5TH ANNIVERSARY ISSUE!

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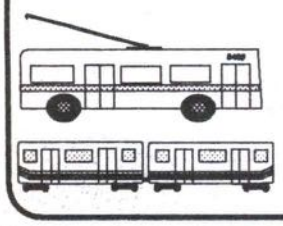

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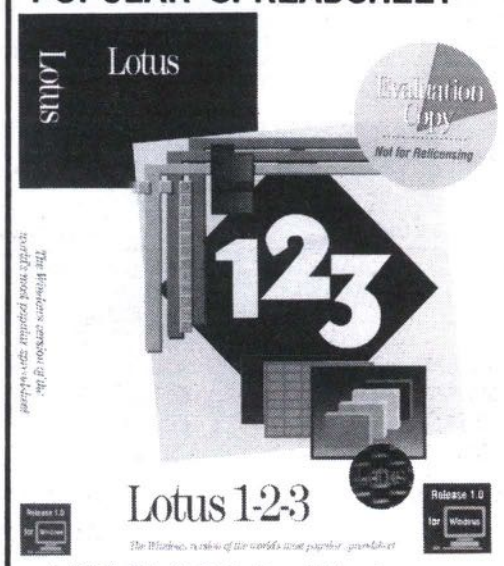

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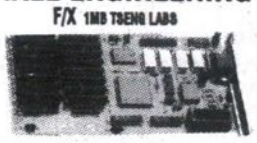

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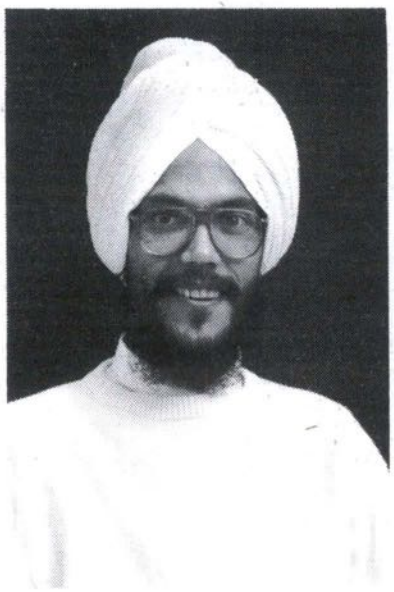
From the Editor



The Battle of the Operating Systems

Make that "32-bit Operating Systems." We just got back from the Pacific Rim Computer & Communication Show and it is evident that the next few years will be interesting for the computer industry. What we are looking at is a coming battle for market share in the operating systems area. The operating system is to a computer what a mother-tongue is for people. It is the most basic method of communicating to the computer. Without an operating system, you can't run your spreadsheets or wordprocessors.

MS-DOS Rules

Currently, the best selling operating system is MS-DOS (Microsoft—Disk Operating System). MS-DOS has many limitations, such as a 640 K RAM limit which programmers have to create elaborate ruses to get around to run their monster programs, a limitation to eight characters for file names (hence some of the complicated file names like "BUDFEB91.WK1" instead of "February '91 Budget Spreadsheet") among other things. It was a great operating system, when computers had 128 K of memory, but it is beginning to show its age.

Windows

What we saw at the show were some of the competitors lining up to replace MS-DOS. Windows is often counted as an operating system, and it functions like one, but it is in fact just a program that runs over MS-DOS. Windows currently looks like the "operating system" to beat. Microsoft claims to have shipped 8 million copies and has software developers falling over each other to produce programs for the system. Windows has limitations, many of them tied to the fact that it is still an overlay to MS-DOS. Microsoft plans to deal with these by producing an interim upgrade called Windows 3.1 and eventually an all-new operating system called Windows NT, which presumably will run Windows programs, but as its own operating system, not on top of MS-DOS.

OS/2

IBM, long a leading purveyer of DOS, has recently split with Microsoft and its very successful Windows. IBM is promoting an operating system called OS/2 Version 2.0. OS/2 and Windows NT have roots in similiar code that both IBM and Microsoft have worked on. One observer claimed that IBM will actually make as much money if Microsoft sells a copy of Windows NT as they do by selling a copy of OS/2. In addition, IBM has in its warehouse of operating systems, a deal with Apple Computer to combine the best elements of that company's Macintosh operating system to run on both Intel-based machines and IBM's RISC-based R6000 computers.

SCO, NeXT and Sun

More options are also being promoted from the Unix world. SCO and other companies have been selling Unix versions that run on "DOS boxes"—inexpensive, powerful 386 and 486 computers. They have generated solid growth, but not necessarily excitement. The Unix vendors have seen it primarily as a way to generate a larger software base for their own hardware platforms.

From rumors at the show, it seems that now NeXT Inc. may be entering the fray with a version of its NeXTstep operating system. NeXTstep is a variant of Unix, which is reputed to be very fast and easy to program new applications in. It was the platform of choice for a new Lotus spreadsheet called Improv a year or so ago, and was chosen because of the ease of programming. NeXT Inc. is rumored to be negotiating with Compaq and Dell to deliver NeXTstep on their 486 computers. A similar route is being taken by Sun International to promote its Sun workstations. A new spin-off called SunSoft will be promoting a version of the Sun OS called Solaris that runs on 386 and 486 computers.

Good Buys, Good Future

What all this means is that a fast 386 or 486 computer is a solid invesment whichever way the software operating system wars go, because you will likely have your choice of operating systems in the near future. DOS will likely linger on for a long time, and we will see a series of options for PC operating systems: OS/2, NeXTstep, Solaris, and SCO Unix to name a few. Interesting times....

Toronto Edition

Beginning in March, *The Computer Paper* will be launching a Toronto edition of the publication. We have had numerous requests over the years for a version of the publication from readers in Toronto and we hope that it will be as well received as it has been in B.C., Alberta and Manitoba. This continued growth is due to you, our dedicated readers. Keep telling our advertisers where you saw their ads. Thanks.

Enjoy the issue.

Kirtan Singh Khalsa
Publisher/Editor

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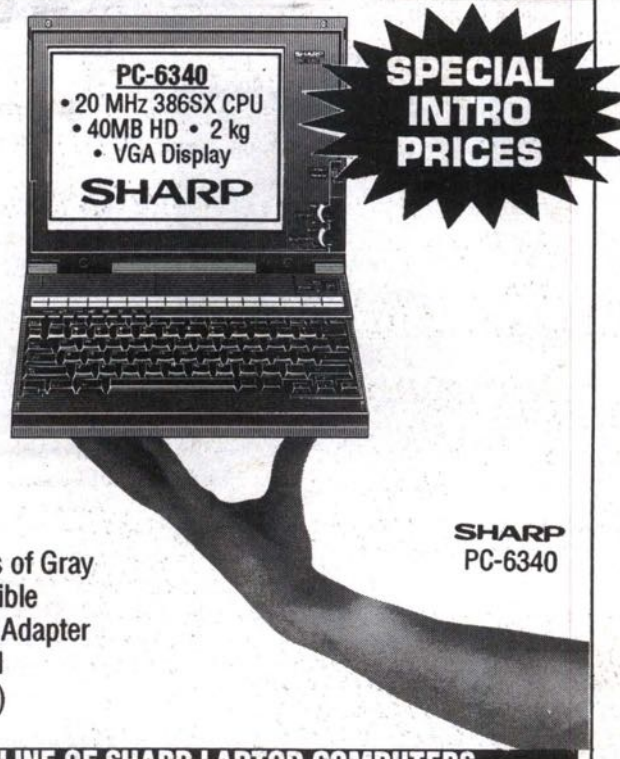

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LETTERS TO THE EDITOR

More Modems Please

How about an updated modem article, similar to the excellent one that Roedy Green did in November 1989? Keep up the great publishing!

Bob d'Esterre
Port Coquitlam, B.C.

Look for telecom-related news in our March edition. It will feature articles about high-speed modems, telecommunications and an updated BBS listing.

He Likes It & I Like It Too

Please find enclosed a cheque for $24.95 for a 1992 subscription to your paper.

We enjoy your paper immensely. While my husband is quite conversant where computers are concerned, I am not and I particularly enjoy the educational benefits.

We read it every month and look forward to it. Sometimes we have trouble locating it, though, so here's your cheque! Keep up the great work.

Penelope Harris
Surrey, B.C.

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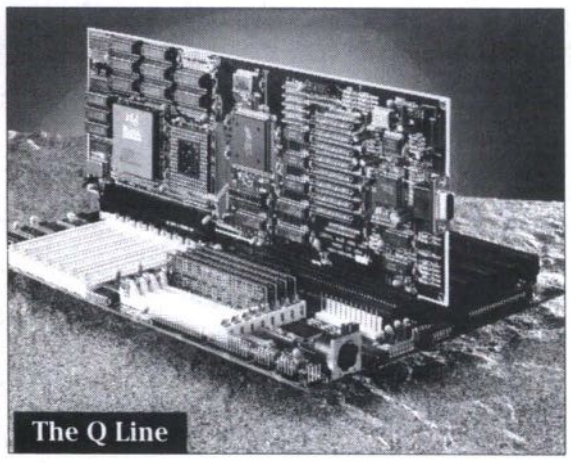

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Amiga Ardor

I completely agree with Barry Fence's criticism, after reading his letter in the December '91 issue of *The Computer Paper.* There is virtually no Amiga coverage in your magazine. In an average issue of one hundred pages, one will be lucky to find even a combined total of half a page worth of Amiga-related news. To help pick up the slack, here are some ideas for possible Amiga-related articles in the future:

The Amiga as a multitasking, multi-environment computing platform. A review of available products that make the Amiga MS/DOS, Macintosh, and UNIX compatible and how one can go about communicating between platforms.

The new 24-bit graphics cards available for the Amiga, which are suitable alternatives to the more costly IBM/Targa board configurations.

Hands-on review of the new Workbench 2.0 operating system. (You already reviewed Windows 3.0, MS/DOS 5.0, Geoworks Ensemble, and System 7.0 when they first came out!)

A comparison of the 68030/68040 upgrade accelerator boards for the Amiga. (Note that the 68040 can do 20+ MIPS, compared to the 80486 at roughly 15 MIPS!).

Video work, animation, and multimedia presentation on the Amiga.

These are just a few ideas that only scratch the surface of a very creative machine. It is a pity that your magazine, so far, has chosen not to fully educate the computing public of the capabilities of the Amiga. But I still have faith in *The Computer Paper* and I wish your staff good luck on their future endeavors.

Steve Tang
Richmond, B.C.

The Computer Paper *welcomes submissions on Amiga-related topics. For what it's worth, we have covered most of the above topics in past issues, including a series of articles by well-known Amiga writer Nancy Devitt Lorieau. Graeme Bennett also writes periodically about the Amiga, and has taught Amiga courses for the Vancouver school board and developed Amiga software and hardware products.*

Disappointed over Apple's 'no-show' at Pac Rim—An open letter to David Rae at Apple Computer

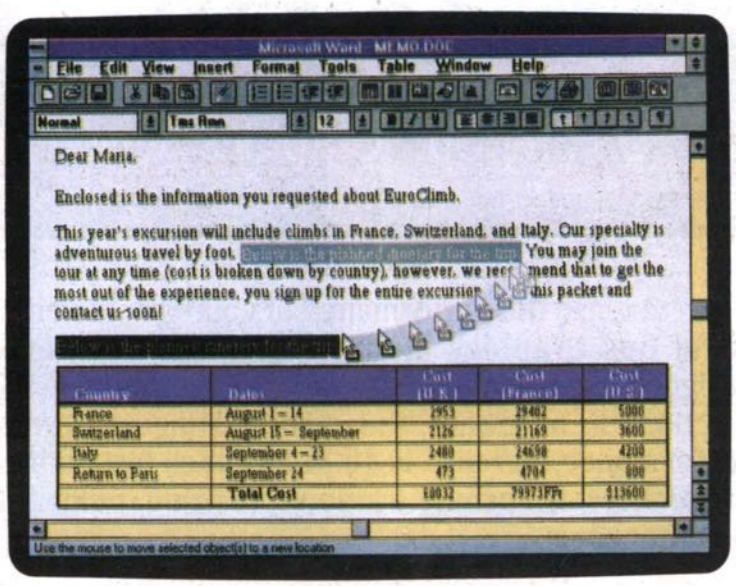
We just finished the Pac Rim Computer Show held at the Vancouver Trade & Convention Centre this past week. Our company, DeskTop Solutions Ltd., was an exhibitor at this years show. The show was very well attended and the show staff were very co-operative, but there was one major problem on our part. Neither Apple Canada nor any of the Apple dealers were represented at the show. This was a great disappointment to us, as well as the many Apple customers who were in attendance. As a result of the "Apple no-show" many of your loyal customers approached our booth confused, thinking that we were an Apple dealer. Our company is a desktop publishing and graphics business and we use Apple Macintosh computer systems exclusively. Many of your customers and other non-Apple users approached us asking us why we use Macintosh computers exclusively in our business. There was so much confusion as to why Apple Computer or one of the Apple dealers did not grace us with their company that much of our time was taken up talking to disappointed Apple customers. Many of these same customers had the opportunity to look at products from Apple's competitors. Of particular note was the excellent display put on by IBM Canada featuring OS/2 version 2.0. I was reminded of the original Macintosh intro eight years ago. What was noteworthy of the IBM display at this year's Pac Rim show was the "down to earth" approach the numerous IBM reps took. IBM even had the humility to poke fun at themselves about their previous "Ivory Tower techno-babble" approach to doing business. Once again we were all reminded of a time when Apple was a small but smart company with great products and an eager and a little bit "cocky sales approach. At that time, IBM was the dominant company in the microcomputer business and Apple was the upstart, a quick and nimble David out to grab market share from the giant, Goliath. It is a pity how success can spoil a good thing.

In business the pendulum of success swings back and forth. The pendulum swung from IBM to Apple in the late '80s. If the Pac Rim show is any indication the pendulum is about to swing the other way. While attendance at the Pac Rim show, the largest computer show west of Toronto is not really that big of a deal; what it indicates is the thinking at Apple Computer these days. I think the comment from people at the show, summed it up when they said that Apple comes across as being quite "insular."

Many of the Apple customers we spoke to at the show said the main reason why Apple was not there was because the local people were in San Francisco at MacWorld Expo. This explanation does not wash. The way we see it, Apple staff was down in San

Continued on page 98

Don't be surprised if new exactly what you want.



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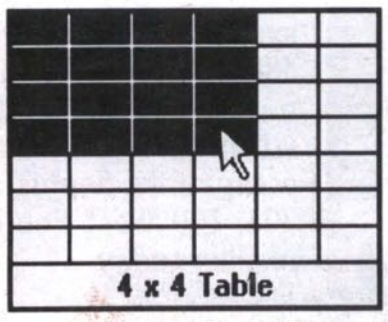

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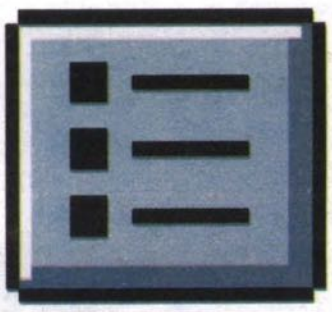

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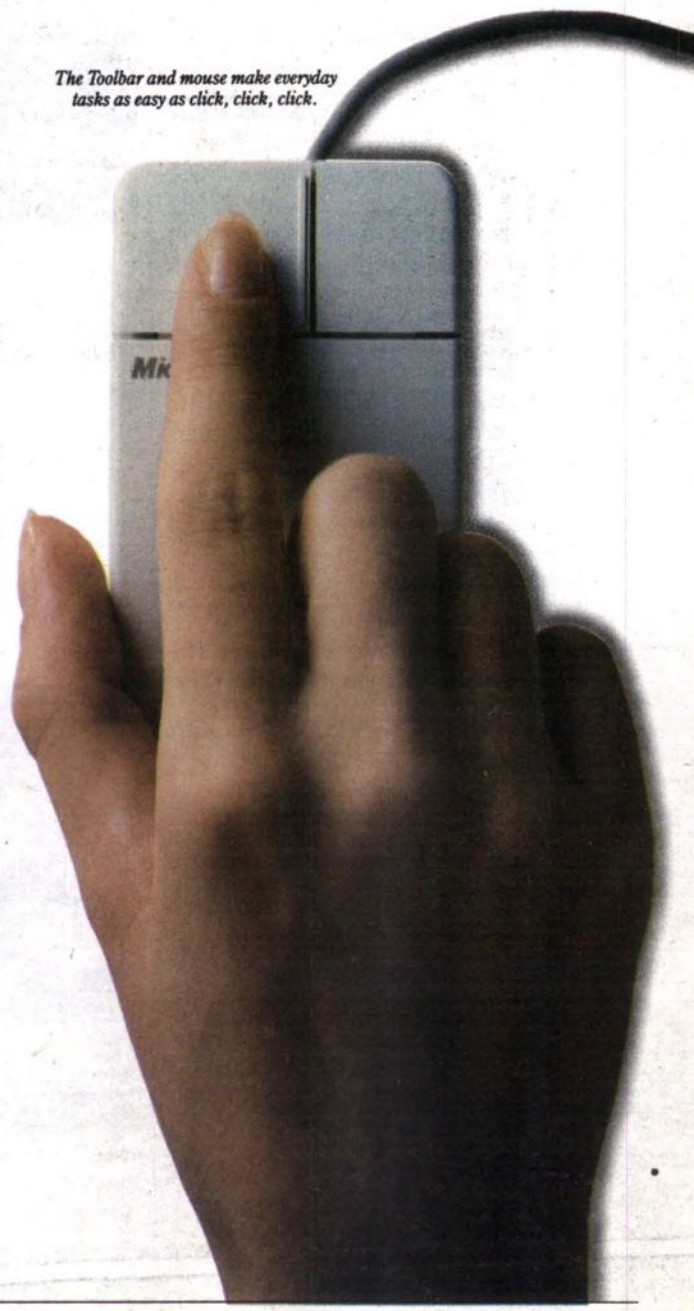


What's New

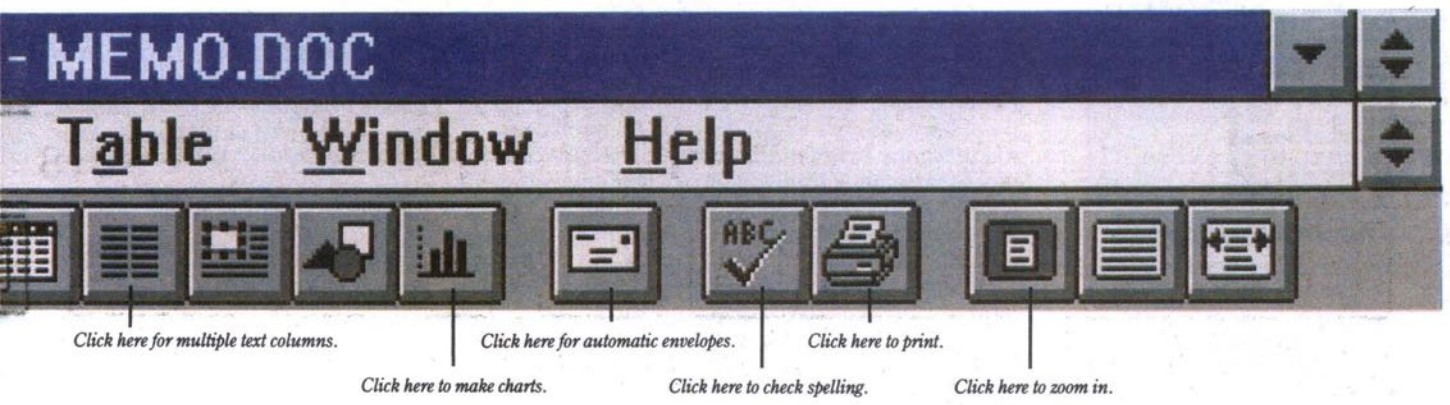
Avez-vous un probleme avec son ordinateur?

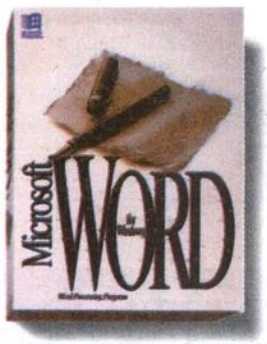
If you've having problems using your computer in French—for that matter—or English, then an innovative new programme of instructional computer courses may be helpful to you. VCS Education Centres of Vancouver, B.C. has opened a classroom in Vancouver that is providing hardware and software instruction in both of the country's official languages.

Initially opened in Toronto in 1989, VCS Education Centres are affliated with Versatile Computer Products and will operate out of that company's facilities at 1930 West Broadway. "There are thousands of francophones residing in the Lower Mainland," says education co-ordinator Pierre Anctil. "And there are obvious benefits to learning a subject in your mother tongue."

To get more information on these courses, call Pierre Anctil at (604) 731 1930.

Word for Windows 2.0 is After all, you designed it.





PC Week recently observed that "Word for Windows 2.0 comes close to being all things to all people." Not surprising, since we invited people just like you to play a big part in its creation.

As a result, Word 2.0 offers the easiest, most useable word processing features ever.

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And for the WordPerfect® users among you, on-screen Help and keystroke compatibility make the transition to Word 2.0 virtually seamless.

In fact, PC Week says Word 2.0 will provide "a smoother upgrade path for WordPerfect users than *even* WordPerfect for Windows."

What more can we say? The word processor you ordered has arrived. So drop in to see your local Microsoft dealer today.

Microsoft

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For more information, call Microsoft Canada at: 1-800-563-9048.

Big Blue Takes a Bite out of PS/2 Prices

IBM announced PS/2 price reductions of 17% on their Personal System/2 (PS/2) Models 35 SX, 35 LS and 40 SX. The new prices are listed below (dealer prices may vary):

PS/2 Model	Former Price	New Price	Standard Config.
35 SX 040	$2,295	$2,006	20 MHz 386SX; 2 MB RAM; 1.44 MB diskette
35 SX 043	$2,905	$2,592	20 MHz 286SX; 2 MB RAM; 1.44 MB diskette; 40 MB hard drive
35 LS 14X	$2,495	$2,092	20 MHz 386 SX; 2 MB RAM; Ethernet adapter
35 LS 24X	$3,100	$2,787	20 MHz 386SX; 2 MB RAM; 16/4 Token-Ring adapter
40 SX 040	$2,755	$2,299	20 MHz 386SX; 2 MB RAM 1.44 MB diskette
40 SX 043	$3,365	$2,925	20 MHz 386SX; 2 MB RAM 1.44 MB diskette; 40 MB hard drive
40 SX 045	$3,675	$3,270	20 MHz 386SX; 2 MB RAM; 1.44 MB diskette; 80 MB hard drive

Contact: IBM Canada 1-800-563-2139.

Spring PBS Series *The Machine That Changed the World* will Change How You Look at Computing

"If the auto industry had moved at the same speed as our industry, your car today would cruise comfortably at a million miles an hour and probably get a half a million miles per gallon of gasoline. But it would be cheaper to throw your Rolls Royce away than to park it downtown for an evening."

—Gordon Moore, Chairman of the Board, Intel Corporation

PBS will air a five-part Monday night series called "The Machine That Changed the World," that chronicles the evolution of computers. The first of the one-hour programs, called "Giant Brains," premieres Monday, April 6 (check your local listings for time). "Giant Brains" covers the wartime events that led to the 1946 debut of ENIAC, the world's first electronic computer. The second program in the series, on Monday, April 13, is called "Inventing the Future," about how the computer rose from obscurity to popularity in the business world. On Monday, April 20, the theme will be "The Paperback Computer," which will explore how computers became available to the mass market. The fourth part of the series aired on Monday, April 27, "The Thinking Machine," will focus on artificial intelligence. The series will conclude on Monday, May 4, with "The World at Your Fingertips," a look at the social revolution caused by computers.

Pioneers of the computing field will appear in interviews, including the fathers of the ENIAC, J. Presper Eckert and the late John Mauchly. Also appearing in the series will be celebrities like:

Konrad Zuse—German engineer who almost built a computer for the Nazi war effort, but was turned down by Hitler.

Herman Goldstine—US Army officer whose World War II assignment to calculate artillery tables led him to commission the first electronic calculator

Thomas J. Watson, Jr.—IBM leader who steered his father's punch card company into the uncertain waters of a new field: computers

Doug Englebart—an engineer with a dream: computers for ordinary people, not just misfit geniuses

Steve Wozniak and Steve Jobs—whiz kids who started a company called Apple Computer in a garage

Bill Gates - youthful CEO of Microsoft, the billion-dollar company with an invisible product: software

Mitch Kapor—developer of the Lotus 1-2-3

Continued on page 10

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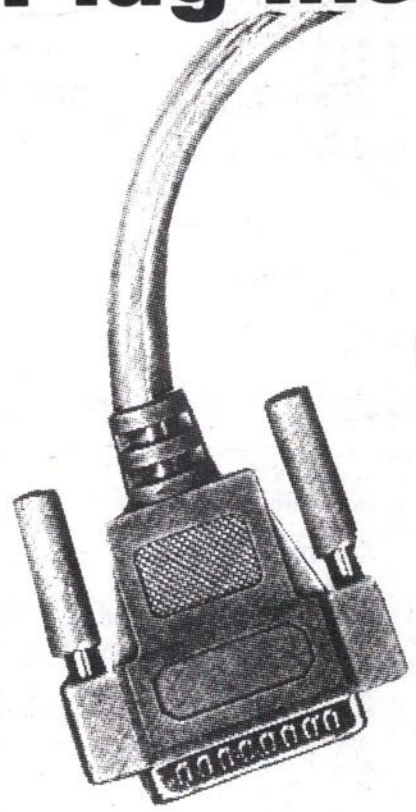

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Continued from page 9

spreadsheet

Marvin Minsky—MIT theorist whose goal is a "thinking" machine

Doug Lenat—head of the Cyc Project to make computers into self-learners that will discover new concepts. "The Machine That Changed the World" will not only show the roots of computing, but will also look to the future of the industry by exploring "virtual reality," an experimental technology that is 3-D and interactive.

Fujikama Streamlines for Success

Blaming the recession and trying to put a light face on a grim managerial decision, Fujikama O.A. Distribution has laid off thirty employees. The company announced announced in a press release that they have trained some of the remaining employees to cover the workloads. It is a mixed message—that times are slow so there's not enough work for these thirty people, however the work must still exist if others must distribute the load among themselves.

Fujikama, of Weston, Ontario recently announced the layoffs as part of a reorganization and restructuring of its head office.

According to Fujikama's president, Kaiser Chan: "In view of the existing economic conditions, which we don't expect will lift in the near future, we feel it is necessary to maintain a lean, highly efficient operation. These kinds of changes are becoming increasingly common in the computer industry."

Fujikama is an international, Canadian-owned conglomerate, employing close to 1,000 employees worldwide. The company has regional head offices in Chicago and China, and sales/support offices in Montreal, Vancouver, Quebec City, Scarborough, Detroit and Hong Kong.

Herron Design Says Cirlipse Eclipses other Halftone Technology

Herron Design & Consulting Incorporated claims that they are the first graphic design studio in Vancouver to use the Cirlipse halftone dot. The Cirlipse improves the reproduction quality of halftone images over the PostScript halftone dot.

Developed by the Isis Imaging Corporation, the Cirlipse incorporates the best of two dot shapes. Its mid-tones are especially smooth due to their elliptical shape. The shadow and highlight tones are round and open to allow good reproduction.

Herron Design, using an Apple Macintosh desktop publishing system, reports savings to their clients of 30% to 50% in reduced materials, separation and color correction, and stripping cost. The time necessary to produce a set of final film negatives is drastically reduced from days to hours.

Stephen Herron will present a workshop on February 29 detailing the methods used by Herron Design to produce color separated negatives. Contact the University of British Columbia, Centre for Continuing Education, 222-5251 for more information.

And the Winners Are. . .

The Computer Paper held its draw at the end of the PacRim Computer Expo on January 16. To enter readers had to fill out *The Computer Paper* Reader Survey. Donald Minchin of Edmonton was the lucky winner of the Oki Laser Printer. Steve Grant came up the winner for a free ad in The Computer Paper. Dr. Urban Nelson won a year's free subscription to *The Computer Paper*. Thank you to the thousands of readers who entered, and congratulations to the big winners.

Continued on page 11

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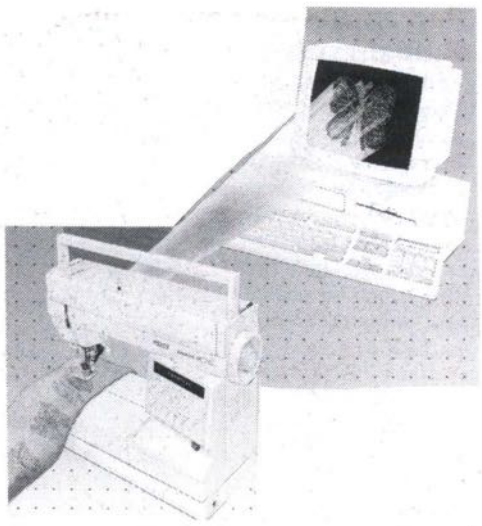

Pfinally, There's PFAFF PC-Designer Software

Finally, from one of the top sewing machine manufacturers in the world—Pfaff—comes a non-proprietary system for machine embroidery for the home sewer who has a PC.

Pfaff PC-Designer Software requires a Pfaff Creative 1475 CD sewing machine, an IBM or IBM-compatible XT or AT computer that can run PC-DOS or MS-DOS version 3.0 or higher, EGA, VGA or Hercules graphic card, 2 MB of hard disk drive space, a serial port and a Logitech or Microsoft Mouse. The software comes on both 3.5" or 5.25" diskettes. There is also an optional Microsoft Windows 3.0 version of the software

Continued on page 12

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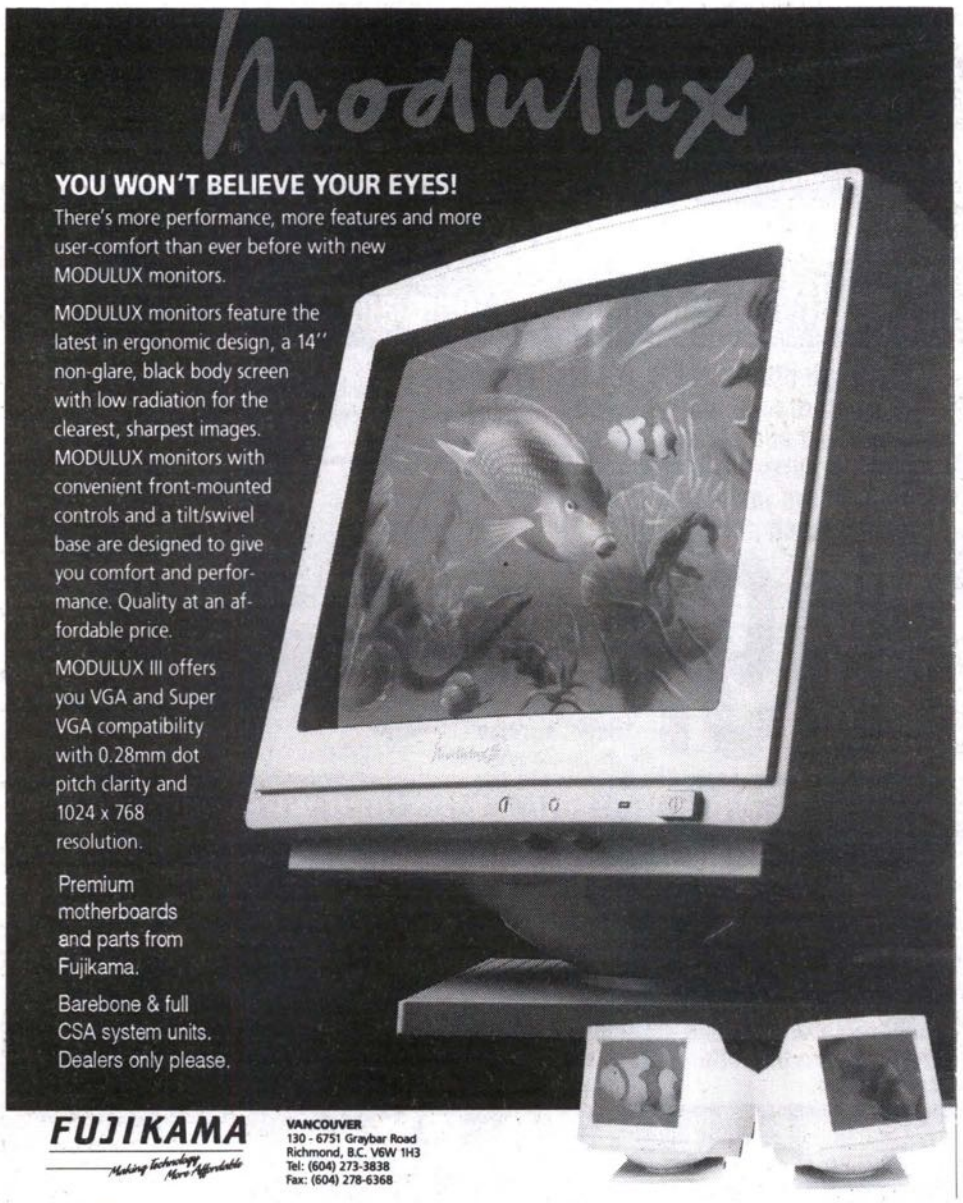

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that makes this innovation very up-to-date with what's happening in the computing world.

Since computerized sewing machines started to be sold to the home sewer, the sewer has been limited to purchasing cam-type updates to get more embroidery stitches. These cams are unique to each company's sewing machine, e.g., Elna, Husqvarna, as well as Pffaff, and are often not compatible with new models from the same line of machines.

Perhaps manufacturers thought they could protect their market by having these expensive non-compatible cams, but as home sewers begin to become more computer savvy, they will want the same kind of compatibility with computerized sewing machines as is available to computer users.

Pffaff PC-Designer allows a home sewer to sketch their original design (up to 40mm wide) with a mouse onto their PC, pick out colors, preview it and send it to the sewing machine to be stitched, much like software sends files to a printer. The designs can be saved on the hard drive or onto a floppy disk, and can be edited much like any computer graphics file. At the time of this printing, there wasn't information available about what format the program saves graphics files in.

Contact: Pfaff (403) 248-9073.

When Backing Up is Hard to Do

New Era of Calgary, Alberta, has announced the April release of automatic backup and recovery software for workstations called Harbor. Harbor v. 1.0 will provide overnight backup, recovery, version control, virus detection and file distribution for DOS, OS/2 or UNIX systems connected to a MVS host via 3270 emulation, APPC, TCP/IP, and Async protocols. Contact New Era (403) 237-6141.

KidPaint for the Child Artiste

End User Software Inc., a new company in Vancouver, B.C., has released a new drawing animation program just for kids with an IBM PC-compatible 286/386 computer running Microsoft Windows. KidPaint, a Windows program, comes with drawing and painting tools and a library of clip art, and a unique feature that once the child has created a picture, it can be animated using a simple "page flip" animation feature.

KidPaint has been "kid tested" and comes with an easy-to-read manual and free user-support—all this for $39.99. Contact End User Software Inc. at (604) 443-5018, fax: (604) 688-4004. Or write to End User Software Inc., Suite 700 - Harbour Centre, P.O. Box 12099, 555 West Hastings Street, Vancouver, B.C. V6B 4N5.

Saving Grays for LaserJets

A Richmond-based company has begun distributing special interface boards for HP LaserJet and Canon LBP laser printers which allow them to achieve almost photographic-quality output. Known as the XLI LaserPix interface board, it will turn HP LaserJet II, IID, III, IIID and Canon LBP8 laser printers into quality-typesetters capable of producing 1200-2400 DPI (dot per inch) half-toned images in 256 greyscales.

The system actually consists of two boards: a controller board that is placed in your 386 or 486-based PC and a laser printer interface board which is plugged into your printer. A cable connects the two boards and an interactive DOS-based software package allows you to position and, it is claimed by the manufacturers, will print the first copy of a TIFF format image within 10 seconds and subsequent copies within 8 seconds. To find out more, contact Greg Boen at Infrascan, (604) 273 8655.

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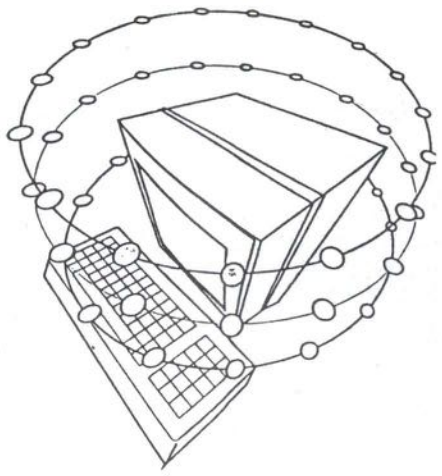


Norad announces ELF Protech

Norad Corporation has announced ELF Pro-Tech—what it claims is the first externally-mounted extremely low frequency (ELF) magnetic field suppressor for video display terminals (VDTs). The idea is that, for the first time, computer operators will be able to retrofit existing monitors—without special tools—to reduce ELF magnetic fields to levels previously available only with the purchase of new, lower-radiation monitor. Call Michelle Hartzell at Norad on (310) 395-0800 to get full details.

Wacom Relocates

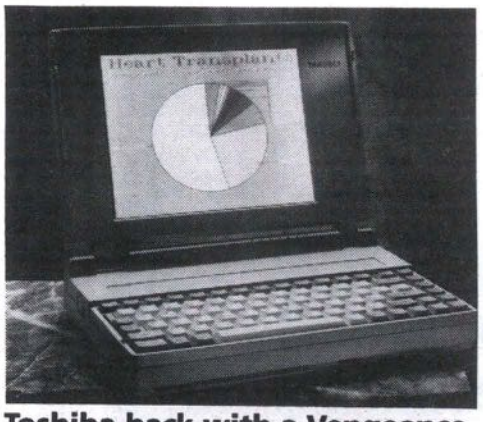
Digitizer tablet and cordless pen specialists Wacom Technology (a wholly-opened subsidiary of Wacom Co. Ltd. of Japan) has opened new offices in Vancouver—Vancouver, Washington that is. Wacom announced at the end of last year that it was relocating its headquarters to expanded facilities in Vancouver, WA.

Wacom claims the distinction of producing the world's first cordless, high resolution digitizer. Meanwhile, the company's Super Digitizer (SD) series of cordless cursors and stylus pens are battery-free and very light. The company's most recent development is a cordless, presure-sensitive stylus. Call Wacom at(206) 750- 8882 for more details.

New Portables, Displays from Computer Brokers

Computer Brokers of Canada (CBC) has announced distribution of several new portable and computer display products. One of the portable computers is a laptop (the Altima Three) while the notebooks are known as the Altima LSX and Altima NS. The monitors are Optiquest's 1000 and 2000 14-inch and 15-inch monitors.

Each monitor's displays offers .28 dot pitch and a maximum 1024 x 768 non-interlaced resolution—and both are compatible with UVGA, VGA, SuperVGA and VESA display standards.



Toshiba back with a Vengeance

Toshiba, the company who pioneered much of the laptop market in North America, has slipped a bit in the past year in not getting to market with a competitive line of notebook computers. This situation has all changed with the recent introduction of two powerful new notebooks and a color portable. Toshiba is one of the first to announce a 486SX notebook, their new T4400SX. The unit which boasts a 25 MHz Intel 486 SX microprocessor and a fast 80 MB hard drive. Weighing in a tad high at 7.5 lbs, the unit still rates a thumbs up from PC Week, who said "the T4400SX is a marvel of engineering in a market where engineering marvels abound."

Also announced was the T3300SL, a 386 notebook with the new SL chip, which offers better performance than the common 386 SX processor with a lower power consumption. Weight on this unit is a more reasonable 5.9 lbs including battery.

Finally, Toshiba announced the T6400, a portable (meaning you still have to plug it in as batteries would last about ten minutes on this power hog) with a 486 DX running at 33 MHz, 4 MB of RAM, upgradeable to 20 MB on 'credit card' memory, a 200 MB hard drive and your choice of a gas plasma display with 16 grey scales, or a TFT active matrix color LCD with 512 color capability. If you have to ask the price of this unit, you probably can't afford it.

Contact: Toshiba Canada 416-470-3478

Vista Laser Contest Winners

Vista Laser reports that N. Bubas of Pacific Spec-Tech, North Vancouver, won a mountain bike in its "Cycle to Recycle" contest at the Pac Rim Computer & communication Show. The company reports that, due to the large number of entries, it decided to offer five consolation prizes of free cleaning of one laser printer. The consolation winners were: Mike Davidson of Pacific Training Institute, North Vancouver; E. Katchur of Vancouver School Board; Joan Campbell of Forest Industrial Relations, Vancouver; and Jim Chan of Coquitlam.

Contact: Claude Diedrick, Vista Laser, 604/273-5446.

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AMI BIOS, MOUSE w/software
2MB 80ns RAM exp. 8MB
1.2 or 1.44MB JAPANESE FD
45/52 MB 64K JAPANESE HD
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101 Enhanced Keyboard

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1.2 or 1.44MB Japanese FD
43/45MB(32K/64K) Japanese HD
15" Baby-Case
2 Serial, Parall & Game Ports
VGA Color Monitor
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486DX-33,128K

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Desktop Image Transfer to Fabric

By Mark Collister

Have you ever been so proud of a desktop publishing image, that you wish you could wear it around on your T-shirt and show the world? Well, here is how.

Current Technology and Application Methods

There are a number of methods currently used to transfer photographic images to fabric. The main application is the transfer to T-shirts and sweatshirts, although other items such as pillow cases, aprons, quilts, caps, jackets etc. are also popular. The most common methods for creating and transferring images are as follows:

- Full-color photocopy—heat transfer paper
- Computer/laser color printer—heat transfer paper
- Videocam/computer/color printer - heat transfer paper

Each of the above methods utilize heat transfer paper as the medium for transferring the image to the fabric after it has been generated.

Of the above three methods, full-color photocopying is by far the most widely used and superior method available. The method of using a computer to generate the image and a laser color printer to reproduce it to paper has never established itself as a viable alternative and is now becoming obsolete. The new generation of color photocopiers have full computer link-up capabilities that allow images to be scanned from the copier or other color scanners to the computer, altered using graphics software, and transmitted back to the copier for printing. All your graphic images created in your favorite graphic programs (CorelDRAW, FreeHand, etc.) can now be printed straight to a PostScript color copier.

The third method of using a videocamera, computer and laser color printer is the oldest technology and has very limited capabilities. This method is typically only used to reproduce someone's facial image within a predetermined stencil.

Heat Transfer Papers

There are a number of heat transfer papers on the market. All are single-sheet systems with the exception of Paro which is a two sheet system. The important criteria for the paper is that it runs through the highly sophisticated copier without causing damage to the machine and that the image will withstand washing without losing color fidelity.

Because of Paro's two-sheet system, it has been proven, through extensive market use, to cause no damage to the copiers. It has also shown itself to provide the best wash results, maintaining color images on the fabric for as long as silkscreening does.

Continued on page 17

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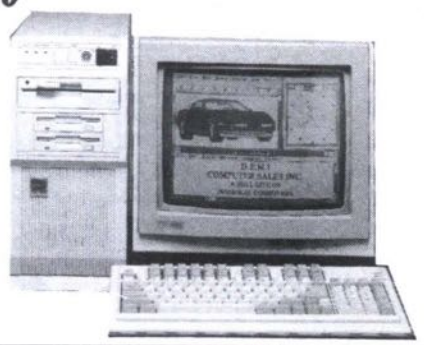

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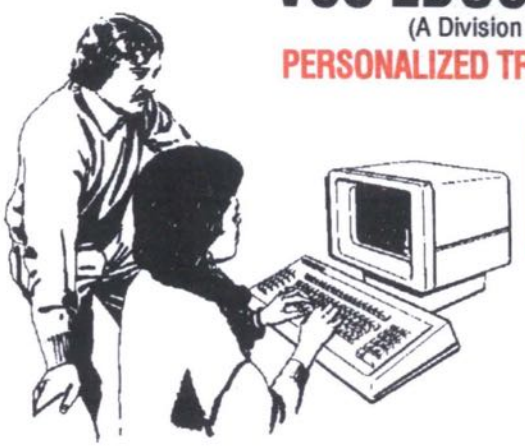

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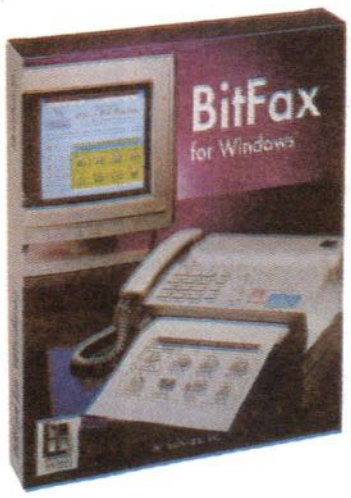

It even works in **MS/DOS or OS/2**.

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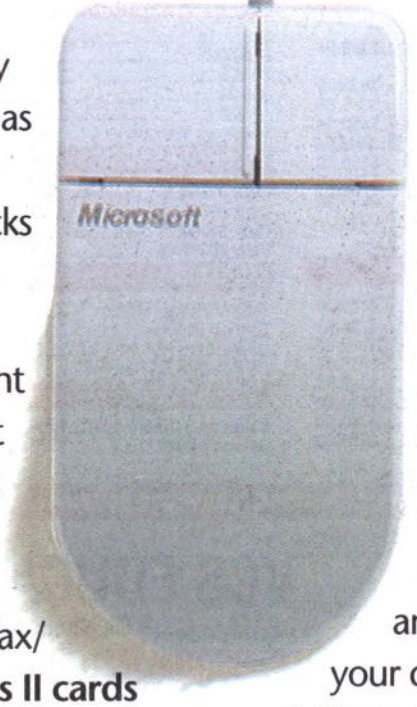

A special **Quick Dial** feature allows single click transmissions and the easy to use Phone Book is in **standard dBase format**. Other productivity features include background auto re-dial and fax logging.

BitFax for Windows offers the freedom to send and receive documents and forms directly from your desktop, laptop, or **notebook computer**. It's available in German, Spanish, Italian, and **French Canadian** versions and includes a comprehensive manual.

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DESKTOP T-SHIRTS

Continued from page 15

Make and models of full-color laser photocopiers:

A. Canon
   CLC-100
   CLC-200
   CLC-300
   CLC-500
B. Konica
   9028
C. Colorocs
   FC 207
D. Ricoh
   NC 100

Of these machines, the Canon is by far and away the market leader. The main machine base is the CLC-100, although now discontinued. The CLC-200 also discontinued this year and has been replaced by the CLC-300. The CLC-500 is the Rolls Royce of all full-color photocopiers.

Laser's Edge was the first service bureau in the city to provide the new color laser printer/copier with a PostScript interface to a computer. They don't provide the T-shirts or the heat transfer services, but do the color printing to the heat-transfer paper which you can take home and iron to your favorite T-shirt.

The market for "image-wear" is large. The process allows anyone to have unique full-color shirts with the design of their choice at a reasonably affordable price. 80%–90% of the market is accounted for by one-off sales to consumers through reatil store locations.

Corporate applications account for the balance. Corporations will utilize this method of shirt design when they require only small quantities for promotions or incentive gifts. Utilizing color copiers and heat transfer paper to create images onto shirts is competitive with silk-screening up to approximately forty-eight shirts depending on image type and size. ❐

Source: *Micropage: Vancouver's Newsletter for Corporate Desktop Publishing*, Winter, 91/92, Vol. 6, No. 1, Vancouver, B.C., pp. 2, 6.

BC OnLine Field Guide

Thanks to the newly released BC OnLine Field Guide, things will be a lot easier for the more than 12,000 users of BC OnLine (BC Systems Corporation's electronic gateway to government databases).

The Field Guide, which was designed and produced by Vancouver-based Clarity Computer Based Presentations, helps BC OnLine users to search for and register records in the Land Titles, Companies, Personal Property, and Rural Property Tax registries. As the user moves through the various data entry fields, the Field Guide places helpful information on the screen, explaining what the options are each step of the way. The Field Guide also provides onscreen access to tables and lists of useful information, and prevents mistakes by only allowing valid input in the fields which it controls. It even analyses certain error conditions and prompts the user through effective recovery procedures.

Continued on page <None>

PacRim Show Report

by Graeme Bennett

The Pacific Rim Computer & Communication Show, held January 14-16 at the Trade & Convention Centre in Vancouver's Pan Pacific Hotel, featured 210 resellers, manufacturers, distributors and other vendors and attracted crowds of attendees over the course of the three-day event. Several vendors claimed that Wednesday was the busiest day and many reported being "swamped."

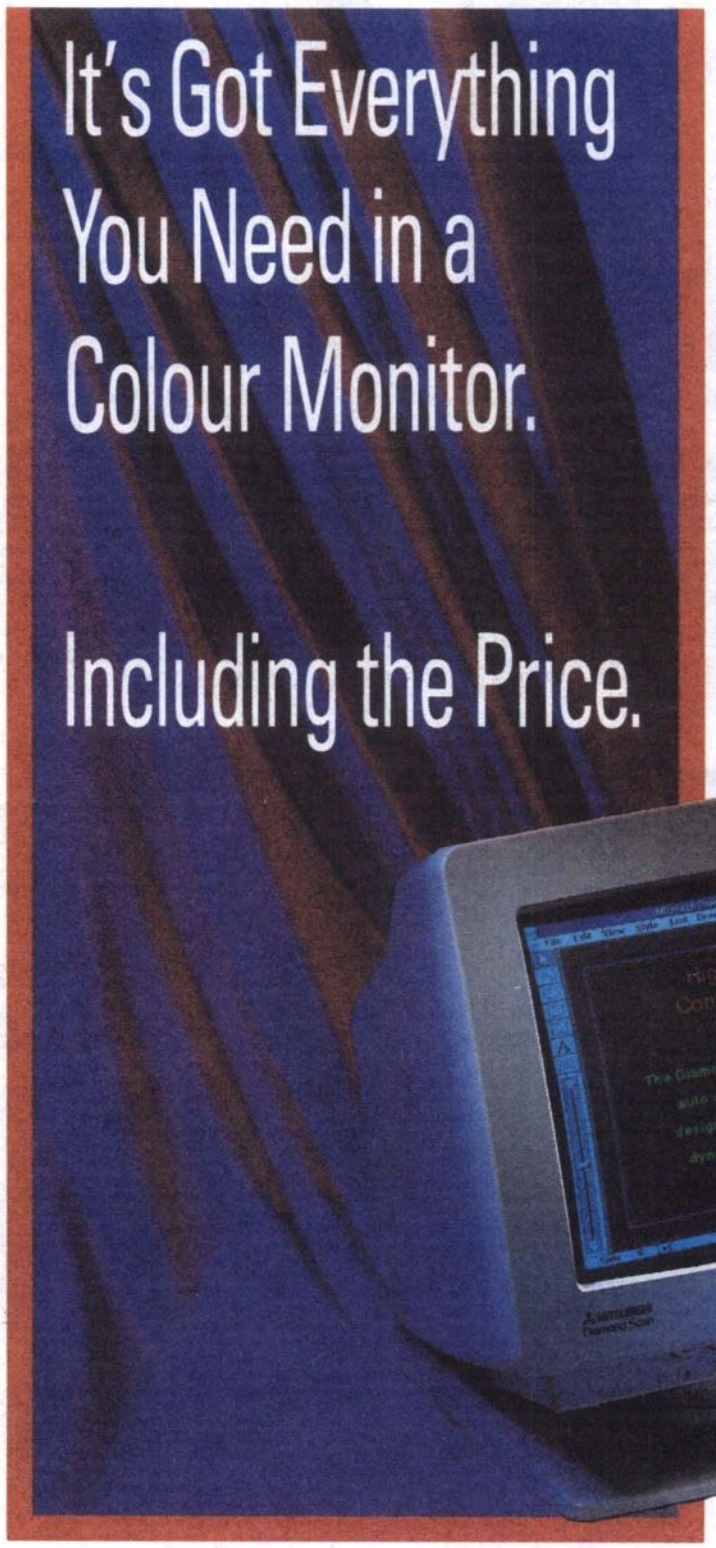
The Computer Paper had a booth at the show where we gave away an Okidata OL400 printer (the winner was Donald Minchin of Edmonton, Alberta) and announced a new Toronto edition of *The Computer Paper*—to begin our total circulation to 185,000 per month.

In addition to the displays on the show floor, there were many vendors who used so-called "hospitality suites" to meet prospective customers in more intimate surroundings. Of course, your intrepid reporter was at all the best parties, and scouted the floor in search of the latest and greatest. Here are some of the highlights.

OS/2 2.0

Everywhere you looked, it was impossible not to notice that nearly everyone was carrying a bag or wearing a pin with the distinctive OS/2 2.0 logo on it. IBM had one of the largest booths at the show, and utilized a small army of employees and business partners to show off the benefits of its new operating system. I spent some time using the new OS, and I was impressed. It appeared to

Continued on page 18



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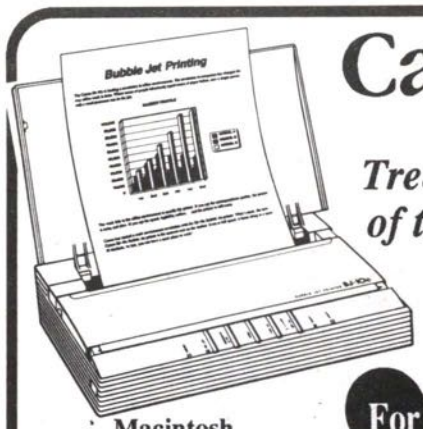

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be fast, stable and extremely easy to set up and use. It is slated to come with a slew of mini-applications the company calls "applets." These range from the usual fare, like calculators and address books, to more esoteric productivity tools for creating 3-D charts and spreadsheets. Of course, there's the obligatory Solitare game (complete with a "cheat" function), and even a network-savvy chess game so that you can, uh, learn to use a network. The OS/2 games are novel in that all of the graphics are object-oriented and fully scalable. Hence, if you shrink the window the game resides in, all the cards or chess pieces redraw to fit. Neat!

Better Windows

Windows veterans will appreciate the way that OS/2 avoids the need for manually editing CONFIG.SYS, WIN.INI files or the like. Instead, OS/2 uses a graphical approach, where device drivers and other system settings can be easily added or changed in point-and-click fashion. To change a color scheme, you can just drag an icon to a window. Each window can have its own color scheme and scalable "wallpaper" background. Gratuitous but very nifty.

Other improvements over Windows include built-in support for Adobe Type 1 fonts, an integrated file manager (similar to, but much faster than, Norton Desktop for Windows), and one of the best menuing systems yet. Instead of graying out inactive menu options the way Windows, Macintosh and virtually all other operating systems do, OS/2 attaches a different set of menu items to each object you select. A disk icon, for example, will pop up commands to format, copy, etc., while a document icon will show commands relevant to it such as print, save and so on.

Exploiting the "object-oriented interface" for all it's worth, OS/2 allows you to print documents simply by dragging the document's icon to to a printer icon and to erase a file by dragging it to a shredder. Unlike Windows' File Manager, OS/2 allows files to be arbitrarily arranged, and folders and other icons to be dropped anywhere on the "desktop."

In general, OS/2 2.0 is much more "Mac-like" than Windows, but can run Windows and DOS programs as well. You don't even need to buy Windows or DOS—equivalents of both are built into OS/2 2.0. In light of Apple's ongoing lawsuit with Microsoft over the look-and-feel infringements of Windows, IBM's recent deal with Apple looks like a stroke of genius.

Displayed in the booth were versions of OS/2 2.0 that only ran Windows applications in full-screen mode. However, in a special session for the press, the most recent beta of OS/2 2.0 was demonstrated to be able to run Windows within an OS/2 window. According to IBM, the version that ships will include this eleventh-hour enhancement.

The true multitasking nature of OS/2 can handle many simultaneous DOS sessions (each with independent, full emulations of extended memory and a variety of graphics modes). The multitasking was smooth and stable, even allowing the playback of digitized sound (via a Windows multimedia extension) to run as a background task. Best of all, text *and* graphics could be seamlessly cut from one environment and pasted to another. Don't count OS/2 out yet. The new version, due out before the end of March, may yet steal Windows' thunder.

Continued on page 20

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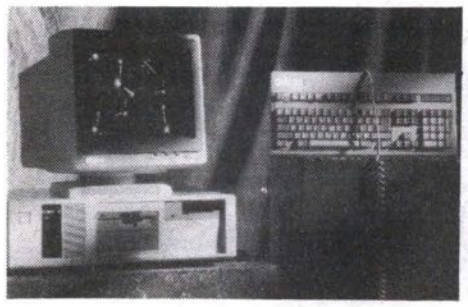

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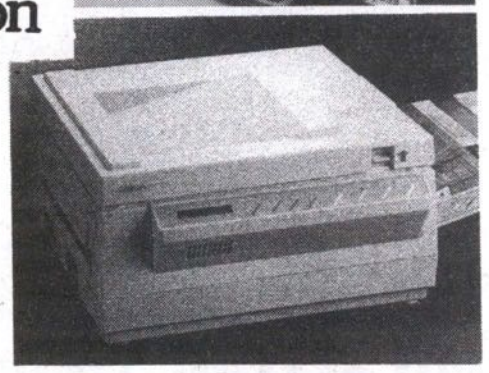

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Continued from page 18

WordPerfect

WordPerfect had what may have been the busiest booth at the show. Never once did I see an empty seat during a presentation, and there were usually crowds standing, too. The main attraction was WP for Microsoft Windows, although it could also have been the attractive WordPerfect baseball caps the company distributed to anyone who stayed for a presentation.

Nearby, Microsoft also had a large booth, but for some reason, its presentations seemed low-key by contrast. The company showed its top PC applications, primarily Excel 3.0 and the new Word for Windows 2.0. According to spokesperson Jackie Slemko, the company expects to announce several new products in April.

Of course, the impact of Windows was visible throughout the show.

Nearly every booth had at least one computer or another running the popular graphical user interface.

Multimedia Arrives—Really

Multimedia Windows made a particularly strong showing in the area of multimedia, an area that, until recently, had been a decidedly lackluster segment of the market. Based on the evidence, it (at last!) looks as though multimedia is more than a flash in the pan. In fact, it looked like the peripherals makers were having a heyday at the show, focussing primarily on color display, output and multimedia solutions. There were several obvious trends. Color printers and photocopiers are clearly "in," while black-and-white photocopiers were scarce—arguably less of a trend than a case of vendors knowing what appeals to the computer market. Plain-paper fax appears to be gaining ground, as are digital cameras, video-in-a-window, sound boards, CD-ROM and other accoutrements of multimedia.

Philips/Magnavox was one of the only companies showing a full-blown "MPC standard" multimedia PC, but by cobbling together elements from different manufacturers, consumers should be able to upgrade any existing 286-or-better machine to MPC standards. Tony Palombo of Philips/Magnavox demonstrated several CD-ROM-based multimedia applications running on the Magnavox MPC, including Microsoft's impressive Multimedia Bookshelf and Time/Warner's Desert Storm disc. Tony is one of several ex-Commodore employees I saw at the show. Apparently, something of a mini-exodus is underway at Commodore Canada. No less than five Commodore employees are said to have left the company fold in recent weeks.

