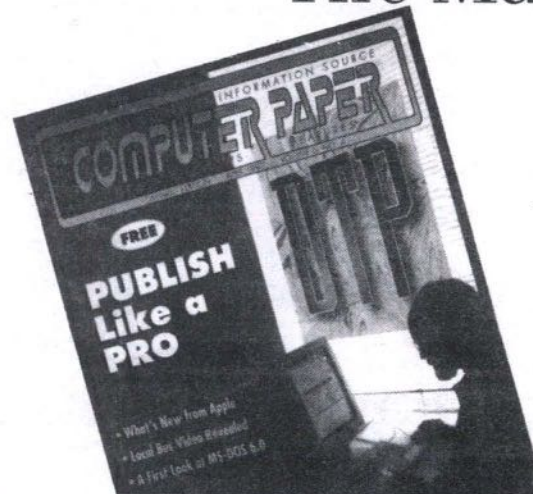
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**CLUB CUBASE** — Toronto area users of Steinberg Software products, especially their powerhouse sequencer Cubase, now have a forum to share information and develop skills. Club Cubase meets at 7:30 pm on the last Monday of every month, in Room C426 at the Casa Loma Campus of George Brown College - 160 Kendall Ave.

For more information contact Club Cubase at 62 Hamworth Drive, Willowdale, ON, M2H 3C2 or call 496-9905.

**CLUB MAC COMPUTER GROUP OF ONTARIO** — All Mac users, Macintosh OS & related issues, meets 2nd Tuesday, Michener Institute, 222 St. Patrick St., Toronto, 7 pm to 10 pm, infoline 462-1702.

**COMPUTER TRAINERS' NETWORK** — A group of teachers, tutors and consultants who meet the first Thursday of every month to discuss training or computer-related issues. Meeting format consists of refreshments, business portion, guest speaker and memberships available. Location: 121 King St. W., 24th Floor, Toronto, Ontario. For more information please call Veronica of Vision Computer at (416) 323-0406.

**CYBERPUNK RESEARCH LABORATORIES** — Merry hackers in search of picturesque, mountains, RAM and fairytales. For further data write c/o CyberPunk Research Labs. - Seneca College of Communication Arts, 1124 Finch Ave. West, North York ON M3J 3J3.

**ELECTRONIC GAMES PLAYERS' ASSOCIATION (EGPA)** — EGPA announces the start of their Canada-wide search for computer and video game players interested in swapping their used games. As a member of the EGPA, individuals will be able to exchange game software. Members will

also be able to buy used games without a trade. Membership available for the first year with an annual renewal. If you are interested in joining or would like more information, please send \$1 to cover postage and handling to: EGPA, 292 Patricia St., North Bay, Ont., P1B 7Z3. The one dollar is applied to your membership fee.

**IRMAC** — Information Resource Management Association of Canada: dedicated to data management, IRM, data dictionaries, CASE, and strategic planning in the corporate environment. Monthly meeting in Toronto, Ottawa, and Victoria. (416) 960-6508.

**K.R.D.** — 1995 (The Kidstuff Reunion Drive Group For 1995) At 144 Gillard Ave., Riverdale. Tel: 461-1343. Call for meeting dates 11AM Saturdays. Group's focus is to collect 1975-6 Canadian pennies in order to reassert interest by signing a petition to reinstate the 1975-76 CTV Show "Kidstuff". Computer Kidstuff 1995?? 2005?? Ask for Jeffrey Leitner (416) 461-1343.

**KW-MUG** — 376 Peel Street, New Hamburg, ON, N0B 2G0, (519) 662-2627. Focus: Public domain distribution; reviews of current software; meetings variable, no fees.

**LOGIC** — An Independent Apple User Group: Provides a support and information network to users at all levels. LOGIC accomplishes this by: holding monthly meetings, hosting Special Interest Group meetings, providing an electronic bulletin board, publishing the Maple Orchard magazine (free to members), and maintaining an extensive library of shareware and public domain software. Meetings 1st & 3rd Tuesday of the month, North York Centre, 5110 Yonge St., in the Memorial Hall at 7:30 pm. Messages (416) 323-0828 BBS (416) 487-9771.

