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FEBRUARY 1993

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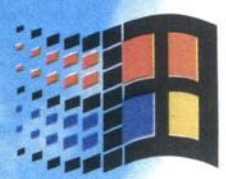
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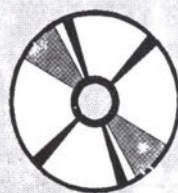
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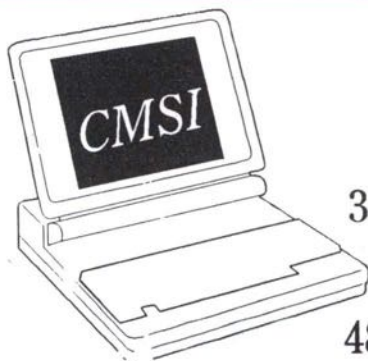
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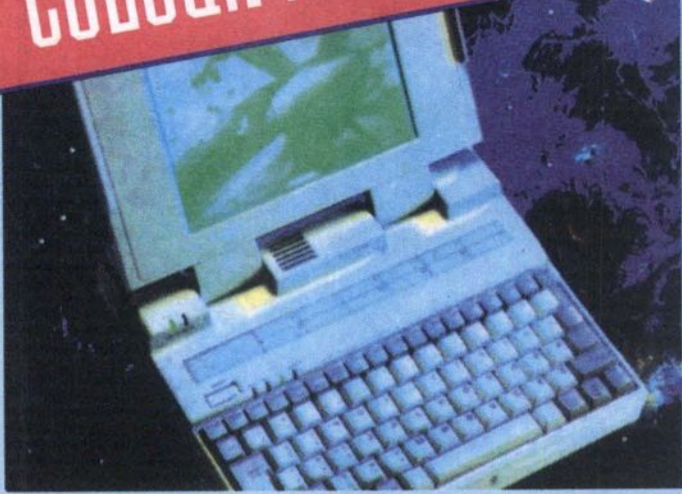
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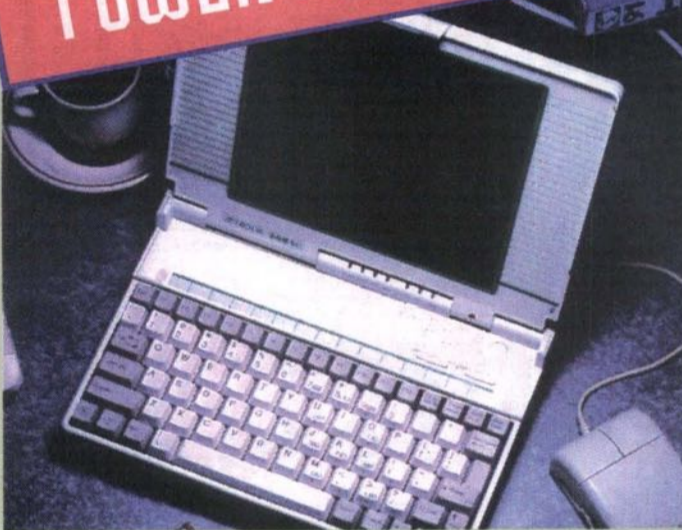


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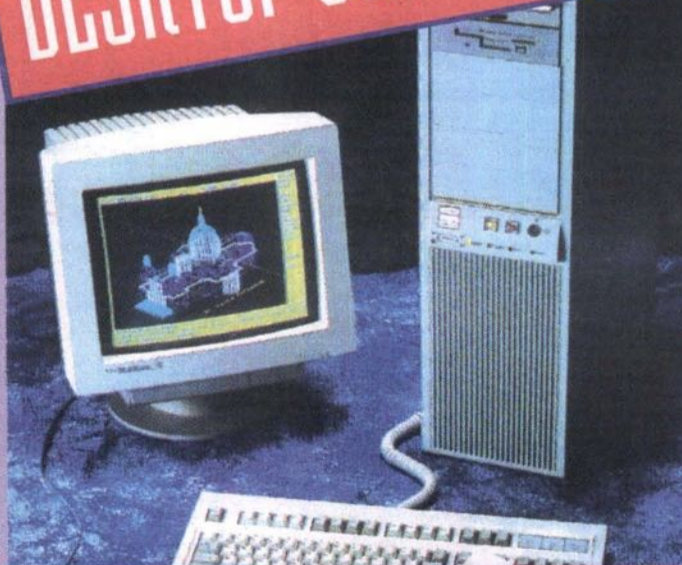
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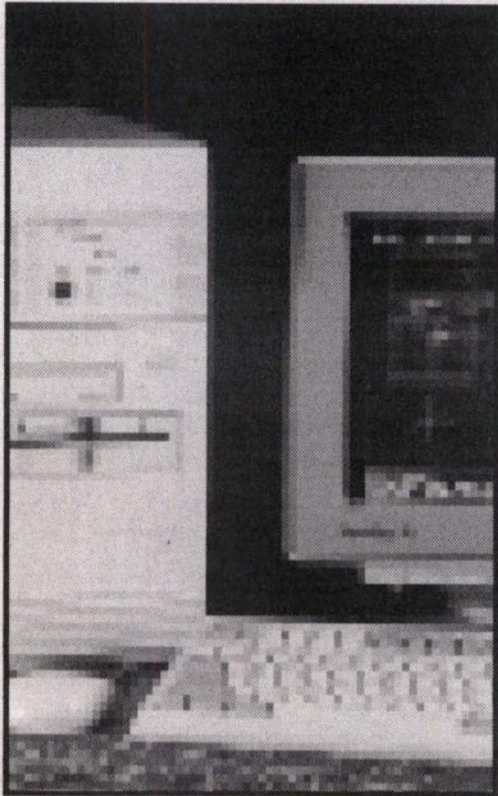
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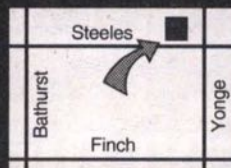
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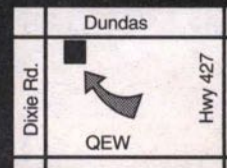
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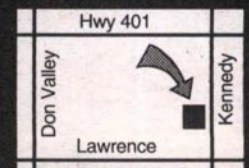
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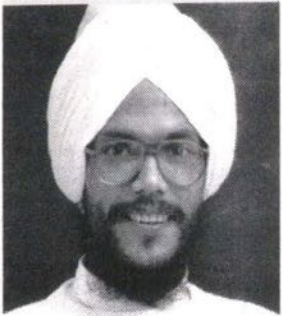


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From the Editor

From *The Hacker Crackdown* by Bruce Sterling (Bantam Books)



city. The place between the phones. The indefinite place out there, where the two of you, two human beings, actually meet and communicate....

"But in the past twenty years this electrical 'space' which was once thin and dark and one-dimensional — little more than a narrow speaking tube, stretching from phone to phone — has flung itself open like a gigantic jack-in-the-box. Light has flooded upon it, the eerie light of the glowing computer screen. This dark electric nether world has become a vast flowering electronic landscape. Since the 1960s, the world of the telephone has crossbred itself with computers and television, and though there is still no substance to cyberspace — nothing you can handle — it has a strange kind of physicality now. It makes good sense today to talk of cyberspace as a place all its own."

My kids have been exploring cyberspace recently. We have a nine-year-old-boy and an eleven-year-old girl who have recently tapped into a "virtual community" online. We have been doing home schooling with them since they were young. Kids being kids, they are seeking out a peer group amongst other home schoolers. A friend of ours founded a private school, and it runs very much like home schooling, letting the children learn at their own pace and the kids move the learning into the areas that they like. He recently set up a Bulletin Board System (BBS) and invited home learners on to it. He is a Mac fundamentalist (DOS is a sin) so he chose First Class, a Macintosh-based BBS with a graphical front-end. (First Class is available from Soft Arc in Scarborough, ON 416-299-4723. They say they will have a Windows version out "Real Soon Now".)

What all this means is that the kids plug a modem into our Macintosh, hook it up to the phone line and then they can send messages and copy files from his computer across town. We get a telecommunications software program on our computer that handles many of the graphics chores. It looks good. We see folders and can point and click with a mouse, just like with other Macintosh programs. The standard BBS tends to be straight text — you get everything one line at a time, and the mouse doesn't work to manoeuvre around.

The kids love it. Their desire to communicate with others means that there is usually a fight to see who gets to log on first in the morning or when they get back from a day's activities. My friends and relatives are telling us to get a second phone line so they can call us once in a while, because our phone always seems to be busy. (I thought this wasn't supposed to happen until they were teenagers!) We tolerate it all, because it is great to see their excited interest in a variety of useful skills — like writing and typing.

They are also learning to spell by default. We get involved in the spelling process fairly often — "How do you spell 'accept'?", "Do you mean 'except', or 'accept'?" I partially alleviated this problem by installing a program called Thunder 7 (Thunder is available from Baseline Publishing for US\$49) on the computer. This is a handy little spell-checking software program that can be set up to check spelling interactively. Translation: As they type their mystery words, the computer beeps if the word is misspelled. They push a "hot key" and up pops a list of suggestions. It has cut down the requests for assistance by about 75%.

Good advice in the last century used to be, "Go West, young man." The motto for the 21st Century will surely have to be, "Go Electronic, young woman (or man, as the case may be)."

Enjoy the issue.

Kirtan Singh Khalsa
Publisher / Editor

"A science-fiction writer coined the useful term cyberspace in 1982. (*The Computer Paper's* research attributes the term to William Gibson, in his 1984 book *Neuromancer*. — ed.) But the territory in question, the electronic frontier, is about 130 years old. Cyberspace is the 'place' where a telephone conversation appears to occur. Not inside your actual phone, the plastic device on your desk. Not inside the other person's phone, in some other

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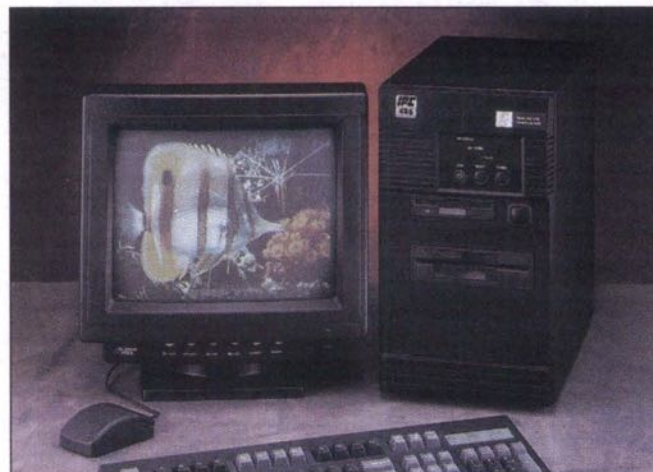
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Letters *Continued from page 6*

use of logic and mathematics today, so I think readers of *The Computer Paper* would have some understanding of this, since they read the paper for knowledge on the subject.

Maybe that's why I am surprised that your readers have just upped my computer language a bit by adding the words, or terms, "Misogynist attitudes, societal prejudice, biological inferiority, IRQ addresses, genetic reasoning and self-fulfilling prophecies."

Maybe heavy-duty criticism is to be expected whenever anybody says something about anything, but I think those readers

are unfair. They obviously spent time in schools since one understands trigonometry and both have great vocabularies, so how come they ignore both math and logic to reach a "self-fulfilling prophecy"?

It sure looks to me like they both had their minds made up and closed up long ago but they happened to find your article and jumped at the chance to spout off. All those beautiful words were misused and wasted.

Maybe they should read your original article over again, ... and again It said: "Is this sexist? Possibly in the traditional sense of the word it may be sexist to view things this way, but what if it is true? Is it not better to be realistic?"

(After all, nobody really knows what makes anyone tick ... or talk, but we all do it, sometimes when we have no right to do so, and, unfortunately, sometimes when our oldest and most favorite opinion is wrong.)

I thought your editorial was pretty good when I first read it but I read it again and still found it good. The style of suggesting, and gently questioning, is excellent; you only expect answers if you ask questions.

How can you recognize an answer if you never asked a question? And so, this closing thought: Keeping a closed mind is cementing it to history.

Ron Martin
Bolton, ON

Re: Brain Sex, Me & Ron

I read with great interest your editorial in the December issue. I saw a show on PBS recently, based on the same book you read. And I have to agree with the comment on toaster user groups. I should explain that I am a 36-year-old female, and have been using computers for ten years.

My husband runs an engineering consulting firm out of our home. He writes programs to control pipelines and monitor power usage; as well he designs screens for the man-machine interfaces. He uses at least five different software programs regularly. I do the drafting, in AutoCAD, for any construction that we are involved in, as well as the company books, and general gopher ("go fer") work. I run five different programs almost daily. I should mention that we have three children under fourteen.

A typical day at our house;

	MYSELF	RON
6:30-7:00	Rise, wash, call kids	Rise, wash, read <i>The Comp. Paper</i>
7:00-8:30	Feed anyone at the table	Eat, dress, start work
8:30-9:00	Get dressed, makeup	Work on computer
9:00-12:00	Drawings, accounting, paperwork	Work on computer
12:00-12:15	Prepare lunch	Work on computer
12:15-12:30	Eat lunch	Eat lunch
12:30-4:00	Laundry between	Work on computer
4:00-6:00	Kids home, dinner, homework done	Work on computer
6:00-6:30	Eat	Eat
6:30-8:30	Dishes, chauffeur kids to Brownies, Scouts, music	Work on computer
8:30-10:00	Kids in bed, cross-stitch sew or read	Play games on computer

I can't understand why someone who has stared at a computer screen for twelve hours would choose to relax in front of that same screen. But then again, I'm only a woman.

Sherry Turykovsky
Calgary, AB

Is this worth it?

Three years ago I purchased an Amdek 8088-based microcomputer, 640K RAM, 360K 5.25 floppy drive, 20 meg hard drive and CGA color monitor. Now, a few short years later, technology has passed me by. In order to preserve some of my investment would it be cost efficient to upgrade this system or do I own "junk"? I have been led to believe that there may be a possibility to at least upgrade to 386SX. Is this worth it?

If you could address this question in your next publication it would be greatly appreciated.

Richard Stogre

Graeme Bennett replies: Unfortunately, although it is possible to upgrade your old 8088-based PC, it may not be as economical as simply passing it on to someone (a charity or school, perhaps) who can use it "as is," and getting a newer model. Here's why. For starters, your PC's RAM will probably not be the type and/or speed that the newer models require. Your 360K floppy drive will not format or read today's 1.2MB high-density disks. Your hard drive is probably of the now-obsolete MFM variety, and so on. If you didn't mind throwing all of these items away, you would still have to completely replace the motherboard of the computer to upgrade the CPU and get away from the PC/XT's so-called 8-bit slots. You might also find that you need to replace the keyboard, and you'll probably want to replace the CGA graphics adapter with at least a VGA one. By now, you probably don't want to hear that you'll have to lose your old monitor, too. As you can see, it's better to donate the whole thing in one piece to your favorite charity. See the article "Upgrading Your Computer" in this issue for more details. ■

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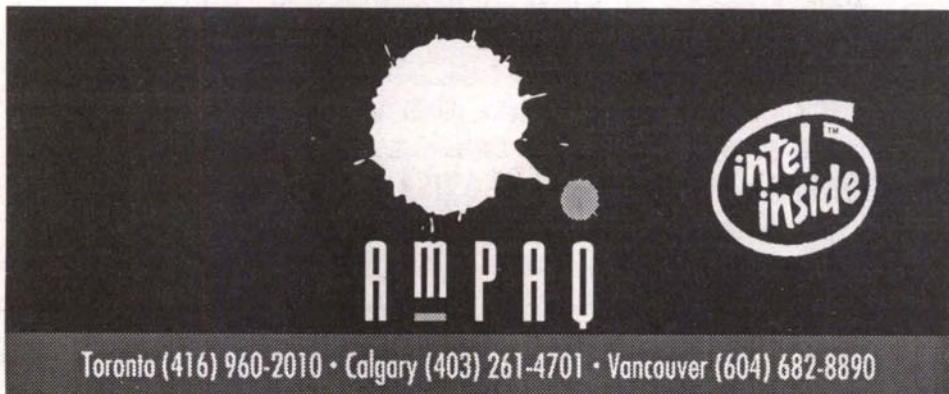
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WHAT'S NEW

More Lasers, less Dot Matrix

TORONTO, —Everybody wants a laser printer, or so it would seem from a recent study by IDC that predicts that the most active Canadian market segments for printers in the next few years will be in inkjet and laser printers.

Overall sales of both units and total dollars in the Canadian printer market have been slipping since 1991; unit shipments increased 5.7%, down from 11.2% growth in 1990, while the value of shipments slipped -1.8%. Although some segments — inkjet, laser and thermal printers — are doing very well, strong growth in these segments is offset by a big drop in impact printer shipments.

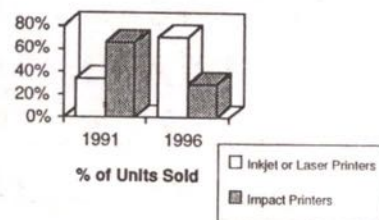
A glut of low-cost laser printer introductions, together with rapidly declining inkjet printer prices, has resulted in a price war of benefit to the consumer. In this competi-

tive environment, IDC predicts that any vendors experiencing expansion will do so at the expense of other vendors. If the trend persists, then those vendors operating on thin margins may be forced out of the market.

This rapid transition in favor of non-impact technologies is attributed primarily to the strong growth of inkjet and low-end laser printers. As the demand for impact printers diminishes, serial dot matrix vendors will not likely pass on the opportunity presented by the more lucrative inkjet market. Also, laser printer prices will continue to decline over the forecast period, making the move from impact to non-impact technologies easier for price-sensitive consumers.

Contact: IDC (416)369-0033.

The Canadian Printer Market



Sales of Used Computers

This note from the folks at Revenue Canada: "Sooner or later, most businesses will sell, trade or otherwise dispose of capital property. These assets may include computers, etc. In most circumstances, if a business used the capital property in taxable activities, the sale of the property is taxable. However, if the business did not use the property primarily (generally, more than 50 per cent) in taxable activities, it is not required to collect tax. For example, if a business used a computer 40 per cent of the time in taxable activities, but 60 per cent in tax-exempt activities, it should not collect the GST when it sells the computer. Keep in mind that if you deal in goods or services taxed at zero per cent, such as exported goods, prescription drugs, groceries or agricultural products, you must still collect the GST on most sales of may be able capital property. Remember that when

you purchase goods from a dealer or other person and use a trade-in as partial payment, the trade-in must be treated as a sale for GST purposes. You are required to account for the tax when you determine a trade-in value with the dealer, and to remit this tax as with any other taxable sale. In turn, you will be required to pay the GST on the full value of the goods you purchase. Remember to provide and obtain sufficient information (including GST registration numbers) to enable both you and the dealer to claim an input tax credit. If you are selling substantially all the assets you used in a taxable business activity to another person who is registered for the GST, you to make an election so that you do not need to collect the GST on the sale of the assets. For details, please contact the nearest Excise/GST District office."

Job Opportunities Are Available For Information Systems Skills

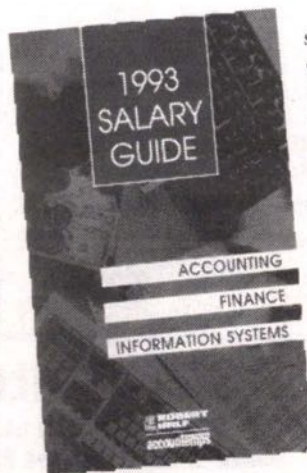
A recent survey, the Robert Half/Accountemps 1993 Salary Guide, concludes that job openings will be limited and salary levels will be flat for accounting, finance and information systems people in 1993. John Archer, President of Robert Half/Accountemps of Toronto, "but there are opportunities in specific areas and industries."

ment ranks of most companies. As signs of a modest recovery begin to take hold, entry-level people in accounting, finance and information systems are the major recipients of the new jobs.

Not surprisingly, information systems continues to weather the recession better than most professions, with particular demand for experts in Local Area Networking, client server technology, object-oriented programming, relational databases, fourth-generation languages and CASE tools.

"No matter what the specialty," says Archer, "companies are looking for accounting, finance and information systems people with 'hands on' skills, a proven track record and computer aptitude. Strong inter-personal communications skills and other recognized designations (such as CA, CMA, CGA) are further prerequisites to meet company demands. The demand for GUI applications, such as Windows, continues to weather the recession better than most professions."

Contact: Robert Half/Accountemps Toronto (416)424-4309.



Starting salaries for entry-level positions are up one to three percent from last year. This trend is particularly evident in western cities such as Calgary where the recession has cut huge slashes through the middle management

WHAT'S NEW

File your Taxes by Phone



Ontek Development Corporation recently announced a new version of their computer program Quick Returns! that guides the taxpayer through doing their income tax, does all the required calculations, and then sends the results to Revenue Canada electronically through the phone lines.

Dr. James O'Neill, President of Ontek, said, "Revenue Canada has been bringing in this service gradually over the last few years, but it has been aimed primarily at accountants and professional tax preparer. However, we have now simplified the process so that anyone can use it."