Anything but DOS

Pen-based computers are still scarce. I only saw two at the show. Macintosh computers were similarly rare. It is a shame that Apple, a company with 10-15% of the market share, apparently chooses to ignore the largest computer show on the west coast. The Macs I saw were relegated mostly to outputting files to color laser printers at the Canon and Superior Laser booths. The best images were coming from the Canon color lasers driven by "Fiery" raster image processors, which produced astonishingly good continuous-tone images from PostScript files.

NeXT put on an impressive showing at a centrally located space staffed by NeXT and Advantage personnel. NeXT was focussed strongly on the platform's considerable strengths as a productivity tool. The booth was usually packed with people avidly watched a video of charismatic NeXT founder Steve Jobs putting the machines through their paces.

Continued on page 23

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Frequency: 30-80KHz (hor.)
Frequency: 50-90Hz (vert.)
Bandwidth: 120MHz
Resolution: VGA, S-VGA, 8514/A, XGA
1024x768, 1280x1024, 1600x1200

NDI AT1600
Processor: TI TMS34020
Video Memory: 4Mb
Vertical Refresh Rate: 60Hz, 72Hz-001
Max. Bandwidth: 167MHz, 200MHz-001
Resolution: 1600x1280 (256color)
1280x1024, 1024x768
Non-Interlaced: Yes
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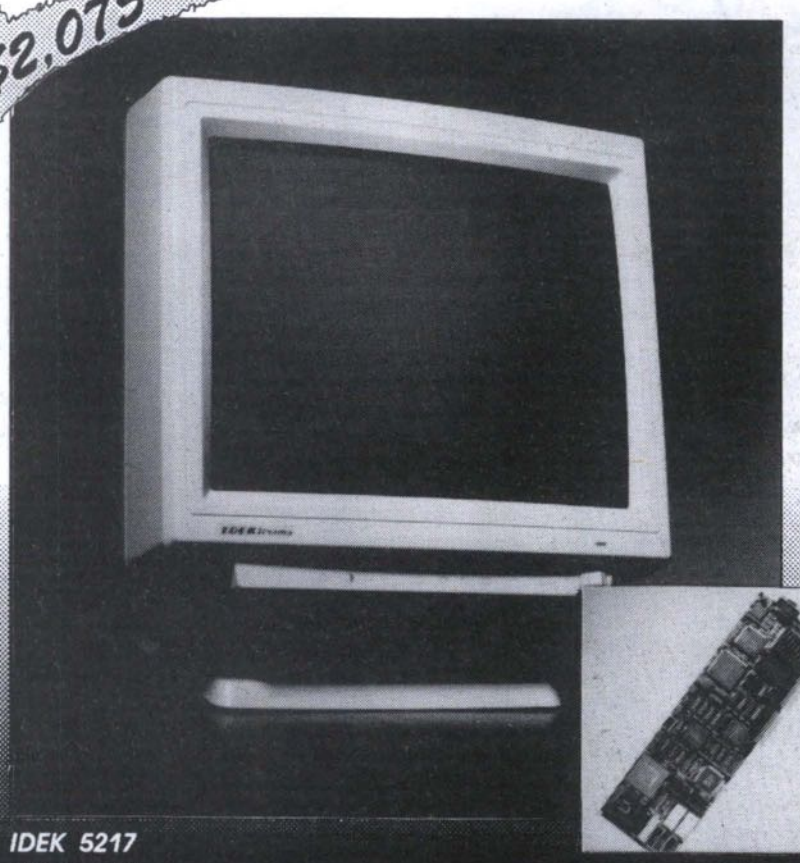
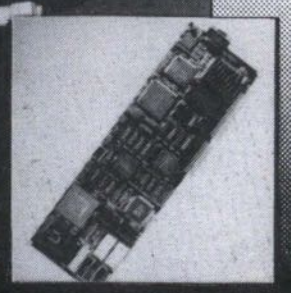


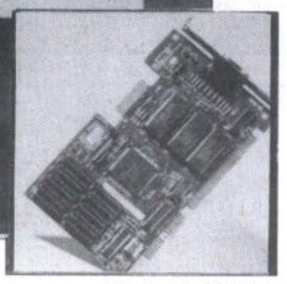
IDEK 5217
CRT Size: 17"
Dot Pitch: 0.28mm
Frequency: 30-57KHz (hor.)
Frequency: 50-90Hz (vert.)
Bandwidth: 120MHz
Resolution: VGA, S-VGA, 8514/A, XGA
1024x768



NDI AT1000
Processor: TI TMS34020
Video Memory: 1Mb
Vertical Refresh Rate: 60Hz, 72Hz-001
Max. Bandwidth: 64MHz, 73MHz-001
Resolution: 640x480, 1024x768 (256color)
Non-Interlaced: Yes

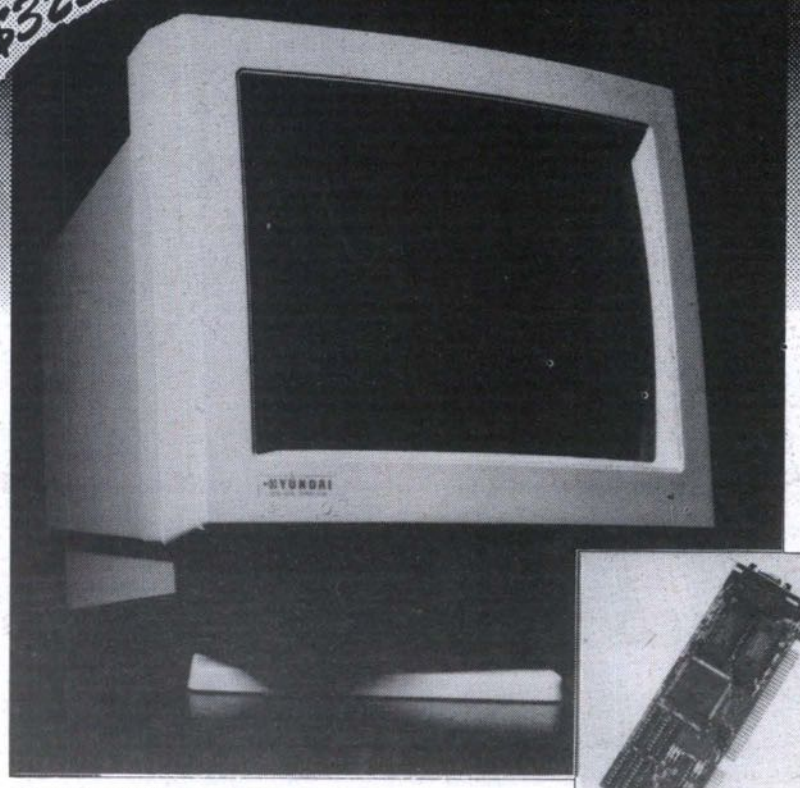
$429

Hyundai 423E (Interlaced)
CRT Size: 14"
Dot Pitch: 0.28mm
Frequency: 31.469KHz (hor.)
Frequency: 60-70Hz (vert.)
Bandwidth: 45MHz
Resolution: 1024x768, 800x600
720x400, 640x480

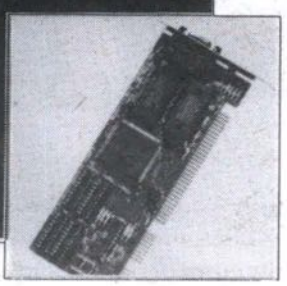


Trident 8900C
Processor: Trident 8900C
Video Memory: 1Mb
Vertical Refresh Rate: 36-72Hz
Resolution: 1024x768 (256color)
Non-Interlaced / Interlaced: Yes

$325



Hyundai Interlaced 402T
CRTSize: 14"
Dot Pitch: 0.41mm
Frequency: 31.469KHz (hor.)
Frequency: 70/60Hz (vert.)
Bandwidth: 30MHz
Resolution: 640x480, 720x400



Trident 9000
Processor: Trident9000
Video Memory: 512Kb
Vertical Refresh Rate: 56-72Hz
Resolution: 1024x768 (16color)
800x600 (256color), 640x480
Non-Interlaced / Interlaced: Yes

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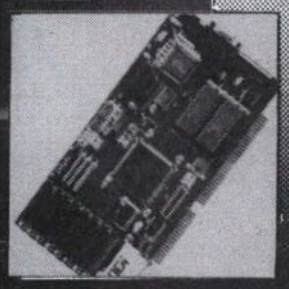
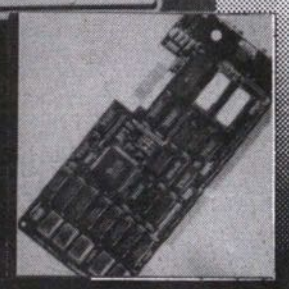


IDEK 5117
CRT Size: 17"
Dot Pitch: 0.28mm
Frequency: 21.8-50KHz (hor.)
Frequency: 50-90Hz (vert.)
Bandwidth: 55MHz
Resolution: EGA, VGA, S-VGA 8514/A, XGA, 1024x768

NDI AT600 WINDOW ACCELERATOR
Processor: S3
Video Memory: 1Mb
Vertical Refresh Rate: 43.5-73Hz
Max. Bandwidth: 76MHz
Resolution: 1024x768 (256color) 1280x960 (16color)
Non-Interlaced: Yes

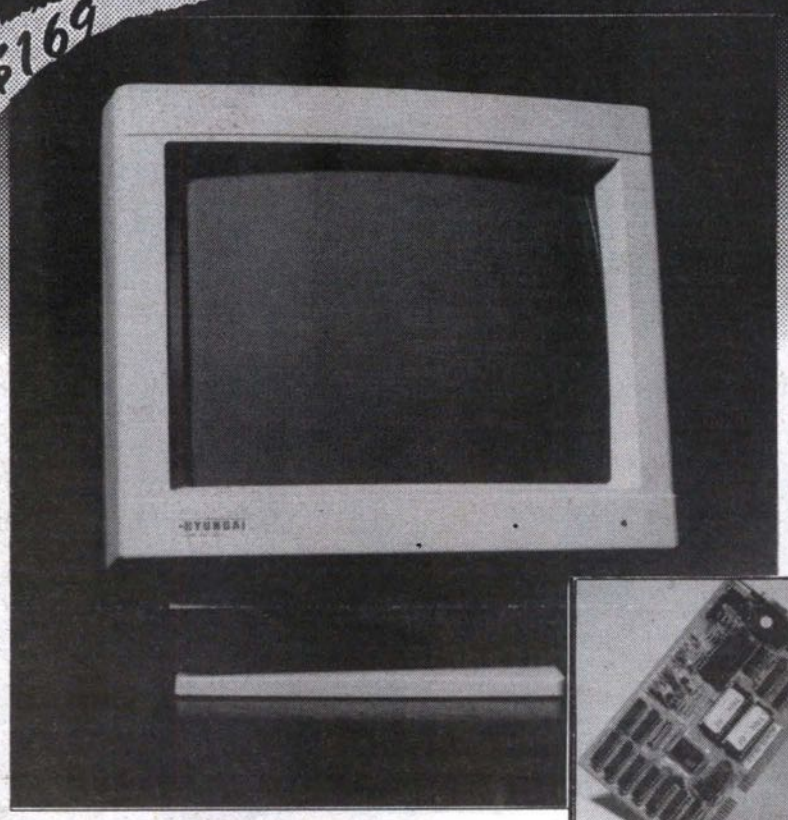
$552

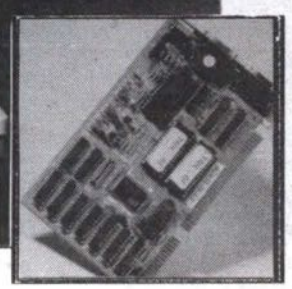


Legend 2 non-interlaced
CRT Size: 14"
Dot Pitch: 0.28mm
Frequency: 30-38KHz, 48-50KHz (hor.)
Frequency: 47-90Hz (vert.)
Bandwidth: 65MHz
Resolution: 640x480 graphics, 720x480 text 800x600, 1024x768 (256color)

Tricom Mega
Processor: TSENG ET4000
Video Memory: 1Mb
Vertical Refresh Rate: 43-70Hz
Max. Bandwidth: 65MHz
Resolution: 1024x768 (256color)
Non-Interlaced: Yes

$169

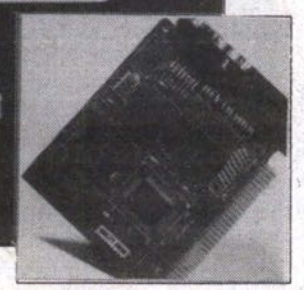




Hyundai VGA Mono
CRT Size: 14"
Frequency: 31.469KHz (hor.)
Frequency: 60-70Hz (vert.)
Max. Bandwidth: 30MHz
Resolution: 640x480, 720x400

Oak 256
Processor: OAK037
Video Memory: 256Kb
Vertical Refresh Rate: 60Hz
Max. Bandwidth: 25MHz
Resolution: 640x480 (256color)

$138



Hyundai HMM1404 TTL Mono
CRT Size: 14"
Frequency: 18.432KHz (hor.)
Frequency: 50Hz (vert.)
Max. Bandwidth: 16MHz
Resolution: 720x350

Monochrome TTL
Vertical Refresh Rate: 50Hz
Max. Bandwidth: 16MHz
Resolution: 720x350

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According to a NeXT spokesperson, the real NeXT news will happen at San Francisco's NeXTWorld Expo, where the company is expected to announce a new version (3.0) of its operating system, with several enhancements including support for AppleTalk networks and the reading and writing of PC and Mac disks, a new color inkjet printer (probably from Canon, a major NeXT shareholder), and a new, slightly faster, model of its popular NeXTstation.

Bubblejet Competition

Speaking of Canon, that company was showing "behind closed doors" a line of new 360-dpi color inkjet printers. The BJ-800 is a model intended for PC users, and will ship in February with a Windows driver, while the BJ-820 is a SCSI-equipped model with a Mac printer driver. Unlike Hewlett-Packard's DeskJet C printer, the Canon models sport true CMYK (cyan/magenta/yellow/black) inks which produce much better blacks than the CMY process used by HP. The new BJ models are able to print pages up to 11-by-17 inches in size.

Color

Color notebooks are still expensive relative to monochrome models, but prices have dropped to about half of what they were at last year's show. Maybe next year....

Color displays were everywhere, and 16-bit "high-color" PC displays are clearly the emerging standard.

Unix

Unix workstations were here and there, but I was disappointed with the majority of the applications I saw running on them. It appears that the kind of mainstream apps that PC and Mac users have enjoyed for five years have yet to hit the Unix world in a big way. More often than not, I saw Unix boxes just sitting there, with a screen full of arcane Unix command-line arguments and a flashing cursor. Those that were running GUI shells (and they all do, these days) were invariably running several rather pointless X-Window demo programs. I did see a killer flight simulator, though, running on a SPARCstation in the Key Computers booth. SCO showed off its new release of Unix for Intel-based PCs, although the product isn't due to be announced until the upcoming UniForum show.

Mondo Video

For sheer visual effect, nothing could surpass the twelve-foot Mitsubishi giant-screen monitor. It ran a constant program of spectacular 3-D computer graphics and animations, most of which appeared to be the work of Robert Able and Associates, a well-known California-based graphics firm.

Award Winning Booths

IBM Canada, with all their razz-a-ma-taz about OS/2, got the Best Overall Booth Award as well as best booth in the "Major Space" category. TLS came second in the "Major Space" category. In the Large Space category, Canon Canada was first, Mitsubishi Electric Sales Canada was second, and Panasonic was third. In the Medium Space category, Laptech Systems Inc. was first, Cable & Wireless Telecommunications was second and WordPerfect Corporation was third. In the Small Space category, Promark Software came first with their big white booth, Plantronics was second and Targus Canada came third with their elegant laptop luggage display.

Intel Trek

Intel's booth gets the "cutest of show" award, for its Star Trek: The Next Generation theme and costumes (although the hairy piano-playing robot at the entrance to the "Uniquely B.C." exhibit was a close second). The company was promoting the soon-to-be-released dual processor upgrade for its current 486SX processor. In case you hadn't heard, rumor has it that the empty socket in those 486SX machines is going to be a lot more useful after the middle of March.

Best Party

The Most Interesting Party award goes to Anixter and IBM, who co-hosted a party in which all attendees were given and asked to wear a beanie with a propeller on it. The sight of a room full of suits wearing these things was absolutely surreal. Great food, too.

DOS Boxes

One of the trends at the show was that, in many ways, the recession-weary industry is in somewhat of a holding pattern. The computer suppliers were largely of the "me-too" clone variety, with nothing more innovative than a low price to offer.

There were, of course, exceptions. Q by Javell was showing its StepUp processor upgrade board, with a 486 CPU and integrated graphics accelerator. It was the fastest PC video card I've ever seen. According to a company spokesperson, having the CPU and graphics processor on a single board allows the transfer of data uninhibited by the usual I/O bottlenecks that plague other video cards.

In a hospitality suite, Zenith Data Systems (ZDS) was touting the fact that it and Intel co-developed the 386SL (a low-power version of the 386DX processor) in Zenith's new line of notebook computers. A Zenith spokesperson explained that another innovation in its new MastersPort 386SL notebook was a much faster parallel port—reportedly ten to thirty times faster when connecting to LANs. Also, in a welcome change from many other vendors, ZDS was showing an interesting new application from a local third-party developer. One of the desktop models on display in the suite was running a video teleconferencing system that used a small video digitizer to capture and transmit over high-speed modems images, text and other data from location to location. Developed locally, the EyeQ system cannot currenty transmit full-motion video over standard phone lines, although future high-bandwidth phone lines hold promise for this capability.

New Ideas

This year, at one end of the show floor, the organizers decided to test out the idea of allowing the sale of certain products, such as books and software. Judging by the crowds swarming around the shareware booth, it is safe to say that HRS Software Inc., the vendors of said shareware, would consider the test a success.

At the other end of both the floor was an area called Uniquely B.C. Adjudicator-approved home-based businesses were allowed in this area for about a quarter of the cost of a regular booth, (subsidized, I presume, by our tax dollars). The government is betting that, by giving them the exposure they need now, some of these businesses will be able to afford a "real booth" at next year's show.

Greg Fleck, president of Roland DG (which was showing its DataTrain and Raven divisions' newest products—monitors and quiet dot matrix printers, respectively) suggested that next year's show organizers should make an area available for multiple vendors to display "real world" solutions of popular applications such as desktop publishing (DTP), multimedia, etc. For example, there might be an area set up like a modern office, with computers, faxes, printers and other items set up so that people can see how they work together in familiar environments. A DTP setting might include networked workstations, black-and-white and color laser printers, color scanner and imagesetter where people could explore the realm of possibilities. And that, I suspect, is why most people go to a computer show in the first place. ❐

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FRECOM 96/24 Fax Modem w Win 3.5 Software	$199
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OPTIQUEST 2000 15" flat screen monitor	$679
Archive 250MB Backup	$349
COLORADO 120MB BACKUP	$329
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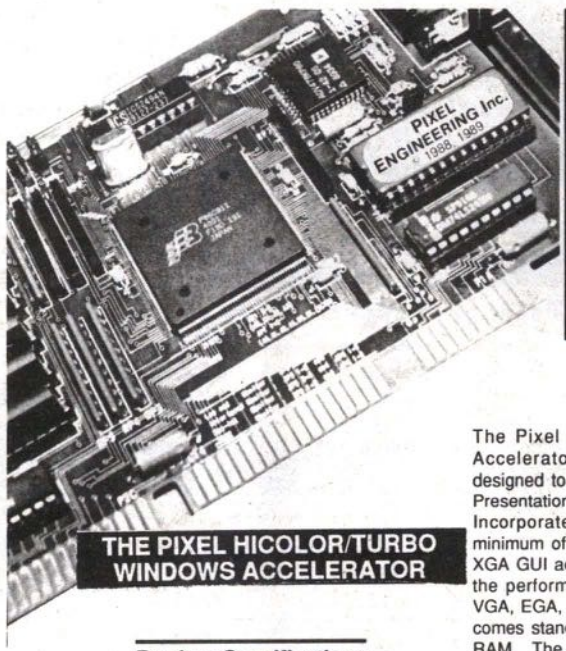

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The Pixel Hicolor/Turbo Windows Accelerator

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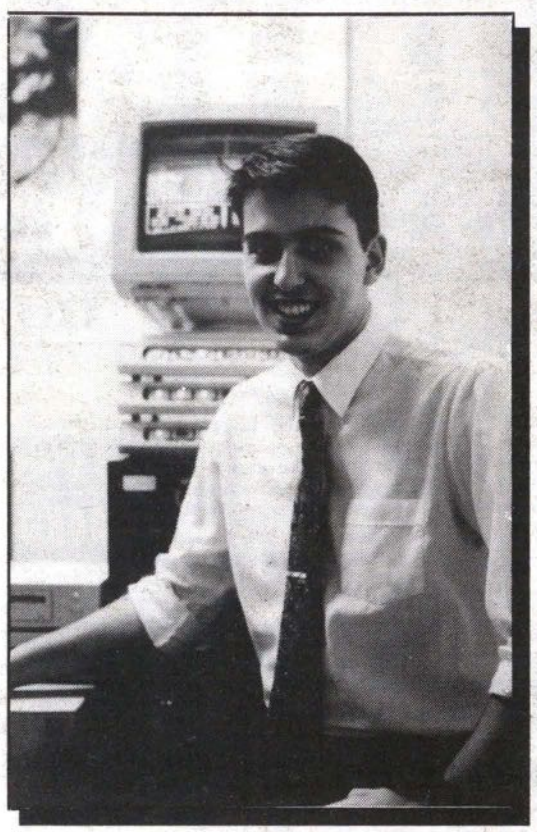

John Smith, the Sysop of Cardz BBS, is a busy man overseeing seven programmers at work on software to display fractal images. When released this spring the program will permit colour VGA images down to 5K in size to be downloaded in 4-15 seconds.

With 30,000 bulletin boards estimated in existence, John could find himself running the only one in the world capable of real time graphics. The new terminal program should prove ideal for such applications as real estate, online stores, art galleries etc. where there's no real substitute for an image.

Cardz BBS should have a demo area running in February. The rate structure for membership on the BBS will be increasing, particularly for downloads, so $79 now can assure you of a year's full access, including adult areas without further charges.

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Spreadsheets
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By Geof Wheelwright

Why Windows?

Many of the computer industry's newest spreadsheets run under Microsoft Windows —which gives them some significant advantages from the word go. First of all, it is truly multitasking. When used in 'enhanced' mode on a machine with a 386 or more powerful processor, Windows will allow you to run several tasks at once—including the ability to be printing out the parallel port while, at the same time, taking data from a modem on the serial port. Secondly, Windows 3.0 provides for communication between applications. At the moment, that communication is provided by two standards: DDE (Dynamic Data Exchange) and OLE (Object Linking and Embedding). DDE allows you to provide "hot links" between one application and another. Using off-the-shelf packages such as Microsoft Word for Windows and Excel for Windows, you can create a link between data in a spreadsheet and a word-processed document. You just "copy" the data from the spreadsheet to the word-processor using DDE and then "paste" it in the word-processed document. There will now exist a dynamic link between the two—such that when the data is changed in the spreadsheet, the changes will automatically be made to the copy of that data sitting in the word-processor. But suppose you are in the word-processor and want to quickly move to the spreadsheet to make your change? That's where OLE comes in. OLE allows you to embed data in a document as an "object"—and that object is then linked to the application which created it. So even if you pasted Excel data into a Word for Windows document without DDE, you could still have that data linked through OLE to Excel—in such a way that when you "clicked" on the copied table

> "For Lotus to ship a product like that, it is unbelievable. Where are the new features, where is the speed? It is so slow. It's an amazing thing that they would ship 1-2-3/W."
>
> *—Bill Gates, Microsoft CEO and Master of Fear, Uncertainty and Doubt.*

Continued on page 26

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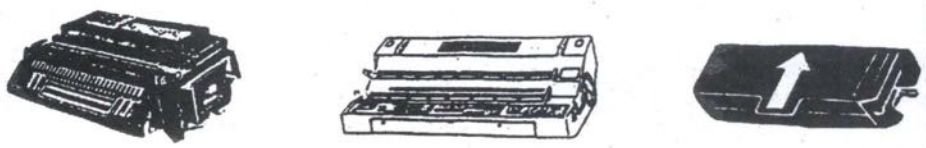

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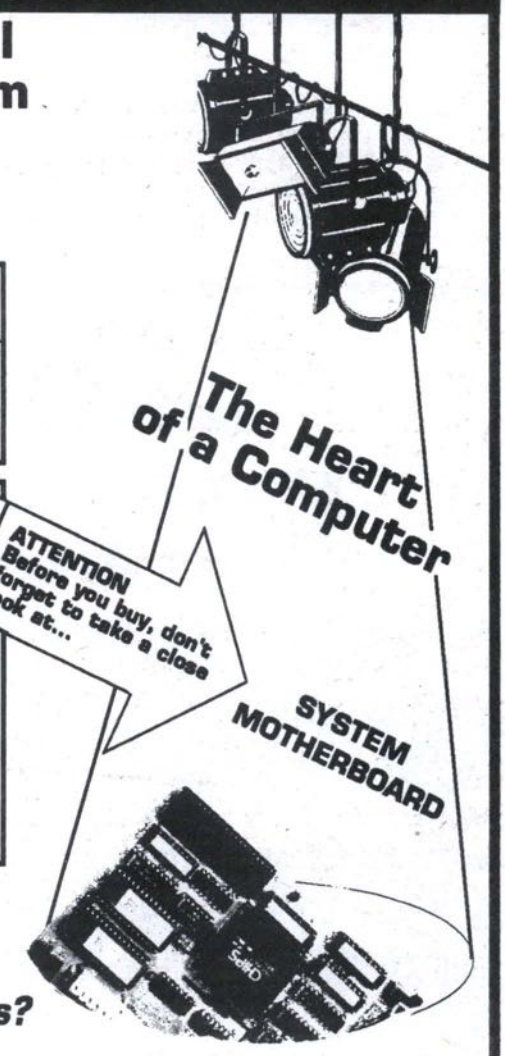

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of spreadsheet data you had placed in the word-processor, it would automatically go and load Excel and allow you to edit that data. These OLE and DDE links can be established between any two Windows applications written to support them. All you have to do is use Windows development tools such as the Windows Software Development Kit, Visual Basic or SQL Windows which give you access to these links. According to Microsoft boss Bill Gates, the idea is that Microsoft Windows is an operating system in its own right. It is soon to be joined by Windows NT (New Technology)—a portable version of the Windows OS which replaced OS/2 Presentation Manager and which will run on anything from a portable notebook personal computer right up to a RISC-based graphical workstation. "Windows is an operating system; you write the application to it, so it is an operating system," Gates concludes. "If you go further out (into next year), then we have Windows NT—which is a complete operating system—in mid-1992. And somewhere in 1993, we have DOS 6, Windows 4.0 and Windows 4 on NT. We will continue to DOS 5, although we will offer DOS 6 by itself. But look at where all the new applications innovation is being done. The world is going to be a very Windows world during 1992."

Bill and Phil's Excellent Spreadsheets

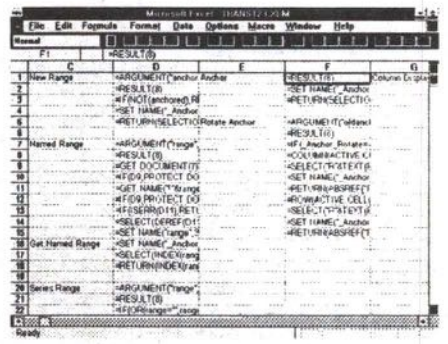
It is fair to say, however, that one of the major spreadsheet competitors who hesitated the longest into moving to Windows was Lotus Development—which only recently started shipping its long-promised Lotus 1-2- 3 for Windows. Despite his delight that Lotus is finally developing for Windows, Microsoft boss Bill Gates is dismissive of the competition this represents for Microsoft's own Excel Windows spreadsheet.

"It (Lotus 1-2-3/W) is the greatest gift we have ever had," he says. "For Lotus to ship a product like that, it is unbelievable. Where are the new features, where is the speed? It is so slow. It's an amazing thing that they would ship 1-2-3/W."

Borland founder and CEO Phillipe Kahn, meanwhile, says that he is also not worried about Lotus 1-2-3 for Windows - or the fact that his Quattro Pro for Windows is coming out at least six months after the Lotus product.

"No, we're not worried about timing - the issue is to be the best, not the first. We could have beaten Lotus to the market, but that hasn't been our strategy," he says. "People will buy the best (Windows) spreadsheet. Our indications are that corporations are waiting until they can evaluate the three products (1-2-3 for Windows, Microsoft Excel 3.0 and Quattro Pro for Windows) - and that's really where we will stand. Quattro Pro for Windows is a very important product for us and will be important to the industry because it defines new ways to think about spreadsheets.

While spreadsheet market leader Lotus Development was busying itself with the release of Lotus 1-2-3 for Windows and for the Macintosh this year, the company's competition was also not standing idle. That competition includes:



Microsoft Excel 3.0

Product: Microsoft Excel for Windows
Publisher: Microsoft Corp., One Microsoft Way, Redmond, WA. 98052-63999 USA
Requires: 286 system or better capable of running Windows 3.0 in standard or enhanced mode
Software: Windows 3.0
Price: $495

This is the product to beat. If Lotus is going to be the kind of market leader in the Windows market that it has always been in the DOS spreadsheet sector, it is going to have to knock out Excel 3.0, the reigning champion of graphical PC spreadsheets. And there is no denying that Excel is a tough opponent. Not only does it conform completely to the Windows development guidelines, but also offers quite an alternative to virtually every feature in Lotus 1-2-3 for Windows—with the important exception of an ability to work in 3-D mode. Although Excel does provide DDE links to an open sheet—and "warm" links to sheets that have already been saved to disk, this is not as elegant a solution at true three-dimensionality. That being said, yet another new version of Excel is expected early next year—one that is likely to jump on any market advantage that Lotus is seen to gain with 1-2-3/W and provide Microsoft with an answer to it.

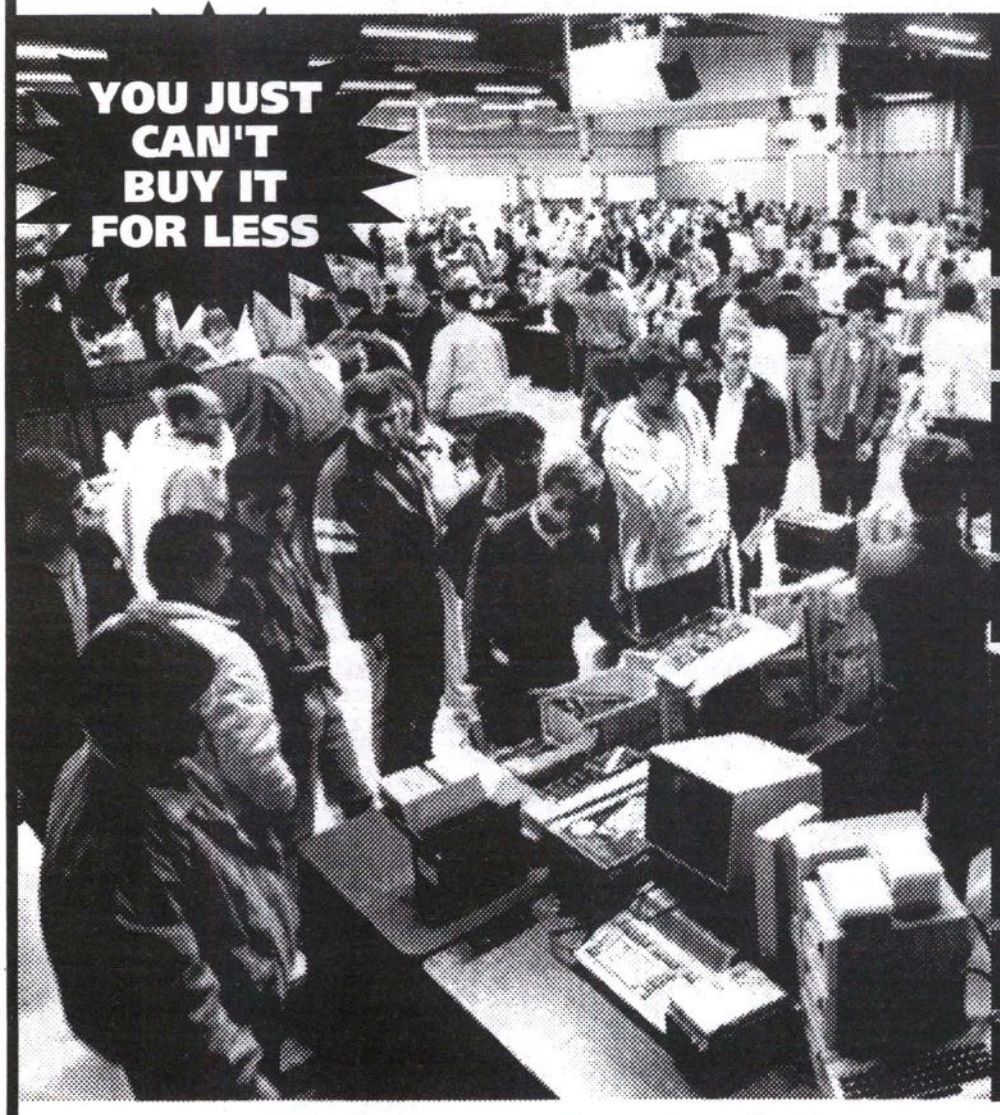
Wingz for Windows

Product: Wingz for Windows
Publisher: Informix Software
Requires: 286 system or better capable of running Windows 3.0 in standard or enhanced mode
Software: Windows 3.0
Price: $495

Wingz is one of those curious products which has won critical appraise from reviewers, employs innovative functions such as its HyperScript development language and offers probably the best range of business graphics options in any Windows spreadsheet—yet hasn't sold in huge quantities. Its developers - minicomputer database software experts Informix—have

Continued on page 27

COMPUTER SWAP-MEET



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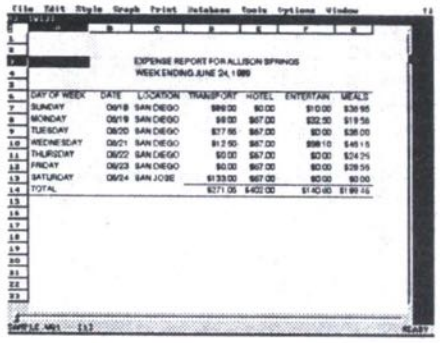
also had the foresight to offer Wingz on a wide variety of hardware and software platforms. These include Windows, OS/2 Presentation Manager, the Apple Macintosh, and a version for the OSF/Motif graphical interface that will run on the IBM RS6000, Hewlett-Packard 9000 series, HP/Apollo, Digital Equipment Corporation's DECstation 2300, 3100 and 5000 series, MIPS RISC computers, RISCstation and Magnum workstations, Data General Aviion series, Motorola Delta Series 8000 and MPC systems, Bull DPX/Prostations, Silicon Graphics Iris workstations and Sequent Symmetry workstations. And despite being implemented on all these wonderful platforms and offering a huge range functions, Wingz has not made any significant impact on the PC spreadsheet market.



Quattro Pro 3.0

Product: Quattro Pro 3.0
Publisher: Borland International, Suite 508 - 4110 Young Street, Toronto, Ontario M2P 2B7
Requires: 512K RAM (640K recommended), hard disk with a minimum 5 Mb available.
Price: $594 (plus $10, plus shipping and tax)

Continued on page 31

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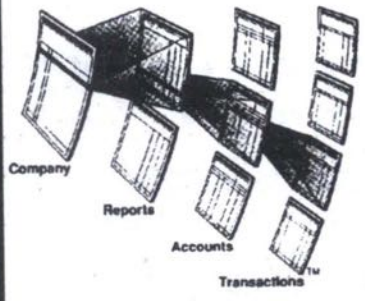

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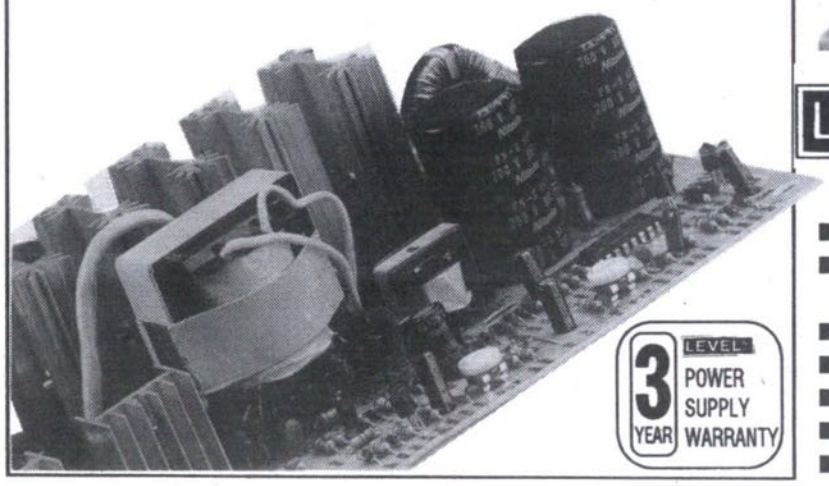

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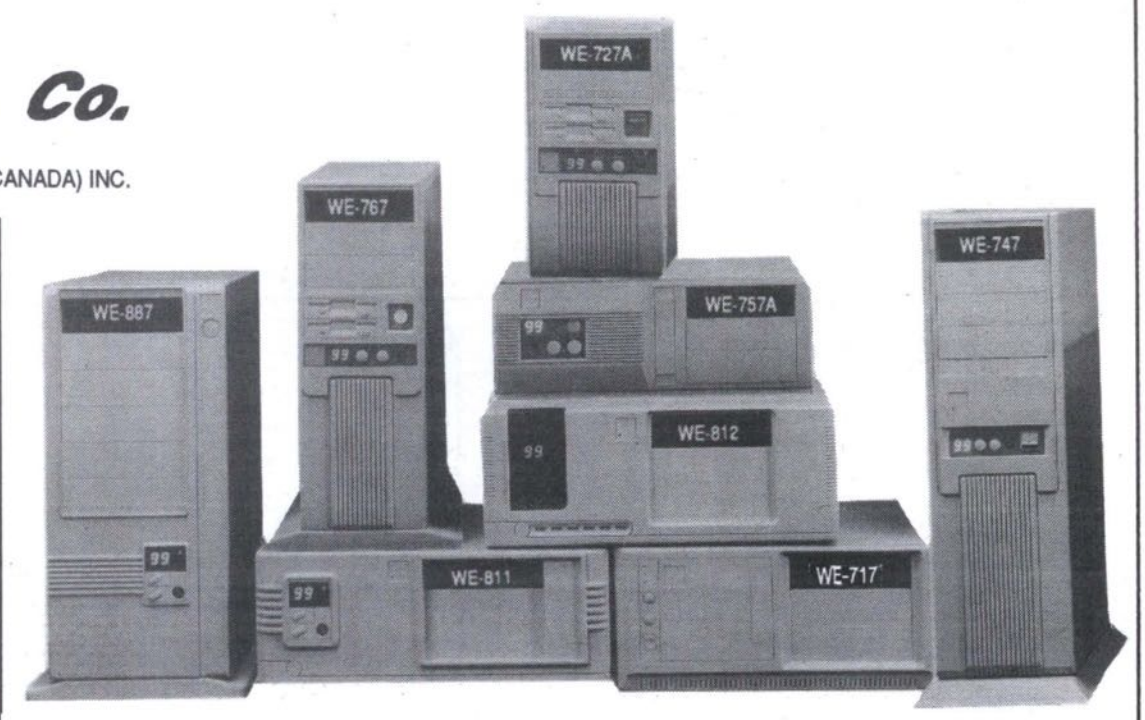

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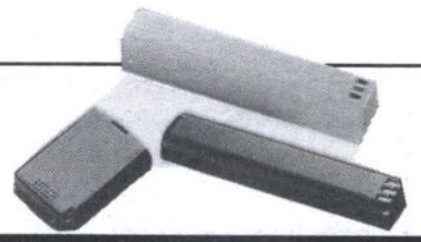

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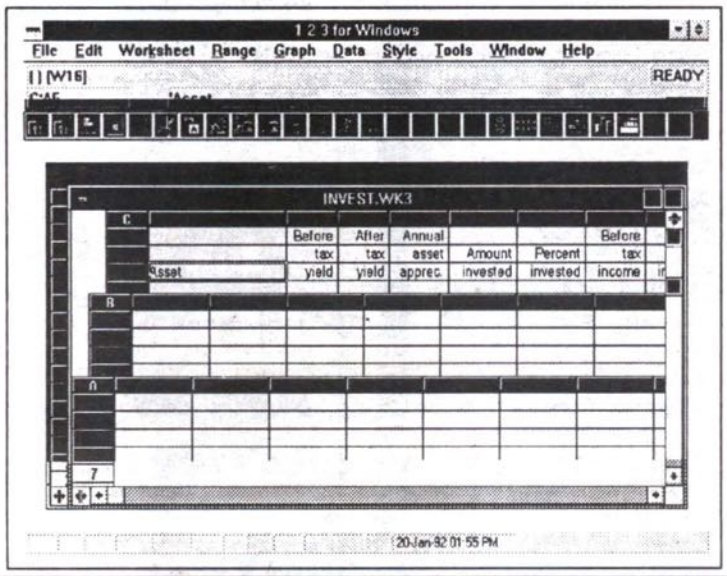
Lotus 1-2-3 for Windows

by Geof Wheelwright



Product: Lotus 1-2-3 for Windows Release 1.0a
Publisher: Lotus Development Corporation, 53 Cambridge Parkway, Cambridge, Massachusetts. Telephone: 800-668 1509
Requires: Any system capable of running Windows 3.0 in standard or enhanced mode
Price: $479 MRP

It's been a long time coming, but Lotus 1-2-3 for Windows has arrived at last. After years of Microsoft's popular Excel spreadsheet being the only serious "electronic ledger" for use in Windows, Lotus Development has brought the world's most popular spreadsheet to the world's most popular operating environment.

The big question is whether or not the Lotus offering is too little, too late. Excel has been available for Windows now for three years and the Macintosh version of the product has long been the market leader for Mac users. On top of all that, Microsoft released a major revamp of Excel—Excel Version 3.0—only last January with full DDE support, improved business graphics, freehand drawing and font-handling facilities.

So what is Lotus going to be able to do to top that? Although Lotus 1-2-3/G—the company's GUI spreadsheet for the now- moribund OS/2 Presentation Manager—won critical acclaim, there weren't enough people using OS/2 for it ever to achieve much commercial success. And the Lotus failure to garner sales in the Macintosh market has been legendary—starting with the disastrous launch of the Lotus Jazz integrated software suite and finishing with the many abortive attempts to launch 1-2-3 for Windows.

But it looks like all that is behind the company now. Lotus 1-2-3 for the Macintosh is now out—and looking very good—while a strong portfolio of Windows products, such as Ami Pro, Freelance Graphics for Windows, cc:Mail (now claimed to be the most popular e-mail package for Windows) and, of course, Lotus 1-2-3 for Windows have been announced.

We are happy to report that Lotus 1-2-3 for Windows is worth the wait. There are bags of new features in it that have never been a part of either Lotus 1-2-3 Version 3.x or Lotus 1-2-3/G.

In designing 1-2-3/W (as it is sure to become known), Lotus has taken advantage of Windows in a most creative manner—while not losing touch with what its huge installed base is used to.

To start with, 1-2-3/W incorporates the use of "SmartIcons" which Lotus pioneered in Ami Pro. This toolbox of commands icons can be positioned anywhere you like

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on-screen and it fully-customizable so that you can—through the use of macros—add new commands to it. New icons can be created for applications short-cuts, special formulae or personal style preferences.

1-2-3 for Windows is shipping with more than 50 standard icons and provides single-click access to functions such as file access and saving, printing, addition, text styling, table formatting and charting. From this selection—and any icons you create yourself—you can build customised "palettes"of icons for doing different jobs.

But if all this talk of icons and mice is disturbing to dyed-in-the-wool Lotus slash- key users, Lotus has ensured that they need never go anywhere near a rodent—at least until they decide they want to. 1-2-3/W includes a "Lotus Classic" mode which provides complete file, style, macro and command compatibility with all previous versions of 1-2-3.

When you press the slash key, a window with the familiar Lotus text command line pops up on the screen—and all major commands can be issued using this interface quite independently of Windows. This "Classic" mode can be switched on and off at any time and is largely provided to help existing users transition to Windows at their own pace.

The 1-2-3 Classic feature can also be used to read and write all files from previous versions of 1-2-3 and Symphony—including all style formats from Allways and Impress (two popular Lotus spreadsheet publishing tools). Lotus also claims that 1-2-3 for Windows is able to read Excel files, styles and macros—although we were not able to get this feature working during our test of a beta version of the product in August.

Lotus further says that it provides full Windows compatibility in this product—with pull-down menus, sizable windows, mouse support, icons, an 'official' Windows Help system, use of memory management, a font/color control system, and full support of DDE and the clipboard. Interestingly enough, however, OLE (Object Linking and Embedding) is not included in the product right away. Lotus is promising to add that later this year.

OLE is a process which allows objects (whether they are graphics, text or data) from other applications to be pasted directly into a document. And if the application which created the object supports OLE, then double-clicking on that object will launch the application. This means, for example, that if—for some reason—you placed an Excel graph in the OLE-supported version of 1-2-3/W, double-clicking on the graph while in 1-2-3/W would cause Excel to be launched.

Another Windows feature which appears to be missing from 1-2-3/W—although Lotus hasn't said anything explicit about it—is support for the quick access to often-used documents. It is this feature which permits Excel and Microsoft Word users, for example, to have a list of the most recent four documents accessed shown as part of the File menu.

We have found this a tremendous boon in use of both Word and Excel. If you forget the name of a document you were recently working on, you just look under the document list in the File menu as it is usually there. Selecting the name of the document automatically opens it.

But we digress. Suffice it to say that Lotus 1-2-3/W isn't quite the Windows application Lotus would have us believe—at least not yet. But then it does have a few GUI features you won't generally find in other Windows apps.

In addition to the SmartIcons, Lotus has developed a very useful Quick Copy feature—which lets you copy ranges, formulae and formatting much more quickly and accurately than using the Windows clipboard. And as Quick Copy allows you to specify the "from" location and the "to" destination for your copying, it is particularly useful when navigating around large 3-D spreadsheets as you don't have to physically move the on-screen cursor to the destination to copy data there.

Speaking of three-dimensionality, it should said here and now that this is probably the biggest ace in the hole which 1-2-3/W offers. Whatever else people have said about Lotus 1-2-3 over the past few years, there appears to be general agreement on the idea that three-dimensionality is a good idea. You know the sort of thing: "Someday all spreadsheets will work this way" and other such remarks.

A 3-D spreadsheet is one of those things you often don't realize the advantages of until you try it. But it is not too hard to imagine the kinds of applications for which it is suited. For example, an enterprising store manager might first want to analyse the mix of his product sales per quarter (a typical 2-D application—time as one dimension and product sales as the other) and then, as his business expands, might have the need to build a model of product sales by store over time (three dimensions).

Rather than building a spreadsheet for each store and then building links between the files, 3-D spreadsheets would allow this guy to manage his livelihood on a single 3-D sheet where store A is represented on sheet A, store B on sheet B and so on.

1-2-3 for Windows is quite powerful in its 3-D functions—allowing you to work with up to 256 worksheets in a single .WK3 file. You can look at up to three of these sheets on screen at once and several files can be open in memory at any one time.

If you do want file linking, 1-2-3 for Windows offers that as well. This provides warm links for models which don't need to be so tightly integrated as those you might build in 3-D mode.

But anyone who uses Lotus 1-2-3 Version 3.x knows all that. What you are far less likely

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to be familiar with is the "solver" and "backsolver" solving technology incorporated in 1-2-3/W. Although this has been used in a Lotus product before—1-2-3/G under OS/2—it is the most comprehensive and tightly integrated implementation so far.

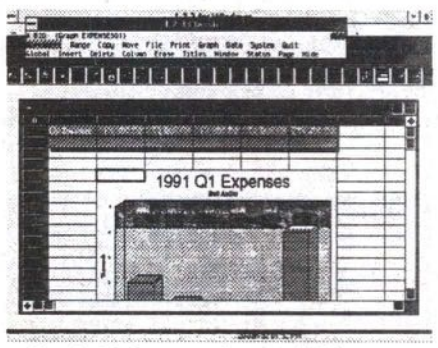
The idea of solver technology is to provide an alternative to standard "What-If?" speculations by letting you start with the goal or financial target you want to hit and then have the spreadsheet tell you the other numbers you'll need to achieve in order to reach that target.

The simplest solving system is the Backsolver. You would typically use it where few variables are involved in a decision-making process. Say, for example, that you have developed a spreadsheet to determine the mortgage monthly payments needed to buy a $130,000 house with a 20 per cent deposit and suddenly find that you can't afford the $1000 or so that it would cost you every month. Using Backsolver, you can turn the question on its head, enter the amount you can actually afford per month and then find out how much you can now spend on the house.

The Solver, however, is a more comprehensive beast. It analyzes data in a worksheet and shows you a variety of possible answers to a problem you define. An answer satisfies constraints you specify. You can start with any worksheet model that contains logical formulae and values you want to experiment with.

Take, for example, a simple worksheet model where profits and expenses are represented by two formulae, one for profits (+SALES-EXPENSES) and one for expenses (+COMMISSION SALES). You can use the Solver to find answers for the problem of how to maximize profits given different values for SALES, EXPENSES, and COMMISSION by specifying two kinds of information to the Solver: the cells that may be adjusted (such as SALES and COMMISSION) and the cells containing logical formulae that are constraints for the problem (such as constraint formulas +SALES<=250000, or +COMMISSION>=0.10.)

Lotus is not the first Windows spreadsheet producer to include a solver. Microsoft's Excel 3.0 also includes a solver feature—although Microsoft's was developed for it by U.S.-based Frontline Systems Inc.



Classic 1-2-3 commands are available, too.

In Use

Whatever else we have said about 1-2-3/W so far, be under no illusion that it is anything other than a highly professional and well-polished product—from installation onwards.

Our review version came on six, high-density 3.5 inch floppies—four for the actual application itself, one for printer drivers and the other for Adobe Type Manager (which comes bundled with 1-2-3/W). Although ATM is expected to be part of Windows 3.1 and is already included in a number of other Windows applications (such as Aldus PageMaker 4.0), it is well worth having.

Installation is simple. You just run the install file on Disk 1 from within Windows and 1-2-3/W presents you with a crisp and professional-looking Windows installation window. You then start the second part of the installation by selecting an "install" icon and all the files are smoothly transferred to the hard disk—with thermometer-style updating windows showing exactly how much of each file, and how much of the whole application, has been installed at any given point in time. Full marks to Lotus for this—it is the best installation routine we have yet seen for a Windows application.

Once you get it up and running, 1-2-3/W is a compelling mixture of old and new. Pressing the "slash" key brings up the aforementioned 'Classic 1-2-3' command line and lets you get started using 1-2-3/W right away. In companies where a lot of time is not available for training, we would imagine that this will enable users to get started with 1-2-3/W from the moment of installation—and then learn the benefits of the Windows implementation at their leisure. In other words, there need to be huge time lag between installation of 1-2-3/W in your company and when people get start working with it.

In conducting basic spreadsheet design, 1-2-3/W is quite similar to Lotus 1-2-3 Version 3.0 - except that you have a number of different ways to issue commands to it. It was when we started to do some text formatting and graphing that the real improvements started to come to the fore.

ATM ensured that text was clear and crisp - even when scaled to odd point sizes - while a whole range of simple formatting functions made things such as cell shading, inclusion of drop shadows, emboldening, italicising and underlining no more difficult than single-clicking on a SmartIcon.

The most welcome feature for many 1-2-3 users will, however, be the business graphics facility. Not only does Lotus finally offer a full range of 3-D, mixed line and bar, scatter, area, high-low-close-open and table charts with more than 200 possible graph style combinations, but a new drawing facility lets you incorporate text, freehand and object-oriented drawings with these graphs.

The draw commands provide you with many of the basic facilities which would, in the past, have required the purchase of something like Lotus Freelance Plus. You can use it to text, arrows, lines, shapes, and freehand drawings to the Graph window.

Finally, Lotus has taken a view to helping its huge base of corporate users by letting them use 1-2-3/W to get at information held in relational databases on larger systems and servers, CD-ROM and online data services. The company's much-touted DataLens data access technology is being used to do with through the provision of drivers for Borland Paradox, SQL/Server, dBase III and IV and the offering of a DataLens developer toolkit.

The idea here is that specific fields and records can be accessed directly from within Lotus 1-2-3/W without having to do any file conversion - or even use DDE - if the DataLens drivers are used.

Conclusion

Lotus 1-2-3/W is a polished and powerful Windows spreadsheet offering. For existing 1-2-3 users it is the safest route for upgrading to Windows that has so far been offered - providing full backwards compatibility with all previous versions of 1-2-3, in both file formats, command structures and data.

For anyone not already using a spreadsheet, however, things are not so clearcut. There is little to choose between Excel 3.0 and 1-2-3/W - both are very powerful and highly flexible. At the moment, Microsoft offers better Windows support - as facilities such as the OLE implementation of 1-2-3/W are still some months off - but Lotus is likely to catch up by year's end. And one shouldn't forget that Borland is likely to launch Quattro Pro for Windows by this summer.

The biggest advantage 1-2-3/W offers is three-dimensionality - which is implemented deftly and professionally in this Windows version of Lotus 1-2-3 Version 3.x. If you need it, there is no choice - you have to look at 1-2-3/W. If not, it's pretty much a toss-up between 1-2-3/W and Excel. ❐

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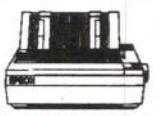

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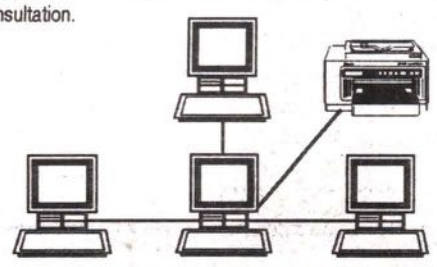

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Continued from page 27

While Excel has not been a direct competitor to Lotus 1-2-3 for the past few years as it required the hardware and processor overheads demanded by Windows, Borland's Quattro spreadsheet has given Lotus big headaches. Quattro Pro was considered by many to be what Lotus 1-2-3 Version 2.2 should have been, but wasn't. Borland is claiming to have sold more than three quarters of a million copies of Quattro worldwide. In fact, Lotus got so upset about the whole thing it took Borland to court for mimicking its user interface in a "Lotus compatibility mode"—a case which made lots of money for U.S. lawyers but doesn't seem to have advanced the state of the U.S. software industry. The great appeal of Quattro Pro is that although it provides a full graphical interface, mouse support and special printing features (such as print to fit and support for both font and print scaling), it will run on any standard DOS machine with 640K RAM and a hard disk. Borland currently has a Windows version of Quattro Pro under development and is expected to announce it before the end of the year.

Supercalc 5

Product: SuperCalc 5
Publisher: Computer Associates, 3rd floor, 1770 Burrard Street, Vancouver, B.C. V6T 3G7
Requires: 512K RAM (640K recommended), hard disk with a minimum 5 Mb available.
Price: $179

While not officially a graphical spreadsheet, CA's canny price cut of SuperCalc 5 by about 400 per cent last year has made it stiff competition for anyone selling spreadsheets. Supercalc claims a worldwide installed base of some three million users (although this figure includes esoteric versions of the product—such as those developed for the pioneering Osborne One portable and the original Apricot PC). And in the latest version of the product, SuperCalc offers Lotus 1-2-3 2.01 macro compatibility, a three-dimensional spreadsheet capability and the ability to run on even the most modest XT compatible with 8088 processor and 20 MB hard disk. CA has also dropped strong hints about plans to develop a Windows spreadsheet, although it has not yet been announced.

The Integrated Option

While the mainstream spreadsheet market moves further and further upscale in terms of its hardware and software interface requirements, "lower-end users" may still want to consider spreadsheets that come as part of integrated software packages. Typical of this approach is Framework from Ashton-Tate (now part of Borland).

Product: Framework IV
Publisher: Borland International, Suite 508 - 4110 Young Street, Toronto, Ontario M2P 2B7
Requires: 512K RAM (640K recommended), hard disk with a minimum 5 Mb available.
Price: $778.40

Framework

Ashton-Tate's Framework was one of the pioneers of the integrated software market. Along with Lotus Symphony, it was supposed to conquer the applications-software world back in 1984—being all the business software that most PC users would ever need.

And it included its own programming language (known as FRED) to help you customise Framework to be any kind of application you wanted it to be. It comprised word-processing, spreadsheet, database, business graphics and communications functions—and was one of the first PC applications to offer multiple, resizable windows, pull-down menus and a real attempt at Macintosh-style operation.

But all this was not enough to save Framework from failing to achieve the kind of success which Ashton-Tate had hoped for. The product was never a huge success in the United States, although it has always had a modest, but dedicated, following in Europe. Over the years since its launch, Ashton-Tate has tried to sell Framework as a high-end applications development system, as a low-cost "all-in-one" package and almost anything in between.

The most recent incarnations of Framework are Framework XE and Framework IV—low-cost "executive" and high-end versions of the product, respectively. It is Framework IV that is the most recent addition to this long list of intriguing integrated applications.

> The whole question of DOS-based integrated applications bears some serious re-examination in an applications world increasingly dominated by Microsoft Windows.

Ashton-Tate these days seems to be setting Framework up as some sort of low-power alternative to Windows (both XE and Framework IV will run on any XT with 640K of RAM and a monochrome display) as it now provides mouse control—and still uses pull-down menus, resizable windows (which it calls "frames", hence the name).

Framework IV provides seven applications: word-processing, outlining, spreadsheet, data management (A-T doesn't want to call this an actual database system as it could compete with the dBase family), graphics, telecommunications and electronic mail. In addition, Framework IV provides "live" access to dBase IV, dBase III Plus and dBase III index and data files—as well as support for file locking and printer sharing over standard PC networks. If you are using dBase files, you can also have file and record locking when accessing data files over a network with Framework IV.

All of the applications are competent—although none would set the world on fire. They are also designed to work with whatever applications you may already have. The word-processing software, for example, offers the ability to import and export files in MultiMate, WordStar, Microsoft Word, WordPerfect and IBM DisplayWrite formats.

You can choose from up to 60 different menu-selectable fonts—and Framework IV supports downloadable, internal and cartridge fonts for most laser printers. The package also includes 12 Bitstream typefaces (offering you scalable on-screen and printer fonts).