**METRO TORONTO ADAM GROUP (MTAG)** — Supporting ADAM, CP/M-TDOS Users contact: (416) 424-1352 or write to: P.O. Box 165, 260 Adelaide St. E., Toronto, ON, M5A 1N0. Meetings 2nd Monday of each month. 1485 Albion Rd (Community Centre) and 4th Sat. each month at the Pape Ave. Community Center. Bi Monthly newsletter.

**MISSISSAUGA COMPUTER CLUB** — (M.C.C.)... Supporting IBM-PC, Macintosh, and Amiga systems. Presentations, Demos, Raffles, SIG's, and "LOADS" of shareware... also a monthly newsletter. "ALL WELCOME". If interested or further information please call Robert Brower (President) at (416) 890-4503 or "TOTAL ACCESS BBS" at (416) 568-5294... Meeting held the last Tuesday of each month.

**NEXT USERS GROUP** — NeXT computer support, 2nd Thursday, Toronto Western Hospital, corner of Bathurst & Dundas, yellow elevator to 6th floor, 7:00 pm, Daniel O'Connell (416) 365-1899.

**PCCT (PERSONAL COMPUTER CLUB OF TORONTO)** — PC users, 3rd Tuesday, St.

Gabriel's Community Centre, 672 Sheppard Ave. E. (2 blocks East of Bayview, North side), North York, 7:00 pm; membership includes shareware, BBS, special interest groups (SIGs) & workshops. Information (416) 244-6786.

**TAF - TORONTO ATARI FEDERATION** - XE/ST/Falcon computers. 300 members. BBS. Newsletter. SIGS for MIDI, DTP, General and more. Meets 7:30pm. Third Thursday of month in North York Memorial Community Hall in the N.Y. City Centre Library building. 5110 Yonge St. at Park Home. BBS - (300-16.8) 235-0318. Info-Line (voice) 425-5357.

**THE CANADIAN AUTODESK MULTIMEDIA USER GROUP** — Interested Users of Autodesk Multimedia products are invited to call Pia Zimperi at (416) 929-8155.

**THE CANADIAN INFORMATION PROCESSING SOCIETY** — presents the following meetings at the Toronto Board of Trade, 3rd Floor. Dec 2, 6pm, Dec 7, 5:30pm, Dec 16, 6:00pm. For further information call Brian Gilbey 351-6283.

**THE COMMUNICATION NETWORK** — Join our Social Network/Support Group for SHY people and enhance your Social and interpersonal skills. Participate in weekly organized social and cultural activities. Weekly meeting from 7-10pm. Pre-registration is required. Call for more info at 851-6696 or 851-2980.

**THE DURHAM P.C. USERS' CLUB** — supports local computer enthusiasts with monthly meetings and a newsletter, a software library and many special interest groups. Meetings on second Thursday of each month at 7-10 pm (free admission). Meetings held at CAW Local 222 Hall, 1425 Phillip Murray Ave., Oshawa. Contact Barbara Rice at 416-434-7420 or Bruce Laycraft 416-728-9351.

**THE ELITE GROUP OF 3-D PROGRAMMERS** — (E.G.3D P) in association with L.T.P.D. Dedicated to Atari users. For more information write to L.T.P.D. c/o (E.G.3D P), 37 Montye Ave., Box #2, Toronto, Ontario M6S 2G8.

**THE SOCIETY FOR TECHNICAL COMMUNICATION** - Toronto Chapter's December meeting is at 7:00 on Tuesday, Dec 14th at the North York Civic Centre, 5100 Yonge St. (in Gold Room A). Speaker - STC member Tony Alderson. Learn how information technology affects paper-based documentation. For more info. call Chris Mill at 408-7690.

**THE TORONTO COLOUR COMPUTER GROUP** — meets on the 2nd and 4th Mondays of each month. For more information, call Larry Osborne at (416) 972-1809.

**THE TORONTO GUPTA USERS GROUP (TGUG)** - Open to anyone who is a user, developer or vendor of Gupta SQL database software. Meetings held in Feb, Apr, June, Sept, Nov each year. Contact Terry Lewis at 416-620-6565 X639 or 416-620-

6913 (fax) for more info. Corp membership fee: \$50/yr (up to 3 employees); Single membership: \$25/yr.