There are several advantages to the new system. First of all, since the return goes straight into Revenue Canada's computer system, a return is cut out. Revenue Canada estimates that the refund cheque on a typical return filed electronically will be on its way in 14 days, many weeks faster than filing on paper.

Secondly, if there are any errors in the information sent in, a message is sent back to the taxpayer electronically by Revenue Canada in only a few hours so that changes can be made. This avoids thousands of dollars in late payment penalties which can result if an invalid paper return is filed.

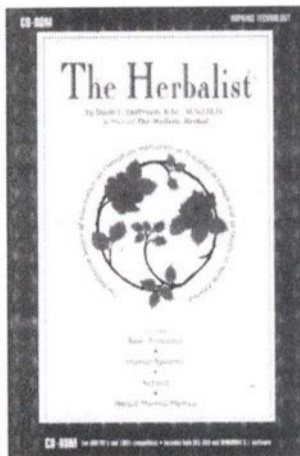
Quick Returns! sells for \$59.95.

Contact: Ontek, 416-767-0918; fax 416-767-0720.

Herbs That Heal

The Herbalist CD-ROM is a new CD-ROM-based software package for personal computers by author David L. Hoffmann (The Holistic Herbal), which explains the world of herbal medicines.

According to the company, it contains a wide range of information on herbs and healing. Did you know, for instance, that garlic could lower blood cholesterol levels and reduce the tendency to clotting? Or that Milk Thistle could help protect the liver from damaging toxic chemicals? And that Midsummer Daisy (Feverfew) leaves may reduce the intensity and frequency of migraine attacks?



The publishers of the Herbalist CD-ROM claim that it contains the knowledge of generations of herbalists and the insights of modern medicine combined. It includes the areas of your body and specific diseases and shows which herbs may help and how to use them.

Search software finds key words, phrases and topics throughout the Herbalist CD-ROM database.

There are four main sections: Basic Principles, Human Systems, Herbal Actions and Materia Medica (specific medical details). It covers subjects such as: how to choose the right herb, the digestive system, what are bitters and how do they work, and details on more than 180 herbs. Illustrations of herbs are included, as well as scientific and medical citations.

The Herbalist CD-ROM runs under Windows 3.1 and is designed for both the professional health care practitioner and the layman.

David L. Hoffmann is the author of six books and is a member of Britain's National Institute of Medical Herbalists. He was a faculty member of the School of Herbal Medicine. Hoffman was director of the California School of Herbal Studies and was the inaugural president of the American Herbalist Guild. The Holistic Herbal has become a standard text and is translated into seven languages.

The Herbalist CD-ROM (U.S. \$99.95)

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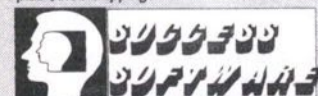
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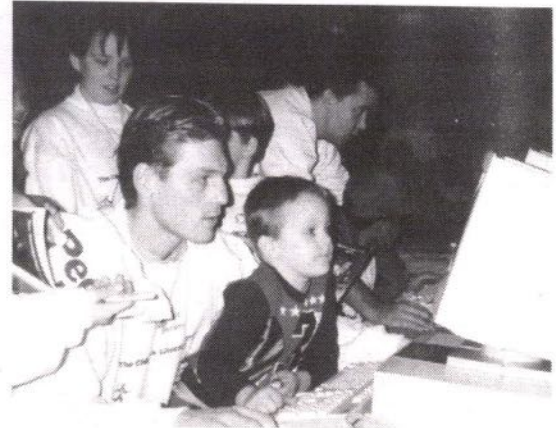
Maple Leafs Join Forces with Ambra Computers to Combat Illiteracy

TORONTO — The Toronto Maple Leafs hockey team and Ambra Personal Computers recently teamed up to fight illiteracy among Toronto's youth by launching The Children's Literacy Program. The initiative was put together by Frontier College, one of Canada's oldest literacy institutions.

Maple Leaf Gardens was transformed into a classroom where 50 school children were taught the importance of reading and writing — through computer technology — by Maple Leafs Ken Baumgartner, Mike Foligno, Mark Osborne, Bob Rouse, and Rick Wamsley.

John O'Leary, President of Frontier College, explained, "Statistics show a startling five million Canadian adults cannot read or write well, or cannot read or write at all. Approximately 30 per cent of Canadian students drop out of high school before graduating. Through The

Children's Literacy Program, we are aiming to reduce these numbers. We have combined sports celebrities and computers with the basic fundamentals of reading and writing," Mr. O'Leary said. "We want to get children excited about learning to read and write."



ExperComp Services Limited supplied 386 and 486 personal computers for the recent kick-off event, which included story reading and a computer workshop. The com-

puters were donated to Frontier College following the computer lesson with the Leafs.

"With 88 percent of all Canadian business people using computers in their offices and 20 per cent of Canadians using computers in their homes, the logical course is to incorporate computers into the learning process," said Andre Turgeon, Chief Operating Officer of ExperComp Services Limited, manufacturers of Ambra computers.

New Version of LightShip, Executive Information System

TORONTO — Pilot Software and EPS Software Consultants recently announced the shipment of LightShip 3.2, a new version of Pilot's PC-based visual information access (VIA) system for Windows. LightShip 3.2 offers a variety of new features that streamline the development and maintenance of VIAs — powerful graphical front-end systems that provide fast and easy access to a variety of information.

LightShip 3.2 offers a more powerful and simplified menuing environment for building and implementing pull-down and cascading menus. With LightShip 3.2, developers can group several or all of their menu items under one object and create cascading menus up to 10 levels deep. With

LightShip 3.2, developers can now name objects on the system's screen, enabling them to easily locate and group objects that are related. LightShip 3.2 offers expanded Dynamic Link Library (DLL) capabilities by enabling developers to create DLLs that add functions and hot spot actions. With this new feature, developers can not only expand LightShip's data access, but also extend the product's action and function capabilities. LightShip 3.2 is available in Canada from EPS Software Consultants, and sells for a list price of \$7,500 for a license of up to ten (10) users.

Contact: EPS Software Consultants (416) 279-8711.

New "Electronic Resume Network" Brings Job Hunters and Employers Together Quickly And Economically

TORONTO, ONTARIO — A new service is available that electronically links up job hunters and employers.

The "Electronic Resume Network" stores the resumes of job hunters in a customized database. When a company has a position to fill, the Network does an electronic search of the database and provides the company with the resumes of qualified candidates.

"Employers who want control of the hiring process but don't have the time to sort through unsolicited resumes, can now find the right people quickly and at a minimal cost," says Daryl Usprech, Marketing Manager of the Electronic Resume Network.

Job hunters pay \$25 to place their resume in the database for six months or until they are hired. According to Usprech, the Electronic Resume Network expects to have 4,000 computerized resumes by the spring, including those of people looking

for full-time, part-time, permanent, temporary or contract positions.

Would-be employers pay \$399 to view up to 25 resumes that interest them. As a special introductory offer, the Electronic Resume Network is offering all companies free access to the database until February 28, 1993.

Job hunters can register with the Electronic Resume Network service directly or through a range of universities, career placement centers and non-profit business groups such as the University of Toronto Faculty of Management, George Brown College of Applied Arts, Toronto School of Business, Seneca College, Humber College Job Finding Club, and the Executive Advancement Resource Network (EARN).

Contact: Electronic Resume Network, call Daryl Usprech at (416) 889-0472. Resumes may be mailed to 9 Romfield Circuit, Thornhill, ON L3T 3H4.

VIDEO to Print



Management Graphics Inc. (MGI) recently introduced VIDEO to Print, a full-color, continuous-tone digital color output service from video sources such as VHS, BETA, Hi8, RGB, Still Video, Kodak Photo CD and others.

This imaging service is ideal for video storyboards and hard-copy reference. The Canon CLC-500 allows up to 16 individual images to be printed per 8.5" x 11" page. Other output choices from video sources include 8K resolution 35 mm slides, 4 x 5 negatives or positives and up to 42-inch-wide poster-size prints.

Contact: MGI, (416) 667-8877.

Virus Alert

Look Software, the makers of the antivirus program Virus Alert, are excited that their software package has gained sufficient international attention to be included in an upcoming *PC Magazine* review of leading antivirus products, scheduled for the March/93 issue in the U.S. According to the company, the product will also be included in *Info Security News'* listing of top antivirus products, scheduled for their Jan./Feb./93 issue.

The company also claims that Virus Alert recently detected and disinfected a

sizable outbreak of the Green Caterpillar virus in an Ottawa office, which had not been detected by McAfee Scan. Virus Alert also discovered and disinfected 1600 files in a UK office, infected by a variation of the Halloween virus which Norton Antivirus did not detect.



Designed for DOS-compatible computers, Virus Alert currently scans for nearly 2000 known viruses, and sells locally at a suggested retail price of \$39.95.

Contact: Look Software: 1-800-267-0778

PC Buyers Remorse: What PC Buyers Wish They'd Gotten

DALLAS, TEXAS (NB) — In a survey released by Channel Marketing, one thousand IBM and compatible personal computer (PC) owners talk about what they would do differently if purchasing their computer again, including things they had to change later.

Of the top five things on the "I wish I had gotten..." list, number one was more expansion capability. Too few internal expansion slots and external drive bays was the biggest complaint with 62 percent of the respondents. Users discovered the limitation when attempting to add one or several components, such as a game adapter, a modem, a sound card, a tape backup, or a CD-ROM drive.

Forty-eight percent of the respondents wish they had gotten a better quality monitor. The lower the dot pitch number, the better the monitor. However, Channel Marketing said many users had .39 or even .51 dot pitch monitors and found viewing graphics applications and playing games a disappointing experience.

The next complaint was a need for more memory among 47 percent of users, especially those using Windows. Channel Marketing said many of the users purchased systems with Windows preconfigured on the system, but with only two megabytes (MB) of RAM. With so little RAM, they had difficulty, or simply could not run the applications desired or found they needed 4 MB of RAM to run two applications at a time.

Even more disappointing was the fact that some users had to purchase all new RAM, as the additional RAM could not be used in conjunction with the RAM they already had. That's because many PCs are equipped with SIMMs (single in-line memory modules) which come in varying capacities that do not mix. For example, you cannot put two 1 MB SIMMs with a 2 MB SIMM to get four MB of RAM. You have to have four 1 MB SIMMs or two 2 MB SIMMs. If the motherboard of the PC is only equipped with two slots for SIMMs, then the user would have to discard the 1 MB SIMMs completely.

Thirty-nine percent of those surveyed

said they should have gotten a bigger hard disk drive. Windows takes up five to eight MB, and Channel Marketing said one gentleman in particular had a Star Trek game which took up seven MB of hard disk space. Many of the Windows applications, such as WordPerfect for Windows or Microsoft Word for Windows will take between six and 10 MB of hard disk space each. On a 40 MB drive, four applications and Windows takes up nearly the entire hard disk drive storage space.

Users said most systems came with either 3.5-inch or 5.25-inch, and which ever drive the user had, 36 percent said they wish they had the other drive as well. The users said they found they needed both size drives, in order to use software they already had as well as new software, or to exchange shareware programs with other users.

The overwhelming majority of users said they could have avoided these problems had they more seriously considered the applications they were going to use the computer for. Many users said they were trying to avoid additional expense at the time of purchase. Channel Marketing reported many users who said they had attempted to upgrade the computer they bought and discovered they were unable to do so. Of the users who responded, almost all said they would have saved a significant amount of money had they simply bought a PC with the options they needed instead of upgrading later.

Channel Marketing said users should consider not only what they want to do now with the computer, but what they'll want to do for the next couple of years. In addition, buyers should find out exactly what is involved in upgrading the PC of interest.

What does it cost to upgrade? A good quality monitor can be in the \$500 to \$700 range. Hard disk drives can be expensive as well. Assuming the computer's basic input/output system (BIOS) can support a larger hard disk drive, users can expect to pay around \$350 to \$400 for a 200 MB drive and up to \$1,000 for a 500 MB hard disk drive.

Contact: David Goldstein, Channel Marketing, tel 214-239-3305 ext 214, fax 214-960-7159.

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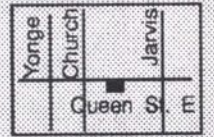
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Do You Really Want To Upgrade?

BY DON WILKES

So, still pecking away at the keyboard of a pokey 8088, you think you're hard done by. Or, perhaps you feel your once-trendy 286 has lost its sizzle. Maybe your soul can be had for a snappy 486.

Take heart; you're not alone. Even those not so long ago more than content with a 386SX today eyeball with envy a confrere with fingers poised over the unblemished keyboard of something sleek just out of the box.

While few of us wouldn't jump at a chance to improve our favorite helpmate, rushing into a haphazard upgrade might prove a bad move. Make sure you have a reason — a valid one! Why invite trouble? Why exchange current relative bliss for a potential slate of problems? They could consume hours previously intended for more rewarding activities such as games, a pet project or earning a living.

In short, old programs don't always get along with new hardware. Or, new software may reject older machines. Windows — seeking dedicated programs and demanding substantial chunks of memory and disk space — is a good example of something rather unkind to existing equipment and whatever's already onboard.

Despite widespread upgrade frenzy, many computerniks happily amble along with older gear. When DOS arrived, CP/M rapidly dwindled in popularity, despite its being at the time a better overall product. DOS's affiliation with IBM micros was the kiss of death. CP/M deserved better; it gave birth to software that has only improved under DOS. Early in 1984, on a 10-megabyte hard-disk Kaypro, I had WordStar, dBASE II, a Perfect Calc spreadsheet program and some rather impressive utilities (for the time). For applications, that's as much as many people have today under DOS.

Contrary to what many think, CP/M

isn't quite dead yet — I expect some writers are still happily using WordStar or Perfect Writer as they peck away at the keyboard of an enduring Kaypro II: a sturdy metal-cased workhorse with a nine-inch green screen, two floppies and no internal fan. Or, perish the thought, a few may still be squinting at the five-inch screen of an Osborne.

Let's face it, everyone doesn't need the latest whistles and bells...or something new to learn. Nor are they eager to confront the unknown downside too often accompanying change. When I finally faced up to upgrading my situation I had to abandon a few handy utilities used for years. To add more insult, a tempting desktop publisher refuses to deal with a recycled monographic adapter that other programs had no problem with.

Even my trusty old WordStar occasionally complains; nonetheless, I've stuck with it despite exposure to other word processors. Thesaurus added and most irritants eliminated with StarFixer, it still performs well; with release 5.0 gathering dust on the shelf, should WordStar 3.3 wear out its welcome, Galaxy (was on BBSes, now Nova) would likely replace it.

With word processing, trendy DTP features may never be called upon to perform. For spreadsheets, having several graphs on the screen at one time only excites a few. dBASE II, now several versions behind, still has a place in the DOS world; being smaller, it's faster in operation and, for what most people truly want, with a little ingenuity invested, there's little it can't do. The old 80/20 rule has changed; today, 90 percent of those pecking away at the keyboard employ

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Despite 386/486 gear being the current minimum corporate entry level, 8088/8086 and 286 hardware still has a place in smaller firms and homes. It's inexpensive and it's a matter of fitting the proper tool to what's to be done. Internal processing and disk-access speeds are usually far less frustrating than waiting for printing to finish.

Nor should cramped hard disks necessarily prompt an upgrade. If a dollop of diligent housekeeping doesn't liberate space, programs like DiskDoubler, Stacker or SuperStor (also comes with DR-DOS) will effectively double disk capacity. PKWare's PKZIP (BBS shareware), although more awkward to use, also squeezes files.

Deficient RAM is another excuse used for marching into an upgrading. It needn't be. Adding extended/expanded memory and adopting something like Quarterdeck's QRAM or QEMM versions can do wonders in improving memory effectiveness. And since working within memory is so much faster than from disks, programs copied to, and run from, a RAM-disk (simulated drive) operate faster; sufficient memory available, try DOS's Vdisk.

Despite most complaints focusing on the main box and what it does, other system components aren't ignored. Perhaps a chugging and noisy daisy-wheel or a 9-pin dot-matrix printer with a ribbon that dries out before it wears out is your bugbear. As prices drop — despite what a 24-pin dot-matrix offers — laser print quality for some becomes impossible to resist. But wait! Do you use tractor-feed forms or odd-sized pages? Lasers are less flexible, with heavier maintenance demands and costs.

Furthermore, don't dismiss older printing gear too quickly. While the output of a 9-pin dot-matrix may be debatable, what climbs out of a daisywheel printer is hard to beat. A legacy from my CP/M days, I still use a TP1 daisy-wheel printer for letters; in contrast to my 9-pin dot-matrix, I can get an envelope through it for printing. BBS's Grab pops up to print the return address and one for mailing that it picks up from the onscreen letter.

To extend the useful life of older printing gear, consider a print spooler program. Accepting files on the way to the printer, it will pass along chunks to it and release the computer for other use. Several spoolers can be found on computer bulletin boards: SP is one that comes to mind. Or, if ASCII text is what you produce, try DOS's print command.

Although a product like PC-KWIC operates like a spooler, caching software enhances hard-disk operation instead of a printer. When a file is sought from the disk, the memory cache gets what's required and a bit more on the chance that it'll be requested anyway. When needed, the extra segment is read more rapidly from memory. In writing to a disk a cache accumulates data and delivers larger chunks less frequently.

Bite-the-bullet Time

When all is said and done, however, refusing to get on with what must be done is foolish, even cowardly. Frequently, an extensive or even lesser upgrade works wonders. If inadequate capacity, speed or functionality seriously hinders productivity, it's time to move onward and upward. It's also an opportunity to take stock of what you have, what you really want to — or should — do (today and for tomorrow) and what is needed to get it all done.

Not so long ago I shifted to a 386 and, opting for a clean slate, abandoned a batchfile menu used for years. Seeking something welcoming in character-based programs, I first worked my way through DESQview. After investing hours to set it up and work with it, I unfortunately found moving between programs irksome and

also discovered I had little use for multitasking.

Undaunted, I next tackled GeoWorks Pro, a memory-thrifty multitasking and mouse-oriented GUI sympathetic to older gear. For non-bundled programs, it adopts DR-DOS 6.0's or MS-DOS 5.0's task-swapping capabilities. Using existing or added icons to load programs, GeoWorks provides a DTP-oriented word processor, a banner maker, two games, a Quattro Pro spreadsheet version, Sidekick - like tools, communications and a drawing facility. While that's all great stuff and I recommend the program to others (particularly if starting from scratch), I doubted I would

ever use much of it.

I resurrected and updated my ever-flexible and faster-access batchfile menu.

Frustration aside, upgrading offers an excellent opportunity to re-evaluate day-to-day tools. For example, I currently use both desktop and portable machines. The next time I change systems, to avoid having to shift files between units or disk sizes, I'll join the portable crowd who enjoy added convenience with less space permanently committed to box and screen. And, no more LCD for me — backlit or not. Until I tracked down a cursor-blocking utility, I couldn't find it on the screen. Also, based upon what's offered today, the new display

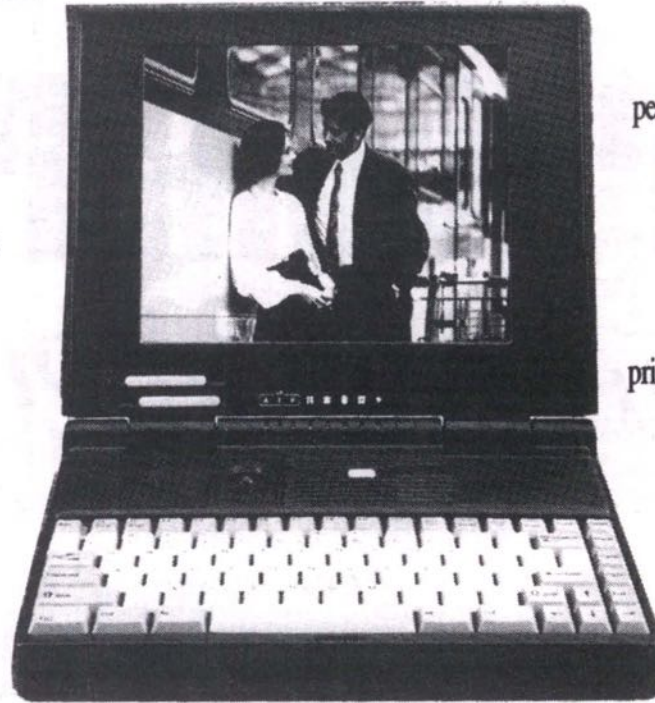
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And...to benefit from past experience, even if I could have one, the luggable will be batteryless. After investing dollars and driving/installing time to resuscitate my trusty laptop/notebook, the replaced battery pack died within nine months. Since I'd never used the unit where wall power wasn't at hand, I had it converted to AC. At least that decision was easy to make!

Don Wilkes is a chartered accountant with a corporate background and a Toronto-based computer consultant.