Facilities are also included for generating tables of contents, creating footnotes, multiple columns and hyphenation. Listing outlining as a separate application is really a bit of cheek on Ashton-Tate's part as it is really nothing more than an extension of the word-processing software. By placing "frames within frames," you can organise text, graphics, spreadsheets and data into a single file. But then you have always been able to do that in Framework.

As in previous versions of Framework, the spreadsheet is the weakest part of the package. Although its does now support import and export of a number of file formats (including Lotus 1-2-3 Versions 1.x and 2.x) and provides a spreadsheet of 32000 rows by 32000 columns, it is a fairly lackluster, though workmanlike, affair.

There are three big problems with Framework IV—none of which have a great deal to do with the package itself. The first is that Ashton-Tate has been acquired by Borland International—which may not be interested in continuing to sell it.

Finally, the whole question of DOS-based integrated applications bears some serious re-examination in an applications world increasingly dominated by Microsoft Windows. Although a couple of integrated applications have recently been launched under Windows (Microsoft's own Works for Windows being the most interesting of these), the whole nature of Windows is that it allows for easy integration of text, graphics, spreadsheet and database information—so who needs an integrated package like Framework IV? ❐

Geof Wheelwright can be reached at 604/984-2351.

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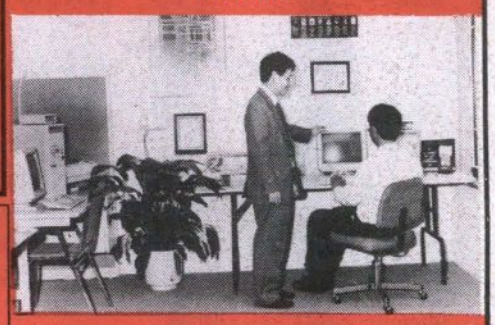

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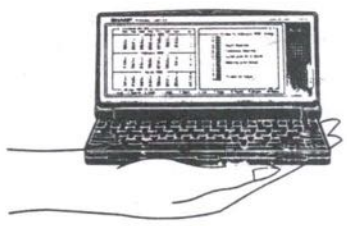
Sharp PC-3000

PC-compatible Palmtop

By Geof Wheelwright



Product: Sharp PC-3000
Price: $1500 (CDN–estimated)
Summary: 80C88-based handheld running at 10 MHz with 1 MB of system RAM, 1 MB of ROM (includes Lotus 1-2-3-compatible spreadsheet, as well as MS-DOS version 3.3, Travelling Software's LapLink, an appointment book function (with alarm facility, a financial calculator, a text editor, a file manager and a "to-do" list)

Sharp Electronics, long one of the pioneers in the handheld computing sector, has broken new ground with the development of a new PC-compatible palmtop computer. Although there have been PC-compatible palmtop systems before, we have not yet seen anything this powerful and this small.

The PC-3000 uses the low-power 80C88A processor running at 10 MHz,comes with 1 MB of RAM, 1 MB of ROM, a monochrome LCD screen that conforms to CGA and MDA display adaptor standards, one serial interface, one parallel interface, two expansion card slots compatible with the PCMCIA standard and an expansion bus for a 1.44 MB 3.5-inch floppy disk drive. Travelling Software's LapLink software is also included with the PC-3000. It runs on 3 AA batteries and weighs a little more than one pound (480 grams). Pricing on the machine is expected to be around $1500 CDN.

The machine measures just 8.8 inches wide by 4.4 inches deep by 1 inch high—and even with these small dimensions, manages to provide a readable LCD screen (with a resolution of 640 x 200 pixels) that is 6.8 inches by 2.6 inches. Although it obviously isn't color, it does go some way using its CGA emulation by offering four gray scales.

Despite the fact that the Sharp PC-3000 comes with MS-DOS 3.3 built into its internal ROM and provides a full 77-key QWERTY-style keyboard, Sharp has recognized the fact that some users coming to the machine will never have used a PC before.

For that reason, Sharp includes both a "shell" and a number of on-board applications within the PC-3000. The on-board applications offer an easy-to-use, menu-based operating environment that includes a file manager for running applications and managing files without using DOS commands.

Other in-built management features include the standard PIM (personal information manager) collection: an address book, a scheduler for monthly/weekly and daily scheduling, a basic text editor, a Lotus 1-2-3-compatible spreadsheet, a "to-do" list for time management, a calculator and clock.

Anyone who has ever used Atari's Portfolio may recognize this software—it is produced by the same British company, Distributed Information Processing (DIP), that wrote the Atari's PIMs. But with a full, 80-character-by-25-line screen, these PIMs are a great deal more useful—particularly the spreadsheet and notebook software.

Sharp claims the PC-3000 will provide an average battery life of 35 hours on three standard AA batteries—and has developed a fairly sophisticated power management system to achieve that.

In addition to the ubiquitous early warning light showing when the battery is running low, Sharp provides within its "setup" screen the ability to set your time-out on the PC-3000's "auto power-off" function. RAM memory is, of course, battery-backed so that none of your data is lost when you change the machine's main batteries.

Conclusion

In many ways, the design of the PC-3000 is merely a refinement of what has gone before. But that extra polish goes a long way—making the keyboard quite usable, the screen easy enough to read and the amount of RAM and storage offered was adequate for running most DOS-based applications. If you need a DOS-compatible pocket computer, then this machine should be at the top of your shortlist. ❐

Geof Wheelwright can be reached at 604/984-2351.

BC OnLine *cont. from page 17*

An example of a new kind of software called "Electronic Performance Support Systems," the Field Guide shortens the learning curve by coaching new users through performing unfamiliar tasks. Experienced users can toggle the Field Guide on and off as needed.

BC OnLine Field Guide complements another Clarity production called Introduction to BC OnLine. This interactive CBT (computer-based training) shows the tricks used by registry experts to find records in the government's (sometimes labyrinthine) databases. With the Introduction, new users can learn the ropes offline, without incurring any search fees, before they sign on to the real system.

BC OnLine Field Guide is available to all BC OnLine subscribers who purchase Version 2 of the BC OnLine Connector (BC OnLine's communication program).

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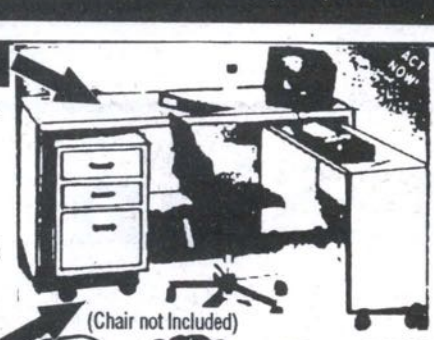

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The program automatically calculates the TD1 cost of living adjustment but the user can no longer alter the UIC, CPP and tax tables. A new feature of version 6 is that the payroll register summary now subtotals employee and employer Unemployment Insurance contributions by UI rate. The program also checks for errors in T4 boxes before printing the T4s and allows the user to make corrections before printing. This flexible program is a good choice for businesses with many and complex earnings and deductions requiring job costing and an interface to Accpac Plus G/L. The 32 earning and deduction limit is insufficient for some payrolls.

Accpac BPI

Accpac BPI Canadian Payroll v. 3.0A is easy to set up and to use. It interfaces with both Accpac Easy and the Accpac Plus General Ledger. This product is the most suitable for a commission sales environment. It provides for up to five hourly rates and enables the user to define up to 20 types of commission calculations. With 20 benefits and deductions per company and up to 6 of each for each employee it has an adequate number of benefit and deduction types for most small businesses. Reporting is good, deduction and benefit reports are excellent, however, it does not print a record-of-employment form.

DacEasy Ver 4.1

DacEasy Ver 4.1 is an inexpensive, simple payroll solution for a small company. The setup will take only minutes and it has many of the features of more flexible and expensive programs such as the capability to calculate earnings and deductions. It's pull-down menus and clear data entry screens are attractive features. A detailed employee pay history report is provided and previously posted cheques can be viewed on the screen and modified even after posting. Some features include a built-in calculator, a Windows type control menu and easy look-up of employee data.

Easypay

Easypay is a middle-of-the-road program with good flexibility in benefit and deduction set up. Data entry screens are complex and I found myself constantly accessing the Help feature in order to set up an employee and enter a timecard for a payroll run. Deduction and benefit formulae are available but not easy to understand. Prompts appear at the bottom of the screen during data entry but refer to function keys not on the standard keyboard. New features include online cheque reconciliation and recurring timecards, both timesaving features. Reporting is very comprehensive and flexible. The manual is well laid out and very easy to use and online help is good.

Grand Master

Grand Master is a good choice for those organizations requiring an extensive cost breakdown by department. The product's special features include the ability to associate each employee's earnings and deductions with its own general ledger account and department and further, the ability to prorate an employee's wages between up to four different companies or departments. This product provides tables for wage rates such as would be included in a union agreement. It provides many user-definable earnings and benefits and deductions which are linked in a deduction table. Formulae are available for the calculation of earnings and deductions but are difficult to configure and the manual is weak in assisting with this function. There is a quick-entry feature for entering timecards with multiple rates of pay.

Reporting is flexible and comprehensive. Files are created for direct deposit interface with bank systems and the product interfaces with most general ledger applications. I also examined the new Grand Master II software which has been designed for companies with more than 1,000 employees. It is a multiuser system with the look and feel of Microsoft Windows available for DOS, Unix and OS/2. It will provide 50 earnings and 50 deductions and benefits and provide table-driven earnings and rate tables for union payrolls.

Great Plains Canadian Payroll

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, many of which are pre-configured. It is excellent for job cost purposes 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. It has built-in pension plan benefits and full union reporting. Version 6.0 includes an accrual for holiday pay or sick pay and the option to pay vacation pay every pay period. The program retains and can print an employee's entire pay history for the year. This and other audit trails are excellent. It interfaces with the Great Plains Report Generator for custom reports. Great Plains Payroll can now be run under the Windows operating system and if run in "386 enhanced mode" it can be run in more than one window so that all the multitasking features of Windows can be used.

Continued on page 39

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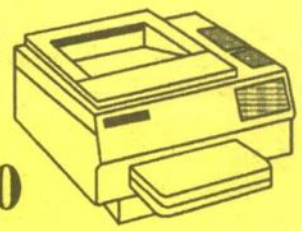

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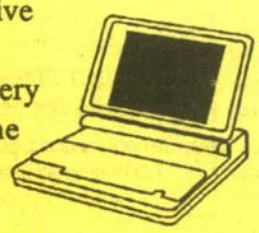
An intelligent UPS Card protecting your data in PC smartly !!!

- Automatically save data when power fail and restore it when power recover
- Automaticcally continue the unfinished iob when power recover
- Much less expensive than conventional UPS system
- Build in your PC, no need for additional desk or floor space

Introductory offer for only ..... **$ 269.00**

Legend NB-320S NoteBook Computer

- Intel 386SX-20MHz CPU
- 2MB ext. to 5MB
- Socket for 80387SX-20 **$ 2299.00**
- One 1.44MB 3.5" Floppy
- One 60 MB IDE Hard Drive
- 6.8lbs, 11"x8.65"x2.1"
- Rechargeable Ni-Cad battery with 3 hours operation time
- DR DOS 6.0
- carrying case
- One year parts & labour warranty



CD-ROM Specials !!!

NEC CDR-36 Portable CD-ROM
- **SCSI Interface, Interface card included**
- **7 games bunble includes Grolier Encyclopedia, National Geo. Mammals, World Atlas, Time Almanac 5000 Articles, Time Table of History, Battle Chess, Great Cities of the World**
- **play CD Music & Audio Software**
- **free Speakers & Headphones** **$ 699.00**

Mitsumi Internal CD-ROM Bundle
- **Enclopedia with Picture & Sound**
- **World Atlas**
- **Britannica Family Choice** **$ 499.00**
  (over $600 of Software, 15 software titles)

Advanced Video Graphics

CYCLONE XG S3 Windows Accelerator Card
- chosen by WindowsMagazine as one of the best 100 Windows Products
- Build-in accelerator for Windows, O/S 2, and other Graphics User Interface applications.
- run Windows 12 times faster than super VGA
- 7 year manufacture warranty

$ 369.00

All above prices are for cash and carry orders only.
Please add 2% for Visa and MC payments.
Corporate or Gov't P.O.'s are welcome O.A.C.
Prices may change without notice;
please call for the latest pricing.

KICKS

KICKS COMPUTER SYSTEMS INC

Now 3 Locations to Serve You !!!

Vancouver
1237 West Broadway
Vancouver, B.C. V6H 1G8
738-3886
Fax:738-2881

Burnaby
#5-4300 Kingway
Burnaby, B.C. V5H 1Z8
438-3088
Fax:438-7088

Surrey
Creative Electronics
2260 Guildford Town Centre
Surrey, B.C. V3R 7C1
582-0318
Fax:582-0463

Mon-Fri 9:30am-6:00PM Sat:10:00am-5:00PM
Sunday & Holiday Closed

Mon,Tues,Sat:9:30-5:30
Wed-Fri:9:30-9:00
Sunday:12:00-5:00

KICKS 386SX-16 System
- True Intel 386SX-16 CPU
- 1MB memory, expandable to 5MB
- 1.2MB or 1.44MB Floppy Drive
- Quantum 52MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Oak 16-bit VGA card 256K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- KPT 101-key Enhanced Keyboard
- Hyundai 14" VGA Monitor 640x480,.41mm

$ 999.00

KICKS 386DX-25 System
- True Intel 386DX-25 CPU, AMI Bios
- 2MB memory, expandable to 8 MB
- 1.2MB or 1.44MB Floppy Drive
- Quantum 52MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Trident 9000 SVGA card 512K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- Focus 2001 Enhanced Keyboard
- Legend SVGA Monitor 1024x768,.28mm

$ 1,349.00

KICKS 386DX-33 Cache System
- True Intel 386DX-33 CPU, AMI Bios
- 64K Cache ,128K optional
- 4MB memory, expandable to 32 MB
- 1.2MB or 1.44MB Floppy Drive
- Teac 105MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Trident 8900 SVGA card 1024K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- Focus 2001 Enhanced Keyboard
- Legend 14" SVGA Monitor 1024x768,.28mm

$ 1,689.00 w/ AMD CPU, 128K Cache $ 1669.00

KICKS 386DX-40 Cache System
- AMD 386DX-40 CPU, AMI Bios
- 64K Cache ,128K optional
- 4MB memory, expandable to 32 MB
- 1.2MB or 1.44MB Floppy Drive
- Teac 105MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Trident 8900 SVGA card 1024K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- Focus 2001 Enhanced Keyboard
- Legend 14" SVGA Monitor 1024x768,.28mm

$ 1,699.00

KICKS 486SX-20 Cache System
- True Intel486SX-20 CPU, running @ 25MHz
- 8K Internal Cache; AMI Bios
- 4MB memory, expandable to 8 MB
- 1.2MB or 1.44MB Floppy Drive
- Teac 105MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Trident 8900 SVGA card 1024K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- Focus 2001 Enhanced Keyboard
- Legend 14" SVGA Monitor 1024x768,.28mm

$ 1,739.00

KICKS 486-33 Cache System
- True Intel486DX-33 CPU, AMI Bios
- 8K Int. Cache, build-in Math Co-proccessor
- 64K External Cache, 256K optional
- 4MB memory, expandable to 32 MB
- 1.2MB or 1.44MB Floppy Drive
- Teac 105MB IDE Hard Drive 64K Cache
- 2 serial, 1 parallel, & 1 game ports
- Trident 8900 SVGA card 1024K
- 13" Mini Tower case w/ LED Display
- 200W CSA Power Supply
- Focus 2001 Enhanced Keyboard
- Legend II SVGA Monitor1024x768,.28mm

$ 2,089.00

TAILOR-MAKE YOUR OWN COMPUTER SYSTEM

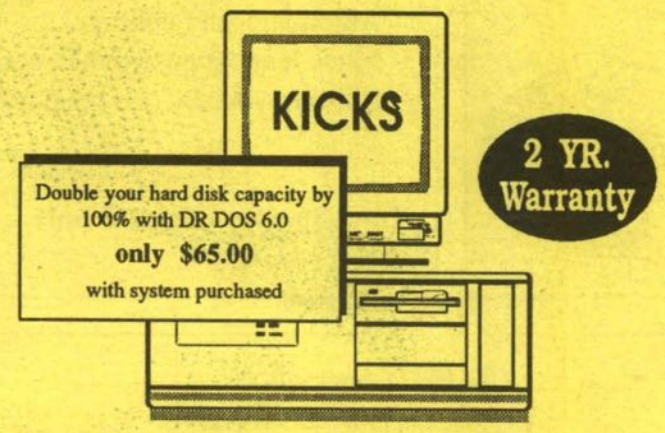
80386SX-16/20/25 System
- Intel 80386SX-16/25 CPU **16 MHz $439**
  or AMD 386SX-25 CPU **20 MHz $475**
- 1 MB RAM memory **25 MHz $509**

80386DX-25 System
- Intel 80386DX-25 CPU; AMI Bios
- 1 MB RAM exp. to 8 MB **$ 629**

80386DX-33 Cache System
- Intel 80386DX-33 CPU, AMI Bios **$ 749**
- 64K cache; 128K optional **w/ AMD-40**
- 1 MB RAM exp. to 32 MB **add $20 only**

i486SX-20 System
- Intel 80486SX-20 CPU, AMI Bios **$ 809**
- 8K internal cache **w/ 64K cache**
- 1 MB RAM exp. to 8 MB **add $95**

i486DX-33 Cache System
- Intel 80486DX-33 CPU, AMI Bios
- Built-in math coprocessor
- 8K internal cache **$ 1165**
- 64K cache; 256K optional **w/ 256K cache**
- 1MB RAM exp. to 32 MB **add $95 only**



Upgrade & Options (only with system)

Additional 1.44MB Floppy Drive	$ 59.00
Legend Hi-res. Serial Mouse	$ 19.00
OEM DR DOS 6.0	$ 65.00
OEM MS DOS 5.0	$ 65.00
OEM Microsoft Windows 3.0	$ 55.00
Microsoft Office for Windows (5 only, while quantity last)	$439.00
2400bps int. Modem w/ Procomm	$ 59.00
OEM Zoom int. 9600 S/R Modem (9600send,4800receive,2400modem)	$ 89.00

ADD A HARD DRIVE, GRAPHICS CARD & MONITOR TO COMPLETE SYSTEM

All Bare -bone Systems include the following configurations:
1 MB RAM (70 ns or faster)
5.25" 1.2 MB or 3,5" 1.44 MB floppy drive
16-bit IDE HD/FD Host Adaptor
2 serial, 1 parallel, 1 game ports
13" Tower case w/ LED Display
200 W CSA approved power supply
101-keys enhanced tactile keyboard

All systems come with a full two year *no non-sense* parts and labour depot service warranty.

(two year labour / one year parts warranty for 386SX systems.)

Prices may change without notice.
Please call for the latest pricing.

All above prices are for cash and carry orders only.
Please add 2% for Visa and MC payments.
Corporate or Gov't P.O.'s are welcome O.A.C.
Prices may change without notice;
please call for the latest pricing.

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1237 West Broadway
Vancouver, B.C. V6H 1G8
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Fax:738-2881

Burnaby
#5-4300 Kingway
Burnaby, B.C. V5H 1Z8
438-3088
Fax:438-7088

Surrey
Creative Electronics
2260 Guildford Town Centre
Surrey, B.C. V3R 7C1
582-0318
Fax:582-0463
Mon,Tues,Sat:9:30-5:30
Wed-Fri:9:30-9:00
Sunday:12:00-5:00

Mon-Fri 9:30am-6:00PM Sat:10:00am-5:00PM
Sunday & Holiday Closed

KICKS COMPUTER SYSTEMS INC.
Monthly Shopping List

Monitor

12" TTL Amber monitor	$109.00
14" TTL Amber monitor	$125.00
Gold Star 14" Grayscale VGA monitor 800x600	$179.00
Hyundai 14" Grayscale VGA monitor 640x480	$139.00
Hyundai 14" VGA monitor 640x480,.41 dp	$269.00
Hyundai 14" SVGA monitor 1024x768, .28 dp	$349.00
Legend-2 14" Tri-sync VGA monitor 1024x768,.28 dp	$349.00
Legend-2 14" non-int. VGA monitor 1024x768,.28 dp	$419.00
NEC 3FGx 15" Multi-sync VGA monitor 1024x768,.28 dp	$849.00
NEC 4FG 15" Multi-sync VGA monitor 1024x768,.28 dp, 70Hz	$1049.00
ViewSonic 6 non-int VGA monitor 1024x768,.28 dp 70Hz	$519.00
Sony 1304 Multiscan monitor (Sony Trinitron Tube)	$849.00
IDEK M5117 17" non-int. SVGA monitor 1024x768, .28 mm dp	$1139.00
PC Magazine Editor's Choiice	
IDEK M5217 17" non-int. monitor 1024x768, .28 mm dp, 70Hz	$1249.00
IDEK M5221 21" non-int. monitor 1024x768, .31 mm dp, 70Hz	$2495.00

Video Graphics Adaptor

Monochrome Graphics card	$ 20.00
Oak 16-bit VGA card 256K (800x600)	$52.00
Trident 9000 SVGA adaptor 256K exp.to 512K	$ 59.00
Trident 9000 SVGA adaptor 512K	$ 72.00
Trident 8900 SVGA adapter 512 K exp. to 1MB	$ 85.00
Tseng Labs 4000 SVGA adapter 1 MB (1024x768, 256 colours)	$149.00
OEM ATI VGA Wonder XL adaptor 512K exp. to 1MB	$165.00
ATI VGAWonder XL adapter 512 K exp. to 1 MB w/ Bus Mouse	$229.00
ATI Graphics Ultra Plus VGA adapter 1 MB VRAM w/ Mouse	$579.00
National Volante AT 1000 Graphics Adaptor w/ 1MB VRAM	$875.00
PC Magazine Editor's Choice	

Mouse & Scanner

Microsoft Hi-res Bus or Serial Mouse	$115.00
Microsoft Hi-res Bus or Serial Mouse w/ Windows	$195.00
Logitech serial or bus Mouse Man	$79.00
Logitech serial Mouse Man w/ Windows 3	$129.00
Legend 3-button serial mouse (400 dpi)	$25.00
Logitech Scanman 32	$199.00
Logitech Scanman 256	$339.00
Prolab 256 Grayscale Hand Scanner w/ OCR software	$269.00
Prolab Color Hand Scanner w/ OCR software	$589.00

Floppy & Hard Drive (Bare)

5.25" 1.2MB floppy drive	$75.00
3.5" 1.44MB floppy drive	$65.00
Quantum 52 MB (17 ms) V.C. IDE w/ 64K cache	$255.00
Western Digital 84 MB (17ms) V.C. IDE w/ 64K cache	$339.00
Quantum 105 MB (17ms) V.C. IDE w/ 64K cache	$399.00
Teac 105 MB (19ms) V.C. IDE w/64K cache	$359.00
Quantum 120 MB (15ms) V.C. IDE w/64K cache	$439.00
Maxtor 120 MB (15ms) V.C. IDE w/ 64K cache	$459.00
Western Digital 212 MB (15ms) V.C. IDE w/ 64K cache	$699.00

All other brands, SCSI and ESDI hard drives please Call.
(All h ard drives have a minimum 2yr warranty.)

HD/FD Controller

16-bit IDE HD/FD controller	$20.00
16-bit IDE HD/FD ctrl w/ 2 ser, 1 par, 1 game ports	$35.00
Intelligent IDE HD/FD controller	$59.00

All other brands and types of controller Please Call.

Tape Drive

Colorado DJ-10, 60/120MB capacity w/ DC2120 tape	$295.00
Colorado DJ-20, 120/250MB capacity w/ DC2120 tape	$369.00
Colorado AB-11 external tape adaptor kit for DJ-10 (2.2MB/min)	$45..00
Colorado FC-10 tape adaptor (4.4MB/min) for DJ20	$99.00
cable for connecting Colorado tape B/U for 2-floppy system	$19.00
Colorado External Kit w/ FC-10 for DJ-20	$189.00
Colorado External Kit w/ AB-10 for DJ-10 & DJ-20	$129.00
Patriot 250 (120/250MB capacity) w/ DC2120 Tape Cartridge	$299.00
Patriot Tape adaptor for Dual Floppy System	$55.00
3M DC2000 Tape Cartridge	$25.00
3M DC2120 Tape Cartridge	$29.50

Miscellaneous

AT Multi I/O card (1S, 1P, 1G)	$14.00
AT Multi I/O card (2S, 1P, 1G)	$20.00
Sound Blaster	$159.00
Sound Blaster Professional	$269.00
Thunder Sound (Adlib & Sound Blaster Compatible)	$135.00
Pro Audio Spectrum (Sound Blaster Pro Comptible)	$289.00
Prolab INner UPS card	$279.00
Gravis Joystick	$39.00
Y-cable for game port	$9.95
Shipping Box	$15.00

Memory Chip & Module

256K Video memory (4464-80ns)	$18.00
256K Video memory (44256-80ns)	$13.00
512K Video memory (44256-80ns)	$26.00
Each 1MB upgrade using 1MB 70ns DRAM or SIMM	$52.00
Each 1MB upgrade using 256K 70ns DRAM or SIMM	$59.00

Modem

Zoom (OEM) 2400 bps internal modem w/ Procomm	$65.00
Zoom 9600 S/R Fax/Modem w/ OEM Winfax Pro	$169.00
Cardinal 2400 baud internal modem w/ Flashlink	$89.00
Cardinal 2400 baud external modem w/ Flashlink & Cable	$135.00
Cardinal 9600 Send/recieve int. fax/modem w/ Bitfax	$129.00
Cardinal 9600 internal modem w / V.32/V.42bis	$429.00
ATI 9600 bps external modem V.42 Bis w/ cable	$469.00

Math Co-proccessor

Intel 80287XL	$109.00
Intel 80387SX-16	$165.00
Intel 80387SX-20	$179.00
Intel 80387-33	$269.00
Cyrix 83S87-16	$139.00
Cyrix 83S87-20	$155.00
Cyrix 83S87-25	$169.00
Cyrix 83D87-25	$229.00
Cyrix 83D87-33	$229.00
Cyrix 83D87-40	$279.00

Keyboard

KPT Enhanced Keyboard	$39.00
Focus 2001 Enhanced Keyboard	$55.00
Focus 2000 Plus Enhanced Keyboard	$59.00
Focus 5001 Enhanced Keyboard	$125.00
Fujitsu 4700 tactile Enhanced Keyboard	$59.00
Northgate Omnikey 101	$125.00
Northgate Omnikey 102	$125.00
Northgate Omnikey Ultra	$189.00

Computer Case

Desktop Case w/ 200W CSA Power Supply & LED	$99.00
13" Mini Tower Case w/ 200W Power Supply & LED	$89.00
17" Medium Tower Case w/ 200W Power Supply	$139.00
19" Tower Case w/ 200W Power Supply & LED Display	$119.00
Full Size Tower Case w/ 220W P.S. & LED Display	$155.00

Dot Matrix Printer

(6ft cable Included,2 year Canadian Warranty)

Citizen 200GX 9-pin printer	$219.00
Citizen 200GX colour kit	$65.00
Citizen GSX130 24-pin printer	$325.00
Citizen GSX140 24-pin printer	$329.00
Citizen GSX140 Plus 24-pin printer	$399.00
Citizen GSX130/140 colour kit	$65.00
Citizen GSX145 24-pin wide-carriage printer	$489.00
Citizen GSX 145 colour kit	$75.00
Epson LQ-570 24-pin printer	$369.00
Fujitsu DL1100 24-pin printer	$349.00
Fujitsu DL1100 24-pin color printer	$379.00
Fujitsu DL1100 color kit	$65.00
Raven 9102 9-pin printer	$199.00
Raven 2416 24-pin printer	$299.00
Raven 2418 24-pin printer	$339.00
Raven 2465 24-pin wide carriage printer	$489.00
Raven 2465 24-pin wide carriage "Quiet" printer	$599.00
Raven 2466 24-pin wide carriage printer (100/300 cps)	$729.00

Laser Printer

(6' printer cable and toner included)

Epson EPL7000 Laser w/ 65-in-one font cartridge	$1079.00
Hewlett Packard DeskJet 500, 512K, 3 PPM, 300 dpi	$539.00
Hewlett Packard LaserJet IIIP Laser w/ scalablefonts	$1425.00
Hewlett Packard LaserJet III Laser w/ scalable fonts	$1999.00
NEC Silent Writer II Model 90 Post Script 6PPM	$1699.00
Jet Ram Memory card w/ 1MB for HP IIP/IIIP/IID/IIID	$99.00
Jet Ram Memory card w/ 2MB	$149.00
Pacific Data 4 Memory for HPLJIIP/IIIP/III/IIID w/ 1 MB	$149.00
Pacific Data 4 Memory for HP LJIIP/IIIP/III/IIID w/ 2 MB	$199.00
Pacific Data PacificPage Postscipt emulation cartridge	$469.00
Pacific Page XL Fast Postscript emul. cartridge w/ 2 MB	$995.00
Okidata OL400 Laser w/ 512K,4 PPM	$799.00
Raven LP-800 8PPM, HP Series II compatible, parallel	$1099.00
Raven LP-1100 11 PPM, HP series II compatible, parallel	$1559.00
Raven LP-1170PS 11PPM, Postscript, HP series Compatible	$2449.00

Software

ACCPAC Bedford Intergrated Accounting (GST) 3.4	$139.00
ACCPAC Bedford for Windows	$139.00
Adobe Type Manager for Windows	$79.00
Aldus Pagemaker 4.0	$599.00
Borland C++ for Windows 3.0	$399.00
Borland C++ for Windows w/ Application Framework	$599.00
Borland Turbo C++ 2nd Ed.	$89.00
Corel Draw 2.0	$459.00
dBase IV 1.1	$569.00
Digital Research DR DOS 6.0	$85.00
Electronic Template System	$19.00
Generic CADD 5	$369.00
Harvard Graphics 3.0 for Windows	$479.00
Lotus 123 V2.3	$409.00
Lotus 123 V3.1 Plus	$499.00
Lotus 123 for Windows	$499.00
Microsoft DOS v5.0	$75.00
Microsoft Entertainment Pack for Windows	$35.00
Microsoft Office Integrated Software for Windows 1.6	$569.00
Microsoft Productivity Pack for Windows	$55.00
Microsoft Windows Version 3.0	$118.00
Microsoft Word 5.5	$275.00
Microsoft Word for Windows	$369.00
Microsoft Works 2.0	$129.00
Microsoft Works for Windows	$165.00
Microsoft Excel 3.0	$369.00
Norton Anti Virus 1.5	$99.00
Norton Backup	$99.00
Norton Utilities V6.0	$119.00
PC-Tools Deluxe Version 7.1	$145.00
Quarterdeck Desqview 386	$169.00
Quarterdeck QEMM 386 v. 5.1	$79.00
WinFax Pro v2.0	$95.00
Word Perfect Version 5.1	$299.00
Word Perfect for Windows	$319.00

All above prices are for cash and carry orders only.
Please add 2% for Visa and MC payments.
Corporate or Gov't P.O.'s are welcome O.A.C.
Prices may change without notice;
please call for availability and the latest pricing.

Before you invest....Investigate

Customer beware of sly and dishonest merchants.....
Make sure you are buying from a honest & respectable dealer;
it will save you time and money in the long run.
We are a member of the Better Business Bureau. Feel free to check us out.
Call the Better Business Bureau at 682-2711

KICKS BBS

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(604)438-3377

5th Annual Survey of Canadian Payroll Software

Sixteen Canadian Payroll programs have been reviewed in this survey. New this year are Accounting with Pictures and products that run under the Microsoft Windows operating system, ACCPAC Simply Accounting for Microsoft Windows and KIS Payroll for Windows. All the payroll software continues to improve; user interfaces are becoming more consistent and all the products have added new features and become more powerful.

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 of the 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 are 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

Continued on page 40

CANADIAN PAYROLL SOFTWARE
For IBM and Compatibles

Basics												
Product Name	Acopac Plus Canadian Payroll	Accpac BPI Accounting Canadian Payroll	DacEasy Payroll	Easypay	Grand Master Payroll System	Great Plains Canadian Payroll	Help	KIS Payroll for Windows	Pay-Calc	Paycheq Controller IV	Paymate 20 Paymate Plus	Powerpay
Version	V 6.08	V 3.1A	Ver 4.1	V 7.00C	Jan /92	V 5.30	V 5.01	V2.1	Ver V(Single Company) Ver III(Multiple)	Ver 3.22	Ver 5.0	V 2.01C 1992
Company Name	Computer Associates Canada Ltd	Computer Associates Canada Ltd.	DacEasy Canada Inc.	Vikusic Consulting Services Inc	Canpay Computer Software Ltd.	Great Plains Software	Help Software Services Ltd.	KIS Information Systems Inc.	Maple Software Ltd	Aslan Microsystems	AK Microsystems	PowerSoft Systems
Address	1770 Burrard St. Vancouver, BC V6J 3G7	1770 Burrard St Vancouver, BC V6J 3G7	7 - 20 Steelcase Rd W Markham, Ontario L3R 1B2	1070 Harcroft Cr Oakville, Ontario L6H 3K5	9-1329 Niakwa Rd Winnipeg, Manitoba R2J 3T5	1701 Southwest 38 St Fargo North Dakota, 58103	5487 Kingsway Burnaby, BC V5H 2G1	3732 W. Broadway Vancouver, B.C, V6R 2C1	Suite 519 120 George Henry Blvd. North York, Ontario M2J - 1G2	402-30970 Wheel Ave. Abbotsford BC V2B 5W6	222 - 6 Lansing Sq. North York, Ontario M2J 1T5	3571 Kingsway Vancouver, BC V5R 5L9
Telephone	604-733-2343	604-733-2343	416-940-3314	416-338-7438	204-254-4726	701-281-0550	604-435-6268	604-222-2252	416-491-3922	604-852-7323	416-756-4514	604-432-7077
Fax	V6J 3G7	604-733-4129		416-338-2787	1-800-665-5129	701-282-4826		604-222-3332		604-852-7376		604-432-1655
Operating System	OS/2 or DOS 3.1 >	DOS 3.0>, OS/2	DOS 3.0> PS/2	DOS 2.0>	DOS 3.0>	DOS, OS/2, MAC, UNIX, XENIX, Windows 3.0>	DOS 2.0>	Windows 3.0 >	DOS 2.1>	DOS, Xenix, Unix	DOS 3.3>	DOS 2.0>
Hardware Requirements	IBM or Compatible 512K RAM & Fixed Disk	IBM or Compatible 512K RAM & Fixed Disk	IBM or Compatible "640K RAM, Fixed Disk"	IBM or Compatible 384K RAM & Fixed Disk	IBM or Compatible 512K RAM & Fixed Disk	"IBM or Comp., MAC" 512K RAM & 20MB HD	IBM or Compatible 256K RAM Fixed Disk	IBM or Compatible Hard Disk	IBM or Comp 256K RAM High Cap Dsk	IBM or Compatible 640K RAM, Hard Disk	IBM or Compatible 640K RAM, Fixed Disk	IBM or Compatible 512K RAM & Fixed
Disk												
Cost												
Program	$1200 List	$450 List	$129.95	$495	$995	$795 US	$349.95	$349	Ver V $150 - $395	$895 Single User	$189 20 Employees	$249 Multiple Co.
Updates Maintenance & Support	$250 per yr	$175 per yr	Update $90/Supp. $150	$195 per yr	$250 per yr	$390 US per yr	No Charge	$99.00 per year	$100 per year	$195 Support N/C	$95 20	
Training and Support												
On Line Help	•	•	•	•	•	•		•	•	•	•	•
Tutorial	•	•				•	•	•	•	•		
Telephone Support Available	•	•	•	•	•	•	•	•	•	•	•	Free Phone Support
Sample Reports in Manual	•	•	•	•	•	•	•		•		Manual not available	
Install & Training Available	•	•	-	•	•	•	•	•	•	•	•	•
Features												
Multiple Companies	•	•	•	•	•	•	•	•	• (Ver III)	•	•	•
General Ledger Departments	•	•	•	•	•	•	•	•	•	•	•	•
Job Costing	•			• - Job # 6 chr.	Additional Module	•	•				• - Extra Module	
Multi Provincial	•	•	•	•	•	•	•	•	•	•	•	•
Multiuser/Network	•	•			•	•			•	•		Single User
Multi UIC Rates per Company	•		•	•	•	•		• 2	•2	•	•	
User Defined Earnings Groups	•					•		•		•		
Password Protection	•	•	•	•	•	•	•	•	•	•	•	
Exports to General Ledgers	•	•	•	•	•	•	•	•		•	•	
umber of Items per Employee												
Earnings	32 Earnings	*8,5HR,20Com,VAC,Other*	5 Special	5+	18	Unlimited	10 Earnings &	20	9	Unlimited	8/10	6
Taxable Benefits	and	20 Company/6 Employee	5	20	15	Unlimited	Benefits	5	10 Tx Benefits	Unlimited	2/4	6
Nonstatutory Deductions	Deductions	20 Company/6 Employee	5 Regular/5 Special	20	15	Unlimited	10	11	& Deductions	Unlimited	10/15	8
Automatic Calculation Formulae												
for Statutory Deductions	•	•	•	•	•	•	•	•	•	•	•	•
for Earnings	•	•	•		•	•	•	• Limited	•	•	•	
for Taxable Benefits	•	•	•	•	•	•	•	• Limited	•	•	/Y	
for Nonstatutory Deductions	•	•	•	•	•	•	•	• Limited	•	•	•	
Manual Cheques	•	•		•	•	•	•	Advances Only	•	•	•	•
After the Fact Pay	•	•		•	•	•	•			•	•	•
Tracks Advances	•	•		•	•	•	•	•	•	•	•	•
Tracks Accruals	•	•	•	•	•	•	•	•	•	•	•	•
Banks Hours					•	•			•	•	•	
Tracks Workers' Compensation					•	•			•	•		•
Report Generator Available	•			• Extra Module	•	•						
Automatic Indexing	•					•						
Allows Extra Tax Deduction	•	•	•	•	•	•	•	•	•	•	•	•
Customized Cheques and Advices	•	•				•	•	•	•	•	•	
User Update to Tax Tables				-			•					-
Direct Deposit Interface					•	Additional Module				•		
Printing												
Prints Cheques for:												
Employees	•	•	•	•	•	•	•	•	•	•	•	•
Receiver General for Canada							•					
Other Deductions							•					
T4's	•	•	•	•	•	•	•	•	•	•	•	•
T4 Summary Form						•		•			•	
Record of Employment Form	•			•	•	•	•	•		•	Optional	
Cheque Register	•	•	•	•	•	•	•	•	•	•	•	•
Payroll Journal or Register	•	•	•	•	•	•	•	•	•	•	•	•
Employee's Detail Pay History			•	•	•	•		•	•	•	•	•
Access Audit Trail	•	•		•	•	•			•	•		
Month End Report for G/L	•	•	•	•	•	•	•	•	•	•	•	•
Employee's Year to Date Report	•	•	•	•	•	•	•	•	•	•	•	•
Employee Profile	•	•	•	•	•	•	•	•	•	•	•	•
T4 Summary Report	•	•	•	•	•	•	•	•	•	•	•	
Insurable Earnings Report	•			•	•	•	•	•	•	•		
Statutory Deduction Report	•	•	•	•	•	•	•		•	•	•	•
Other Deductions Report	•	•	•	•	•	•	•		•	•		
Job Cost Report	•			•	• - Additional Module	•	•				• Extra Module	
Direct Deposit Report			•	•	•	•				•	•	
Performance												
Auto Install of Software	•	•	•	•	•	•	•	•	•	•	•	
Ease of Setup	Moderately Difficult	Easy	Very Easy	ot too Easy	Moderately Difficult	Moderately Easy	Very Easy	Easy	Moderately Easy	Difficult, complex	Easy	Extremely Easy
Ease of Use	Easy	Easy	Very Easy	Easy	Good	Easy	Easy	Very Easy to Use	Easy	Moderately easy	Easy	Easy
Ease of Adjustment	Easy	Easy	Very Easy	Easy	Easy	Easy	Easy	Easy	Easy	Moderately easy	Easy	Easy
Programmed Backup		•	•		•			•	•	•	•	
Menu Appearance	Clear & Easy to Use	Pull Down Menus	Pull Down Menus	Satisfactory	Good	Clear, Easy to Use	Good	Excellent	Clear	Clear, lacking prompts	Pull Down/Easy to Use	Good, Clear
Data Entry Screen Appearance	Clear & Easy to Use	Confusing	Clear & Easy to Use	Busy, Hard to Read	Good	Clear, Easy to Read	Good	Excellent	Busy	Clear, lacking prompts	Good	Good, Clear
Graphics Reporting	N/A	N/A	N/A	-	N/A	Good	N/A	N/A	N/A	N/A	N/A	-
General Flexibility	Excellent	Good	Good	Good	Excellent	Excellent	Good	Very Good	Good	Excellent	Good	Some
Reporting Flexibility	Good	Good	Some	Good	Excellent	Excellent	Good	Good	Good	Excellent	Some	one

Help Canadian Payroll

Help Canadian Payroll is a product that provides a lot of features for the money. It is one of two payroll programs in this review that does not require an annual fee for tax table updates and allows the user to access and update the statutory deduction tables. Help has features such as capability to import time cards, simple customization of the cheque advice and good facilities for locating and correcting errors. Help interfaces to most of the general ledger products 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 slightly humorous approach to the set up of a company's payroll.

KIS Payroll for Windows

KIS Payroll for Windows has taken full advantage of the Windows interface. It uses a Windows control menu for all the payroll operations. Setup is very easy and fast using dialogue boxes for the entry of employees to the master file. Earnings and deductions are pre-configured 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. A payroll may be recalculated and cheques can be printed as many times as necessary for the payroll to be correct. Reports and audit trails are selected for viewing or printing by the click of the mouse. Help is available both by using the Help function from the control menu, and through a feature called the "Advisor" on the control menu. The Advisor guides the user through the set-up procedures and the steps necessary for a payroll run. There is also an excellent manual to guide the user through all the payroll operations.

Pay-Calc

Pay-Calc is available in two versions, Version III for accountants and payroll services, and Version V for a single company. Employee bank account numbers can be entered for automatic deposits. There is an unposting feature available to correct errors found after posting of the payroll and a mass change feature is also available. The program is designed to track apprenticeship hours. Benefits and deductions are easy to set up and the user can define up to 10 fields for entry of personnel information. The cheque configuration is simple, clear and easy to set up; the pay history retention is good. The company has recently changed management and the program is in a transition state so I was not able to review all the new features.

Paycheq Controller IV

Paycheq Controller IV is a complex, flexible payroll product with versions designed to interface with Real World, Accpac and Timberline accounting systems. The screens and keystrokes are similar to those of Real World. This was the only program reviewed in this group that did not have color and user friendly menus and data entry screens. Screen prompts and on-screen help are poor to non-existent. The manual is helpful but lacks an index so locating the required information is difficult. 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 IV produces all the reports a business would require as well as Records of Employment and T4s and provides for a direct deposit interface. The version I reviewed provided job cost information for Timberline and calculated the payroll burden.

Paymate

Paymate is available in two versions, Paymate 20 for less than 20 employees and Paymate Plus with additional features for more than 20 employees. Paymate provides formulas for the calculation of earnings and deductions and accounts for commissions, lump sum payments, and piece work payments. Paymate is easy to set up and to use. The pay is calculated as the time sheet is entered and can be reviewed on the screen for errors. This product will batch timecards for quick set up and review of payroll entries. Reporting is very comprehensive with good pay history retention. Paymate is a complete personnel system. There is provision for the entry of personnel information such as the benefit plan features selected, due dates for salary reviews and increments, a screen to enter education and skills and a free form screen which is user definable. The user can prepare user defined reports from this personnel database. Paymate is compatible with most popular accounting packages. The manual, in preparation, was not ready in time for this review.

Powerpay

Powerpay is a well-priced, easy-to-use payroll program for a single company. It also comes in a multiple company version. All the features are extremely easy to use. The names of 4 taxable benefits and 6 deductions can be defined in addition to those assigned by the program. Powerpay does not record insurable earnings and does not provide a report from which to prepare the 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.

Payroll in Integrated Software

Abacus II Multiuser Accounting System

Abacus II Multiuser Accounting System is an integrated system which includes General Ledger, Accounts Receivable and Accounts Payable. The general module integrates with an optional Estimating and Job Costing module. This product is a reasonably easy, flexible payroll solution. Multiple hourly rates can be assigned to different departments. It accrues vacation and sick pay and banks hours for future pay out. Benefits and deductions can be calculated and good remittance reports are prepared by the system. Data can be transferred to the job cost module when it is integrated. There is a Report Generator available and graphics presentations are a nice feature of this product.

Accounting with Pictures

Accounting with Pictures is an easy-to-use payroll which is integrated to job costing and therefore suitable for the small contracting business. The hourly wages are entered through the job cost section of the program; the payroll burden is calculated at this time. The payroll data is accumulated until the next payroll run and the employee is paid, then the time sheet entry is cleared and made ready to accept more hourly data. The program provides all the payroll forms and reports that would be required for a small business and provides tables for the user to enter statutory deduction rate changes.

Continued on page 40

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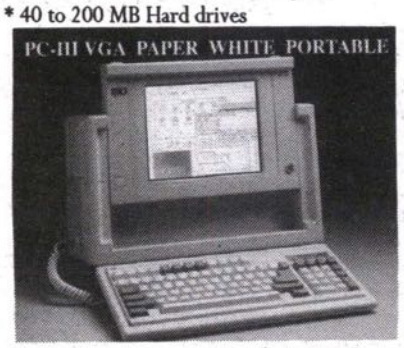

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Survey *cont. from page 38*

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 '•', the payroll can be processed for more than one company, otherwise the user is restricted to a single company.

"Job Costing" means that some payrolls will record time and amounts charged to a job and provide job cost reports.

"Multiuser/Network" means that the software has been written with file and record locking features so it can be used on a network.

"Multi UIC Rates per Company" means many companies provide benefits that qualify them for reduced UIC rates; more than one Revenue Canada number is required.

"User Defined Earnings Groups" refers to a feature that allows the user to define groups of earnings and deductions for different job types. If a group is entered to the employee file all the earnings and deductions for that job type are activated for the employee—a time-saving feature.

"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." Most of the products have a limited number of earnings, benefits and deductions available per company or employee.

"Automatic Calculation Formulae" are user-definable formulae for the calculation of earnings such as commissions or piece work and deductions which are based on 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 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 claims 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 provides a 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 "•" 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 simple-to-use payrolls the process of entering time sheets and calculating the payroll is very simple and straightforward.

"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. ❐

Integrated Payroll *from page 39*

Accpac Bedford Integrated Accounting for DOS

Accpac Bedford Integrated Accounting for DOS is included in the survey because it includes an accessible payroll which is integrated to job costing and therefore very suitable for the small contracting firm. The name of the product is being changed to ACCPAC Simply Accounting for DOS. This product tracks advances, accrues or pays out holiday pay and provides for a taxable benefit and other non-statutory deductions. It prints T4s but does not calculate and report the amounts to be entered to the T4 summary. It does however track employees gross pay for worker's compensation calculations. This product is available for both the DOS and Macintosh operating systems. I did not review the Macintosh version so cannot guarantee that the features are identical to the DOS version.

Continued on page 41

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Integrated Payroll *from page 40*

Accpac Simply Accounting for Windows is an easy to use integrated accounting program with a payroll system and job costing program similar to Accpac Bedford Integrated Accounting, and in addition, it takes advantage of the Windows operating system's control menus and dialogue boxes. The program is especially suitable for small construction businesses. A click of the mouse on the Accpac icon starts the program and the mouse can be used throughout to set up employees and perform journal entry procedures. Payroll data is entered to a screen that resembles a payroll cheque. In most other respects the program is similar to Accpac Bedford. ❐

Joan V. Hornal, B.Sc., CGA, is principal of J.V. Hornal, CGA and managing consultant of PC Professionals, a Vancouver firm specializing in the selection and installation of microcomputer software accounting solutions and related training and support. The telephone number is 604-732-9731.

Macintosh Payroll

Of course there are versions of Great Plains and AccPac Bedford Simply Accounting for the Macintosh. These products are virtually identical to the DOS and Windows versions that are reviewed above. In addition there is at least one stand alone product that we know of called MacPayroll Plus. It was developed by Altec Design Group Ltd., in Langley, B.C., and sells for $149. For more information, contact: Altec Design Group Ltd., 20422 Douglas Cres., Langley, BC V3A 4B4, Tel. (604) 530-6457.

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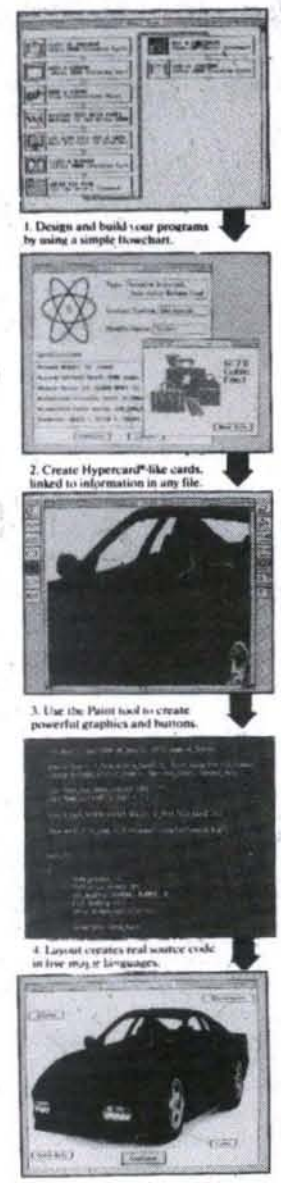

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Logitech Serial Mouse / Bus Mouse	75/85
Microsoft Serial Mouse or Bus Mouse	110
EVERdata Serial Mouse	19.50

CD-ROM and Miscellaneous

Sony CD-ROM external	$895
Sony SCSI internal	1075
NEC CD-ROM external	945
NEC CD-ROM internal	719
Hitachi CD-ROM int. kit	695
Hitachi CD-ROM ext. 340 ms	850
Teac 1.2MB or 1.44MB drive with 5.25" frame	70
AT I/O card with 1S, 1P, 1G/2nd chipset	15/6
1m*9 SIMM, 70ns	50/MB
Intel 387SX-16MHz/387DX-33MHz	149/249
Fujitsu 4700 or Focus 2001 Keyboard	55
Northgate Omnikey 101/Plus	119/135
Northgate Omnikey Ultra	169
Power bar basic/full surge protection	9/11
Printer sharing auto switch 2 and 4 to 1	30/50
Desktop case with Jaba 200W power supply	95
Mid-size tower case with 200W power supply	135
Full-size tower case with 230W power supply	195

Computer Systems

286-12MHz VLSI, Mother Board AMI Bios	$595
386SX-16MHz Intel, Mother Board AMI Bios	705
386SX-25MHz Soyo, Mother Board AMI Bios	725
386DX-25MHz Soyo, Mother Board AMI Bios	855
386DX-33MHz Soyo, Mother Board AMI Bios	975
386DX-40MHz Soyo, Mother Board AMI Bios	995
486DX-33MHz Soyo, Mother Board AMI Bios	1345
386DX-33MHz AMI, Mother Board AMI Bios	1495

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UPGRADE;

RAM $50/MB, Microsoft serial mouse $100, DOS 5	73
Oak SVGA card with 512K, SVGA .28mm dp monitor	375
Paradise OEM card, 512K, SVGA .28mm dp monitor	409
Tseng Labs ET4000 card 1MB, SVGA .28 dp monitor	455
ATI OEM XL non-inter, 1MB SVGA non-int monitor	575

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BASICS				
Product Name	ABACUS II Multiuser Integrated Accounting	ACCOUNTING WITH PICTURES	ACCPAC BEDFORD Integrated Accounting	ACCPAC Simply Accounting for Microsoft Windows
Version	Ver 1.8	V 5.02	Ver 3.4	V 1.0B
Company Name	Comsoft Inc.	Accounting by Graphics International Inc.	Computer Associates	Computer Associates
Address	208, 10335 - 172 St. Edmonton, Alta T5S 1K9	Suite 304 1324 - 11th Ave. S.W. Calgary, Alberta T3C 0M6	1770 Burrard St Vancouver, BC V6J 3G7	1770 Burrard St Vancouver, B.C. V6J 3G7
Telephone	403-489-5994	403-229-3161	604-733-2343	604-733-2343
Fax	403-486-4335	403-244-9270	604-733-4129	604-733-4129
Operating System	DOS 3.3 >	DOS 2.0>	DOS	Windows 3.0 >
Hardware Requirements	IBM PC or Comaptible 640K RAM, 40 MB HD	IBM or Compatible 640K RAM, Hard Disk	IBM / Macintosh 2 floppy disk drives	IBM or Compatible
COST				
Program	$1995 Multiuser $495 Single	$229	$225	$225
Updates Maintenance & Support	$75 - $300 per year	$149 per year	$75 per year	$75
TRAINING AND SUPPORT				
On line Help	•	•	•	•
Tutorial	•	•	•	•
Telephone Support Available	•	•	•	•
Sample Reports In Manual	•		•	•
Install & Training Available	•	•	•	•
FEATURES AND OPTIONS				
Multiple Companies	•	•	•	•
General Ledger Departments	•	•		•
Job Costing	•	•	•	•
Multi Provincial	•	•	•	•
Multi User/Network	•			•
Multi UIC Rates per Company	•	•		•
User Defined Earnings Groups	•			
Password Protection	•	•	•	•
Exports to General Ledgers	Integrated	•	Integrated	Integrated
umber of Items per Employee				
Earnings	12	6	5	5
Taxable Benefits	5	6	1	1
Non Statutory Deductions	11	8	3	3
Automatic Calculation Formulae				
for Statutory Deductions	•	•	•	•
for Earnings	•			
for Taxable Benefits	•			
for Nonstatutory Deductions	•			
Manual Cheques	•		•	•
After the Fact Pay	•		•	•
Tracks Advances	•	•	•	•
Tracks Accruals	•	•	•	•
Banks Hours	•			
Tracks Workers' Compensation			•	•
Report Generator Available	•			
Automatic Indexing				
Allows Extra Tax Deduction	•	•		
Customized Cheques and Advices	•	•		
User Update to Tax Tables		•		
Direct Deposit Interface				
PRINTING				
Prints Cheques for:				
Employees	•	•	•	•
Receiver General for Canada		•		
Other Deductions		•		
T4's	•	•	•	•
T4 Summary Form				
Record of Employment Form	•			
Cheque Register	•	•	•	•
Payroll Journal or Register	•	•	•	•
Employee's Detail Pay History	•			•
Access Audit Trail		•		
Month End Report for G/L				
Employee's Year to Date Report	•	•	•	•
Employee Profile	•	•	•	•
T4 Summary Report	•	•		
Insurable Earnings Report	•	•		
Statutory Deduction Report	•		•	
Other Deductions Report	•			
Job Cost Report	•	•	•	•
Direct Deposit Report				
PERFORMANCE				
Auto Install of Software	•	•		•
Ease of Setup	Easy	Very Easy	Very Easy	Very Easy
Ease of Use	Easy	Very Easy	Very Easy	Very Easy
Ease of Adjustment	Easy	Difficult	Easy	Easy
Programmed Backup	•	•		
Menu Appearance	Good	Good	Pull Down Menus	Pull Down Menus
Data Entry Screen Appearance	Good	Good	Clear, Easy to Read	Clear and Easy to Read
Graphics Reporting	•	N/A	N/A	N/A
General Flexibility	Good	Good	Some	Good
Reporting Flexibility	Good	one	one	Limited

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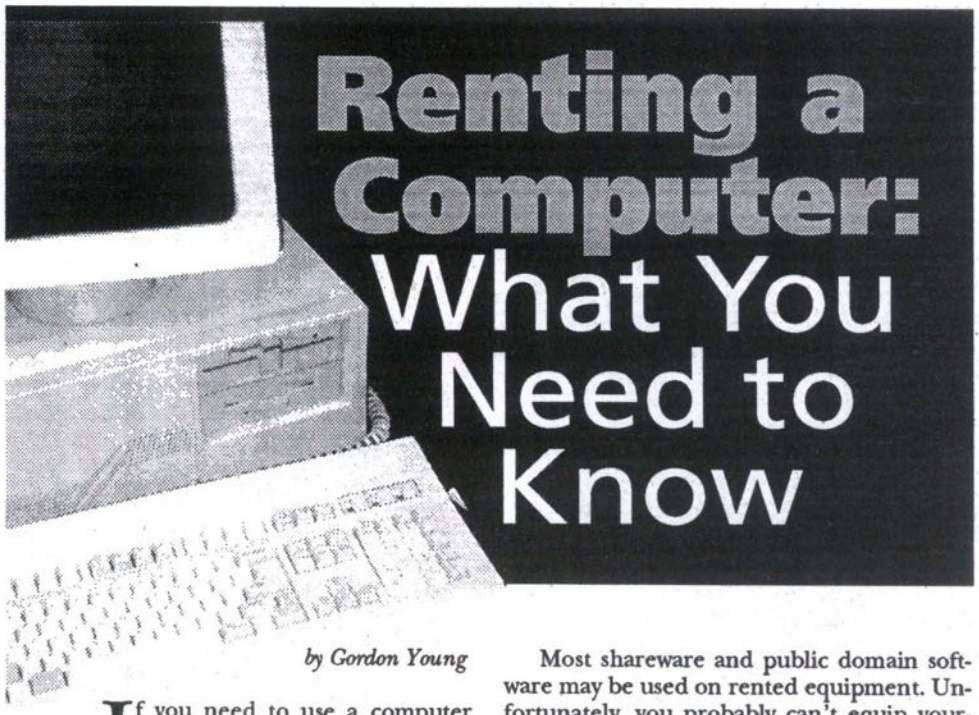

Renting a Computer: What You Need to Know

by Gordon Young

If you need to use a computer you have three choices to rent, buy or lease.

To Rent a Computer

Renting is a good solution for some types of problems. If you only want to use a computer for a short time, or only need it periodically, renting can solve your problem.

Renting has these advantages:

1) The computer will be contemporary. The demands of new software can make a purchased computer obsolete within two years.
2) Flexibility. You can upgrade equipment when needed or rent only when you need a computer.
3) Mobility. You can rent when you're away from your home computer: at a convention or on a business trip.
4) Maintenance. You are not responsible for maintenance.
5) Short -erm needs. Renting meets short-term needs of speculative, developmental or training projects.

You Can't Rent Software!

This is the most frequently misunderstood fact about computer rentals.

To rent software violates the copyright of almost all commercial software packages. If you want to use your favorite software on a rental computer you have a problem. A rental computer vendor can rent or lease you all the hardware you want, but would have to sell you the software outright.

Most shareware and public domain software may be used on rented equipment. Unfortunately, you probably can't equip yourself fully from this limited selection.