**TIMEX-SINCLAIR USERS CLUB** — All Timex and Sinclair Computers. 1st Wednesday of the month, 14 Richome Court, Scarborough, ON, M1K 2Y1, 7:00 pm. Demonstrations, bi-monthly newsletter. Voice Info. (416) 751-7559.

**TORCHI (Toronto Region Computer Human Interaction)** — Meets every second Wednesday of the month from 7:00 pm-10:00 pm. Members come from business, academic, and government to share interests in human use of computers, reflected in human factors, usability, Ergonomics, the user interface and many other related disciplines. For more information re speakers, topics and membership. We are the local chapter of Sigchi a part of ACM. Call M. Boshes (416) 448-2697.

**TORONTO APL SIG** — An educational and social organization concerned with the use and promotion of APL computer language. 4th Monday of each month at 6:30 pm (excluding the Summer) at BCE Place, 161 Bay Street; 10th Floor. Or write: Toronto APL SIG, Box 384, Adelaide Street P.O., Toronto, Ont., M5C 2J5. Contact Ben Best (416) 862-3193.

**TORONTO BORLAND USER GROUP** — meets 2nd Thursday of every month at 5:00 pm Free BBS 271-9795. Call for next meeting Loc & list of presentations. Learn about "PAL" (Paradox Application Language), add-in products, Paradox tips and traps. For membership info., contact Doug Campbell 496-2120.

**TORONTO USERS GROUP** — User members support of Intermediate CL. Next meeting is held on Sept. 22nd at the Howard Johnson Plaza at 400-401 Keele St. Please contact Wende Boddy at suite 2550, P.O. Box 77, Toronto Dominion Centre, Tor., ONT, M5K 1E7 for more information, or call (416) 607-2546.

**TPUG (TORONTO PET USERS GROUP, INC.)** — Commodore users (PET, 64/128, Amiga, CDTV, MS-DOS, etc.), meets Tuesdays (1st, 12th, 2nd, Amiga; 3rd, GEOS; 4th, 64), York Public Library, main branch, 1745 Eglinton Ave. W. (near Dufferin), 7:30 pm; 3rd Thursday Alderwood United Church, 44 Delma Drive, Etobicoke, 7:30 pm, software library, newsletter & BBS, information (416) 253-9637.

**TRACE** — Toronto Regional AutoCAD Exchange: Presentations on the last Tuesday of every second month. Held at the Malton Community Centre, 3540 Morningstar Drive. For details call Tim Lucas at (416) 750-9765.

**ZIM USERS GROUP** — Revival of the Toronto Zim Users Group. Emphasis on exchange of ZIM technical expertise in a friendly environment. Contact Fay Rakoff: Phone (416) 979-6216, or Fax (416) 979-4888.

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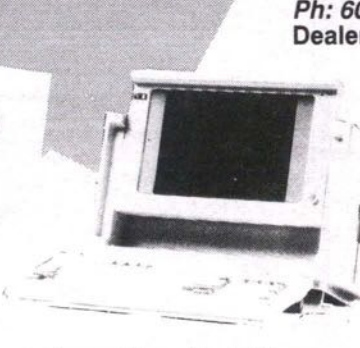
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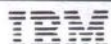


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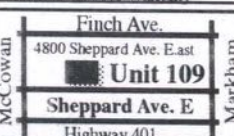
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CALL 538-1212 (10:00-12:00am)

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## Impulse 486SX Notebook

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RETAIL VALUE **\$2849**

## Lexmark Laser-Quality Printer IBM 4037 5E

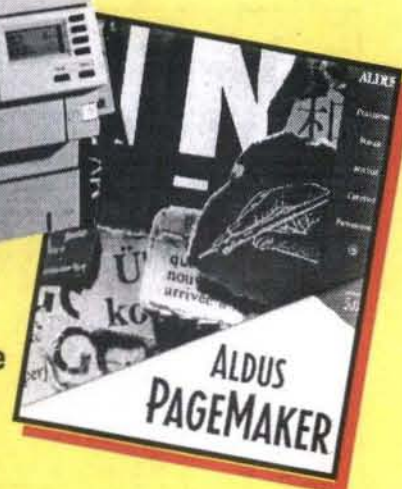
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DRAW DATE: JANUARY 20, 1994