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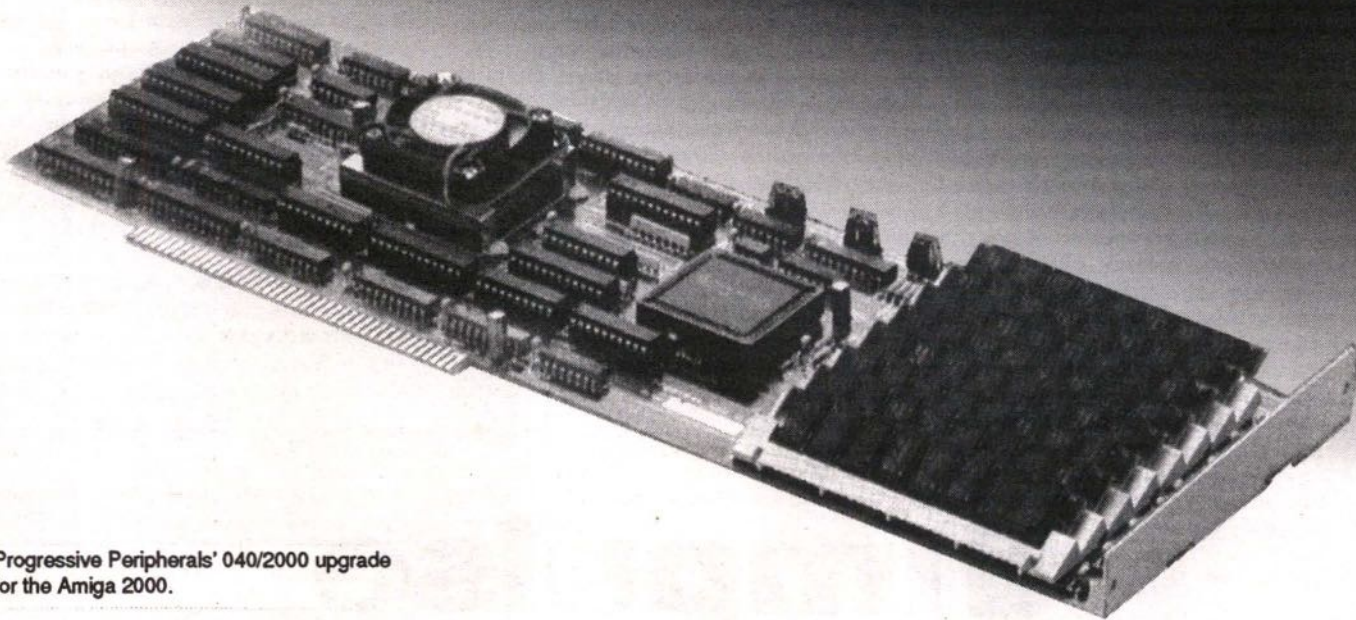
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Progressive Peripherals' 040/2000 upgrade for the Amiga 2000.

Turbocharge Your Amiga 2000

BY CONIAH CHUANG

Few computers have survived the test of time as gracefully as the Amiga 2000. It was introduced in 1987 and remains a strong seller for Commodore. Despite seeing few enhancements since its release, the A2000 is still a key member of the family of Amiga computers.

Its staying power can be attributed to its expandability and upgradability. I define expandability as the ability to add to basic capabilities (extra drives, sound cards, etc.) and upgradability as the ability to remain up-to-date.

While most Intel-based computers (IBM compatibles) are designed for expandability, few are designed for upgradability. The Amiga 2000 was designed with many expansion slots (five Amiga, four ISA, one video) and a CPU slot. It is the latter feature that

has kept the five-year-old model competitive with its younger, newer, and faster siblings.

This article will focus on the CPU upgradability of the Amiga 2000. The first section provides a brief history of some

popular CPU accelerators. The second section compares today's most popular choices. I leave off with some helpful hints on optimizing your turbocharged system.

Soon after the introduction of the Amiga 2000, a company called CMI brought out the Processor Accelerator. It consisted of a small card that plugged into the CPU socket. Processor Accelerator replaced the standard MC68000 CPU with a faster, more efficient MC68010 CPU that provided the owner with a 10-20% speed increase (although carefully chosen benchmarks showed a 100% improvement). This product was just a small taste of what CPU upgradability could offer.

It was not until Commodore introduced the A2620 Accelerator card that the true benefits of the CPU slot were realized. The A2620 contained a much faster and more powerful MC68020, an MC68881 FPU and an MC68551 MMU. It upgraded the basic Amiga 2000 from 16-bit architecture to 32-bit and provided the owner with a 200-400% speed increase.

Third-party developers began introducing their versions of MC68020 accelerators, which soon boasted faster speeds, more memory and more functions. These cards quickly brought the Amiga 2000 up to state-of-the-art for 1988-1989.

The next wave of accelerators was based on the MC68030. This chip integrated the MMU functions onto the main processor and came in even faster speeds. Commodore has its A2630, which contained the even faster and more efficient MC68030 CPU, MC68882 FPU. The owner now experienced a 400-600% speed increase over the basic model.

GVP brought out its lineup of 68030 accelerators which incorporated an AT IDE and later a SCSI controller onto the accelerator with processor speeds from 25-50MHz. This brought the owner a 400-1000% speed increase over the basic Amiga 2000. Of course, during this time, software demands also grew, so the ten-fold increase in power was not only useful, for some it was necessary. These cards brought the Amiga 2000 up to date for 1990-1991.

When the Amiga 3000 was introduced in 1990, accelerated Amiga 2000s were already competing with it for speed. While the Amiga 3000 contained some unique enhancements, a turbocharged Amiga 2000 did not have to take a back seat to the brand-new machine in the area of computing power. The Amiga 2000's upgradability had proven to be an effective defence against obsolescence (at least for now).

The latest competitors to vie for the CPU slot boast Motorola's current top-of-the-line MC68040. One of the first on the scene was RCS's Fusion-Forty, which sported a 25MHz MC68040 (the FPU is integrated into the CPU much like Intel's 80486DX). Soon, 28MHz versions were introduced. RCS was joined by Progressive Peripherals and Software when PP&S released the Progressive 040.

Since then, PP&S has released the Zeus accelerator and GVP has introduced the G-Force 040. Both of these units incorporate a high-speed serial port and a SCSI II controller. These accelerators offer owners a 200-400% speed increase over the Amiga 3000 (or 12-24 times the speed of a standard Amiga 2000) for most functions. With these cards, five-year-old Amigas can match the power of the just-released Amiga 3000T/40 and Amiga 4000.

While the future of this expandability is not assured, one must be impressed with the Amiga 2000's ability to stay current. An instrumental part of this success has been the CPU slot designed into every Amiga 2000.

The current selection of accelerators includes 68030 and 68040 varieties. Which one you choose depends largely on what you are willing to pay. While the price of 68030 accelerators has dropped to almost

Card	Processor	Speed MHz	RAM (MB)		SCSI	I/O	SI
			Min	Max			
Commodore A2000	MC68000	7	1	-	-	-	4
Commodore A2620	MC68020/68881	16	2	4	N	N	12
Commodore A2630	MC68030/68882	25	2	4*	N	N	28
GVP Combo-030	MC68030/68882	33/50	4	16	Y	N	35+
GVP G-Force 030	MC68EC030/68881 25	1	13	Y	N	28	
	MC68EC030/68882 40	4	16	Y	N	—	
GVP G-Force 40	MC68040	33	4	16/32	Y	Y	165
Progressive 40	MC68040	28/33	4	32	N	N	124+
PP&S Zeus 040	MC68040	33	4	64	Y	Y	165
CSA Magnum 040	MC68040	33	4	64	Y	Y	165

Processor

MC68000	Standard processor for Amiga 500/600/2000s. 16/32-bit	MC68030	Faster 32/32-bit processor. Includes Memory Management Unit (MMU)
MC68020	32/32-bit processor.	MC68EC030	Scaled-down version of MC68030 (no MMU).
MC68881	Floating Point Unit (FPU)	MC68040	Fastest 32/32-bit processor. Includes MMU and FPU. CISC/RISC design.
MC68882	Faster, more efficient FPU		

Speed: CPU/FPU/MMU Processor speeds. The higher the number, the faster the processor, the more instructions per second it can handle. Due to design and memory constraints, twice the speed does not always equate to twice the processing power. Changes in processor models (68000 vs. 68020, or 68030 vs. 68040) are more significant than changes in processor speed. A 25MHz 68040 can be more than twice as powerful as a 50MHz 68030.

RAM: Min/Max Amount of memory that comes standard

with the accelerator and the maximum amount of memory that the board can accommodate. The A2630 accepts a daughter board (DKB 2632) which allows the user to add up to 112 MB to the 4MB of 32-bit RAM on the card.

SCSI: Whether or not a SCSI port is included on the accelerator card. It is preferred to have a SCSI port on the accelerator so that the hard drive controller can take advantage of the faster processor when transferring data to and from hard drives.

I/O: Whether or not a parallel and serial port is included on the accelerator card. This is a new trend in adding I/O ports to accelerator cards. While not necessary, it does provide the Amiga with additional and faster I/O ports.

half the price of a year ago, the 68040 accelerators are still quite expensive. However, since you get about three times the computing power (more if the program is optimized for the 68040) with a 68040 system at only twice the price, the MIPS/\$ ratio favors the 68040s if you need the power.

The most popular 68030 accelerators are the GVP Combo and GVP G-Force series. The Combo 030 series was introduced in the spring of 1991 and was the first to include a SCSI controller. The previous model from GVP had an AT IDE controller. The integrated hard-disk controller gave the Combo 030 card excellent data-transfer throughput since both primary and secondary storage were now hooked up to a 32-bit bus.

The Combo series contains a full-featured MC68030. The newer G-Force 030 uses a less-expensive MC68EC030 which does not incorporate the MMU functions on the chip. This cost-saving design has brought down the price of a basic accelerator to less than \$1000. The lack of an MMU is of little concern for most users since the Amiga operating system currently does not support the functions of the MMU.

There are three models in the G-Force series with speeds of 25, 40, and 50 MHz. Which one is right for you depends on the amount of money you have to spend, and the computing power you need. The 25MHz model will be fine for basic computer use, word processing, desktop publishing, desktop video, character generating, painting, etc. Where you will want (and maybe need) the extra processing speed is in 3-D animations.

Once you enter this field, there is no such thing as too much power. A 40MHz accelerator with 4MB of RAM at \$1600 is the most popular speed/price model. It is about 60% faster than an Amiga 3000 and remains under the \$2000 mark. It is cheap enough to justify even for hobbyists, yet powerful enough to handle almost all applications without a problem.

Those involved with 3-D modeling and ray-tracing applications will always want more. If you do 3-D modeling on a professional basis, you might want to look at the 50MHz model G-Force or the newer 68040s. My experience is that most of these people are willing to go all the way to the 040s. The price difference is still large, but the performance difference is even larger.

Those who don't need the power of the 040 can usually do with the 40MHz 030. Other 030 cards on the market include Commodore's A2630. This card lacks the features and speed of the G-Force cards, but is currently the only one to support the Unix operating system. My recommendation for most users is to get the fastest 030 you can afford.

For the speed demons, there are a number of 68040s available. The original RCS Fusion-Forty is the best buy at \$1600 for a basic board.

A fully populated 28MHz accelerator will cost just over \$2000. The card is very popular with hobbyists and amateur videographers because of its low price. RCS, a Canadian company out of Montreal, has been able to offer their product at such low prices because of low overhead and very aggressive buying. The Fusion-Forty is showing signs of age and there has been a history of compatibility problems with some motherboards. RCS — to its credit — is a very helpful company and always tries its best to resolve any difficulties customers might have.

The next 040 system to hit the market was the PP&S Progressive 040. Like the Fusion-Forty, it offers a 28MHz 68040 with RAM expandable to 32MB. The Progressive 040 has fewer compatibility problems and is supported by a much larger organization. However, it also costs almost \$1000 more. Neither of these cards includes a hard drive controller.

The latest competitors in the 040 market are PP&S's Zeus 040 and GVP's G-Force 040. Both of these cards come with SCSI controllers and high-speed serial ports and processors up to 33MHz. If price is not a major concern, these two accelerators are what you should be looking at.

The Zeus card is expandable to 64MB RAM and has a SCSI II controller, while the G-Force 040 is expandable to 16MB of RAM (64MB when 16MB 32-bit SIMMs are available) and has a fast SCSI I controller.

Of the two, the Zeus card is currently the more powerful, but the G-Force at \$3000 with 4MB RAM is less expensive. However, at 16MB of RAM, the G-Force 040 is almost the same price as the Zeus 040 and at higher memory configurations, the Zeus becomes more cost effective. This is because GVP uses a proprietary SIMM design.

Other 040 cards on the market include CSA's Magnum 44, a 33MHz 68040 card with high-speed SCSI II, parallel, serial, and AppleTalk ports. My recommendations for the 040 market is to get a Fusion-Forty if you are on a tight budget, a G-Force if you can live with 16MB of RAM for a while, and a Zeus 040 if you can wait until PP&S can fill their orders.

So what makes me think that I can give advice on accelerator cards? Remember the Processor Accelerator, the A2620, the A2630, the GVP-Combo 030, the Progressive 040, and the G-Force 040 mentioned above? I've personally owned all of them at one time or another. I have also worked on or installed the G-Force 030s (25, 40, and 50MHz versions) and Fusion-Fortys. My recommendations are based on hands-on experience with these cards, not

just research. After owning six accelerator cards in five years, I can offer some basic tips on optimizing your system.

Hints and Tips

Enable caches whenever possible. Most programs will run fine with both data and instruction caches enabled. Those that don't have not followed CBM guidelines.

If you are using Workbench 1.3, obtain the freely distributable program "SetCPU" by Dave Haynie and run setcpu cache burst in your s:startup-sequence. If you are using Workbench 2.x, use the supplied CPU command and run CPU cache burst in your s:user-startup.

Use CPU or SetCPU to copy the Kickstart ROM image to 32-bit RAM. This reduces the bottleneck of having to access Kickstart code on the 7MHz 16-bit bus. This will provide you with an additional 10% speed increase. If you are using 040 systems, this may or may not work. Make sure that the CPU utility you are using is compatible with the card you own. Using the wrong combination can cause your system to crash or actually slow down your computer.

If your accelerator has a hard-drive controller, use it. On-board controllers can DMA (Direct Memory Access) to 32-bit RAM, without using the slower 16-bit bus.

To make sure that you are using your hard-drive controller optimally, read the next tip. Most accelerators that come with hard-drive controllers automatically choose optimal mask and maxtransfer settings, but if you are upgrading your system and using a hard-drive prepared on a 16-bit system, you should make the changes listed below.

Make sure that you set the mask on the hard-drive to 32-bit address space whenever possible. This can provide a ten-fold increase in data-transfer to and from the hard-drive. Also, you can increase the max-transfer rate to take advantage of your faster processor. Variance in the maxtransfer rate can provide a little extra speed although real-world tests have failed to demonstrate any worthwhile gains. To do this, use the hard-drive prepping utility that came with your hard-drive controller.

For Commodore 2091 owners:

1. Run the HDToolbox program found either in the Systems (Workbench 1.3) or in the Tools (Workbench 2.0) drawer.
2. Select the drive you want to optimize.
3. Select the Partition option.
4. Select the partition you want to optimize.
5. Select Advanced Configuration.
6. Select Select Filesystem.
7. Change the Mask to 0xFFFFF0 and the MaxTransfer to 0x7FFFFFFF.
8. Repeat Steps 2-7 for each drive and partition.
9. Select Save Changes.

Note: Saving the changes only updates

the Rigid Disk Block, which tells the computer how your hard-drive is configured. It does not delete any information.

Unless you change the partition size, you can safely make changes to the MaxTransfer and Mask parameters without having to reformat your hard-drive. Do not change drive type or partition sizes unless you have a backup of your hard-drive and want to reformat the effected partitions. Changes made will not take affect until you reboot the machine and force the computer to re-read the Rigid Disk Block.

GVP Combo and Series II owners:

1. Obtain the new FaastPrep 2.0 utilities from your authorized GVP dealer.
2. Follow the instructions for GVP G-Force owners.

GVP G-Force owners:

1. Run the ExpertPrep program that came with your accelerator. It is found in the GVP/SCSI subdirectory.
2. Using the SCSI ID selector, scroll through the SCSI IDs until a drive is found.
3. Select Go To Page Two!
4. Set Mask to 0xFFFFF0 and MaxTransfer to 0x7FFFFFFF for each partition.
5. Select Go To Page One!
6. Select Write This Setup.
7. Repeat Steps 2-6 for each drive.

Note: Writing the setup only updates the Rigid Disk Block. No information will be lost unless you have also modified the partition sizes, or if you have selected Low Level Format, AmigaDOS Format, or UnPrep hard-drive. Do not do any of these last four things unless you have a backup of your hard-drive and want to reformat the affected partitions. Changes will not take effect until you reboot the system and force the computer to re-read the disk information stored in the Rigid Disk Block.

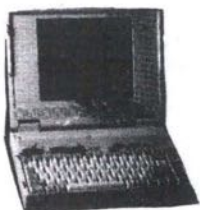
Configure your memory for the largest contiguous block. If you have 8MB or less of 32-bit RAM, set all of it as autoconfig memory. If you have more than 8MB of 32-bit RAM, set as much of it as possible as expanded RAM (non-autoconfig). This allows your programs to make the best use of the memory available. Some applications like ADPro like a lot of contiguous memory. There is no reason to split up the memory into small chunks.

If you are using a 68040, make sure that you are using Kickstart 2.04 or above. Only the newer versions of WorkBench are compatible with the 040. WorkBench 1.3 can be patched to use 040s, but many programs will require that the copy-back feature be disabled during loading. Save yourself the time and hassle and upgrade to 2.0.

Coniah Chuang can be reached at VFX Video, 604-451-0137.

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Choosing the Right Spreadsheet for Windows

BY GEOFF WHEELWRIGHT

Buying a spreadsheet used to be easy — you either bought industry-leading Lotus 1-2-3 or, if you were short of money, you bought one of the dozens of 1-2-3 clones which littered the PC software market throughout the late 1980s.

But spreadsheets have changed and evolved dramatically over the past couple of years, with dozens of new features becoming commonplace and Lotus 1-2-3 slowly losing its iron-clad grip on the market. Spreadsheet users today look for something which will allow them to do the following:

- Both "what-if?" and "what-is?" analysis of their data. Spreadsheets were traditionally good for helping people make a financial model of their business and then plug in different numbers to see "what-if?" things such as profit margins, taxes, sales figures or interest rates changed. These days, the "what-is?" feature of spreadsheets is almost as important — particularly as many businesses have become far more complex as they face increasing competition in international markets. "What-is?" features help users build up that initial model of their business — sometimes by pulling data from

corporate databases held on mini and mainframe systems — and then use the tools of the PC spreadsheet to manipulate it.

- Presentation of data. Reporting and presentation tools have slowly become a major part of spreadsheets. It started with the ability to generate a few bar and pie charts, but these days it includes the ability to produce desktop published-quality finished financial reports direct from the spreadsheet. Hundreds of graph types are offered, different fonts can be used and even on-screen slide shows can be generated (with their "wipe," "slide" and "fade" transition effects between slides).

- Consolidation of complex data. As part of the globalization of information-based businesses, many firms now find themselves having to consolidate data from a huge variety of sources. A company with 20 sales offices around the country, for

example, may have to commonly produce lists of the top 10 sales offices — with breakdowns of salesperson performance in each office. Data consolidation in a spreadsheet — where the information about each office is held in a single sheet and the sheets are linked to one another — is a very effective way to do this job.

- On-the-fly planning. By having an accurate and up-to-date financial model of your business in a spreadsheet file, you can quickly gauge the impact of any changes on the business — and thus be more ready to respond to such changes quickly.

Future Directions

The biggest change taking place in the spreadsheet world is the move to graphical user environments (GUIs) and the attempt by spreadsheet makers to make their products easier to use.

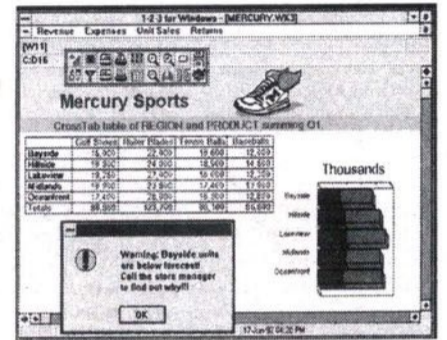
This is generally done through develop-

ment of a proprietary windowing-based system (such as the one used in Lotus Development's new 1-2-3 Version 3.4 for DOS) or moving to one of the leading PC GUI systems (such as Microsoft Windows 3.1 or IBM OS/2 2.0).

Platforms

Most spreadsheets are now offered in several versions. Lotus, for example, offers versions of its market-leading Lotus 1-2-3 for DOS, Windows, OS/2, Apple Macintosh — as well as versions that operate under Unix, IBM's AS/400 and the DEC VAX. The company also has a spreadsheet-style application — known as Improv — which runs on the NeXT system and will shortly be released for Windows.

The most important platforms for spreadsheet development, however, are DOS and Windows — with Apple's Mac and OS/2 following behind (in that order). In recognition of this, we provide profiles below of the major leading spreadsheets in their Windows incarnations (where they exist) and DOS versions where they don't.