How to Use Software on Rented Computers

Software license agreements generally follow a "library book" principle. If it is reasonable to do it with a library book, it is reasonable to do it with the software. This means there are some options for using software on a rented or leased computer.

Supplying the convention market constitutes approximately 35% of Vancouver's computer rentals. This shows that a common reason for renting is that renters are away from their home computers. If you are away from home and want to use your usual software on a rented machine you have some options.

Many commercial software license agreements bind you to using the software on only one computer at a time. They do allow you to make extra copies for backup. This means you legally use it on a rented computer as long as you're not using it on your home computer at the same time. Microsoft's license agreements for DOS and other products read this way.

Read the fine print on your software envelopes. If the agreement reads this way, then you can use the software on a rented computer. Here's how:

Copying Your Home System Onto a Rented Portable

If you're traveling away from your home computer, you can carry your software operating system with you on a rented portable.

Rent a portable computer with power, speed and memory the equivalent of your home system. Load the rental computer's hard drive with your usual operating system.

You'll need to boot the rental system with your operating system diskettes to get started. If you have the main system's hard drive partitioned into directories then you'll have to create these partitions on the rental.

Now use a back-up of the main system, and your back-up software on diskette. Run the back-up program's diskettes in the rental's floppy disk drive. Then, as if you were recovering from a hard disk crash on your main system, use back-up diskettes from your main system to load the rental's hard drive.

This transfers the software and directory structure you're used to the new computer. Your computer operating environment is the same as usual, comforting and efficient when away from home.

Some back-up programs let you select a subset of your total file and directory structure. If you use this option, you can take with you only the tools you're going to use. The subset of files will fit onto fewer floppies and a smaller hard drive.

This won't violate most software license agreements. When you're traveling, the copy on the portable is the one you're using. The copy on the computer back home is now a vital back-up.

Any new work you do on a rental should be saved to diskette. It must be transferred back to the home computer or destroyed by the rental company's wiping the rental's hard drive on return. If you can, transfer the data before returning the portable. Floppy diskette transfers can fail—make at least two full backups of your new work.

Copying onto a Rented Desktop System

You can use the same methods if you rent a desktop away from home.

You can take your floppy disk backups, backup program, and operating system diskettes to a new location. Rent the computer system you need. Use the backups from home to load up the rental's hard drive.

Don't take all your backups on the road. Leave at least one backup with the home computer. Make extra backups if you have to. Using the extra diskettes or tape is well worth the expense, you can always use them for something else later.

Selection

The computer rental industry's biggest customer is business. This means most rental computers are IBM-compatible name brands, like Compaq desktops or Toshiba portables. Macintoshes are available from some, but not all, rental companies.

Selection in computer rental fleets tends to run from the low to medium range. The newest, most powerful models may be under-represented in rental fleets. This can cause a problem. If the software you want to use needs a new, powerful system to operate, an adequate rental system may be hard to find.

Terms and Prices

Rental arrangements are usually on a daily, weekly or monthly basis. Much of the price you pay is the fixed cost of the store's checking in and out the equipment. Because of this, prices for a week's rental usually average around half a one-month rental.

Prices are fairly uniform between different rental companies, since renting computers is a competitive business. A monthly rate is usually between eight and ten percent of a rental unit's purchase price.

Some companies are very flexible in their rental agreements. Others stick to a set of standard rates and terms. Hybrids of standard agreements, rent-to-own plans for example, can be worked out with the more flexible companies.

Returning Rented Equipment

Files and data on the rental's hard drive will be wiped when staff prepare it for the next customer. Back up the data and get your final hard copy before returning the rental.

Do you want to keep the information on the rental's hard drive confidential? Then be sure to erase it yourself before returning the rented computer. Rental store staff have read everything from tax returns to illicit love letters.

Renting Accessories

Another good reason to rent computer equipment is to test new accessories. The choices of makes, models and designs in printers, monitors, CPUs, etc. are wide, diverse and sometimes confusing.

Renting an accessory solves your immediate needs, and tells you how well that piece of equipment suits you. Test different equipment while getting your work done. When you learn enough to know which model you want, you can buy it.

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Marketplace Dynamics

The computer rental market organizes itself around the needs of its customers. If you rent computer accessories you'll probably find your needs have been anticipated. Most of the accessories you'd want to rent are conveniently available.

High-quality printers are very popular rental items. Laser printers are a big step up from dot matrix types. For example, if you want to desktop publish a document you can work through initial drafts using a dot matrix printer you own for output. Once you've got a draft that's ready to publish, rent a good-quality laser printer.

Using the laser printer, produce the good copies of the document. You pay cost of production for toner and paper on top of the flat cost of renting. Professional printing shops can offer this service, but once you hand them the final draft on disk, you're much more committed to it as a final format.

To Buy a Computer

For the computing power you get, prices of computers today are not high. I like to point out that any modern microcomputer could have ended the Second World War about four months earlier. Prices are going lower all the time. If the cost of using a computer has to be paid in installments then approaching a bank, finance company, or other source of loans is a logical option.

There is irony in buying a new computer. Computer equipment usually lasts a long time, but its resale value drops quickly. Solid state electronic components last a long, long time. There are many ten-year-old XT clones chugging away faithfully out there, but they're only worth about three hundred bucks each today.

As technology improves, the price of computing power drops steadily. The price of used equipment is a fraction of the same equipment new. It's a remarkable sinking feeling you feel when you see the system you paid thousands for a year ago advertised for half the price you paid.

Try Before You Buy

Renting a computer can be a step on the road to buying one. Many prospective first-time buyers ask, "What's the best computer to buy?" They're asking the wrong question.

The right question comes in three parts:

1) "What do I want to do with my computer?"
2) "What software do I need to do it?"
3) "What might I want to do in the future?"

Once you have worked out answers you can go on to think about which computer system to buy. First you choose the software you want to run, then you choose the computer to run it on. The computer you choose should be powerful enough to run your software comfortably, with a margin of power enough to handle your future needs.

Renting can give you the information you need to make these decisions.

You can choose and buy your software first. You have to pay for it anyway. You're just changing the order of purchase. Shareware, with its "Try before you buy" concept is good here. Your evaluation period for shareware programs can be used to test their performance on different rented computer systems.

Once you have your software, rent a computer system to run it on. Rent one system and try out the software on it. A week's rental would be enough to get a good idea how well the software runs on one system. Start by renting the lower-range system. Test the software to see if it runs well on that system.

If it does not, you'll know you need a more powerful, expensive system. You don't risk the disappointment of buying a computer system too weak for your demands.

To Lease a Computer

Leasing a computer is a valid option for small businesses which have cash-flow problems that keep them from financing a purchase, and/or who need a tax deduction. Leasing costs are totally deductible. Leasing is not really a very good option for anyone else.

If your first question of a leasing company is going to be "What's your interest rate?" you should go talk with your bank or finance company. Financing a purchase will give you a better interest rate. At the end of your installment payments you will be left with your used computer, a saleable asset.

Computer Viruses

The computer rentals business worries about computer viruses. Part of the price you pay to rent a computer is the cost of computer virus security.

Enough rented computers have come back infected with viruses that stringent sanitation measures are needed. A good rental company wipes hard disks completely every time a system is returned. This imposes a significant cost in added downtime for the rental computers. This cost gets passed on to you, the customer.

Tax Tips

Tax considerations are an important factor in the decision to rent, lease or buy computer equipment. If you are using the computer for business purposes the price of renting or leasing a computer is totally tax deductible. Rentals and leases, a service, are subject to the GST.

The price of buying new applications software for business is completely tax deductible. Software prices are subject to PST and GST.

The price of computer hardware and "system software" (Revenue Canada's term) purchased for business is not totally tax deductible. It is depreciated at 30% per year as a class 10 deduction. Purchases are subject to PST and GST. ❐

Gordon Young can be reached at 604/255-3156.

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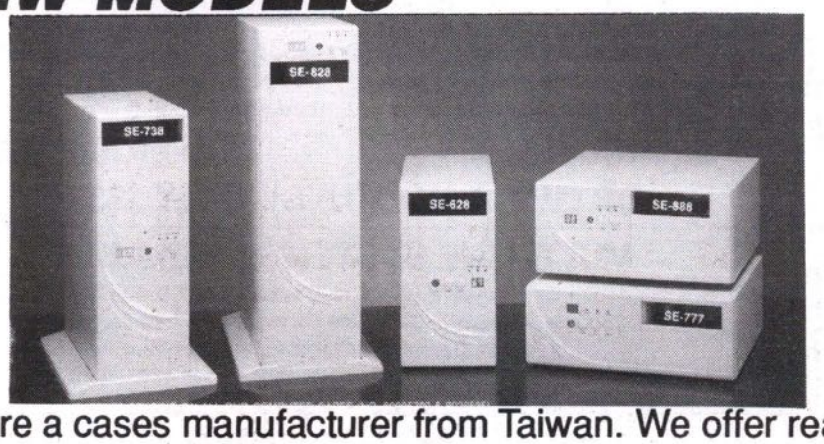

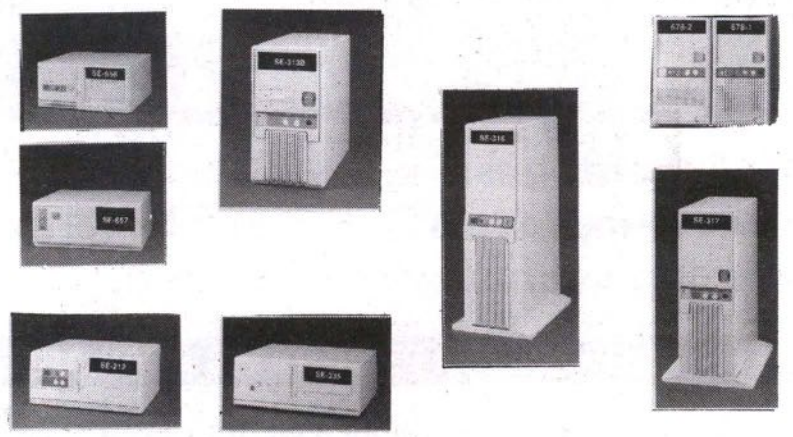

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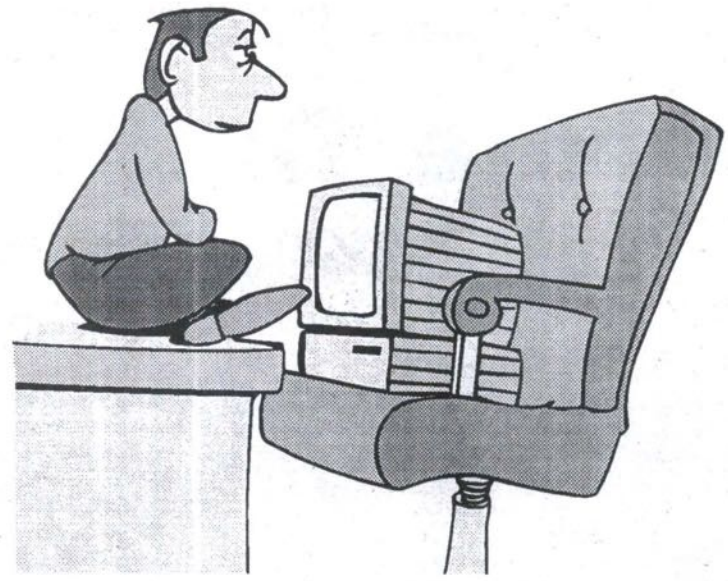
Sources of Computer Rentals

By Gordon Young



Here is a short list of computer rental firms. They all provide the standard levels of service in delivery, installation and maintenance. They were selected to cover a wide range of services and locations. For more sources, consult your Yellow Pages.

Bottom Line Computer Associates Ltd.
Rentals Manager: Brian DeGrave
Suite 307 - 5400 Airport Road South Richmond, B.C. V7B 1B4
Phone: (604) 273-1191 Fax: (604) 279-9084

Bottom Line is a Vancouver-based company specializing in serving the business community. They rent IBM systems, DOS and PS/2 versions, Compaq and AST clones, and Toshiba and NEC portables, with 286, 386, or 486 processors. They rent Apple Macintosh equipment ranging from the simple Macintosh Plus to the IIsi and IIci models, and accessories for both IBM and Macintosh.

BCS Computer Services
Suite #310 - 9801 King George Highway Surrey, B.C. V3T 5H5
Phone: (604) 589-4244 or (604) 684-3823 Fax: 589-0899

BCS rents IBM-compatible and low-end Macintosh computers. They specialize in leasing to small businesses, giving them a valuable tax break. This service often goes hand-in-hand with BCS's networking support for Novell and LANtastic systems.

Hamilton Computer Sales and Rentals
Rentals Manager: Anthony Valverde
101 - West 6th Ave. Vancouver, B.C. V5Z 1B2
Phone: (604) 734-7710 Fax: (604) 734-3212

Hamilton is Canada's biggest computer rental company, serving mostly the corporate world. Hamilton has outlets in Vancouver, Calgary, Edmonton, Winnipeg, London, Toronto, Ottawa, Montreal and Quebec City. Rentals in any of these cities can be arranged from any other. Hamilton rents the full range of IBM PS/2, Compaq, Apple Macintosh and Toshiba computers. Rental and leasing agreements are flexible for corporate clients.

Microserve Business Computer Services
Rentals Representatives: Jim Scarrow (Vancouver), Theresa Quillevere (Victoria)
219-1675 West 8th Ave. Vancouver, B.C. V6J 1V2
3370 Tennyson Ave. Victoria, B.C. V8Z 3P6
Phone (Vancouver): (604) 732-7368 Phone (Victoria): (604) 385-7783 Fax (Vancouver): (604) 731-1000 Fax (Victoria): (604) 361-0094

Microserve has offices in both Vancouver and Victoria. A computer rental can be reserved in either city with a local phone call in the other. They rent IBM-compatible 286 and 386 computers, and AST and NEC laptops and notebooks. 486s are available on a rent-to-own basis. They carry a basic selection of Macintosh computers. Microserve provides a good range of accessories, including high-quality laser printers.

Northern Computer
Phone: Kelowna (Head Office): (604) 868-2127 Prince Rupert: (604) 624-6560 Prince George: (604) 563-2263 Kamloops: (604) 374-6887 Cranbrook: (604) 476-2775 Dawson Creek: (604) 782-6965

Northern Computer has franchise stores in these B.C. towns. They offer rentals, leases and sales of IBM and IBM compatibles and Macintosh computers. They sell software, supplies and support in these remote locales.

Westcoast Computer
Rentals Manager: Dwight Dubowits
1637 Lonsdale Ave. North Vancouver, B.C. V7M 2J5
Phone: (604) 986-7680 Fax: (604) 986-7682

Serving the North Shore and Vancouver, Westcoast provides rentals, leases and sales of quality brand name computers and lower cost clones. They carry the full spectrum of IBM PS/2, IBM, IBM compatibles, and Macintosh computers. Accessories include dot matrix and laser printers, plotters, scanners, modems and CD ROMS.

TCS The Computer Store (#7–11220 Voyageur Way, Richmond, B.C., V6X 3E1) also rents business or personal computers by the day, week or month. TCS has three stores, in Vancouver, Calgary and Toronto. Contact Gerry Alston, 604/273-8443. ❐

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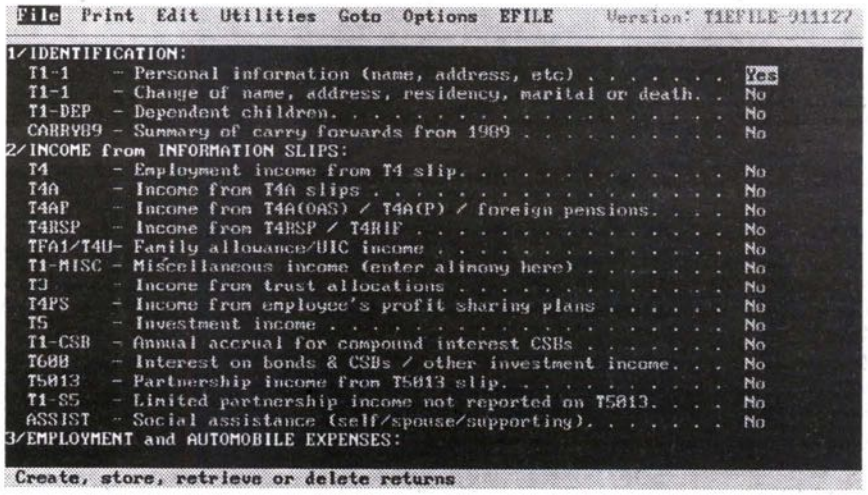
Personal Income Tax Software

by Steve McIlwain



HomeTax Plus

Publisher: HomeTax Information Systems Inc., 5353 Dundas Street West, Suite 500, Etobicoke, Ontario M9B 6H8 Phone (416)239-7829, Fax (416)236-9162 System Requirements: IBM PC, XT, AT, PS/1, PS/2 and compatibles; 512K RAM (640 recommended); DOS 3.1 or higher; Hard drive with 3 MB of disk space; monochrome or color monitor; supports Microsoft Mouse; dot matrix or HP LaserJet compatible printer. Price: MSRP $49.95 Cdn.

Key Features: T1 tax preparation; expert tax advice; tax summary; "what-if" calculations; optimization feature; financial utilities; simple word processor; import data from Quicken accounting; custom options; includes book on how to beat the tax man.

HomeTax Plus prepares a simple tax return for one or more people. Returns are stored in a database for easy retrieval. Returns are filled out by first entering the personal information and then selecting the appropriate schedules and forms from a menu. Financial management utilities—year round tax planning, portfolios and a personal directory - allow you to keep track of your financial position on the computer.

HomeTax Plus has two parts - T1 preparation and financial utilities. The user interface is good for the financial utilities but poor for the T1 preparation. In some places of the T1 preparation, it's as if three different interfaces were written and then combined into one big clutter. When you have to press a key indicated on a menu at the bottom of the screen to access the menu at the top, you know there is too much on the screen. Unfortunately, HomeTax also tries to emulate the Revenue Canada forms in its interface. For some reason, tax preparation packages think that following the Revenue Canada T1 forms as close as possible makes tax software easy to use. This defeats the purpose of doing your taxes by computer.

HomeTax has added five schedules and forms this year but it is still very limiting in its schedules. Page 9 of the manual lists the schedules that HomeTax does not produce (this should be on the back of the packaging). If HomeTax cannot produce the schedules you need, you have to do them by hand. HomeTax claims that its limitations only exclude 5% of the taxpaying public. I wonder about this claim. If I had such a simple tax return, I would go to a credit union or H & R Block and get it done for less money than HomeTax costs. I bet that people who have a little more complicated tax return are the ones trying personal tax software. It is people who have a more complicated tax situation that are looking for a package to help them so they don't have to pay someone to do their taxes. HomeTax does aid the user in filling out the return. The Interview Mode uses a questionnaire to move you to the appropriate forms automatically. All you have to do is answer the questions correctly. This I appreciated.

In T1 preparation, HomeTax's strength is its expert tax advice. HomeTax also includes a book on beating the tax man. A tax summary window can be used for "what-if" scenarios to see the impact of a decision on the final refund or balance. The Optimization feature automatically allocates income, deductions and credits to the taxpayer or spouse using Income Tax Act rules.

HomeTax's strengths are the expert tax advice throughout the software and its financial utilities. No other personal tax preparation package that I have seen has the tax planning and financial utilities that HomeTax has. Once you get used to the interface, HomeTax will definitely help you with your taxes. The addition of more schedules and a simpler user interface would make HomeTax a superior product.

Quick Returns!

Publisher: Ontek Development Company, 24 Waller Avenue, Toronto, Ontario M6S 1B9 Phone (416)767-2775, Fax (416)767-0720

System: IBM PC or compatible; 256K RAM; DOS 2.0 or higher; monochrome, Hercules, CGA, EGA, VGA display adapter; floppy disk drive; printer capable of boldface print (for Revenue Canada).

Price: MSRP $59.95 Cdn.

Key Features: T1 tax preparation; swap between returns; "what-if" calculations, tax summary; context- sensitive help and tax advice; import data from other spreadsheets, databases and accounting packages; supports PostScript printers.

Quick Returns prepares a simple tax return for one or more people. Returns are stored in a database for easy retrieval. Returns are filled out by first entering the personal information and then selecting the appropriate schedules and forms from a menu. You can put up to eight returns in memory and swap between them.

Quick Returns is a simple-to-use personal tax preparation package. While it is an easy package to move around in, the data entry aspect is poor. Quick Returns falls into the same trap as HomeTax in trying to emulate the Revenue Canada T1 form on computer. For example, a simple yes or no question requires the user to first cursor to the correct box and then press X. You cannot just press Y or N. Pressing Y for yes or N for no is not accepted throughout the program. You have to put an X in the box. This might seem picky, but if you do many returns for friends and family, this can get frustrating. Quick Returns does not interact with the user and lacks features that help move the user to the appropriate forms. You have to select the right form and make sure it gets filled out. Quick Returns does have good help throughout and some tax advice in the software and in the manual. Quick Returns has enough schedules to handle some complicated returns but it is limited in this area.

Quick Returns can import data from popular spreadsheets, databases and accounting packages. If you already have your financial data on computer, you might want to consider Quick Returns for this feature.

Quick Returns is the easiest package for doing "what-if" scenarios. A status bar at the bottom of the screen constantly tells the user what the refund or balance due is upon every entry. For more complex calculations, you can use the swap command to look at two or more versions of the same return.

Quick Returns can do most personal tax returns quickly and easily. If it could interact with the user and help the user through the task, it would be a more complete package.

Cantax

Publisher: CANTAX Corporation Ltd., 340-7330 Fisher Street S.E., Calgary, Alberta T2H 2H8 Phone (403)255-8444, Fax (403)253-6281

System: IBM PC or compatible; 512K RAM; hard disk; monochrome or colour display; 80 column printer capable of printing 10 and 17 CPI. Price: MSRP $49.95 Cdn.

Key Features: T1 tax preparation; tax planning; swap to spouse feature; tax summary; labels; custom options.

Cantax prepares tax returns for up to 15 people. Returns are stored in a database for easy retrieval. Returns are filled out by entering the personal information and selecting the appropriate schedules and forms from a menu. A year-round tax planning feature allows you to plan for next year's taxes.

Cantax is the most refined of the personal tax packages that I have seen. It is tidy and easy to use. The first thing you do is select the schedules and forms you need and Cantax directs you to only the selected forms. Data entry is made easy by proper defaults in fields, and Cantax does not stick to the Revenue Canada form user interface as much as the competition.

Since the birth of personal tax returns on computer, Cantax has been the leader. Yet, it lacks some basic features that it's competition has. Cantax has no context sensitive help. Even the simplest software package should have some sort of help. Cantax also does not provide any tax advice in the software, leaving the user on their own. There is no "what-if" calculation feature that allowws you to see the impact of a decision on the final refund or balance. You have to enter the income, deduction or credit and then go to the final page of the return to view the final refund or balance.

Cantax has a decent selection of schedules and is only limited in producing more complex returns such those that include farming or fishing income. Cantax does not have the financial management facilites that HomeTax has, but it does have a tax planning feature that helps you estimate next year's taxes.

Cantax's output is superior to most personal tax packages. It produces a very professional looking return.

Cantax produces a return fast and easy. The ommission of some basic features that should be present, such as help screens and tax advice, keep it from being a superior package.

Personal Income Tax Software Comparison

Feature	Cantax	Quick Returns	Hometax Plus
Help screens / Tax advice	No	Yes	Yes
What-if calculations	No	Yes	Yes
Unlimited returns	No (15)	Yes	Yes
Complex Returns	Yes	Yes	Very Limited
	Limited	More Limited	
Import from spreadsheets, databases, accounting	No	Yes	Quicken only
Tax planning	Yes	No	Yes
Financial Utilities	No	No	Yes
Interactive mode (helps the user through return)	Yes	No	Yes
Printed return quality	Good	Average	Average

Which one should you try?

HomeTax, Quick Returns and Cantax all produce proper Revenue Canada accepted personal tax returns. Each has a support line if you have problems. Each package has limiting features that should be considered. The best advice I can give is to make sure the package you pick has the schedules you need. If it does not, you have to produce the schedules another way and include them in the return. The table will help you sort out the package for you. ❐

Steve McIlwain is a freelance high-tech writer based in Vancouver, BC.

Macintosh Personal Tax Software

According to a write-up in *The MacWest Memo*, the newsletter of the MacWest Computer Society (604/574-2064), there is a Macintosh set of shareware templates to do your personal taxes in Excel. The program is called the 1991 Canada/Provincial Tax Return Template, and was prepared by Icicle Computer, Box 20093, Rideau East P.O., Ottawa, Ontario K1N 9N5. You can obtain it directly from the company for $25. ❐

New For Macintosh:

1991 MacTax Ships in Canada

MARKHAM, ONTARIO, JAN 3 (NB)—The 1992 version of MacTax, Canadian income tax software for the Apple Macintosh, is now available. Developed by RSI of Mississauga, Ontario, the software is marketed by LDL Enterprises of Markham.

According to LDL, MacTax uses the full Macintosh interface and is System 7 compatible. Revenue Canada will accept its printouts for tax filing. Lois Densmore, president of LDL, told Newsbytes the software is aimed primarily at the home market but also has the features small-business users need, such as the ability to produce income statements.

MacTax is a stand-alone product, requiring no other system application to perform. It produces a full tax return with all pertinent pages, the vendor said. The software can also be used for experimenting with "what-if" tax scenarios.

LDL said it will compete with models for the Microsoft Excel spreadsheet software, which cost from C$100 to C$800, and some public domain software that is not approved by Revenue Canada.

LDL markets MacTax across Canada through Apple dealers, user groups, and direct mail. The software retails for C$39.95.

RSI offers full telephone technical support.

Contact: Lois Densmore, LDL, 416-499-7500.

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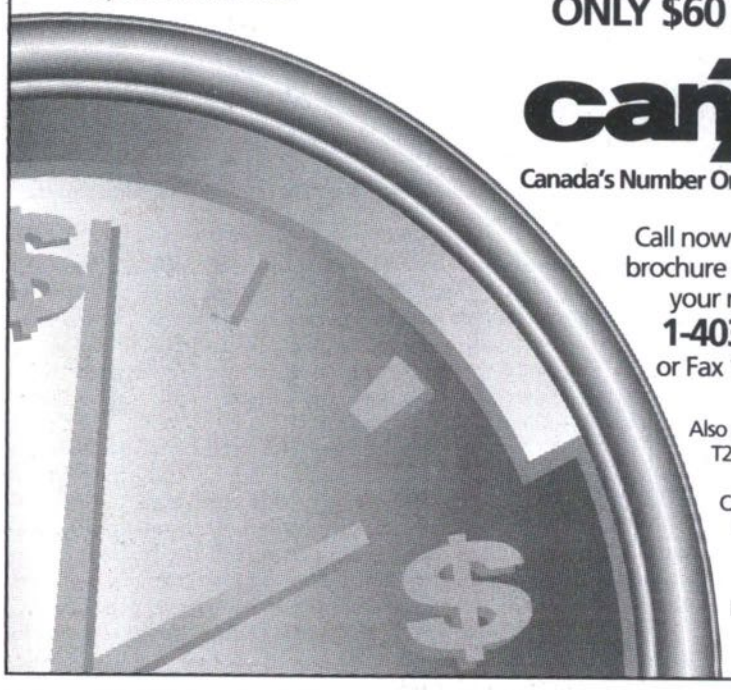

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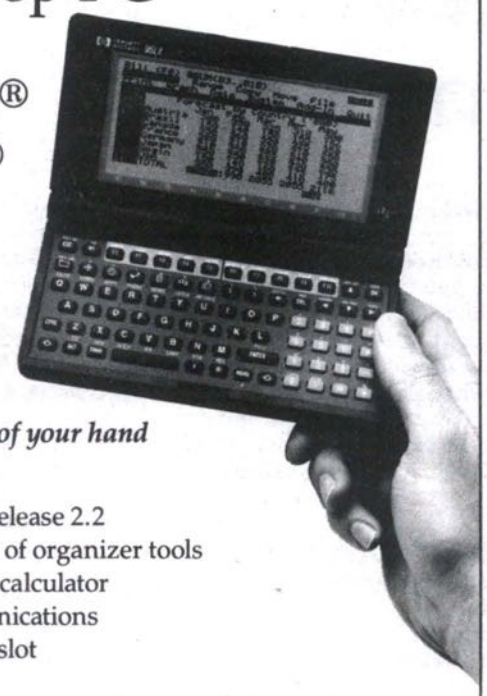

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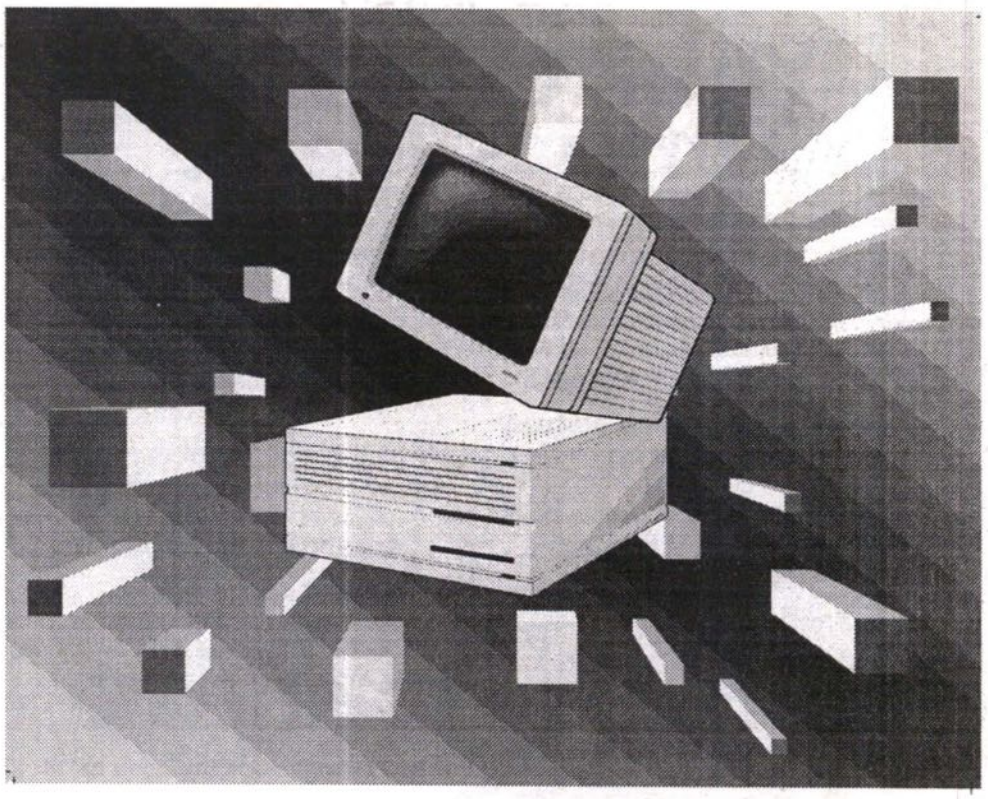
How To Build Your Own Computer

by Roedy Green



Introduction

Computers are much like stereo systems. You need not buy a complete package. You can buy individual components to make up your own dream machine. You might assemble and test them yourself, or have someone else do it for you.

Even if the thought of building your own machine leaves you cold, you might still want to read on. Most of what I will tell you will also be useful in selecting a pre-fabricated computer.

Why Build Your Own?

Here are some reasons why you might build your own machine:

1. Long term you will save money. Once you learn to build machines, you can repair or upgrade computers, on your own, just for the cost of the components. In the short term you will not save money. A craftsman can build a machine much faster than he can teach you how to build one.
2. You can be sure that every component in your machine is good quality and tested properly.
3. You will have a deeper understanding of how your machine works.

Selecting the Components

The basic components are: case, power supply, motherboard, RAM, hard disk, video controller, monitor, floppy drives, multi-i/o card and keyboard. Optionally you might have a mag tape backup, modem, mouse and printer.

Manuals

It is crucial that you acquire manuals on all the components in your system. Without manuals, the equipment is useless. Manuals on the floppy drives and the power supply are hard to come by. However, you should be able to twist the vendor's arm to get manuals on all the other components.

Cases

Choose a case with care. You will live with it far longer than any of the innards, since cases do not become instantly obsolete.

There are four basic styles:

1. Full-size tower with six accessible bays.
2. Full-size desktop with three accessible bays and two inaccessible bays.
3. Mini tower with two half-height accessible bays and two third-height accessible bays.
4. Mini desktop with three half-height accessible bays and one third-height accessible bay.

Which one should you choose?

The Case for a Full-size Tower

If you are a hobbyist, and think in future you might add goodies to your machine, such as a mag tape, a CD-ROM, one of those new 2.88 MB floppies, or something not yet invented, get a full-size tower case. It has six bays (holes) in which to put devices such as hard disks, floppy drives and mag tapes.

A tower case has plenty of room for a giant 450-watt power supply or even an internal UPS (uninterruptible power system) if ever you grow that big. Tower cases give you easy access to the components, so assembly and servicing is easier. Tower cases have plenty of room inside for air to flow freely to keep your components cool. Natural convection in the tower also aids cooling.

The tower case sits on the floor, so it takes up no desk space.

There are two main disadvantages to a full-size tower case:

1. It is full size — these puppies are BIG.
2. They are more expensive than the other types of case.

If you plan to build your own machine, then a full-size tower is the best way to go.

The Case For a Full-Size Desktop

A full-size desktop case has one less bay than a tower, and two of its bays are inaccessible. This means you cannot get at them from the front, since they hide inside the case. So you cannot put devices like floppy drives or mag tape units into such bays. However you can put hard disks in.

A full-size desktop case has many advantages of a tower, though it does not cool as well, and is not as easy to service. It takes up a large chunk of desk space. You can mount a desktop case on its side and treat it like a small tower case.

A full-size desktop case is not considered "sexy" and so sells for considerably less than a tower.

The Case for a Mini Tower

A mini tower is best for a low-cost computer that will perform only one function, such as word processing or accounting, and that will never be upgraded. Mini towers are handsome and economical.

A mini tower case cannot sit on the floor. If you were to put it there, you would have to grovel every time you inserted a floppy. Mini towers must sit on your desk.

They have room only for a small power supply and a few components. There will be no room to add half-height devices like a mag tape or CD-ROM. The cramped interiors can limit your choice of motherboards. The cramped placement of the RAM and the bays often prevent you from using all the slots on the motherboard.

If these terms, "motherboard", "slot" and "RAM" are unfamiliar, hang tight. I will explain them later.

Servicing in such cramped quarters is more difficult.

The Case For a Mini Desktop

The mini desktop case sits on your desk. The monitor sits on top of it, so oddly it ends up taking less space than the mini tower case. These cases, too, are handsome and low cost.

The same cautions apply as for the mini tower. However, cooling is even worse than in a mini-tower since cramped cabling interferes with air flow. Further, natural convection is not as efficient.

Cases to Avoid

If you plan to build or service your own computers, beware of non-standard cases. If you buy an unusual case, it may need an oddly shaped or custom-sized power supply. If it fails, you could end up paying five times as much as you would for a one of the standard types.

If you select a smaller case, make sure it uses a standard "slimline" power supply with dimensions 150 x 140 x 86 mm. Other safe, common sizes are "baby" 165 x 150 x 150 mm and "standard" 213 x 150 x 150 mm.

Power Supply

The power supply is a box that converts the 110 volt AC current from the mains to the 12 volt and 5 volt DC battery-style power the computer uses internally.

To work properly it must provide smooth DC power, even when the AC power coming from the utility company is rough with spikes and sags.

The AC power can be noisy even when the utilities company is providing perfect power, even when there are no obvious light dimmings. The trouble usually comes from office copiers, fans, other motors or fluorescent light ballasts on the same circuit with the computer.

Big heavy cans called capacitors in the power supply act like reservoirs to absorb the spikes (overvoltages) and provide power during the sags (undervoltages). Low-quality power supplies scrimp on these and other filtering components.

The best quality "TurboCool" power supplies are made by PC Power and Cooling in the USA. Unfortunately, they cost more than twice as much as an ordinary power supply.

There are several reasonable intermediate brands such as Senstron, Jaba and Maxpower.

Poor-quality power supplies have noisy fans and provide very little protection from AC power glitches. I will not mention any by name to avoid a cross-burning on my lawn. With a poor-quality power supply, your computer will freeze sporadically, reboot for no reason from time to time, and occasionally just give wrong answers. If it appears your computer is haunted, chances are it has a poor-quality power supply. Yet if you take it back to the dealer (who has dedicated clean AC circuits), it will behave perfectly.

The power supply is the engine of your computer. This is not a place to scrimp.

When I build machines, I mostly use TurboCool power supplies, augmented with an ESP surge suppression box that goes between the wall and the computer. The ESP further filters the power, and protects the computer from the really big spikes.

Most of the so-called power protection boxes contain only about $1 worth of MOV's, which are almost useless by themselves since they burn out on the first big hit. You need boxes that have some more robust components such as gas discharge tubes, silicon avalanche diodes, chokes, baluns, capacitors or transformers.

The faster your computer, the more sensitive it is to noise in the power. A slow old 12 MHz 80286 will be happy with any old power supply. A 33 MHz 486 needs the purest, cleanest power money can buy.

UPS

A UPS is an uninterruptible power system. It keeps your computer going even when the AC power has failed. Otherwise, you lose your work in progress if the power fails, even momentarily. UPSes used to be prohibitively expensive, but prices have been tumbling.

Besides the UPS boxes that go between the wall socket and the computer, there are two types that fit right inside the computer. These are simpler and cheaper than a standard UPS since they feed the innards of the computer directly off batteries, rather than using DC from the batteries to generate AC which is then fed to the power supply to convert it back to DC again.

One type incorporates the UPS inside the power supply — such as the Innersource. The other uses a battery that goes between the power supply and the motherboard — such as the Boomerang.

The Motherboard

If you open up a computer and look inside you will see a big board with eight slots (sockets) on it. The various controller cards fit in the sockets. Also on the motherboard are the CPU (e.g., the 80386 DX chip), the ROM BIOS, the RAM, the SRAM cache and the support chip set.

Today's motherboards have far fewer chips and components than those of just a year ago. Ironically, the 486 motherboards are the most expensive, but cost the least to manufacture since they require the fewest chips.

The CPU is the part that does the arithmetic. The ROM BIOS is a burned-in program that handles the details of making the keyboard, floppy and hard disk work. The RAM is the high-speed memory where the results of calculations are stored. The SRAM is super high-speed memory where the most active portions of RAM are duplicated. The support chip set helps the CPU interface with the rest of the computer, handling such tasks as copying data from the hard disk to RAM, tapping the CPU on the shoulder when a character has come in on the modem ,etc.

If you are going to build your own machine, build one 25 MHz or slower. 33 MHz machines are much trickier to get working. A 25 MHz 486 is quite easy to build. If you are successful with that, go ahead and build your second machine at 33 MHz.

How do you judge a motherboard?

1. Look at the soldering and the traces. They should be clean and neat.
2. It should come with a manual that clearly describes the function of all the jumpers

(pairs of pegs you short together to configure your board).

3. The BIOS should be a well-known brand. The BIOS most programmers test their code with is called AMI (American Megatrends International). Phoenix is also safe. I would avoid anything else, not because it is necessarily defective, but just because programmers will not have tested their programs with it.
4. The support chip set should be a well-known brand. The chip set most programmers test their code with is called C&T (Chips and Technologies), so it is the safest. The QEMM memory manager has full support only for the C&T brand chipset. Intel and OPTI are also reasonably safe. If you select anything else, you are more likely to run into incompatibility problems, though the degree of trouble is nowhere near as severe as if you select a no-name BIOS. Unfortunately C&T has not yet released a 486 chip set, so there you are on your own.
5. The motherboard should be set up to allow the CMOS to run from a lithium battery. The battery keeps the time and date clock-calendar running, even when the power is off. Once you install a lithium battery, you can forget it for years. Other types of battery require periodic attention and replacement, especially the so-called rechargeable ones. When a battery fails, the computer suffers a fit of amnesia and forgets all its configuration information stored in CMOS. (I wrote a program called CMOSSAVE to restore its memory should this happen. It is available on diskette.)

RAM

RAM is the high-speed memory. RAM can come in the form of chips (DRAM—Dynamic Random Access Memory), miniature cards with edge connectors (SIMMS—Single Inline Memory Module) or miniature cards with pins sticking out one side (SIPPs—Single Inline Pin Package).

SIMMs are the easiest to install yourself. All cost about the same, so go with SIMMs if you have a choice. Most RAM nowadays is 70 or 80 ns. 70 is faster and costs little more.

Check out how much RAM your motherboard can hold. 8 MB sounds like a lot today, but in few years 64 MB will sound as cramped as 640K does today. On some motherboards you need a proprietary 32-bit card to add extra memory. BUY THAT CARD NOW, even if you don't need all the RAM. Guaranteed it will not be available when the time comes to expand your RAM.

2 MB is sufficient for most word processing and accounting. 4 MB is enough for Windows, but 8 MB is better. Microsoft demonstrated their unreleased Windows 3.1 using 14 MB of RAM. Autocad needs 8 to 16 MB. Buy a little more RAM than you think you need since all programs are getting fatter with every release.

Happily, all brands of RAM I have encountered work fine.

SRAM Cache

If you have a 33 MHz CPU, it is so fast the main RAM cannot keep up with it, even if you buy 70 ns RAM. You then need some ultra high-speed 20 ns SRAM that can keep up. This SRAM is so expensive, you can only afford perhaps 32 to 256K of it (about 3% of the size of your big main RAM). A special cache controller makes optimum use of this RAM by dynamically tracking which parts of regular RAM the CPU uses most often and by keeping duplicate copies in the SRAM cache.

You also need a small amount of even faster still 15 ns TAG RAM that tracks which parts of the main RAM are duplicated in the SRAM cache.

The 486 chip has an additional 8K SRAM internal cache built right into the CPU chip.

Happily, all brands of SRAM I have ever encountered work fine.

Hard Disk

There are five kinds of hard disk controllers (electronics). The most commonly sold is IDE because they are fast and inexpensive.

1. MFM: These were the original type of hard disk. They are reliable and inexpensive, but slow. They are becoming rare.
2. RLL: These crammed 50% more data into the same size disk as MFM. They were less reliable than MFM. They too are now rare.
3. IDE: Most disks sold are the IDE type. They are fast and inexpensive. IDE is not a standard like the other types which means you may have software compatibility problems. Usually you cannot test IDE disks properly for surface defects. Usually, if you inadvertently damage the low-level formatting information, there is usually no way to repair it without sending the drive back to the factory.
4. ESDI: These disks are fast, reliable, and expensive. You can rest assured they will work under OS/2, which you cannot say for IDE or SCSI. These are the easiest kind of disks to install. If you are building your own machine, this is the way to go if you can afford it.
5. SCSI: These disks are potentially the fastest, but they are the most expensive and the trickiest to make work. To complicate matters, there are SCSI-I, SCSI-II and MAC SCSI drives. In theory, you can also hang CD-ROMs, mag tape backups, and several hard disks all on the same SCSI controller, but in practice . . .

Buying a Decent IDE

You might have your heart set on an ESDI or SCSI drive till you find out the combined price of drive and controller. That may force you to lower your sights to an IDE. How do you get a decent IDE?

ATA IDE Standard

There is a standard for IDE drives called ATA. To the best of my knowledge, only the Maxtor brand disks comply with the standard. Without standards you have chaos —

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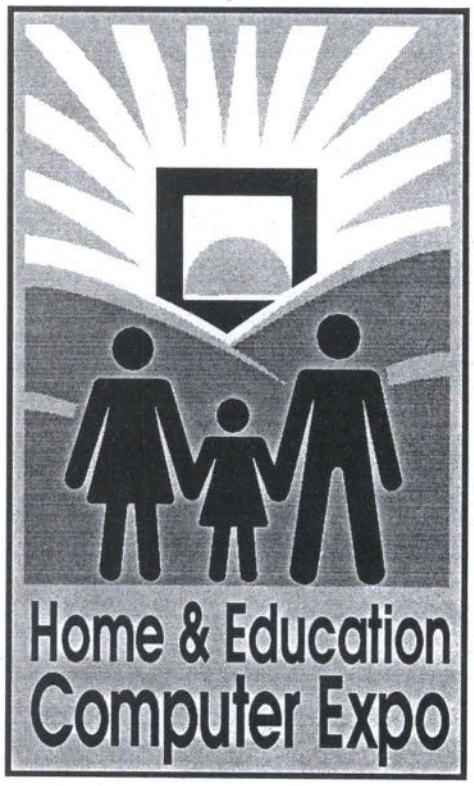

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some drives will work with each other, but others will not. Some drives will work with some controllers but others will not. Some software will work with only some drives. Even without standards, you can usually get things to work, but only after you have pulled out a few handfuls of hair.

IDE Cache Disabling

Conner IDE allows you to disable the cache in the drive itself. (Don't confuse this cache with the SRAM cache. The disk cache keeps the most active parts of the disk in RAM.) With the cache disabled, you can test the drive surfaces. If you cannot disable the cache, all you can test is if the non-mechanical electronic cache is working, not the magnetic surfaces themselves.

I use HDTEST every month on my drive as prophylaxis, to handle any new bad spots before they give trouble. Testing for bad spots in especially important as part of burn-in when you first set up the drive. I run alternately HDTEST and SpinRite for 4 days as part of the initial burn-in. Unfortunately, no other brand but Conner lets you disable the cache to perform this test properly.

IDE LLF

Fujitsu and Maxtor allow you to perform the low-level format in the field. This means if rogue software or a hardware failure inadvertently destroys the housekeeping information on the hard disk, you can recreate it without sending the disk back to the factory. Unfortunately, other drives don't allow you to do this. To get around this problem, I wrote a program called BOOTSAVE, that at least allows you to reconstruct the most commonly damaged sector on the disk.

I know of no IDE drive that simultaneously follows the ATA standard, allows you to disable caching, and allows you to redo the LLF in the field. Meanwhile, I recommend that you just pick one of these three brands and live with its imperfections.

How Big A Disk?

Fortunately, you can create word processing and spreadsheet documents for years without making much of a dent in your disk space. However, you can fill your hard disk very quickly by installing programs. I have built 80 MB systems for people that were ¾ full at the time of delivery —containing just the software they purchased. Further, every upgrade to the software is often double the size of its predecessor.

80 to 150 MB is a reasonable size if you are not sure. Don't buy too far ahead. You are better to put the money in the bank, then buy later when you need the capacity. Then drives will be cheaper, faster and larger. You can also later expand the size of your disk using Stacker, a software data compressor.

Video Controller and Monitor

There are three routes you can go:

1. Economy Plain VGA (such as the ATI Basic) usually with grayscale monitor.
2. Super VGA (such as the ATI Integra) usually with a low-cost color monitor such as the Samsung SyncMaster 3.
3. Deluxe Graphics Coprocessor (such as the ATI Graphics Ultra) with a non-interlace, big-screen monitor such as the Idek.

Without an expensive big screen to make the type big enough, expensive non-interlace monitor to control the jitter, and fast coprocessor to process all the extra dots, the high resolution 1024x768 mode is not practical.

Customers often insist on buying part of such a high-res package, but then end up running it in plain 640x480 VGA mode to get a decent-quality image. They wasted their money. In the musical Oklahoma!, Addo Annie sings "With me, it's all or nothing." She must have been thinking about high-resolution video.

Avoid no-name video cards. These cards lack proper software drivers to make Windows and other programs work. Compatibility problems plague them. Good quality cards are now so inexpensive, it is not worth the hassle.

Floppy Drives

Since most software comes on 5.25" floppies, it is convenient to have a 5.25" floppy drive. Since 3.5" floppies hold more information, and are more durable it is best to use a 3.5" floppy drive for day-to-day use. Since floppy drives are now so inexpensive, there is little reason not to have one of each.

I have had good success with Panasonic and Teac floppies exchanging floppies between XT and AT machines. I have had troubles with some of the other brands.

Unfortunately the quality of floppy drives generally has declined over the years. When you buy a floppy drive, there is a very high probability it will be misaligned. If you are building your own machine, you will need a special tool like the Dysan Interrogator to detect this problem.

Multi-I/O Card

The multi-I/O card provides ports to attach your printers, modems, mice and joystick.

In off-the-shelf machines, the multi-I/O card is usually the weakest link. Sometimes you will find multi-I/O cards worth as little as $5 causing nothing but trouble in a $4000 machine.

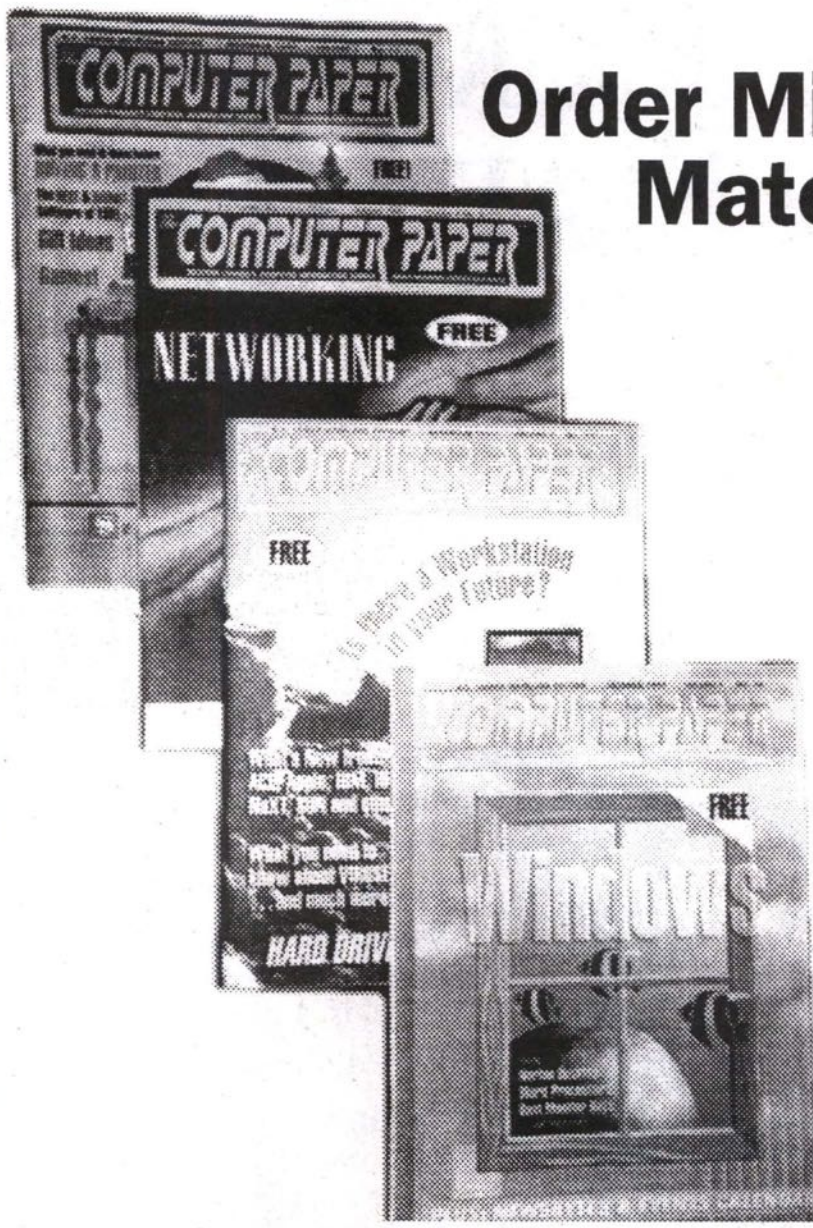
I have experimented with many multi-I/O cards. The only one I found completely satisfactory is the Everex. However, it is so complicated to set up, you need to use a computer program to help you.

To set up a multi-I/O card correctly, you must understand IRQs, port addresses, DTE versus DCE and other computer arcana. When people bring me machines to repair, I find very few of the multi-I/O cards were set up correctly. Get experienced help when it comes to that step.

Keyboard

Here are some factors to consider in choosing a keyboard:

1. Touch: a light touch is faster, but if you rest your fingers on the keyboard, you will get spurious keystrokes. Make sure it has tactile feedback — a sudden give when you have pressed the key far



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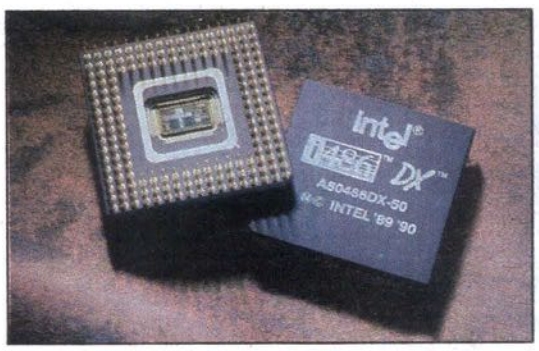

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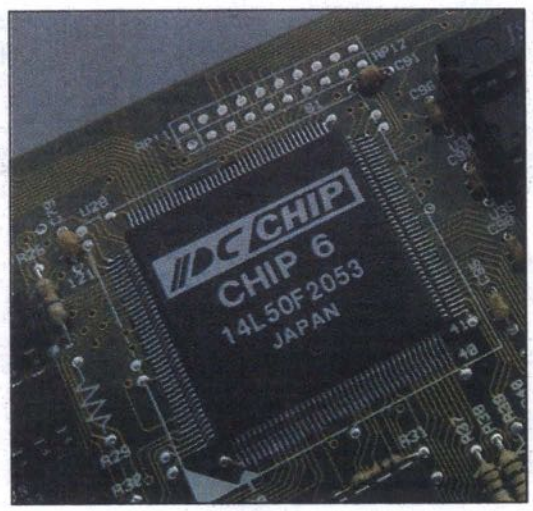

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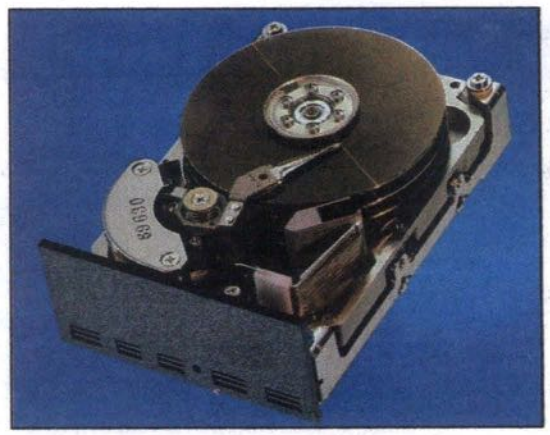

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enough. Without feedback, your typing will be slower.
2. Layout: function keys on the top, left or both. Is there strange placement of \ ` [ ] keys? Is it similar enough to other keyboards you need to use in a day?
3. Size of keys: large backspace, Enter, Shift, Ctrl.
4. Comfort: how does the lower shelf feel against your wrists?

Before you make your final selection, try typing with your candidate keyboard for at least five minutes. Buy the keyboard you like best. Save money elsewhere on the machine. Do not scrimp on the keyboard.

Mag Tape Backup

Don't kid yourself and say you will do backups to floppy. It takes about 67 diskettes to back up an 80 MB drive. No one has that much patience! If you completely lose the contents of your hard disk, it would cost an average of $35,000 to replace the data.

You might think you will backup only your data to floppy, and "simply" reinstall the software if you crash. Some software takes weeks to get working smoothly. If you hired professional help to install your software, and you have to reinstall it, he will charge you at least as much to clean up the mess and reinstall.

Mag tapes are now becoming so cheap they pay for themselves in months. You just insert a tape the last thing at night, and come back the next morning and the entire disk is backed up. You can keep an extra backup tape offsite in case thieves steal everything.

Modem

2400 baud modems are so inexpensive, you might as well throw one in. I have also written a set of generic modem manuals available on diskette.

With a modem you can get free advice on how to make your computer work from local BBSes (Bulletin Board Systems). You can also "download" free programs. If you tie into commercial BBSes like BIX, you can talk to the magazine and book authors to obtain advanced technical information.

MNP-4 modems automatically correct errors due to static on the phone lines. MNP modems cost a little more, and are only useful if you plan to talk to other MNP modems, e.g., Tymnet.

Mouse

If you use Windows, you must have a mouse. The best 3-button mouse support comes from Logitech. Microsoft makes their own expensive 2-button mouse which is also popular. The problem with using no-name or very cheap mice is the lack of software to make them work.

Also consider using a trackball instead of a mouse. It requires less desk space. You need less manual dexterity to double click, but a little more to move diagonally.

Printer

Before you select a printer, get a list of the printers supported by each software package you plan to use. Then confine yourself to a printer supported by all the packages.

I like printers with very flat paper paths. This means paper does not jam easily. Sticky labels do not peel off inside. S-shaped paths are the worst. Alps and IBM make printers with perfectly flat paper paths where the paper is inside the printer only for a very short time.

Nine-pin printers are cheap, but the print looks ugly. 24-pin printers can produce quite good-looking type. Ink-jet printers produce excellent type, but are limited to single sheets. They are quiet. Laser printers have the best type. PostScript laser printers can do elaborate graphics and shading.

If you select a laser printer, you might also want a small dot matrix printer to handle the sticky labels, or multi-part forms.

Cables

Prefabricated ribbon cables are usually low quality. Overlong cables stuffed into the machines kink easily, giving sporadic trouble. I found that most trouble with hard disks and floppies could be traced to damaged cables or poor connections on the cable ends.

So I suggest you build your own cables using high-quality gold-plated connectors, and 3M flexible ribbon cable. U.S.-made such as Robinson, Nugent or Amphenol connectors have much stronger springs to grip tightly. Further, you can make the cables exactly the right length. This reduces the antenna effect that attracts electrical noise into the cables.

I have written an essay on how to build your own cables available on floppy.

Tools

After you have purchased all the components, you will need a workshop and tools to assemble them. The easiest way to handle this is to use someone else's fully equipped workshop. However, you can do much of the work on the kitchen table, using only a minimal set of tools.

Canadian Tire makes a line of black screwdrivers called Mastercraft that are excellent for this work. They are good quality hard molybdenum steel. Get a 57-3122-8 Phillips and a 57-3101-8 slot head screwdriver.

