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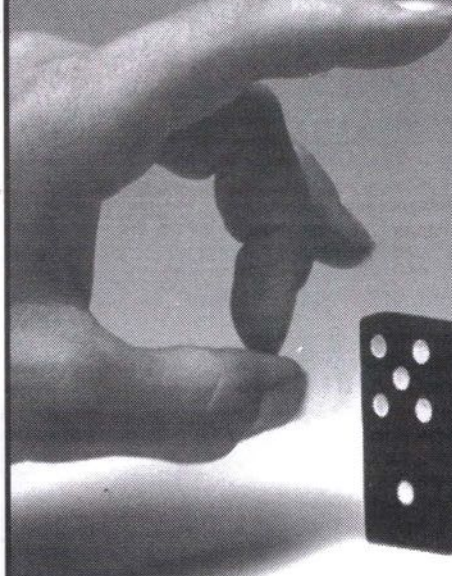
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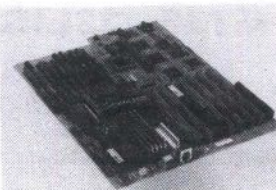


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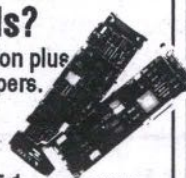
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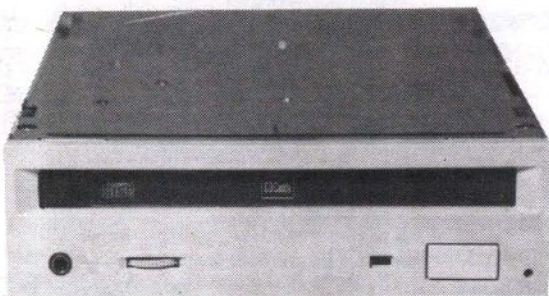
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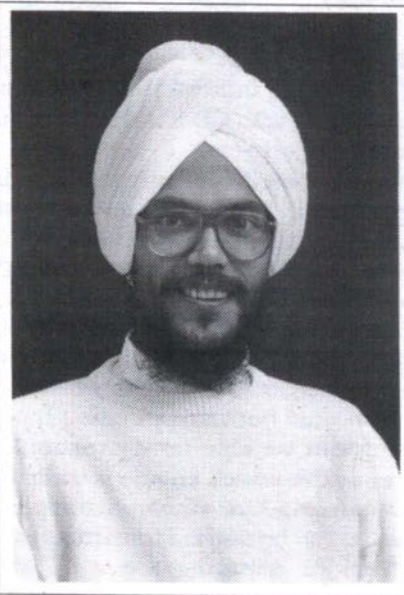
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# From the Editor



If you had to read only one publication per month to keep up on the latest in the computer industry which one would it be? Well it depends which part of the computer industry you want to know about. Here is one editor's opinion of what to read: I have to start with *PC Magazine*, which has the best product comparisons. They are one of the few magazines that has the resources to run and maintain a large full time testing lab for both hardware and software. *PC World*, I will pick up occasionally if there is no new *PC Magazine*, (which is bi-weekly) but, in my opinion, it runs a poor second. I like *Byte Magazine*, for an all around view of MS-DOS, Macintosh and Unix, as well as glimpses of technologies and trends just breaking. *Byte* is one of the oldest computer publications and the bible for many programmers.

## Special Interest Magazines

*Personal Publishing* and *Publish* are good sources for desktop publishing tips and techniques. *Publish* is usually longer and more polished, but *Personal Publishing's* editor usually has a chip on his shoulder about something, and I often read it to see what it is. *MacWorld*, *MacUser* and *MacWeek* cover the spectrum for Macintosh products. *MacWorld* and *MacUser* run neck and neck. *MacWorld* is more polished as a magazine, *MacUser* usually has more technical comparisons. *MacWeek* keeps up on the news—very current. The only problem is that it is a complimentary subscription, (as are a number of the other publications mentioned here) and they seem to want you to be in charge of purchasing for a couple of hundred Macs to get on the list. On a more sporadic basis, I read *Unix World*, a relative newcomer in computer magazines (or perhaps it is just me who only recently discovered it) which covers the burgeoning field of Unix. *ECC&I*, is a Canadian desktop publishing magazine and usually quite strong in how-to and technical reviews. Not much fluff here. *Database Advisor*, is way beyond me, but I look at it anyway to get an idea of what is happening in this field. *Amiga World* seems to be the best for tracking the Commodore Amiga. The last of the glossy magazines for Atari, *STart* just folded, so I am not quite sure what to recommend in that area. Whenever I am feeling insecure that the bottom is about to fall out of the computer industry (and hence my livelihood), I buy a copy of the *Computer Shopper*, — 500 plus pages of pure unadulterated ads. Every once in a while, they slip in an article to justify their editorial staff's existence. *Computer Reseller News* is a wealth of information on the American dealer channel.

## Canadian Magazines

In Canada, there are quite a few computer publications, of varying quality. *Computing Now* has to be my favorite from a technical, get-your-hands-dirty perspective, but it is too short to be well-rounded. It wants to be a Canadian *Byte* magazine, but lacks the page count to pull it off. *Computing Canada* is not bad, though a tad 'old-style corporate' (read: mini and mainframes) for my tastes. It is the Canadian equivalent of the U.S. *Computer World*. Sometimes they have interesting stuff and it is usually current. I like *Computer Dealer News*, when I can find someone who actually kept a copy, for its information on what is happening in the dealer channels. *Direct Access* is useful for computer professionals looking for work (in Ontario). *Input*, out of Edmonton, is strong on Commodore information and Richard McGuire's anti-GST editorials.

Saving the best for the last, there is that wonderful paper you are holding in your hands, *The Computer Paper*, a wealth of hot news, insightful reviews, topical and bang-on feature articles and the events you need to know about. Come to think of it, maybe it is all you really need after all.

## Computer Events

This month check out the Atari Fest on June 15-16 at the Steveston Senior Secondary School. It is worth a trip to see all the latest happenings in Atari-land. They promise seminars, door prizes and games. They expect between 2,500 and 5,000 attendees.

The following weekend, on Saturday, June 22nd, there is another of the popular Swap Meets at the McPherson Centre in Burnaby. They usually get 5,000 or more people and a bazaar hall full of tables of new, near new and just plain used equipment. Irresistible deals abound, as one staffer found out at the last one. It is also a great place to pick up shareware. Enjoy the issue

*Kirtan Singh Khalsa*

Kirtan Singh Khalsa  
Editor/Publisher

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B.C. Edition • June 1991

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AUG 1991	Networking, Home Office Computers	July 22	July 24	Aug 9
SEPT 1991	Education & Training Point of Sale	Aug 19	Aug 21	Sept 6



# Masthead

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Kirtan Singh Khalsa

## Assistant Editor

Graeme Bennett

## Newsbytes Contributing Editors

Wendy Woods, Janet Endrijonas, Dana Blankenhorn, John McCormick, John and Barbara McMullen, Steve Gold, Peter Vekinis, Ken Takahashi, Naoyuki Yazawa, Paul Zucker, Sean McNamara, Keith Cameron, Norman Wingrove, Kirill Tchashchin and Grant Buckler

## Contributing Writers

Graeme Bennett, George Slade, Steve McIlwain, Mike Beswick, Daniel Werger, Joe Wheeler.

## Proofreader

Neall Calvert

## Cover Art

Graeme Bennett

The cover illustration's crowd of screaming people is courtesy of "Science Fiction and Horror Movie Posters in Full Color" (ISBN 0-486-23452-5), edited by Alan Adler, published by Dover Publications Inc., 180 Varick Street, New York, N.Y. 10014.

By the way, they were originally running away from "The Beast from 20,000 Fathoms."

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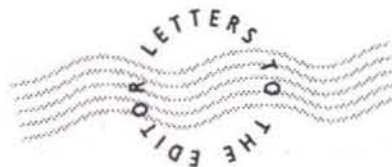
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# Mailbox



## How to Contain The Computer Paper

I love your magazine. I want to keep it on hand for reference, but it doesn't fit into my Ikea magazine boxes. Any suggestions?

Mark Hammond

Yes, Mark, we do have a solution for you. We ourselves have come across this very same problem in our library. We get and collect a number of oversized publications and so we set out to find a box that would do it. Lo and behold we found a small but industrious packaging supply company that could provide us with these same Ikea-style boxes in an oversized format. The company is called Allworld Packaging Supplies Ltd., 1375 Odium Drive, Vancouver B.C. V5L 3M1, (604) 253-5577 FAX (604) 254-9944. The boxes are a tad plain looking—no snappy Ikea designs here, we are talking kraft white, but they are available for \$2.50 a-piece. Volume discounts are also available. The model number is the TMF-3 (size: 11.25" x 4" x 14.5")

## Local Masters

I noted with interest your upcoming issue dealing with CD-ROM and various related products. I represent a Vancouver-based company that has developed a full text search and retrieval product specifically geared towards CD-ROM access. The DOS version currently supports both image and text data. Each article may span up to 16 megabytes in length, and over 4 billion articles (documents) can reside in the database. Sophisticated boolean searching is permitted with variable word proximities. Presently the search engine is commercially employed for automotive applications but can be utilized for virtually any applications requiring access to large information stores of primarily text data.

The Windows version, which is currently in beta test, should be ready for release in 2 to 3 months' time. For companies wishing to acquire this type of database access we provide the database preparation and indexing service as well as CD-ROM pre-mastering if desired. For further information contact:

Ron Estrin  
Inspiration Software

## How to Make Big Bucks at DTP

I am new to the Desktop Publishing field and I would like to get into it for a



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## MAILBOX

business. Because I'm new at it I need some experienced advice/pointers. My question is can you please have an article on how to get your customers, what services to offer, and the technical stuff (from drawing to finished paper).

I could go and buy a book, but I rather look for a cheaper way out. Your newspaper is very good and very good to a person like me. Keep up the good work!...

Henry Leung.

*You flatter us, but I think you really do need a book to get into the nitty gritty. There are a number of excellent books on getting started in DTP and running service bureaus. Two magazines have in depth coverage of this area: Publish and Personal Publishing. There are a number of specialty computer bookstores in the Lower Mainland area. Check your Yellow Pages for listings.*

### Downgrading Software

I have read your paper almost every month since you started publishing and have found it very informative. Your May edition added, at least for me, a new feature above and beyond the supply of technical data and product reviews. Graeme Bennett's commentary "Retro Computing" did wonders for my peace of mind. I, too, have found the value of many software updates questionable and had assumed I was not using the programs properly or that I lacked competence.

After reading Graeme's article, I can appreciate why so many people continue to use PC Tools 4.24 rather than the 5.5 or 6.0 version with its very busy screen, why those who have a desktop publishing program continue to use WordPerfect 4.2 rather than 5.1, why Corel users revert to version 1.21 after falling asleep waiting for version 2.0 to refresh or save. Even PageMaker 4.0 seems slow compared to 3.01 and, though it has added several features, I wonder if they will be used frequently enough to warrant a change over.

It's a pity the software writers cannot develop a sound, basic program and offer the extras as add-ons that could be selected according to the user's needs. The present system of rewriting programs periodically—which means changing many commands from previous versions—is frustrating and time-consuming. I buy a program to use it. I don't have the time or inclination to become a professional student, forever learning new procedures.

In the meantime, my thanks to Graeme. He has done wonders for my ego.

John H. Hall,  
Aldergrove, B.C.

And you his.

### No Views?

I read with interest your recent survey of Canadian Payroll packages but noticed that NewViews was not mentioned.

On page 42 of the same issue of your magazine there was an ad for TXL Management Systems Inc., advertising NewViews accounting software. NewViews has the second-largest sales

volume for mid-range accounting software packages in Canada.

We feel the NewViews payroll package compares very favourably with those in your survey. NewViews Payroll is a powerful, flexible payroll program with an unlimited number of earnings rates, deductions and taxable benefits types, most of which are pre-configured for easy calculation and tracking.

A complete detailed employee earnings and deductions history is provided for a ten-year period, with the ability to view, change and print an employee's pay history for that time period.

In short, NewViews payroll, like the accounting package itself, is flexible enough to accommodate the payroll requirements of most companies. Q.W. Page also provides free unlimited telephone support for all of its products.

NewViews, the winner of the 1986 PC Magazine Technical Excellence Award, should not have been missed.

If there is any information we can provide your magazine with, please let us know.

Anthony Bone  
Director of Sales and Marketing  
Q.W. Page Associates Inc.

*Sorry guys, we missed a few others as well. There is always next year.*

### Shareware Shelf Praised

I am an avid reader of your excellent magazine, and am always waiting anxiously for the next issue—having to drive to Langley for my copy.

I am particularly impressed with *The Shareware Shelf*; these articles allow me to read an in-depth analysis of various shareware programmes—much better analysed than the skimpy ones provided by various U.S. Public Brand Catalogues—and allow me to ascertain whether the program is suitable for me.

I have spent, over the years, so much money for retail programs, only to not use them. A case in point is Reflex—I have never used it once.

Keep the articles coming.  
John T. Hogan, M.D.,  
Abbotsford

### Translating Polish

I would like to make this an opportunity to congratulate you on the job well done of putting out this paper, which is undoubtedly a great service to the computer industry and individuals connected with it. I do have a question: I am a newcomer to the computer field, and would like to find out where would I have to turn to in order to learn about using computers for translating from English to Polish. I also would like to know what will it involve in the way of equipment which I will have to have, and the software (if it is available) necessary to accomplish it. Your time and willingness to help me with this matter will be greatly appreciated.

Jerzy. M. Drozynski,  
Vancouver

*One source you might try is glps Products, PO Box 3454, Chapel Hill, North Carolina. They have a vocabulary creator and an online*

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Technology with Impact and IQ

*Russian I know Russian is not Polish, but they may either have other products, or be able to refer you to other companies in the translation industry. Alliance Business Computer Systems Ltd. (604-936-8088) may be able to help you with a multi-lingual word processing system. Also try Ecological Linguistics PO Box 15156, Washington, DC 20003, Tel 202-546-5862; they have a Cyrillic font covering Polish, Czech, Slovak and Serbian-Croatian. So does Devonian International Software Co., PO Box 2351, Montclair, CA 91763, Tel 714-621-0973. I have also heard of programs that translate from one language to another—although they are usually only 80-90% accurate. I do not have a reference for this, but I believe they exist. How about it readers? Any references?*

### CDTV

I'm looking forward to your next edition and its focus on CD-ROM.

I hope you intend to do a write-up on Commodore's new CDTV product. It is a wonderful marriage between multimedia and CD-ROM technology.

Like most good ideas CDTV uses existing technologies in new ways. It's heart is an Amiga 500 but the unit is controlled by a remote control and is meant to be incorporated in an entertainment centre with the stereo, VCR and TV.

Leon Davidoff,  
New Westminster

See article, page 47 for a first look at CDTV.

### GeoWorks Review

In regards to your recent review, while in some areas, GeoWorks is a far better Graphical User Interface than Windows 3.0, there are a few notable undesirable features in GeoWorks.

GeoWorks will not print to a network spooled printer, neither will it print to a fax board. It is our belief it will not print to any print spooler or print-capturing device. The selected printer must be used and any substituting device will cause an error. This will include printer-sharing devices such as the Logical Connection, fax boards, which capture the printed document to a file, print spoolers such as the Quadram board, and spooled network printers.