Product: Lotus 1-2-3 for Windows
Publisher: Lotus Development
System requirements: 286 system or better capable of running Windows 3.1 in

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standard or enhanced mode
Software: Windows 3.1

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

Although Lotus 1-2-3/G — the company's GUI spreadsheet for the original version of OS/2 Presentation Manager — won critical acclaim, there weren't enough people using OS/2 for it to achieve much commercial success. And 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 Lotus 1-2-3 for Windows has been around for almost two years now and has improved both its speed and integration in the Windows environment. It also incorporates the use of "SmartIcons," which Lotus pioneered in Ami Pro. This toolbox of command icons can be positioned anywhere you like on-screen and it is fully customizable so that you can — through the use of macros — add new commands to it. New icons can be created for application shortcuts, special formulae or personal style preferences.

1-2-3 for Windows ships 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 customized "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.

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 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.

Product: Microsoft Excel 4.0 for Windows and Macintosh

System requirements: 286 system or better capable of running Windows 3.1 in standard or enhanced mode

Software: Windows 3.1



Speaking of Excel, this is the product to beat. And there is no denying that Excel is a tough opponent. Not only does it conform completely to the Windows development guidelines, it offers a quiet alternative to virtually every feature in Lotus 1-2-3 for Windows — and adds far more.

Windows and Spreadsheets

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 printing out of the parallel port while, at the same time, taking data from a modem on the serial port.

Secondly, Windows 3.1 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 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. ■

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MDG 386SX/20	\$880
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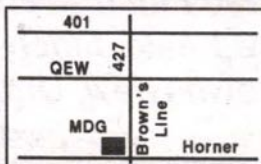
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The company says that this version of Excel more than any other represents a better focus on what users actually do with their spreadsheets. As a result, Microsoft has moved many of the functions in Excel 4.0 off the pull-down menus and the dialogue boxes and onto the toolbar and as part of the kinds of "Wizard" functions that Microsoft pioneered in Works for Windows.

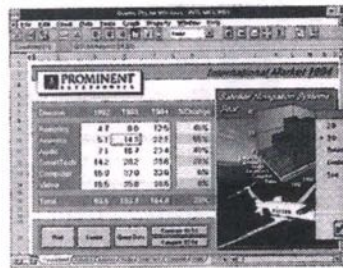
There are four major areas where Microsoft has worked to improve Excel: basic usage, analysis tools, presentations and reports, and Lotus 1-2-3 transitioning and co-existence.

Microsoft also has suggested that the vast majority of users only want quick access to about five per cent of a spreadsheet's functions. Yet in the past, even those functions have been hard to get at. So a number of simple, common-sense bits of "intelligence" have been built into Excel 4.0 to make these more accessible.

One such problem, for example, has traditionally been in setting up numerical sequences. You know, you want to have the figures for first quarter, second quarter, third quarter and fourth quarter in

But with Excel 4, you don't have to do that any more. Microsoft has designed what it calls a "scenario manager." You can stick with working with the same set of data — and then just apply different sets of data to it with the scenario manager.

Product: Quattro Pro for Windows
Publisher: Borland International
System requirements: 286 system or better capable of running Windows 3.1 in standard or enhanced mode
Software: Windows 3.1



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, the DOS version of 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 the DOS version of Quattro worldwide.

In fact, Lotus got so upset about the whole thing it took Lotus to court for mimicking its user interface in a "Lotus compat-

Continued on page 23

There are four major areas where Microsoft has worked to improve Excel: basic usage, analysis tools, presentations and reports, and Lotus 1-2-3 transitioning and co-existence.

columns beside one another. In the past, this has meant typing Q1 at cell A1, then Q2 at cell B1 and so on.

Excel 4.0 is intelligent enough to know that once you have typed Q1 in cell A1, you will probably want Q2 to appear in cell B1. So to start any obvious data "series" (for this is what you call such a sequence in the wonderful world of spreadsheets), all you have to do is type the first item in one cell and then grab the "fill handle" and the bottom right-hand corner of the cell and Excel will automatically fill the cells you highlight with the data series.

This not only works with financial quarters, but also with days, months, weeks and any other obvious data series. I say "obvious," because Excel 4 will also work with "non-obvious" data series relationships if you provide it with the first two cells filled in. If, for example, cell A1 contains the amount of your bank balance and cell A2 below it contains your balance minus a withdrawal shown in cell B1, then you would only need to drag the fill handle at the bottom of cell A3 and it would continue doing your bank reconciliation (assuming all credits and debits are listed in column B) for as far down column A as you wanted to drag the fill handle.

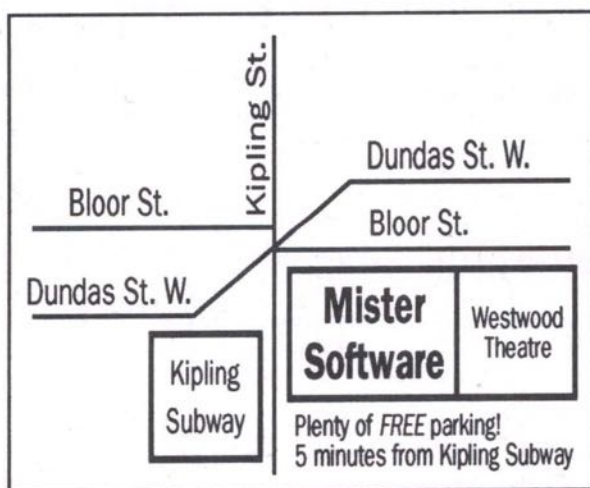
In Excel 4.0, Microsoft has also gone well beyond the traditional idea of spreadsheets being about doing "what-if?" calculations on a whole variety of permutations. You know the sort of thing: "If I can borrow the money to get this batch of CD Walkmans for a bulk discount of 50 per cent, will I make more in getting a bigger profit margin than I lose in paying interest to the bank?"

After a lot of fiddling around, you usually end up with a number of different scenarios — a really good one, a realistic one and a heavily pessimistic one. Although they often share the same sets of data, you may well set up each scenario as a separate sheet — or at least give it over to a different part of the spreadsheet.

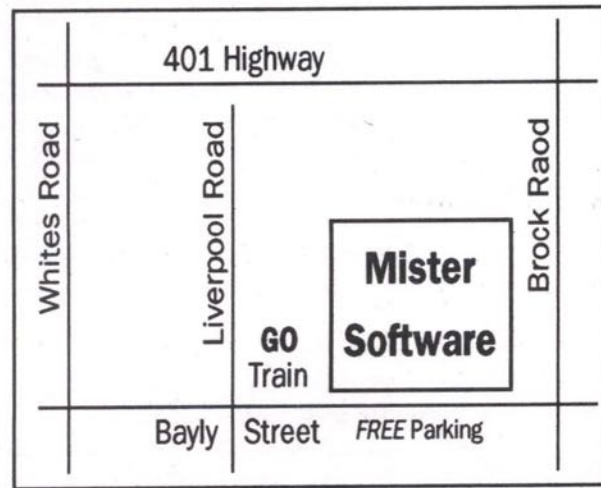
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THE CURRENT AMIGA LINE

1992 was another banner year for Commodore and the Amiga. With the introduction of three new computers, the Amiga 600, the Amiga 1200 and the Amiga 4000, Commodore has demonstrated a firm commitment towards keeping Amiga on the leading edge of computer technology.



This leading edge technology, combined with aggressive pricing, has made these new computers very hot sellers indeed.

And not to be forgotten, the Amiga 2000 and Amiga 3000 lines, remain as popular as ever with the unique Amiga architecture and operating system, including the custom chipsets, a slick graphical user interface and true multi-tasking. Again, aggressive pricing contributed to brisk sales.

SOFTWARE AND HARDWARE PERIPHERALS

Product releases by third party developers are continuing at a dizzying pace. Space does not permit listing more than a few of the new products due for imminent release or already released.

OPAL VISION

A combination software/hardware 24-bit expandable Graphics and Video System. Released in mid-1992, we are anxiously awaiting the add-on modules which include a frame grabber/genlock, a quad-input production switcher, a roaster chip and a scan-rate converter.

The basic OpalVision system is an impressive 24-bit graphics card/program and has been in high demand. With the addition of the soon to be released modules, OpalVision will provide many of the features of the Video Toaster.

DESKTOP PUBLISHING AND WORD PROCESSING

Soft-Logic (the PageStream developers) have just release Art Expression, an outstanding structured drawing program. FinalCopy II by Softwood, now available for several months, continues a runaway best seller.

MULTI-MEDIA

Scala MM200, a greatly enhanced version of the original Scala which was being distributed by GVP is now being handled by Scala themselves. It is simply the most flexible, powerful and easy-to-use multimedia program available for the Amiga. We are also anxiously awaiting the release of AmigaVision Professional by Commodore.

GRAPHICS

Aladdin 4D by Adspec is the latest entry into the modeling, rendering and animation field. Among a plethora of features is this program's ability to render very realistic gaseous objects.

Playmation by CinePlay is also a contender, being somewhat stronger on the animation side. Use of spline curves rather than traditional polygons makes this program perfect for character animation.

ImageFX by GVP has joined ASDG's Art Department Professional and Morph Plus in the image processing and morphing field. With the introduction of ImageFX, GVP has been propelled into the morph-wars. Morphing is just one of ImageFX's features. A stand-alone morphing-only version, Cinemorph, is also available.

UTILITIES

Inovatronics has just released their long awaited upgrade to Directory Opus, Version 4.0. While the original Directory Opus is an outstanding program, the new version is guaranteed to curtail most users' visits to the CLI Shell. It is interesting to note that the icon for the new version is a hard disk platter with a read/write head. Definitely a must-have hard-drive management utility.

Due for release imminently is Ami-Back Tools by Moonlighter. This product promises to provide serious competition to Quarterback Tools.

HARDWARE

GVP has been as prodigious as ever with new releases. Their Phone-Pak (described in the last two editions of *Amiga Talk*) and the G-Lock, a very affordable, high performance external genlock, are both in high demand.

OTHER PRODUCTS

Hard drives, memory expansion and accelerators remain the most sought after hardware peripherals for the Amiga. As a result, a host of developers are vying for this market, resulting in some very competitive pricing.

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We are now carrying an extensive selection of public domain and shareware programs, including the Premier Software line and the entire Fred Fish collection.

Starting in early February, we will be offering hands-on courses in our fully Amiga-equipped classroom. These courses will range from general, introductory instruction on using the Amiga to advanced techniques in graphics,

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Spreadsheets *Continued from page 21*
 ability 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.

Quattro Pro for Windows has been considered particularly innovative due to its use of "spreadsheet notebooks"

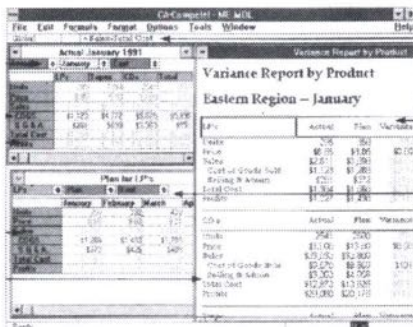
The great appeal of Quattro Pro was that although it provided a full graphical interface, mouse support and special printing features (such as print to fit and support for both font and print scaling), it would run on any standard DOS machine with 640K RAM and a hard disk.

But the spreadsheet business these days is a matter of "what have you done for me lately" and many observers worry that Borland rested on the original Quattro's laurels for too long. After more than a year of delays, new versions of Quattro Pro for Windows and DOS were released late last year and have won widespread praise from reviewers.

Quattro Pro for Windows has been considered particularly innovative due to its use of "spreadsheet notebooks" — which allow you to use linked sheets as if they were pages of a notional "notebook." This notebook can have tabs to separate different sections and the tabs can have any names you like — without reference to cell or three-dimensional sheet names.

Minor Players

Product: CA Compute! and SuperCalc 5
Publisher: Computer Associates
System requirements:
 For SuperCalc — 512K RAM (640K recommended), hard disk with a minimum 5 MB available.
 For CA Compute!: 286 system or better capable of running Windows 3.1 in standard or enhanced mode



SuperCalc 5 is not officially a graphical spreadsheet, but CA's canny price cut on the product last year has made it stiff competition for anyone selling spreadsheets. The recommended retail price dropped to less than \$200.

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).

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 developed a Windows spreadsheet known as CA Compute!. It is unlike most other spreadsheets in that it doesn't use cell and row numbers — instead offering you the option of putting in your own horizontal and vertical titles — and lets you model in up to 12 different "dimensions." This permits you to create a wide variety of "views" of your data that you just wouldn't have in a conventional spreadsheet.

Product: Wingz for Windows
Publisher: Informix Software
System requirements: 286 system or better capable of running Windows 3.1 in standard or enhanced mode
Software: Windows 3.1

Wingz is a curious product that has won critical appraisal 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 also had the foresight to offer Wingz on a wide variety of hardware and software platforms: 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 Aviiion series, Motorola Delta Series 8000 and MPC systems, Bull DPX/Prostations, Silicon Graphics Iris workstations and Sequent Symmetry workstations.

Despite being implemented on all these wonderful platforms and offering a huge range of functions, Wingz has not made any significant impact on the PC spreadsheet market.

On The Horizon

Lotus Improv for Windows will be released early this year and is unique in its handling of multidimensional spreadsheet data. Rather than relying on things such as cell addresses and multiple pages of sheets linked together, Improv works much more like a traditional ledger — but with all the flexibility that such a connotation implies. You can easily move headings around and adjust a given formula that appears in a number of different cells with a single edit. It is not designed to replace Lotus 1-2-3 for Windows, but rather to offer a different approach to Windows users. ■

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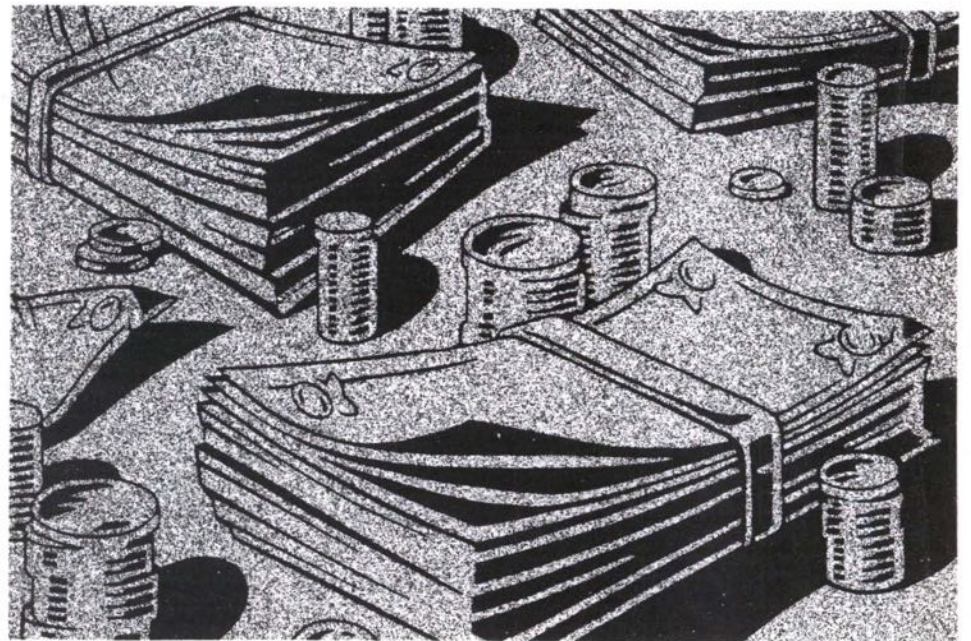
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Personal Income Tax Software for less than \$70

BY KEN GELHORN

In this article we will provide comments on six programs that are being developed for the 1992 T1 taxation year. Four programs were provided us by the developers as preliminary versions; final products should be released by the time you read this article. One developer provided us with their pre-filing version, and the other with an established track record has provided information on changes. Our comments will assist you to determine which one of these inexpensive programs will best fit your requirements.

The products reviewed include Hometax, Quick Returns, Protax and Cantax in the MS-DOS environment and Mactax Pro and Grifftax for the Macintosh environment.

T1 personal income tax software is purchased for a variety of reasons. Individuals consider T1 software to:

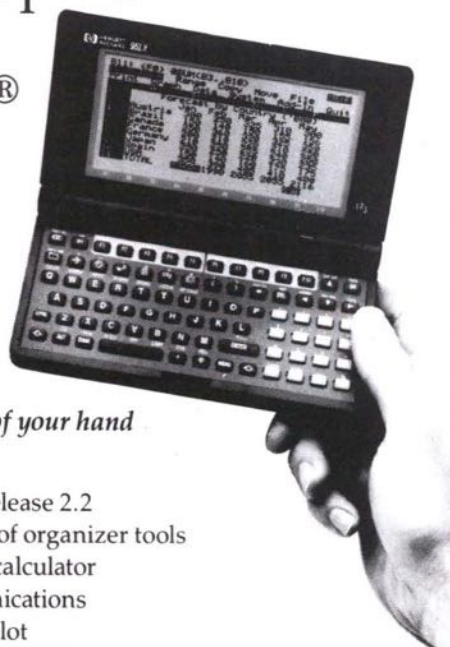
- ensure that the forms are mathematically accurate, especially as changes are made
- assist in maximizing claims for deductions using audit or diagnostic functions
- carry out what-if calculations more effectively
- allow financial and tax minimization planning at other times during the year
- retain control of the preparation of the final product
- minimize preparation costs for more than one return.

All the products discussed here provide

assurance that the mathematical calculation in the basic return is correct and rates are applied correctly. Some of the products provide more capabilities than others in the accumulation of the amounts. All products allow what-if calculation ability, however there are differences in how this is done.

Hometax released in early fall allows you to do your planning much earlier than any of the others, but you must register for the free update to allow you to print and file the returns with the approved forms. All six programs provide the ability to minimize your preparation costs if your alternative is to have a tax preparation firm or tax professional prepare a number of family and or friends returns, in that the minimum cost using a tax service is about \$40 per return.

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HomeTax Plus - 1992

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5353 Dundas Street West,
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Etobicoke, Ontario, M9B 6H8
Phone: (416)239-7829 Fax: (416) 236-9162
System requirements: -IBM PC, XT, AT, PS/1,
PS/2 and compatibles;
640 KB ram or greater;
DOS 3.1 or higher;
Hard drive - 3.5 MB free space
for T1, 4.5 MB for Quebec T1/TP1;
Monochrome or color monitor;
supports Microsoft mouse
and compatibles;
dot matrix or HP LaserJet
compatible printers
Price: MSRP \$49.95

Hometax provides a feature-rich product in two parts. The tax return section is for preliminary planning and actual determination of income tax amounts, both prior to the end of the taxation year and/or at the time of preparation of the final return. The second is a group of financial utilities available to assist in keeping track of personal financial records, stock positions, retirement funds, mortgage calculations, etc. In addition, the program comes with an extensive manual that provides valuable tax-saving tips and planning suggestions.

The tax program is based on the Informatrix T1 program for professional tax preparers. It has been modified to be used by the individuals not requiring all of the sophisticated features of a full-blown professional program. Particular computer-generated schedules which are missing include business income, farming and fishing income, commissioned salesperson expenses, rental income and expense, capital cost allowance schedules, restricted farm loss calculations/business investment loss calculations, and royalty tax rebates.

However, these schedules can be prepared independently and the appropriate figures can be directly inserted into the

return, to enable the completion of complex returns. There is no limit on the number of returns which can be prepared using this program.

The program allows you two different but effective methods of input — an interview method or a screen tax form method. There are extensive supporting schedules for underlying details, accessed using a toggle key (F3) and there are calculation schedules with logic for items such as RRSP deductions, Capital Gains deductions, etc.

The program has a roll-forward function for carry-forward amounts for those who have used the program in the prior year. An additional tax-planning options screen is available to view alternative scenarios at the same time, as well there is a comparative feature to the prior year's return figures to help ensure all items have been reported or claimed.

An auditor/diagnostics function is available to assist in making sure that all logical fields have been entered. The program allows simultaneous processing of spouses using an "F7" swap key. An optimization feature is available to allow the allocation of income and/or credits in the most advantageous fashion using the tax rules.

Extensive help facilities accessed using the "F1" key allow you to prepare the return(s) with confidence. A password feature exists to provide confidentiality if required. If you use the Quicken accounting program, there is the ability to import data using the tax summary report.

Hometax is a good planning and return preparation program for those who do not require the use of computer-generated schedules for business income activities. The addition of the capital gains deduction, cumulative net investment loss and GST rebate schedules in the current year provide a more complete program for investment-oriented taxpayers.

Strong features exist for the individual who is willing to spend the time and effort to plan their financial affairs. Its early

Personal Income Tax Software Comparison Schedule

FEATURE	HomeTax	Cantax	Protax	Quick Returns!	MacTax pro	GriffTax
Operating system:	MS-DOS	MS-DOS	MS-DOS	MS-DOS	Macintosh	Macintosh
Input basis:	Tax Form or questionnaire	Menu of forms & then to form	Questionnaire	Tax form	Questionnaire and input boxes	Tax form and selected forms
What-if summary	Yes	Yes	Yes	Yes - using swap function	Yes	No
Audit or Diagnostics	Yes	Yes	No	Yes	No	Yes
Unlimited returns	Yes	No - 15	Yes	Yes	Yes	Yes
Future year tax planning	Yes - Planner extensive	Yes - single schedule	No	No	No	No
Business income schedules	Yes	Yes - single	Yes - single	Yes - single	Yes - single	No
Rental schedules	Yes	Yes	Yes	Yes	Yes	No
Help screens tax advice	Yes - extensive manual	Yes	Yes On screen	Yes	Yes On screen	Yes Manual
Printed return quality	Good	Excellent	Good	Good	Good	Excellent
Financial Utilities	Yes	No	No	No	No	No
Prices	\$49.95	\$69.95	\$24.95	\$59.95	\$39.95	\$60.00

It's Tax Time.