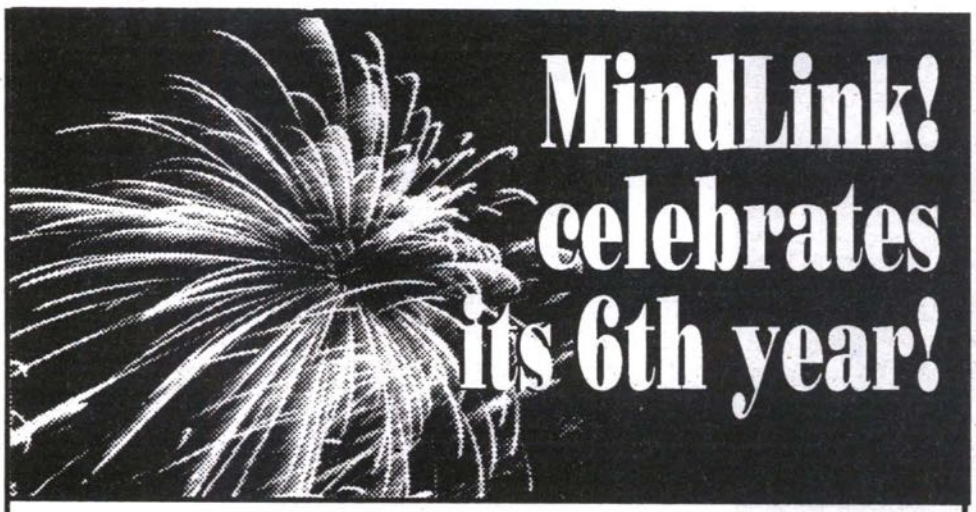
A Sharpie permanent marker and a Dymo label gun will be useful. A small flashlight is a necessity. A few nut drivers, some needlenose pliers will also be helpful.

For handling your RAM, you need a static mat. You might borrow one just for this crucial step.

For making cables, you need a vice, an Exacto knife, and a righ- angle triangle.

You will also need a collection of diagnostic software such as: Dysan Interrogator for testing floppies, SpinRite and HDTEST for burning in disks, RAMTest and QA Plus for testing the keyboard and ports. You might borrow this for one-shot use since the whole bundle is expensive. Usually diagnostic software comes with your multi-I/O card, video card and mouse.

These are the very same tools you need



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to repair your computer. You also might find my article in the April 1989 edition on options for speeding up your old XT helpful.

Materials

Get a small bottle each of Cramolin Red, isopropanol and Stabilant. Also buy a half-dozen foam swabs. Foam scrubbies look much like Q-tips except they are lint-free. You use Cramolin to clean electrical contacts. You use isopropanol to rinse them clean. You use Stabilant to treat the contacts. Stabilant is a semiconductor gel that fills in any gap in a contact. Without this treatment, you sometimes find contacts are temperature sensitive. As the machine warms up or cools, strange glitches sometimes occur.

The Stabilant keeps the air away from the contact, which prevents it from tarnishing. This is how NASA treats spacecraft to keep contacts clean.

You need only a small amount to treat every place where current flows where metal contacts metal — e.g., the "teeth" where cards insert into the motherboard, all cable ends, hard and floppy disk connectors, all rear connectors, all connectors on the printer, modem and mouse.

Assembling

When I build a machine, I use a checklist that runs to about 15 pages and with over 400 steps. Different machines have different steps. The major steps are:

- setting the motherboard jumpers.
- installing the RAM
- assembling the case and installing the power supply.
- installing the motherboard.
- installing the floppies, hard disk, and tape.
- setting all the jumpers on all the cards, and installing them.
- constructing the cables and grounding straps.
- setting up the CMOS
- formatting and partitioning the hard disk
- testing everything (this is by far the bulk of the work).
- When it does not work, figure out why, and replace the defective piece. Building a new computer is very much like repairing an old one. Very rarely do all the components work first time.
- burning in the hard disk.
- installing the software.
- getting CSA approval.

CSA Approval

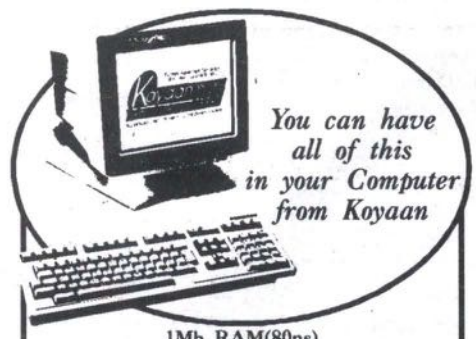
When you have finished assembling and testing your machine, you can take it out to the Canadian Standards Association in Richmond to have them inspect it for safety. They don't care if it works. All they care about is:

1. Will it catch fire?
2. Will it electrocute anyone?

Here are some tips to make sure you pass the first time out.

1. Make sure you case is built of self-extinguishing plastic. They will take a front plate and set it on fire with a match. When they take the match away, the flame must go out by itself.
2. On the power supply is a switch that allows you to set it for 110V or 220V. Set it to 110V then cover it to prevent anyone from tampering with it.
3. Make sure your power cord has a yellow CSA ribbon around it. CSA stamped on it is not enough.
4. Mount your hard disk in the bottommost bay. This way young fingers poking in cannot possibly get at the front power switch and get a shock.
5. Make sure your monitor, power supply and hard disk are already CSA approved as components.

You can ask them to do a special "hospital" leakage current test where 1200 volts pass



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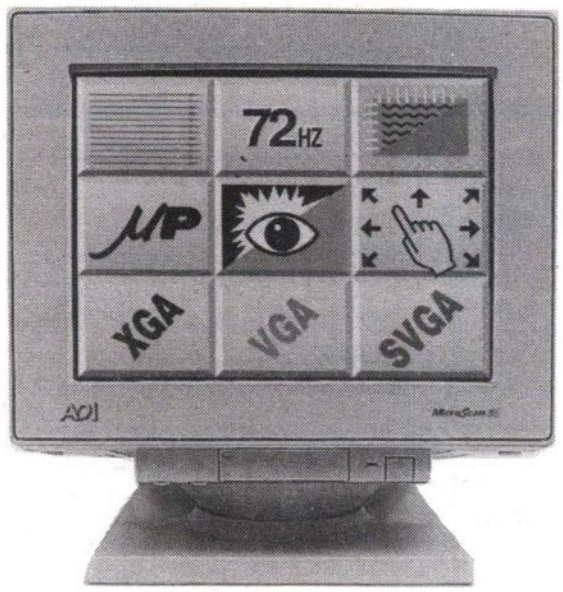

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through your machine. This will flush any shorts or potential shorts. If you pass this test, your machine can then be used in hospitals.

Learning More

I am giving a free course to be held Saturday February 16 from 10 am to 4 pm and possibly repeated February 23. Phone 684-6529 to register. Space is limited. The topic is Building Your Own Computer. The bulk of the course will consist of handling your questions.

Even in that one-day course, there is no way I could tell you everything you needed to know. I teach a $250 course that runs over five consecutive Saturdays where you build and test your own computer. It is quite a full curriculum. Most students need to come in a few extra days during the week to catch up. I am pretty exacting, but the advantage is I personally guarantee your workmanship for two years.

I have written in depth on many of these topics in greater depth in previous editions of *The Computer Paper*. If you cannot find back issues, I have all the articles I mentioned on three diskettes. I will mail you the set anywhere in the world for $18, which includes a hard case, postage, handling, GST and PST. You are free to make all the copies you like and pass them on. I have posted these essays both on BIX and given them to the Vancouver PC User Society Library.

The best book I have found is *Upgrading and Repairing PCs* by Scott Mueller, Que Books ISBN 0-88022-395-2.

Roedy Green, president of Canadian Mind Products in Vancouver (604) 684-6529, builds custom computers. He also writes custom computer software, primarily for non-profit organizations and charities, and offers training and consulting.

Previous Articles in *The Computer Paper*

by Roedy Green

Components:
March 1989, January 1990 and August 1990.

Power supplies and AC power protection:
February 1990

Under the Hood/RAM background:
July 1989.

Video cards and monitors:
March 1990 and October 1991.

Keyboards:
June 1990

Backups, both mag tape and floppy:
July 1990.

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November 1989 and May 1990.

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April 1990.

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ATI Graphics Vantage: Accelerated Video Card

by Ron M. Grant

> "ATI makes a lot of claims for its accelerated video products: "24 times faster than VGA," "Cleaner, sharper and faster Windows," "Get 16" clarity on a 14" screen," and so on. I'm pleased to report that they're all true...."

Product: ATI Graphics Vantage video board (available in 512K or 1MB versions; tested was the 1MB version)

Manufacturer: ATI Technologies, Inc.
3761 Victoria Park Avenue
Scarborough, Ontario
M1W 3S2
Telephone: (416)756-0718
Fax: (416)756-0720

Requirements: IBM AT, PS/2 Model 50 or higher or compatible systems with an 8 or 16-bit IBM AT bus.

Monitor Compatibility: IBM 8514/15 analog color monitor, NEC MultiSync 2A, 3D, 4D, 5D or compatible monitors.

Overview

The Graphics Vantage board from ATI is one of two video cards being marketed by ATI Technologies that include an on-board "Graphics Accelerator." The review unit differs from the pricier Graphics Ultra board only by the type of Video RAM it employs; the Vantage uses DRAM chips, while the Ultra uses faster "dual-ported" VRAM.

Review

ATI makes a lot of claims for its accelerated video products: "24 times faster than VGA," "Cleaner, sharper and faster Windows," "Get 16" clarity on a 14" screen," and so on.

I'm pleased to report that they're all true . . . at least the qualitative statements like "cleaner" and "clearer." I was unable to verify the quantitative claims as I could not find a benchmarking utility for Windows in time for this review.

How about subjective measurements like how big my eyes pop out or how much neck-strain I'm getting from watching windows snap open? I'll say that I no longer want to run Windows without a graphics accelerator. ATI video boards essentially give the IBM-AT compatibles what other graphical computers have enjoyed for so long; dedicated microprocessors for screen graphics.

The processor on the Vantage is a custom VLSI called MACH-8, and it is not visible to the regular video circuitry. It takes a special communications protocol for a video driver to take advantage of the lightning speed of the chip. Fortunately, ATI supplies a quantity of drivers with the card, including the prerequisite Windows 3.0, Lotus 1-2-3, GEM, GEM Ventura, and of course Display List drivers for AutoCAD R10 & R11. Note that if you decide to use both the Windows driver and one of the AutoCAD drivers, you'll likely need an expanded memory manager to get the most out of them both.

The Windows drivers are especially wellthought out, with one 800x600 driver, and three 1024x768 drivers. Once installed, these new resolutions show up within the SETUP.INF file, allowing one to change from one to the other within the Windows Setup Accessory.

One of the Windows drivers uses what ATI calls "Crystal Fonts." These are anti-aliased fonts that appear sharper and easier to read than standard screen fonts. Anti-Aliased Fonts are to your screen what HP's Resolution Enhancement Technology (RET) are to your HP LaserJet III. Well, not really, but they give the same sort of boost to clarity that RET does to the HPIII. In fact, I had the opportunity to install the Vantage on a system that didn't have a high-priced monitor attached; it was just a standard paper-white VGA monitor. We were surprised that the Vantage made this monitor look like a far more expensive unit than it was; the 1024x768 Crystal Fonts, though tiny, were more readable than the 640x480 fonts.

The enhanced crispness of RET and Crystal Fonts comes with a price tag; in the HPIII it's memory, in Crystal Fonts it's color palette; all the other Windows drivers are 256-color drivers, while the Crystal Fonts driver permits only 16 colors. The other 240 colors are used internally by the driver to provide gradations of color to smooth the on-screen fonts. Nevertheless, users of Crystal Fonts will attest that they are worth at least fifty percent of the purchase price of the Vantage/Ultra cards alone. Even your telecommunications sessions will gain a certain elegance from these fonts.

Speaking of price tags: the communications protocol I mentioned happens to use a COM port. If you've got more than two serial devices already in your system, you might want to consult an expert before purchasing one of these boards; the test system had a serial digitizer and a FAX modem installed, and we had a wonderful time resolving conflicts, though it all worked out.

These video boards come with their own mice, though, so you can stop worrying about one of your serial devices. It's an "in-port" mouse, so a Microsoft mouse with a

Continued on page 56

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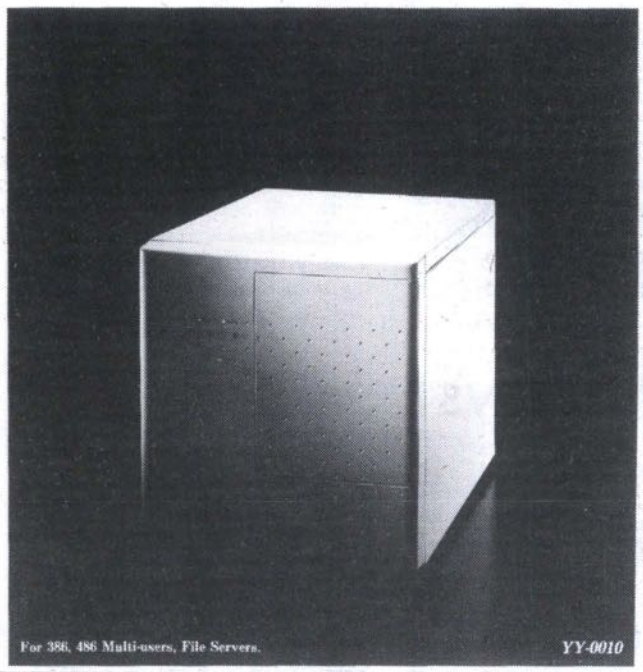

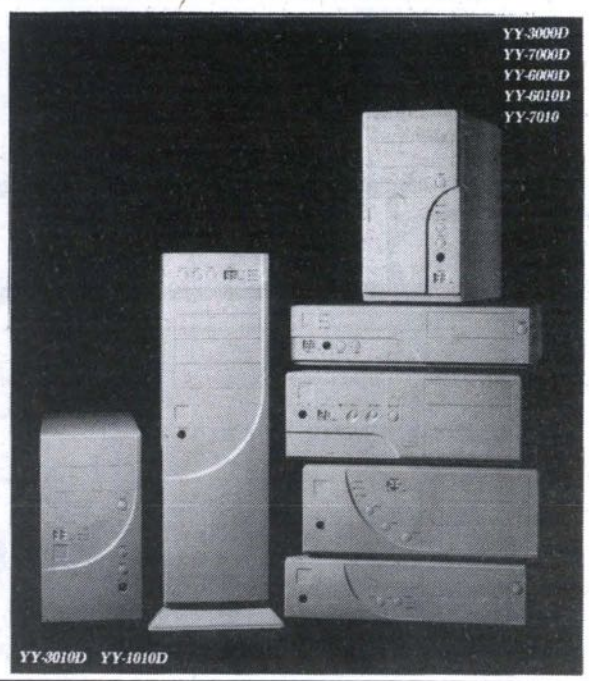

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SHARP

PS/2 connector should be able to replace the supplied mouse, which is a good thing considering that the ATI mouse is an extremely cheap offshore mouse that I've seen attached to many a discount system. I was rather shocked to see this mouse attached to a high-quality board like this. If I were buying one of these, I'd get the board "sans rodent," and plug in a decent ergonomic model.

Installation of the board and accompanying software and drivers is easy enough, and the board has an EEPROM to save your power-up configuration. Once you've installed these drivers, you can forget about the hardware. In fact, since the Vantage has a built-in WonderXL card, you don't need to worry much about it at any time.

At the same time as I was reviewing the ATI Graphics Vantage, I was installing an ATI Graphics Ultra for a client. The Ultra is entirely identical to the Vantage except for the dual-ported VRAM, which allows the video circuitry to access video RAM at the same time as the processor, eliminating the usual "push-me, pull-you" type of transfer.

I'm still searching for a good graphics benchmark utility, but a friend at Microsoft suggested scrolling through a long document. Pretty inaccurate, but my sloppy stopwatching showed that a file that took three minutes to scroll on the Vantage took only two minutes on the Ultra. My backwards math tells me that it's therefore 50 percent faster, in a real-time application. That can mean a lot over a day.

We hope that ATI's Quality Control department is on the ball, though, because that selfsame Ultra had a glitch in it, and I had the dubious pleasure of dealing with ATI's User Support department. They have about twenty different support reps apparently, and it's nearly impossible to get the same one twice, meaning that you will spend a fairly significant amount of time explaining your difficulty, unless you have ready access to a fax machine and carefully follow their "procedure,"

If you do experience difficulty, make sure that you have access to your machine specifications; ATI will want to know everything about your machine before they'll turn a wheel. This includes your computer's BIOS part number, usually flashed for a brief moment on screen as you boot. Funny how the computers of yesteryear gave you enough time to write this information down longhand....

My installation problem was finally solved by a combination of hints from ATI and good old trial and error. There's a set of jumpers on the board which ATI's documentation only mentions as something that is "not used by any known software"...except of course in my case. Naturally, because of their "rare" use, they weren't documented as clearly as I'd expected.

Conclusion:

Since the Vantage doesn't suffer from the same dilemma as the Ultra, I can recommend it heartily; in fact, I'd suggest it as the minimum acceptable video board, now that I've seen the difference. ❐

Ron M. Grant is a consultant and VAR specializing in desktop publishing solutions. Contact him at 604/433-3001.

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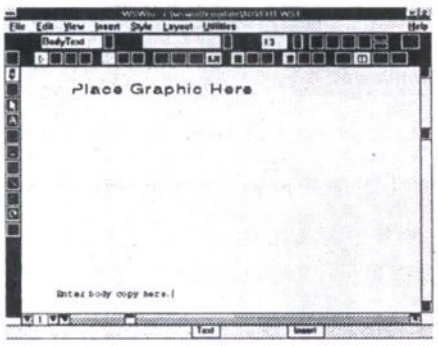
WordStar for Windows

By Geof Wheelwright



In short, WordStar for Windows is very much a first effort for WordStar in the Windows market—and it shows. This should not mean, however, that anyone considering a Windows-based word-processor should dismiss WordStar for Windows out of hand. It does have a great many innovative features—from which the likes of Microsoft and WordPerfect could learn a thing or two. These include:

- Advanced frame-based layout functions that provide for the use of variable-width columns, unlimited numbers of graphics and tables within a document, support for some 16.7 million colours in text, graphics and table editing mode and a healthy collection of document templates.

- Graphic editing tools that rival those in many simple paint and draw packages. Not only do you get all the standard importing and cropping tools you would expect, but WordStar for Windows adds the ability to use color wheels based on the RGB, CMYK and HSI color models, rotation of text or graphics by one-degree increments (something only a few Windows-based DTP packages offer, never mind word-processors) and the ability to group/ungroup and layer graphic objects.

- Precise typographic control is provided—offering the use of type in any size from 1 to 792 points, an adjustable leading to 1/10 of a point, either automatic or manual text kerning, space controls to within 1/1000th of an em space, text tracking, a "drop caps" function and word character spacing to within 1 per cent precision.

So there are still many great features in WordStar for Windows—despite its problems in being the company's first major Windows application. On balance, it is probably a good package for someone who needs almost DTP-level control over text and graphics—but doesn't want the complications of having to learn something like PageMaker or Ventura Publisher.

Continued on page 88

Hard Times

It's always a shame to see an old friend fall on hard times—even if that friend happens to be a piece of software. It was this thought which sprang to mind when I started looking at new Wordstar (formerly Micropro) flagship product WordStar for Windows.

WordStar and I go back a long way. In 1984, I used it to write my first book on an old, CP/M-style machine and ever since I have always been glad of that experience whenever I was handed a line editor or memory-resident note taker which responded to WordStar commands. It's one of those "you never forget your first word-processor" sort of feelings.

Given the trouble that WordStar has faced over the past five years—seeing its market share gradually eroded to a shadow of its former self by both WordPerfect and Microsoft Word—I was glad to see that WordStar had finally managed to move into the new "leading edge" arena for producing word-processing products: the Windows 3.0 environment.

Once I loaded and started using WordStar for Windows, my joy was tempered by the fact that WordStar obviously still has a ways to go before it really gets the idea of how to design Windows applications. Simple things which are quite standard in other Windows applications just didn't work the same way in WordStar for Windows.

WordStar for Windows did not, for example, recognise the Microsoft multiple document interface (or MDI, as Windows applications buffs like to call it). If you wanted to have more than one document open at once—and be able to cut and paste between them—you had to use the multitasking power of Windows to open up a second instance of WordStar for Windows! This also meant that there was no list of recently opened documents (a popular feature in Microsoft Word for Windows) and no list of active windows.

Connectivity

Meanwhile, in terms of connectivity within Windows itself, WordStar has managed to work DDE (Dynamic Data Exchange) into the package—thus allowing "hot links" between the data in one application and WordStar for Windows. This is useful—but would be even more useful if WordStar had also managed to build in compliance with the OLE (Object Linking and Embedding) standard. When editing a WordStar document with mixed text and graphics, this would allow you, for example to simply double-click on a graphic element created in Corel Draw and have Corel Draw immediately come up with that graphic loaded and ready for editing. And because the graphic is a "linked" object, any changes made to it in Corel Draw would have been immediately reflected in WordStar for Windows.

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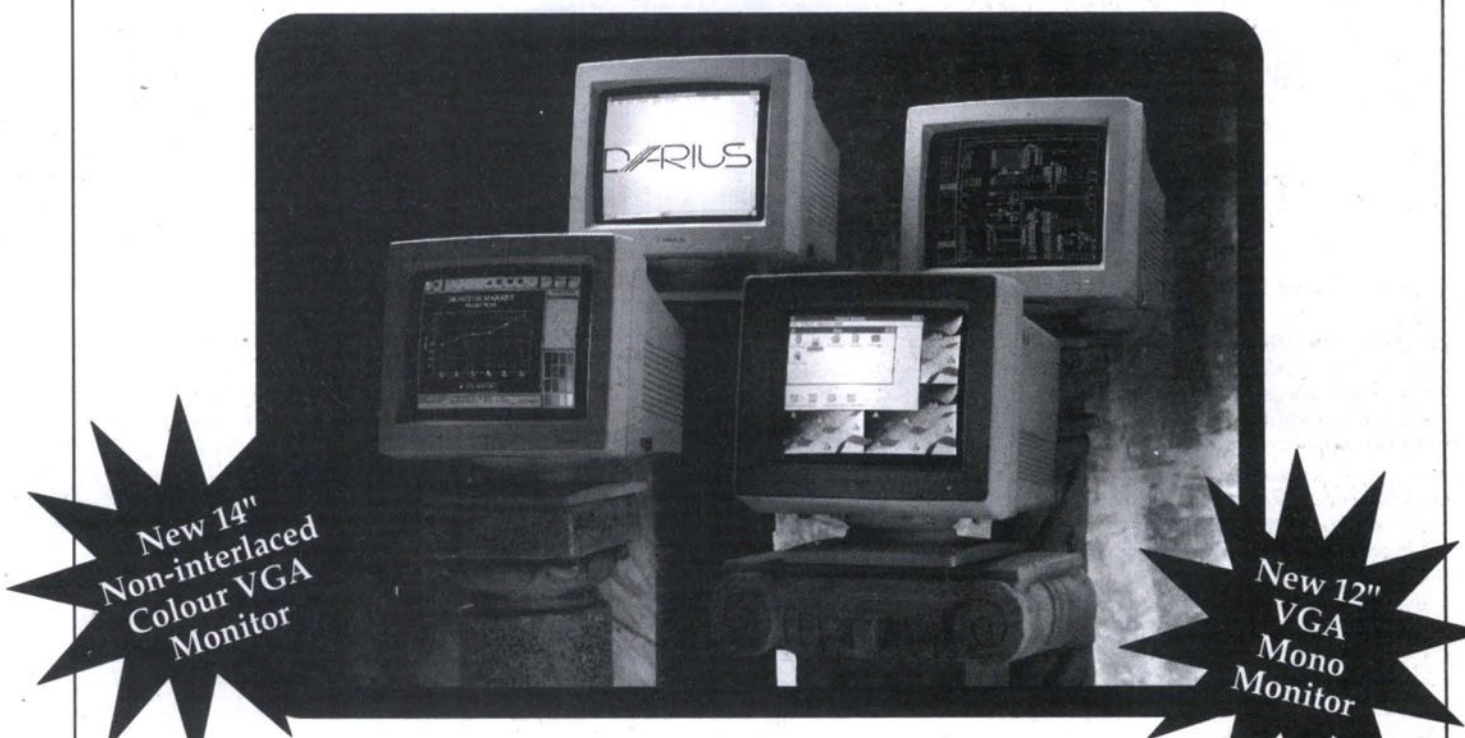

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CorelDRAW Tips & Tricks

By Graeme Bennett

Product: CorelDRAW
Publisher: Corel Systems Corporation
The Corel Building, 1600 Carling Avenue
Ottawa, Ontario K1Z 8R7. Tel: 613/728-8200; fax: 613/761-1806
System: Versions available for Windows, OS/2, Unix

Corel has recently sent out free upgrade disks to all registered 2.0 owners. The new update fixes a number of bugs and adds a few new features, notably the ability to modify, save and load color palette information, search for Pantone ink colors, easier duplication of objects, improved DXF import and export filters (including 256-color support.) In addition, several enhanced options for program customization are available. All are detailed in a 22 page booklet that ships with the upgrade. Also included is a user's guide for the art librarian utility, Mosaic.

After you perform the update, you may be surprised that the opening dialog still says "CorelDRAW 2.0" (we were). Once inside the program, choosing "About CorelDRAW..." reveals that is is indeed version 2.01L.

CorelDRAW tips

In case you hadn't noticed, pressing SHIFT before clicking on the page with the Text tool brings up a special symbol library. There are three libraries available, Dixieland, Geographic Symbols and Musical Symbols which, like most other Corel fonts, correspond closely to Adobe counterparts—in this case, Zapf Dingbats, Carta and Sonata, respectively.

Probably everyone knows it, but tapping the space bar toggles between the currently active tool and the pointer (selection tool).

Pressing CTRL while selecting any handle (the little black boxes that pop up when you click on an object) of an object allows you to mirror that object. You can do this in both horizontal and vertical directions.

Holding down the Shift and CTRL keys while dragging, stretches or scales the object in increments of 100% from its center.

New Features in 2.01

In the new 2.01 version, you can leave behind a copy of an object while moving the object simply by pressing the right mouse button during the move. This works even if you have assigned another function to the right button via the Mouse... option in the Preferences menu. Note that you must press the right button after you begin the move, which seems a rather non-intuitive way to leave a copy of an object where it was before the move began.

You can now duplicate an object directly behind the original by pressing the "+" on the numeric keypad. This is particularly useful for creating outline text effects. (Use this feature with caution, though. The first time I tried it on a one-word paragraph text block, the program locked up.)

Note that, unlike some other illustration apps, you do not need to use this feature for outlined letters, so that they do not fill in. The "Behind Fill" option of the pen tool (accessed, along with many other options, by selecting the first icon in the pen icon's pop-out submenu) is a better way to achieve attractive outlined letters. Note that with Behind Fill, half the outline is hidden, as the name implies, behind the filled text object. Compare figures 2 and 3 to see the effect.

The **CorelDRAW 2.01** update includes a brochure with an offer to join the "Association of Corel Artists & Designers."
On the cover of the brochure, an artist is defined as "Anyone who uses *CorelDRAW!*"
Should we tell the CorelDRAW manual writers that this doesn't make it okay to use all **UPPER-CASE SCRIPT** in the examples.
The illustration at the left is from the CorelDRAW manual. No wonder we see so many bad illustrations. The culprits have probably been studying the tutorials.

August 90, Julie: "When I walked into the ExCITE lab for the first time, there were five exuberant teenagers—summer students, four boys and a girl—creating multimedia applications on Macs and PCs. They were active and chatty, shouting 'Eureka', 'Hey! How'd you do that?' and 'Look at this.'—obviously excited about making media connections with high tech tools."

Gerri Sinclair
ExCITE Lab Director

Exciting Connections

Multimedia projects at the SFU Exemplary Centre for Interactive Technologies in Education (ExCITE) in the faculty of Education

ExCITE views the student as a creative author rather than a passive consumer of electronic learning.

Bourbon Street, New Orleans, April 91. Jude: "It was a warm night. Gerri and I were walking with Tom Furness III, Director of the HIT lab at U. of Washington and designer of the legendary SuperCockpit flight simulator. Speaking of Gerri he said, 'Thank goodness there's someone else looking at virtual reality issues in the field of education.'"

It's 6:30 a.m. and Gerri Sinclair is already on the phone—a conference call with colleagues in Los Angeles and New York. As one of twenty IBM consulting scholars, professor Sinclair is discussing new telepresence techniques for long-distance collaborative work groups.

After breakfast she calls the B.C. Dairy Foundation to learn that *FoodTrack* has won an Amtec media award. ExCITE helped produce the animated Macintosh computer nutritional planning guide for high-school students together with MotionWorks, a local multimedia production firm. The project was funded in part by an Apple Education Foundation Grant.

"It's the type of work I like best," says Sinclair who acted as a designer and mediator between the information provider (the Dairy Foundation), the software developers (MotionWorks), and the end users (high-school students). "I particularly enjoyed the formative evaluation work with the students. A target group of fifty teenagers tested the software, critiqued the artwork and the storyline, gave names to the characters and even described what they ate."

Still working from the office in her house overlooking Grandview park off Commercial Drive, Sinclair calls the Human Interface Technology (HIT) lab at the University of Washington in Seattle to discuss a virtual reality (VR) project involving Science World of BC. If all goes according to plan, museum goers would don 3D goggles and datagloves to explore VR worlds like simulated DNA molecules or human lymph ducts.

Sinclair spends the next few hours finishing a grant proposal to the Science Council of BC for the VR project and reading a student's Masters thesis.She then drives downtown to the Four Seasons hotel where she is speaking at a business lunch meeting. Daydreaming at a red light, she tries to picture the

Figure 2. Text with a 6 point outline, white fill.

Figure 3. Text with a 12-point outline, white fill, "Behind Fill" option enabled.

Upon close examination, you will see that the hook at the bottom right of the letter "R" has a flaw in it, where the outline folds back upon itself. I am unaware of any way (short of manually covering it up with a small "patch") to trick CorelDRAW into exporting this letter or others like it correctly, despite the manual's assertations that the "Break Apart" command will do it. It won't. Nor does it export properly as a TIFF, or print properly to a PCL-type printer. It does, however, print correctly to via PostScript.

To export CorelDRAW images as EPS files for importing into Aldus FreeHand 3.0, uncheck the "Include Image Header" option. To avoid font problems, convert any fonts to outlines before exporting.

Some users also may not be familiar with the differences between paragraph text and text strings. The former is created when the text tool is dragged (as when creating a rectangle), and the latter is created by simply clicking with the text tool. Paragraph text displays as the Courier font (ugh!) on the editing screen, and only the Preview display shows the appearance of the actual typeface.

Paragraph text cannot be fitted to a path, blended, extruded or converted it to outlines—all options available to text strings.

Bugs

Rotating a bitmap and then cutting or copying it to the clipboard almost always causes Windows 3.0 to lock up. Unfortunately, the new update does not fix this problem. According to Corel, this is a Windows problem and is "under investigation."

Extended RAMdrive Problems

Corel frequently creates huge TMP files when working with complex images. Because RAMdrives can only have a maximum size of 4 megabytes, it is recommended that users with extended RAM do not set up a ramdrive to store TMP files in. Writing a TMP file that exceeds a ramdrive's capacity will cause your system to hang.

If You Can't Get a File to Print

It is not hard to create a CorelDRAW file too complex to print to a PostScript printer. Files with many objects, such as those created with CorelTrace or those containing many text objects will tie up a PostScript printer or imagesetter all night, or choke it completely. Even setting the "flatness" of curves to a higher value may not do the trick. When all else fails, try this: export the image as a high-resolution TIFF. Because a TIFF is just a bitmap, it prints relatively quickly and reliably. We've had to resort to this technique more than once to get advertiser-supplied artwork to print.

Users of desktop publishing programs that don't support many file-types (Logitech's Finesse is one; there are others) can also use this trick for accessing Corel clip-art items. In the case of Finesse, just export the CorelDRAW image as a GEM ".IMG" file, which Finesse can load. Just remember to save a copy in CorelDRAW's native file format, in case you want to edit it again later.

Speaking of Saving

Did you know that you can dramatically speed up the operation of the program by turning off the auto-save and "Save Preview Image" features?

CorelDRAW is no speed demon at the best of times, but every little bit helps.

We were surprised to learn that CorelDRAW does not make use of math co-processor chips. According to Corel, the presence of such a chip in your system will not affect the program in any way.

Typefaces

CorelDRAW comes with 153 typefaces, many (if not all) of them clones of well-known faces that often sell for $50 or more apiece.

These fonts, and the 9 megabytes of mostly-good clip art, are excellent reasons to make CorelDRAW part of your computer graphics toolbox.

People often wonder whether they can use these Corel fonts in other applications. The answer is yes, although the procedure can get tricky, depending on what kind of printer you have.

CorelDRAW comes with a font conversion utility called WFNBOSS, (Windows Font Boss), which can, among other things, convert fonts to the Adobe Type 1 font format. With the use of a separate utility, such as Ares Software's FontMonger, you could then translate these Type 1 fonts into TrueType format for use with Windows 3.1.

Adobe Type Manager users can then use the Corel outline fonts as screen and printer fonts from virtually any Windows application—at least if they want to print from a non-PostScript printer.

The catch with PostScript printers is that the system doesn't know to download these outline fonts to the printer; it thinks they are already resident in the printer's memory. To work around this problem, you must manually edit your WIN.INI file in order to get the new Type 1 fonts to download properly. The entire (lengthy) procedure is detailed in the CorelDRAW 2.01 update booklet. ❐

Jude Kornelsen
Special Projects

Noni Mate
Curriculum Editor

Kristof Roomp
Computer Programmer

Blair Rosser
Interface Architect

Dennis Smith
Art Director

Julie Zilber
Lab Administrator

ExCITE lab director Gerri Sinclair says, "Fewer and fewer children today are reading. When I hear that 80% of North Americans get 100% of their inews information from TV, I feel it's critical to teach kids media literacy—how to use video, how to build soundtracks, how to create newsletters—how to avoid being manipulated by slick, packaged information."

Jude Kornelsen with 3-D goggles and powerglove

ExCITE Projects

•The Heritage Post

A full colour newsletter with teaching activities and curricullum ideas on Canadian heritage distributed three times a year to every school and library across the country.

•Multimedia Tools

Audio/Video clipmaker software; Multimedia database browsers; Electronic Magic Markers for composing interactive presentations.

•Teaching Prototypes

Interactive fiction and poetry; Multimedia analyses of Shakespeare's Sonnets and poems of Dylan Thomas; Beatles electronic collage; English as a second language video storybook; Interactive Law Library.

•Commercial Products

Design, evaluation or development of: FoodTrack nutritional guide for high-school students; Journeys, Ginn Publishing's interactive bibliographies for elementary students; Discis books on CD-ROM; Matrix's Multimedia Animal Database.

Bricoleur!

Orlando, FL, Feb. 91, Jude: "We were having sushi with Mal Nechis, an IBM program manager. Gerri was talking about five projects at once when Nechis said, 'Hold it Gerri, you're going non-linear on me!' When we all stopped laughing, Gerri continued as before: her mind galloping along several tracks but integrating everything at once—true multi-tasking."

school assignment of the future. Will it be on floppy disks or erasable CDs? Holograms? How do we prepare today's education students for the realities of interactive multimedia technologies in tomorrow's classrooms?

At the luncheon, she is greeted by Charles Bronfman whose CRB Foundation, together with Canada Post, sponsors ExCITE's largest project: The Heritage Post, a glossy large format newsletter for teachers delivered free to every school and library in Canada. This bilingual publication is written, designed and edited in Vancouver (with French content from Montreal), translated in Ottawa, printed in Toronto, and mailed from Antigonish, Nova Scotia—a truly Canadian distributed networking project.

At the luncheon Sinclair introduces the *Heritage Minutes*, a series of sixty second mini-dramas—*info-commercials* about historic Canadians—currently airing on national TV.

By 2:30 Sinclair is on her way to SFU to check in at the lab. She has a meeting with Ted Baxter, principal of Johnston Heights Secondary School in Surrey, BC, one of three North American schools recently selected for the AutoDesk Cyberspace Educational Research Program. She and Baxter are developing a science curriculum. Teams of students will work with ExCITE staff to design 3D virtual worlds.

By 7:00 o'clock Sinclair is at home again, listening to her eight-year-old son's piano practice while packing her trusty carry-on luggage before a taxi takes her to the airport. She boards an overnight flight to New York for two days of meetings at IBM's Thomas J. Watson Research Centre. The day, though busier than most, is fairly typical.

Want to get involved multimedia prototyping? Call the ExCITE lab at 291-3615.◊

This article was reprinted with permission from the newsletter of the Simon Fraser University Centre for Systems Science. (291-3257)

Simon Fraser University
CENTRE FOR SYSTEMS SCIENCE

Psion Series 3
Pocket-size Computer

Product: PSION Series 3
Distributor: Real Data Systems Inc.
#120–1575 W. Georgia St.,
Vancouver, B.C. V6G 2V3
604/683-7226 Fax: 604/683-6725

By Graeme Bennett

Pros: Good keyboard layout, extremely compact, very easy to use, good internal programs.
Cons: Keyboard too small for touch-typists, OPL not a common language, angle of screen not adjustable.
Price: Not available at press time

Touting a 16-bit CPU, 256K RAM and multitasking operating system, Psion's newest entry into the pocket-sized computer category is both attractive and highly functional. Like the Psion MC-400 that I reviewed in March 1990, this unit goes against conventional wisdom by using its own unique proprietary operating system. That's good news for those looking for a unit that's truly easy to use. That's not to say that the Psion Series 3 lacks connectivity to the world of DOS, Mac or other PCs. Although normally hidden from the user, its internal filing system is MS-DOS compatible in both syntax and hierarchy, and its word processor saves files in Microsoft Word-compatible format.

The unit can be configured to print to parallel or serial printers and can write files via the serial link to a remote desktop PC.

Like the earlier Psion Organiser II, MC and HC series computers, the Series 3 includes OPL, a high-level language that savvy users can access to write their own programs.

If you write your own program, it automatically appears as an icon with the name of your choice in the main System menu, which will scroll to accommodate as many applications as the system's memory and optional "Flashdisks" will hold.

The keyboard is too small for touch-typing, but the keys are spaced far enough apart that two-fingered typists will enjoy reasonable success. It seems that the keys are a little too hard to press. I frequently found words I had typed were missing letters or spaces. Naturally, as I became used to the unit, this problem diminished.

Of course, most pocket-sized computers are primarily used as personal organizers, and the Series 3 is no exception. It includes database, word processing, scheduling, calculation and programmable functions such as alarms and a world map with time zone displays. The database is used to access a Dial function that emits DTMF "phone tones" and can thus act as a universal phone dialer. I must admit I'm not convinced that pulling out your pocket computer, pressing the "On" button, pressing an icon labelled "Data," typing in a person's name, pressing Enter, pressing the Psion and Help keys simultaneously to invoke the dial menu, then reaching over, taking your phone off the hook and laying it down so you can position the bottom of the Psion case (where the speaker is) over the mouthpiece of the phone, and finally pressing the Psion's Tab key to initiate a dialing sequence is any easier than just punching the numbers into the phone the old-fashioned way. It didn't even dial the right number the first time I tried it! (I didn't have the Psion's speaker pointed directly into the mouthpiece.) Oh well—it works well enough if you are calling a series of people and you already have the unit out and it's probably great for speakerphone owners.

I like the "look and feel" of the operating system. It's extremely easy to learn, and convenient to use. I was able to access all the major features without looking at the manual once! And, when I tried to look up connecting the Psion via a serial link, I discovered that was a good thing—the manual is weak.

Neither the table of contents nor the index of the manual make any mention of the words modem, baud, serial, XMODEM or remote link, but all are found in various other places in the manual.

According to a Psion representative, the optional serial link for the Series 3 includes an RS-232c adaptor cable, terminal software with XMODEM and YMODEM support, and either PC or Mac software to enable direct file transfers. Although the review unit we received did not come with the necessary cable to try a remote connection, we also found a menu option labelled "Remote Link (off/on)" and a section to set the baud rate that was not mentioned in the manual.

Like other optional settings, this item is accessed by touching one of the icons below the bottom of the screen (in this case, the one labelled "System"), then tapping the Menu key and using the cursor keys to navigate the drop-down menus that appear. It's all very easy to navigate. All you have to remember is that ESC cancels a selection or Enter chooses it. Menu allows you to see options, and the cursor keys move the cursor or current selection around. Like most graphical environments, there are also keyboard shortcuts for menu selections. There's even a Help key that gives useful context-sensitive help.

I like the Psion Series 3. It's easier than a DOS-based portable, it's attractive and very small. The internal software is good, and it has connectivity options. If you don't mind the tiny keyboard and the fact that the screen tilt is not adjustable, it's worth a close look if you are in the market for a pocket-sized computer. ❐

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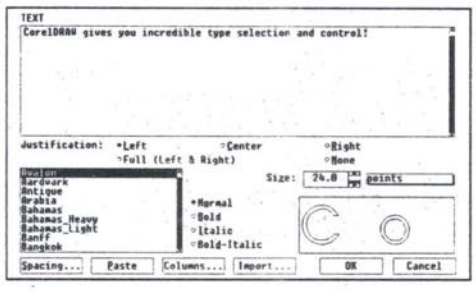
FreeHand vs CorelDRAW

Windows Illustration programs compared

by Graeme Bennett

According to market research, 85% of CorelDRAW users are happy with the program, but when asked to name areas for improvement, they repeatedly named three areas: type handling, speed and user interface.

Based on my own experience with CorelDRAW, these are all legitimate complaints. To include text in a CorelDRAW illustration, you must enter it into a clumsy dialog box (ironically, like the Macintosh version of FreeHand 3.0), in a different font. If you enter CorelDRAW text as so-called "paragraph text," you can't even see the correct font in your CorelDRAW illustration while you are working on it!

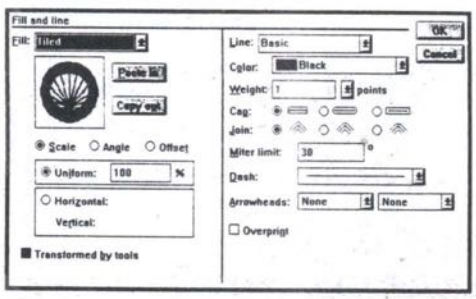


Speed

I have always been surprised at how tolerant users are of CorelDRAW's sluggish performance. I am not referring to overall Windows (system-level) slowness, although certain areas could stand some improvement there, too (print spooling and window refresh speeds, for example, are two areas where Windows 3.0 is very slow). CorelDRAW's main bottleneck appears to be in opening, saving and converting files. It is not uncommon to wait a minute or two to open a complex CorelDRAW illustration, but a comparable file will open in 5 or 10 *seconds* with FreeHand. Such a dramatic difference adds up to significantly higher productivity with FreeHand.

By the way, it is possible to exchange files between the two programs via either one's EXPORT AS ADOBE ILLUSTRATOR 1.1 ".AI" option, or by saving the image as EPS. The FreeHand manual cautions that the former may lose information from the original, whereas EPS does not. However, AI files can be edited and EPS cannot.

Both programs can also import and export other common file formats, including TIFF and Windows metafiles. CorelDRAW has more options than FreeHand, but only FreeHand has a Macintosh version—a boon to users who wish to transfer files or skills between the two platforms.

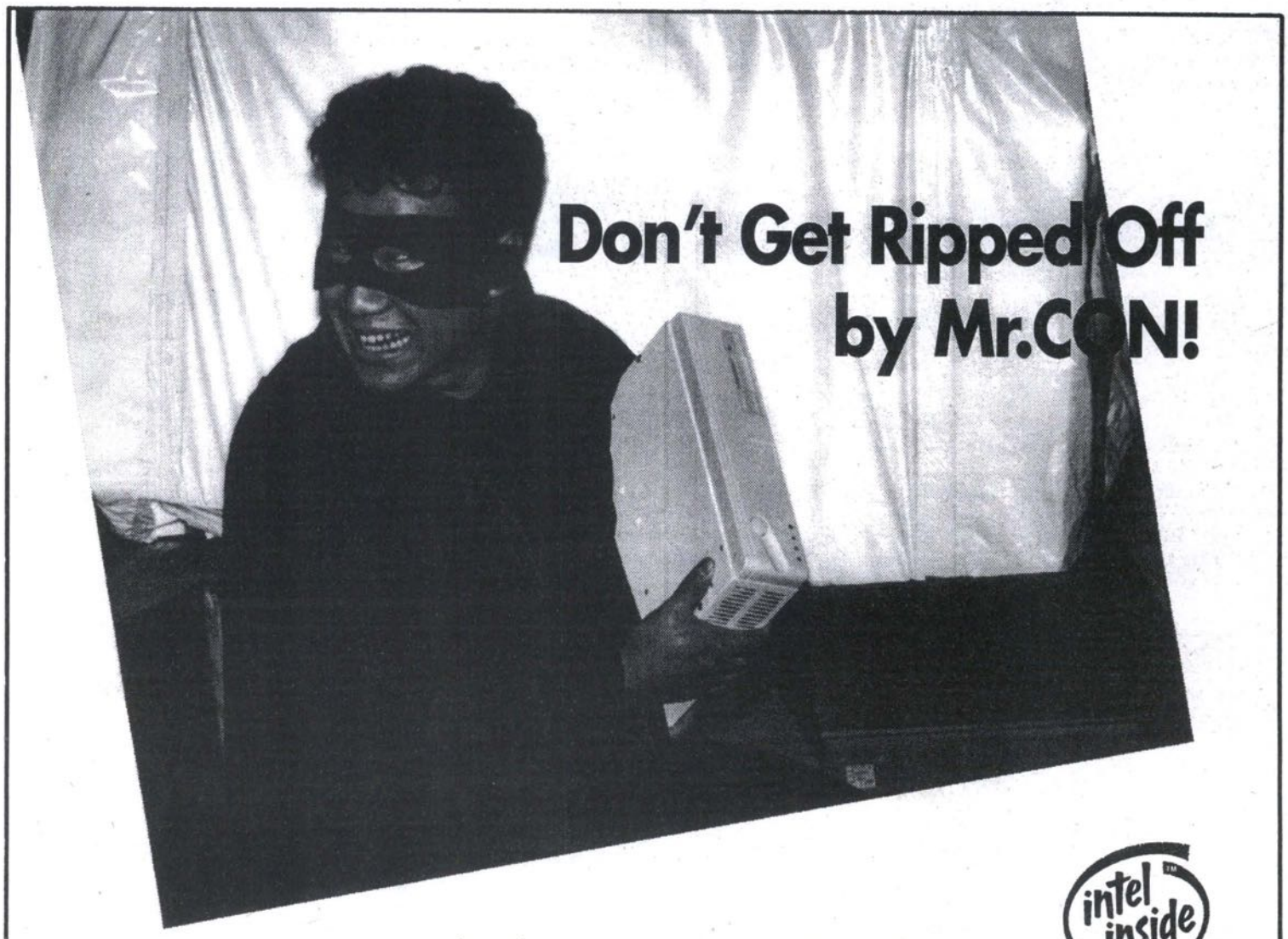


User Interface

FreeHand is the clear winner in the user interface category. Its on-screen "floating palettes" for color, style and layers are much more convenient that Corel's options. FreeHand's palettes resemble those of a word processor or page layout program (the similarity to Aldus' own PageMaker being the obvious point of reference). In particular, the Style palette is enormously convenient for defining blends or fill-and-line combinations, which can then be applied—or changed—in one simple step.

Most FreeHand users enjoy the option of working in full color, with text effects, fills, blends and line widths visible in a WYSIWYG view of the editing screen. CorelDRAW (along with several other competitors, including Adobe Illustrator) cannot do this, although it can display a separate "Preview" screen. Both programs can work in the faster "Keyline view" mode, where only object outlines are visible. The issue of user interface is largely a matter of personal preference, but it is clear that a program that gives you the option of working in "preview mode" has an advantage over one that does not.

Continued on page 62



intel inside

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Continued from page 61

Fonts and Clip Art

CorelDRAW has many strengths, notably its large library of clip-art and the 153 fonts that come bundled with the program. FreeHand comes with no fonts at all, but directly supports Adobe Type 1 and Type 3 fonts—something that Corel does not. Only via Corel's clumsy WFNBOSS utility can you convert Type 1 fonts to and from Corel's proprietary font format.

FreeHand comes bundled with Adobe Type Manager (ATM) version 1.15 (although the package makes no mention of its inclusion and the manual, apparently written before the decision to bundle it was made, says "If you do not already own one, we recommend that you install a type management utility on your system"). Be sure to install the latest version! Earlier versions of ATM will cause FreeHand to lock up in certain circumstances, such as when exiting the on-line tutorial.

Speaking of the tutorial, it is simply excellent. I suspect that most PC users have never seen a good hypertext help system with animation, color and interactive options. Apparently created with Asymmetrix's Toolbook, FreeHand's tutorial is a good example of why Mac users got so excited about HyperCard back in 1987.

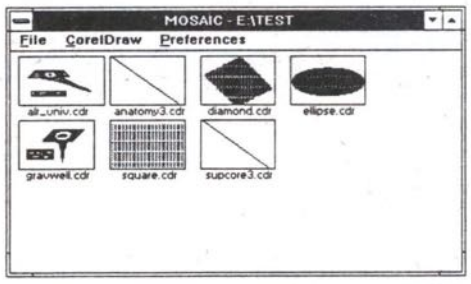
For users wanting lots of fonts, the advantage is Corel's; for those who favor Adobe Type Manager compatibility, the advantage is FreeHand's.

Incidentally, you may have read of the so-called "Font Wars" between Adobe fonts and a format called TrueType. TrueType support, as you may know, is going to be built into the next release of Microsoft Windows (3.1). I am seeing certain publications (the Jan. 1992 *Publish*, for example) already predicting that TrueType will emerge victorious as the de facto font standard on the PC.

Sorry, but I just don't buy it. Apple tried it, and it didn't work. It built TrueType support into the Macintosh operating system, and now that the dust has settled, it is clear that it just didn't fly.

Adobe is still king—some would say, stronger than ever. All service bureaus use PostScript Type 1 fonts, virtually all high-end laser printers and imagesetters use PostScript and you can be sure that Adobe will make sure that ATM works under future revisions of Windows. As a matter of fact, I predict it will soon do what it has recently done on the Macintosh: start giving away ATM (Mac users need only pay US$7.50 shipping and handling for a copy of ATM and four free fonts), and ATM comes free with all new Macintoshes.

I am of the opinion that ATM and Type 1 fonts will eventually emerge as the dominant font standard. Luckily, there are utilities that can convert one font format into the other, so the *real* winner is the consumer.



Clip Art

CorelDRAW is the clear winner here. CorelDRAW has a vast quantity of good-quality art (with a few turkeys thrown in for good measure), while FreeHand includes only a small quantity of art. The sheer quantity of clip art in Corel's collection makes it a foundation for a comprehensive library—something that FreeHand's collection is not.

FreeHand's clip-art library includes a range of computer-related images, maps, flags, sports, arrows, borders, the arts, universal symbols and silhouettes of animals, as well as a few complex nature scenes for use as backgrounds. The overall quality of the FreeHand library of images is excellent.

Corel includes a much wider variety of images, including cartoons, holidays, business equipment, people, transportation, food, science, industry, architecture and other categories. Corel's Mosaic art-librarian utility is great, too, allowing images to be stored on the user's hard disk in a compressed format until needed.

Conclusion

Remember that the usability of a program is at least as important as its feature list. If programs were judged solely on their feature lists, we would have sluggish, bloated, multi-megabyte monsters that strain system resources and the patience of their users (come to think of it, that's what we usually *do* have, these days).

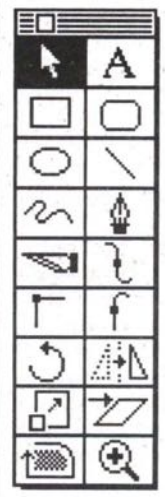
If you have to choose one, I suggest CorelDRAW, if only for its fonts and clip-art libraries. If, however, you prefer quality over quantity, I think FreeHand is the better drawing tool, with a clearly superior user interface. Most professionals will probably want to use both: CorelDRAW for its 3-D extrusion and envelope-shaping features, and FreeHand for its superior handling of color TIFFs, color separations, Type 1 fonts and its best feature—the ability to work in Preview mode. Now that Windows has legitimized the notion of working on a "WYSIWYG" screen, you shouldn't have to settle for less. ❐

Contact: Aldus Info Centre: 1-800-333-2538; Corel Systems Corp., 613-728-8200.

ABOUT THE COVER

Techniques

by Graeme Bennett



Because one of this issue's feature articles is about FreeHand 3.0 for Windows, I used FreeHand to draw the illustration. Here are the steps I used to do it:

First, I set up some equipment and took a few reference photos. After I had them developed, I scanned one of them with a gray-scale scanner and saved the file as a TIFF (which stands for "tag image file format," in case you were wondering).

I then opened FreeHand 3.0 and created a new document one inch taller and wider than the actual dimensions of the cover (this allows for a half-inch bleed in all directions).

I then placed the TIFF image on the page and pulled down some guidelines from the ruler to mark the "bleed area."

Working in "Preview Mode," (a great FreeHand feature), I then proceeded to manually trace over the TIFF, using the Pen tool. This tool makes it easy to create both straight lines by clicking, and curves by clicking-and-dragging.

Although FreeHand has an Autotrace tool, I have not had much success with it in the past. Not only do autotracings generally need a lot of manual touching up, they tend to generate an enormous amount of "control points," which add greatly to the size of the file and slow down printing. In fact, autotraced images often don't print at all on high-resolution imagesetters. So, for safety's sake, as well as accuracy, I did it by hand.

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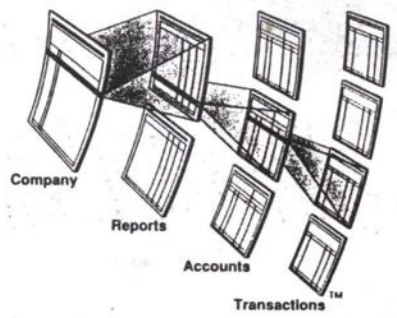

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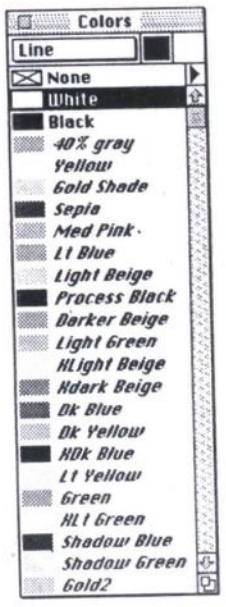
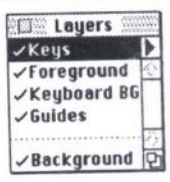


As I worked, I defined colors and gradient fills. The fills I planned to re-use, I defined as a Style (much like a word processor would do). This allowed me to apply fills and colors simply by drawing or selecting a "closed" area and clicking on the style or color name. Best of all, if I decided I wanted to change the color scheme, simply double-clicking a color brings up a dialog box with slider bars to control the color components. By the way, because the illustration was intended for process color separations, I made sure to define all my colors as "Process."

In case you were wondering, the ugly "white shadows" behind some of the lettering on the cover of last month's issue occurred because I neglected to define the shadow color as process. The reason it slipped past me is a story in itself. Normally, we get a color proof of each cover, which allows us to see any changes. When the color proof was printed of the January issue, an option called "convert spot colors to process" was enabled, and the shadow printed correctly. When the cover actually was separated to film, this option was not selected, and the spot color didn't print. Hence, white shadows. Yecch.



Nearly everything in this illustration contains a gradient fill, which also slows down printing, but is a good way to create attractive shadows and other illusions of depth.

In general, it is easiest to create object-oriented illustrations such as this one by working in layers, from background to foreground. Thus, I first defined the background and tabletop areas, then began with the "case" of the computer and monitor, then the screen, mouse and details on the desktop, and finally the keyboard, which was to be the most detailed portion of the illustration, so that it might serve as a focal point.

Because the keyboard contains literally hundreds of individual components, I cheated a bit, and cloned most of them from a few that I had drawn and placed them evenly, using FreeHand's "step and repeat" Duplicate command. I used FreeHand's Layers palette to manage the different groups of objects—for example, the keyboard was done in a separate layer than the rest of the image. By hiding the keyboard layer, the screen redraw speed was greatly improved.

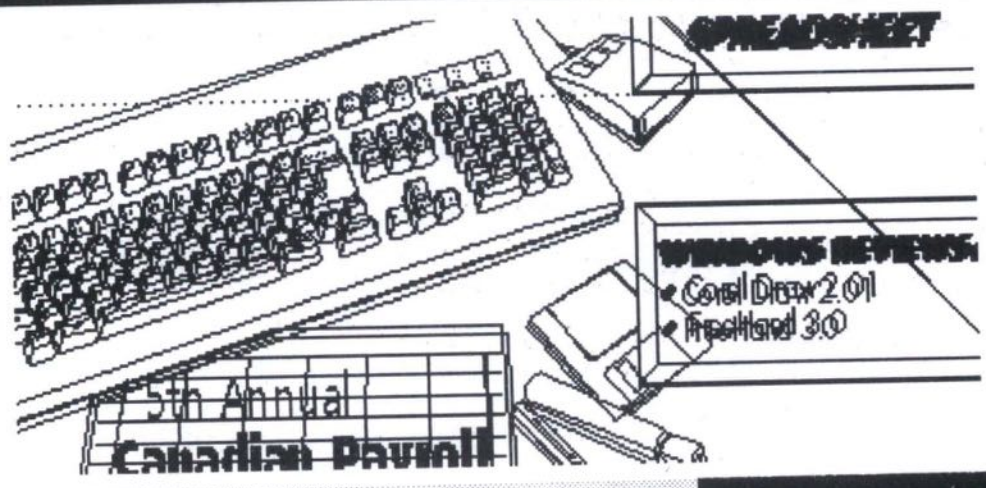
Once the illustration was more-or-less complete, I added the rectangular buttons, logo and text elements. I converted all of the words in the logo to outlines, because they are not standard Adobe Type 1 fonts. This helps ensure that the service bureau will not have difficulty with my custom fonts. FreeHand has the ability to convert Type 1 and (Fontographer) Type 3 fonts to outlines automatically.

Sharp-eyed readers will note a slight change in *The Computer Paper* logo. Because we have officially announced a Toronto edition, it was deemed appropriate to drop the word "Western" from the logo. The replacement line, being shorter, allowed the lettering to be made larger. Dropping the word "Events" from the bottom line helped to balance the new lettering in the available space. I also increased the space above and below the large logo type, which greatly improves legibility.

The final image was output at 1270 dpi to a Linotronic imagesetter.