GeoWorks temporarily disables all Terminate and Stay resident programs such as Instant Recall, SideKick, Turbo Lightning, Gamma Fax, etc. The hot key sequences to activate these programs are unavailable while using GeoWorks, but you may open a DOS window to activate them.

If you need the above-mentioned capabilities, you may want to wait for the next version until these shortcomings are addressed.

George Slade,  
Surrey

Thanks George.

Underwood No. 3



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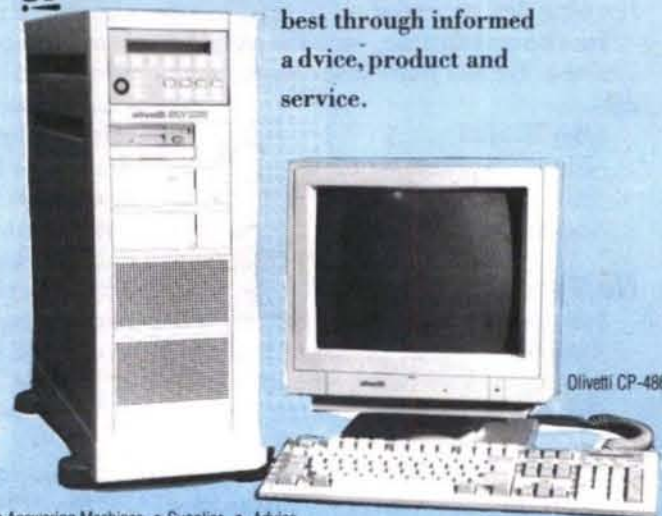
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# What's New

## Microsoft Mail version 2.1 for PCs

TORONTO, ONTARIO, APR 15 (TCP)—Microsoft Canada has announced version 2.1 of its E-mail system for PC networks. The new release is based on The Network Courier, which Microsoft recently acquired from Bellingham's Consumers Software. The Network Courier achieved the highest overall rating for a PC LAN (local area network) E-mail product in the March 1990 Software Digest Ratings Report. Licensed users of The Network Courier will be offered a free upgrade to the Microsoft release.

Including support for Microsoft Windows and other desktop environments, the company says the new product provides connectivity through a broad set of gateways, including all major PC networks and E-mail systems such as X.400, PROFS, MCI MAIL and others.

Via a bridge due later in the year called Microsoft Mail Connection, the system will also be able to exchange directories, messages and files with Microsoft Mail users on AppleTalk networks.

Contact: Johnathon Sachs or Tim Stewart, Microsoft Canada, 415-568-0434.

## Northwest High Tech Guide

BELLEVUE, WASHINGTON, APR 15 (TCP)—The latest edition of *Northwest High Tech*, a comprehensive guide to the computer industry in the Pacific Northwest and Western Canada, has just been released by Resolution Business Press.

*Northwest High Tech 1991* lists more than 1,700 computer companies in Washington, Oregon, Idaho, British Columbia and Alberta, featuring detailed information on the companies' products and services. Listed are details of each product's application, price, quantity sold in 1989 and 1990, trademark claims, and where and when reviewed.

Other information includes data on sales and staff sizes, names of company officers, expansion plans and other information, plus sections entitled Northwest Computer People and Northwest Computer Media. The guide, priced at C\$29.95, is available from local bookstores and the publisher.

Contact: Resolution Business Press, 1-800-866-0327.



## Raven Tackles Mac Market With Low-cost Printers

RICHMOND, B.C., APR 15 (TCP)—Encouraged, no doubt, by the market

success of Apple's lower-cost Macintosh models, Raven has announced a new line of Mac-compatible printers at savings of 25% to 50% over competitive models.

Since Raven is said to be the number-one supplier of dot matrix printers in Canada, it is perhaps not too surprising that the new line-up includes Mac

versions of six of its popular 9- and 24-pin dot-matrix models.

Designed as a plug-and-play solution for any Macintosh computer, the printers are bundled with Macintosh printer driver software the company calls RavenPrint (based on GDT Softworks' excellent PrintLink), and a high-speed (57.6K baud) parallel-to-serial interface that adapts the parallel printers for the Mac's serial port. The interface is an OEM version of ParaLink—also a GDT product.

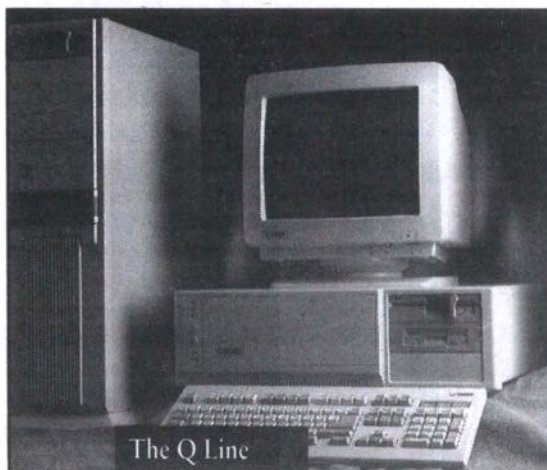
Priced from \$599, the 9-pin models with RavenPrint ship with 13 outline typefaces (the Expressive Fonts collection from—you guessed it—GDT Softworks). When shipped with a Raven 24-pin printer, RavenPrint includes 35 outline fonts.

Unlike some other third-party printer drivers, RavenPrint fully supports printing from HyperCard, Adobe Type Manager and TrueType at the maximum resolution of the printer—360 dpi on the 24-pin models, and 200 dpi on 9-pin

# Q: Which 486 is first with the answer? Answer: Q.

We pit ourselves against some of the highest performers and our Q 486<sup>33</sup> came up ahead with Mother Board Factory speed ratings of 120.9 (Landmark V2.00) and 72.1 (Norton SI V5.0). With expandable RAM cache, Q boasts of a highly efficient, incredibly fast cache controller of proprietary design. Q systems will run Novell, Unix, MS-DOS, Windows, OS/2 and other multi-user and multi-tasking operating systems. And, with up to 16 MB of 32 bit cached RAM, Q's 486 has its I/O ports and full Weitek coprocessor support integrated right on the motherboard, giving you up to SIX OPEN expansion slots in our fully configured systems. No wonder the Q 486 (and 386!) models are among the highest performance workstations in their class. And as with all of Q's computers, you get a two-year limited warranty and a service centre right here in Vancouver.

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Q486/33 Cache	Q386/25 Cache
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Q386/33 Cache	Q386/sx Slim
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## WHAT'S NEW

models.

The company says its new printers are between twice and four times the speed of the most popular printers in the Apple market and offer more flexible paper-handling capabilities, including multiple paper paths that can accommodate continuous forms, cut sheets and envelopes.

Contact: Greg Fleck, president, or Mike Fleck, vice president of sales and marketing, Raven, 604-273-4453.

## Hyphen RIPs it up

RICHMOND, B.C., APR 15 (TCP)—Hyphen, Inc. recently made more than a few heads turn at the Seybold publishing conference when one of their employees demonstrated what appears to be a bug in the Macintosh's printing software that causes it to be unduly slow when outputting to a PostScript printer. Besides demonstrating that Apple's system software isn't always what it's cracked up to be, these findings (later corroborated by

Quark's Tim Gill) serve as evidence that Hyphen really knows its business: PostScript RIPs (raster image processors).

Hyphen has announced the release of the Hyphen PC RIP, a software package that transforms a normal PC into a high quality, high resolution PostScript compatible RIP for imagesetters from Linotype, Ultras and ECRM.

Unlike traditional hardware RIPs, which are bulky, expensive, and have no upgrade path, PC RIP is a software-only

solution. Approximately one-half the cost of hardware RIPs (inexpensive is, of course, a relative term: the PC RIP software still costs nearly \$10,000!), PC RIP is one of the only vendors licensed for Hell screen angles, said to greatly improve color reproduction.

Hyphen and other Macintosh and PC-based publishing systems are available in B.C. exclusively from Western Imaging Systems, 604-270-3214.

## Computers on TV

Vancouver viewers with cable can pick up a short segment about computers on UTV News at 1 pm on Thursdays. The segment features David Chalk, president of Doppler Computers, and Doug Miller discussing technology for computer novices. They apparently talk about hardware and software for a bit and then open the phone lines for questions. Check it out.

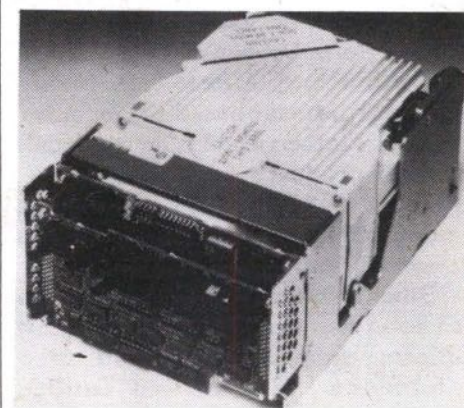


## New Notebook has Resume Function

**Resume Function**  
TORONTO, ONTARIO, MAY 15 (TCP)—Panasonic's new CF-370 notebook computer features an innovative resume function that allows the memory contents to be preserved when the computer is turned off. When you power up again, it will automatically return you to the programs and data you were using before you left off.

The 20 MHz 386SX-based unit sports a 60MB hard drive, 1.44MB floppy and 1MB of RAM, expandable to 4MB. Weighing in at under 7 pounds, including battery, the unit's dimensions are 12.2" (W) x 10" (D) x 1.73" (H).

Contact: Edmund Yeung, Panasonic,  
416-238-2405.



## Giant-Capacity Hard Drive

**TORONTO, ONTARIO, MAY 16 (TCP)**—Fujitsu Canada has announced the industry's first 5.25-inch Winchester disk drive to break the 2 gigabyte (GB) unformatted capacity barrier.

Called the M2652, the new drive is the first 5.25-inch drive to support the SCSI-2 command set, and offers a formatted capacity of 1.6GB and an average positioning time of 11ms. An IPI-2 version is also available.

Contact: Gwen Lannaman, Fujitsu Canada, 416-673-8666 or 1-800-263-8716.


## Correction

The Commodore C286-LT Notebook Computer comes with a one year parts and labor warranty, not 90 days as stated in our May 1991 issue.

# THE CAD MASTER

## SUPER VGA MONITORS: SUMMARY OF FEATURES

Products listed in ascending price order

Nanao FlexScan 9070U	 <b>Idek MF-5117</b>	Nanao FlexScan 9080i	Mitsubishi Diamond Scan 16L	Mitsubishi HL6615(TK)
\$1,779	\$1,795	\$1,999	\$2,030	\$2,150
■ 16 15.9 x 15.8 x 17.7 42 DB-9, BNC-5	■ 17 16.3 x 15.8 x 16.3 43 DB-15	■ 16 15.9 x 15.8 42 DB-9		
■ B	■ B	■ A		
□ ■ ■ ■ ■ ■ ■	□ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ □		

## IDEK Iiyama MF-5117

Pal Systems is proud to present the superior IDEK Iiyama 17" MF-5117 and 21" MF-5221 monitors.

The IDEK MF-5117 is an Analog and TTL 17" colour video monitor for high resolution engineering, CAD/CAM and Desktop Publishing applications. The Japanese made IDEK MF-5117 combines a flat screen with automatic frequency scanning for all frequencies from 21.8kHz to 50kHz horizontal and 50Hz to 90Hz vertical. The monitor supports all high performance video controllers and is capable of displaying crisp, clear and precise graphics with its Superb 0.28mm dot pitch and 1024 X 768 resolution.

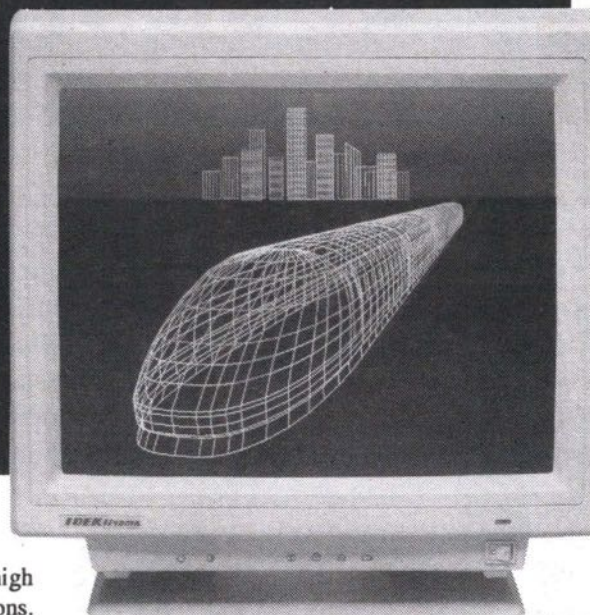
The superior qualities of MF-5117 has also won big honours from the PC Magazine. After comparing it with 9 other monitors in the same class, the experts were so impressed that they crowned the IDEK MF-5117 with the award of "Editor's Choice".

The IDEK MF-5221 shares the same superior qualities as the MF-5117, but with an increased horizontal synchronization signal of 30kHz to 80kHz and 1280 X 1280 resolution at 0.31mm dot pitch. There is no doubt that the IDEK professional monitors are the most advanced products from a company that has pioneered colour video technology.



**Pal Systems (Canada) Ltd.**

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# NewsBytes

## AMIGA

### Newtek Markets Stand-alone Video Toaster

TOPEKA, KANSAS, MAY 14 (NB)—One of Commodore's major success stories is going it alone. NewTek, whose Video Toaster board for the Amiga acts as a stillstore, switcher, titler, and video effects generator, among other things, has announced it is now selling a stand-alone Toaster system for \$3,995.

The new stand-alone Toaster has the guts of a Commodore Amiga 2000, but it is designed specifically for the broadcast TV market. The product features a four-input production switcher which can perform cuts, fades and wipes among any of seven sources including four video inputs. It also includes a digital video effects generator, a three-dimensional animation package called LightWave, a character generator, a paint program, 2 frame buffers, a color processing engine called ChromaFX, and a frame grabber and storer.

The product includes all the new video effects which Newtek has been working on since the Toaster was first shipped a year ago, along with additional software. It was first introduced using a video by the comedy-magic team of Penn & Teller, that was created with the Toaster.

Commodore, meanwhile, announced

the Commodore Amiga 500 Starter, a version of the Amiga targeted at first-time computer users, and the Commodore Amiga 2000HD Professional, an enhanced system for the small business market. The latter product costs \$2,000 and comes bundled with a word processor, spreadsheet, database, desktop publishing, business graphics, print, and music program, along with a program to read and write MS-DOS files. The Starter system costs \$599, and comes bundled with simulation and games programs.

Contact: NewTek, 913-354-1584; Commodore, 215-431-9100.

## APPLE

### Apple Reduces Upgrade Prices

SAN JOSE, CALIFORNIA, MAY 13 (NB)—To coincide with the extra memory requirements of the newly released System 7.0 operating system, Apple has announced a significant price reduction on its logic board upgrades and memory for its Macintosh line of computers. The cuts range from 41 percent for logic board upgrades, to as much as 57 percent for memory kits.