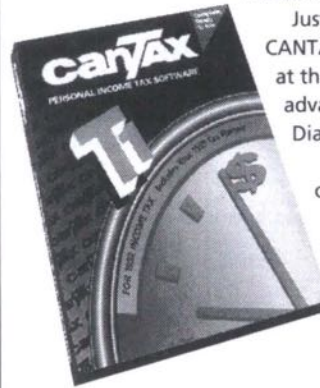
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Personal Tax *Continued from page 25*
 release in the fall period of the taxation year helps ensure the program is useful for planning, particularly with the financial utilities. However, this means you must register the product to receive the free update in order to print Revenue Canada approved forms for filing.

Registration also ensures that you are made aware of any late changes to the tax laws. All in all, Hometax is a good product for personal T1 preparation.

CANTAX

Publisher: Cantax Corporation Ltd.
 Suite 200, 6130 -
 3rd Street Southeast
 Calgary, Alberta, T2H 1K4
Phone: (403) 255-8444 or 1-800-265-3800
 Fax (403) 253-6281
System Requirements:-IBM PC, XT, AT, PS/1, PS/2 and compatibles;
 640 KB ram or greater;
 DOS 3.1 or higher;
 Hard drive - 2.5 MB free space;
 Monochrome or color monitor;
 dot matrix or HP LaserJet;

compatible printers
Price: MSRP \$69.95 /renewal \$39.95

The Cantax T1 program has been a consistent performer over the years. There are two versions of the T1 personal program; the home version and the professional program. The home program allows preparation of returns for up to 15 people, and does have a limitation of a single business/commission/profession statement and a single fishing/farming income statement. Information is entered into various schedules after making the appropriate

selection in the forms index. There is a swap feature as in other programs that allows you to enter data for spouses at the same time when preparing returns for a couple. The program becomes available at retailers or on a direct order basis in mid-February once Revenue Canada has provided their approval of the forms for filing. A final version is available in March, for late changes.

The program uses extensive defaults and there is a manual tax guide to lead the user through the required fields. This year, there is a Help function, there is a diagnostics section that indicates apparent inconsistencies in the entry of data. The extensive list of schedules supported includes: a single Business/Professional /commission income/expense schedule, a statement of farming/fishing income and expenses, rental income, automobile expenses, office-in-home expenses, RRSP calculation worksheet, and many others. It has a tax summary feature that allows you the ability to do what-if calculations.

A planner schedule within the program allows you to plan next year's income and taxes at any time. This allows you the liberty of planning as you complete the current years return, or at any time during the subsequent year. There is also a schedule to determine the installments required.

The printed output from the program is professional-looking and easy to obtain. The use of a laser printer will allow you to print a jacket and schedules which look just like Revenue Canada's. A roll-forward function, which is very easy to use, brings data forward from the prior year.

The program does not calculate or provide for Quebec provincial taxes. Other than that, it is an exceptional product for preparing a limited number of returns..

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Price: MSRP \$24.95 /updates \$19.95

Protax is a relatively straightforward program using a simple menu structure. It has a 17-page manual that provides information on the installation of the program, the use of keys and certain data entry and printing functions. Upon entry into the program, you enter the personal information and are then led through a series of questions and input fields to complete the return.

You do not enter information into a screen view of the return. There is no actual view of the return until you either view it on screen using the "F3" function or print it. A summary screen is available using function key "F4" which provides a snapshot view of amounts for a taxpayer and spouse and can be used to make your what-if decisions.

Continued on page 32

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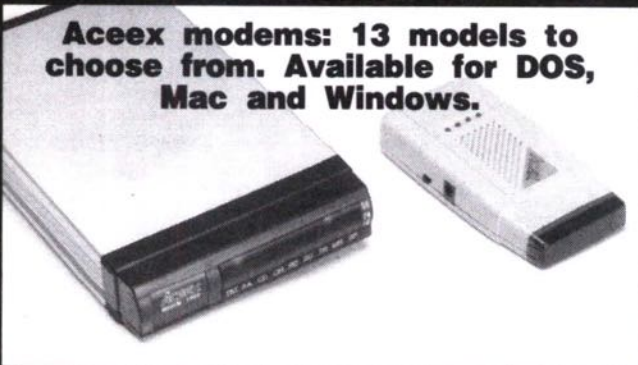
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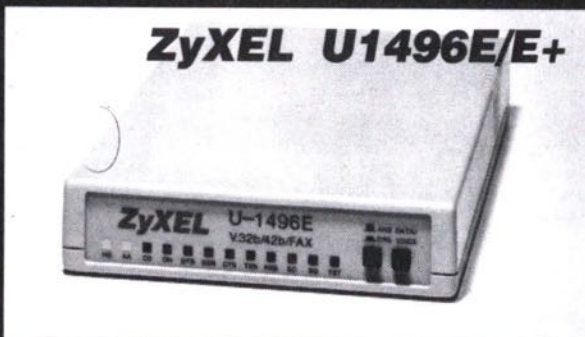
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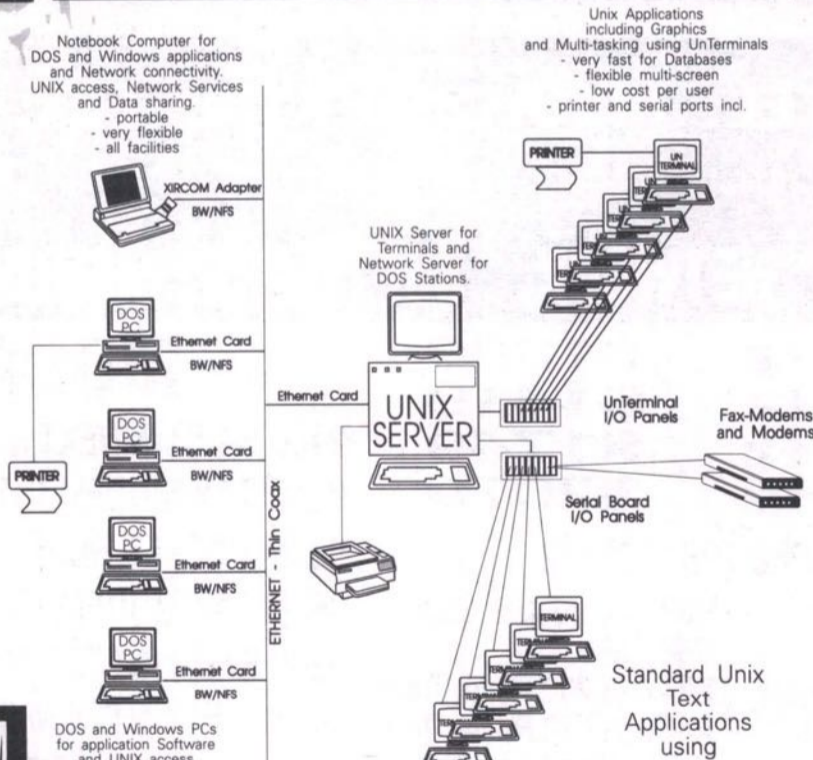
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commtalk BY JAMES MACFARLANE



Is a computer-based home office practical?

If you're like me, you get to play computer consultant for the whole family. You never know when your wife is going to call you up and ask how to install a mouse, or when your long-lost second cousin asks about buying a computer.

Christmas Eve was no exception. This time it was Horst, my father-in-law. He's 62 and is planning on going into semi-retirement in the spring. He lives and works in Toronto and will be moving to Nanaimo, where he wishes to set up a home office and do some private consulting to supplement his income until he's 64.

He's the senior manager for a company that sells and installs intercom and security equipment for schools and large companies. The majority of his work will come from his former employer, who will still be in Toronto.

His job will be to make up proposals — everything from the equipment specifications to wiring and pricing as well as some general analysis of the company's finances.

Fax machine or fax/modem?

Using fax technology makes the most sense. It's the quickest way to move detailed information and drawings between Toronto and Nanaimo. But should a computer equipped with a fax/modem or a standard fax machine be used?

Horst explained why he didn't want a regular fax machine. His documents had to last up to seven years. Many of his projects were for buildings that weren't built yet and the document would have to last for years after its completion. Thermal fax paper would fade. (Solution #1: Fax machine — \$450)

He explained a second scenario: Get the fax machine and a cheap photocopier. All documents that need to be filed could be photocopied first. (Solution #2: Fax machine and photocopier — \$1650)

The third solution would be to buy a computer and a fax/modem. This would allow him to use even the cheapest dot-matrix printer for his fax output and would allow him to type up his proposals in a word processor as well as use other software packages for other purposes.

He admitted that having a computer around would be nice, but was not necessary to his job. He'd be quite happy to sit in front of his old IBM Selectric typewriter and type out his proposals "the hard way." (Solution #3: Computer and fax/modem — \$1500)

The only problem is the drawings. He does all of his sketches by hand. With a fax/modem there would be no way for him to send his drawings. Sure, he could buy a scanner. Hand scanners, although inexpensive, are useless for full-page drawings and

full-page scanners simply cost too much. We discussed the idea of moving to a computer-based drawing system, but he was much more comfortable with pencil and paper. (Solution #4: Computer, fax/modem and scanner: \$2500)

Of course, he could buy a plain-paper fax machine. This would provide him with faxes that wouldn't vanish after a year and would give him much of the functionality a computer-fax/modem-scanner would provide. (Solution #5: Plain-paper fax machine — \$2000)

Although buying a fax machine and a cheap photocopier may be the cheapest route, it's likely the one that's going to require the most maintenance.

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20 Tips for WordPerfect 5.1

BY STEPHEN GAUER

Ten years after making its debut as a DOS word processor, WordPerfect is still at the top of the best-seller lists and still provoking strong reaction. Experienced users swear by it, and beginners swear at it, citing such sins as non-standard function key assignments, eccentric keystroke sequences, and the confusing Reveal Codes feature.

But for sheer power and choice of features it's hard to beat WordPerfect in its current incarnation, version 5.1. If you work with the program and feel you're not exploiting all that it has to offer, you're probably right. To help you use the program more productively, here's a collection of WordPerfect tips based on five years' experience with the program.

1 Moving text. Forget the <Ctrl F4> Move key for rearranging blocks of text in your documents. After blocking the text you want to move, press <Ctrl Del>. Move the cursor to the new position and press <Enter> to retrieve the blocked text. The steps for copying text are identical except that you press <Ctrl Ins> instead of <Ctrl Del>.

2 Switching Screens. Why retype text when you can just copy from existing documents? Use WordPerfect's Switch Screen feature to do this quickly. From the Doc 1 screen press <Shift F3> to switch to the empty Doc 2 screen. Retrieve the source document in this screen. Block and copy any text you want to the Doc 1 screen, pressing <Shift F3> each time you want to switch. The two screens work independently, so you can clear Doc 2 and retrieve additional documents without affecting Doc 1.

If you prefer to see both screens at once, follow these steps: press <Ctrl F3> for Screen, <1> for Windows, type 12 for the number of lines and press <Enter>. You now have Doc 1 in the upper half of your screen and Doc 2 in the lower half. Return to the original setup by changing the number of lines back to 24.

3 Assign Alt key macros. You don't have to be a programming wizard to set up some simple Alt key macros that will save you keystrokes. Here's an example for double and single spacing. Press <Ctrl F10> for Macro Define. Press <Alt D>. At the Description prompt type

DOUBLE SPACING and press <Enter>. With Macro Def flashing on the screen, every keystroke you press is recorded. Go to Format with <Shift F8>, then press <1> for Line, <6> for Line Spacing, and <2> for double spacing. Press <F7> Exit twice to return to the empty screen. Turn off Macro Define by press <Ctrl F10>.

Now when you press <Alt D>, the macro plays the keystrokes very quickly, inserting the code in your document. Set up Alt S to return to single spacing. You can assign all 26 letters of the alphabet as Alt key macros.

4 Use WordPerfect's macros. WordPerfect supplies two very useful macros with the program. EDIT.WPM can be accessed with Alt E when you select the SHORTCUT keyboard through <Shift F1> Setup, <5> Keyboard. Highlight any formatting code in Reveal Codes, press Alt E, and the macro takes you quickly to the appropriate menu screen. When you Exit back with <F7>, the macro deletes the old code. This macro is terrific for editing tabs and headers and footers.

The CALC.WPM macro is a pop-up calculator that handles basic addition, subtraction, division and multiplication, up to 9 digits. The macro inserts the calculated number at the cursor position when you press the spacebar. You can run the macro by pressing <Alt F10>, typing calc, and pressing <Enter>. Or chain it to Alt C for even easier access.

5 Using WordPerfect styles. The Style feature is great for storing custom formatting information like tab settings, font settings, margin settings, paragraph numbering styles, footers and headers. Set up half a dozen styles for the different types of documents you use, and then quickly retrieve a style by pressing <Alt F8>, highlighting the one you want and pressing <Enter>. Retrieve an open style at the very top of a document to set the formatting for that document. Use paired styles for headings and subheadings in longer documents,

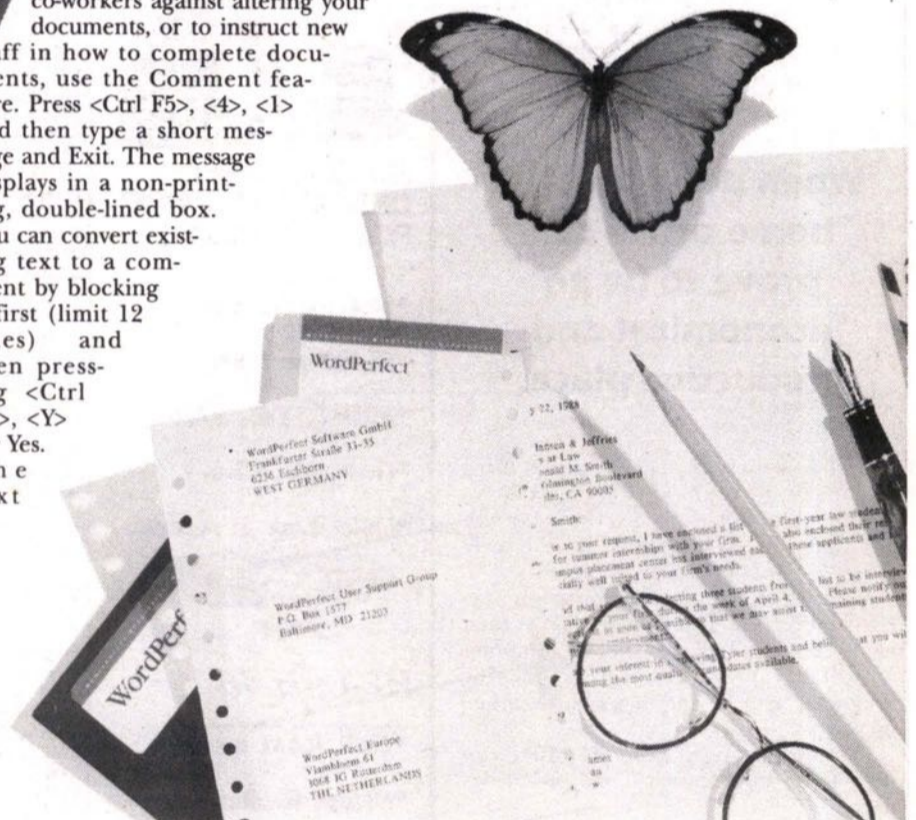
manuals and books. The WordPerfect manual gives a clear explanation of how to set up styles.

6 Change initial codes. If all your documents have non-default format settings (special margins for letterhead, for example), go into Setup and make a global change. Press <Shift F1>, <4>, <5>. Press <Shift F8> and make any formatting changes. When you Exit back to your blank screen again, the initial settings control all new documents from that point on.

7 Comment boxes. To warn co-workers against altering your documents, or to instruct new staff in how to complete documents, use the Comment feature. Press <Ctrl F5>, <4>, <1> and then type a short message and Exit. The message displays in a non-printing, double-lined box. You can convert existing text to a comment by blocking it first (limit 12 lines) and then pressing <Ctrl F5>, <Y> for Yes. The text

remains in the document but does not print out. Convert it back to text by positioning the cursor after the [Comment] code, then pressing <Ctrl F5>, <4>, <3>.

8 Long document names. The long document name feature in 5.1 lets you assign a name of up to 65 characters to any document. Instead of "1001SMIT.LET" you can name a document "LT to Smith re invoice - Oct 1/92". Turn on the feature by pressing <Shift F1> for Setup, <3>, <4>, <3>, Yes.




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Now when you press <F10> to Save, you'll be prompted for a long name and your initials. WordPerfect will construct a short filename based on the long name you've entered. You can alter this short name if you want.

The long names display in alphabetical order in the directory list. This slows down the display when you press <F5>, <Enter>, especially when you have more than 50 documents in a directory. The keystrokes for re-saving a document are now <F10>, <Enter>, <Enter>, <Enter>, <Y>. You may want to create an Alt key macro to automate these keystrokes.

9 Temporary variables. Tired of typing the same phrase over and over in a long document? Store it as a temporary variable. Block the phrase and press <Ctrl PgUp>. At the Variable prompt type a single digit from 0 through 9 and press <Enter>. Now when you press <Alt> plus the digit, the phrase is retrieved to the screen. You can store up to ten variables at once, and each variable can be up to two lines long. All temporary variables are erased when you exit WordPerfect.

10 Moving codes. The quick way to move formatting codes from one place to another is by deleting them, moving the cursor to the new position, and then pressing <F1>, <1> to bring them back again.

11 Blocking tips. The block feature can be used for much more than just copying and moving. Combine it with search, search and replace, printing, spellcheck, append, centre and flush right.

To block a paragraph at a time, press <F12> and then <Enter>. To block a sentence quickly, press <F12> and then the period.

12 Lost a document? You can search a directory based on a keyword from a document. List the directory, then press <9> for Find, <3> for First Page or <4> for Entire. At the Word Pattern: prompt, type the word or phrase you want to search on, and press <Enter>. WordPerfect will search all documents in that directory and display any that contain the search term.

13 Searching. Use the <F2> Search key to quickly find any word or phrase in a document. If you're correcting an error on page 23, the fastest method is to retrieve the file, press <F2>, type a unique word or phrase from that paragraph, press <F2> again and the cursor flies to that location.

You can also search for formatting codes. Press <F2> and then <Shift F8>. Choose from Line, Page or Other depending on the formatting code you want to search for. When you find the code, press <F2> to launch the search.

14 Use the + and - keys. These are useful scrolling keys. To proofread a longer document, press the <+> at the right edge of the keyboard to scroll through the text 24 lines at a time. The <-> key takes you back up to the beginning.

In View Document, the <+> key shows you the bottom half of a page at 100% View. At 200% View, press the key three times to see the bottom of the page.

15 Change the Reveal Codes window. If you like to work with Reveal Codes on, you can decrease the size of its screen so you can see more of your document in the upper screen. Turn on Reveal Codes with <F11>, press <Ctrl F3> for Screen, <1> for Windows, and then cursor down to shrink the window. Press <Enter>.

16 Fast dot leaders. Instead of struggling with the tab set screen, create fast dot leaders this way. For dot leaders flush right to the margin, type the text and then press <Alt F6> twice. For dot leaders to the centre of the page, press <Shift F6> twice.

17 Print sheet labels. WordPerfect comes with predefined label formats that should appear in your Paper Size menu (press <Shift F8>, <2>, <7>). Use these formats to print sheet labels, the kind set up in two or three columns on sheets 8.5 by 11 inches.

You can set up your own definition from the Paper Size menu by pressing <2> for Add, <4> for Labels, <8> for Yes. A full screen menu appears for entering the dimensions of the labels. Complete this carefully and Exit back to the Paper Size menu. Select the new Label format and type the text for your labels. Each label is separated by a page break. When you view the labels in View Document, they appear

on one page, correctly formatted.

18 Checking creation and revision dates. The quick way to check revision and creation dates for a document is to use the Look feature. List the directory, highlight the file and press <Enter>. In the upper right corner of the lightbar at the top of the screen you'll see these dates (and times) displayed.

19 Buy a good WordPerfect book. The best books I've found are Karen Acerson's WordPerfect: The Complete Reference, from McGraw-Hill, and Que's WordPerfect 5.1.

A good book for absolute beginners is Que's Easy WordPerfect. The definitive

book on macros is Gordon McComb's WordPerfect 5.1 Macros and Templates (Bantam), which comes with dozens of macros on diskette.

20 Finally...learn to type. If you can't touch type, you're not making full use of a program like WordPerfect. Spend \$40 on Typing Tutor V or Mavis Beacon Teaches Typing, or any other typing software program. Practise 15 minutes a day for a month and you'll be amazed at the improvement in your typing speed and accuracy. ■

Stephen Gauer, a Vancouver-based trainer and consultant, is a WordPerfect Certified Resource. He can be reached at 604-290-9230.