Last issue, I promised to reveal how to print Adobe Illustrator or Aldus FreeHand PostScript files in full color on the HP DeskWriter printer. Here's how:

Adobe Photoshop can load Illustrator EPS files. Aldus FreeHand can, with the help of Altsys' EPS Exchange program, export Illustrator format EPS files. Simply load one of these EPS files into Photoshop and print, or save in a file format for exporting to the file format (or computer) of your choice. ❐



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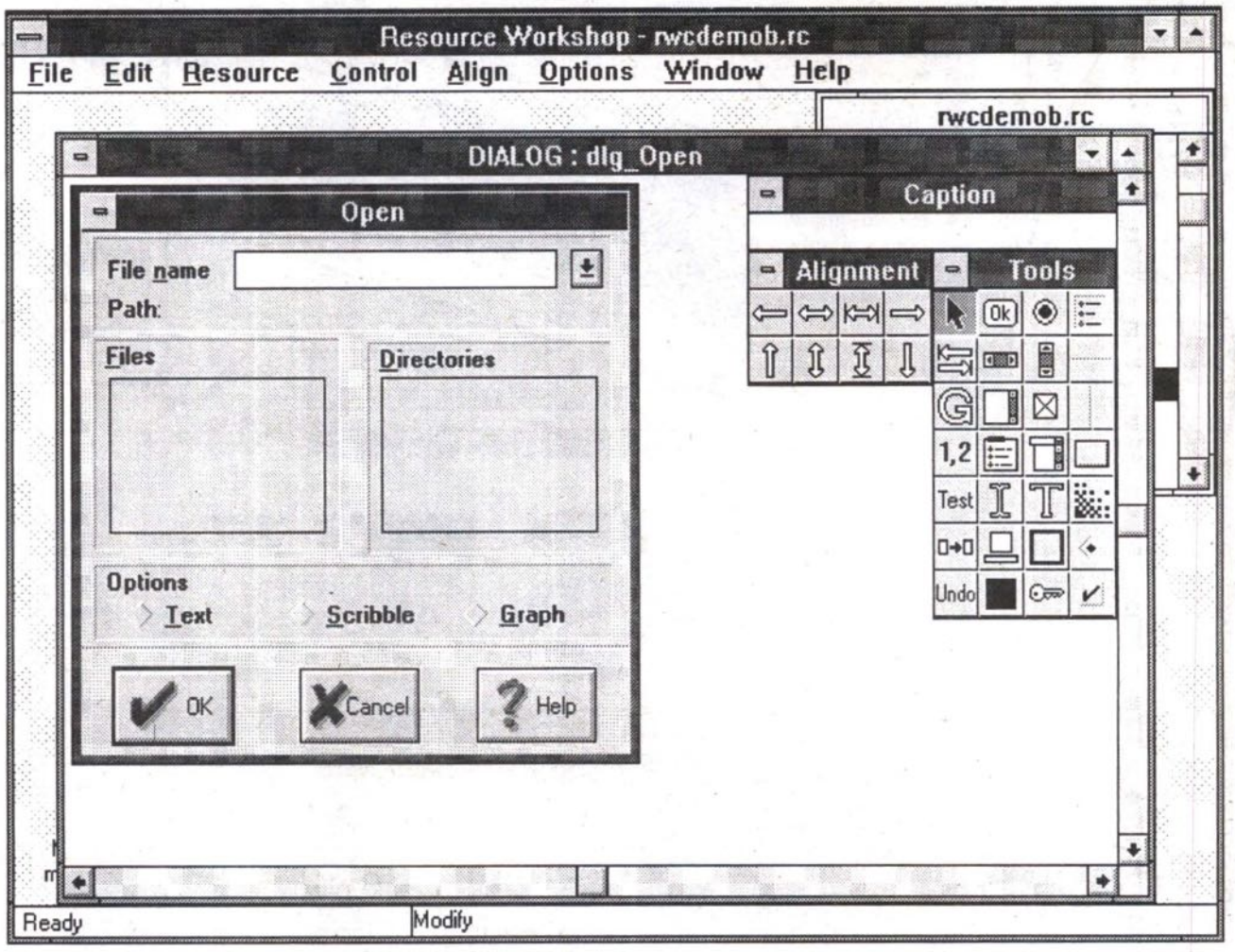
Power Programming with Borland C++



by Stephen Smith

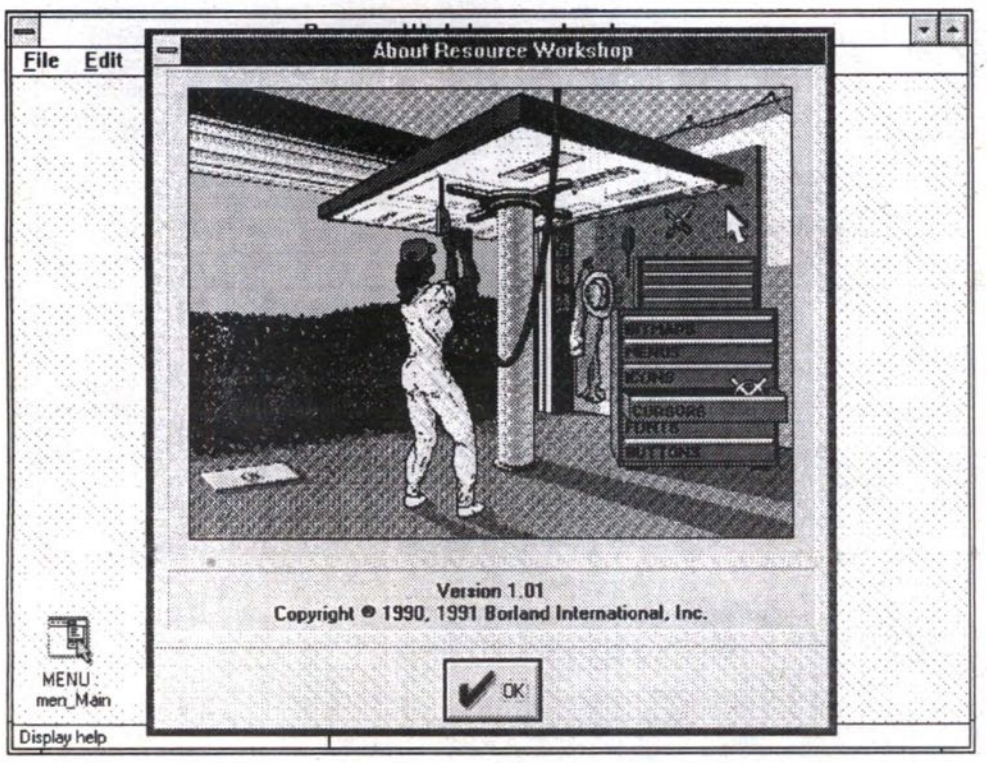
Products: Borland C++ Version 3.0
Publisher: Borland International. 1800 Green Hills Road, P.O. Box 660001, Scotts Valley, CA 95067-0001.
Requirements: Any IBM-compatible computer with at least an 80286 processor, 2 MB of RAM and 28 MB of free hard disk space.
Key Features: C++ compiler, class libraries, integrated development environment, debugger, profiler, assembler and other utilities.
List Price: $649.

Introduction

C++ is an object-oriented extension to the popular C programming language. Developed by AT&T, C++ adds modern object-oriented programming (OOP) models to the standard C language. C++ is upwardly compatible with C, i.e., any program that works under a C compiler should also work under a C++ compiler without any modification. C++ is not an easy language to master. Many people complain that although C is very powerful it is hard to learn and tricky to debug, C++ is even more powerful, harder to learn and trickier to debug. However for many new programming projects the power of C++ is essential and many companies are upgrading to using C++ and OOP.

It used to be that Microsoft monopolized the C programming game for MS-DOS based computers, however Microsoft hasn't been updating its products and now competitors are moving in. Borland originally challenged Microsoft with Turbo C, which Microsoft countered successfully with Quick C. Then Borland came out with Turbo C++ V1.0 that added C++ functionality to the Turbo C product. This package began to sell, but lacked many features and utilities necessary to do professional programming, hence Microsoft C still remained supreme.

Then Borland came out with Borland C++ V2.0 that was finally a complete mature package with everything necessary to do professional programming. This package also had all the added functionality of C++, and sales of this product boomed. The only thing Microsoft had in its favor was better optimization. Borland C++ V3.0 adds better optimization plus a whole slew of new features not found in any Microsoft package. Microsoft will be adding C++ to Version 7 of its own C compiler, but early beta test reports suggest that Borland currently has a big lead. Other competitors include Symantec's Zortech C++ (which also runs on OS/2 and UNIX), Intel C/386, a C compiler for generating 80386-specific programs and Watcom C, that has 80386 code generation and excellent code optimization. It is a pity that Borland C++ does not have an 80386 code generation option.



Many Features

There are a large number of programs and examples included with the package. Most of the programs included contain a great many features. The compiler is ANSI C and C++ V2.1 compliant with global optimizations, precompiled headers for faster execution and supports in-line assembler code. Utilities include separate character-based and Windows-based integrated environments, ObjectBrowser graphical source browser, WinSight utility for tracking Windows messages, Turbo Debugger for DOS and Windows (supports C++, remote debugging over a network or serial cable), Turbo Profiler for DOS and Windows, Turbo Assembler, Resource Workshop for Windows (with the ability to extract and modify dialog boxes, cursors, icons and bitmaps in any Windows EXE file), UNIX-like make utility, Turbo on-line help, Windows resource compiler, Windows help compiler.

Libraries (both regular and object) include ObjectWindows application framework for Windows (class library for easing Windows development), Turbo Vision application framework for DOS (class library for doing nice character-based interfaces), DPMI extended memory support, DOS and Windows runtime libraries, EasyWin library to compile DOS programs to run under Windows with no modification, VROOM library to use Borland's swapping technology to fit large programs into 640K, Windows header files, Borland custom windows controls (such as buttons with bitmaps in them). All the products run under all Windows modes including 386-enhanced (some in a DOS window some as Windows applications). Source code for the runtime libraries, Turbo Vision and Object Vision are available separately for about $70.

Hard to Install

The installation program is easy to use and well thought out, with one glaring problem. To install the programs you require twice the disk space as what is finally required. This is because the install program copies all the compressed archive files from the floppy disks to the hard disk before decompressing them and finally deleting them. Most install programs de-compress from the floppy to the hard disk, which is a bit slower, but does not require any intermediate disk space. Thus to install everything that comes with the full C++ system requires 40 meg disk space to install, but what is installed only requires 28 meg. Similarly for Turbo C++ for Windows—it requires 22 meg to install and occupies 12 meg when completed. For people like me with near-full hard disks this is a very major problem, and caused me great difficulties in installing the program.

Hard to Learn

The package comes with many reference manuals, all of quite high quality (in fact the full Borland C++ package comes with 12 pounds of manuals). However one glaring omission is an introduction to C++ (or C); there is only a language reference manual. Borland C++ Version 2 came with a very good introduction to C++ for C programmers, but this unfortunately has been dropped from the new version. Beginning programmers or C programmers looking to learn C++ will have to purchase an additional book (a catalog is provided) for probably around $40. If you are planning on doing serious Windows programming you will also have to buy a book on it such as "Windows Programming" by Charles Petzold or the manuals for the Microsoft Windows Software Developer Kit (which are now sold separately). Borland provides an online Windows API reference and a manual on programming Windows with ObjectWindows but the additional book is necessary.

Great Value

This package is currently the best C/C++ general-purpose programming package for the MS-DOS and Windows environments. The number of excellent programs and utilities included in these packages makes them unbeatable value. There are many utilities not found in other products that really enhance programmer productivity. As a Windows programmer I especially liked the EasyWin library, ObjectWindows and the Resource Workshop. The beginner programmer should be warned that this is not an easy system to master. ❐

Stephen Smith is a Vancouver area computer consultant specializing in programming for the Microsoft Windows environment. You may reach him at 604/224-5242.

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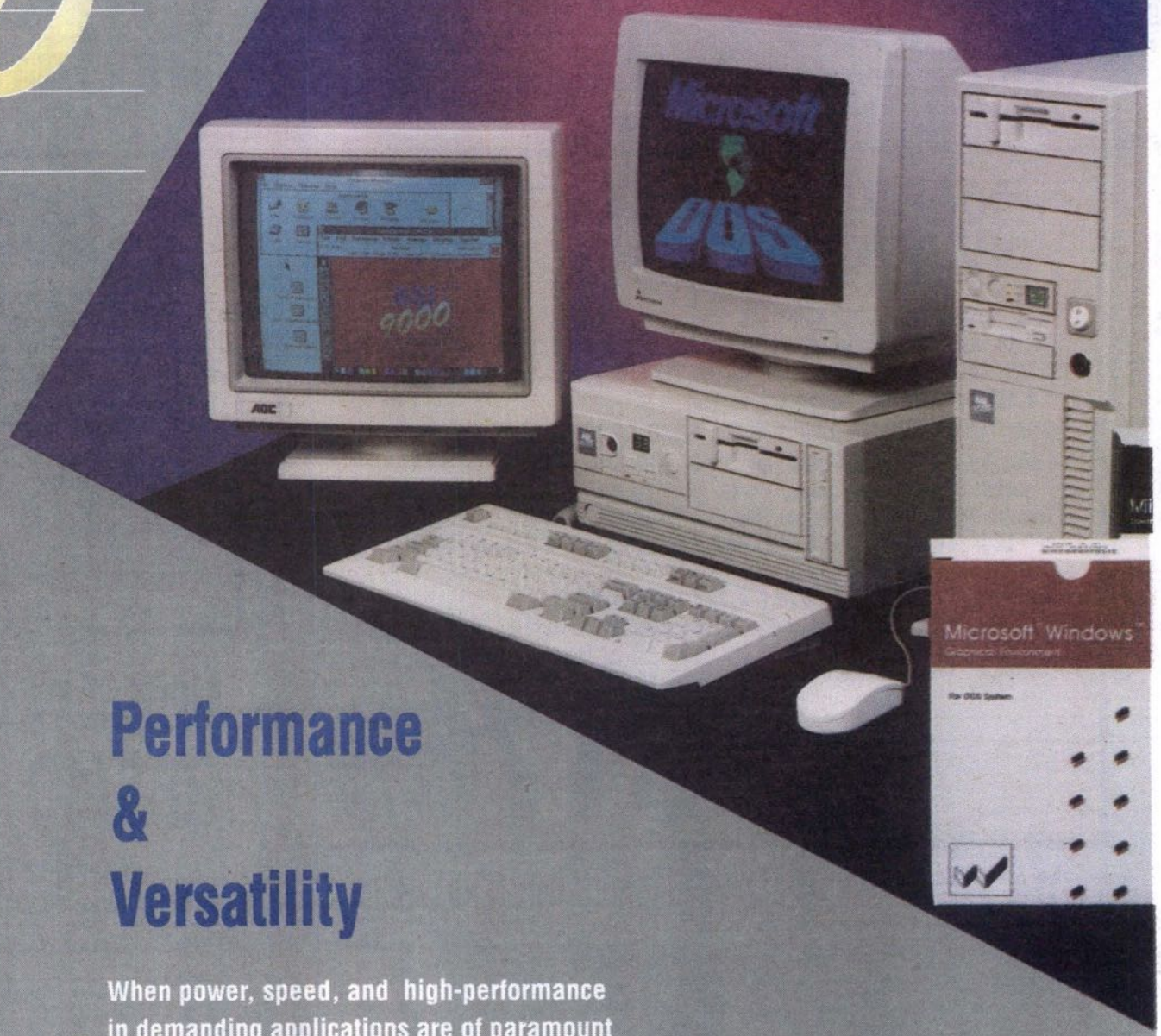

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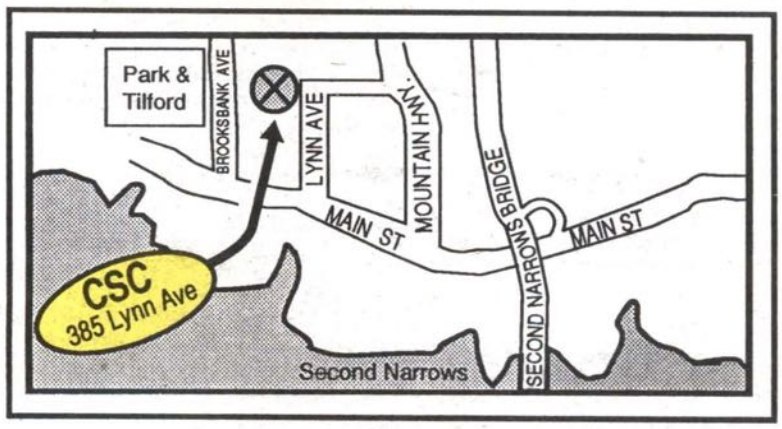

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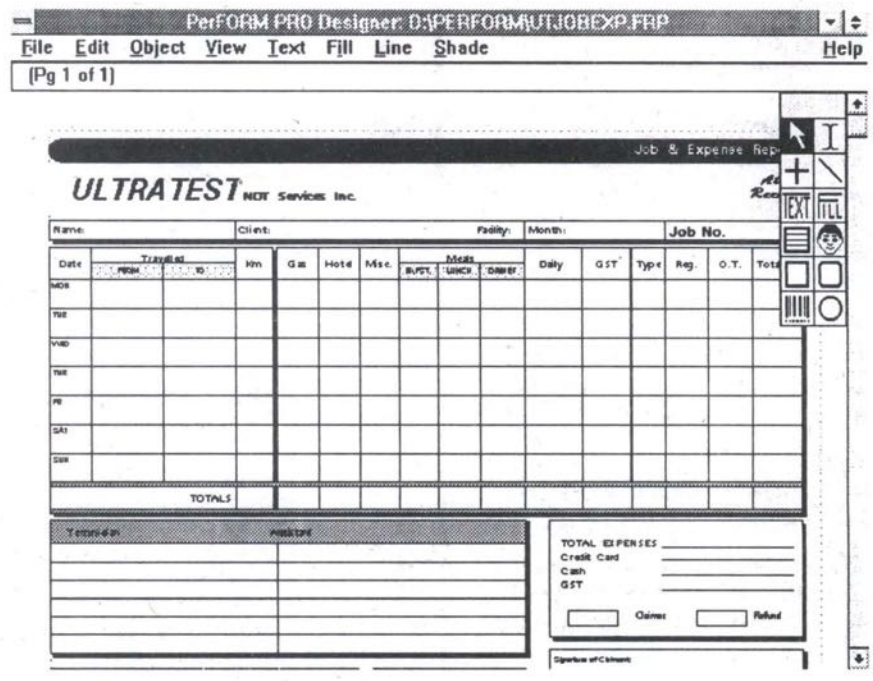
PerFORM PRO for Windows 3.0
Forms Design Software

Product: PerFORM PRO Version 1.0 for Windows 3.0. A forms design and form filler system.
Publisher: Delrina Technology Inc., 1945 Leslie Street, Don Mills, Toronto, Ontario M3B 2M3. Phone (416) 441-3676.

By Jacques Surveyor



Overview

PerFORM PRO is a prime example of what happens with software evolution. As DOS gets around the 640K barrier through Windows and DOS extenders, software evolves. Thus, word processors become more like desktop publishers, spreadsheets sprout full-fledged 2- & 3-D graphics plus database query modules. In the case of forms design packages such as PerFORM PRO, they get promoted into the big leagues of database q u e r y / form filling and database publishing. So small but successful Delrina, Toronto-based developer of forms-design software with PerFORM, has found itself thrust into a much broader market with the introduction of its Windows-based PerFORM PRO. In the world of forms design, Delrina had Formworx, JetForm, and some decent shareware as competition. But PerFORM PRO has not only Windows versions of these products but also Xerox' Formbase, Borland's ObjectVision, Gupta's Quest, Aldus' PageMaker—Database Edition and every database product with a halfway decent data entry Screen Painter as potential competitor. Talk about out of the frying pan and into the fire....

This review will examine how PerFORM PROdoes a topnotch job of forms design and printing—particularly of empty forms suitable for copying and later use as manual fill-in forms. With a few simple extensions, PerFORM PROcould make its strong forms filling and database publishing capabilities also tops in the field. In sum, if all you need is to design a number of forms, PerFORM PROwill quickly earn its keep; but for filling in and publishing database files there are some limitations that you may want to consider (and so please do read on). However, also bear in mind that no product on the market offers the same versatility for the price.

Requirements & Limitations

PerFORM PROis a Windows 3.0-based product so you will need at least a '286 machine with 640K. Use Delrina's DOS-based PerFORM for better performance on XT and slower '286 machines. As is generally the case with Windows graphics programs, PerFORM PROreally shines on a '386 PC with 2MB or more of memory. If you plan to use the database form-filling features, be careful—PerFORM PRO only works with dBASE tables or ASCII flat files. If, for example, you need to access and fill-in directly Paradox, Oracle, or Rbase tables (or maybe Excel or 1-2-3 spreadsheets) then PerFORM PRO currently will not meet your needs.

Ease of Setup & First Use

If you are an experienced Windows user, you will hardly need the manuals as the setup is easy; most design and fill-in operations are intuitive, and the online help offers context-sensitive, indexed and key lookup features. If you are new to Windows or forms design programs, rest assured that Delrina has provided a good balance in its intro to Windows features, easy-to-follow tutorials, many sample forms, and well-indexed reference materials.

The Getting Started manual allows an experienced user to get going with a minimum of fuss while at the same time providing the novice with all the details for becoming comfortable with the product quickly. Individual manuals for Forms Design and Form Filling provide both reference and tutorials/hints to steer the user through most needs. However, PerFORM PRO's ease of operations and many keystroke shortcuts make simple the tasks of learning and later re-using the program.

Forms Design

As a constant and loyal user of WordPerfect 5.1 and Ami Pro 2, my first reaction was to see if I couldn't design forms just as easily in either of these programs. So I did a calendar form with some fill-in boxes as a test. Of course, you can create the forms in both programs—and pretty easily (especially with Ami Pro's tables features); but it was even faster and easier to do in PerFORM PRO. PerFORM PRO calls tables "combs"—whatever the name, they've made the task of creating tables, in fact all the paraphernalia of forms (also known as objects in PerFORM PRO), easy to do.

PerFORM PRO divides forms into eight basic objects—and it has an icon bar with each object for quick selection and creation of the next element of your form design. These eight objects are square corner box, rounded corner boxes, combs, circles or ellipses, vertical or horizontal lines, diagonal lines, barcodes, text, and fill text. Again, at first, I thought this is not enough, but after working on a few real forms, the Delrina objects quickly make sense.

Even more helpful is the combination of keyboard and mouse short cuts used to help design (and later for filling in) forms. For example, it was not long before I was using CTRL-W and CTRL-H to change between page and working views (i.e., side to side). Likewise, double-clicking on any object brings up its attribute dialog box, etc. For me, Delrina has struck a nice balance of design objects and features for creating forms—yes, there are no elaborate tools for curve and text manipulation—but if I want to design a logo or graphic that's what CorelDRAW or Paintbrush are available for. And some features such as barcodes and a wide range of shading, etc. are not to be found in word processing/DTP competitors. Overall, PerFORM PRO rates very good as a forms design and assembly tool.

Printing

Printing quality, speed and flexibility are all important for a forms program. To test it, I had to move PerFORM PRO from a Gateway 486/33 to a Compaq 386/20 where the HP/IIP was available. De-installing and re-installing were easy and the performance hit was not too bad—startup and Windows' screen refreshes are similar to other Windows products—slow. I ran the Ami Pro, WordPerfect 5.1 (DOS version) and PerFORM PRO "identical" forms to an HP Laserje IIP with 2.5MB of memory. PerFORM PRO is distinctly faster than Ami Pro (20-50%) and slightly faster (5-10%) than WordPerfect.

More important, the quality of the printed forms was uniformly high except for shading. All products had problems with one or two of the grades of shading. Some PerFORM PRO shades lacked WYSIWYG degree of shade change; but a note in the documentation addenda shows how to correct this. Also, the Windows Print Manager should be turned off when printing more than 4-8 pages of forms/output because it inevitably overflows. Finally, with Type Director fonts, PerFORM PRO does not need, but does take advantage of, Adobe Type Manager or Facelift print enhancers. In sum, expect high print quality and fairly good print speed from PerFORM PRO.

Forms Filling

As a forms filler, PerFORM PRO has its toughest competition. The problems are three-fold. First, as noted in the limitations, PerFORM PRO supports only dBASE and ASCII files for direct reads (and there are a few further limitations on filling ASCII files). Other "form filling" programs (I put quotes because these products do not have the same ease of use and range of forms design features available in PerFORM PRO) such as Borland's ObjectVision and Gupta's Quest allow direct form filling to a number of products (e.g., ASCII, dBASE, Paradox, Btrieve, Lotus 1-2-3, Excel, etc.). Second, unlike the above products and such others as SPC's Superbase 4 or Blyth's Omnis 5, PerFORM PRO does not handle the one-to-many records relationship well. A typical one-to-many record relationship occurs in a sales order. Typically, the sales order form has two underlying tables. The sales order table has all the customer info and the items ordered has a list of the items ordered by the customer. PerFORM PRO Filler has no problem linking from the sales-order table to the items-ordered table as long as the customer orders one item; but many items presents real problems. There are work-arounds but they can quickly become quite complex.

The third problem is actually a trade-off of programming power and flexibility versus speed and ease of programming. PerFORM PRO takes a form-filling approach to specifying how forms are to be filled in. It offers a wide range of features and control over fill calculations, default values, verification by user definable masks/picture fields or range checks, subsidiary fill-ins by range lists or table lookups, extensive fill field and form security features, etc.

In sum, a robust set of capabilities which handles 90-100% of fill-in requirements. Since the fill attribute dialog box handles 70-80% of these "programming requirements," creating the fill side of the form is easier than programming. But there is a trade-off—ease of setup by using forms "programming" means some complex procedures such as multi-table verifications or complex dependent fill-ins are best left for the database system to handle. In fact, this summarizes the approach to take with PerFORM PRO Filler in general—let the database system do the complex tasks, use PerFORM PRO for quick, forms- based data entry, and then look for the Data Publishing dividend below.

Database Publishing

Some programs have a hidden golden nugget, a cumulative benefit coming from all the features which meets an extra need. This is the case with PerFORM PRO and Database Publishing. Remember this from above—PerFORM PRO is easy to design forms with. It is also easy to "program" the forms for fill-in. Again, you have extensive control over not only how the fixed form text looks but also how the filled-in text will appear as well—e.g., you can change fonts, font size, bold, underline, etc. Finally, the print speed of PerFORM PRO is well above average. *Voilá*, you have PerFORM PRO Database Publisher.

Until the recent emergence of Windows database programs such as SPC's Superbase 4 and Blyth's Omnis 5, traditional PC database programs such as dBASE, Paradox, Rbase, etc. have been woefully lacking in print control features. Hence, the need for database publishers which allow you to fill out and print data in forms suitable for more than computer lineprinter paper. By combining a Windows batch command processor like Winbatch (shareware) or Softbridge's Bridge Toolkit with PerFORM PRO Filler one can create a very useful automated database publisher.

Conclusion

At a street price of $C189, PerFORM PRO is [illegible]se high payback utilities. If you [illegible] forms for manual and elec[illegible]y and would like to improve [illegible]ase output in the bargain, then look no further for a program with forms design power and general ease of use. ❐

Jacques Surveyer is a partner with Application Builders, a Calgary software consulting firm. He can be reached at (403) 229-9551.

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GAME REVIEW

Falcon 3.0
Combat Flight Simulator

by John McCormick

Requirements: A 12 megahertz, 80286-based system is the absolute minimum needed, with a 386 or full 486 recommended along with a minimum of one megabyte of RAM required and four MB recommended. Full VGA graphics, hard drive, high density floppy, and MS-DOS 5.0 or DR-DOS 6.0 are required! Math coprocessor is optional

From: Spectrum Holobyte, 2061 Challenger Drive, Alameda, CA 94501. Phone 510-522-3584.

Price: $79.95

PUMA Rating: 4 on a scale 1=lowest to 4=highest

Summary: A new level of sophistication in both graphics and action for fighter simulation buffs.

What? A mere game that won't run on a computer with less free memory than MS-DOS 5.0 will free up and isn't really comfortable without at least two megabytes of memory to play around with? They've got to be kidding!

Math coprocessor or 80486 suggested? What is this, a game or a mainframe business program?

Yes, that was my reaction when I first looked at the package, but since I happen to love flying, games, and fast computers, such demands certainly weren't going to deter me.

Falcon 3.0 is the first game in nearly two years that didn't get reviewed on my designated "game" machine, a Zeos 386SX, but fortunately I just happened to have a 33 MHz Zeos 80486 with four megabytes of memory and a one megabyte super VGA graphics card sitting around waiting for some software hot enough to put it through its paces.

I'm glad that review machine was here and waiting because five minutes into Falcon 3 I knew that not only were they not kidding, but that I was going to be spending many, many hours with this fantastic new combat flight simulator.

As if the memory requirements and five high-density floppy disks (with compressed files yet!) weren't enough to warn you that this is a major program that pushes the envelope of PC simulations, the 340 pages of fully indexed documentation should set you straight. I've got C compilers with less documentation.

But for all its bulk, the manual is not intimidating and to really get the most out of this simulation/game, it is mandatory reading, at least as far as the end of the Air Combat School section which trains you how to fly the General Dynamics F-16 Falcon fighter.

I really recommend that you go through the Red Flag weapons training session before you head off for Kuwait and your first encounter with a Mirage or the latest MiG.

Of course I am free to ignore my own advice, so I immediately fired it up and flew around for a couple of hours over Kharg Island before I even glanced at the documentation, so don't fear that this plane is too complex to ever fly - it actually handles very easily; it is just the combat that poses problems, that and your wing man. Oh, did I forget to mention that you not only fly your own fighter, you control an entire squadron?

If you happen to have two demon computers handy, you can also link up and fly a joint mission with another player.

The heads-up flight data display is not new to this sort of simulator, but it is by far the best I have seen.

The near TV-quality of the graphics explains why so much data is included on those floppy disks. I have never seen this level of realism on a hard disk-based game of any sort.

Most of you will probably, like me, want to get right to the action, and while really skilled flying, and all combat missions, will require hours of practice and training, the game's designers are game junkies too and have included an "instant" flight mode where it only takes seconds from initial start-up to 450 m.p.h. flight over the desert of Kuwait.

Besides the Kuwait scenario, Falcon 3.0 includes air maps and battle scenarios for Panamanian and Israeli air space, covering a total "landscaped" surface area of 90,000 square miles each.

I won't bother with all the details of the aircraft; there are just too many to go into and, besides, anyone interested in spending this much money on a "mere" game will already know something about these fantastic planes.

But for the uninitiated, the F-16 Falcon is

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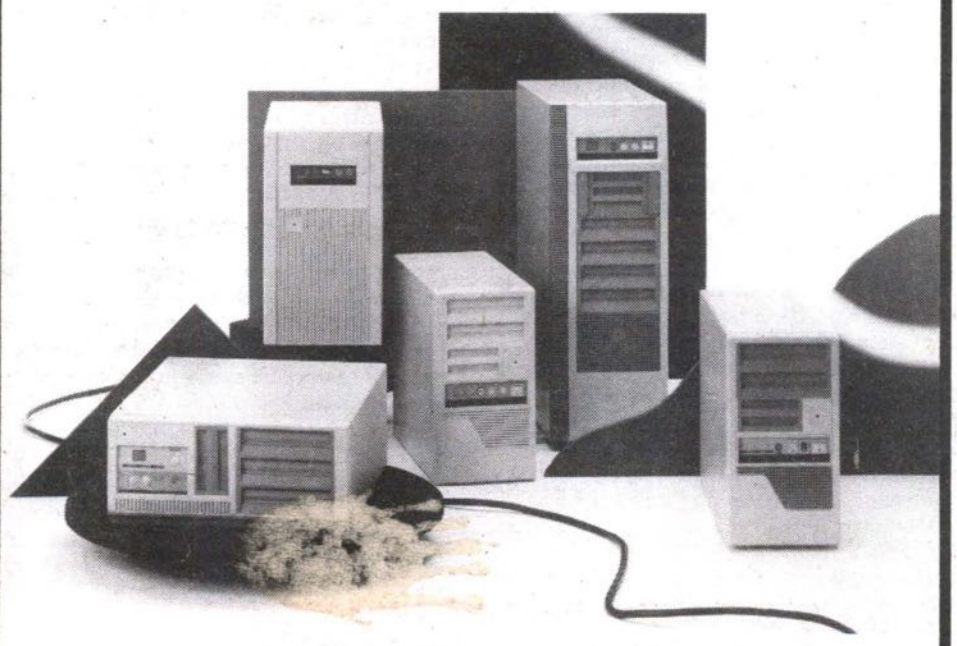

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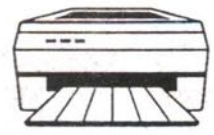

GAME REVIEW

a Mach 2, single engine fighter that carries a crew of one and is normally equipped with a 20 mm six-barrel cannon and two Sidewinder or Sparrow missiles. The F-16 can also carry up to 15,200 pounds of additional weaponry.

The U.S. Air Force has more than 1,500 of them, and they are also used by some European countries, Egypt, Israel, and Pakistan.

Falcon 3.0 includes training sessions, as well as bombing runs, air-to-air combat, and close combat and rescue mission support.

Animated cinematic graphics and sound are both digitized for added realism.

As for that math coprocessor, if you have one (or are running a full 486), you can access one additional scenario, a "high-fidelity" option which offers an actual flight model developed for Air Force training.

By the way, the designer and at least one of the programmers of Falcon 3.0 have done some flying at the civilian Air Combat USA over the Miramar (Top Gun) range.

If you have the computer power to play this game, by all means grab it; this is a fantastic combat flight simulation package, suitable for everyone from novice pilots to real combat pilots.

Promised soon is a way to link up your Falcon fighter with the famous A-10 "Avenger" Thunderbolt close support plane, the flying 30 mm cannon better known as the Warthog.

One special note: this is the first game I have noticed that specifically supports Novell. To play with two people you need either a Novell LAN, a null modem cable, or two 2400-baud or faster modems.

Other supported options include Roland MT-32 or LAPC-1 music cards and Ad Lib or Sound Blaster sound cards; mouse; joysticks; and ThrustMaster game control.

Rating

PERFORMANCE: 4 Utterly fantastic.

USEFULNESS: 4 Fun and realistic; the only drawback is the need for really heavy computing iron to run it in full mode.

AVAILABILITY: 4 Spectrum Holobyte games are widely available.

MANUAL: 4 Documentation and accompanying maps and quick-reference sheets are all clear and as simple as they can be considering the amount of information they have to convey.

Contact: Tom Byron, Spectrum Holobyte, 510-522-3584, or fax 510-522-3587.

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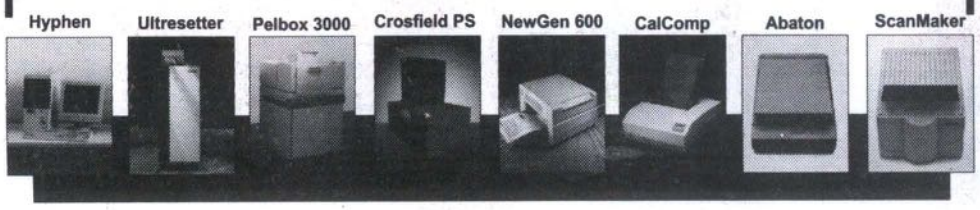

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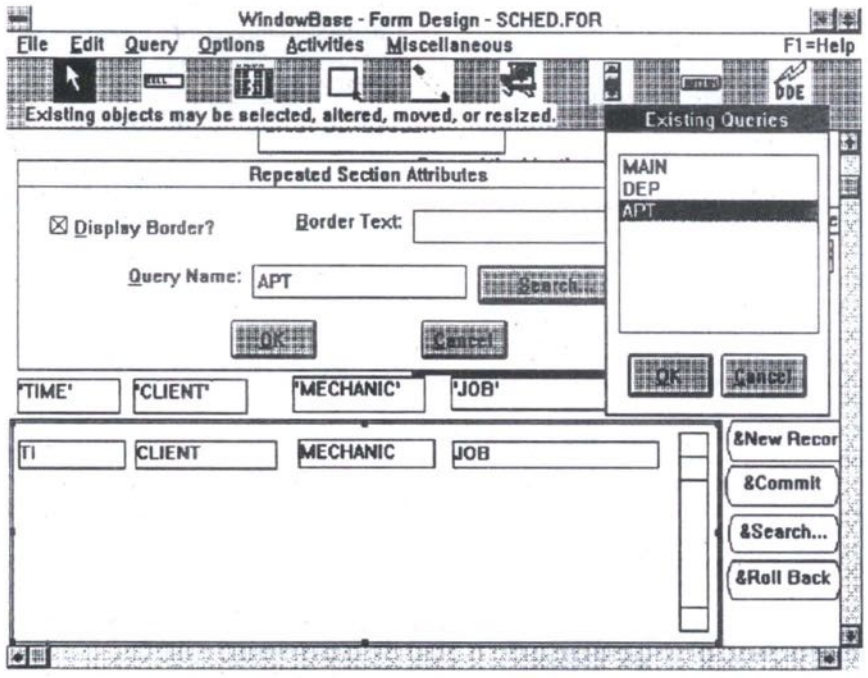
WindowBase 1.0
The Power of Arrival

by Thomas Fee



Product: WindowBase 1.0
Publisher: Software Products International, 9920 Pacific Heights Blvd., San Diego, California 92121-1697; 800-937-4774 fax: (619) 450-1526
System: Windows 3 on a 286 or higher. Windows must be running in either standard or enhanced mode.
Price: US$495

Looks May Be Everything

The front end is where WindowBase shines. It is impressively user-friendly in either of its two guises, which Software Products International (SPI) calls "open" and "bound." Think of "open" as running it with the full application development capabilities available and "bound" as running the developed application where the system has been fully customized for a specific task. Database applications developed with WindowBase can be used by practically anyone after a quick introduction. The real complexity is determined by the business context.

The application developer will have to learn WindowBase by reading and doing but its overall clarity and friendliness makes the process a real pleasure. There is nothing glitzy about the package: no slide shows nor online instructions. Instead, the tutorial takes up a full volume of printed material supplemented with sample files. It is serious business, but the clarity of presentation is outstanding. Overall, the quality of the manuals are excellent, with excellent illustrations and organization.

Tapping the Familiar

WindowBase implements a free-style spreadsheet kind of approach in reports or forms. You place cells in either and give them names. By entering formulas and references to other cells, you effectively use a form/report as a free-style worksheet. Database fields are special cases of cells. Since cells can be freely located and made invisible, the approach is very flexible.

Cells can call a respectable complement of built-in functions. One calculates a depreciated value of an asset using the double declining balance method. Certain date functions are exceedingly convenient for business applications. For example, one figures out, given a date, which quarter (calendar, not fiscal) it falls in. Another one tells you how many day are in a given month. Throwing in a WYSIWYG user interface, all this makes for an unbeatable worksheet interface.

Not All Mousetraps are Alike

Being a version 1 product, there are some limitations. Some needed items will not be available for awhile, most notably a host language interface kit, a network version, and a run-time copy. Currently, the most serious situation is a bug which prevents SQL scripts from running correctly from a menu, though you can run them from a special SQL screen. While it is possible to work around the problem, a maintenance release is mandatory. SPI deserves praise for having an 800-number reachable from Canada and for providing excellent phone service, religiously returning my calls in every case.

Relational engines are hard to make and the one under WindowBase, Coromandel's Integra SQL, runs sluggishly and does not support referential integrity. Instead, WindowBase takes the common approach of enforcing RI in screen forms, using "must-match" cells. Cascade delete, but not set-to-null, is supported in forms. SPI's SQL dialect immensely improves on the ANSI standard by letting you: 1) rename database tables, and 2) directly assign the result of an SQL statement to either a temporary or permanent table, both of which can be created on-the-fly. Additionally, you can export/import tables to other formats, such as binary or text files, on-the-fly using their SQL. Since you can specify the delimiter character, you can produced the comma-separated-values format so beloved by Lotus.

Refining Traditions

If you measure the 4th-ness of a 4GL by the number of defaults it produces, WindowBase is right up there. You can produce a form or a report merely by asking the genie in the computer to do it and things will appear and arrange themselves on the screen for you in a very reasonable way.

At your command, WindowBase can creates various Windows screen objects for certain pre-defined jobs. For example, buttons to step thru records, the usual Next/Previous ones, are pre-fabricated. This means there is no programming. Indeed, aside from writing SQL scripts, programming is not possible as there is no built-in programming language. This does have a down side. Certain tasks are very record oriented, as oppose to table oriented, and can't be done using SQL.

Reporting is done with report forms and is very similar to screen, i.e., interactive, forms. Both are designed with the mouse, which is effectively exercised. You can do a marquee select on a number of objects and move them as a group with the mouse. It gets help from on-screen rulers in both dimensions with T-squares sliding on them. Snap alignment is possible and takes the guesswork out of the layout process.

We Need Team Players

WindowBase integrates well with other Windows programs. DDE with Excel works very well and so you can print charts along with your database reports. WindowBase can act as both DDE server and client, though for security you can disable the server.

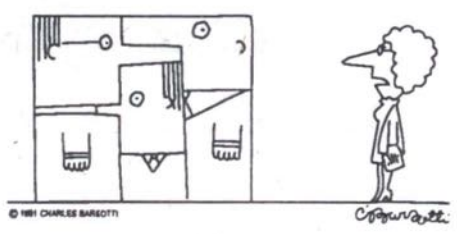
Because WindowBase uses windows, it dissociates a form from the tyranny of the actual screen/window dimensions. Consequently, you can design a form to conform to a printed page, i.e., in portrait orientation, yet use it online on your typical monitor, which is landscape oriented. Every screen form is automatically printable. This is an incredible functional strength and means that an invoice you enter on screen can routinely be converted to hard-copy, without extra development cost. All your graphics, e.g., company logo, are automatically supported.

Summary

In terms of technical depth, WindowBase can handle modest database tasks very well but will not satisfy complex requirements. Its forms do not have some of the sophistications needed, such as triggering SQL scripts to be run on events, e.g., whenever a record get created. Forms are presently single-stage and can benefit from multi-block or multi-stage operation, with pre- and post-triggers.

WindowBase installs easily and spending some 20 hours in learning gives you a secure understanding of most of your resources. If it can handle your job, WindowBase is a super product. It can interface to B-Trieve, Open Access, and dBASE III/IV via a gateway. SPI is currently working on a version of WindowBase for SQL Server for delivery in 1992. However, for companies with a small number of concurrent users (note: concurrent), say five or less, a database server may not be economical. Missing from the SPI lineup will be a file server (i.e., a simple networked) version with a cheaper workstation run-time version.

Thomas Fee is a consultant specializing in small-scale line-of-business systems. Contact him at 604/682-6590.



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BOOK REVIEW

Official Xtree MS-DOS and Hard Disk Companion, 2nd Ed.

Reviewed by T. Bass

From: IDG Books Worldwide, Inc., 155 Bovet Rd, Suite 730, San Mateo CA 94402, 415-358-1250.
Price: US$15.95
Rating: 4.0 (on a scale of 1=lowest to 4=highest)
Summary: *The Official Xtree ... 2nd Edition* covers all six XTree programs in simple language, complete with cartoons and pop quizzes.

The Official Xtree MS-DOS and Hard Disk Companion, 2nd Edition by Beth Woods is well worth the time and price. Especially for the user who goes from machine to machine and XTree program version to version. As the book covers the features in each program, the differences are noted in the outermost columns on each page.

The 2nd Edition has added sections to include the programs XTree Easy, XTree Gold 2.0, and XTree Net 2.0. Also added to the original edition, by popular demand, is a command key list for every XTree product under the program's own heading.

The instructions and descriptions of features are easy to follow, with many annotated with suggestions. The literature is laced with cartoons and pop quizzes, making the book fun and interactive.

The consumer is asked to fill out the registration card in the back of the book, as its producers—Beth Woods, the writer; Richard Tennant, the cartoonist; Michael Cahlin, the designer; Jan Altman, the editor; and Jonathan Sacks, the president of IDG Books Worldwide, Inc., all wish to move forward in providing a helpful product.

The Official Xtree MS-DOS and Hard Disk Companion, 2nd Edition and IDG Books Worldwide, Inc. support XTree Company's Project Green. Project Green is a program in which recycled paper is used for printing the books and money is set aside from each purchase for the planting of trees. We applaud these business practices!

Rating

PERFORMANCE: (4) This book accomplishes its goal. It imparts knowledge, hones skills, and entertains the reader.
USEFULNESS: (4) It broadens one's perspective of the XTree programs and what can be accomplished with them. The book helps us to understand the features of these very useful utility programs.
AVAILABILITY: (4) Available from B.Dalton's bookstores, Software Etc., or direct from the publisher at 800-282-6657. ❐

Contact: Michael Cahlin 213-933-4957.

Apple System 7.0
Personal Upgrade Kit

Reviewed by Sean McNamara

Runs on: Apple Macintosh computer with at least 2 megabytes (MB) of random access memory (RAM) and hard disk drive
From: Apple Computer, 20525 Mariano Avenue, Cupertino CA 95014-6299, (408) 996-1010
Rating: 3.5 on a scale of 1=lowest to 4=highest
Summary: System 7.0 is the latest incarnation of the Mac operating system, and incorporates many new features. Installation is not without pain, however, and should be approached with forethought.

Review

The release of System 7.0 last May was the answer to many Mac users' prayers. With a slew of new features, the upgrade is offering users increased functionality without losing much of the ease-of-use of the Mac operating system. In some areas, ease-of-use has been markedly increased, especially in the Finder.

Being such a major upgrade (almost the entire system software was written from scratch), potential users should follow a cautious path when upgrading. Start by ensuring you know where to go to for help. Determine what parts of System 7.0 you will be implementing, and be prepared for the worst. Make sure you have a back-up of all your files, as well as your original application disks.

Before going ahead with a full installation, prepare a boot disk by installing a minimum system onto a floppy disk, and copy the Disk First Aid, HDBackup (or your back-up utility) and Apple HD SC Setup applications onto it. The instructions for installation really must be followed, right down to running the Before You Install System 7 HyperCard stack and following its recommendations. Treat files reported as "incompatible" warily, but by all means try them out as well once the installation is finished.

Once these steps are completed, and you have made sure you understand all parts of the *How to Install System 7* booklet, you are ready to move on to the installation proper. For most users, installation is as simple running the Install program by shutting down the Mac, inserting the Install 1 disk, and restarting.

The Install program starts automatically, and can determine your machine type and requirements. For users who wish to customize their installation, they can select the elements they desire. Generally, by simply clicking the Install button, and following the instructions presented, the installation proceeds without incident.

Once installation is finished, simply restart and start exploring the new features. Test all items reported as incompatible to determine the level of incompatibility, ensuring you have a backup of all your files at all times. Problems can be taken up with your Apple dealer, or via the Apple Answerline, a 24-hour 800 number. It may be necessary to re-install System 7.0 if your system won't boot (virtual memory caused some problems early on in the reviewer's machine), but your files will generally be undamaged.

As with the last few releases of System software, Apple has given users the option of using an "easy" install or a customized one, but either way, installation is a simple process. As long as the user plans everything and follows the instructions given in the manuals and on-screen, they should have little trouble entering the System 7.0 world, into which a constant stream of programs is being updated (and released) to take advantage of the new features.

PUMA Rating

PERFORMANCE: 3. After initial problems with installation, the system has worked well, with the same stability as previous system releases. With the exception of some programs that don't work with System 7.0 (usually with a particular new feature), the semi-pessimistic Compatibility List should be consulted, but not taken as the final word on compatibility.

USEFULNESS: 3. The usefulness of upgrading to System 7.0 is really only held back by the minimum requirements to use it. Many users will not be able to justify the upgrade, and for these, Apple will continue to maintain System 6.0.X. However, as System 6 "upgrades" will only be bug fixes or driver updates, the "true path" for Mac users to enter the '90s is via System 7.0.

MANUAL: 4. As with almost all previous Apple manuals, those for System 7.0 are first rate, although they are starting to get rather numerous and long (a feature Apple once ridiculed). They are clear and concise, and for most Mac users, a quick skim over the What's New in System 7 booklet should be sufficient to get the most out of their machine. (Our editor-in-chief found the answer to "where do I put my DAs?" promptly in the *What's New* booklet.) Apple also offers its Answerline Service for customer queries free to purchasers of the kit.

AVAILABILITY: 4. The Upgrade Kit is not only available from the usual range of dealers; for those with the inclination, it can be downloaded from bulletin board systems (obviously without manuals). ❐

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ClarisWorks
Is Integrated Enough?

By Geof Wheelwright

Product: ClarisWorks 1.0
Publisher: Claris International Inc, 5201 Patrick Henry Drive, Santa Clara, California 95052. Phone: (408) 727 9054 Fax: (408) 987 7447
System: Mac Plus or higher with hard disk and at least 1 Mb of RAM, System 6.0.2 or later; Finder 6.02 or later.
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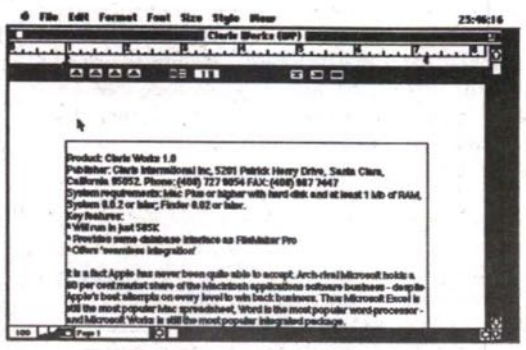

It is a fact Apple has never been quite able to accept. Arch-rival Microsoft holds a 60 per cent market share of the Macintosh applications software business - despite Apple's best attempts on every level to win back business. Thus Microsoft Excel is still the most popular Mac spreadsheet, Word is the most popular word-processor - and Microsoft Works is still the most popular integrated package.

Over the past 18 months, however, Apple has intensified its applications software battle with Microsoft through a more aggressive marketing and development approach by its Claris software subsidiary. Claris has announced and shipped Claris Resolve, MacWrite Pro, MacDraw Pro, FileMaker Pro, MacProject II and Claris CAD - and has even cheekily entered the Windows software market with Claris Hollywood for Windows.

Probably the most important, high volume application to come out of the Claris stable in recent months has been the long-awaited ClarisWorks - a product which finally offers Mac users a reasonable integrated alternative to Microsoft Works. Like the Microsoft product, ClarisWorks provides word-processing, graphics, spreadsheet, charting, database management and communications functions - but provides access to all these functions from within a single document.

Claris calls this approach 'seamless integration'. The idea is that if you're working within the word-processor and suddenly decide that having a table of figures below the current paragraph could be useful, you can insert a bit of spreadsheet information without having to open a new spreadsheet fit to do it. Claris has designed ClarisWorks so that users can add text, graphics, calculations and charts to their documents at any time - without having to 'switch' applications.

The company is clearly targeting entry-level Mac users with this product - it will run in just 565K, making it ideal for users of the Mac Classic II or any of the new Powerbook portable products. But despite making it able to run on modestly-equipped Macs, ClarisWorks is not lacking in features.

Its word-processing and page layout capabilities include support for features such as multiple columns, footnotes and linked text frames. In addition, ClarisWorks borrows

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Newsbytes

NEWSBYTES News Network is the largest independent computer industry news service in the world, published continuously since May, 1983, with 4 U.S. and 7 international bureaus in London, Brussels, Toronto, Tokyo, Hong Kong, Moscow and Sydney, Australia, devoted to gathering the week's most significant microcomputer and consumer technology news. NEWSBYTES was honored to receive the "Best Online Publication" award from the Computer Press Association. Editor In Chief: Wendy Woods. Janet Endrijonas, Dana Blankenhorn, John McCormick, John and Barbara McMullen, Steve Gold, Peter Vekinis, Ken Takahashi, Naoyuki Yazawa, Paul Zucker, Sean McNamara, Keith Cameron, Norman Wingrove, Kirill Tchashchin.

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Aldus Lays Out Pagemaker 4.2 for Mac

SEATTLE, WASHINGTON, JAN 2 (NB)—Aldus Corporation has announced it is now shipping Pagemaker 4.2 for the Apple Macintosh in the U.S. and Canada.

Aldus says that the latest update to its page-layout program includes compatibility with Apple's System 7 operating system, features six Aldus Additions, and includes Aldus PrePrint 1.5.

The Aldus Additions technology enables users and third-party developers to extend Pagemaker features to meet special needs as well as automate common production tasks such as creating drop-caps.

Aldus PrePrint 1.5, which is now included at no additional charge, is a color-production tool enabling users to enhance and color-correct TIFF images as they prepare files for generating full-color separations for use in publications, including text, illustrations, and photographs.

A new Control palette allows users to precisely position, move, and resize objects, as well as scale and crop imported graphics, by typing in numerical values and coordinates. There are also 'Nudge' buttons for pixel-by-pixel (picture element) adjustment of an element's dimensions or position.

Aldus says performance enhancement features in release 4.2 include a user-interruptible screen redraw, speedier text import, and faster launching of the application itself. Text autoflow has reportedly been improved through an option to flow stories without the program pausing to display each new page as the text comes in.

Pagemaker 4.2 for the Mac has a suggested retail price of $795. The company says shipment dates and pricing of versions localized for Europe and the Pacific Rim will be announced later.

Minimum configuration for color production is an Apple Mac II series or SE/30 computer equipped with 4MB of RAM and an 80 MB hard drive. For black-and-white production, you will need a Macintosh LC, SE, Classic or Plus with 2MB of RAM and a hard disk.

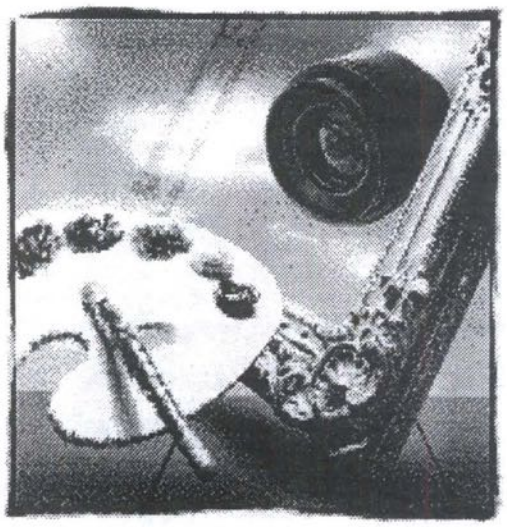
The program will print to color, gray scale and black-and-white output devices such as Postscript-compatible and QuickDraw-compatible laser printers, as well as Postscript-language imagesetters.

Registered owners of Pagemaker 4.0 or 4.01 for the Mac can upgrade to the new version for $85.

Contact: Pam Miller, Aldus, 206-628-6594.

Adobe Touches Up Photoshop 2.0.1 for Mac

MOUNTAIN VIEW, CALIFORNIA, DEC 20 (NB)—Adobe Systems is shipping its Adobe Photoshop 2.0.1 photo design and image retouching program for Apple Macintosh computers.



According to Adobe, the update provides full compatibility with Apple's new Quadra series of computers and includes Adobe Type Manager (ATM) 2.0.3 software.

The company also claims that version 2.0.1 also contains four new plug-in modules which give it the ability to export paths created with the pen tool (with the Paths to Illustrator module); to add special photographic highlights (with the Lens Flare filter); to import object-oriented PICT files with soft edges (with the Anti-Aliased PICT module); and to compress images using the Joint Photographic Experts Group (JPEG) compression scheme.

In addition, JPEG compression/decompression of Adobe Photoshop PICT files is automatically available to users of Apple's new QuickTime software.

The company claims that the inclusion of support for the TOYO 88 color swatching system is the first paint or image processing program to provide the feature.

Adobe is also offering a special deal to purchase the company's new digital movie editor, Adobe Premiere. For a limited time, registered Adobe Photoshop users can buy Adobe Premiere for $199, a 60 percent discount from the suggested retail price of $495.

Adobe Photoshop 2.0.1 requires a minimum of an Apple Macintosh Classic, SE, II, LC, or Portable with System software 6.0.4 or later (including System 7). The product also requires two megabytes (MB) of RAM and a hard disk. A color monitor, 4 megabytes of RAM, and a 68020 (or greater) processor is recommended.

Adobe Photoshop 2.0.1 is available immediately from all Adobe authorized retailers at a suggested retail price of $895. Registered Adobe Photoshop 2.0 users will be sent the new update free of charge.

More information is avaliable from Adobe at 1-800-344-8335.

Contact: LaVon Collins, Adobe Systems Inc., 415-961-4400.

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New For Macintosh:
Adobe Premiere For Video Editing

MOUNTAIN VIEW, CALIFORNIA, DEC 16 (NB)—Adobe announced it is releasing digital video-editing software product developed to take advantage of Apple's System 7's QuickTime for the Macintosh, called Adobe Premiere.

Premiere is based on Reeltime, a product Adobe acquired from Supermac Technology in August of this year. Reeltime was developed by Supermac to allow users to produce videos using the Videospigot, Supermac's digital-video capture hardware system. At the time of the announcement of the purchase of Reeltime, Adobe said Supermac was to be involved in the continued development of Reeltime.

Adobe representatives did say Supermac has been involved in the development of Premiere and the product will be bundled with the Videospigot card for a limited time.

Adobe says Premiere allows users to combine video footage, audio recordings, animation, still images and graphics to create digital movies on the Macintosh. The product is built on QuickTime, Apple's newly released extension to System 7.0. QuickTime allows users to combine and distribute sound, video and animation on the Macintosh platform as easily as text files can be interchanged.

Adobe describes the features of Premiere as: it displays tracks in "filmstrip" style, allowing the user to see all the details in clips; offers animated icons for selection of digital effects, including wipes, fades, dissolves, zooms and page turns; has filters compatible with Adobe Photoshop which can be applied across video segments for special effects and image control; and it has the ability to superimpose titles, graphics, and other video images.

Adobe lists the minimum hardware requirement for Adobe Premiere software as a Macintosh II computer with four megabytes (MB) of random access memory (RAM) and a hard disk drive. Adobe is bundling QuickTime version 1.0 extensions with Premiere—extensions which have only recently been released by Apple. Premier also requires 32-bit QuickDraw version 1.2 or later as well and Adobe says a QuickTime compatible, digital video capture board is recommended.

Some confusion exists at Adobe as to whether the software will run with System 6.0.7 or later software, including System 7.0. Adobe has announced in writing and Teri Chadbourne of public relations with Adobe confirmed the assertion Premiere will run under System 6.0.7, and so will QuickTime and QuickDraw, both extensions to System 7.0, which are required for Adobe Premiere.

Lisa Jeochau, at Apple Customer Support (800/776-2333) says no, that QuickTime and QuickDraw only work with System 7.0 (This is incorrect information—*Ed.*) and users should have QuickDraw if they have System 7.0, since QuickDraw has been bundled with System 7.0.

Retail pricing for Adobe Premiere is US$495, the company added.

Adobe is probably best known for PostScript, a page description language for laser printers. However, the company does market other visual communication software, including Adobe Photoshop and Adobe Illustrator.

Contact: Teri Chadbourne, Adobe, Tel: 415/961-4400, Fax: 408-962-0850.

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Apple Shares Quadra's Video Technology With RasterOps

SANTA CLARA, CALIFORNIA, DEC 16 (NB)—RasterOps, best known for its computer video display monitors, is getting the rights to Apple Computer's video technology developed in conjunction with the Apple Macintosh Quadra computer line.

RasterOps made the announcement of the new agreement with Apple and said the technology includes a 24-bit video adapter for the Quadra's processor direct slot (PDS). The 24-bit video adapter board has the advantages of expanding the Quadra's video performance and offers flicker-free composite video recordings via the incorporation of convolution technology, RasterOps said.