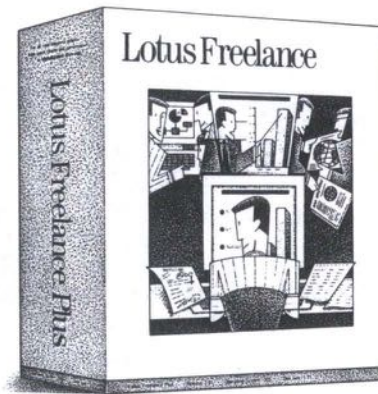
For example, Apple Canada has announced reductions that the Mac SE/30 logic board upgrades for the Mac SE has been reduced from a suggested retail

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- Microsoft Windows 3.0 .....\$105
- Quattro Pro V2.0 .....\$380
- WordPerfect V5.1 .....\$278



price of C\$2,453 to C\$1,299, a reduction of 53 percent. A IIci upgrade for the Mac IIcx is down from a suggested price of C\$3,464 to C\$1,999, a drop of 42 percent. The Mac IIcx board upgrade for a Mac II or IIx to a Mac IIcx is now C\$3,449, down from \$4,270 — a 19% decrease.

In addition, Apple Canada has reduced the price of its Dynamic Random Access Memory (DRAM) expansion kits. For example, a 1MB expansion kit is down 58 percent to C\$180 from C\$427, a 2MB kit is down 64 percent to C\$270

from C\$759, and 4MB is down 63 percent to C\$530 from C\$1,424. Also, 1MB of memory for the IIci is now priced at C\$180 from C\$427, a reduction of 58 percent, and 4MB for the IIci/IIsi is down 63 percent to C\$530 from C\$1,424. The IIcx is also catered to, with 4MB down 63 percent to C\$530 from C\$1,424.

Apple is also offering a new 8MB expansion kit for the IIsi and IIci priced at C\$1,030, and reducing the cost on its 4MB parity kit for the IIci 68 percent, to C\$485 from C\$1,500.

Enhanced memory will allow many Macintosh models to take advantage of System 7.0's virtual memory capabilities, and allow some high-end models to access 32-bit addressing. 2MB of RAM is required to run System 7.0.

The price of Macintosh hardware in the used computer market plunged in response to Apple's price reductions. Prices fell as the cost of desirable new machines came down and Mac owners reached for the machines of their dreams. The BoCoEx Index, a leading computer

trading board observed that in its 8-year history, there had been no prior drop of this magnitude on such a wide selection of computer models since the introduction of the IBM PS/2 killed the value of AT hardware. The Macintosh IIci dropped US\$400 to US\$4050, losing 10% of its value, while the IIcx was off US\$100 at US\$3100. The Mac Plus lost 20 percent to end the week at US\$500.

Contact: Apple Computer Inc., 408-974-3145

### Apple Beefs Up Mac LC

CUPERTINO, CALIFORNIA, MAY 6 (NB)—Apple Computer, saying it has responded to the needs of its corporate customers who asked for a "beefier" version of its lowest-priced color Macintosh, has unveiled two new configurations of the computer.

Apple spokesman John Cook tells Newsbytes that the new configurations do not include a keyboard, because corporate users like to add their own. The new bundles are a 2-megabyte RAM, 40 megabyte hard disk LC with 512 kilobytes of video RAM, \$2499, and a 4-megabyte RAM, 80-megabyte hard disk LC, also with 512K of video RAM, \$2,999.

The original LC, still on the market, has 2 megabytes of RAM, a 40-megabyte hard disk, and 256K of video RAM soldered onto the motherboard.

Cook says focus groups of business customers told Apple they wanted beefier versions of the Macintosh LC configured right out of the box. "We've tried to use some of the flexibility we have in manufacturing," he said, to meet those needs.

Apple believes that these enhancements, especially when combined with the upcoming release of System 7, will make the Macintosh LC an even more competitive offering in the business market.

Contact: Apple Computer, 408-974-3145.

### Next-generation Operating System Development at Apple

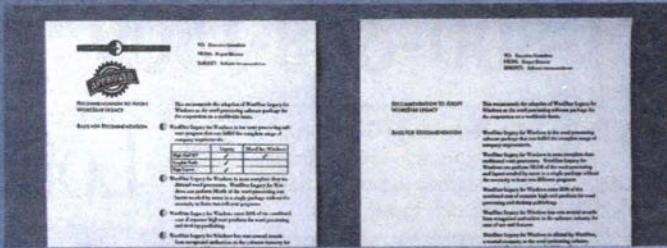
CUPERTINO, CALIFORNIA, MAY 16 (NB)—In developments which are most likely related, Apple Computer is working on a next-generation operating system which may not be Macintosh-compatible, and is evaluating several RISC-based processors, including one developed by an alliance between itself, LSI Logic, and Acorn, to power new machines.

One of the elements coming into play in the development of new, RISC-based processors, and possibly the new operating system, is ARM, for Acorn RISC Machine—an alliance formed in November, 1990. The spin-out firm, spawned by Acorn Computer of Great Britain, has created prototype RISC machines which offer high performance and low power consumption, elements which come in handy for a laptop, but most likely are not being considered for large-sized processors that might compete with workstation makers like Sun Microsystems, an informed source at Apple tells Newsbytes.

A report in the *San Francisco Chronicle*, which could not be confirmed at dead-

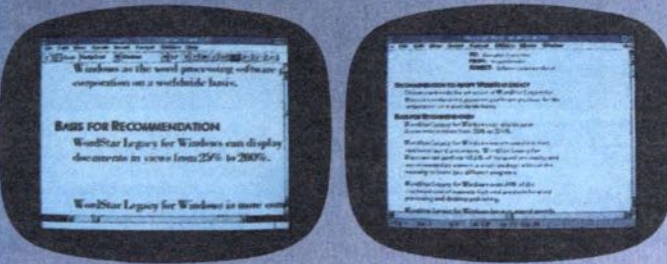
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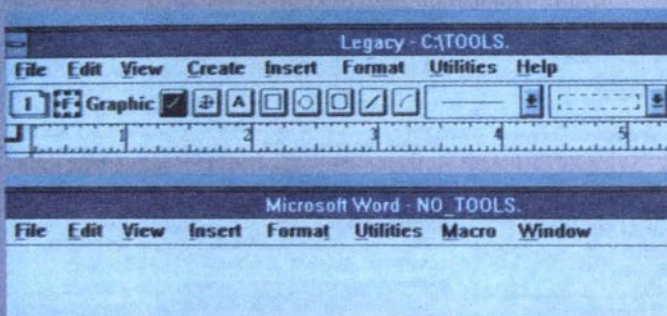
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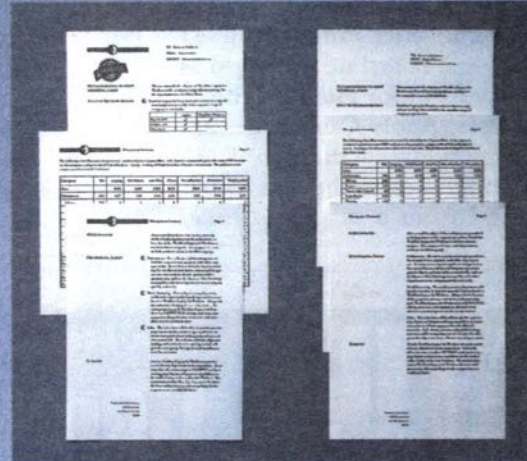
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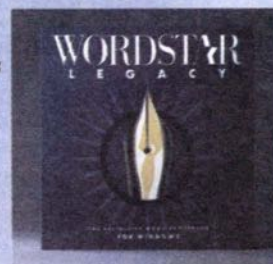
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line, says that Motorola's prototype 88110 RISC-based microprocessor is also being tested in Apple's Advanced Technology Group. This group, however, is set up not to develop products, but to investigate new technologies that might lead to product development. The 88110, due to be finished later this year, according to the report, would be used to compete with workstations from Sun, and MIPS, the report suggests.

Apple will not comment on the report's assertion that the new operating system software, for which development is being led by Senior Vice President Ed Birss, is object-based.

John Sculley, Apple chairman, has stated that a next-generation operating system would most likely not be an extension of the Macintosh line, although he did not specifically say that it would not run Macintosh programs. Sculley has also stated that RISC is an important direction for the industry and that Apple is responding accordingly, according to Apple spokesman Christopher Escher.

## ATARI

## HP Printer Utility Package

LONG BEACH, CALIFORNIA, APR 30 (NB)—Software Development Systems (SDS) has released the Deskjet Utilities Pak for the Atari ST. The \$34.50 package allows ST users to set up the fonts, character sets, and printer attribute configurations on the HP Deskjet, Laserjet (and compatible) laser printers.

The package is needed since, unlike on the PC and the Apple Macintosh, most Atari ST word processing software assumes that the user has a dot matrix printer plugged into the parallel port. While it is possible to drive a laser printer using dot matrix printer commands, many of the facilities of the laser printer cannot normally be accessed using a dot matrix printer command set.

Because the Deskjet Utilities Pak was developed for the ST, it allows Degas Elite, Macpaint and Gem .IMG (ST proprietary format) files to be printed on the laser printer in all their glory. Also, because the package can be loaded alongside existing Atari ST word processing software, it can be set so as not to permit other software to reset the laser printer's configurations.

Despite its wide range of facilities, Deskjet Utilities Pak occupies only 9K of system RAM on the ST and can be set up to work with the ST's new extensible control panel. SDS is also bundling a bunch of shareware and freeware packages for the ST that neatly complements its software. These include an ALT-HELP screen dump replacement, an ASCII text compressor, and a picture format conversion package.

Contact: Software Development Systems, 213/595-9799.

## Local Area Networking System For The ST

MERLIN, OREGON, APR 30 (NB)—A&D Software has announced The Universal Network for the Atari ST. The company claims that the networking system for the ST—which costs \$89.95

per node—is compatible with most other popular networking systems for the PC and Apple Macintosh platforms.

A key advantage of the system, according to the Merlin, Oregon-based company, is that the networking operations take place in the background, freeing the user to run normal ST tasks in the foreground. This situation mirrors that of Novell Netware on the PC, which runs on a transparent basis, with the user almost unaware that they are running within a Novell Network shell environ-

ment.

The company claims that any number of ST stations can be linked using The Universal Network, which runs on any Atari ST, although 1MB of RAM is recommended so as to let all software run effectively within the network environment.

Contact: A&D Software, 503/476-0071.

## CANADIAN NEWS

## Advanced Gravis, Logitech Complete Deal

VANCOUVER, B.C., MAY 9 (NB)—Advanced Gravis and Swiss mouse manufacturer Logitech International have completed a private placement that gives Logitech 44 percent of the Canadian joystick vendor.

Logitech has bought four million shares of Gravis at C\$0.25 per share, and holds debenture convertible into a

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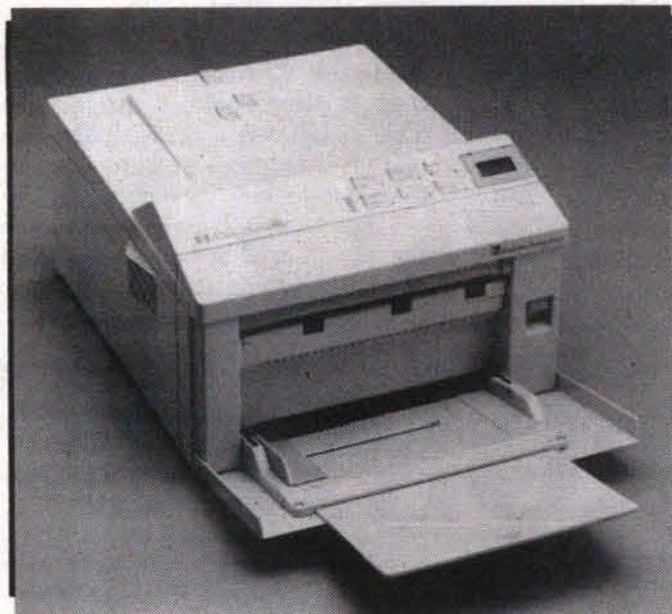
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further 1.5 million shares and a warrant to buy another 1.5 million.

Logitech got the debenture and the warrant in a previous deal with Gravis last November 1990. On a fully diluted basis, Logitech will hold 58 percent of the outstanding shares of Gravis. Two Logitech representatives have been appointed to Gravis' board of directors.

Founded in 1981, Logitech designs, manufactures and markets pointing devices, hand-held scanners, and supporting software for both DOS PCs and the Apple Macintosh. Gravis makes joysticks, an optical Mouse Stick for the IBM PC, Tandy, and Apple systems, and input devices for Nintendo, Amiga and Atari machines.

Grant Russell, president of Gravis, told Newsbytes his company focuses on the entertainment side of the PC market, while Logitech's strength is on the business side.

Logitech and Advanced Gravis plan to work together in product development and possibly marketing, Russell said. "We're certainly hoping some synergy will occur between the two companies."

Contact: Advanced Gravis, 604-434-7274

### Maximizer to Work with Books, Cards & Labels Software

VANCOUVER, B.C., MAY 9 (NB)—Richmond Software has announced that its Maximizer contact management software will now work with a special version of Books, Cards & Labels, a print-

ing utility from Useful Software in California. Books, Cards & Labels prints in any format, including multi-column labels, phone directories, and index cards, from any file.

The Print Base versions of Books, Cards & Labels comes with a driver for Maximizer, said Cathy Jones, a Richmond spokeswoman. Print Base is available now, separately or through Richmond. Richmond is selling the software for US\$59.95 (C\$59.95 in Canada). Also, Jones said, current users of earlier versions of Maximizer will get a free copy of the software when they upgrade to Version 2.1.

Maximizer stores client names, tracks contacts with clients, and can be used to write letters and manage telemarketing.

Richmond has also announced that Market Intelligence Research, a Mountain View, California, research firm, rated Maximizer the marketshare leader in PC-based individual contact management software, and second in the local-area network-based area. Market Intelligence Research's figures give Maximizer 44 percent of the individual category and 25 percent of the LAN sector.

Richmond has also begun shipping a French-language version of Maximizer Version 2.1. Prices are \$495 for the single-user version and \$1,095 for the LAN version, in American or Canadian currency. A bilingual version is available for \$595 (single-user) or \$1,195 (LAN).

Contact: Richmond Software, 604-299-2121, fax 604-299-6743

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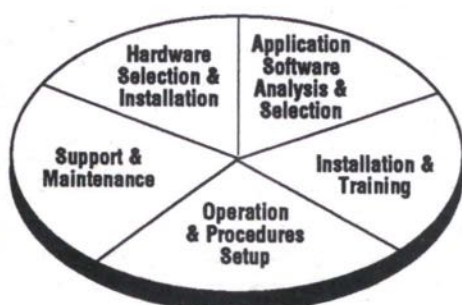
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Special see page 14

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## VSE Sells Trading System to Venezuela

VANCOUVER, B.C., APR 26 (NB)—The Vancouver Stock Exchange has announced the first sale of its computerized trading system, to the Caracas Stock Exchange in Venezuela. Terms of the sale were not disclosed.

The Caracas exchange has agreed to purchase the system from a consortium made up of IBM Venezuela, the Vancouver Stock Exchange, New York consulting firm TCAM Systems, and OLTP Venezuela, a Caracas-based soft-

ware developer.

Dave Laundry, a spokesman for the Vancouver exchange, told Newsbytes the fact that the system was already up and running in Vancouver was a major factor in the Caracas exchange's choice. Staff from Vancouver will help train employees at the Venezuelan exchange and will be available to provide consulting services, he said.

The Vancouver exchange is actively pursuing other sales of the system, which was developed by the exchange and TCAM Systems and runs on IBM hard-

ware. There are two or three bids "on which we think we have a good chance," Laundry said.