PLEASE FILL IN BOXES

### 1. Sample Question

01. First Answer  
 02. Second Answer

03. Third Answer

03

## Who Are You?

### 1. What is your age?

01. Under 14  
 02. 14-18  
 03. 18-24  
 04. 25-29  
 05. 30-34

06. 35-44  
 07. 45-54  
 08. 55-64  
 09. 65+

### 2. Are you...

01. Male

02. Female

### 3. What is your highest level of education?

01. High School  
 02. Some/completed post-secondary

03. Univ. degree(s)

### 4. What is your combined household income?

01. Under \$30,000  
 02. 30,000-49,999  
 03. 50,000-59,999

04. 60,000-89,999  
 05. 70,000-99,999  
 06. over \$100,000

### 5. Are you employed?

01. Yes  
 02. Self-employed

03. Not currently

## How do you use a computer?

### 6. What is your company's main business? (select one only)

01. Agriculture  
 02. Construction  
 03. Finance, Insurance, Real Estate  
 04. Education  
 05. Engineering/Architecture  
 06. Media  
 07. Government  
 08. Health Care/Medical/Legal  
 09. Hospitality

10. Manufacturing  
 11. Media  
 12. Mining  
 13. Retail  
 14. Services  
 15. Transport, Comm., Utilities  
 16. Wholesale  
 17. Other

### 7. What is your professional title or job function? (select one only)

#### Corporate Management

01. Chairman/President/CEO/Owner/Partner  
 02. V.P./General Manager/Controller/Treasurer  
 03. Other Manager/Supervisor

#### Computers

04. Microcomputer Manager  
 05. Micro Specialist/Coordinator  
 06. Network/LAN Manager  
 07. Data/Telecom Manager  
 08. IS/DP/MIS Manager  
 09. Project Manager/Group Leader  
 10. Systems Analyst/Programmer  
 11. Computer Trainer  
 12. Computer Consultant

#### Other Professionals

13. Art Director/Graphic Designer/Artist  
 14. Architect/Engineer  
 15. Scientist  
 16. Educator  
 17. Editor/Writer  
 18. Doctor/Lawyer  
 19. Accountant  
 20. Sales/Marketing Representative  
 21. Publisher  
 22. Other

### 8. Your Department/Function (select one only)

01. Engineering/Systems Engineering  
 02. Research & Development  
 03. MIS/DP/Information Systems  
 04. Communication/Publishing/Public Relations  
 05. Art/Creative Design  
 06. Manufacturing/Operations  
 07. Sales/Marketing  
 08. Administration/Management/Personnel  
 09. Accounting/Finance  
 10. Education/Training  
 11. Science  
 12. Networking/Communications  
 13. Office Automation  
 14. Purchasing  
 15. Consulting  
 16. Other

### 9. What was your company's total gross sales volume or revenues for 1993? (select one only)

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 - \$9 million

### 10. How many people are employed full-time at your location? (select one only)

01. Under 10  
 02. 10 - 19  
 03. 20 - 49  
 04. 50 - 99  
 05. 100 - 499  
 06. 500 - 999  
 07. 1000 - 2,499  
 08. 2,500 - 4,999  
 09. 5,000 - 9,999  
 10. 10,000 or more

### 11. How many computers do you have at home?

Number of Computers 1 2 3 4 5+ none

### 12. Describe your home computer

A. Type ☐ Desktop ☐ Portable  
 B. Megabytes of RAM  
☐ >1MB ☐ 2MB ☐ 4MB ☐ 8MB ☐ 16MB ☐ >16MB  
 C. Size of Hard Drive  
☐ >40MB ☐ 41MB-80MB ☐ 81MB-120MB  
☐ 121MB-200MB ☐ 201MB-500MB ☐ 501MB+  
 D. Modem  
☐ No modem ☐ 300bps ☐ 1200bps  
☐ 2400bps ☐ 9600bps ☐ 14.4K ☐ >14.4 K  
 E. Monitor  
☐ Monochrome ☐ CGA ☐ EGA ☐ VGA ☐ SVGA ☐ XGA  
 F. Brand of Computer