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Personal Tax *Continued from page 26*

The spousal return is accessed using function key "F5". Information on the various fields is available using the "F1" key. Supporting schedules for various amounts such as RRSP's, moving expenses, etc. need to be prepared on manual forms and submitted with the printed return. The preliminary version reviewed did not have a calculation function to determine the maximum amount of RRSP which could be claimed, but the developer has advised it will be available in the final release of the program.

Computer-generated schedules are

available for business, commission sales, professional, farming and fishing. Items such as interest and dividends are entered into list schedules. The dividend schedule uses actual dividends received instead of taxable dividends as other programs do.

Protax does not provide an audit/diagnostic function such as Hometax and Cantax to ensure fields are logically filled out. Spousal transfers must be done using a separate transfer function and the summary screen to ensure optimal claiming of deductions by the appropriate individual. The program, however, is simple to operate and you can prepare an unlimited number

of returns. Data files can be maintained on floppy or hard disk. The program generates Revenue Canada approved forms.

The developers do not provide any significant information on tax matters as other programs do, nor do they supply a detailed manual, meaning you have to use the Revenue Canada or other sources of support documentation. The program, like others in this class of product, does not deal with Quebec provincial taxes.

Aside from the above comments on the method of reporting dividends and the lack of tax compliance assistance, we found Protax to be an inexpensive, speedy and effective tool for the preparation and filing T1 income tax returns.

QUICK RETURNS!

Publisher: Ontek Development Co.
24 Waller Avenue
Toronto, Ontario, M6S 1B9
Phone: (416) 767-2775 Fax (416) 767-0720
System Requirements: -IBM PC, XT, AT, PS/1, PS/2 and compatibles;
640KB ram or greater;
DOS 3.1 or higher;
Hard drive - 3.5 MB free space;
Monochrome or color monitor;
supports Microsoft mouse and compatibles;
dot matrix or HP LaserJet;
compatible printers
Price: MSRP \$59.95

Quick Returns! is designed to facilitate the preparation of an unlimited number of relatively simple tax returns. The program has a limited number of supporting schedules and forms. However, in contrast to Hometax, it does have some well laid out computer-generated schedules for business, professional and rental income and expenses. To offset the lack of other supporting schedules or forms, the program has an

effective calculator/list function to accumulate and paste the appropriate amounts into the return.

Returns are filled out using a modified screen view of the T1 form. There is a wealth of information available to assist the preparer in knowing what is required to fill in the appropriate fields in the return and related schedules, and advice on how to get the information. The manual also provides some tips on effective tax minimization.

The program provides ongoing information on the effect of the last entry into the program. Alternative scenarios are available by creating copies of the currently entered data and swapping between returns using the "F6" function key.

Quick Returns! is offering electronic filing capability this year. It is acting as the preparer and transmission service for a fee of \$4.50 per return submitted electronically. This makes it unique among the developers reviewed here, in that you do not have to separately arrange the use of an authorized file transmission service to electronically file.

Quick Returns! major strengths are in the extensive computer-accessible documentation, the speed of data entry and calculation and the ability to compare alternative results. If you prepare multiple returns with many T4's, T5's, T3's, etc. there are other products better suited to the task providing separate input and summary schedules and posting the results directly to the return. If you have a limited number of forms and want assistance in knowing what is required in the appropriate boxes, this product provides an excellent solution.

MacTax pro

Publisher: MACTAX Corp.
5284 Heritage Hills Blvd.
Mississauga, Ontario, L5R 3H2

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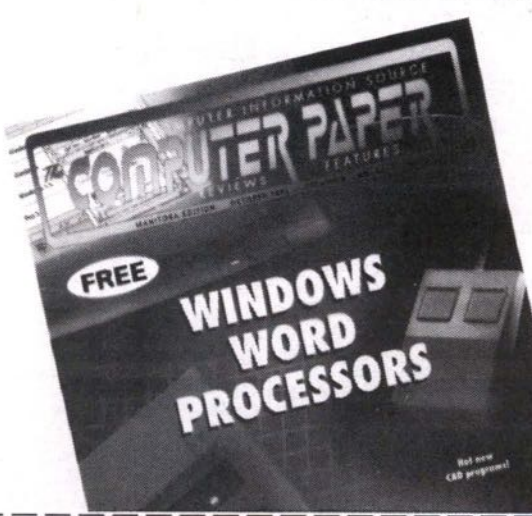
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Price: MSRP \$39.95 /updates \$24.95

MacTax pro is a stand-alone program developed by an associated firm to the developers of ProTax. It shares many of the same characteristics in how the return information will be entered and completed. The program starts with an operational control menu which sets out the basic parameters for the taxpayer. You then enter personal information and are led through a series of questions and input fields to complete the return.

You do not enter information into a screen view of the return. There is no actual view of the return until you either view it on screen using the summary function or print it. The summary function provides a snapshot view of amounts for a taxpayer and spouse and can be used to make your what-if decisions.

There is an amazing number of schedules for the cost of the program. There is appropriate schedules for all of the T-slips, business and professional income, farming and fishing. There are a number of screens to enter the deduction information. Supporting schedules for various amounts such as RRSPs, moving expenses, etc. need to be prepared on manual forms and submitted with the printed return. Items such as interest and dividends are entered into information boxes. The dividend schedule, like Protax, uses actual dividends received

instead of taxable dividends as other programs do.

The program has screen commentary on the input screens to assist in completing the various data input fields. There is a 17-page manual to assist in the operation of the program and understanding the various data input fields.

A support line is available. The program does not require you to have an extensive knowledge of the income-tax laws and readily does support the average tax preparer. Printed output will be Revenue Canada approved.

With a limited number of items to input, this program is very cost effective.

Grifftax Individual

Publisher: Colin Griffiths & Associates Ltd. 120 Pineridge Road Carp, Ontario, K0A 1L0 Phone: (613) 839-5796 Fax (613) 839-1764

System Requirements: Macintosh 512K, Macintosh Plus, Macintosh SE, Macintosh II Macintosh LC or Macintosh DUO. with at least MB ram and using System 6.0 or later; Hard drive - 1.5 MB free space; an Apple Imagewriter, Apple LaserWriter or equivalent
Price: MSRP \$60.00 /updates \$45.00 Extended forms \$75.00 / updates \$55.00

Grifftax Individual is a scaled-down version of the professional program offered by the same developer. The program has developed from an Excel template product to a full program. The current product allows for the preparation of unlimited numbers of returns and you fill data into

Continued on page 43

Throne Computer Systems

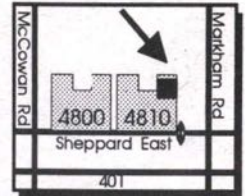
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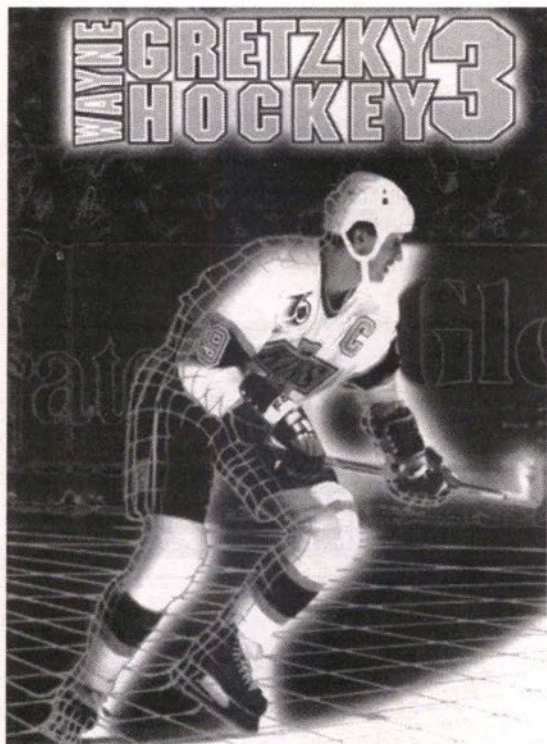
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game*talk* REVIEWED BY GORDON GOBLE

Wayne Gretzky Hockey 3



Unfortunately, most sporting simulations don't quite live up to expectations, nor to their own hype. This is especially evident in the area of team sport, and it doesn't take the proverbial rocket scientist to realize that there is one great hurdle in the path to the perfect product.

Product: Wayne Gretzky Hockey 3
Minimum System Requirements: 286 IBM PC/100% compatible or better (preferable 3/4 rink view requires 585K base memory plus an additional 512K expanded memory.)
Recommended Hardware: 386 25 MHz IBM/100% compatible or better, 1024K ems.
Players: One (against computer) or two (head-to-head)
Protection: document look-up
Publisher: Bethesda Softworks (division of Media Technologies) Rockville, MD.
Designers: C. Walton, D. Gregory
Summary: Take your choice of any 1991-92 NHL team, and face-off against either the computer or play head-to-head with a friend (or foe).
Graphics: Three stars (out of four)
Sound: ★★★★★
Gameplay: ★★

Specifically, in a team sport simulation, one human game player must somehow control the actions of each and every member of his squad. Since most of us human-types have been designed with but one brain, game designers have compensated for our uni-directional thinking by defaulting a large percentage of decision-making back to our friend, the computer.

Often, the armchair jock can influence on-field (or on-ice) events through a series of pre-set strategies and smart "coaching," but until the day we become truly multi-tasking, or a brilliant designer discovers a better way to quickly decide which member of our "team" is under our control at any given moment, WGH3 is about as good as it gets.

A slightly flawed attempt at the perfect team sport simulation, WGH3 looks like

the real thing, sounds like the real thing, and at first, seems to play like the real thing. But after a little experimentation, it becomes apparent that as far as definitive video hockey goes, the Great One should have waited a little longer before lending his esteemed name.

My hopes for a hockey simulation with adequate human control were buoyed by the sheer magnitude of WGH3. At 9MB of installed size (13MB of free disk space are required for a fast load), one must be a true hockey fanatic to set aside enough hard-drive space for this fat little fellow.

Yet once installed, running WGH3 to its full potential involves two somewhat annoying procedures: adding the name of your sound card to the command line each and every time you play (batch this to save time), and the initiation of your computer's expanded memory facilities.

Three main interfaces are presented with WGH3: a press-box view of the rink, wherein specific team, roster, coaching, and mode-of-play choices are presented; the game view itself; and a post-game screen allowing access to game summaries and highlights. It is abundantly clear that game designers have poured a tremendous amount of effort into the first one.

Decisions, decisions...pre-game options and "coaching" choices are indeed plentiful, and this is undoubtedly where the bulk of nine megabytes of program comes into play, so to speak. For openers, is it going to be head-to-head or man vs. computer? As yet, I can't comment on head-to-head action, but I like the idea.

I also like the idea of the new and improved "3/4" view of the ice surface during game play. Choose this option before your game begins and you won't be worrying about the nosebleeds particular to the old overhead "blimp" view that was mandatory in earlier versions. Game length (for those busy execs fitting a little pro hockey between appointments), choice of referee, fights on/off, penalties on/off...these are but a sampling of the available variations. Last, but definitely not least, the teams involved in the upcoming tilt must be chosen.

Choices include all NHL rosters from

the 1992 season, or any new powerhouse group that springs to mind. Once participating teams (and, if desired, the color of their uniforms) have been decided, any player can be modified by enhancing or detracting from up to ten of his on-ice strengths and weaknesses. Even his name (somehow Wayne Gretzky became Gord Goble, for instance) can be changed.

Having gotten this far, an important decision must be made. To coach or not to coach, that is the question. If coaching is defaulted to the computer, it will make the decisions as to which players are thrown into the fray at what times, and which of a variety of pre-set plays will be put into action in given circumstances. However, if the armchair Gretzky elects to coach himself, these time-consuming, yet possibly very effective options can be tailored in any fashion he wishes.

Then...just as it seemed pre-game preparations would never end...it's GAME TIME! With the exception of a couple of rows of prime seating, and a small game clock/scoreboard that sits unobtrusively to one corner, the screen is filled completely with ice surface. This is good. The puck is dropped, and inevitably, the human will lose this and nearly all face-offs to the computer. This is not good.

WGH3 feels and sounds like a real hockey game. Players cut swaths through the ice realistically, carve through corners realistically, get tripped and fall head first to the ice realistically, and raise their arms in triumph or pump their fists after bulging the ol' twine realistically. Fast guys are fast, slow guys slow, tough guys are tough, and skilled guys are damn hard to get off the puck. If a player mistakenly collides with either net at break-neck speed, said net actually comes off its moorings, creating a stoppage of play! A zamboni (ice-cleaning machine) even hits the ice surface between periods.

Goalies freeze the puck when they should, players under computer control fire the puck down the ice when playing shorthanded, and in the waning moments of a tight contest, the computer-controlled enemy coach will opt to pull his goalie. All

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these things would please even Foster Hewitt.

The audio make-up of WGH3 squares admirably with the sounds of a real hockey rink, too. Players collide full speed in the corner, and it hurts just to hear it. The puck ricochets off the boards with a reverberating clunk and is gathered up in a swish of flying ice. The rink announcer sounds just like a typical rink announcer should.

So...nothing's wrong, right? Wrong.

As indicated by what you've read so far, a tremendous amount of Bethesda's research and effort has gone into statistics, rosters, coaching decisions, and a good overall "feel." But this same quality is somehow lacking from the actual play.

Numbers are missing from the backs of player's jerseys. It's hard to tell the Gretzkys from the lumbering oafs except by the way they move, and even then it's not an easy task. And overall, even the Gretzkys on your squad are pretty darn stupid when not under your direct control. It's a constant source of frustration to have your point men watch in blissful ignorance as perfectly fed drop passes scoot between their skates. The urge arises to shoot out the monitor screen.

To prevent this, it is time to relate the story of the fateful "D" key. Depressing the "D" on your keyboard changes the player you currently control to the player that is currently closest to the puck. And this, more than any other single operation in WGH3, is the one to master. Freeing one hand, getting it to the keyboard, and depressing that "D", all within a split second, is something you must learn to perfection in order to have any designs on maintaining possession and moving that puck with mastery. Why the inconspicuous "D" as opposed to something more accessible is unknown at this time.

There's virtually no control over the

A final word about penalties: there's too many! Rare is the time when one player or another is not doing hard time in the sin bin.

speed of passes and shots. (Although a wrist or slap shot can be chosen, the difference in the speed and/or quality is almost imperceptible.) As well, there is no gauge to measure the accuracy of shots on net. It would be a welcome addition to really see the difference between a cannonading blast into the top corner of the net and a radar-equipped feathered pass.

Goaltenders are utterly computer controlled. Again, this is OK for those who would rather coach than perform "hands-on" netminding, but merely giving a goalie top talents at the beginning of the game is not much fun come game time. Pucks disappear off the screen for moments at a time, and solo rushes from one end of the ice to the other with opposing players all draped over top are often much more effective than stunning passing plays (wherein the computer team simply reads the play just a little too well).

A final word about penalties: there's too many! Rare is the time when one player or another is not doing hard time in the sin bin. However, the frequent nature of penalties in WGH3 brings me to my Tip 'o' the Day, and that is: It's re-e-e-al easy to draw penalties. With possession of the puck, simply skate to the boards nearest you and

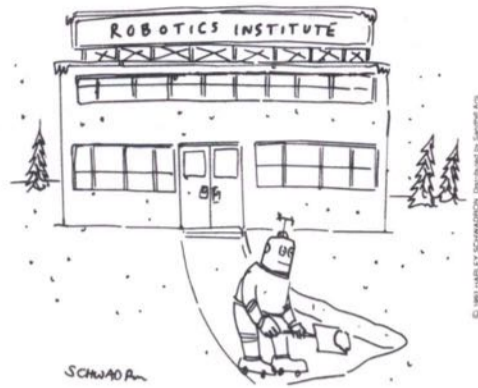
you'll draw opposition players like flies. Holding the puck and not moving...wait. Most often, you'll be hacked brutally to the ice, and...voilà — penalty! Repeat procedure, and voila again — the bad guys are two men short, making it much easier to slam home a scintillating slap shot. This sneaky little procedure is much easier than setting up a terrific passing play, and although far removed from real hockey, when in Rome....

The Great One himself penned a few lines of introduction in the WGH3 manual, and I think he summed things up quite succinctly by saying "...playing this simulation will teach you something about hockey. You

may not learn about controlling the puck with the side of your skate or how to make a feather pass, but I guarantee you'll learn about the importance of strategy and teamwork...."

Unfortunately, with 9MB taken up on my hard-drive, and a stronger computer than even NASA had twenty years ago, I wanted more than that. ■

Gordon Goble is an avid sport-aholic (both participant and observer). He is a correspondent for *Computer Gaming World*, a freelance writer and desktop publisher, and a three year correspondent to California-based *On Track* automobile racing magazine.



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booktalk REVIEWED BY KEITH ROBERTS

John von Neumann

The Scientific Genius Who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More.

BY NORMAN MACRAE

Pantheon Books \$31.50. 1992.

The title of this book just about says it all: this is the story of a brilliant pioneer in the history of computing. All computers made today follow the basic logic that von Neumann laid out for them back in the 1940s. On top of this he also helped develop ground-breaking ideas on artificial intelligence, economics and mathematics. He also played a major role in the development of the first atomic bomb, and the idea of nuclear deterrence which formed the basis of the Cold War. This is a well-written biography of a remarkable man whose significance is not restricted to the field of computers.

Von Neumann's work in computing, though significant, was only one of the many interests he pursued. Born to a relatively wealthy family in Budapest, Hungary in 1903, Von Neumann was recognized as a mathematical prodigy in his youth, and was on equal ground with his math professors while still in his teens. With a Ph.D. in math and a stellar reputation preceding him, he left Europe for the U.S.A. shortly before Hitler's rise to power.

He was not a highly politicized man, but he had strong convictions that were shaped by the political forces surrounding him. Though he later converted to Catholicism, he was born a Jew and his family was devastated by Nazism. He also had first-hand experience of Communist tyranny from a short-lived Hungarian Communist revolution during his childhood. His experiences eventually led to his decision to involve himself with America's Manhattan Project, which would develop the atomic bombs.

It was while working with the incredible amount of figures needed to understand how these bombs would work that he first got interested in computers. He visited the site of ENIAC, the world's first electronic computer, and met its developers. He had a special ability to recognize the importance of other people's ideas, and then develop them well beyond the initial idea. Up to then computers were designed and developed in terms of the parts that made them.

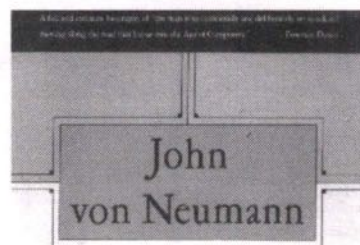
He was the first to realize that computers were ultimately logical machines, and that they must be designed along logical lines. Von Neumann produced a report on the proposed design of ENIAC's successor in 1945, describing a machine that had a central arithmetical processor, a central control unit to direct operations, and a memory. His ideas were widely spread, and this architecture is the basis for all computers that have been made since that time.

His ideas for computers went beyond the idea of mere number crunching. He established the first computer to aid in weather projections, but saw it not just as a way of making forecasts, but as a step on the way to controlling the weather. He also had ideas on creating artificial life within the computer, setting the stage for later research in this area.

Much of the book is devoted to his research and work in other areas, including his work on atomic weaponry and his contribution to the Cold War stalemate based on nuclear deterrence. A contemporary of Einstein and Oppenheimer, he was unlike either of them in terms of his own convictions on the role of nuclear weaponry in politics. This biography probably had to wait until the end of the Cold War, as the biographer takes the stance that its end vindicates von Neumann's ideas on nuclear deterrence, an idea he started and helped set into political motion.

The biographer was once principal editor of *The Economist*, which intrudes too much into his subject matter; he makes judgement calls that should be left for the reader to make. His research is impeccable and his writing has a way of holding the reader to the page.

Von Neumann died of cancer in 1957, likely due to the fact that he attended a few too many atomic test sites. While his contribution to computers took up only a fraction of his career, his work was ground-breaking in the field. This biography reminds us that the history of computers is not all numbers and engineering, but based upon politics, society and imagination. ■



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While his contribution to computers took up only a fraction of his career, his work was ground-breaking in the field.

newsbytes

EXCLUSIVE NEWS

Macworld: Apple's New Low Priced, Ergo Keyboard, Mouse

SAN FRANCISCO, CALIFORNIA, JAN 6 (NB) — Apple has announced two new products aimed at ergonomics at Macworld in San Francisco, California — the Apple Adjustable Keyboard and the Apple Desktop Bus Mouse II.

The new keyboard is hinged so it is in two sections. Users can adjust to an angle that is right for them. The human wrist is designed so the wrist muscles are twisted if the hand is held flat in front. The correct angle, which doesn't twist the carpal muscle in the wrist is one in which the hands are slanted slightly upward.

Apple says the right and left halves of the industry-standard alphanumeric keyboard can be split up to 30 degrees. Adjustable feet control the keyboard's slope and height and detachable palm rests provide a contoured surface for resting the hands, which can reduce stress on the neck and shoulder muscles and may minimize wrist-flexing.