The system has been operating in Vancouver since May, 1990.

Contact: Vancouver Stock Exchange, 604-689-3334.

## Multimedia Division Launched by Quorum Computer Group

VANCOUVER, B.C., APR 26 (NB)—Quorum Computer Group is branching out from duplicating and packaging

software for other companies to producing multimedia sales pitches. The company has launched a multimedia division, based on a custom service called Selling With Software.

Jim Secord, multimedia product manager for Quorum, told Newsbytes Selling With Software is a custom service based on a core structure that can be tailored to individual clients' needs. The idea is to present information using graphics, text, sound, and animation that can be played back on any IBM or compatible PC.

The price of a Selling With Software package varies with the client's needs, Secord said, but about C\$5,000 is typical.

Clients to date include a Vancouver company that produces databases for lawyers and customs brokers. The company needed a better way to explain its offerings and how they could be used, Secord said.

Secord said the multimedia division has the added advantage for Quorum of generating disk duplication business. The company has 80 to 90 percent of the Western Canadian disk duplication market, he said, working for Lotus Development, Vancouver developers Richmond Software and Stratford Software, and others.

Contact: Quorum Computer Group, 604-879-6886, fax 604-879-0214.

## Canada Citizen's Forum on Suzy and Mind Link!

VANCOUVER, B.C., APR 26 (NB)—The Citizens' Forum on Canada's Future is accepting submissions online, via Stratford Software's national Suzy online system and a Vancouver-area bulletin board system. This is the forum's first use of online information services, Mark O'Neill, a facilitator for the forum, told Newsbytes.

The Citizen's Forum on Canada's Future, also known as the Spicer Royal Commission, was set up last November to collect ideas from the public on the future of the Canadian federal system. The forum is part of current attempts to resolve the status of mainly French-speaking Quebec in an otherwise mainly English-speaking country. It is conducting organized public discussions across the country.

O'Neill said the electronic experiment started on *Mind Link!*, a 1,300-member bulletin board system in Surrey, near Vancouver. More than 100 submissions have been received through *Mind Link!*, he said. The more recent conference area on *Suzy* has received about 70 submissions to date, he said.

The online systems have the advantage of allowing people to read each other's comments and think them over before replying, O'Neill noted. "They get increasingly thoughtful and creative in their submissions."

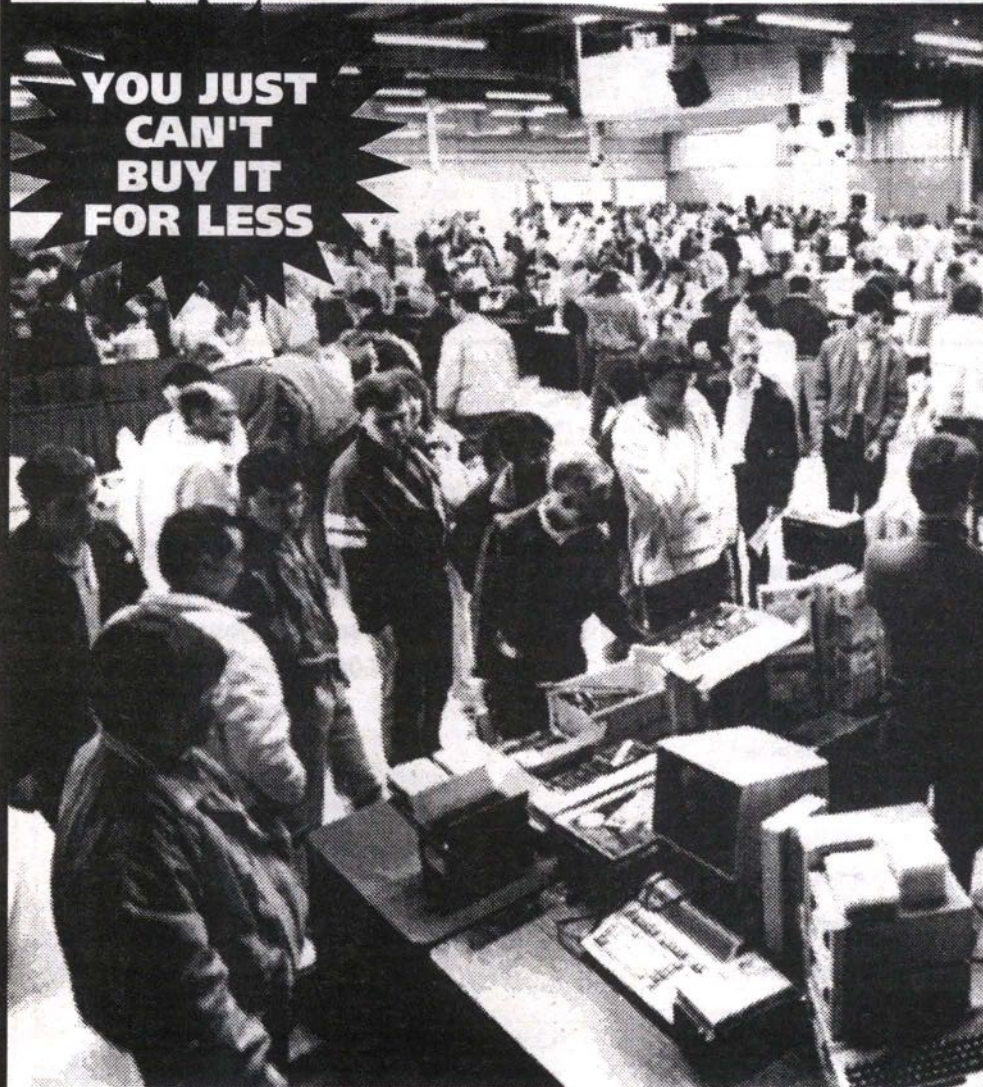
Contact: Mark O'Neill, Citizens' Forum on Canada's Future, 604-685-7661; Stratford Software, 604-439-1311.

## Geac Donating Software to Celebrate 20th Anniversary

MARKHAM, ONTARIO, MAY 6 (NB)—Library automation vendor Geac Computer plans to celebrate its 20th

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year in business by donating its Advance integrated library system to 20 needy libraries around the world.

Geac said Advance licenses will be donated to libraries that would like to automate but can't afford entire systems, and which "have a special vision and scope on the future of the library as an information center in society."

Geac is asking libraries that are interested to submit essays of not more than five pages outlining what they hope to achieve through automation and how automation will help them provide library services in the future. An international selection panel will decide who gets the 20 licenses. Further information is available from the nearest Geac office, and entries must be submitted by August 30.

Contact: Geac, 416-475-0525.

### IBM Canada Signs Beamscope to Distribute PS/1

MARKHAM, ONTARIO, MAY 14 (NB)—IBM Canada has signed Beamscope Electronic Entertainment as a distributor for its PS/1 computer. Beamscope distributes consumer electronics and home office products.

Al Ionson, IBM Canada's director of personal systems, said IBM sees great potential in the home market in general because only 16 percent of households now have computers. Working at home—whether the home is the sole place of work or a supplement to the office—is expected to be a major reason for putting computers into homes. Ionson said the PS/1 will appeal to first-time home office buyers.

About 85 percent of Beamscope's dealers focus on home office buyers, Ionson said.

Ionson added that IBM has been very happy with PS/1 sales in Canada to date, but has focused so far on its existing dealers. While continuing to sell through those channels, he said, IBM wants to look at ways of reaching other buyers as well.

Larry Wasser, president of Beamscope, said that his company expects the home computer market to take off, and described the IBM deal as "a relationship which we hope will go on for many years in the future."

Contact: IBM Canada, 416-474-3900; Beamscope, 416-291-0000.

## IBM WORLD

### AMD Announces 25 MHz 386SX

SUNNYVALE, CALIFORNIA, MAY 3 (NB)—Advanced Micro Devices (AMD) has fired its latest shot at Intel by releasing details about a 25-megahertz (MHz) version of its 386SX compatible microprocessor due to ship in June. The fastest Intel 386SX now being marketed operates at 20 MHz.

AMD's new chips are not only faster than Intel chips but are said to use less power, making them especially suitable for the very fast-growing 20 MHz notebook market.

Sample quantities are now shipping and prices are expected to be in line with Intel chip prices.

Contact: AMD 408-732-2400.

### IBM Kicks Off Environmental Research Program

ARMONK, NEW YORK, MAY 15 (NB)—IBM has announced what it refers to as "a major research program intended to encourage the use of computer-based technology in the study of environmental problems."

The multimillion dollar program is intended to promote cross-disciplinary collaboration and stimulate the international transfer of technology, and will provide funding, equipment and technical support for selected research projects over several years. IBM will invite qualified researchers from universities and research organizations in the U.S. to submit preliminary project outlines, after which a review committee will request formal proposals on selected projects. An IBM advisory committee, including representatives from the environmental, scientific and business communities, will then evaluate the formal research proposals and nominate candidates for final selection by IBM.

IBM said the program "is designed to address problems of concern to both industry and the general public, such as ground water pollution, ozone depletion and waste disposal." It also stated that, while "this program will be offered on an invitation basis, interested parties may obtain guidelines by writing to: Program Director, Environmental Research Program, IBM Corp., 208 Harbor Drive, Room Number 4C-29, P.O. Box 10501, Stamford, Conn., 06904-2501."

Contact: IBM, 914-765-6432.

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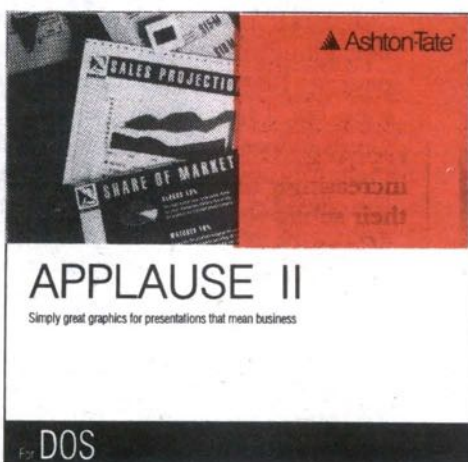
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**Tandy Releases Multimedia PC**  
FORT WORTH, TEXAS, MAY 9 (NB)—Tandy has unveiled a line of PC clones bearing the Multimedia Personal Computer (MPC) label, with sophisticated sound, graphics, and CD-ROM support.

The new line of Tandy Multimedia PCs—80286, 80386SX and 80386 systems, as well as CD-ROM upgrade kits—are now being shipped to software developers and publishers and will be placed with selected Radio Shack business and education customers over the

next few months. They should be available at participating Radio Shack retail outlets by the end of the summer.

The new systems come with the Tandy CDR-1000 internal CD-ROM drive, a multimedia expansion adapter with audio circuitry, a 3.5-inch diskette drive, 256-color VGA graphics, 2MB of RAM, a 40MB hard disk, and a two-button mouse. Monitors are not included in these prices.

Prices start at \$2,599 for a 16MHz 80286 system, the Tandy M2500XL/2. Then there's the Tandy M4020SX, a 20MHz 80386SX system for \$3,299; and

the M4016DX, a 16MHz 80386 system for \$3,999. Coming with 4MB of RAM and a 105MB hard disk is the Tandy M4025LX, a 25MHz 80386-based system for \$4,999, and the Tandy M4033LX, a 33MHz 80386-based system for \$5,499.

The units come with Microsoft Windows plus Windows Multimedia Extensions pre-installed. The CD-ROM drive is based on the \$399.95 internal unit that Tandy announced in March.

The audio circuitry can accept and mix a variety of sound sources. Features include an 11-voice-per-channel FM

music synthesizer, two 16-bit digital-to-analog converters with sampling rates of up to 62.5 kilohertz, an eight-bit stereo or 16-bit mono analog-to-digital converter, and a built-in stereo amplifier with manual volume control and 1.5 watts per channel. There is also a MIDI port to interface with computerized sound systems.

"The Multimedia PC is a natural and compatible product born out of customers' demands to enhance the information and communication ability of PCs," said Howard Elias, vice president of computer merchandising for Radio Shack.

"Tandy's Multimedia PCs create more compelling, interesting, and productive applications in a consistent and affordable manner. By adding the capability of high-fidelity stereo sound, photorealistic images, animation and CD-ROM mass storage, an industry-standard PC with a minimum of a 10MHz 286 processor, 2MB of memory, and VGA graphics can become a Multimedia PC," he added.

"Today's announcements and demonstrations by Tandy represent a major milestone for Multimedia personal computing," said Rob Glaser, general manager of Microsoft's Multimedia Systems Group. "Tandy has played a crucial leadership role in the development of the Multimedia PC. Tandy's line of Multimedia PCs will play a significant role in establishing the market for Multimedia content-based applications."

At press time, Radio Shack Canada had made no decision on whether it will carry the kits, the new product line, or both.

Contact: Tandy, 817/390-3487.

### Time Management Package Includes Training

VANCOUVER, B.C., MAY 14 (NB)—Priority Management Systems has introduced PC software to go with its time management training courses.

The company will sell The Priority Manager, software which runs on IBM and compatible PCs, along with its courses on management skills and productivity.

Norm Jone, vice-president in charge of the software project, told Newsbytes the software is somewhat similar to personal information managers such as Lotus Agenda that can be used to maintain to-do lists. It helps users keep track of appointments, calls that must be made, deadlines, and other things to do. It also lets them assign priorities and set alarms to remind them of appointments.

Unlike other software vendors, though, Priority Management sells a package that includes not only the software but a four-phase training course. Given at roughly 250 locations worldwide, including about 140 in the United States, the course covers essential management skills and group productivity, and includes a personal consultation at the customer's office to help customize the software.

The Priority Manager is a memory-resident program that occupies about 7K bytes of memory and can be popped up over another application. It allows daily, weekly, monthly, and yearly views,

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with as many as 20 alarms per day. It can dial phone numbers automatically, search for text strings, and import data from other programs, the vendor said.

The package, including training, costs US\$595 to US\$695, depending on location. Priority Management also has training franchises in Australia, Belgium, Canada, Ireland, Japan, New Zealand, Portugal, Singapore, Spain, Taiwan, and the United Kingdom.

Contact: Priority Management, 604-879-6121.

### Database of Mail Order Pricing Offered on Disk

PALM SPRINGS, CALIFORNIA, MAY 13 (NB)—Did you ever wish someone would compile all those computer magazine software house ads into one database, and provide an easy way to search it? Lilac Akiko Ltd. claims it has done just that with its Ultimate Computer Software Buyer's Guide.

The guide comes on either 5.25 or 3.5-inch disks, and has an easy to use interface. The latest version provides price information on 592 software products from 35 mail order companies, said Lilac Akiko.

The database can be searched by product name, manufacturer, and type of software, according to the company. Once a product is selected, another window shows the mail order companies that carry it, and each price, lowest price first, Lilac said. Full information is provided on each software house including any toll-free numbers, terms and business hours.

Subscription prices are listed by Lilac as a single trial issue for \$5 USA, \$6 Canada, and \$7 all other countries. A six month subscription is \$25 USA, \$30 Canada, and \$35 all other countries, and a 12-month subscription costs \$45 USA, \$55 Canada, and \$65 all other countries. Contact: Lilac Akiko Ltd., Subscription Department, 127 Twin Palms, Palm Springs, CA 92264. Tel (619) 320-0135.