The Quadra is the current top-of-the-line computer series from Apple. Announced at COMDEX in October, the Quadra is based on the Motorola 68040 microprocessor and has improved Nubus and small computer systems interface (SCSI) systems, Apple said. RasteroOps says its videographic hardware will make the system attractive to users doing desktop video production.

Apple is not one to share its technology easily—the reason there are no Macintosh clones, unlike the IBM personal computer world. However, Apple has been more generous with its video technology and did grant Radius rights to its Touchstone video technology in September of this year. Keith Sorenson, chief executive officer and co-founder of RasterOps, expressed pleasure at Apple's decision to share the technology, and predicted RasterOps will make good use of the information to provide cutting-edge technology now and in the future.

RasterOps has been working on development of products for the Quadra and recently announced Mediatime, a product the company says allows users to record compact disc-quality sound directly to the computer's hard disk. RasterOps claims Mediatime is the first fully integrated single Nubus adapter for the Macintosh II family that integrates compact disc-quality sound with 24-bit real time video and graphics display.

Mediatime also has the distinction of being the only video product available that allows users to edit sound recordings, then play the recordings back in full 16-bit fidelity directly from the Macintosh, the company added.

Contact: Pattie Walters, RasterOps, Tel: 408-562-4200, Fax: 408-562-4065.

New For Macintosh:
System 7-Savvy SuperCard

SAN DIEGO, CALIFORNIA, DEC 16 (NB)—Aldus, probably best known for PageMaker, a desktop publishing software program available on both Apple Macintosh and IBM platforms, announced version 1.6 of SuperCard geared toward System 7.0 on the Apple Macintosh.

SuperCard 1.6 is described by Aldus as a multimedia authoring application. Multimedia is the incorporation of sound, video and animation. SuperCard is designed to produce multimedia front-ends to databases, education and training applications, and can also be used to build custom applications that employ standard elements of the Macintosh interface, Aldus said.

SuperCard 1.6, developed by Aldus' subsidiary, Silicon Beach Software, takes advantage of the capabilities of the System 7.0 operating system in offering features such as Apple Events, Balloon Help and TrueType fonts, Aldus said. It also allows the conversion of Hypercard 2.0 stacks to the SuperCard format—a feature Aldus says was frequently requested by users of earlier versions of SuperCard.

SuperCard 1.6 is expected to be available in the first quarter of 1992. The retail price is expected to be $299, Aldus said.

Contact: Jill Miller, Aldus, Tel: 206-628-2352, Fax: 206-343-4240.

Delrina To Market Backfax Software For Mac

TORONTO, ONTARIO, DEC 18 (NB)—Delrina, maker of forms processing software and the WinFax Pro facsimile software for the PC, has signed a letter of intent to acquire all rights to the Backfax software for the Macintosh from Solutions Inc., of Williston, Vermont.

Delrina will market Backfax exclusively and will take responsibility for future development of the software, company spokesman Josef Zancowicz said. Delrina said it plans to enhance Backfax to support Sendfax, Class I, and Class II standards.

Delrina expects to have Backfax out under its name early in 1992, Zancowicz added. It will market the software through retailers and through other manufacturers acting as original equipment manufacturers (OEMs).

Backfax supports most popular Macintosh fax boards, company officials said, including those from Circuit Research, Orchid Technology, Prometheus Products, and Relisys. It can send and receive documents in the background while other applications are running.

The acquisition is Delrina's second in two months. In November, the company took over OCR Systems of Huntingdon, Pennsylvania, saying it would tie together fax, forms, and optical character recognition technology.

Contact: Josef Zancowicz, Delrina, 416-441-3676 ext. 308; fax 416-441-0333.

March

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Forecast for '92

Advanced Micro Devices is expected to announce its version of the 80486 processor chip in January. Samples of the chip should be shipping by the second quarter of 1992.

Compaq may be one of the first companies to announce the use of this chip. A strong alliance may form between these two companies due to two recent events. First, Compaq is committed to producing computers at a lower cost basis to regain market share. Shopping the marketplace for the lowest-priced components will be the main method of reducing costs. The second factor involves the recent announcement of an alliance between IBM and Intel, AMDUs competitor. Compaq fears IBM may beat them to the market with new products due to this alliance.

Michael Hallman, president of Microsoft, recently sold 93 percent of his Microsoft stock, valued at almost $16 million. Rumors soon circulated that he might be leaving the company. Microsoft has stated there is no basis to those rumors. The other school of thought centers around his concern for the outcome of the Apple/ Microsoft lawsuit and the ramifications it could have for the future of Windows, Microsoft's latest operating system. The lawsuit may be settled as soon as next February.

Earlier this year, Advanced Micro Devices predicted it would capture 10 percent of the 386 chip market from Intel before the end of 1991. It now appears its share of the market is closer to 20 percent. It is now boldly predicting it will it will own over 50 percent of this market before the end of 1992. This market share could only be achieved through lower chip prices indicating lower system prices in the new and used markets next year. AMD should also have full-scale production of its 486 chips by mid-1992.

Digital Research, Inc. has indicated it may incorporate IBM's OS/2 into its DR-DOS operating system soon. Digital Research is owned by Novell. This integration of OS/2, which will run Windows software, with Novell's dominate networking software could pose a serious threat to future versions of Microsoft's Windows. This alliance may explain why five vice presidents of Microsoft sold over $9 million of stock last month.

Some printer manufacturers are promising PostScript laser printers next year for less than $1000. This may force the prices of all laser printers lower by mid-1992.

John Hastings is the president of the American Computer Exchange, which matches buyers and sellers of used microcomputer equipment. For more information contact the American Computer Exchange Corporation at (800) 786-0717.

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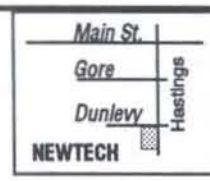

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CANADIAN NEWS

Far Side Computer Calendar Now Available For Mac

SEATTLE, WASHINGTON, DEC 17 (NB)—Just three months after Amaze introduced a computer version of Gary Larson's "The Far Side" for IBM and compatibles, the company is now shipping a Macintosh version of the popular cartoon.

Functioning as a full-featured personal appointment calendar, the program also includes a year's collection of Larson's very funny, but somewhat offbeat, cartoons.

The program is constructed so that the user will be able to add cartoon "refills" for each subsequent year, without having to replace the entire program. The price of the refills has not yet been set, according to Bob Morse, a spokesperson for Amaze.

Morse told Newsbytes that the features of the Windows version, released last month, and the Mac version will be very similar.

Users can view their schedules by the day, week, month, or year and set alarms to alert them of upcoming appointments. Calendars can also be printed in a variety of sizes. A collection of about 15 animated icons provide graphic representations of various types of appointments. For example, a sports figure might represent a ballgame, while a phone icon might represent a call to be made.

Morse said that all versions of the program will sell for $69.95. For Mac users, a Mac Plus or better will be required. For systems which have less RAM, Morse said the program has been written in such a manner that one calendar quarter can be loaded at a time if necessary.

Contact: Bob Morse, for Amaze, 206-821-7385.

Canadian PC Market Maturing Rapidly, Study Says

TORONTO, ONTARIO, JAN 2 (NB)—The vast majority of organizations using personal computers in Canada have now had them for more than three years, and about three quarters of the sites have had PCs for more than five years. International Data Corp. Canada points to those figures from its 1991 Canadian PC Usage and Acquisition Patterns study as evidence that the PC market is maturing rapidly.

In 1989, IDC said, 52.4 percent of surveyed sites said they had been using PCs for more than five years. The figure is now 76.5 percent, and 95 percent of sites said they have had PCs for at least three years.

More than a third of those who responded to IDC's survey said their PC budgets were lower in 1991 than in 1990. But market saturation was not the main reason, IDC researcher George Bulat told Newsbytes. Most respondents said the recession was the biggest factor affecting purchases. Indications are that the PC market will continue to grow, Bulat said, and that budgets will increase again when the recession lets up.

More powerful PCs are catching on. PCs using the Intel 80386 processor have gained popularity over the last two years, the research firm reported, as have those using the even newer 80486, although these are still not big sellers.

More than a third of those who responded to IDC's survey said their PC budgets were lower in 1991 than in 1990. But market saturation was not the main reason....

However, IDC found the most widely installed machines are still those using the older 80286 and 8088 processors—IBM PC AT compatibles were found at 145 out of 196 sites while IBM PC XT machines were reported at 102 sites.

IBM-compatible PC ATs were the most common among installed machines, followed by IBM-compatible 386 systems, IBM PC XTs, and XT-compatibles. The IBM PS/2 line was ranked the fifth most popular. The IBM PC AT came sixth, and the Apple Macintosh seventh.

For new purchases, the most popular category was 80386-based PCs from manufacturers other than IBM.

IDC also noted rapid growth in the use of portable computers. More than 80 percent of the businesses that responded to IDC's survey said they had at least one portable computer.

Contact: George Bulat, IDC Canada, 416-369-0033, fax 416-369-0419.

Little Fanfare As IBM Name Turns 75 In Canada

MARKHAM, ONTARIO, DEC 30 (NB)—As the new year 1992 arrives, so will the 75th anniversary of the best-known name in computers and one of the best-known corporate names in the world. The name International Business Machines was first used in 1917, when it was applied to the Canadian subsidiary of what was then the six-year-old Computing-Tabulating-Recording Company.

What is now IBM Canada Ltd. became International Business Machines Co. Ltd. in the fall of 1917. It was only seven years later, in 1924, that the parent company adopted the name International Business Machines Corporation. In a letter to employees dated February 13, 1924, the company's famous founder, Thomas J. Watson, commented on the change in tones that still sound familiar to anyone who reads corporate press releases today:

"Our new name is particularly adaptable and suitable to our business," Watson wrote, "in view of the fact of our increasing growth, the constant development of additions to our line, and our products covering such a wide range in the field of business machinery."

The IBM of that time had three operating subsidiaries in the United States selling different lines of products: the Tabulating Machine Company, the International Time Recording Company of New York, and Dayton Scale Company.

IBM Canada plans to mark the occasion quietly, company spokesman Stan Didzbalis told Newsbytes.

During the fall, IBM announced plans to cut 20,000 jobs worldwide. Some 2,000 of those will come from IBM Canada's payroll.

Contact: Stan Didzbalis, IBM Canada, 416-474-3900, fax 416-474-3409.

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Ingram Micro Canada To Distribute PS/2 Models

MARKHAM, ONTARIO, DEC 17 (NB)—IBM Canada has announced that Ingram Micro will distribute two Personal System/2 (PS/2) models to its network of dealers across Canada. The deal represents a significant broadening of distribution of the PS/2 Model 35 and Model 40 in Canada.

"Ingram Micro has a broader base of dealers across Canada," said Martha Terdik, a spokeswoman for IBM Canada. Ingram will provide the PS/2 models to dealers that have not been carrying IBM machines up to now, she said.

In the past, IBM has sold PS/2 systems either directly to resellers or to large accounts through its own sales force.

Initially, the distribution deal covers only the low-end Model 35 and Model 40. Both of these models use the older AT-bus rather than IBM's Micro Channel Architecture (MCA). However, Terdik said, depending on the success of the initial agreement, IBM might well extend the practice to other PS/2 models.

Don Kreutzer, manager of personal systems distribution channels for IBM Canada, told Newsbytes the Ingram deal is intended to bring the PS/2 machines to the small business market. "We were not participating in that market segment," he said.

Kreutzer said existing IBM dealers are not likely to be much affected by the move, because most of them focus on larger accounts.

The use of a third-party distributor is not completely new for IBM Canada, which in May arranged to distribute its PS/1 computers through Beamscope Electronic Entertainment, a Toronto distributor with a focus on the home market.

Contact: Martha Terdik, IBM Canada, 416-474-3900.

Canada's First Home Office Show Set For Spring

TORONTO, ONTARIO, DEC 18 (NB)—The National Home Business Institute and Corporate Events Management have announced plans to stage Canada's first Home Office Show March 31 and April 1 at the Metropolitan Toronto Convention Center. The show is co-sponsored by the Federal Business Development Bank and Small Business Ontario, an agency of the provincial Ministry of Industry, Trade and Technology.

The event will include a trade show at which organizers are expecting about 200 vendors to exhibit, along with a seminar program for current and prospective home business operators and a conference on selling to the home office market.

Jo-Ann Austin, executive director of the National Home Business Institute, told Newsbytes that about 30 major vendors, including national distributor Beamscope, Bell Canada, 3M, and Xerox, have already signed up for the show. The organizers are projecting attendance of about 10,000. Austin said they are working with about 200 business groups and associations, and are planning a home entrepreneur contest to help promote the show.

The seminar program will include roughly 50 sessions on topics of interest to home business owners. These will include presentations by the Federal Business Development Bank and the Ministry of Industry, Trade and Technology. Some will deal with specific businesses that are commonly operated from home, such as mail-order, desktop publishing, and consulting. Some will address issues such as taxation, selecting equipment, legal concerns, marketing and sales, and customer service. There will also be seminars aimed at the specific concerns of groups such as senior citizens, women, disabled people, and ethnic minorities.

Austin said the show will meet a need for show exhibitors: "There is no vehicle ... for suppliers of products in this marketplace to talk directly to the market," she said.

Contact: Jo-Ann Austin, National Home Business Institute, tel 416-926-8746, fax 416-489-6293; Jacqueline Peake, Corporate Events Management, tel 416-869-0141, fax 416-869-1660.

Telecom Canada Expands Digital Links With AT&T

OTTAWA, ONTARIO, JAN 2 (NB)—Telecom Canada, the consortium of Canadian telephone companies, has expanded its Digital Switched Network (DSN) links with AT&T. Telecom Canada customers can now call AT&T customers on the switched digital services. Before, only northbound calls from AT&T customers to those of Telecom Canada were supported.

Telecom Canada customers have been able to call customers of the U.S. local carriers' digital switched services since July.

Digital switched network connections currently operate at 56,000 bits per second (56Kbps), and will provide 64Kbps service once Canadian regulators approve Telecom Canada's proposed Integrated Services Digital Network (ISDN) access services. The services provide an end-to-end digital connection over the public switched telephone network.

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rently available from more than 250 switching centers across Canada, Telecom Canada said.

The services are intended for applications such as desktop videoconferencing, image processing, connecting local-area networks over long distances, transferring large files between computers, and telecommuting.

Contact: Tom Schwarzkopf or Penny Edwards, Telecom Canada, 800-461-7800 or 613-560-3009.

Micromedia, Southam Electronic Publishing Ally

TORONTO, ONTARIO, DEC 31 (NB)—Southam Electronic Publishing, a unit of the Canadian newspaper and magazine publisher Southam Inc., has announced a strategic alliance with Micromedia Ltd., a publisher of electronic databases and other information. Both companies are based in Toronto.

John Kitchen, chief executive officer at Micromedia, told Newsbytes that the agreement makes his company an information provider on Infomart Online, Southam's electronic information service.

Among the databases Micromedia will make available on Infomart is Cancorp, which provides financial and corporate information on about 7,000 Canadian companies. Micromedia will also provide its Canadian News Index, which contains brief synopses of stories appearing in the Vancouver Sun, Calgary Herald, Winnipeg Free Press, Toronto Star, Toronto Globe and Mail, Montreal Gazette, and Halifax Chronicle-Herald. Four of these newspapers—the Sun, the Herald, the Free Press, and the Gazette—are published by the Southam group.

Infomart Online already provides the full text of articles from Southam's Vancouver Sun, Calgary Herald, Ottawa Citizen, and Montreal Gazette, as well as from the Toronto Star, the Financial Post, and Montreal's French-language La Presse.

Micromedia's Canadian Magazine Index, which contains references to articles in some 400 Canadian periodicals, will also be available through Infomart Online, Kitchen said.

Infomart Online is accessible by modem from any personal computer. Southam Electronic Publishing will also conduct searches for customers who phone in their requests. Kitchen said Micromedia is also making the Cancorp database available through Datastar, a European information service.

Contact: John Kitchen, Micromedia, 416-362-5211; Southam Electronic Publishing, 416-445-6641, fax 416-445-3508.

DTP

Logitech Intros Way To Merge 4 Scans

FREMONT, CALIFORNIA, DEC 19 (NB)—Logitech says it is more than "bridging the gap" between hand-held and desktop scanners by introducing "Virtual Page Scanning" capability for its Scanman modem 256 hand-scanner so a user can automatically merge up to four scans.

Called Autostitch, this new feature intelligently adjusts image attributes to allow for seamless, transparent images.

Logitech Product Marketing Manager David Almoslino said: "Now, users can capture images significantly wider than the 8.5-by-11 inch limit of desktop units, with minimal effort, equal image quality, and significantly lower cost."

In addition, Ansel, the image editing software previously shipped with the Scanman Model 256 is being upgraded to include Autostitch (as well as other new features) and is being renamed Fototouch, Logitech said.

Other new features for Fototouch include an audible beep to signal scanning speed is too fast; Autostop, which senses a pause in scanner head motion and allows the user to continue scanning anyway without manually terminating the scan and starting over; on-screen tonality control; and improved printing, Logitech said.

The new Fototouch software will ship with Scanman Model 256 beginning in January 1992, at the same retail price, the company said. Users who already have Scanman Model 256 may upgrade for $49 and users of older Logitech scanners may upgrade for $79.

Fototouch requires an IBM personal computer (PC) or compatible running Microsoft Windows 3.0 or higher. Scanman Model 256 and Fototouch require 1 megabyte (MB) of random access memory (RAM) and a hard disk, Logitech added.

Contact: Betty Skov, Logitech, Tel: 510-713-4439, Fax: 510-792-8901.

GENERAL

Byte Magazine 1991 Awards For Excellence

PETERBOROUGH, NEW HAMPSHIRE, DEC 24 (NB)— Byte magazine has released its editor's choices for the best products of 1991.

The Awards for Excellence went to the following products:

System 7.0, the Macintosh operating system from Apple Computer. Also from Apple, the QuickTime 1.0 movie file format for multimedia; Digital Research's DR DOS 6.0; Fox Pro from Fox Software, as a top-quality database; The PCMCIA 2.0 IC card standard that may replace floppy cards as a common way to store data and programs; Microsoft did not win for MS-DOS 5.0 but did garner top awards for Excel 3.0 and Visual BASIC.

Cayman Systems' GatorBox CS Macintosh and Unix network system got a top network award, as did Novell's NetWare 3.11.

There were several other top awards, and a number of other products were also cited in other categories.

—John McCormick

J.D. Power Cites Apple, HP, Borland, And WordPerfect

AGOURA HILLS, CALIFORNIA, JAN 8 (NB)—J.D. Power and Associates, in a report surveying satisfaction levels among end users, reports that the firms with the highest satisfaction ratings are Apple Computer, Hewlett-Packard, Borland International, and WordPerfect.

Apple came in number one in the personal computer category in customer satisfaction and Hewlett-Packard came top in printers. There was a tie in the software category between Borland International and WordPerfect.

The year-long project that developed the "J.D. Power and Associates 1991 End User Satisfaction Study," ranked more than 35 computer, printer and software brands and included a sample universe of more than 4,000 actual business sites. A total of 5,811 business end users were surveyed.

From the survey, analysts examined the comments and determined the attributes that users found most important. Among personal computer users, five essential factors constitute customer satisfaction: ease of use; support; capability; reliability; and software friendliness. The critical factors contributing to satisfaction in the printer category were; capability; ease-of-use; support; and versatility. Application software users report that ease-of-use, capability, and support are the vital attributes that make relative differences in their satisfaction.

Commenting on the report, J.D. Power III, president and founder of J.D. Power and Associates, said: "If computer vendors hope to continue to offer products that are widely accepted in the marketplace, it is critical that they understand all the attributes that make up satisfaction headings such as ease-of-use, capability and support. Specifically, this study focuses on the end-user who, in many cases, is into his or her second or even third generation of computers. In today's world, users bring increased expertise resulting in

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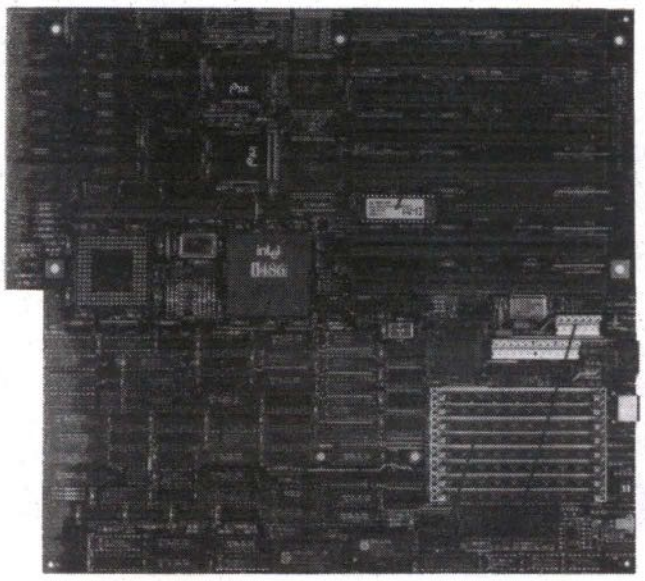

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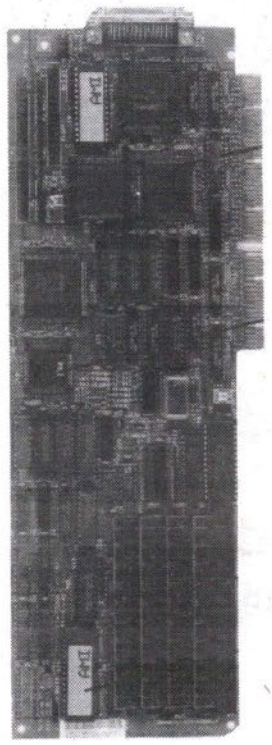

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rising user expectations and demands. The companies that succeed will be those that have an accurate perception of these expectations and demands. We are heartened at the interest and use of the survey results by key industry leaders. Many of these companies are turning their organizations inside out, in an effort to revolutionize their consumer efforts."

Contact: Patricia Patano, J.D. Power and Associates, 818-889-6330.

Woman Wins $25,000 From WordPerfect

OREM, UTAH, DEC 23 (NB)—Christmas came early for Minnesota's Judy Johnson, as she picked up $25,000 for guessing the total number of WordPerfect for Windows orders received after the product had been shipping for 30 days.

WordPerfect for Windows shipped on November 7, and the total number of units shipped, which included pre-orders, numbered 369,693. Johnson's guess came within 40.

Using the tried-and-tested "lottery formula," Johnson's guess derived from a combination of her age and street address.

A computer programmer for a grocery retailer, Johnson said she intends to use the money to pay off her new car and go on a Caribbean cruise and scuba diving trip.

Of the 7,000 entries, the lowest estimate was zero (such cynicism), the highest was 910,620,044 (which is about 905 million more than the number of Windows 3.0 units sold), and the median was 218,124. Packages ordered up through December 6, 1991, were included in the total.

Contact: Beth McGill/WordPerfect Corp., 801-228-5008.

SPA Helps Mediate Divorce

WASHINGTON, DC, DEC 24 (NB)—In the "Is nothing sacred?" department, the Software Publishers Association (SPA) reports that a divorce judge recently ruled that a man make copies of his favorite software for his wife, and the gentleman, obviously a strong believer in copyright protection, contacted the SPA for help in convincing the judge that this would be illegal, immoral, and unethical.

The software police jumped at the chance to expand the legal system's understanding of the modern-day piracy problem and promptly got the ruling vacated, as it certainly should have been.

The original complainant is probably not all that thrilled with the results, however, because instead of leaving the software with him, the judge ruled that he now turn over the originals to his wife instead of illegal copies. Since he has already brought himself and the case to the attention of the SPA, he will likely resist the probably-very-strong temptation to now make those copies for himself.

Contact: Terri Childs, SPA, 202-452-1600.

IBM Offers Art "Repository" Of The Future

YORKTOWN HEIGHTS, NEW YORK, JAN 2 (NB)—IBM has announced that its scientists and engineers have developed a system for recording, storing, cataloguing, managing, displaying and reproducing publication-quality color images of paintings and other graphic artworks that "could become the fine art repository of the future."

The system, developed at the instigation of the American artist Andrew Wyeth, was installed as a prototype a year ago at the Wyeth Collection's offices in Chadds Ford, PA where approximately 10,000 of the artist's works reside in the vicinity, many as original paintings, most as color transparencies stored in hanging folders inside numerous filing cabinets. The system is now being used to scan and store images of the majority of these works.

The system consists of five major components: two IBM PS/2 Model 80 personal computers, a high-resolution scanner, a color monitor and an "optical jukebox" to hold and deliver thousands of computerized color images, each with its own descriptive text.

Wyeth, who has been personally involved in the project, was quoted by IBM as saying that the IBM computer images "accurately portray (both) the content and intent of the artist's works."

Describing system benefits, IBM's Fred Mintzer, leader of the software development team, pointed out that the system converts paintings into numbers that can regenerate the images exactly and, while photographic records are perishable and 30-year-old transparencies of some Wyeth paintings were found to be in poor condition, "digital images are forever."

Mintzer said that IBM will be adding software to the system to "correct" photographic records that have faded, restoring the images to the artist's initial intent. The release expounded on this point, stating, "In some instances, the computerized version of a painting can be adjusted to satisfy the artist more than the original photograph."

IBM spokesperson John A. Osmundsen told Newsbytes that while the prototype is being continually improved and the "system has received very positive comments from the museums and publishing houses that are looking at it, there is no plan at this time to offer a commercial product based on the prototype. This is a research and development project and the offering of a product would have to be evaluated through normal cost benefit analysis and marketing studies by the organizations responsible."

Osmundsen also said that the response to the system to date has been "very positive. The system has demonstrated the feasibility of producing images of high enough quality to be reproduced in art books. Additionally, the ability to electronically transmit the images to other locations opens up brand new

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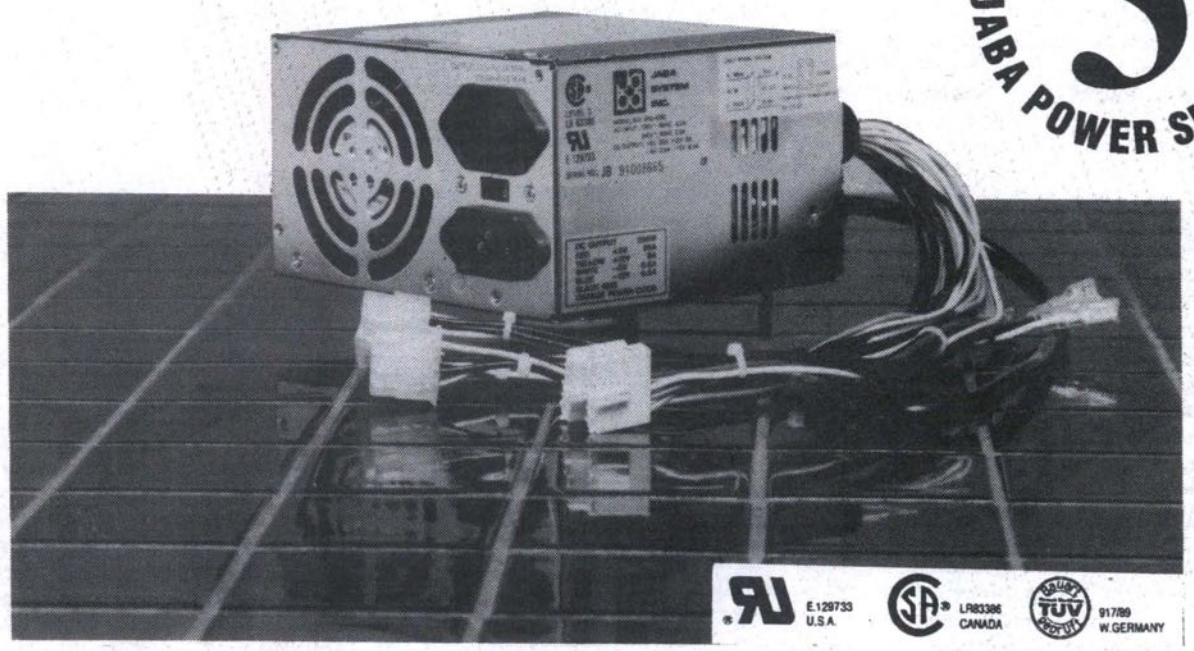

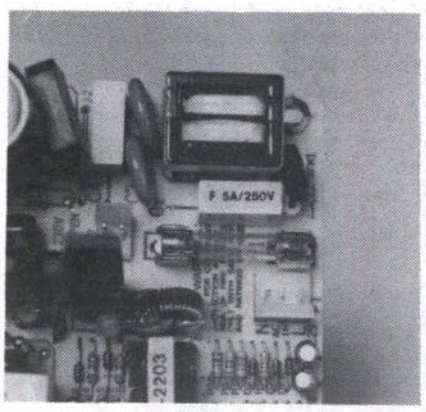

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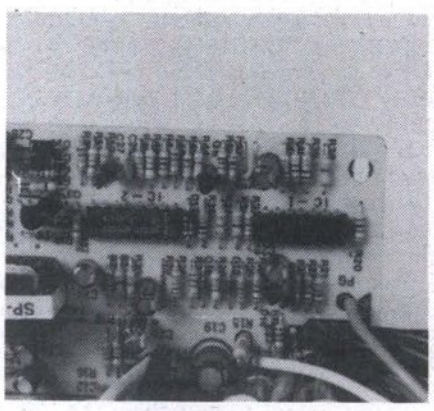

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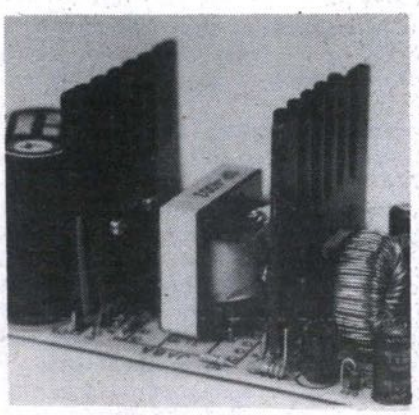

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opportunities for museums and publications."

Contact: John A. Osmundsen, IBM Research Division, 914-945-2392.

Gotham City Computers Attacked; Robin On Case

GOTHAM CITY, EMPIRE STATE, USA, DEC 16 (NB)—With Gotham City's major computer systems under the control of the archcriminal The Joker, all of the beleaguered city's hopes rest on the shoulders of Robin, a teenage crime fighter known as the "Boy Wonder." The story, detailed in the four-issue mini series from DC Comics, "Robin II—The Joker's Wild," brings the issues of computer crime and security into the long-running Batman and Robin narrative for the first time.

The events that precluded the assault on the computers, as chronicled by Chuck Dixon, Tom Lyle, and Bob Smith in the mini series, included the kidnapping by the dastardly Joker of Dr. Osgood Pellinger, Gotham's foremost computer expert, and his subsequent torture to force him to aid the Joker in his takeover of the city. Following Pellinger's acquiescence, the Joker and his henchman, disguised as telephone repairmen and aided by Dr. Pellinger's schematics of the central telephone switching system, rewired the city's communications network to allow undetected access to the computer systems controlling the operation of city agencies.

In rapid succession, the city computers, now under control of the Joker, deducted $100 from the paychecks of all Gotham policemen with the notation "To help the city meet its debt," sent layoff notices to 1,000 city firemen, levied a 500% property tax increase on all city businesses, blacked out power in various city areas, and caused the arrest of a welfare mother for $10,000 in parking fines in spite of the fact that she does not own a car. When city officials did not reveal to the public that the Joker was behind the incidents, the Joker interrupted a Gotham Giant football game by appearing on the electronic scoreboard (and thus the television coverage of the game) and demanded $1 billion from the city to halt the computer attacks. The Joker also demanded that the money be delivered by Batman.

Robin, normally the young "sidekick" of the Batman series, is forced to operate on his own due to the absence of his mentor on a case in Brazil. Although Robin attempts to cover the absence of Batman through the use of holograms, the deception is rapidly uncovered by the Joker who becomes even more brazen upon finding that his nemesis is not in town.

According to Dixon, Lyle, and Smith, Robin, using the two Cray supercomputers installed in the BatCave, attempts to pinpoint the location of the Joker's hideout by trying to determine from where the city's computers were being accessed. The attempt was not only unsuccessful but led Robin into a trap set by the Joker and, had not Robin powered down the Crays, would have revealed the location of the BatCave.

Following Robin's attempt, the Joker accelerated his computer-based warfare causing criminals to be released from prison, traffic lights to behave erratically, creating rush-hour gridlock, and power to be cut to hospitals and homeless shelters. He also is said to have forwarded a list of detailed instructions for the delivery of money to the mayor's office.

DC Comics Editor Denny O'Neil told Newsbytes that Robin's investigation is proceeding and that a breakthrough in the case is expected by the time that the concluding issue of the Dixon, Lyle, & Smith series reaches the public.

O'Neil also informed Newsbytes that the material submitted by the reporters on the scene in Gotham City was checked for technical accuracy by his assistant at the time, Kelly Puckett, who has familiarity with computer systems.

—Barbara E. McMullen & John F. McMullen

ROUNDUP: Stories Carried By Other Media

WASHINGTON, DC, JAN 3 (NB)—Roundup is a brief look at some computer stories carried in other publications received here this past week.

January 14's PC Magazine picks the editor's top 29 favorite products and top stories of the decade. Top joke: What's the difference between a computer salesman and a used car salesman? Answer: The used car salesman knows when he's lying.

January's PC World looks at easy-to-use page layout software and carries 50 tips for using DOS and Windows.

January's Communications of the ACM puts "Hypermedia" on the cover.

Seybold Report on Desktop Publishing dated January 1 explores streamlined formatting of repetitive records in database publishing and includes the vastly helpful annual calendar of events for the coming year which lists important trade shows worldwide.

—John McCormick

Obituary: Computer Industry Pioneer Grace Hopper

ARLINGTON, VIRGINIA, JAN 3 (NB)—Rear Admiral Grace Murray Hopper, co-inventor of the COBOL programming language, has died after a lengthy illness. She was 85 years old in December.

Hopper became involved with computers in the late 1940s when, as a U.S. Navy Lieutenant, she joined the Bureau of Ordnance Computation Project at Harvard University. There she learned to program Mark I, the first large-scale digital computer. She was later a research fellow at Harvard during the development of that machine's successors, Mark II and Mark III, for the navy.

In 1949, Hopper joined the Philadelphia-based Eckert-Mauchly Computer Corporation, which was then building the first large-scale commercial computer, UNIVAC I. She remained with that company through its purchase by Remington Rand and its eventual merger into Sperry Corp., finally retiring from what was then Sperry Univac in 1971, while on military leave.

It was her work at Sperry that led to her involvement in the development of the COBOL programming language, probably her best-known achievement. In later years, Hopper was often referred to as "Mother COBOL" or "Grandma COBOL" for her part in creating what is still one of the most widely used programming languages in the world.

She is also credited with coining the term "bug" to refer to problems with computers. The story is that the original bug was just that—a large moth which flew inside a relay and was squashed, causing a short circuit.

Hopper continued to work with the Navy long after regular retirement age, and was from 1982 until 1986 the oldest officer on active duty in the U.S. armed forces. After leaving the military, she worked for a time as a full-time senior consultant to Digital Equipment Corp.

In the 1980s, Hopper remained much in demand as a speaker at computer industry conferences and a commentator on computing trends.

Hopper's husband died during World War II and she did not remarry. Her death was announced by her brother.

—Grant Buckler

Spectrum Holobyte's Star Trek Next Generation

ALAMEDA, CALIFORNIA, JAN 2 (NB)—Spectrum Holobyte has announced that it has obtained the exclusive license to produce video games using the name and characters from Paramount's Star Trek: The Next Generation television series.

PC NEWS

Insider's Look At Microsoft's New OS: NT

WASHINGTON, DC, JAN 2 (NB)—Rick Vizachero, an editor for Government Computer News, reports in his latest column that the demo version of Microsoft's Windows NT operating environment is less than friendly when it comes to older MS-DOS applications software or hardware.

Having seen it running on a 75 megahertz 80486-based computer, a workstation, and a 33 megahertz 80386, he reports that it appears the new 32-bit operating system, which Microsoft is putting up against the long-awaited IBM OS/2 2.0, will require a minimum of a 33 megahertz 80386 with eight megabytes of memory to run.

A Microsoft demo technician reportedly gave out the standard line that "well-behaved" MS-DOS programs are running OK under the as-yet-unfinished Windows NT, but that some, notably those that deal directly with hardware, are having problems.

One computer industry insider pointed out that "well-behaved" is just code for "this one works!"

New For PC: Harvard Graphics For Windows Ships

SANTA CLARA, CALIFORNIA, JAN 3 (NB)—Hoping to cash in on the lucrative world of Microsoft Windows applications, Software Publishing has began shipping Harvard Graphics for Windows, a presentation graphics product.

According to the company, Harvard Graphics for Windows provides users with more chart types than any other Windows-based presentation graphics program. In addition to standard text, pie, and XY charts, the product offers data-driven table charts, high/low/close charts, and organization charts. Users can mix multiple chart types on a single slide and create their own custom templates.

The company claims that an integrated chart gallery with 88 professionally designed slide layouts, displayed through icons, enables users to preview the design and charting options available for developing a chart.

The package also offers 54 presentation styles, each consisting of a collection of templates specifying the charting options, color palette, background design, and type font and size.

Templates automatically position and format text, table and organization charts, as well as graphics and drawings. According to the company, this enables users to change the appearance of an entire presentation with the click of a mouse button. Additionally, users can also customize styles or create their own to match corporate guidelines or personalized formats.

Contact: Software Publishing Corp (408) 450-7316.

New TI Travelmate Optimized For Windows

BEDFORD, ENGLAND, JAN 2 (NB)—Texas Instruments (TI) has announced that a new version of its notebook PC, the TI Travelmate 3000 WinSX, has been released. The new machine has been optimized specifically for Microsoft Windows, the company claims.

Standard features on the machine include a 20MHz 80386SX microprocessor, 4MB of RAM (expandable to 6MB onboard), a 60MB hard disk and TI's Travelpoint pointing device, a thumb-operated trackball.

Bundled with the 3000 WinSX is Windows 3.0 and MS-DOS 5.0. Both packages are pre-loaded on to the machine's hard disk, taking advantage of BIOS features specially configured to maximize performance while running under Windows,

"The Travelmate 3000 WinSX is the total notebook solution for Windows applications," said Colin Day, UK product marketing manager for TI's peripherals products division.

"Every element of the WinSX has been optimized for Windows, from pre-loaded software to the Travelpoint device and a larger hard disk. TI even provides 1MB of video memory to allow faster video speeds under Windows," he added.

According to Day, many of the company's existing Travelmate users said that they wanted to run Windows on a notebook. "The WinSX is the only notebook PC today that has been specially developed to give users the best from their Windows applications," he said.

Day added that the machine is already shipping in the US, with European versions expected shortly. UK pricing will be announced closer to shipment date on this side of the Atlantic.

In use, the 3000 WinSX has a number of software and hardware features designed for convenience, ease of use and power savings. Users can change the size and shape of the cursor to make easier to locate on-screen.

MS-DOS 5.0, meanwhile, has been enhanced to provide increased CPU performance, along with better memory management and power conservation. TI's Batterypro battery management software, which comes as part of the BIOS of the 3000 WinSX, extends battery life still further and there is also a standby function that suspends individual Windows applications, resuming the application with a single keystroke when required.

The Travelpoint thumb-operated trackerball can be hand-held or mounted into the right-hand side of the 3000 WinSX. When attached to the machine, the Travelpoint can be tilted to a number of settings. The detachable Travelpoint measures 38 by 38 by 19mm in size, and is available as an optional extra to existing Travelmate portable PC users.

Contact: Texas Instruments Tel: (604) 278-8474.

New For PC: Universal Font Conversion Software

CARLSBAD, CALIFORNIA, JAN 2 (NB)—A new software package that converts, modifies and installs virtually any font for use with Windows or DOS-based applications is now available from Atech Software of Carlsbad, Calif.

Called AllType, the software's key feature is its ability to perform bidirectional conversion of fonts in nearly every major format, the company claims, including Adobe PostScript Type 1 and Type 3, Microsoft TrueType, Agfa Compugraphic Intellifont, Bitstream Fontware, Digital Typeface Corporation Nimbus Q, and Atech Software FastFont.

AllType's font translations preserve the typeface's hinting information so that the newly-created typeface maintains its quality and clarity at smaller point sizes, Atech explains.

The software also allows users to modify a font's appearance. Through the use of AllType's Variation feature, a user can create bold, oblique, condensed, expanded, and two-dozen other standard variations of an original font. The software's Customize function lets the user change the typeface's weight, pitch, italic angle, and leading to create a nearly limitless variety of fonts from the original.

AllType provides automatic setup and installation routines for a number of software packages. AllType for DOS will run on any IBM PC or compatible with 640K of RAM and mono, CGA, EGA, or VGA graphics. AllType for Windows requires a PC running Windows 3.0 or 3.1 and a minimum of 1MB of RAM. The two versions have a suggested retail price of $79.95 each. For more information, contact the company at 619/438-6883.

Novell Announces Netware Services For OS/2 Version 2.0

PROVO, UTAH, DEC 18 (NB)—Novell claims it is now ready to ship version 2.0 of its Netware Services for IBM's OS/2 operating system.

According to the company, Netware Services for OS/2 includes Netware Management Map, a new OS/2-based Netware management application, as well as the Netware Requester for OS/2 announced earlier this year.

Netware Management Map is designed to reduce the time required to manage Netware by automatically recognizing all Netware nodes on the network. Once the nodes are recognized, the software creates a graphical display, or map, of the internet using icons to represent the network servers, communications servers, cable segments, routers, and workstations.

Novell says the Management Map can reduce network downtime, since it continuously monitors the network, updating the graphical display with the on-line/off-line status of each node.

Selection of any icon will display the configuration data, statistics and other resources data without having to physically access the server. The map can also be used to maintain a physical inventory.

Network Requester for OS/2 2.0 provides users with transparent access to all features of Netware and its services, including file, print, database, network management, communications, and messaging.

The Requester uses icons to represent desktop utilities, and what Novell calls an enhanced installation program, which simplifies the installation process. Both utilize IBM's Presentation Manager.

The Requester supports OS/2 distributed applications such as Notes from Lotus, and SQL Server from Microsoft and Sybase. Novell says that customers using DOS, Macintosh PCs, PCs running under OS/2, or Windows and Unix workstations can access those applications in their native computing environment.

The Requester reportedly can run over 1,000 simultaneous named pipe connections, support high-performance 32-bit adapter cards and support all OS/2 application programming interfaces.

Netware Services for OS/2 version 2.0 has a suggested retail price of $200. Novell's Michael Adams told Newsbytes that it will begin shipping at the same time IBM puts OS/2 release 2.0 on the market, which according to Adams is expected to be in March of 1992.

Contact: Michael Adams, Novell, 801-429-5809.

CA Delivers Accpac Plus Accounts Payable 6.0

GARDEN CITY, NEW YORK, DEC 17 (NB)—Computer Associates has announced delivery of Accpac Plus Accounting Accounts Payable version 6.0, the last module of the Accpac Plus 6.0 series. The new release enhances the bill-paying process from invoice entry and tracking to check printing and reporting, CA claims.

Changes to check processing in this release streamline the processing of prepayments, check reversals and COD (cash-on-delivery) invoices. With manual check processing, users can choose to print single checks immediately or in batch mode. There is also a feature that lets a user enter an invoice and a payment in one step, and one for forcing discounts during automatic check processing.

System transaction capacities have been increased. Other features include complete on-line history with full transaction matching, an unlimited number of bank accounts and control account sets, and en-

Continued on page 82

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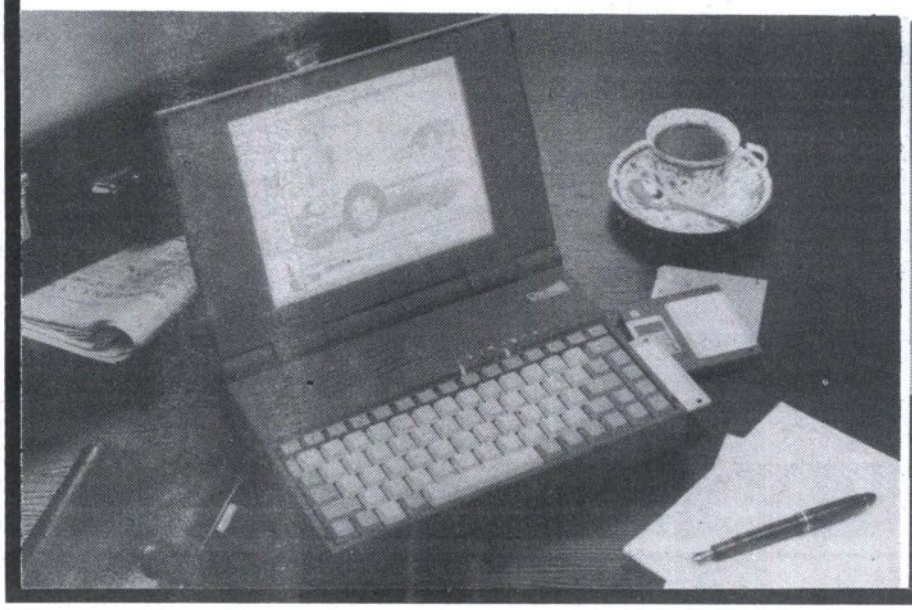

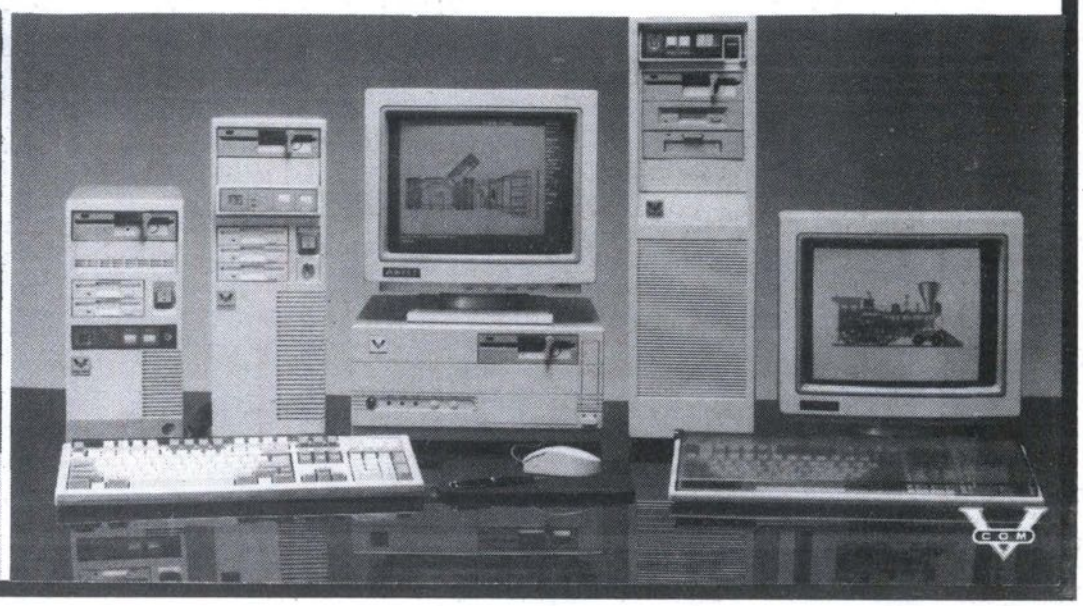

hanced reporting flexibility. For Canadian users, CA has added functions to calculate and track payments of the Canadian Goods and Services Tax (GST).

New date sensitivity features ease multi-period processing, CA claims. Users can enter transactions for more than one period. General ledger entries are posted by transaction date, and key reports can be printed for any period.

Other features include faster invoice entry and more features for customizing invoices.

Company spokesman John Schoutsen said the 6.0 level Accpac Plus Accounting modules provide users with more detail because of the way the data is structured internally.

Accpac Plus Accounts Payable version 6.0 is priced at $795 (C$895 in Canada). CA clients with SupportPlus maintenance contracts will get the upgrade free. Those without SupportPlus can get the upgrade for $200 (C$200 in Canada), or the upgrade in addition to a year of SupportPlus maintenance for $250 (C$250 in Canada).

The Accpac Plus modules require a personal computer using an Intel 80286 or higher processor with 512 kilobytes of RAM and DOS 3.1 or later.

Contact: John Schoutsen, Computer Associates Canada, 416-676-6700, fax 416-676-6734.

TELECOM

Editorial: Telecom Trends

ATLANTA, GEORGIA, DEC 24 (NB)—Three major trends dominated telecommunications in 1991. For data networks, it was frame relay. For phone networks, it was cellular networks. For international networks, it was privatization.

Frame relay replaces X.25 data networks with a system capable of trunk-line speeds—1.5 to 2 million bits-per-second—while reducing error correction found in X.25. This is possible because computers are faster, and most modems now have their own error correction schemes, most notably under the V.42 or V.42bis standard. In 1991, every major packet network announced an expansion into frame relay, with British Telecom's system expected to offer worldwide service under this new standard in 1992.

Wired service must become faster, because universal cellular service is becoming a reality. Countries in Eastern Europe, Latin America, and even Africa all offered cellular concessions in 1991, most under the Motorola AMPS standard. These analog services helped jump-start many economies, bringing business communications to nations which previously relied on telegraphs. By year-end, AT&T had closed its telegraph business, recognizing the new reality.

Privatization, meanwhile, is sweeping the world. The year began with Mexico's sell-off of Telmex to a group headed by Southwestern Bell of the U.S., and Argentina's sell-off of EnTel to two European groups. The year ended with Britain's sell-off of the rest of British Telecommunications PLC, with Germany and Brazil considering spinoffs of their telecommunications networks, and with Australia combining its state-owned companies and granting a new franchise to Optus, which is headed by BellSouth of the U.S.

Another major story for 1991, almost unnoticed by most analysts, consisted of heavy bets placed by big, smart companies on other radio data technologies. U.S. cellular systems endorsed a digital standard called TDMA, European companies began implementing a competing digital standard called GSM. More important, service began on other frequencies as well. Motorola and IBM offered radio data service on their ARDIS net in the U.S., while BellSouth paid $300 million for half of RAM Mobile Data, a radio network under the Mobitex standard pioneered by Ericsson of Sweden. Fleet Call and other companies bought emergency radio licenses, and moved to turn them into digital highways as well.

I believe these trends will expand in 1992. I call the new buzzword "field computing," a term first coined by the folks at Grid Computer Systems, which makes pen-based computers. Here's how it works.

Federal Express and United Parcel Service started it, building their own radio networks and giving specialized, handheld terminals to their delivery people. Now, any company can build such a system, for much less. Standard networks with competitive, pay-as-you-go rates, combined with pen-based computers, laptops or DOS-based terminals, make it possible. Continuing economic problems in Europe, the U.S., and Japan make it necessary. Recessions always bring new technology to the fore, and this will be no exception. Those companies which can improve productivity, and which provide better service to their customers, will be the only ones to survive the 1990s.

—Dana Blankenhorn

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TRENDS

Ins And Outs Of '92
—*Editorial by John McCormick*

WASHINGTON, DC, DEC 31 (NB)—It's almost New Year's so it must be time for predictions and here is a selection of mine from all areas of the computer industry.

IN

Clones—Two of the past year's big losers didn't make clones and were badly hurt by their pricy product lines. IBM (stock down by about 20 percent) by definition doesn't make clones; it builds the computers that others clone. Compaq (down about 50 percent and missing its founder) didn't make clones by executive decree of Rod (don't-call-them-clones!) Canion.

Apple Portables—After only one major disaster in the portable field (I hear there is a good market for the original Macintosh Portable as a solid small-boat anchor), Apple has done nearly everything right with its new laptops. I say nearly everything because the floppy drives are reportedly starting to give problems already, but this problem is covered by the warranty so I wouldn't let that keep me from buying one. It's a pity that it took IBM so many failures before it learned to build what remains a mediocre and overpriced laptop. The big question raised by the Apple/IBM partnership is, will IBM drag down Apple's inventiveness or will Apple pull up IBM's creativity and bottom line?

Multimedia—This blend of Saturday morning cartoons and corporate reports will be the darling of the media for several years to come, but note that it is also included in the OUT category below.

Data Storage—The move to much larger programs will accelerate the move to both data compression software and hardware as well as a surge of upgrades from small (less than 100 megabyte) hard disks to medium-size ones (100 megabytes to one gigabyte). By 1995, people will notice that MS-DOS 2.11 and Wordstar 3.31 produced letters and reports that made just as much sense as those generated on systems running the 25 megabyte MS-DOS 7.0 and 32 megabyte Wordperfect 9.2. By 1996 there will be a desperate search at garage sales for copies of programs that provide the minimum computing tools, occupy only a few hundred kilobytes of storage, and can be learned before the next version of Super-Duper Word Processor is released.

Windows—This will continue to be a hot item, especially when the next big release (at or before *Fall Comdex* '92) comes out with a built-in peer-to-peer file- and printer-sharing local area network (LAN). (Don't ask me to explain Windows' popularity; I see it but I still don't believe it.)

Graphics Accelerators—Big, BIG market; for the reason, see Windows or ask anyone trying to run Word for Windows on anything as slow as a 20 megahertz 80386 system.

Pen Computing—This will be hot in the media but cold in the stores when people notice that Pen systems only recognize carefully printed characters as opposed to handwriting and that they also require users to learn yet another operating environment—yes, LEARN because Pen operating systems, despite all the hype to the contrary, are no more intuitive than Windows was.

CD-ROM—Lots of big, useful, and relatively inexpensive titles will provide a big boost to sales of CD-ROMs and drives. It might even revive interest in my book on the subject but I doubt it.

Enabling Technology—Companies and individuals will come to realize that most disabled people want to work and could easily

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New for Macintosh: PhotoShop & QuickTime

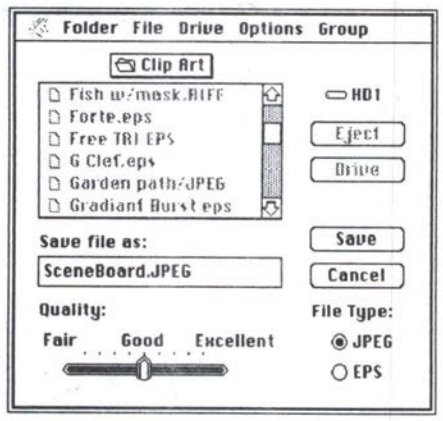
by Graeme Bennett

Readers of previous issues of *The Computer Paper* will know that Adobe Photoshop is one of my favorite applications. And so it was with great joy that I opened up the Photoshop 2.01 update package from Adobe Systems.

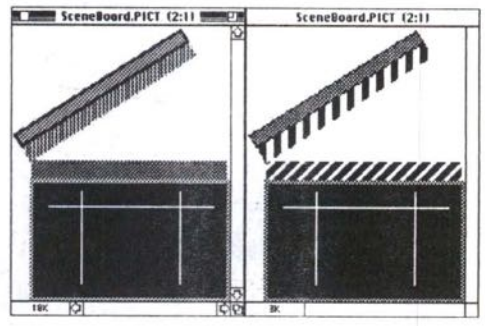
Adding compatibility with Apple's new Quadra computers, along with several minor bug-fixes, the update adds a bevy of features to the program, notably:

JPEG compression and decompression comes in two forms: as a plug-in module for System 6 and 7, and also as an adjunct to the system level JPEG utility of Apple's new QuickTime extension under System 7. (See related story, next page.)

The most notable feature of the Adobe JPEG implementation is its remarkable speed. I had previously used Storm Technology's JPEG plug-in module. With it, a 44K JPEG-compressed image took one minute, eight seconds to decompress and be displayed. I then saved it using the Adobe JPEG export option at the "GOOD" quality setting (the Adobe version will not directly read Storm-compressed JPEG files), resulting in a 56K file. When loaded back in, the Adobe-compressed image took only twelve seconds to appear! For comparison, an uncompressed TIFF file of the same image (a whopping 1.78 MB) took seven seconds to load, while a compressed TIFF (502K) took an inexorable 27 seconds to load. By the way, the 56K JPEG file was visually indistinguishable from the 1,824K TIFF image when loaded and compared. You can bet that I'll be saving most of my images in Adobe JPEG format from now on.



Another great new feature is the program's ability to import object-oriented PICT files as anti-aliased Photoshop files. This feature works similarly to the program's EPS rasterizing feature, where you are able to specify the target resolution of the image. There is a wrinkle with PICT files, however. QuickDraw patterns like stripes don't display correctly on-screen. As seen below, the rasterized image on the left appears quite different than the original on the right.



Amazingly, though, the images print correctly. The Photoshop 2.01 addendum explains that this is necessary for gray patterns to print as true gray-scale, rather than dithered white and black dots.

Adobe Illustrator users will savor Photoshop's new ability to export pen tool paths as Illustrator files. This makes it particularly easy to use that program's "text-on-a-path" features to integrate photographic images with PostScript text effects.

Also supplied are several new plug-in filters, including one that simulates the refraction caused by shining a bright light in the camera lens.

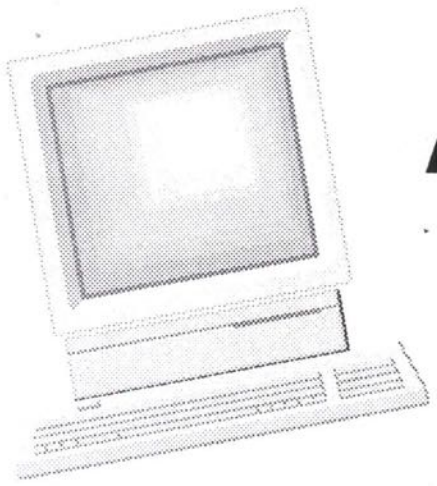
Other goodies include:

- Support for the Toyo ColorFinder 1050, an ink-matching system popular in Japan.
- The ability to load and save text captions along with TIFF images.
- A non-printable color alert warns you when a chosen color value can not be printed using CMYK inks.
- You can save and load custom monitor settings.

In addition, the update package includes Adobe Type Manager 2.03, reportedly only necessary for Quadra users. Owners of other Macintoshes need not upgrade their ATM software, according to the company.

The Photoshop update package includes a 22-page addendum, a cover letter briefly describing the major features and an offer to get 59% off the price of Adobe's newest software release—Adobe Premiere. Acquired several months ago from SuperMac Software, Premiere is Adobe's entry into the multimedia market. The company describes it as "Movie-making made easy... [a] tool for making QuickTime digital movies."