### 13. Do you use a computer at work?

01. Yes 02. No

### 14. Describe your computer at work

A. Type ☐ Desktop ☐ Portable  
 B. Megabytes of RAM  
☐ >1MB ☐ 2MB ☐ 4MB ☐ 8MB ☐ 16MB ☐ >16MB  
 C. Size of Hard Drive  
☐ >40MB ☐ 41MB-80MB ☐ 81MB-120MB  
☐ 121MB-200MB ☐ 201MB-500MB ☐ 501MB+  
 D. Modem  
☐ No modem ☐ 300bps ☐ 1200bps  
☐ 2400bps ☐ 9600bps ☐ 14.4K ☐ >14.4 K  
 E. Monitor  
☐ Monochrome ☐ CGA ☐ EGA ☐ VGA ☐ SVGA ☐ XGA  
 F. Brand of Computer

### 15. Do you belong to a computer user group?

01. Yes 02. No

### 16. Do you use an electronic Bulletin Board System? (BBS)

01. Yes 02. No

### 17. Do you use an on-line service?

(such as: CompuServe, America Online, Delphi, BIX, 5. GEnie)

01. Yes 02. No

### 18. What Operating System do you use? (Select one of each)

01. DOS  
 02. Windows  
 03. OS/2  
 04. Unix  
 05. Macintosh  
 06. Atari  
 07. Amiga  
 08. Other

Home Work  
☐ ☐

### 19. What is your Network Operating System?

#### Network Operating System

01. Novell  
 02. Unix/NFS  
 03. LanManager  
 04. Banyan  
 05. Appleshare  
 06. DEC Pathworks  
 07. Other

Home Work  
☐ ☐

### 20. How long have you used a computer?

01. less than 6 months  
 02. 6 months to 1 year  
 03. 1 year to 2 years  
 04. 2 years to 5 years  
 05. 5 years to 7 years  
 06. 7 years to 10 years  
 07. more than 10 years

### 21. Do you purchase, recommend, specify or approve any of the computer products listed below? (Check all that apply)

#### Computers

☐ 01. PCs  
☐ 02. Workstations

#### Connectivity

☐ 03. Local Area Networks  
☐ 04. Modems  
☐ 05. Communications/Networking Software

#### Peripheral Equipment

☐ 06. Laser Printers  
☐ 07. Color Printers  
☐ 08. Monitors  
☐ 09. Hard Disks  
☐ 10. Backup Systems  
☐ 11. Scanners  
☐ 12. Input Devices  
☐ 13. Removable Storage  
☐ 14. CD-ROMs  
☐ 15. Plotters

#### Software

☐ 20. CAD/CAM  
☐ 21. Graphics  
☐ 22. Desktop Publishing  
☐ 23. Desktop Presentation  
☐ 24. Database  
☐ 25. Programming  
☐ 26. Accounting, Payroll  
☐ 27. Spreadsheets  
☐ 28. Project Management  
☐ 29. Word Processing  
☐ 30. Utilities  
☐ 31. Multimedia  
☐ 32. Outside Services  
☐ 33. None of the above

#### Add-In Products

☐ 16. RAM Memory  
☐ 17. Display Boards  
☐ 18. Ethernet Boards  
☐ 19. Accelerator Boards



**22. If you checked any of the above computer products, for how many PCs do you have this involvement?**

- |           |              |
|-----------|--------------|
| 01. None  | 05. 50-99    |
| 02. 1-9   | 06. 100-499  |
| 03. 10-19 | 07. 500 plus |
| 04. 20-49 |              |

**23. Please indicate the quantities of computers installed and/or planned in the next 12 months at your location.**

**Currently Installed**

01. Don't know  
02. 1  
03. 2-4  
04. 5-9  
05. 10-24  
06. 25-99  
07. 100-499  
08. 500 plus  
09. None

**Planned to Purchase in the next 12 months**

10. Don't know  
11. 1  
12. 2-4  
13. 5-9  
14. 10-24  
15. 25-99  
16. 100-499  
17. 500 plus  
18. None

*What do you think of us?*

**24. How many other people see your copy of The Computer Paper?**

- |                         |                         |
|-------------------------|-------------------------|
| 01. one other reader    | 04. four other readers  |
| 02. two other readers   | 05. six or more readers |
| 03. three other readers | 06. no others           |