### Motorola Caught in Scandal

ATLANTA, GEORGIA, MAY 10 (NB)—Motorola is the focus of a scandal involving the sale of an \$11 million emergency telephone system for Fulton County, Georgia. Fulton County contains most of the city of Atlanta, and is the state's most populous county.

Motorola has offered to repay \$16,500 which the county District Attorney Lewis Slaton says was used to bribe the emergency communication workers. Gifts, trips, and entertainment were disguised on invoices as training that never took place, and the repair of "lightning strike" damage which never happened, he says. Motorola claims the refunds would not be an admission of guilt, just "good customer relations."

Robert W. Deariso, head of the Fulton County communications center, has resigned and no decision has yet been made on criminal indictments.

### Racist Computer Games Distributed by Nazis

LOS ANGELES, CALIFORNIA, MAY 3 (NB)—Computer video games that

depict the killing of Turks and Jews are being distributed in Germany and now in the United States, according to researchers at the Simon Wiesenthal Center in Los Angeles.

The games are clearly aimed at the home computer market, and especially at youths from 13-15 years of age, said researchers at the Center.

The games range from displays of German pre-World War II symbols to complex graphics of tortured prisoners and bizarre death images like the grim reaper, according to the center. Some games are merely multiple choice quizzes, most are totally in German, and bear titles such as "KZ Manager," "Aryan Test" and, surprisingly enough, "Bruce Lee," researchers said.

The most bizarre of the games runs on an Amiga and is titled "KZ Manager." KZ is short for the German word for concentration camp. The center has reported it contains graphic images of human torture, Hitler, and the winner gets to be the Gestapo, with a tortured, bleeding prisoner in the background. "The quality of the graphics is very good—the people who wrote these games know what they're doing," Wiesenthal Center researchers said.

As far as Center researchers have been

able to determine, the Bruce Lee games only rotate and display Nazi symbols. Why they bear the famous Oriental martial arts movie actor's name is unknown, but ironic, researchers said.

Authorities at the center have distributed translated German and Austrian newspaper clippings describing concerned teachers who have started an

initiative against the Nazi propaganda that is not only available through the games, but on European computer bulletin boards as well. The statistics reported were 22% of the students in a Salzburg high school were familiar with the games, many of which are reported to be pornographic as well as violent.

Turks, as well as Jews, are the favorite

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subjects of the games for economic reasons, researchers pointed out. "The U.S. is used to the 'melting pot' concept, but in these countries everyone was either French or German, until the recent Turkish population, over 400,000 in Germany alone, began moving in to get work," the researchers explained. "Many of the Turks have taken jobs that natives used to do. The Neo-Nazis have taken advantage of this in introducing Turks into these games," researcher explained.

The Wiesenthal Center describes itself as an international center for Holo-

caust remembrance, human rights and the Jewish people.

The Center researchers asked their identity not be revealed due to their secret work in infiltrating the Neo-Nazi party in the U.S. The researchers said, "Racial prejudice has to be exposed—it damages all of us."

Contact: Avra Shapiro, Simon Wiesenthal Center, Tel: 213/553-9036.

#### Four-inch Hand-held Color PC Scanner

MILPITAS, CALIFORNIA, MAY 7

(NB)—NCL America has introduced a high-resolution, 4-inch hand-held color scanner complete with software for editing page-width photographs, illustrations and other color graphics.

The scanner is the latest addition to the company's ClearScan line of products and is designed for a wide range of DOS applications running on IBM AT- and compatibles, or PS/2-class systems.

According to the company, the scanner uses PC Paintbrush IV Plus software for editing or manipulating stored images. With this software, custom-tailored 256-bit color palettes are created for each graphic element or photograph scanned using 4096 colors recognized by the scanner head. The scanner operates at color resolutions as high as 200 dots-per-inch.

PC Paintbrush IV Plus can also be used to cut, move, rotate or duplicate scanned images, add or delete lines or other unwanted materials, create gray-scale renderings of a scanned color image, and store an edited file in industry-standard TIF or PCX formats. Gamma correction can be applied in order to compensate for different output screens and printers.

The company says that an Image-Merge function is also included with the integral ClearScan software that takes individual graphics segments four inches wide and overlaps and stitches them together to form seamless full-page images.

NCL is marketing the new ClearScan

4-inch scanners as prepackaged complete subsystems, containing scanner head, cabling, power pack and 16-bit NCL host adapter card for enhanced throughput, in addition to the PC Paintbrush IV Plus software.

The scanner is available immediately at a suggested price of \$695.

NCL America Computer Products Inc., is a wholly owned subsidiary of National Computer Ltd., Tokyo.

Contact: NCL America Inc., 408-956-1040

#### Lotus Intros 1-2-3 Release 2.3; 3.1+ Due Soon

CAMBRIDGE, MASSACHUSETTS, MAY 9 (NB)—Lotus Development Corporation has announced the immediate availability of 1-2-3 for DOS Release 2.3. The new version of the spreadsheet is intended to bring WYSIWYG (What-You-See-Is-What-You-Get) display to the product which Lotus says has an "installed base of more than 14 million users."

At the same time, the spreadsheet specialist has announced plans to ship 1-2-3 Release 3.1+, an upgrade from Release 3.1, within the next few months.

Announcing the new version, Eileen Rudden, general manager of DOS spreadsheet development at Lotus, said: "Customers are looking for easy-to-use DOS spreadsheets that maximize the capabilities of their existing PCs, offer superior control over the use of fonts, colors, graphics, display and output of

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## NEWSBYTES

spreadsheets, and offer a migration path to new operating environments as their needs evolve."

"The 1-2-3 for DOS spreadsheet family delivers the broadest range of spreadsheet design, analytic, and presentation capabilities to DOS users, while maintaining style, macro, data and keystroke compatibility with Lotus' spreadsheets for other platforms," she added.

In addition to Version 2.3, Lotus also announced 1-2-3 for DOS Release 3.1+, an update to Release 3.1 that includes the Viewer and Auditor capabilities introduced in Release 2.3. Lotus stated that Release 3.1+ also provides the Lotus Solver technology introduced in 1-2-3/G for OS/2. 1-2-3 for DOS Release 3.1+ is currently in beta testing and is scheduled to ship within 60 days in the U.S.

The suggested retail price of the 1-2-3 Release 2.3 Standard Edition is \$495. The Network Server and Node Editions of the product are scheduled to become available within 60 days at a suggested retail price of \$795 and \$495, respectively. Lotus 3.1+ Standard Edition will have a suggested retail price of \$595 while the Network Server and Node Editions of the product, scheduled to be available in the third quarter of 1991, will have suggested retail prices of \$895 and \$595, respectively.

Contact: Lotus Development Corp., 617-693-1580/1-991-0509

### PCs in 24.9% of Homes

STAMFORD, CONNECTICUT, APR 30 (NB)—The Comtec Market Analysis

## AT&T MORE POPULAR THAN ANSWERING MACHINES in households

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10 20 30 40 50 60 70 80%

April 1991 Comtec Marketing Analysis  
Services survey of 60,000 households  
with 45,000 responses.

Services subsidiary of the Gartner Group research firm has finished a survey of 60,000 households and found AT&T long distance service to be more popular than even answering machines.

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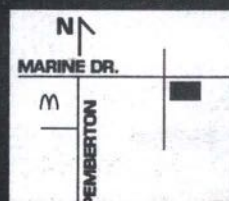
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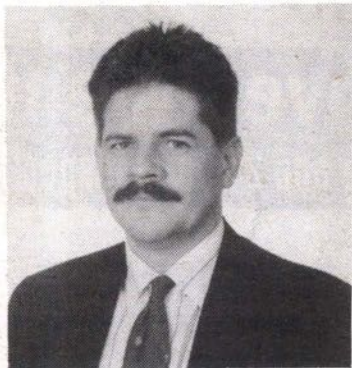
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Western Imaging Systems Inc. is pleased to announce the appointment of Jim Reich to President.

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The survey, which drew 45,000 responses, making it one of the most intensive of its type ever done, found AT&T long distance services used by 78 percent of households, while answering machine penetration stood at 49.7 percent. Cable TV is used by 62.7 percent, according to the survey, and PCs are in 24.9 percent of homes. Also, 10.3 percent of households have someone on a pager, while only 6 percent have copiers, 5.1 percent have cellular phones, 3.9 percent have fax machines, and only 3.5 percent use online services like GENie.

John Kupik, who conducted the study, said there's a cloud on the horizon for AT&T, however. "We've done some further digging into the data looking at AT&T's share. As the amount of the monthly bill goes up, AT&T's share diminishes," he told Newsbytes. The only surprise in the data for Kupik was the high penetration of answering machines.

Kupik told Newsbytes his next task is to send more detailed questionnaires to 30,000 of his 45,000 respondents, asking about their specific use of technology. The intent is to find out what PC usage is for people who work in corporate America. 24% of households have PCs, but that doesn't account for people who were given PCs by their employers. We anticipate a 60% response rate from the whole thing. What we see is with corporate downsizing a lot more equipment is ending in the home."

The resulting data will be compared with existing Comtec information on

household income and gender to come up with a profile of PC users which marketers can use to target their pitches. "One of the things we're surprised about is that vendors in this market don't target their new clientele the way the people do who sell shampoo and razor blades." This is the 8th annual Comtec survey, Kupik added, but only the second time the questions have concerned other technology areas besides PCs. "Growth in PC use has been steady, but it's still far from ubiquitous," he concluded.

Contact: Comtec, 203-964-0096.

MS-DOS

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2	Space Quest IV	Sierra On-Line
3	King's Quest	Sierra On-Line
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Software Publishers Association March 1991

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## NEWSBYTES

## NETWORKS

**Novell, Eagle Intro Entry Level "Lan-in-a-Box"**

PROVO, UTAH, MAY 10 (NB)—Novell has announced that it has signed a licensing agreement with Eagle Technology, of San Jose, California, under which Eagle Technology will manufacture and distribute a complete LAN (local area network) in one package.

The package, dubbed the Netware Starter System, will contain starter Novell LAN software which will accommodate up to four users on the network, as well as two Ethernet network interface cards which Novell has certified as compatible with versions of Netware, and is complete with cabling, connectors and documentation.

Novell says the two companies decided to provide this small business configuration as a direct response to customer demand for a complete network all in one package. The operating system for the new package is based on ELS Netware Level I technology.

The new package is immediately available, and has a suggested retail price of \$995 for the ISA (Industry Standard Architecture) version, and \$1155 for the MCA (Micro Channel Architecture) version. Technical support will be handled through Novell's current distribution channels. Customers can upgrade to either Netware 2.2 or Netware 2.11 when their system needs grow.

Additional information is available from Eagle Technology at 800-733-2453. Contact: Novell, 801-429-5833.

## PORTABLES

**Aquiline Unveils 4.5-pound 386SX**

BENNINGTON, VERMONT, MAY 8 (NB)—What weighs less than Texas Instruments' lightest computer, and is the size and weight of a heavy magazine? Aquiline says it's the Aquiline 4.5-pound 386SX notebook computer, equipped with a 20MB 25 millisecond access hard disk, 1MB of RAM, a 10-inch sidelit LCD screen capable of resolving VGA graph-

ics in 32 shades of gray, and a 3.5 inch 1.44MB floppy disk drive—all for \$2,995 retail.

The products Aquiline lists as bundled with the notebook computer include FastLynx—a program for transferring files between computers; FastLock—a software-based protection scheme for the computer; a battery alert program; a phone book; DOS 4.01; a client management program, and a choice of Microsoft Windows 3.0 or Microsoft Works.

The company also offers an AC adapter, nickel cadmium batteries that last for up to 3 hours, and a carrying case, as optional extras. Aquiline claims to offer a 24-hour replacement system, so if the unit fails in the field, data from the failed computer can quickly be restored to a replacement system before the battery power fails.

The Aquiline notebook computer is offered with a one-year unlimited parts and labor warranty, and toll-free technical support. Upgrades include a 40 MB or 80 MB hard disk, up to 4 MB of RAM and additional nickel cadmium batteries.

Contact: Aquiline, Tel: 800/221-1119, 802/442-1526.

**Toshiba Slashes Prices on Laptops 19-33%**

IRVINE, CALIFORNIA, MAY 3 (NB)—Toshiba's Computer Systems Division, Toshiba American Information Systems (TAIS), announced the suggested retail prices of its entire line of laptop and notebook computers have been dropped by 19 to 33 percent.

The company said the reductions have been instituted to strengthen Toshiba's market position, according to Tom Martin, vice president of marketing, TAIS.

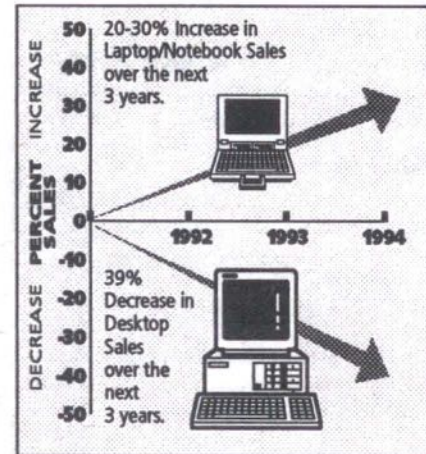
A few examples from the company's new price list include: T1000 has been reduced \$200, from \$999 to \$799; T3100e has been reduced \$800, going from \$3,699 to \$2,899; and the T5200C has been reduced \$1,900, from \$9,499 to \$7,599. Martin said suggested retail prices on accessories were also reduced.

Toshiba claims it is the leading vendor in the U.S. for portable computers,

with 23.1 percent of the volume in 1990, according to a study done by the International Data Corporation (IDC).

Martin says Toshiba's plan in the portable market is to capitalize on its ability to reduce unit cost by purchasing materials in volume, an advantage not available to new, smaller manufacturers. Also, Toshiba intends to help lead the transition to portables by improving the relationship in price between desktop and portables, Martin said.

Contact: Toshiba, Tel: 714/583-3925.

**Are desktop computers dead?**

Predicted by Dataquest, a Silicon Valley-based research firm, April 1991.

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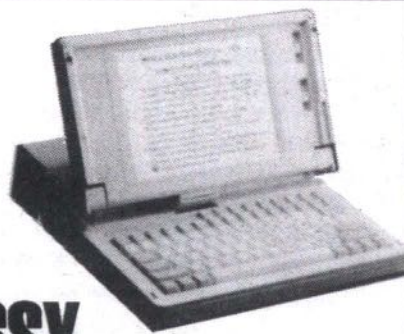
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## NEWSBYTES

### Fujitsu Intros 16-bit Handheld Computer

SAN DIEGO, CALIFORNIA, MAY 14 (NB)—Fujitsu has announced a new handheld PC-compatible, the Acutote 3000. The DOS-compatible unit is the same size as a conventional hand-held scientific calculator, only a lot more powerful.

According to Fujitsu, the Acutote 3000 is fully compatible with existing PC-based programming tools and its connectability to a host system via modem or direct link will help facilitate business operations such as order entry, inventory management, route accounting, materials handling, distribution and a range of retail applications.

Fujitsu claims that the Acutote 3000 has been designed with rugged operating conditions in mind. The company says that the computer's surface mount technology helps it survive shock and vibration, the unit is environmentally sealed, the charging unit lasts 10 hours, and the computer is designed to prevent overcharging.