The keyboard has 111 keys, including 15 function keys, an 18-key numeric keypad, and sound keys to control the volume, mute and record operations used in multimedia applications. A separate extended keypad can be placed on either side of the keyboard and has 15 function keys, six special screen-editing keys, four arrow keys arranged in an inverted-T layout, and an 18-key numeric keypad.

At US\$219, the Adjustable Keyboard is



much less expensive than other ergonomic keyboards which can cost \$800 or more and comes with a palm rest and the separate extended keypad. It will work with any Macintosh, plugging directly in the Apple Desktop Bus port (ADB), but requires operating System Software 6.0.7 or later.

The new Apple Desktop Bus Mouse II has been elongated with a rounded shape Apple says fits the contours of the hand and supports the palm. A large button at the tip of the Apple Desktop Bus Mouse II lets more than one finger do the clicking and is convenient for

large or small hands to reach, Apple said.

A tracking ball is located in the front of the mouse so the cursor can be precisely controlled with the fingertips rather than wrist or hand movements.

The Mouse II is also energy efficient, so it can be used with the Macintosh PowerBook notebook-sized computers and it can also be connected directly to any Macintosh computer through the Apple Desktop Bus (ADB) or daisy-chained from the Apple keyboard or another ADB device.

Apple says the Mouse II will replace its current mouse and in February 1993 it will be bundled with computer systems and sold separately for a retail price of US\$79. (Canadian prices were not available at press time.—Ed.)

Aldus Licenses "Fetch" Browser

SEATTLE, WASHINGTON (NB) — Aldus Corporation claims it has signed licensing agreements with Macromedia Inc., and Image Club Graphics Inc., for a "browser" version of Fetch.

Fetch, as reported recently by Newsbytes, is a multi-user, mixed-media database program that allows users to catalog, browse, and retrieve digitized media on Apple Computer's Macintosh.

The two companies will use the special version of Fetch to act as a front-end to their latest CD-ROM titles. The \$295 program is expected to ship in the fourth quarter, and will carry a suggested retail price of \$295, Aldus spokesperson Belinda Young told Newsbytes. The browser technology is being made available to licensees immediately.

Young said that while licensing of a browser version probably would not be a significant part of the program's revenue, it would be an important part of the product's strategy.

John Testement, Fetch product marketing manager, said that searching for and retrieving digitized media has long been a

problem for graphics professionals. "Fetch helps solve this problem," says Testement.

Macromedia will use the Fetch browser with its Industry At Work: Clip Media 2 For The Macintosh, its newest CD-ROM. The disk contains media for creating multimedia presentations and productions. The browser creates a read-only catalog that displays the clip-media elements of Industry At Work in a visual gallery of thumbnail images, rather than a test list of file names. A user can browse through, search for, retrieve, move, copy, preview, or print any of the 1,200 graphics, sound, animation and music clips on the disk.

Image Club Graphics develops font and clip art for Macintosh and IBM-compatible computers, including PostScript and EPS clip art. It will use the Fetch browser as a front end to Art Room CD-ROM version 5.2, a clip art collection of more than 9,000 images.

Clip art images, animation and sound files require large amounts of disk storage space, making a CD-ROM disk ideal for such clip-art collections.

Contact: Aldus Corporation, 206-386-8819.

Fetch is a multi-user program that allows users to catalog, browse, and retrieve digitized media on Apple Computer's Macintosh.

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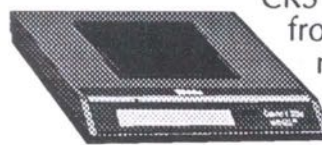
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PC NEWS

WordPerfect 5.2 For Windows

OREM, UTAH (NB) — WordPerfect Corporation has announced it will start shipping WordPerfect 5.2 for Windows, an upgrade for version 5.1 of the popular software program that includes new tools and features, later this month.

New features include Grammatik 5 from Reference Software International, and Adobe Type Manager with a selection of fonts which the company says were created specifically for WordPerfect. Grammatik 5, a writing improvement tool that checks the grammar, spelling, style, and punctuation of a document, will be available on a pull-down menu from within WordPerfect 5.2 for Windows.

Sold as a stand-alone product Grammatik 5 has a suggested list price of \$99. WordPerfect recently signed a licensing agreement with Reference Software to use Grammatik 5. Reference software also publishes an electronic version of Random House Webster's Dictionary & Thesaurus College Edition; Dorland's Electronic Medical Speller; and Black's Electronic Law Dictionary.

The upgrade also includes QuickFinder, an indexing and text retrieval feature; electronic mail capabilities; support for object linking and embedding; and new macros and button bars. Eight new button bars are included: Layout, Generate, Font, Page, Tools, Merge, Macros, and Graphics. Clicking anywhere on a button bar with the right mouse button brings up a QuickMenu of other button bars. The button bars provide quick access to favorite features, and can be edited.

The new macros include one that creates custom forms; a search and replace feature for formatting codes; and a macro that inserts a US Postnet barcode anywhere in a document. A glossary macro lets users create abbreviations for commonly used words or phrases. For example, when the user types in an abbreviation such as NB, the

program will replace this with the longer form of Newsbytes.

WordPerfect spokesperson Liz Tanner told Newsbytes that the new indexing feature of QuickFinder will index every word in userdefined files and build an index file which will occupy disk space equal to about five percent of the document file size. The user uses Find Files from a pull-down menu to search an index for file names by either name of by specific words in the document. Find Files supports the use of Boolean operators such as "and," "or," and "not."

The new e-mail feature can be used to send an on-screen document to another user. By clicking on the name of a mail package from the File menu, the user can insert selected text into the message or attach an entire document with comments. WordPerfect will support WordPerfect Mail for windows, which is part of WordPerfect Office for Windows, and other e-mail programs which use the VIM or MAPI standards. That would include Lotus cc:Mail, Microsoft Mail, or Da Vince e-mail.

Tanner said that the enhanced printer support allows users to print on multiple paper sizes and use portrait and landscape orientations in the same document. There's also an envelope macro that will work with Windows printer drivers, the ability to select from multiple addresses, and users can position a US PostNet barcode.

WordPerfect says that Adobe Type Manager (ATM) will ship with 13 additional fonts that were created for WordPerfect. The additional fonts will also work with any other Windows application that supports ATM, a Postscript language scalable font technology that supports Adobe's Type 1 font software.

The upgrade to WordPerfect 5.2 For Windows will retail for \$39.95 for disks, an upgrade guide, and documentation for Adobe Type Manager and Grammatik. A full WordPerfect 5.2 upgrade with complete

New For PC:

Creative Labs' 16-bit Sound Card

MILPITAS, CALIFORNIA (NB) — High-quality sound is becoming an increasingly popular addition to PCs as more users begin to take advantage of multimedia products and more complex applications and games. To address the issue, Creative Labs Inc. has introduced a 16-bit sound system that features advanced signal processing technology.

The company claims that the new Sound Blaster 16 ASP is the "only sound system in this price category to offer CD-quality sound combined with a DSP."

W.H. Sim, Creative's chairman and chief executive officer, said: "Advanced Signal Processing (ASP) enables the Sound Blaster 16 to perform complex high-speed mathematical algorithms providing the board with real-time 16-bit hardware compression and decompression. When new technologies such as time-scale modification and speech recognition become available, they will be able to be uploaded onto the board's programmable signal processor."

According to the company, the Sound Blaster 16 ASP is a multifunction board that brings the Sound Blaster across platforms to Windows 3.1, OS/2 2.0, and DOS-based applications. The board features multiple interfaces: a CD-ROM, MIDI (musical instrument digital interface), and joystick port.

The Sound Blaster 16 ASP also features 16-bit quality stereo sound sampling and playback with auto dynamic filtering. Other features include enhanced four-operator, 20-voice FM music synthesis, selectable sampling rates from 5 (kilohertz) kHz to 44.1 kHz, a 10-channel stereo digital mixer, tone control, input/output gain control, and a recording input mixer. A microphone is also included with the package.



According to the company, the product will be shipped with a variety of software packages: HSC Interactive, for multimedia presentations; PC Animate Plus, animation software; and a diverse group of utilities including a Windows-based wave editor, Creative WaveStudio, Creative SoundO'le, a voice and music recording application, and Creative Talking Scheduler.

The board's suggested retail price is \$349.95.

In September Newsbytes reported that Creative Labs said it would build software drivers so its popular Sound Blaster multimedia sound card can be used with IBM's OS/2 Multimedia Presentation Manager/2.

In October Newsbytes reported that Creative Labs and Media Vision had resolved their reverse-engineering court case with an out-of-court settlement.

Contact: Benita Kenn, Creative Labs, 408-428-6600.

Commodore Notebook In Canada Has AMD Chip

TORONTO, ONTARIO, CANADA (NB) — Commodore Business Machines Ltd., the Canadian subsidiary of Commodore International Inc., has announced a notebook computer that uses Advanced Micro Devices' power-saving 80386SXL micro-processor.

Tom Shepherd, director of marketing for Commodore in Canada, said the 5.3-pound machine has not been announced in the United States.

The 386SX-LT notebook has a 25-megahertz AMD 80386SXL chip, which Commodore said uses 27 percent less power than a standard 386SX processor. Shepherd said Commodore uses Intel chips in most of its line of DOS machines, although AMD chips are used in some of its 386SX desktop computers.

The 386SX-LT comes with an 82-key keyboard that has a two-inch wrist rest; a

640-by-480 VGA liquid-crystal display; two megabytes of memory; a 60-megabyte hard disk drive; a 3.5-inch, 1.44-megabyte diskette drive; serial, parallel, mouse, and video ports; an external AC power adapter; and support for a math co-processor and an internal data/facsimile modem card.

Shepherd said that with power-saving features enabled, the machine can run for as long as six hours on a single battery charge. Several power-saving features are included, such as the low-power chip, the ability to shut down the hard drive and screen after a preset amount of idle time, and a system standby mode that cuts off power to virtually all parts of the system.

The suggested list price for the machine is C\$1,995.

Contact: Tom Shepherd, Commodore Business Machines, 416-499-4292.

Poor Detection Rate For Anti-virus Software

LONDON, ENGLAND (NB) — International Data Security (IDS) has announced the results of what it claims is its continuing research into the effectiveness of anti-virus software currently available on the market.

Products tested by IDS include: Dr Solomon's Toolkit, McAfee Antivirus, Central Point's Anti-virus, and the Norton Anti-virus package. The tests were carried out by a number of leading organizations and libraries, such as the National Computer Security Association (NCSA), Virus Bulletin, VSUM Virus Library and the Hamburg Virus Test Center.

According to IDS, the tests were conducted over a period of 15 months, from June, 1991, to September, 1992.

Of the eight packages tested, only the McAfee Anti-virus software maintained an average virus detection rate of more than 95 percent. McAfee scored 97 percent. Sophos

took second position with 90 percent.

IDS notes that a shortfall of seven percent in the sample test of 1,200 viruses is equivalent to 84 missed viruses and strains. The company claims that this greatly increases the risk of a virus attack and destruction of computer data. The VSUM virus library has currently registered 1,405 known viruses and strains.

The other results of the tests showed Dr Solomon's Toolkit as scoring 88 percent, Central Point's Anti-virus 72 percent, Norton Anti-virus 67 percent, IBM's Viruscan 73 percent, Xtree's Virusafe 67 percent, and Fifth Generation's Untouchable just a 51 percent hit rate.

IDS is offering interested parties a copy of its test results. This service is provided free of charge.

Contact: IDS - Tel: 071-631-0548; Fax: 071-580-1466.

TELECOM

Hayes VS Multi-Tech; A BBSer's View

WASHINGTON, DC, U.S.A. (NB) — Is Hayes being unfair to Multi-Tech in its advertisements which warn people about possible anomalies encountered when using Multi-Tech modems? Boardwatch Magazine's always outspoken Jack Rickard has waded into the Hayes/Multi-Tech controversy with a reply to a Multi-Tech Systems letter-to-the-editor addressed to his magazine.

Hayes Microcomputer and Multi-Tech Systems have been trading white papers and legal charges for months now, all over the fact that Multi-Tech decided to use its own escape sequence rather than the near-universal Heatherington 302 system patented by Hayes. Hayes is telling the world that Multi-Tech's escape sequence is inferior and likely to cause a crash.

Multi-Tech, which says that it will sell about \$80 million worth of modems in 1992, is understandably upset with this contention.

In the January, 1993 issue of Boardwatch Mr. Rickard takes Multi-Tech to task criticizing the company's understanding of the real problem and pointing out that the BBS community isn't concerned about the two companies' legal wrangling, just whether the Hayes escape sequence is superior.

An escape sequence is a string of events that cause a modem to stop whatever it is doing and wait for a new command. While it is obviously vital for such a sequence to exist, it is also important that the escape sequence not occur due to a random sequence of events such as the transmission of a file.

Hayes' popular escape sequence involves both a string of unusual characters and a fixed pause before reception of that string. The odds of this sequence happening even once is remote and the chances of

it occurring twice with the same file is vanishingly small.

Multi-Tech's escape sequence (TIES) uses a character string only, a very unusual sequence, but no time delay has to occur just before or after the sequence is sent, making the event far less unique.

The company says that this character string is so rare that it won't cause trouble, but Mr. Rickard says that the firm is ignoring the fact that BBS users transfer not text or data files, but compressed files which may generate very strange character sequences and also share gigantic image files where almost every imaginable sequence can occur.

He goes on to point out that ZyXEL avoids using the Hayes escape sequence by adding an even more sophisticated system based on a variable length pause that must be different from the pauses detected during a particular transfer.

Mr. Rickard's objection to Multi-Tech's system is that it is much less secure than either the Hayes or ZyXEL escape sequence and thus adds another variable that can cause already chancy communications to fail. Since Multi-Tech modems are not significantly less expensive than competing Hayes-compatible modems and in fact cost BBS Sysops more than comparable Hayes brand modems, Mr. Rickard says that there is little reason to take the chance.

If you want both sides of this argument, Multi-Tech's BBS number is 612-785-9875 and one can download the company's white paper from that number at a variety of speeds. Most of the white paper concerns the legal actions and charges being traded by the two companies and very little of it concerns technical issues.

Contact: Jack Rickard, Boardwatch Magazine, 303-973-6038, fax 303-973-8754.

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Adobe Illustrator 4.0 for Windows

BY NELSON RUEST

With release 4.0 of Illustrator, Adobe Systems re-enters the illustration fray in the Windows environment. And unlike the previous edition of Illustrator for Windows — version 1.0 released in 1989 (can any of us remember that far?) — which was full of bugs and seriously lagged behind the Macintosh version in terms of

features, version 4.0 is as serious as they come. Professional illustrators will be pleased to discover this masterful illustration package on a new platform, one where



hardware is much more affordable.

What does this mean for the Mac?

In the

words of Adobe's Product Marketing Manager, Susan Spencer, "Illustrator 4.0 for Windows puts the PC on a par with the Macintosh for design work — perhaps even surpassing the Mac ... We feel that the PC graphics market is a terrific growth area for Adobe to be in because the price of hardware for the PC is significantly less than the price of comparable Macintosh hardware in terms of sheer power." (Ingram-Micro Communiqué, CRN, April, 1992). Basically, it means that Adobe is finally taking the PC seriously. It means that Microsoft Windows is being recognized by another major industry leader as the powerful and inexpensive platform it is. It means that professional illustrators can now afford the most powerful tools.

Unlike in the Mac version, the PC version of Illustrator includes a number of features and add-ons which make it a complete illustration solution. Here's what you receive:

- Illustrator 4.0 for Windows — a highly sophisticated illustration program which comes complete with new tools, new features and better functionality than the Macintosh version;
- Adobe Separator — sophisticated colour separation software;
- Adobe TypeAlign — a powerful text effects drawing tool;
- Adobe Streamline — the most powerful automatic bitmap tracing tool available for PCs;
- Adobe Collector's Edition — a collection of borders, symbols, patterns and textures for use in Illustrator;
- Adobe Type Manager — the latest edition of this on-screen type management tool;
- over 40 Adobe Type 1 fonts which you can use in any other Windows application;
- and a series of professionally illustrated and designed manuals which really help get you started with this powerful collection of tools.

Adobe Systems has really done their homework this time. This collection of tools covers the gamut of most illustrators' needs. Equipped with a powerful PC, a large screen (which should display at least

256 colors), a scanner and a proofing printer, any illustrator can use these tools to create the most sophisticated imagery on any system.

Installation

Installation is very easy. Insert Disk 1 and run ASETUP.EXE, make your selections and answer the prompts. The Adobe Installer will automatically set up all of the tools included with the package. It will also update your copy of the Adobe Type Manager (if you have it; if not it will install a new copy for you). Once this is done, you get to select the fonts you wish to place on your system.

The entire collection of tools and fonts takes up about 12 megabytes (MB) on your system. To run Illustrator, Adobe recommends at least 4 MB of RAM. My experience is that you can run Illustrator with 4 MB of RAM so long as nothing else is running. Serious Illustrator users will want at least 8 MB of RAM. And, no, ladies and gentlemen, this product does not run on 286 computers. You need at least a 386SX, though a DX or 486 would work much better.

Over 40 Usable Fonts

Unlike other illustration products that include fonts, Illustrator's font set is truly unique. It includes such faces as Bellvue, Berthold City, Madrone, Adobe Garamond, Poplar, Stencil, Tekton, Wood Type Ornaments and many more. Be careful when installing these fonts. If you install every font, you will be duplicating some of the default TrueType fonts available through Windows 3.1 such as Times, Helvetica, Symbol and Courier. Even though Adobe's fonts have slightly different names, they are effectively the same typeface. There is no point in duplicating font sets, especially when hard disk space is at a premium.

Font duplication seems to be a problem with Illustrator. You may wish to install only one version of the fonts mentioned above. While this will work effectively with any other application, Illustrator will cause some problems. This is because Illustrator does not recognize TrueType fonts. This can cause two slight problems. First, if you don't install Adobe's Times and Helvetica, all of the clip art which comes with Illustrator will give you font errors the first time you open it. Second, and more seri-

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Mac vs. PC Illustrator

Adobe Illustrator is virtually the same on the PC as it is on the Macintosh. There are some keystroke differences — the Option key is replaced with ALT, Command is replaced with CTRL — but most are minimal. Adobe Systems has made a significant effort at keeping both programs the same as well as maintaining complete file compatibility.

The major differences lie in the list of new features mentioned above. Most Mac users will deplore the lack of such features in Illustrator 3.2. Another major difference is that the Mac version only includes Illustrator itself whereas the PC

version is replete with goodies. This is probably due to the fact that on the PC, Adobe must contend with the likes of CorelDRAW, which comes with everything but the icing.

Mac users shouldn't despair. Though Adobe's cross-platform policy is not to keep each version identical — they expect cross-platform versions of Illustrator to leapfrog each other in terms of features — they should come out with a new version on the Mac fairly soon. This one should include a few extra bonuses since rumor has it Corel will enter the Mac fray in 1993. ■

ously, if you have an extensive collection of TrueType fonts, the only way you will be able to use them in Illustrator is if you convert them from TrueType to PostScript format via a font conversion tool which must be bought separately. I hate double standards!

Working with Illustrator

Once you get past the font issues, you get into Illustrator itself and discover that it was all worthwhile after all. This drawing tool can create phenomenal effects. Illustrator

you're looking for through these tools, you can always turn to the Illustrator User Guide, a valuable feature reference tool. The nicest thing about Adobe's manuals and packaging is that they're all beautiful. Since Adobe's business is type and illustration, they treat their printed materials as showcases for the tools they provide.

24-Bit Color and More...

Illustrator for Windows supports both black and white and full-color imagery. In fact, Adobe provides full support for 24-bit color systems displaying up to 16.7 million colors on-screen. It includes a palette which lets you access all of these colors even if your system displays only 16 or 256 colors at a time (256 would be my recommended minimum).

There is a problem with some Windows drivers and certain video cards. If you own a video card based on the Tseng microchip — Trident Video or Dell computer, for example — problems will occur if you do not have their most recent Windows video driver. Most of these problems are well documented in a README.TXT file which comes with Illustrator. I strongly recommend that new users read it.

To output color, Illustrator can use any Windows printer driver or for larger output runs, you can use Adobe Separator to output your color drawings to film on Imagesetters. In addition, all Illustrator files can be exported to most common PC formats such as EPS (of course!), TIFF, WordPerfect Graphics, CGM, Windows Metafile, etc. In addition, Illustrator supports a clipboard with multiple formats. This means a PostScript clipboard for exchanging information between Adobe applications and WMF support for all other Windows applications.

It is unfortunate that Illustrator does not yet support (OLE Object Linking and Embedding) since it would provide even more effective image embedding into documents. I'm sure we will see it in future releases.