**25. How many of the last 12 editions have you read?**

- |       |       |        |
|-------|-------|--------|
| 01. 1 | 05. 5 | 09. 9  |
| 02. 2 | 06. 6 | 10. 10 |
| 03. 3 | 07. 7 | 11. 11 |
| 04. 4 | 08. 8 | 12. 12 |

**26. What other types of local publications do you read regularly?**

- |                           |                       |
|---------------------------|-----------------------|
| 01. Daily Newspaper       | 04. None of the above |
| 02. Weekly Paper          | 05. Other             |
| 03. Business Publications |                       |

**27. How much time do you spend reading THE COMPUTER PAPER each month?**

- |                          |                     |
|--------------------------|---------------------|
| 01. Less than 30 minutes | 03. 1 - 2 hours     |
| 02. 30 - 60 minutes      | 04. 2 hours or more |

**28. What other computer magazines do you regularly read? (Check all that apply)**

**US-based Publications**

01. PC Magazine  
02. PC World  
03. MacWorld  
04. MacUser  
05. Byte Magazine  
06. Computer Shopper  
07. PC Week  
08. Mac Week

**Canadian-based Publications**

09. Computing Canada  
10. Computing Now  
11. Toronto Computes  
12. Computer Dealer News  
13. Direct Access  
14. Our Computer Player  
15. The Computer Post  
16. Networking World  
17. Info Canada  
18. Computer World Canada  
19. CIO Canada  
20. IT Magazine  
21. The Computer Paper

**29. From the above list, which Canadian computer publication do you consider the best?**

**30. What would you like to see more of in The Computer Paper? (Check all that apply)**

- |                      |                  |               |
|----------------------|------------------|---------------|
| 01. Feature articles | 05. How-to-tips  | 09. Macintosh |
| 02. Newsbytes        | 06. Telecom      | 10. OS/2      |
| 03. Local News       | 07. Book Reviews | 11. Amiga     |
| 04. Advertising      | 08. Music        | 12. Other     |

**31. Do you have any other comments on the publication?**

## CONTACT:

Name:

Address:

City, Prov.:

Postal Code:

Telephone:

1. FOLD ALONG LINE

2. FOLD ALONG LINE

TEAR OUT

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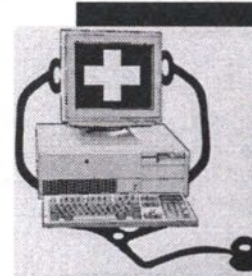
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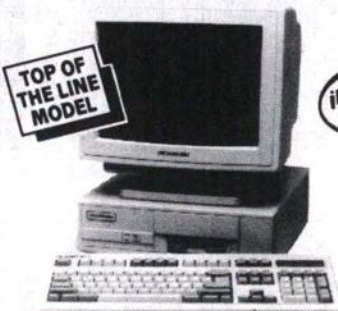
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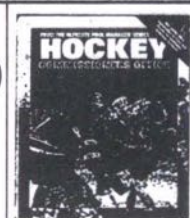
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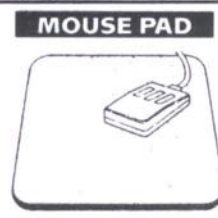
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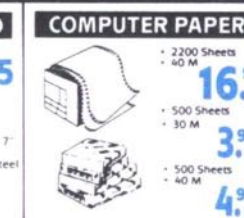
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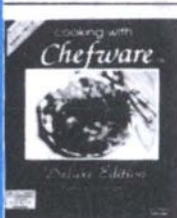
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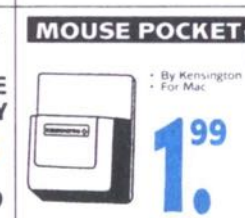
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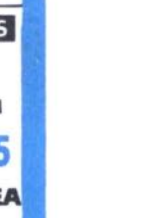
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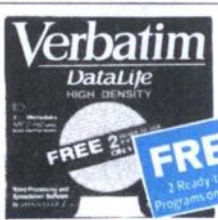


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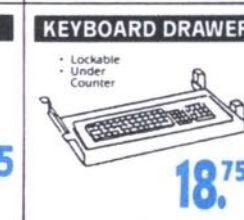
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