The standard serial RS-232 connector has been replaced by an optical RS-232C that Fujitsu says is more reliable. The keys are sculpted, it can be laid face down without the keyboard or display area making contact with a hard surface, there's support for a variety of scanner attachments, an adjustable backlit display is provided, and it has an elastic strap and holster, the company said.

Fujitsu has at the same time initiated a support program for its value-added resellers that provides support and training as well as end-user leasing and financing options. For information about the Acutote 3000 contact Fujitsu, 619-481-4004 or McQuarterm Group, 619-450-0030.

### HP and Lotus Launch Palmtop with Lotus 1-2-3 Built-in

NEW YORK, NEW YORK, APR 24 (NB)—Hewlett-Packard (HP) and Lotus Development Corporation have jointly announced the introduction of the HP 95LX palmtop PC, a palmtop personal computer containing Lotus 1-2-3 in ROM. Jointly developed by Hewlett-Packard and Lotus, the HP 95LX will be manufactured and marketed by HP at a suggested retail price of \$699.

The 6.3 x 3.4 x 1.0-inch unit tips the scales at 11 ounces and contains 512K of RAM and 1MB of ROM for the use of the built-in Lotus 1-2-3 version 2.2 software, as well as MS-DOS version 3.22, an appointment book function, a financial calculator, a memo writer, a communications manager and a telephone list. It is powered by 2 AA flashlight batteries.

John Young, Hewlett-Packard CEO, announcing the new product at an April 23rd press conference in New York City's Rockefeller Center, said: "This is a great American success story. Bringing a system out in 15 months for a market which has been conceded to off-shore production is a story in itself."

Lotus CEO Jim Manzi commented further, saying that the central mission of the product, which was originally prototyped by Lotus using balsa wood, "is to put 1-2-3 into the hands of more



and more users. The HP 95LX extends the reach of 1-2-3 by expanding its distribution into the electronics channel."

Lotus Project Manager Leon Navickas told Newsbytes that the 95LX "combines calculator convenience with personal computer power. The presence of 1-2-3 as a built-in feature preserves the investment in training made throughout the world in the leading spreadsheet project."

Contact Hewlett-Packard Co., 604-270-2277; Lotus Development Corporation, 617-661-7900.

## Palmtop

### Computer Comparison

	HP 95LX	Poquet PC	Atari Portfolio
Length (in.)	6.3	8.7	7.1
Width (in.)	3.4	4.3	4.1
Depth (in.)	1	1	1.1
Weight	11 oz	14 oz	12 oz
RAM	512 K	512 K	128 K
ROM	1 MB	640 K	128 K
Operating System	MS-DOS 3.22	MS-DOS 3.3	DIP DOS
Spreadsheet	Lotus	None	Generic
Calculator	Financial	None	Basic
Appointments	Yes	Yes	Yes
Phone Book	Yes	Yes	Yes
Memo Editor	Yes	Yes	Yes
Clipboard	Yes	No	Yes
Price (Cdn)	\$845.95	\$1495	\$388

### Borland ObjectVision Supports Pen Windows

SCOTTS VALLEY, CALIFORNIA, MAY 7 (NB)—Borland demonstrated its ObjectVision visual programming tool's support for the Microsoft Pen Windows Operating System at the Demo '91 Conference in Palm Springs, Calif., sponsored by Stewart Alsop.

ObjectVision is a Windows 3.0 application creation tool that now enables users to develop stylus-based applications. Borland also stated that the company would continue to enhance ObjectVision for the upcoming Pen Windows environment, and include handwriting edit controls, annotation support and other stylus-resident features.

Pen Windows is a graphical operating system that is built on Microsoft Windows, a graphical environment for personal computer users.

Contact: Borland, 408/439-2096.

### Pen Windows Word Processor Recognizes Handwriting

PALM SPRINGS, CALIFORNIA, MAY 10 (NB)—Software Publishing an-



nounced at the Demo '91 conference in Palm Springs its Professional Write Plus document processing product that operates under Microsoft's Pen Windows Operating System. Software Publishing claims the product exploits the capabilities of the Pen Windows Operating System by providing handwriting recognition and gestures.

The company claims users who want to take advantage of pen-based computing will not have to sacrifice ease of use or advanced features. For example, Software Publishing claims the speed icon bar, used to give commands to manipulate text, operates with a pen. The gesturing capability of the pen also provides a way to edit and correct documents, the company said.

"Software Publishing built its heritage on its intuitive interface," said Richard Frank, vice president and chief technical officer. "The simplicity and natural feel of a pen presents a wonderful opportunity for us to continue extending this heritage. Professional Write Plus is just one example of how our intuitive interface can adapt, unmodified, to a pen-based operating system such as Pen Windows."

Professional Write PLUS is currently available and has a suggested retail price of \$249, according to the company. The same version will run under Windows or Pen Windows, the company said.

Contact: Software Publishing, Tel: 415/335-6440.

## TRENDS

### IBM San Jose, Like Apple, Reduces CFC Air Emissions

SAN JOSE, CALIFORNIA, MAY 16 (NB)—Citing a corporate goal of eliminating the usage and emissions of chlorofluorocarbons by the end of 1993, International Business Machines has reported that it has reduced CFC-113 air emissions at its San Jose, California site by 95 percent over the last three years.

The company said that CFCs have been used primarily in the past for cleaning and drying disk storage system parts. Now though, the company is converting to aqueous cleaning systems and dryers which use hot air or vacuum instead of CFC-113.

Newsbytes recently reported that Apple, too, is taking steps to eliminate CFCs from manufacturing processes in its plant in Fremont, California, just across San Francisco Bay from the IBM facility. In addition to eliminating the use of CFCs to clean electronic assemblies and circuit boards, Apple also said that it had developed a new process for circuit board assembly that did not require the boards to be cleaned.

IBM said its San Jose site will report to the Environmental Protection Agency (EPA) that 68,000 pounds of CFC-113 were emitted to air in 1990 compared with 230,000 pounds reported in 1989. The total year-to-year emission reduction is 70 percent, the greatest in three years. Its 1987 CFC air emissions were reported at 1.5 million pounds. IBM also reported using 521,000 pounds of CFC-113 in 1990, a 63 percent reduction from the previous year and an 83 percent

drop from the 1987 figure of 3 million pounds.

CFCs have been linked with depletion of the earth's ozone layer, a natural shield against harmful ultraviolet radiation. The electronics industry has long used CFCs to clean electronics assemblies and printed circuit boards.

A combination of deionized water, detergent and ultrasonic sound waves are used in the new cleaning process to wash the parts, and hot air to dry them. In one water cleaner system, parts are moved into the four-stage cleaners in

stainless steel baskets by a robotic arm that operates under the control of a personal computer.

The washing and drying cycle takes about 15 minutes and uses about 13 gallons of water per load. The water is reused so the total daily volume per machine is about that used by an average household.

IBM maintains that water-based cleaning is equal to, or better than the CFC cleaning it is replacing and is less than half the cost to operate, because expensive air emission control is not

required and solvents are not used.

IBM's San Jose-based Storage Systems Products Division develops and manufactures computer disk and tape storage systems and employs more than 9,000 people.

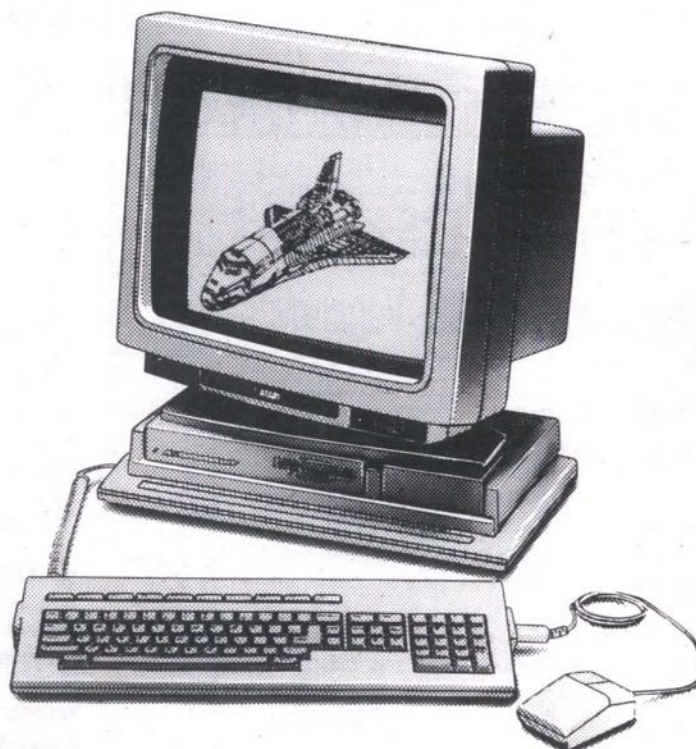
Contact: IBM, 408-256-2217.

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a hardware/software combination system that allows any IBM PC or compatible microcomputer to answer the telephone and dispatch faxed information in response to the keystroke instructions of a remote caller using a touch-tone phone.

The Robofax system sells for \$2,999 and includes software, a voice mail board, a 9600 baud fax modem board, and a 200-page manual.

According to the company, installation takes less than an hour, and requires at least an IBM XT-class computer, 512 kilobytes of RAM, a 20 megabyte hard drive, DOS 2.1 or higher, and two free expansion slots.

More information can be obtained from Add-On America, 433 N. Mathilda Ave., Sunnyvale, CA 94088. Telephone: 408-746-1590.

Contact: HTC, 408-282-1926.

## TOP 10 Suzy\*

- 1 Aviation
- 2 Sextalk
- 3 Integrity
- 4 Kids
- 5 Family Tree
- 6 Computer News
- 7 Gamers Forum
- 8 World Watch
- 9 Computerized Accounting
- 10 Business Software

\* 10 MOST POPULAR SERVICES  
available on **Suzy** (Canada's on-line information service available by modem).

### Japan: Fax Machine Displays Faxes on LCD, Paper Optional

TOKYO, JAPAN, MAY 15 (NB)—Toshiba has developed a low-end version of a fax machine that is equipped with a liquid crystal display on which a transcript of the fax can be viewed. It is expected to cost around 150,000 yen (\$1,100).

Toshiba's latest fax machine, called the "Display Fax," is equipped with a built-in LCD (23 by 7 cm) and a memory. The received messages can be displayed and scrolled up and down on the screen. This feature allows the user to choose which fax messages to print out, thus it will save the fax paper.

Interestingly enough, the scanner part can be separated from the body of the fax machine so thick documents such as books can be transmitted easily.

This fax machine is expected to debut this fall, and will be aimed at home users. Other electronics firms are expected to follow shortly thereafter with similar products.

Contact: Toshiba, +81-33457-2100.

### Prodigy Part of Evil Empire?

LOS ANGELES, CALIFORNIA, MAY 3 (NB)—Newsbytes has received per-

mission to reveal the name of the Prodigy user who informed Newsbytes over a month ago (March 29, 1991, San Francisco Bureau) that he cancelled his subscription after finding sensitive personal information in files created and accessed by Prodigy. Hirshal Wolfson, a retired physicist/computer consultant and a resident of Culver City, told Newsbytes, "If anyone asked me, I'd tell them to stay away from it."

In a letter from Randie L. Moss, Prodigy services manager, to Wolfson, Prodigy claimed it could inadvertently access user data, but not if it was operated from a bootable, freshly formatted floppy disk. In that case, the letter stated, the information from the hard disk files would not be accessed by Prodigy. Prodigy President Theodore C. Papes yesterday issued a statement saying that Prodigy cannot read or access private data on its members' personal computers. Papes said, "Such wild speculation simply isn't true. Prodigy is committed to protecting the privacy of our nearly one million members."

Wolfson told Newsbytes, "I started out in this innocently. My hard disk was loaded, so I wanted to install Prodigy onto a bootable floppy, and I had to call them [Prodigy] to find out how to do it. I tried it several ways, and when my data kept showing up, I cancelled the service."

The *Wall Street Journal* reported Prodigy does access information from users' personal computers, but said Prodigy doesn't look at the data. In an article titled "Prodigy' Headquarters Offered Peeks Into Users' Private Files," Wednesday, May 1, 1991, Prodigy officials were quoted as confirming a software quirk that picks up unrelated Prodigy information off a user's hard disk, and also confirmed they could access that data. Brian Ek, a spokesman for Prodigy was quoted by the *Wall Street Journal* saying, "We couldn't get to that information without a lot of work, and we haven't any intention of doing so."

Newsbytes has reports from seven other Los Angeles residents, including a journalist for Newsbytes, of incidents involving the finding of personal data in Prodigy files. All of the seven have canceled their Prodigy services.

Prodigy is under fire from several sides. The Los Angeles District Attorney's office says it is broadening an earlier investigation into Prodigy to include possible criminal and civil violations involving alleged unfair business practices and unauthorized access to computers and computer data. Two class-action suits, filed in Los Angeles County Superior Court, have been moved to Federal Court, and are pending. *Board Watch* magazine reported on a story from *Infoworld* in which *Soap Opera Now*, a weekly newsletter, has sued Prodigy, alleging Prodigy illegally used stories from the newsletter in its online services.

Contact: Los Angeles District Attorney's Office, Tel: 213/974-3981.

### D.A.'s Office Soliciting Prodigy Complaints

LOS ANGELES, CALIFORNIA, MAY 6 (NB)—Rich Goldston of the Los Ange-



## NEWSBYTES

les District Attorney's Office has asked that anyone who has a complaint against Prodigy register it with his office in writing, as part of the Prodigy investigation regarding the alleged criminal and/or civil violations involving unfair business practices and unauthorized access to computers and computer data.

Goldston is accepting complaints from all over the country from both current and former Prodigy customers.

This announcement comes after disclosure that some Prodigy users claim they've found personal data in a file created and accessed by Prodigy called STAGE.DAT. Prior to this disclosure, the L.A. District Attorney's Office was investigating possible deceptive advertising charges.

Complaints should be submitted in writing to: Rich Goldston, Los Angeles County District Attorney's Office, Hall of Records, Room 540, 320 W. Temple Street, Los Angeles, CA 90012.

Contact: Rich Goldston, Los Angeles District Attorney's Office, Tel: 213/974-3981.

### Fax & Voicemail Called Faxpump

CAMPBELL, CALIFORNIA, MAY 15 (NB)—Companies seeking a cheaper way of running their own fax delivery and voice mail systems are being eyed by Faxpump Systems, which has just come out with the \$1295 Faxpump, an integrated voicemail with fax system for PCs.

Consisting of two 8-bit, PC compatible (ISA) plug-in cards, an external speaker, two telephone cords and software, Faxpump requires a PC with a minimum of 640K RAM (random access memory) and a hard disk drive with DOS 3.1 or greater. An optional fax/phone switch is \$199.

The way it works is this. The unattended Faxpump, using digitally recorded voice messages, verbally offers callers a set of menu options and, depending on which options are selected, can immediately transmit the desired document by fax if a call is being made from a fax machine.

The software keeps track of which

options are selected, and, if necessary, calls back the caller's fax machine and transmits them.

Its creators say Faxpump is fully compatible with all existing PBXs and Voicemail systems using analog lines.

"There is a tremendous need for automated inquiry handling," said Victor Hanna of Service Plus Technology, a national distributor of computer products. "The \$15,000 add-on solution offered by voicemail companies is out of the reach of most small to mid-sized companies and corporate departments."

Contact: Chris Claudatos, Closed Loop Marketing, 800/695-1210.