I'll report more on Premiere in a future issue, but one thing is clear: Adobe's timing couldn't be better. ❐



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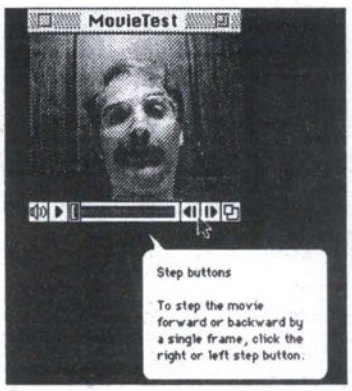
QuickTime Adds Motion, Sound

by Graeme Bennett



As promised, Apple has begun distributing its latest Macintosh system software extension, QuickTime. Available on CompuServe, GEnie, America Online and other sources as a 333K StuffIt archive, the release includes a QuickTime INIT compatible with Systems 6.07 and later, a separate INIT called Wild Magic, reportedly developed by an Apple France employee, that somehow fools the operating system into allowing QuickTime movies and sounds to be pasted into virtually any application that allows images to be pasted from the clipboard. Wild magic, indeed.

Suddenly, Microsoft Word documents can include a still image that, when double-clicked on, begins to move and talk! The possibilities are staggering.

Of course, full-motion video and digitized sound files are huge. Even with QuickTime's built-in JPEG support, a one-second movie occupies close to 500K of hard disk space (!). Clearly, QuickTime is a technology that will benefit greatly from the burgeoning popularity of CD-ROMs as a delivery vehicle for the immense amounts of data full-motion digital video requires.

Speaking of full-motion, don't get your hopes up too high. Even users of the most powerful Macintoshes may be disappointed to see that, unassisted by third party hardware, full-motion video and sound at 10 or 15 frames a second requires an image about the size of a postage stamp. The playback speed of a business card-size movie deteriorates visibly, and full-screen movies plod along at about one frame per second, even with a graphics accelerator video card. I was particularly dismayed to see how slow QuickTime movies are when viewed in a different number of colors

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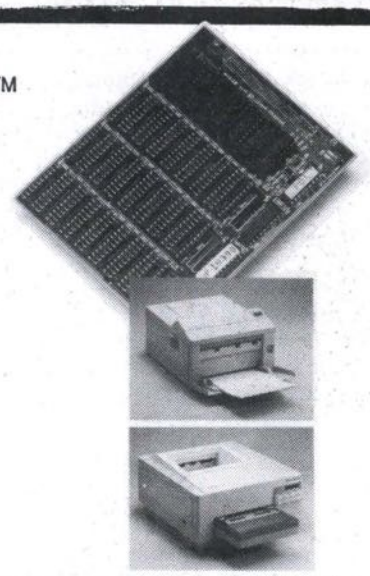

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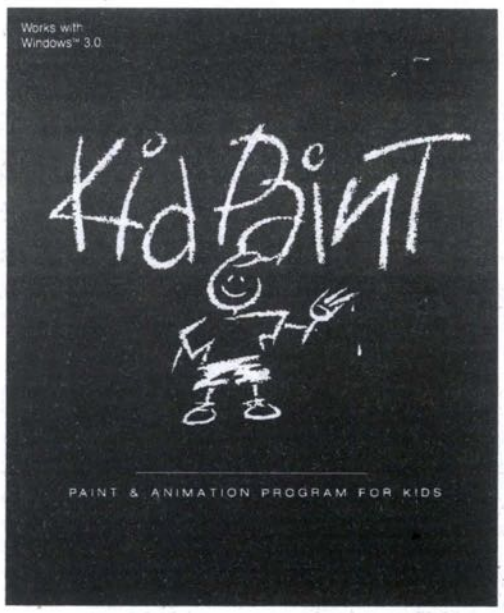

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ClarisWorks *cont. from page 72*

from MacDraw with a set of drawing tools that provide you with a wide choice of pop-up menus to choose colours, patterns and pen palettes for your graphics.

One of the most pleasant surprises lies in the database - which is modelled after FileMaker Pro. It provides you with the same kinds of graphical tools as FileMaker Pro, yet adds to that the high level of integration inherent in the design of ClarisWorks.

The spreadsheet, not surprisingly, borrows a little from Claris Resolve - although dedicated fans of that product may not feel it borrows quite enough. There aree some 100 built-in mathematical, statistical, financial, date and time functions built into the ClarisWorks spreadsheet feature and a wide range of chart types.

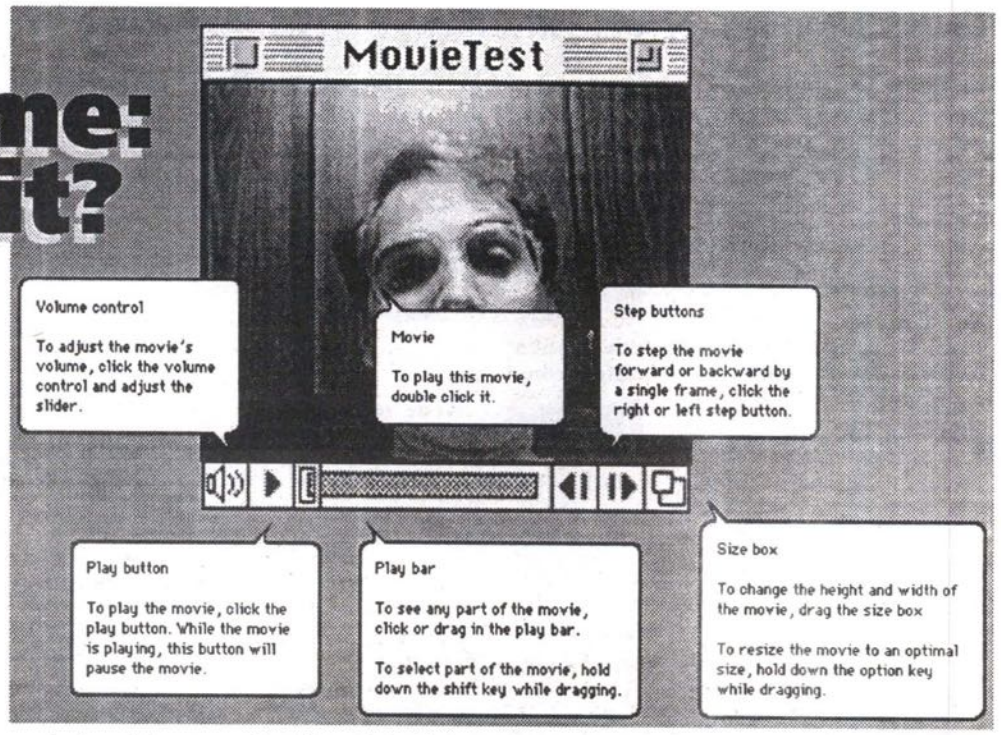
Overall, ClarisWorks is a useful alternative to Microsoft Works. Although it will face more competition (notably from Symantec's GreatWorks) as the number of lower-cost Macs in the market increases, you can feel confident that Apple is committed enough to this product that it is well worth having - for now and for the future. ❐

WordStar *cont. from page 57*

In fact, WordStar for Windows provides more control over text in some cases than do either of the major DTP applications. And because it takes a 'frame-based' approach to mixing text and graphics (as do both Ami Pro and Ventura Publisher), anyone who has briefly used a DTP package or some of the other Windows-based word-processing applications shouldn't have too much trouble getting used to WordStar for Windows. ❐

Geoff Wheelwright can be reached at 604/984-2351.

QuickTime: What is it?



AT RIGHT: QuickTime's Help balloons tell of its major functions. (Balloon Help is a built-in function of System 7.) For the purposes of this screen-shot, we assembled several different balloons onto one screen using a graphics program. Normally, a balloon pops up when the pointer passes over any of the controls or other important areas on the screen.

Until now converting photographic or video (analog) images to computerized (digital) form has been a science, a memory intensive, expensive science. Inside the computer there are video boards, outside special cables, and a host of hardware-related details; on the screen there are the nested dialog boxes querying the user for nebulous details. And finally, should a user get past these obstacles, the largest problem remains: how to "absorb" and store the massive quantities of digital data for later use. A single frame of video analog translates to nearly one megabyte of information. Considering that there are 20-30 such frames every second of viewing, the sheer speed of conversion necessary surpasses the current technology.

"Current technology" is the key phrase here. With the release of QuickTime, the Component Manager and Image Compression Manager will provide a universal link between applications and, as Apple puts it, "the intricacies of compression and decompression" schemes. In addition Apple is providing a range of compression formats, tailored to the particular needs of still images, animation and video. These schemes will be a built-in feature of every color-capable Macintosh running QuickTime.

For still image compression Apple uses the standards developed by the Joint Photographic Expert Group (JPEG). This compression scheme can reduce the memory required to store a scanned image 10 to 25 times (a range of 10:1 to 25:1 compression ratios) without noticeable degradation. There is some image data sacrificed at each compression, so this scheme is characterized as lossy. But in most applications these data omissions are not perceptible to the human eye.

Apple's animation compressor uses an algorithm based on an extension of the PICT image format to time-based data. The run-length encoding techniques are adapted to computer generated content and also compress screen-recorded images to anywhere from 1 to 32 bits in depth, depending on the content. QuickTime's animation compressor can operate in either lossy or lossless mode by utilizing spatial (one screen at a time) or temporal (storing the difference between frames) compression.

When digitizing video content the third compression method developed by Apple is most appropriate. The Video compressor also boasts both spatial and temporal compression, producing a compression ratio from between 5:1 to 25:1.

If you're beginning to feel a bit compressed by all this new jargon, refer to the glossary, or just chalk it up to experience because one of the principal functions of QuickTime is to buffer the applications, and therefore, the user, from all these "intricacies." Instead the take home message is less memory is required to perform the task with superior results, when compared to today's methods.

Information for this article was provided by Apple Computer, Inc.

than they were originally created with. For example, a sample movie I downloaded for these tests was originally created in 24-bit color. It played at the proper speed when the Monitors control panel was set to "Millions" or "Thousands" of colors (presumably because the movie did not contain more than a few thousand colors, the operating system did not have to dither or otherwise translate the screen images), but it played much more slowly when viewed in 256- or 16-color modes. In black-and-white, too, the dithering process slowed down the playback unacceptably. Worse, there does not appear to be a convenient way to tell how many colors a QuickTime movie was created in, at least with the supplied software.

Also, it is a shame that Apple did not see fit to include a way to access QuickTime"s JPEG compression for use with still images copied from the Clipboard or Scrapbook. There appears to be no way to save a movie's frame as a new size, although you can drag the "grow box" in the lower right-hand corner of the movie larger or smaller, much like any other window. By holding down the Option key, the frame sizes are constrained to "optimum" sizes, such as 150%, 200%, 400% etc. You can paste an image into a QuickTime movie, all right, but the image is reduced to the resolution of the previous movie's frame size. Although, with only the supplied software, this limitation renders the touted "system-level JPEG support" as close-to-useless, I don't expect to wait long before a simple utility appears in the public domain that can create a movie frame the size of, say, the current clipboard image.

As mentioned earlier, Adobe Photoshop 2.01 already allows full access to QuickTime's built-in JPEG support for saving images under System 7. Other graphics applications are sure to follow.

Included in the archive are QuickTime 1.0, Simple Player, QuickTime-aware scrapbooks for System 6.0x and System 7, and the Wild Magic extension.

Strangely, the release includes no documentation whatsoever, although under System 7.0, invoking the system's Balloon Help option gives rudimentary explanations of the various QuickTime controls. Fortunately, the whole affair is so simple (the controls resemble nothing more than a VCR or cassette deck's PLAY, STOP, FAST FORWARD and REWIND buttons. A VOLUME slider is equally intuitive.

One feature that is not detailed by Balloon Help appears when you click in the FAST FORWARD/REWIND area while holding down the CONTROL key. A previously hidden slider is revealed, which allows you to set the speed and direction of playback — a great way to hear what things sound like backwards. ❐

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Newsbytes *cont. from page 83*

be put to work using existing computer technology. When the economy pulls out of this recession, companies will need those underutilized workers—fortunately, the technology is ready and waiting.

Telecommuting—Not just those who have mobility problems will take to telecommuting; everyone smart enough to hold down an office job will come to realize that it just doesn't make sense to commute two hours or more each day just so your family can live out in the suburbs, especially when 99 percent of your job is done using a computer, telephone, or fax.

OUT

OS/2—Even without vaporish Windows NT looming on the horizon, OS/2 is deader than a 286 at a computer-aided design (CAD) conference. Industry reports have it that the beta copy won't even load into a lot of machines—probably due to a secret nonsense filter built into many clones. I was a very early fan of OS/2; I thought it had a great deal of promise. Unfortunately, that's all it ever had—promises.

Multimedia—How, you might ask, can Multimedia be in both the IN and OUT categories? Well, it isn't, as many of my friends might jump to suggest, that I am schizophrenic (Yes, I am! No, I'm not!); the split personality is Multimedia's. The "true" or trademarked MPC (Multimedia-PC) isn't the only way to get sound, action, and text from a computer, making the market rather fragmented. To make things far worse, the MPC standard itself is confused and many MPC software titles won't run on the minimum MPC as specified by the MPC council. Not many people will upgrade home computers to meet even the minimum MPC standard in 1992.

Bus Wars—By 1991 virtually no-one cared whether his or her PC had an EISA (Extended Industry Standard Architecture), ISA, or MicroChannel bus. Next year even that person will notice that for most applications there is no measurable performance difference.

Because of the nature of this editorial, I will provide some background information, something we don't normally do at Newsbytes.

My first experience with electronic computers was back in the early '60s when I wrote a simple machine-language program for an IBM 1401. Later I worked for Wang Laboratories and even later went into journalism, concentrating on the computer field.

Besides being Newsbytes' Washington Bureau Chief, I am a columnist, writer, or editor for several computer publications, and I have a book on the market called *"A Guide to Optical Storage Technology,"* BusinessONE Irwin.

All of that doesn't guarantee that any of my predictions are correct, but at least you know I didn't just buy my first computer last week.

—John McCormick

California Technology Stock Letter Predicts 1992

HALF MOON BAY, CALIFORNIA, JAN 7 (NB)— The California Technology Stock Letter, a stock advisory publication, has released some predictions for 1992. Among others, the newsletter predicts that a pen-based computer will be selling well by the end of the year, and that Apple will win the lawsuit against Microsoft and Hewlett-Packard, and get an injunction against sales of Windows and New Wave.

Other notable predictions include Borland International, towards the end of the year, settling its lawsuit with Lotus Development , by paying $50 million in past royalties and discontinuing the Lotus 1-2-3 lookalike mode in Quattro.

Two Advanced Micro Devices predictions include the introduction of a 486SX microprocessor by June, and the company winning its lawsuit and arbitration against Intel, with perhaps $500 million in damages.

The newsletter also predicts that the United States will select a HDTV (high definition television) format by mid-year.

In terms of storage, the newsletter maintains 60 megabyte (MB) 2.5-inch disk drives will appear in notebook computers by April, forcing the dumping of 20 MB notebooks on the market.

NeXT is also predicted to go public in 1992.

The newsletter is published 24 times a year at a subscription cost of $350. For more information contact P.O. Box 308, Half Moon Bay, California, 94019. The telephone number is 415-726-8495.

Contact: Morenove Inc., 415-726-8495.

Distributor Predicts What's Hot In Software For 1992

VAN NUYS, CALIFORNIA, DEC 23 (NB)— Based on feedback from software dealers, Robert Guth, vice president of purchasing at Kenfil Distribution, is predicting what's hot in computer software for 1992.

Guth says personal finance software is heading the list, especially tax preparation software as April 15 is fast approaching. Tax software is especially attractive as the Internal Revenue Service now accepts computer-generated tax forms and electronically transmitted returns, Guth added. As money gets tighter, people also find they need to get organized with their personal finances and personal finance software sales increase, Guth predicted.

Software that is developed for use with Windows is also hot. Guth said users will buy updated versions of software they already own just to take advantage of the graphical user interface (GUI) offered by Windows.

Education software is heating up, as moms and dads look to expand the use of the computer purchased for business to include home study for the kids, Guth said. Evolution of educational software is making

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At Olivetti, we didn't want to offer you just another 386SX computer.

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In totality, the M300 line delivers a rare, cost-effective combination of flexibility, security, power and speed.

An Olivetti M300 is ideal as a desktop PC. Yet, the feature-rich systems design allows it to function perfectly in a networked environment. The system runs MS-DOS™, MS-OS/2™, MS-Windows™ 3.0, SCO UNIX™ System V 3.2 and UNIX™ System V 4.0.

Another network advantage of the Olivetti M300 series is the degree of security it provides against unwanted users. This includes power-on/keyboard passwords, keyboard disabling, cabinet lock and key, "booting" disabling and disabling of all disk drives and ports.

Both the M300-05 (16MHz) and M300-10 (20MHz) models come with an Intel 386SX (32/16 bit) processor. There's also ample room for memory expansion and peripheral add-ons.

Before you invest in a 386SX, make sure you look at all the extra features of an Olivetti. Afterwards, anything else will seem quite ordinary.

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it more fun for learning as well, Guth added.

Always hot, Guth said software utilities continue to "keep cooking." Increasing speed, increasing hard disk storage capacity and improving system performance is attractive to users, but especially when they may not be able to afford buying a bigger, faster computer. Software is a more affordable alternative, Guth said.

Compact disc read-only memory (CD-ROM) multimedia software titles are coming out of the domain of the distant future into the everyday, and users are interested. Guth said high-quality sound and full-motion video combine to provide users with a new generation of training, education, and entertainment media.

Kenfil claims is has about 15 percent of the wholesale software market, offering more than 2,000 software titles. Kenfil is located in Van Nuys, California.

Intel Reveals 586, Flash Memory Info

SANTA CLARA, CALIFORNIA, JAN 7 (NB)—Intel has released a few more tidbits about the coming 80586 microprocessor chip, the awaited central processing unit (CPU) addition to the IBM and compatible family of personal computers.

A newsletter sent to Intel corporate customers reported the chip is known internally at Intel as the P5. The new chip is to combine the virtues of reduced instruction-set computing (RISC) architecture and complex instruction-set computing (CISC).

The new chip is to be a lot more integrated as well. While the 486 chip has 1.2 million transistors, the P5 contains over three million transistors, Nancy Pressel of Intel said. Processing power of the P5 is estimated to be 100 million-instructions-per-second (MIPS).

Intel says it also plans to provide an upgrade path to customers, so at some point after the P5 is released, the company will offer a bridge from the 486 to the P5. What that bridge is exactly or what it will cost is still known only to Intel.

A release date for the P5 is still uncertain, but Pressel did tell Newsbytes to expect the chip in 1992. Whether in the first or second half of '92 is still speculative.

Another fairly new technology is called flash memory. It is a replacement of the read-only memory (ROM) chips that store the basic input/output system (BIOS) information.

The BIOS is what determines, at least in part, the type and number of hard and floppy disk drives the computer can support as well as other system information. A new type of hard disk drive or a higher capacity floppy disk drive may require a BIOS upgrade to operate in the system. Upgrading the BIOS is risky at best as it involves the removal of the ROM chips from the motherboard.

With flash memory the user can upgrade the BIOS from a floppy diskette. Dell computer, who is offering flash memory in its Powerline systems, allows users to download BIOS upgrades via modem from its electronic bulletin board.

Intel is encouraging other system manufacturers to consider flash memory over ROM chips. Advantages include the fact that systems can be customized on the assembly-line and the flash memory chips can be soldered in place for better reliability.

Contact: Intel, Nancy Pressel, tel 408-765-4483, fax 408-765-5677; Lisa Rohlf, Dell Computer, tel 512-343-3782, fax 512-343-3312.

1992 Chinese New Year

BEST PACKAGE DEALS

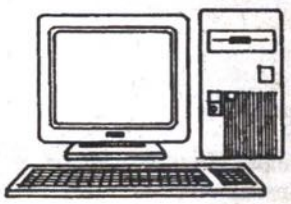
Laptops Notebooks & Palmtops

Notebook	Notebook	Notebook	Options Corner (Installed)
Texas Instrument TM 2000 4.4 lb, VGA 286-12 Mhz 20 Meg Hard Disk Laplink included	Bondwell B310V 386 SX 16 Mhz 8.5 lb, 1 meg RAM 40 meg Hard Disk VGA, HD Floppy Drive Theft alarm	Bondwell B330 386 SX 25MHz 8.5 lb, 5 meg RAM 63 meg Hard Disk VGA, HD Floppy Drive Internal modem.	Logitech Mouse from ... $69 52 MB to 85 MB ..... $80 52 MB to 105 MB ..... $129 85 MB to 105 MB ..... $55 105 MB to 125 MB ..... $55 Trident to ATI XL ..... $79 Extra Floppy Drive ..... $70 Extra RAM per MB ..... $65 Fax Modem Send/Rec $139
$1250	$1769	$2979	
Lease $47	Lease $66	Lease: $111	

Desktops

386SX-16 MHz	386SX-25 MHz	386SX CD-ROM	386DX-40 MHz
52MB Hard Disk 1MB RAM Memory 256K VGA 16 bit Color VGA .41 dp Mouse included, 3 button	52MB Hard Disk 17 ms 2MB RAM Memory 512K VGA 16 bit Super VGA .28 DP Mouse included, 3 button	386SX-25 MHz, with CD-ROM 2MB RAM, 52MB Hard Disk 512K VGA 16 bit Super VGA .28 dp Monitor Thunderboard and Mouse	85MB Hard Disk 4 MB RAM, 64 K Cache 1MB SVGA, 16 bit Super VGA, .28 dp Mouse included, 3 button
$1050	$1229	$1799	$1679
Lease: $39	Lease: $46	Lease: $67	Lease: $62

Tower Models



386DX-40 MHz	486SX-20MHz	486DX-33 MHz	486DX-33 MHz
64K Cache 4MB RAM ATI (OEM) XL, 1MB 125MB Hard Disk, 16 ms SVGA, Non-interlace	64K cache 4 MB RAM ATI (OEM) XL, 1 MB 105 MB Hard Disk, 19 ms SVGA, Non-interlace	64K external cache, 4 MB RAM, 60 ns ATI (OEM) XL, 1 MB 125 MB Hard Disk, 16 ms SVGA, Non-interlace	128K cache, Direct Writeback 4 MB RAM, 60 ns ATI (OEM) XL, 1 MB 125 MB Hard Disk, 16 ms 15" SVGA, Non-interlace
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COMPUTER CALENDAR

Events

PRO-COM Open House, Feb. 4, from 3:00 pm to 7:00 pm. Featuring Jeff Lerous from Progress Software and Matt Binnie from D.C.S., Micro Systems, and all new 4GL software. Refreshments. 150-14480 River Road, Richmond, B.C., 224-7911, fax: 244-7966.

MULTIMEDIA.92 PACIFIC EXPOSITION AND FORUM. Trade show on the latest in technology and products available for professionals in visual communications will take place Feb. 27-29 '92. Contact: Jai Cole 416/660-2491.

ANPA Prepress Technology Symposium, Orlando, FL, Feb. 23-24. 1st symposium on the impact of new technology on production and advertising in newspapers, 703/648-1000, fax: 703/620-4557.

MEDIA '92, Los Angeles, CA, Feb. 26-28. World Expo & Mitch Hall Associates multimedia expo and conference.

DEXPO/CANADA, Calgary, Feb 11-13, Miller Freeman Exposition, 800/223-7126.

ESTHER DYSON'S PC FORUM, Tucson, Feb 23-26, EDventure Holdings, Inc., 212/758-3434.

NETWORLD, Boston, Feb 11-13, Bruno Blenheim, Inc. 800/829-1400.

PC/South, Feb 9-11/93, Dallas, TX. Interface Group, 617/449-6600.

SEYBOLD COMPUTER PUBLISHING, Boston, Feb 18-21, Seybold Seminars, 213/457-5850.

CeBIT '92, Hannover, Germany, Feb. 11-18. Hannover Fair on computers and communications, 609/987-1202, fax: 609/987-0092.

THE HOME OFFICE SHOW, Toronto, ON, Mar. 31-Apr. 1. Home-based business trade show, 416/869-0141 or fax: 416/869-1660.

PC/WEST, San Franciso, CA, Mar. 17-19. Interface Group, 627/449-6600.

PC/Windows, Toronto, ON, Mar. 23-25. World Expo Corp., 508-879-6700, fax: 508-872-8237.

USER GROUPS

AMIGA USER GROUP (PaNorAmA), BCIT, Rm 129-1A. Gen. Meeting 2nd Wed 7:30; Programmers 4th Wed 7:30. Bill Wagstaff, 597-1746.

APPLES B.C. COMPUTER SOCIETY. A User Group for Macintosh, Apple II's and Lisas.

Macintosh meetings are the last Tuesday in each month at the Unitarian Church in Vancouver. Novice meetings and special interest meetings are held mid-month. Call Beth Gibson 261-8682 for information. Apple II meetings first Monday of each month. Call Al Crout 521-8618 or Kiyoshi Masuda 437-9935 for information.

ARCHITECT USER GROUP (Macintosh). Call Glen Schiller or Kal Gill, Byte Computers, 738-2181.

ASTUTE—ATARI ST. Meets 1st Tues., 7:30 Hastings Comm. Ctr. Dennis 420-8710.

ATARI USERS! Vantari, P.O. Box 3614 Main Post Office, Van., B.C., V6B 3Y6. Bill Sutherland 988-1450, Don Hatch 433-8055. Meets 2nd Wed., 7:30, Hastings Comm. Ctr., 3096 E. Hastings.

BEAVER VALLEY COMMODORE CLUB, 1st Tues., Montrose School Library. Call John Vink 367-6426.

B.C. INTERGRAPH USERS GROUP (BCIUG) Quarterly Meeting, B.C. Hydro Auditorium, 970 Burrard St., Vancouver, December 3, 1991, 5:30-9:00 p.m. Contact Mike Barnes @ 663-3662 for information.

B.C. REGIONAL USERS GROUP SOCIETY of Hewlett-Packard Users. Contact Randy Cliff for information 661-8048.

B.C. UNIX USERS GROUP Dinner Meetings. 681-4473.

B.C. VAX/VMS Local Users Group (BCVAXLUG) meets on the second Wednesday of each month (except January, August and October) usually at Digital Education Services, 13110 Cambie Road, Richmond, B.C. at 7:30. p.m. Contact Lenore Wemyss 663-3995.

CHILLIWACK COMMODORE COMPUTER CLUB (C.C.C.C.) - 976, Supporting Commodore Amiga, P.O. Box 413, Sardis, B.C. V2R 1A7.

DATA PROCESSING MANAGEMENT ASSOCIATION, DPMA dinner meetings 4th Tuesday every month, Stanley Park Pavilion. Contact Frances Dickson or Suzette Havens — 660-8668 to register or Gail Nicols — 660-9533 for information.

DESKTOP PUBLISHING USER GROUP — bi-monthly meetings. For information, call Karole Doner, 929-4916.

FORTH-BC meets 7:30, 1st Thurs/month, Rm 1A-324, BCIT main bldg. Discussions, demonstrations and information for programming/applying FORTH (hardware and software).

GREATER VICTORIA PERSONAL COMPUTER USERS' ASSOC., PO Box 5309, Station B, Victoria V8R 6S4. General meeting last Wed. Also, special interest group meetings 382-3934.

INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION, Box 820, Station A, Van., B.C. 682-2747.

Conferences, Exhibitions, Seminars and Courses

January 16–April 15—High-tech evening courses, Capilano College, North Vancouver, B.C. Capilano College has just kicked off a new round of *Applied Information Technology Evening Courses.* They include an introductory course on computer systems and telecommunications (Info 140), how to print resources and track down information electronically (Info 143) as well as how to create and use multimedia tools. To get more information on these courses—as well as details on when they will next be run — contact Capilano College at (604) 984-4903.

February 18–20—*Accounting and Business Management Seminars*, held in Calgary and Vancouver. These seminars are run by Great Plains Software and will focus on accounting and business management tools that make accountants in public practise and industry more productive and competitive. For the full story, contact seminar co-ordinator Lori Beteen at (701) 281-3709.

March 6–8—*Home & Education Computer Expo*, B.C. Enterprise Hall, Vancouver. Presented by the B.C. Ministry of Education, T.V. Week Magazine and ISR Software Review Corporation, this exhibition is designed to be the only one in Vancouver solely dedicated specifically to the home and educational use of computers. For more details, contact George Slade at ISR Software Review Corporation: (604) 538 0517.

March 7—*Vancouver Island Computer Show and Sale*, Sancha Hall, 2443 Beacon Avenue, Sidney, B.C. Live on Vancouver Island and want to get a bargain on PC hardware or software? Or perhaps you have some surplus computers or applications you want to sell? This show and sale may be the place for you. The organisers are promising lots of free parking, a snack bar and a chance to win door prizes. To get the complete low-down on this one, call Dave Lord at (604) 477-7756.

April 30–May 3—*B.C. Home-based Business and Opportunities Show*, Tradex Exhibition facility, Abbotsford, B.C. Use your computer to work from home? Need some ideas on how to be more productive? Then you might benefit from a visit to this show. It's stated purpose is to provide "sources, resources and opportunities for today's entrepreneur" and exhibitors will include suppliers to home-based and small businesses, as well as those who offer business opportunities through franchises, direct sales, distribution and network marketing. To find out more, call Ken Grant or Stan Sauerwain at (604) 985-1143.

Realtors' Computer Show

For the realtors in the Lower Mainland, the computer show of choice is the *Computer & Trade Show For Realtors* being held Wednesday, Feb. 19th at the Italian Cultural Centre, 3075 Slocan Street in Vancouver. Over the past two years more than 3,500 realtors have attended this event looking for real estate computer solutions. Their main areas of interest are software for contact management, client qualifying, contract and form generation, and image compression, as well as hardware and networking. If you or your company wish to exhibit products or services there, contact Mark Wilson 604-736-4551 (fax: 604-734-1778) at the Real Estate Board of Greater Vancouver.

PC Windows Show

'WindowsMania' is a phenomenon that spread to many of the major U.S. computer trade shows this year and it is hitting in a big way at the recently announced PC Windows/Canada Exposition and Conference in Toronto in March. Targetted for corporate and end users of Microsoft Windows and Apple's System 7, the show will feature guest speakers Philippe Kahn of Borland International, and Bill Gates of Microsoft. This promises to be Toronto's hit show this year. Many software and hardware vendors are closely examining their budgets for trade shows this year, with a plethora of shows to choose from, and limited budgets due to a slower economy. We heard at least one vendor say that they were targetting this show because of its Windows focus as the one show to be at in Toronto.

Contact: Roland Klassen, I C + E, (416) 581-8797.

Accountants "Hot Links" Seminar

Accountants in management advisory services, business or industry, may want to check out a free seminar put on by Great Plains Software. The program will cover Great Plains Accounting software, the award winning accounting software for Macintosh and PCs, Forest & Trees, a data access tool, Mobley matrix, a program that reframes tradional financial staements in a form for high-level financial planning and F9, a utility that allows users to draw accounting information from Great Plains into spreadsheets. Accountants "Hot Links" Seminar, 9:00-11:30 a.m., February 19, 1992 at the Holiday Inn, Downtown, 1110 Howe Street, Vancouver. Contact 1-800-456-0025.

Prophet Accounting

If your to-do list includes finding a new accounting system for a small or medium-sized business then an in-depth look at *Prophet* may be for you. This product won *PC World's* (the one from New Zealand) best buy, over Accpac and others. Coastway System Technology is offering a *Complimentary Computerized Accounting Course* to demonstrate the Prophet modular accounting system. Registration information, times and place for this course can be attained by calling Jerry Glowka at Coastway (604-736-5039 or fax: 604-736-6272).

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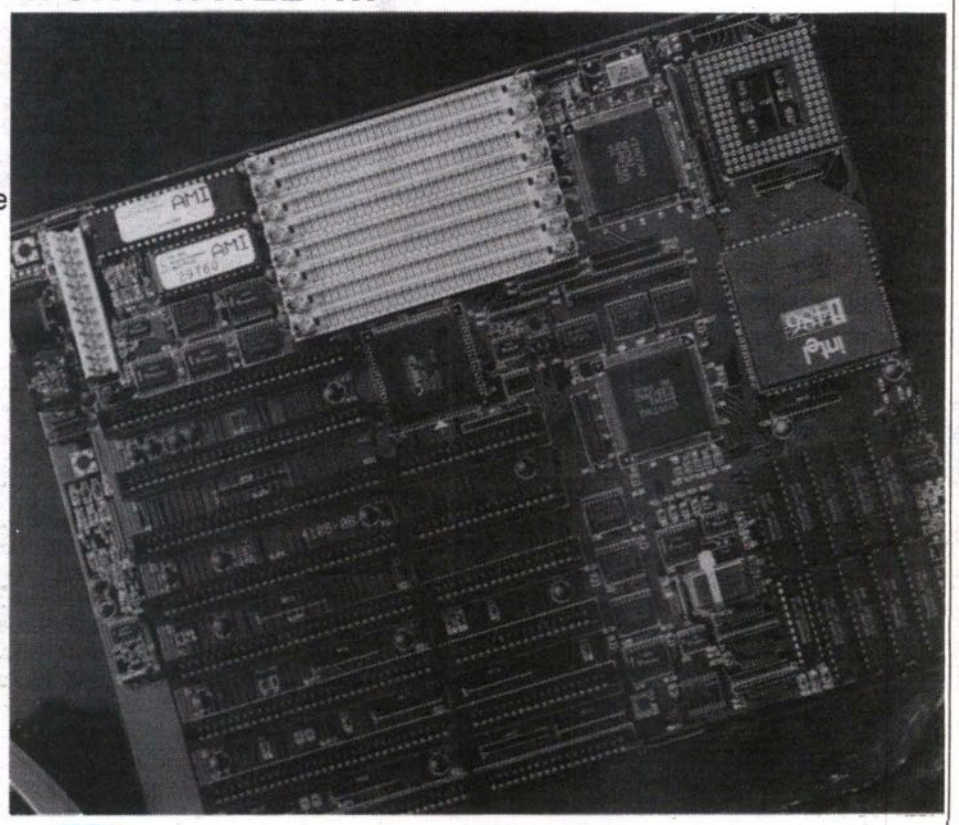

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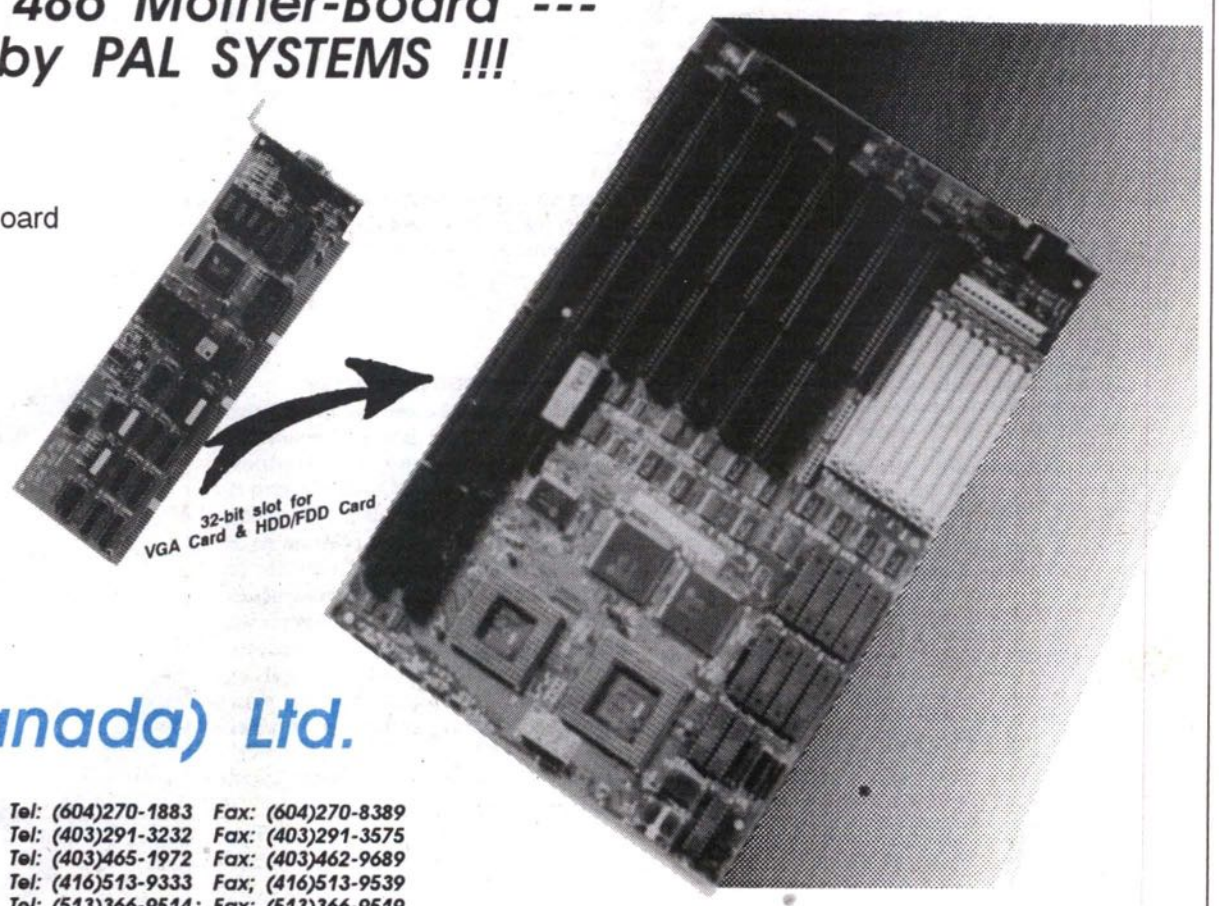

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ITAC/SOFTWARE B.C., #400-1190 Melville St., Van., B.C. 684-7432. Meetings at Stanley Park Pavilion, Doors open at 5:30 pm, Buffet dinner at 6:15 pm, Guest speakers at 7:00 pm, $25 for members, $40 for non-members. January 16th meeting topic: Expert panel review of a local high-tech company business plan.
KAYPRO USER GROUP/VANCOUVER PORTABLE COMPUTER CLUB, 3rd Mon., at Kwantlen College Richmond (DOS & CP/M) 271-1519.
LABORATORY PC USER GROUP, Rm 2J38, BC Children's Hospital, Vancouver. 7:00 pm, every 2nd Wed. (except July & August) - $10/year 266-7999.
MACWEST COMPUTER SOCIETY, 2 monthly meetings for members, plus PD copy session. General Meetings - 2nd Wed., Contact: Phil Beall 855-9274 or Edmund Hsiah 583-5799. 7:30 pm. MacWest New User Meeting - 3rd Wed., 7:30 pm, Guildford Pub. Lib., Surrey. PD Copy sessions & meet New User Group. Computer User Group, 2nd Tues. of every month, M.R. Sr. Secondary 7:30.
POCO COMPUTER USER GROUP, 322-6198, 1379 Laurier, Hyele Creek Centre.
NeXT User Group Meeting, last Wed. every month, 7:00 pm at Science World, B.C.
ORACLE USERS GROUP, 1055 W. Hastings. Lawrence Clark 275-5902. Every 3rd Wed. of each alt. month.
PACIFIC INFORMATION EXCHANGE, P.O. Box 67366, Station O, Vancouver V5W 3T1.
PORT COQ. COMPUTER CLUB—Commodore, Amiga & IBM, 1st & 3rd Tues 7:30, Rm. 104, George Pearkes Jr. Sec. School, 1390 Laurier Ave., Port Coquitlam, Mike Evans 942-4286.
REVELATION TECHNICAL USER GROUP (RTUG), 1st Wednesday of every month, c/o InfoTech Management, 360-885 Dunsmuir St., Vancouver, B.C. V6C 1N5. Brian Turner 666-3523
SMART USER GROUP, Brian Wiebe 588-8065.
T.I. 99/4A COMPUTER B.C. 99er Users Group, Every Thurs 7-10 pm, Cameron Rec Ctr., Bby. Ron: 522-2598. 1st Thurs. Tutorials, 2nd Thurs. General, 3rd Thurs. Tutorials, 4th Thurs. Copying Prog.
TARGA/3DS USER GROUP, First Image, #112-1020 Mainland St. Vancouver, 2nd Thurs. 7:30 p.m., 684-9588 or BBS 264-8101.
TRACE (Richmond Atari Club), Thompson Comm. Ctr., 272-5789 1st & 3rd Mon. 7:30-9:30.
VANCOUVER ACM/SIGGRAPH Computer Graphics, 1st Wed. Call Susan Mair, 228-3938.
VANCOUVER ACCPAC USERS GROUP, 3rd Tues. Stanley Park Pavilion. For Info: phone or fax 325-0353.
VANCOUVER AUTOCAD USERS SOCIETY, BCIT, Bldg. 3A, Room 110, 1st Wed of the month, 7:30 pm. Contact Robert Cheek, 684-9311 for info.
VANCOUVER CLIPPER DEVELOPERS ASSOC., 1st Tues., 7 pm, 800-1190 Hornby St., Van, 667-4100.
VANCOUVER COLOR COMPUTER CLUB, 3rd Tuesday, 7:30 PM, Century House—Moody Park Recreation Centre, 620-8th St., New Westminster. Contacts: Jordan Dobrikin 420-6081; Steven La Favor 467-0923.
VANCOUVER DBASE USERS GROUP, 2nd Wed., 7 pm. 800-1190 Hornby St., Van. 667-4100.
VANCOUVER ELECTRONIC PUBL. ASSOC., 1115 W. 11th, Vancouver V6H 1K4 (mail). For info, call 733-9080 (leave msg).
VANCOUVER NETWARE USERS GROUP, meets first Monday of the month, Stanley Park Pavilion, Information 733-0055.
VANCOUVER NeXT USERS SOCIETY (VNUS), last Wed. 7 pm at Science World. Lawrence Clark 275-5902.
VANCOUVER PORTABLE COMPUTER CLUB (VPCC), AMO 17, Jay Siegel, 4251 Lancelot Dr, Richmond, B.C., V7C 4S4, 271-1519.
VANCOUVER PC USER SOCIETY, Science World Auditorium, 6:30 pm, 2nd Thurs. $30/yr. 734-0060.
VAN. SINCLAIR USERS GROUP, Timex-Sinclair, 2nd Fri, Killarney Comm. Ctr., Gerd Breunung 931-5509.
VANTARI, Box 3614, Main Post Office, Van., BC V6B 3Y6. Judy Harcus 873-1941; Don Hatch 433-8055; 2nd Wed., Hastings Comm. Ctr., 3096 E. Hastings.
VERSACAD USER GROUP, 2nd Tues. Call CADD Solutions Inc., 681-4686 for info.
WANG SYSTEM USERS, Karen Turner 643-7902.

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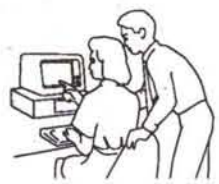

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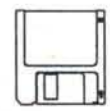

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Intel 80486DX-50MHz C.P.U. Running @ 50MHz
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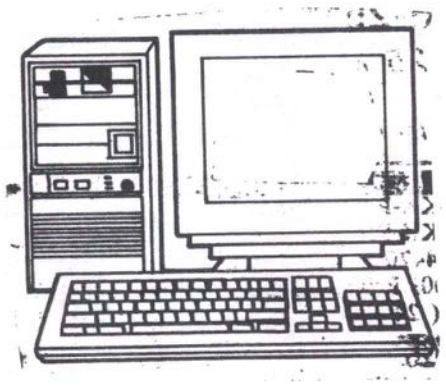
Built-in Math Coprocessor (socket for WEITEK)
105 MB Voice-coil 64k cache IDE Hard Drive
4 Megabyte RAM (expandable to 32MB)
5.25" (1.2MB) or 3.5" (1.44MB) TEAC Floppy Drive
1:1 IDE controller; 2 serial, 1 parallel, 1 game ports
Clock/Calendar with Battery Bachup; AMI Bios
Fujitsu soft tactile 101-keys enhanced keyboard
Trident 8900 SVGA adapter card with 1MB RAM
14" DIAMOND series Mini-Tower Case
200 Watt CSA approved Power Supply
AAMAZING Super VGA 14" Colour Monitor .28mm
2 Years Parts and Labour Warranty (Carry-in



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AMD 80386DX-40MHz C.P.U.
Running @ 40MHz - 64K Cache Memory
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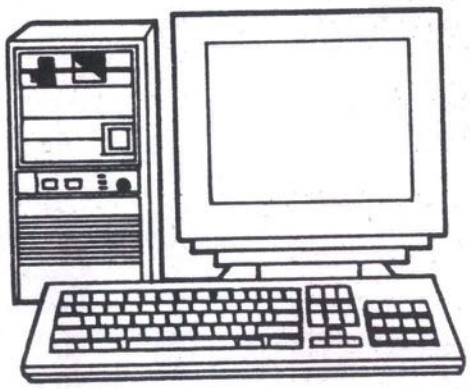

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Intel 80386DX-25 C.P.U.
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Mailbox *cont. from page 8*

Francisco having a good time while their customers were taking time out of their work schedules to attend a show where their vendor doesn't even show up. Worse still, none of the Apple dealers were there to pinch-hit for the big boys at Apple who had more important things to do than hang out with their customers. Wait a second, I stand corrected, there was an Apple dealer at the show—Advantage Computers. They were showing the NeXT computer. Does this mean that the Apple dealers out there would rather show computers other than Apple computers? The other explanation given is that the Pac Rim show is an IBM- and DOS-oriented show. This also does not wash. We are in a time when computer platforms are opening up for everyone except Apple. By not attending the Pac Rim show, Apple's customers could not compare the Mac to products like Microsoft Windows and many walked away with the opinion that Windows, OS/2 and NeXT are superior systems. Locking your customers in to what seems like a closed technology and not showing up to explain the benefits is very short-sighted on the part of Apple.

Finally in closing, the Pac Rim show gave us an opportunity to compare and see who is the innovater in the computer industry. We saw the new IBM eagerly demonstrating their new systems, we saw the NeXT computer and its innovative new system and we saw Microsoft Windows 3.0. In the minds of your customers who rely on shows such as the Pac Rim show to compare (myself included), these systems, and not Apple, are the choices for the future. Indeed, Apple in choosing not to attend the show, does nothing to dispel this notion.

At any rate, if you get a moment, and I know you are obviously busy with many more important things than communicating with your customers, drop me a line!

Your disappointed customer,
Dwight Dionne
Desktop Solutions Ltd.
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Tandy Fan

So far, this is the only computer paper I receive, and it appears to be as good as many others I have seen. And it is the first one, apparently, to mention Tandy or Radio Shack.

In a recent issue, on page 28 I find both mentioned in your first column. Tandy is mentioned again on page 35, first, second, and third columns; these are the first mention of either I have ever found. I had formed the impression that these companies were proscribed and verboten by the rest of the industry, and had given up hope of seeing them in print.

Which leads me to another point: why is there so little mention made of the products of these of these two companies? And why are no books about the two, or either, shown on news stands, as are books about other makers' products?

A further question I should like answered: on your page 37 you discuss another firm which has a similar name: Tandon. Is there any connection between Tandon and Tandy? And, if so, what is it?

I shall look forward to your answer most eagerly.

Percy Bendell
Bathurst, N.B.

We wish Amiga owners would be so grateful to read their computers' name in print! We've noticed that the Tandy name is in the news with increasing frequency, now that the company has one of the first MPC-standard CD-ROM drives at a competitive price. As for why there is so little mention, we surmise that, because Tandy computers only sell through Tandy/Radio Shack stores, that the products are not as widely available as other national brands. Finally, we love a good rumor, but it appears there is no connection between Tandon and Tandy.

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- 16MHz clock speed
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- 25MHz clock speed
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- 1MB RAM/64K Cache
- 33MHz clock speed
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- 5.25" (1.2MB) or 3.5" (1.44MB)
- 1:1 IDE Controller; 2 serial, 1 parallel, 1 game ports
- Clock/calendar with battery backup: AMI Bios
- BTC soft touch 101-keys enhanced keyboard
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- 1:1 IDE Controller; 2 serial, 1 parallel, 1 game ports
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- Socket for math co-processor
- 42MB Voice-coil IDE Hard Drive
- 1MB RAM (expadable to 16MB)
- 5.25" (1.2MB) or 3.5" (1.44MB)
- 1:1 IDE Controller; 2 serial, 1 parallel, 1 game ports
- Clock/calendar with battery backup: AMI Bios
- BTC soft touch 101-keys enhanced keyboard
- OAK 067 SVGA adapter card with 256K RAM
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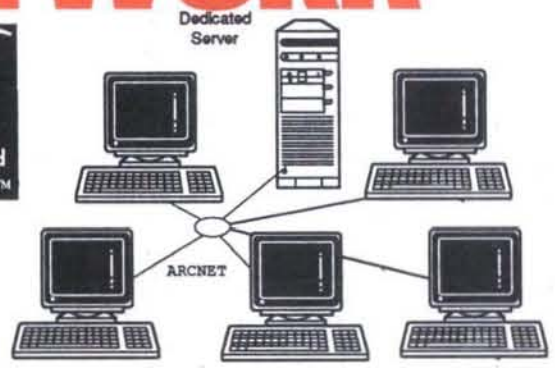

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SOFTWARE POWER LIST

386 To The MAX	Computers Clip Art	Flight Simulator	PC Globe	Splash VGA Paint
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ACCPAC	Cook Book	Flow Charting II Plus	PC Instructor (trainer)	Stacker Compression Software
ACT!	Cook Book Condensed	Fontasy 3	PC Kwik Power Pak	Stedmans Legal Dictionary
Above Disk (Create LIM 4)	Copy II PC	Fonts on the Fly	PC Kwik Super Disk Accelerator v4.	Stedmans Medical Dictionary
Above LAN	Copy II PC Option Board	Fonts-Atech/Ni for First Publisher	PC Paintbrush IV	StreamLine (restore Scand)
Above MEM	CopyWrite	Fonts-Atech/Ni for Windows 3	PC Paintbrush IV PLUS	Success Inc (financial plan)
Accu Weather Forcaster	Corel Draw	Fonts-Atech/Ni for WordPerfect 5.1	PC Tools Deluxe	Super Base 2
Act V2.0 (Best contact manager)	Corel Draw on CD ROM	Form Filler (fills forms)	PC Wedding Planner	Super Base 4 Windows
Address Book Plus	Corporate Ladder	Form Finisher	PD Quote	Super Video Editor
Adobe Illustrator Windows	Correct Grammar for DOS	Form Publisher Windows	PackRat	Super Video Editor Developer
Adobe Plus Pack	Cricket Graph for Windows	FormGen Plus v5.0	PageGarden (page & font control)	SuperKey (great macro maker)
Adobe Type Align	Crosstalk Communicator	FormTool Gold	PageMaker v4.0	Supersolic 5.0 (super value)
Adobe Type Manager	Crosstalk Mk IV	Formdoes	Paint Show Plus	Superproject v3.0 CA
Advanced Mail List (My)	Crosstalk XVI	Formmerx FM & File	Paradox	Swift Laser Fonts for WP 5.1
After Dark Screen Saver	Crosstalk for Windows	Fortran Compiler	Paradox Competitive Upgrade	Switch It
Agenda Upgrade All to 2.0	Current	Fox Graph	Paradox Engine	T MAN Point of Sale
Agenda v2.0	DOS 5 Upgrade	Fox Graph (for Foxbase)	Paradox Network	Take Control of Cholesterol
AgendaMentor	DOS 5 w/Windows Bundle	FoxBase 365	Paradox Node	Task Force Presentation
Alleays Lotus	DOS Tutor DS (DOS Trainer)	FoxBase Runtime	Paradox 3a	Timeline 3
Alleays Symphony	DR DOS	FoxPro	Party Clip Art for Printshop	Timeslips III
American Heritage Dictionary	Dac Accounting Upgrade	FoxPro LAN	Pascal	Tool Book (for windows)
Ami Lotus	Dac Easy Accounting	FoxPro Royalty Free Runtime	PerForm Pro Designer Filler Windows	Toolworks Office Manager
Ami Pro Upgrade	Dac Easy Payroll	FoxPro Runtime	Power Macro's Lotus	Top Dollar (D)
Amortize (Canadian Loans)	Datasave v4.3	Fozbase Plus	Power Macro's WP5.1	Top Priority (planner)
Animation (for Deluxe Paint)	Deluxe Paint II Enhanced	Generic 3D Drafting	Power Pend	Trading Places (for Obase)
Animator Clipart	Deluxe Paint IV	Generic 3D Symbols Pack	Power Point Windows	Treasures (Sky)
Antivirus	Design Cad 3D	Generic AutoConvert	PowerDisk PC Kwik	Tree Saver
AutoDesk Multimedia Explorer	Design Your Home Interior	GeoWorks Ensemble	Present It (power up)	Turbo Debugger Tools
Autodesp Road Atlas (CanAm)	Design Your Own Home	Geoworks Free Upgrade Pack	Print Master Plus	Turbo EMS Memory Manager
Autodesk Bathrooms	Design Your Own Train Set	German Assistant (WP Translator)	PrintQ	Turbo Pascal
Autodesk Home Design	DesignCad 3D	Ghost Writer	PrintQ LAN (buffer plus)	Turbo Pascal Professional
Autodesk Kitchens	Designer For Windows	Guitar 2.0 (find any file)	Printshop The New	Turbo Pascal Windows
Autodesk Landscape	Deskjet Y0.2	Grammatik IV DOS	Prizemate Plus	Turbo Pascal windows/objects
Automate Anytime	Deskjet 500	Grammatik IV Windows	Procomm: The Works	Type Set I
Autosketch	Deskjet Companions -Utilities	Gran Forme	Productivity Pack Windows	Typing Tutor V Windows
Avagio Desktop Publisher	Deskjet v2.4	Grandview (organize/ track)	Publisher Windows	Typing Tutor V Dos
Avery Label Maker Pro	Destiny 1	Graph in a Box Windows	Publishers Paintbrush	UD Atlas
Award Ware	Direct Access Network	Great Chefs	Pyrol v1.0	Ultra Coach
Bard in a Box	Direct Access v5.1	Hand Writing Analysist	Q Dos R New	Ultra Vision
Bazaar Blue Movie Guide	DirectLook (security)	Harvard Draw	Q DOS Advanced	Understanding DOS
BannerMania (fantastic banners)	Disk Optimizer v4.0	Harvard Graphics	Q&A	VIA TSR Writer
Bar Code Maker	Disk Technician Advanced	Harvard Project Mgr 3.02	Q&A Network	Ventura DOS
BarCode One (maker)	Double Disk (doubles HLDisk)	HeadRoom v2.0	Q&A Write	Ventura Windows
Bartenders Guide	Double Dos v5.0 (run twice)	HLJack (graphics screen grabber)	QA Plus (system checker)	Vinci
Basic Compiler Professional	Drafix Cad	InfoSelect (thought manager)	QEMM 386	Vineard
Battery Watch Pro	Dragnet (file finder) Windows	infoSelect Network (5 user)	QEMM ROAD	Visual Basic
Becker Tools for Windows	DrawPerfect	InfoSelect Node	QRAM	Voice Data Switch
Bedford Accounting ACCPAC	DrawPerfect Tradeup Exchange	K Edit	Quattro Pro	Wallpaper for Windows
Borland C++	Duplicator Toolkit Pro	Key Watch	Quattro Pro Upgrade	Watch Dog Security
Borland C++ (Application Framework)	Duorek on Typing	Label Maker (My)	Quattro 3e	Who What When
Brief for DOS	Dynacom Asynchronous Windows	Labels Unlimited	Quick Basic	Wide Angle for Windows
Brief v3.0 (for DOS)	Dynaview	LapLink Pro	Quick C	Wild Cat BBS Single Line
Brooklyn Bridge (MS)	Eight In One	Lotus 123	Quick C Windows	WinConnect
Btrieve Network	Empryses Handbook Builder	Mavis Beacon Teaches Typing	Quick C with Assembler	WinFax
Btrieve Upgrade	Entertainment 1 Pac	Mesmerizer Lite	Quick History	WinFax Pro
Budget Express (for Lotus)	Entertainment 2 Pac	Mesmerizer v2.1 Network	Quick Pascal	Window Works (Spinnaker)
Business Graphics Clip Art	Entertainment 3 Pac	Mesmerizer v2.1wNetWrNg	Quick Reports v5	Windows
C Compiler	Everybodys Planner	NetRoom	Quick Schedule Plus (scheduler)	Windows 3 Developer
C++ 2nd Edition	Excel Upgrade Windows	News of the Past	Quicken	Windows 3 Device Driver
CA Compete	Excel Windows	Newsletter Clip Art	Quicken for Windows	Windows Application Launcher
CC Mail Remote	Executive Fonts	Newsmaster II	QuickMaster for Windows	Windows Draw
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Career Design	Face Lift for Windows	Norton Backup	R Base for Dos	Wise Compaction
Cash Collector (for A/R)	Face Lift for Wp 5.1	Norton Commander	Random House Encyclopedia	Wogd Windows
Catalogue-Select Customer Pricing	Family Reunion	Norton Desktop Windows	Reindex Live	Word 5.0
Catchword v1.1 (OCR Reader SW)	Family Tree	Norton Editor	Run Your Own Train Set	Word 5.5
Centsy/Point Backup DOS/Windows	Fastdrivers	Norton Just Write	SCO Multiview Windows	Word For Windows
Certificate Maker	Far Side Calendar DOS	Norton Utilities 6	SCO Xenix Dev 386	Word Upgrade Windows
Chain of Command	Far Side Calendar for Windows	Novell Lite	Sidekick	Word for Word
Chaos	Fast (Windows Accelerator)	Novell Netwers V3.11 10 User	Sidekick	WordPerfect Windows
Chiropsche	Fast Trax	Object Vision Windows	Sidewys	WordPerfect DOS
Charisma Node	FastFox Mail (mail list)	Office Bundle Microsoft	SSBack (Automatic backup)	WordPerfect Dos
Check Book (My)	Fastback Plus	Office in a Box	Silotech	WordPerfect Executive
Check It (PC Diagnostics)	Fax Modem Phone Switch	OmniPage	Small Talk	WordPerfect Office
Check Writer Plus (Tobias)	File & Find	On Target	Small Talk 286	WordPerfect Office LAN
Clarion Developer Personal	File Apx for Windows	On Time Calendar/Scheduler	Small Talk for Windows	WordPerfect Upgrade Dos
Clarion Pro v2.	File Director	On Time for Windows	Smart Key Macro Maker	WordPerfect Workbook for 5.1
Clipper	File Shuttle Windows	One Person Office	Smart Spreadsheet	WordStar Legacy
Close Up Customer	Financial Calculator (Tobias)	Optune (drive checker)	Smart System (new Ver.)	Wordperfect Competitive
Close Up Network (8 user)	Focus Forcast (power up)	Orbits	Smartern 320	Wordstar Professional
Close Up Support	Finesse Desktop Publishing	Org Plus Advanced	Smartern 240	WordWheel Utilities
Color Compiler	First Apps Windows	Org Plus Windows	Softdisk v2.0 (system security)	Working Hours
ColorEX VGA Paint	First Choice	Outside In	Soft[Type (D-soft Fonts Windows)	Works DOS
Comm.ax	First Publisher v3.0	PC Anywhere IV	Software Bridge v4 (wp Convert)	Works Windows
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