Conclusion

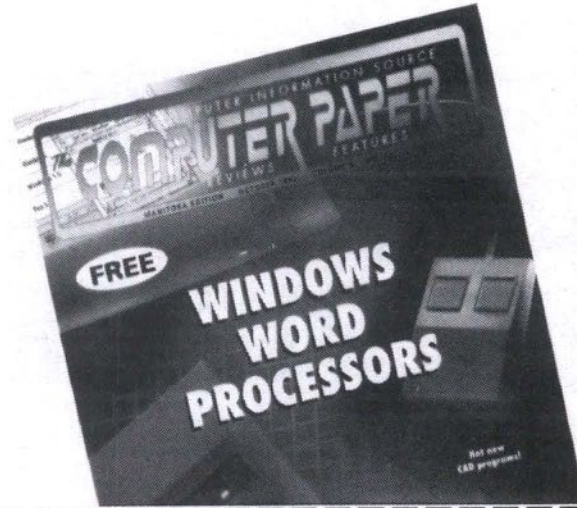
Adobe Illustrator is the litmus test of all drawing applications. Unlike competitive products, Illustrator is not filled with all the features we never wanted. It is a basic down-to-earth illustration tool with which you can create anything you want on your PC. It is comparatively easy to learn, but like all drawing software it takes time to learn. It provides complete compatibility with both the Macintosh and NeXT versions of Illustrator. It is the perfect choice for two types of illustrators: those who want to create complex imagery and want the right tool to do it; and those who are tired of running into problems each time they send output materials to their Mac-only service bureaus.

For a second entry into the PC illustration field, Adobe Illustrator for Windows is an excellent contender. It's easy to use, doesn't have any major bugs, and it's replete with new features. Bravo Adobe! ■

Nelson Ruest is Manager of Marketing and Training for Remuera Corporation. Remuera specializes in complete network solutions from installation, management and support of organizational networks to system customization and specialized training for end users. He can be reached in Ottawa at (613) 235-2321.

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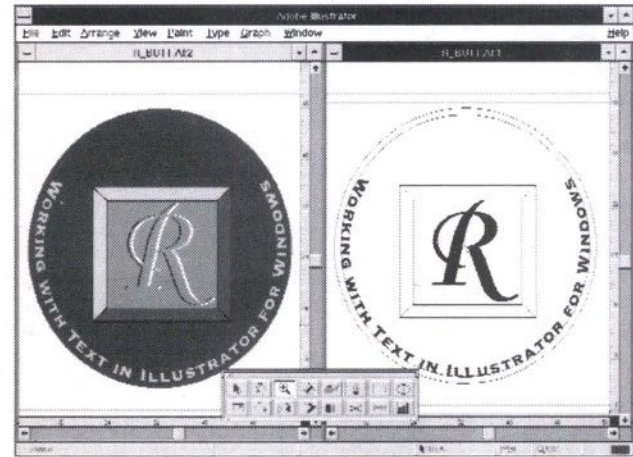
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Illustrator's "Text along a path" function.

can literally let you reproduce anything you can think of on a computer. Working with multiple tools and drawing with Bézier curves — curves controlled by tangent points — you can create logos, drawings, charts, text effects, and comprehensive single-page layouts. For me, relearning Illustrator — it's been a while since I used a Macintosh on a regular basis — was like relearning to ride a bicycle: you never forget. After some slight fumbling, I began to remember all of the keystrokes and mouse combinations and was working away quite effectively.

Edit in Preview

Illustrator's original trademark was its wireframe drawing mode (borrowed heavily by competitors) — all objects were displayed as outlines of the actual shape. To actually see the object as it would appear on paper, you had to change to the preview mode. The drawback was that once in preview mode, you couldn't make any changes. This dual-pane drawing mode was very effective despite its obvious flaws. Illustration was much less demanding on system resources and actually worked at effective speeds on less capable computers.

In version 4.0, Illustrator for Windows has evolved to a full-color editing mode, allowing you to see your final image as you create it. While wireframe is still useful, especially when you need to trace scanned objects, full-color mode makes it much easier to render the exact shape and color you want. The most effective way to use this feature is to create most of your drawing in wireframe view (Artwork) because it is faster and often more effective to control and select multiple objects, and to put the finishing touches in preview.

Easy to Learn

Illustrator for Windows is easier to learn than ever before. It includes Adobe's famous drawing tutorial, which is comprised of a collection of tutorial, manual and exercise files which take you through every basic illustration step. When you're ready to graduate, you can move on to Beyond the Basics, a booklet which covers more advanced procedures. For ongoing work, Illustrator boasts a comprehensive on-line Help system that can be both general or context-sensitive as well as a new Status Bar that gives you helpful information such as cursor position, tool information, zoom level, paint attributes and more. And if you can't find what

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TRENDS

Compaq Doing Well, Says Price Wars Will Continue

HOUSTON, TEXAS (NB) — Compaq Computer Corporation President Eckhard Pfeiffer says that he doesn't think the personal computer price wars will be over in 1993. "We are prepared for that," Pfeiffer told the British news agency Reuters. "We will be seeing very intensive price fights at the very entry level."

Pfeiffer declined to predict when the price wars would end. In contrast to Pfeiffer's comments, Dell Computer Chairman Michael Dell said in late September he believed the price cuts were over. Dell told analysts that the personal computer market is now so strong that he sees no need for further PC price cuts. According to Dell, "We are overwhelmed with demand, so if we lowered prices it would be like a self-inflicted wound."

Pfeiffer told Reuters it's not important when price cuts among PC makers end "because the goals we are setting are independent of that." He said cost leadership is essential for good times and for bad times. "The most cost-efficient manufacturers will become the industry leaders," according to Pfeiffer. He predicts that system prices are tied to the cost of microprocessor chips, with the prices of 386- and 486-based systems continuing to drop just as the prices of 286-based systems did as those chip prices fell.

Intel is expected to introduce its next-generation chip, the Pentium, in early 1993. Until now the chip has been referred to by its development code name, P5, and frequently referred to as the "586." However, Intel decided not to use the generic number system so it could copy-



right the name, and conducted an extensive campaign both within the company and from without before deciding on Pentium.

The company had no comment about rumors that it would demonstrate a PC running Pentium at COMDEX/Fall '92 in Las Vegas Nov. 16-20. Comdex is traditionally the place where many companies introduce new products. Compaq had no comment on fourth-quarter projections, but according to Pfeiffer, "We are bringing out new products as fast as production permits."

Meanwhile, Compaq reported a strong third quarter, in stark contrast to the company's earnings for the same period last year.

Compaq said it earned \$49 million on sales of a record \$1.07 billion. For the same period last year the company reported a loss of \$70 million on sales of \$709 million last year. Both third quarters were affected by restructuring and other special charges and credits.

Compaq President and CEO Eckhard Pfeiffer said record product shipments during the third quarter "are customer affirmation of the strategy we put in place just one year ago to lead the industry in PC technology, price competitiveness and customer support." It was a year ago that the Compaq board of directors ousted president and co-founder Rod Canon, saying it was time for a change. The board felt that Pfeiffer's experience in sales, marketing and manufacturing was what the company needed. It cost Compaq \$3.6 million to remove Canon.

Earlier this month, Newsbytes reported that Compaq had cut prices on 13 of its desktop and portable personal computers. The company issued pink slips to about 1,000 employees, or 10 percent of its worldwide work force. Compaq had reduced its work force by 1,400 employees earlier.

Contact: Compaq Computer, 1-800-263-5868 or 416-924-5700.

Aldus Announces Version 5.0 Of PageMaker



SEATTLE, WASHINGTON (NB) — Aldus Corp., in a product announcement viewed by about 800 people at a New York hotel and by an estimated 2,200 in other cities via satellite that included video and animation, has announced that it will release a new version of its popular desktop publishing program PageMaker.

The company said version 5.0 of PageMaker for both Microsoft Windows and Apple Computer's Macintosh platform will ship during the first half of 1993. The two versions are nearly identical, and Aldus says the program will offer more than 100 new features and enhancements.

One of the biggest added features will reportedly be PageMaker's ability to integrate with other software, with import and export filters for Kodak's Photo CD, DXF files, Wordperfect graphics and Metafile/PICT conversion. PageMaker will also include support for object linking and embedding (OLE) as a client application on Windows as well as on the Macintosh, a font mapper which identifies a publication's missing fonts and then substitutes other available fonts between both Windows and Mac files, and linking to the new TWAIN standard for direct scanning.

Other new features include a control palette which is new to the Windows edition and updated for the Mac, to allow precise placement and sizing of both text and graphics on the page. The palette will be visible in both layout and story editor

modes in order to set text and paragraph attributes such as font, style, size, baseline shift, indents and alignment. Numeric positioning and "nudge" buttons are also provided.

The company says it has also completely rewritten the Postscript printing code to provide faster printing. Users will also now be able to print non-consecutive pages in any order. Crop, registration, and plate identification have also been added for use by printers.

Using Aldus Additions technology, end users will be able to work with more than 20 Additions that will be included with Release 5.0, and will be able to create their own PageMaker scripts. Third party developers can use the technology to create Additions that give PageMaker additional capabilities. Running headers and footers have also been added, and a kerning Addition is available to provide proportional spacing of characters. There is also the ability to produce process-color separation of text and graphics and import CMYK, TIFF, DCS, and ES images. A "drag-and-drop" feature allows text and graphics to be moved between open publications, and a Library palette will store frequently used images which can be added to a document using the "drag-and-drop" method.

Aldus says the Windows version will ship first, with the Mac version following about 30 days later, but declined to be more specific about the shipping date except to say it would be in the first half of the year.

Contact: Pam Miller, Aldus Corporation, 206-628-6594.

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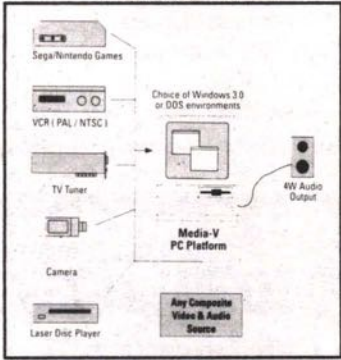
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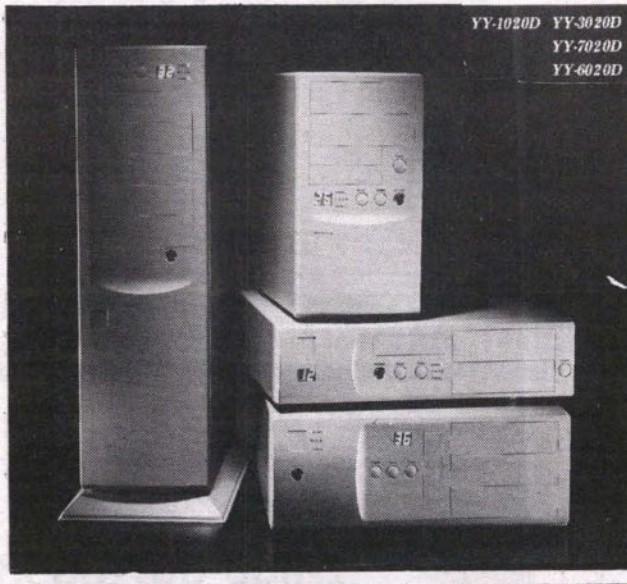
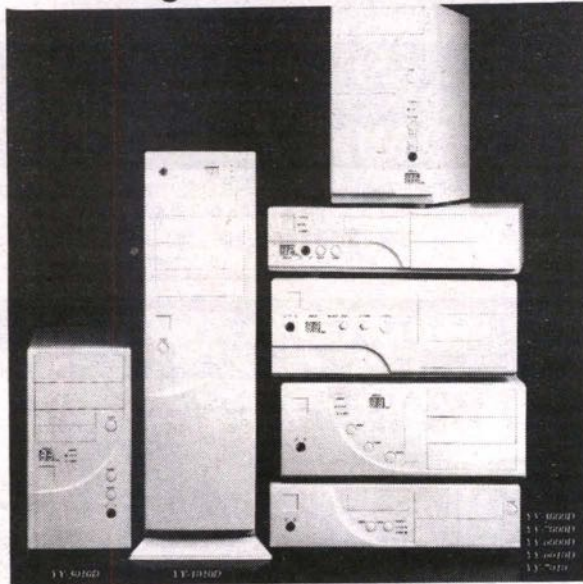
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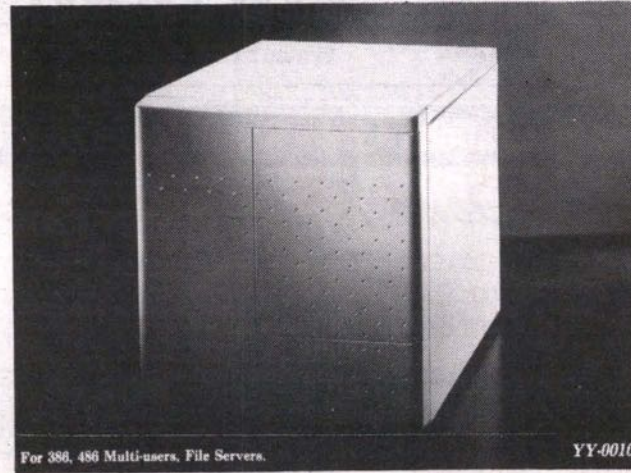
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OUTSOURCING THE DATA CENTRE AND BEYOND, Jan. 21-22, 1993, The Adolphus Hotel, Dallas, TX. Project directors: Frost & Sullivan, Inc., 106 Fulton St., New York, NY 10038. To register call (212) 233-1080, Fax (212) 619-0831.
WINDOWS & OS/2-WEST San Jose, CA. Jan. 20-22, 1993. Contact: Miller Freeman Expos-West (415) 905-2222.

FEBRUARY

COMNET '93—15TH ANNIVERSARY SHOW Feb. 1-4/93, Washington D.C. A Data Communications Conference and Exposition focusing on the theme "Enterprise Networks in Transition: New Applications and Corporate Profitability". Contact: Matt Mondino (800) 225-4698 or (508) 879-6700.
COMPUTER FEST Feb. 19-21, 1993 Exhibition Place, Toronto. Three days of the best prices available, seminars, demonstrations and free advice. Contact: Ryhan Ahmad (416) 925-4533.
MICRO EXPO '93 Feb. 26-28/93 Place Bonaventure, Montreal. Best prices available, seminars, demonstrations and free advice. Contact: Ryhan Ahmad (416) 925-4533.
OBJECT WORLD BOSTON Feb. 1-4, 1993 at the Hynes Convention Center in Boston, Mass. The conference program, divided into two tracks—Technology of Objects and Business of Objects—will focus on six areas: Object Basics; Making the Move; Methodologies, Analysis and Design; Application Development; Languages, Tools, Environments and Components; Object Storage and Distributed Objects and Services. Contact: Christine Krajewski (508) 879-6700.

MARCH

CeBIT '93 Hannover, Germany. 6,000 exhibitors from 45 countries will showcase technology from the entire information & communications sector. Information Technology, Network Computing, Local Networks, CIM (Computer Integrated Manufacturing), Software & Consulting, Telecommunications, Office, Banking & Security Technology, Strategic Research Centre, Conferences, Company Presentations and Special Displays. March 24-31, 1993. Contact: Jennifer Cooke, representative for Canada, at Co-Mar Management Services Inc. (416) 364-5352.
PC WORLD EXPO '93 and PC WINDOWS/Canada Expo will merge at the Metro Toronto Convention on March 10-12, 1993. Produced by International Conferences & Exhibitions Inc. For further information contact Roland Klassen at (416) 581-8797.
THE BUSINESS TO BUSINESS EXPOSITION '93 and Home Office Show will run concurrently at the Metro Toronto Convention Centre, March 30 & 31, 1993. Sponsored by The Board of Trade of Metropolitan Toronto. For more information call 416-869-0141.

APRIL

ONTARIO COMPUTER FAIRS Kitchener, Ontario April 18/93. Over 50 tables with a selection of computers, software, peripherals and games. Contact: James Creighton (416) 535-3761.
THE CANADIAN HIGH TECHNOLOGY SHOW April 27 & 28, 1993 at Place Bonaventure, Montreal. An electronics showcase of exhibitors. Four show sections: Components & Microelectronics, Design Automation; Electronic Production & Packaging; and Test, Measurement & Instrumentation. For professionals from the high-technology industry or users of electronics. Trade only. The show and the Conference Program will be running concurrent. For more information call Reed Exhibition Companies (416) 479-3939.
THE MISSISSAUGA BUSINESS SHOW at the International Centre April 14-15/93. Show of office technology products for the office environment. Contact: Paul Day (416) 497-9562.
THE SECOND INTERNATIONAL BEAM ROBOT OLYMPICS AND MICROMOUSE COMPETITION Ontario Science Centre, Toronto, Thur, April 22 to Sun, April 25, 1993. Robot Judging will be based on sophistication of behaviour, novelty of design, efficiency of power source, and quality of hardware. Rules and guidelines are available. Please contact Mark Tilden (519) 885-1211, Ext. 2454.

WORLD COMPUTER LAW CONGRESS '93 "Global Success in the Computer Industry: Putting the Business, Legal and Marketing Resources Together". April 25-28, 1993, Hotel Del Coronado, San Diego, California. For more info contact: Michael D. Scott, World Computer Law Congress (213) 689-5186.
ECOO - Educational Computing Organization of Ontario's 14th Annual Conference. April 29th to May 1st 1992 at The Regal Constellation Hotel, Toronto, Ontario. Over 200 presenters in a multistranded conference. Pre-workshops and a larger vendor area (including all the industry leaders) are available. For more information contact the ECOO Office at (416) 773-3981 for fax (416) 773-6963.

MAY

MULTIMEDIA '93 EXPOSITION AND FORUM "The Merging of Technologies" Featuring: Multimedia Communications, Vicom, Electronic Design, and Showcase on Production. Metro Toronto Convention Centre, Toronto. Conference May 26-29, 1993, Trade Show May 27-29, 1993. Contact Susan Blair (416) 660-2491.
RADIOCOMM '93 Canada's only trade show dedicated to mobile communications. Location: Metro Toronto Convention Centre from May 26-28, 1993. Hours: Wed, May 26th 10 a.m.-6 p.m., Thur, May 27th 10 a.m.-6 p.m., Fri, May 28th 10 a.m.-3 p.m. For more info contact: Harley Austin, Show Manager, or Carole Meyer, Assistant Show Manager (416) 252-7791. Fax (416) 252-9848.
VARDEX '93 with an added Unix section. May 5 & 6 at Toronto's International Centre. Contact: Marina Perry, Reed Exhibitions (416) 479-3939.

BASE LINE 486DLC-33 SYSTEM



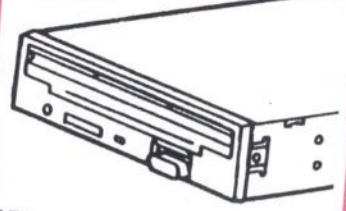
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MAYBE WE DON'T CHARGE ENOUGH FOR OUR COMPUTERS.

Or is it the other way around?

EVERY ONCE IN A WHILE WE TAKE A LOOK AT WHAT everyone else is charging for computers. It usually makes us green with envy. We get all glassy eyed thinking about the big profit margins they must be raking in. Then we come back to earth and remember **the commitment we've made** to our customers.

Ever since we started building IPC computers seven years ago, our goal has been to produce **reliable quality computers** and sell them for the most affordable prices. While the other guys said you had to pay a premium for quality, we were busy proving them wrong.

Judging from their price slashing behavior in recent months, **it looks like we were right all along.** The competition say they've cut their margins to bring you lower prices. That's reassuring! At IPC, We started out with lower margins, then kept finding ways to save you money.

One of our secrets is **vertical integration.** We own a chip design firm and a board manufacturer. That enables us to control costs throughout the engineering process.

By downsizing our **486 class boards,** we cut material costs and condensed our chip requirements to a minimum. Our engineers designed the new 486DX boards with **only 15 TTLs** (transistors) **and 2 ASICs** (integrated chip sets). That means lower production costs, lower QC costs, increased yield rates, and frankly **less components to worry about.**

And we don't have big fat overheads either. If we thought having a corporate jet would improve the quality of our computers we'd probably buy one tomorrow. But we think you'd prefer that we **beef up support and service.** So we've installed a **toll free line** and have engineers standing by to answer all your questions.

The simple truth is, we build computers as good, if not better than the other guys, and sell them for a **lot less money.** Either they charge too much, or we don't charge enough — you decide.

AST	COMPAQ	DELL	IPC
Bravo 486/33	ProLinea 4/33	486P33	ES4-3300
i486DX	i486DX	i486DX	i486DX
33MHz	33MHz	33MHz	33MHz
4MB RAM	4MB RAM	4MB RAM	4MB RAM
SVGA Colour Monitor	SVGA Colour Monitor	SVGA Colour Monitor	SVGA Colour Monitor
120MB HD	120MB HD	120MB HD	105MB HD
no ext. cache	no ext. cache	no ext. cache	128K cache
MS/DOS 5.0	MS/DOS 5.0	MS/DOS 5.0	MS/DOS 5.0
Windows 3.1	no windows	Windows 3.1	Windows 3.1
MS Mouse	no mouse	MS Mouse	MS Mouse
145W	145W	150W	200W
1 Year Warranty	1 Year Warranty	1 Year Warranty	3 Year Warranty
\$2899	\$2797	\$2909	\$2199

WHAT DO THESE PRICES MEAN

To be fair, we used "suggested list prices" quoted directly by each manufacturer the first week of December, 1992. We made every effort to compare systems that are as similar as possible but each vendor has their own ideas about what is and isn't standard.

Naturally, list prices are not accurate selling prices (except in the case of Dell who sells direct). But whatever price you pay you can be sure of one thing — dollar for dollar IPC offers the best value in the computer industry. We wouldn't have it any other way!



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