### Soft-Switch Integrates Fax, Telex with E-Mail

WAYNE, PENNSYLVANIA, MAY 16 (NB)—However efficient a means of communication electronic mail is, it only works if the person you want to contact has access to an e-mail system. Recognizing that, Soft-Switch is offering gateways to two other forms of electronic communication: facsimile and telex.

Soft-Switch said its new gateway products will let any e-mail user connected to a Soft-Switch mail backbone send fax or telex messages. A message may be sent to a distribution list encompassing e-mail, fax, and telex users. The fax gateway can also add graphics and logos to the message.

The gateways can also receive fax and telex messages, although the distribution of fax messages within a network is limited by the graphics capabilities of the workstations. Company spokesman David Zimmer explained the optical character recognition (OCR) technology is not yet up to converting an incoming fax into machine-readable text as in an e-mail message. So, if the addressee has a PC with adequate graphics capability, the message can be displayed as an image. Otherwise, it can be printed out for delivery on paper.

Telex is easier; since the message is in machine-readable form anyway, it simply needs to be translated. It can be delivered like any other e-mail message provided it bears the recipient's correct

## Answers

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Storage space is important because it determines how many files can be offered for people to download. Two gigabytes is more than three times as much as a typical CD-ROM will hold - that's a LOT of space. Just last month MIND LINK! received more than 900 new files from its members - every month there are hundreds more.

MIND LINK! is very active. Last month our members spent more than 5000 hours online and read more than 400,000 public messages. In excess of 12,000 pieces of mail were sent or received (locally and internationally).

MIND LINK! is B.C.'s largest bulletin board service.

### Is MIND LINK! growing?

MIND LINK! is growing quickly as more and more people discover what we have to offer. Each year for several years we have added 50% more phone lines and doubled our storage capacity. There are signs that we are beginning to grow even more quickly than that.

### How much do you charge per hour?

MIND LINK! does not charge by the hour. There is a flat monthly or yearly fee (as low as \$4.50/month) which covers almost every service. A few special services (like our international

fax service) have a low usage fee. We'll be happy to give you details.

### Is MIND LINK! a local service?

MIND LINK! is owned and operated by British Columbians but offers many of the advantages of the international services. MIND LINK!'s internet mail reaches more than 6 million people in every developed nation in the world. The Internet is the largest email network in the world.

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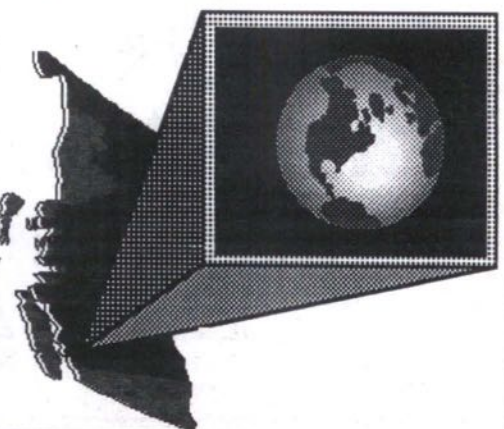
Nobody sponsors MIND LINK!. We are an independent business free of the restrictions and biases imposed by a sponsor; we do not sell, nor are we affiliated with, software and hardware vendors. We stick to our own knitting, which is online communications. This makes MIND LINK! a dedicated communications service for individual and business users.

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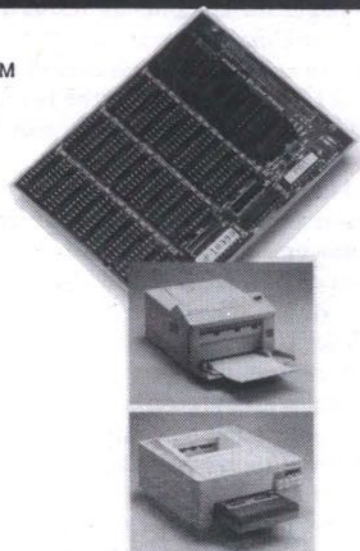


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e-mail address.

Soft-Switch's products provide switching and connectivity among a number of vendors' electronic mail systems.

Zimmer said Soft-Switch expects the gateways to be popular with multinational corporations that must use a mix of communications methods. Telex, though its use is declining in highly developed countries, remains popular in Eastern Europe and the Third World, he said. The capability will also ease companies transition from older technologies to e-mail, he added.

The gateways work with Soft-Switch's e-mail backbone. The fax gateway has a base price of US\$32,000; the telex gateway starts at US\$30,000. In both cases there may be additional customization charges depending on how the customer's backbone is set up, Zimmer said.

Contact: Soft-Switch, 215-640-9600.

## UNIX

### Calera OCR for Sun SPARC Systems

SANTA CLARA, CALIFORNIA, MAY 6 (NB)—Calera Recognition Systems is now shipping Omnifont OCR software for Sun Microsystems SPARC Unix systems, expanding Calera's line of OCR products beyond the PC and Macintosh computers. Using the same interface as Calera's Compound Document Processor and Recognition Server software, systems integrators and developers can now add OCR capabilities to existing installations by a simple recompilation.

Calera has also introduced a Developer's Kit for SPARC systems and a new version of the PC Developer's Kit for AT and MCA or Micro Channel Architecture-based computers, including those running Windows 3.0.

Contact: Calera, 408-986-8006, ext. 7002, fax 408-989-1440

### AT&T, Microsoft Join to Develop Unix LAN Manager

REDMOND, WASHINGTON, MAY 15 (NB)—AT&T, HP, and Microsoft have announced an agreement to have Bell Laboratories take over development of LAN Manager for Unix machines. LAN Manager for Unix will be influenced by Microsoft to comply with the overall direction of LAN Manager, but the brunt of the development will now be transferred to AT&T.

LAN Manager for Unix is the server application that will run under Unix. LAN Manager for OS/2 will continue to be developed by Microsoft and will influence the future development of LAN Manager for Unix. Microsoft's goal is to allow for interconnections among machines of many manufacturers and types. Microsoft hopes that all computer platforms will eventually encompass support of LAN Manager in one way or another.

The companies' current strategy calls for LAN Manager server applications to reside on OS/2 and Unix machines while all other machines will support LAN Manager client applications. If this occurs, Macintoshes, DOS machines, Suns, HPs and many others will all be able to reside on one network exchanging files and sharing resources seamlessly.

Up till this announcement, AT&T, Microsoft, and HP each had their own versions of LAN Manager under development. As a result of this agreement only one set of code will be developed, allowing for consistency and less customer confusion. The companies expect that the Application Programming Interface (API) for both products will develop jointly and compatibly. Microsoft and AT&T will both market the product internationally to hardware manufacturers and independent software vendors.

"We are committed to bringing one powerful, portable Unix system-based network operating system, as well as value-added services and support, to the marketplace," said Mike Murray, general manager of the Microsoft network business unit. "This cooperative development agreement will benefit customers by enabling them to use the power of client-server computing in a single network that includes minicomputers as well as PC servers running the Unix System and OS/2."

"Now there will be a single LAN Manager for Unix Systems for customers who want to take advantage of the extraordinary scalability of the Unix System and the advanced client-server capabilities of LAN Manager," said Bill O'Shea, vice president of systems marketing/ and development, AT&T Computer Systems. Contact: Microsoft, 206-882-8080.

## WINDOWS

### Central Point Does Windows, Upgrades Popular Utilities

BEAVERTON, OREGON, MAY 3 (NB)—Central Point Software is expected to announce major upgrades of PC Tools and Central Point Backup on Monday, the 6th of May. PC Tools, a very popular and highly rated utility software package that provides backup and other useful utilities such as password file encryption, undelete, and unformat tools.

PC Tools 7.0, priced at \$179 (\$49 upgrade), adds virus protection, a powerful remote computing capability, enhanced Windows support, including MS-DOS and Windows Backup, and extensive network support. PC Tools 7.0 will ship immediately.

Available in June will be the separate Central Point Backup for both MS-DOS and Windows at a list price of \$129 (\$30 upgrade).

Also due to ship in June is Central Point Commute, a new program which provides full-featured remote computing for LAN or local area network, modem, and direct connect computer systems. This program, which is also bundled with PC Tools, will carry a list price of \$129 and offers remote control for those operating a computer from home or directly connected to a laptop.

Central Point is apparently going to continue breaking some popular utilities out of PC Tools for those who just want one feature, but savvy purchasers will continue to buy PC Tools for the same and much more software at a very reasonable price.

Last fall the company separated Central Point Backup, offering it as a separate program but keeping the same fea-



## NEWSBYTES

tures in PC Tools, and now they are offering Commute as a separate program, but only after releasing it as a part of PC Tools.

There is some demand for this sort of unbundling but Central Point is giving the consumer a real break by keeping a low-priced complete set of tools available.

Contact: Central Point, 503-690-2650.

### Harvard Graphics 3.0 For Windows

MOUNTAIN VIEW, CALIFORNIA, MAY 16 (NB)—Fast on the tracks of other major publishing houses trying to cash in on the Microsoft Windows 3.0 bonanza, Software Publishing has brought out a Windows version of its Harvard Graphics presentation graphics package, as well as released version 3.0 of its main DOS-based product.

The company says that version 3.0 features enhanced charting, drawing, and presentation features by incorporating such tools as chart layout regions, a broad selection of chart types, and a spreadsheet view to simplify the chart creation process, while maintaining the product's ease of use.

The Harvard Graphics for Windows product meanwhile includes such features as Presentation Styles, ScreenShow application launching, and Dynamic Data Exchange (DDE), to analyze and communicate information.

With the Windows version, users have access to 12 chart types, including title, bullet, table, column, pie, organization, vertical and horizontal bar, line area, high/low/close, point and free form.

In addition to these chart types, Harvard Graphics for Windows offers a Chart Gallery of 88 slide layouts that are displayed through icons, enabling users to preview the design and charting options available for developing a slide.

According to the company, Harvard Graphics 3.0 also offers an extensive selection of chart types. Users can create charts from scratch, or select from more than 160 chart types available in the product's Chart Gallery. In addition to standard text, pie, and XY charts, the product offers new table charts that format text and data in up to 24 columns and rows, and color-coded ranges to customize data or emphasize key points.

The company maintains that new chart appearance options in the DOS 3.0 version, such as wordwrap and shrink-to-fit, automatically reformat text to fit within chart layout regions. Framing options let users place different box frames, such as three-dimensions and shadow, and add more dimension to data in a specific chart region.

Both Harvard Graphics 3.0 and Harvard Graphics for Windows will be distributed through Software Publishing's network of over 4,500 resellers nationwide. International language versions of Harvard Graphics 3.0 will be available in September 1991. Users of Harvard Graphics 3.0 can participate in a limited-time cross-platform exchange for \$50.

Contact: Viki Hahne, Software Publishing Corp., 415-335-2059.

### Lotus for Windows Due This Summer

TOKYO, JAPAN, MAY 16 (NB)—Lotus will release both English and Japanese versions of Lotus 1-2-3 for Microsoft Windows 3.0 this summer, according to the Nikkan Kogyo newspaper.

The Windows 3.0 version of Lotus 1-2-3 supports multiple worksheets and a pull-down menu as well as the conventional 1-2-3 menu of MS-DOS version.

The program provides a "What-You-See-Is-What-You-Get" feature to print out the screen image.

Apparently, Lotus was behind in the development of a Windows 3.0 version because it spent a great deal of time developing the program for IBM's Presentation Manager. Now, Lotus is simultaneously developing the English and the Japanese versions. The firm has already developed the beta-version of

the programs, says the Nikkan Kogyo.

Meanwhile, major Japanese business application program developer Creo will release a unique integrated program for Windows 3.0 this summer. The program code-named "Scene" has multiple features including word processor, spreadsheet, database, scheduler, graphics, and telecommunications. This program provides much faster switching from one feature to the other compared with other



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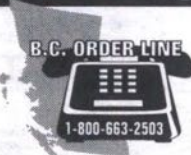
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## NEWSBYTES

application programs on Windows 3.0, the company says.

Contact: Lotus Development Corporation, 617-661-7900.

### New Chip Speeds Up Windows

SUNNYVALE, CALIFORNIA, MAY 14 (NB)—Weitek has announced the immediate availability of the personal computer industry's first user interface controller microprocessor, the W5086, which builds the software screen draw commands into the video controller card, and speeds up Microsoft Windows.

The single chip controller incorporates in hardware the key functions of Microsoft Windows' graphic device interface and is expected to increase the speed of the Windows environment and Windows applications, the company said.

Industry experts have expected for some time the introduction of a hardware-controlled user interface to speed up the performance of products such as Windows. However, the W5086 chip is the first to make those predictions reality, according to Weitek.

The company says that the chip offers up to 2,048 by 1,024 pixels resolution in monochrome mode, 1,024 by 768 pixels resolution with 16 colors, and 800 by 600 pixels or 640 by 480 pixels resolution with 256 colors.

Contact: Weitek, Tel: 408/738-8400.

### First Byte To Preview Monologue for Windows

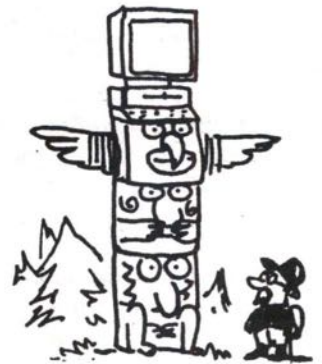
SANTA ANA, CALIFORNIA, MAY 13

(NB)—First Byte has announced that it will preview a beta Windows 3.1 version of Monologue, the company's text-to-speech software for PC-compatible computers, at Windows World '91, which runs in parallel with the 1991 Spring Comdex show. Comdex Spring runs from May 20-23 at the Georgia World Congress Center in Atlanta, Georgia.

This is an important development because applications software run under Windows are normally inaccessible to vision-impaired computer users and current 'Americans with Disabilities' legislation requires that business and government offices must accommodate special needs employees and customers.

Monologue for Windows is a Windows 3.0 version of Monologue which will read words presented in text-based applications but, unlike the MS-DOS version which can use the PC's internal speaker, Monologue for Windows will require an external speech accessory speaker.

Contact: First Byte, 714-432-1740.



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## CD-ROM

by Daniel Werger

## Overview

CD-ROM is really a marvellous medium.

Aside from its initial problems with formatting standards, pricing and lack of exposure, it is an amazing method of collecting and moving very large amounts of information from A to B (B being your computer). Although there are some criticisms of these products, the bottom line is that everyone reviewed here worked as described and provides the user with over 4 gigabytes (4000 megabytes) of information!

As a medium for distributing data, CD-ROM will, without doubt, be a part of computing life—not tomorrow—but very soon. It deserves a very close look, by both business and the general consumer. Putting all the hype aside, it does work wonderfully!

## Slow Growth

One reason CD-ROM has made a relatively slow penetration of the computer market is because the expense of producing a disc is not in the hardware/technology—but in the production/assembly of the data. A CD-ROM disc can hold up to 680 megabytes of data. The ALDE Shareware Carousel disc, for example, contains over 11,000 shareware files, 1100 graphic files, 2300 Macintosh files, 100 Commodore files, 600 Amiga files, 600 Atari files and sundry bits and pieces. That's over 15,700 individual files of one sort or another.

Many CD-ROM discs contain files for several microcomputer platforms on the same disc. This means that files meant for one platform can often be "scooped" by another. Mac graphic files, for example, can be read by a CD-ROM on a DOS platform without any problem.

## Half Full or Half Empty?

In terms of the space used on CD-ROM, many discs are only partially filled. The Microsoft Bookshelf has 155 MB of data (according to the NEC "CHKCD" utility), the ALDE Carousel uses 546 MB, the Compton's MultiMedia Encyclopedia 417 MB, the ALDE Grab-Bag 227 MB, and for some reason the PC-SIG disc crashed the system when CHKCD was run on it.

The products mentioned here represent a slice of technology which has had a bit of a hard time. CD-ROM drives and discs have been available for

# INVASION OF THE CD-ROMS

Massive storage media changes the nature of software

years now, but because of the slow growth in the number of titles, have not shown the rapid growth that the "CD Disc" for audio has. Audio CD's are virtually replacing 33 RPM vinyl discs for sound reproduction. CD players for sound systems can be bought for as little as \$99.

CD-ROM drives for computers, on the other hand, sell for at least 5 to 10 times that. As a delivery system for information, the CD-ROM drive is still too expensive for the average home computer user to justify. But, the CD-ROM situation is slowly improving. In 1986, there were very few CD-ROM titles (94) available. However, in 1991, the number of titles has increased to something in the order of 4000. The pressure is increasing on drive manufacturers to bring the prices down to under \$500, which will hopefully eliminate the barrier of the hardware purchase in accessing the growing number of titles. Right now, the average price for a drive sits around \$800-\$900 dollars (without interface).

## Built-in Hardware

Tandy is making an attempt to capture the potentially huge computer consumer market by introducing a CD-ROM drive for less than \$400 US. The CDR-1000 is quite slow, with a very slow data access time of 800 milliseconds. Another strategy to entice computer users to buy into CD-ROM is to bundle both a CD-ROM drive and a number of discs with a standard 286 or 386 system package. Sun Moon Star is one company marketing a series of systems like this.

Another company offering a built-in CD-ROM is Philips Magnavox. They offer both 286 and 386SX models. HeadStart costs about what you would expect for a mid-level 286 and 386SX with about a \$1,000 premium on the CD-ROM player. Aside from the advantage that you don't have to fuss with installing and

configuring a drive, they throw in a good software selection including Quattro Pro, Q&A, Publish It!, and Deluxe Paint, over a thousand dollars worth of CD-ROM disks (Microsoft Bookshelf, PC Globe, and a CD games disk among others). This unit also boasts a "Made in Canada" label. If you don't already own a computer and are wanting to get started with a CD-ROM unit, these are worth a look.

## The Chicken and the CD-ROM

The bottom line with CD-ROM involves that age-old problem of the chicken and the egg. Until more drives are sold, the overall number of CD-ROM titles will not increase. Until there is a large suite of titles to choose from, the impetus to buy a drive will remain low. The figures show that sales of drives and numbers of titles are doubling each year, but until they reach critical mass, the overall market will not be big enough.

Bill Gates of Microsoft has said many times that this "critical mass" of installed CD-ROM drives is somewhere around a million. 1989 figures show worldwide installed drives at a little over half that, which suggests the early nineties could see widespread acceptance of CD-ROM as an information transportation medium.

**Product:** PC-SIG IBM PC Shareware CD-ROM Disc  
**Publisher:** PC-SIG Inc., 1030 D East Duane Ave., Sunnydale, CA 94086  
**Price:** US \$495.

This disc comes with a 600+ page book documenting the thousands of shareware programs on it. The system requirements to access this disc are a IBM PC/XT/AT, PS/2 or compatible computer with a minimum of 256K of memory and a CD-ROM drive. Also, DOS 3.1 or higher and Microsoft MS-DOS CD-ROM extensions. The disc supports the High Sierra format (all the CD-ROMs

mentioned here do) and is accessible just as if it was a standard hard drive.

The package contains a CD-ROM disc and a manual. If you wish to explore the directory structure, just move to D: drive, type DIR as if you were on your hard drive. If you want help to see the various categories of software, type "GO" at the root directory and a shell program will guide you through the many categories of shareware.

Overall, this product is well designed and useful. The software available on it is a little dated, but still fully functional. One thing to remember is that CD-ROM is a publishing medium, not a magic carpet to "billions and billions" of up-to-the-minute programs. The time between the software being written and it finding its way onto a CD-ROM disc and then into your CD-ROM drive can span several months.

This particular disc is dated December 1990, which means the Windows 3.0 software selection is limited since the production and pressing of this disc took place in the late summer or early fall of 1990. This is not a problem, but should be kept in mind when considering purchasing a disc for specific types of programs (graphics for example).

The strong aspect of this disc and others like it is the fact that the range of software is HUGE. Accounting, artificial intelligence, astrology, bible study, business applications, chemistry/physics, DOS shells, engineering, fractals, gambling, games, ham radio, hypertext, label makers, language study, loan calculators, movie databases, music/sound, network software, paint/drawing programs, photography, printer utilities, programming tools, real estate, schedulers, security programs, spreadsheets, tax preparation, typing/educational word processing programs, etc.

Although many of these programs may not be of interest at any given moment, the real advantage to a CD-ROM disc of shareware is that you have instant access to a large base of programs which could fill a need quickly. Sort of digital instant gratification.

**Product:** Microsoft Bookshelf CD-ROM Disc  
**Publisher:** Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717  
**Price:** US \$295.

This is the most practical disc of all those reviewed here. Whether you're a

Continued on page 33

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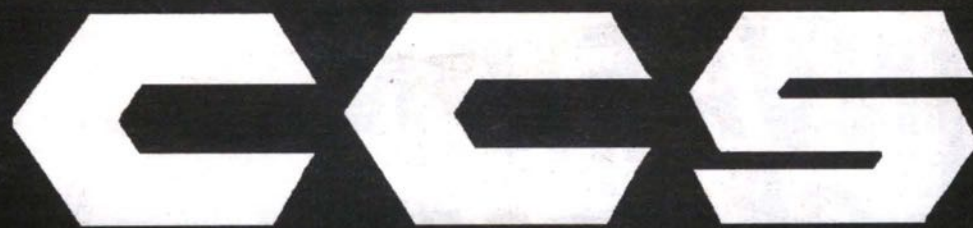
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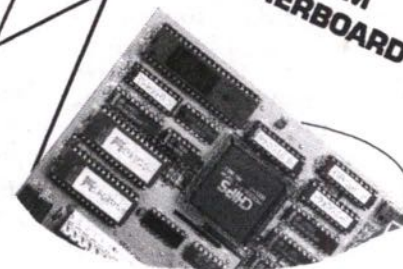
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## CD-ROM

Continued from page 31

research assistant, a student, an executive, or starting that great Canadian novel, this disc is instantly useful. It in fact goes a long way to justifying the purchase of a CD-ROM drive by itself. The contents are: The American Heritage Dictionary, Roget's II: Electronic Thesaurus, The 1987 World Almanac and Book of Facts, Bartlett's Familiar Quotations, The Chicago Manual of Style, Houghton Mifflin Spelling Verifier and Corrector, Forms and Letters, U.S. ZIP Code Directory, Houghton Mifflin Usage Alert, Business Information Sources. The system requirements are 640K memory, DOS 3.1 or higher, 1 CD-ROM drive and MS-DOS CD-ROM extensions.

All these functions are grouped under a single "hot key" TSR shell which pops up when the ALT-SHIFT keys are pressed. Search functions, cut&paste, etc. are all available to the user. With very little effort, this disc becomes a necessity for anyone who writes any number of words. The down side is it does not run under Windows 3.0.

This brings up a point which is not specifically a problem with Bookshelf, but common to many CD-ROM discs today. That is that every CD-ROM disc has a different user interface. If you plan to use several discs, you will have to learn and use several different user interfaces. The need for a common interface to access many discs is absolutely necessary. The most likely one is Windows 3, but we will have to wait and see.

**Product:** Compton's MultiMedia Encyclopedia CD-ROM Disc  
**Publisher:** Britannica Software, Inc., 345 Fourth Street, San Francisco, CA 94107  
**Price:** US \$895.

This product is what CD-ROM/multi-media is all about. A single disc with hundreds of megabytes of text, pictures, sound and knowledge.

The installation software creates a working directory on your hard disc and then loads a number of files. After installation, you type "CME" and things should begin to happen. Unfortunately, it did not. Whatever the problem was, the search software started under a different batch command.

When you reach the main menu, you are presented with a set of eight choices called "entry paths." Across the bottom are a set of tools, a note book, a help button and exit button. The entry paths

## Top 10 CD-ROMS—1990

- 1 Microsoft Bookshelf
- 2 Grolier Encyclopedia
- 3 Microsoft Programmer's Library
- 4 PC-SIG Library shareware software programs
- 5 Ziff-Davis Computer Library
- 6 McGraw-Hill Science and Technical Reference
- 7 Compton Encyclopedia from Encyclopedia Britannica
- 8 US History CD-ROM from Bureau Development
- 9 CIA World Fact Book from Quanta Press
- 10 World Atlas from Software Toolworks

Source: Barry Cinnamon, Bureau of Electronic Publishing, 201-408-2700

are the main tools for searching through the CD-ROM disc.

The first one is Idea Search, in which you type a word or sentence to describe what you are looking for. The next is Title Finder which presents you with a list of articles in the encyclopedia to choose from. Topic Tree divides all the articles into a list of topics for you to browse through. Picture Explorer lets you browse through photos (or you can type a description of the picture). U.S. History Timeline lets you browse along a time line to pick people and events to examine information on each. World Atlas draws maps on which you can point and click to get information on places around the world. Science Feature Articles entry path gives you a menu of 20 science articles that have been enhanced with sound, illustrations, animations, and additional text. The final entry path is the Researcher's Assistant which contains a set of research assignments dealing with 100 different topics.

The concept of this disc is great! All the parts and functions of a truly interesting reference tool are there. What really falls down about this product is the appearance of the windows, images and text. It has a very low-resolution look, with the photos being quite poor. All text is bitmapped (jaggy) and the overall look and feel is juvenile. It is acknowledged that this disc is aimed at a younger user, but it still could do with a little better interface.

Other than the appearance, the information contained inside is useful, although with the price being what it is, one should look at other products as well. The system requirements for this disc are IBM AT (286) or better, VGA card and monitor, 20 MB hard disc, Microsoft compatible mouse, 640K RAM, DOS 3.3 or higher, CD-ROM drive with support for MS-DOS CD-ROM extensions.

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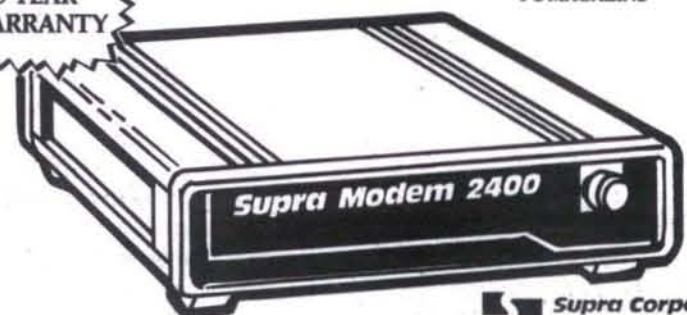


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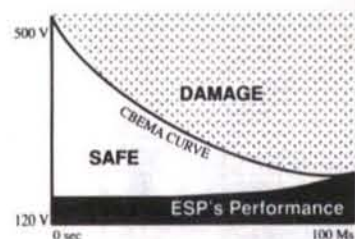


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## CD-ROM

# NEC Intersect CDR-73

## External CD-ROM Drive

by Daniel Werger

**Product:** NEC Intersect CDR-73 External CD-ROM Drive  
**Manufacturer:** NEC Canada Inc., 6200 Kenway Drive, Mississauga, Ontario L5T 2N3

**Price:** CDN \$1199, SCSI Interface for PC: CDN \$239.

The CDR-73 is a very good drive. It is fast for CD-ROM. The data access time is 300 milliseconds. Compared to many of the drives available, which can range from 300 ms to 1000 ms, the CDR-73 is attractive because of its speed. However,



you should remember, 300 ms access time is still many times slower than the average hard disk.

The technical specs on the CDR-73 are as follows (PC-DOS version):

PC platforms supported: XT/AT, PS/2, NEC Prospeed and Ultralite lines, various additional laptops and notebook PCs via NEC's new Parallel-to-SCSI interface.

Data capacity: 680 Mbytes

Data transfer rate: 150 Kbytes/sec

Data access: 300 ms typical

Power requirements: 120v/220v

Dimensions: (external) 9 1/16"W x 3 1/16"H x 10"D

Weight: 7.7 lbs.

Accessories included: caddy, data cable, terminating resistor, power cable, manual.

Warranty: Two years.

The CDR-73 also has the capability to play standard audio CDs. There is a headphone mini-jack on the front of the drive and two RCA (left and right) jacks on the back (for connecting to your stereo system). For the home user, this audio aspect is a pleasant bonus and for those who do not own a regular audio CD player, adds value to the purchase.

The installation and setup of this device was a snap. It took a total of 15 minutes from pulling off the shrink wrap to typing "DIR" at the D: prompt! In this particular case, no jumpers or dip switches needed to be fiddled with. Luckily, there were no conflicts with other device drivers and such. The SCSI interface card just snapped into place. The only hardware problem was that the interface and power cables are extremely short considering this is an external unit.

The software drivers come on a floppy, and use a menu-driven install program, which places them in the appropriate locations on your system. The only curious thing is that if the CD-ROM drive is not powered on when you start up your PC, the system complains during the autoexec.bat execution, and the CD-ROM drivers are not installed. I assume that this is for memory conservation, as these drivers and TSRs can eat a fair amount of RAM.

The unit comes with a CD-ROM disc "caddy" which holds the disc for insertion into the drive. The nice thing about this fairly common method is if you have several discs, you can buy a separate caddy for each and then never have to handle the actual CD. Although CD-ROM discs (like audio CDs) are very durable, one deep scratch could ruin a \$300, \$600, or \$900 investment.

The NEC drive represents the high end of the CD-ROM drives. There are many other drives out there that can do the job, but with regards to reliability and speed, the CDR-73 is a good bet.

## Which CD-ROM Should You Buy?

by Kirtan Singh Khalsa

CD-ROM drives are all too slow, but this isn't likely to change much because they are all based on a standard of what a CD-ROM is. So then the question becomes which one is the best to get.

There are many CD-ROM players on the market, but only a few major CD-ROM mechanism makers, including Toshiba, NEC, Sony, Chion, Sanyo, Pioneer, Hitachi. According to the June 1991 *MacUser* magazine survey of CD-ROM players, the Toshiba (350 ms) and Hitachi (400 ms) drives were generally the fastest, followed by Sony (just under 400 ms) and NEC (just over 400 ms). They did not, however, review the newest NEC drive (under 300 ms) which we look at here, the CDR-73, which is substantially faster than the one that they reviewed, so it is probably worth a look speed-wise now. Although *MacUser* found the EMAC Metro CD to have a "near-perfect set of features," with more features and better audio software than any faster drive, they condemned the Sanyo mechanism found in the EMAC unit, because it was one of the slowest. They also did not have too much nice to say about the Pioneer DRM-600 (over 1000 ms access). This is the "jukebox"-style unit which has six CD-ROMs in a cartridge. The article claims that it started life as an audio CD player, and its origins show in its lack of speed. However, if you just have to have that many CD-ROMs on line at once, it may be the way to go.

The difference between a unit with 300 millisecond access times and those with 400 millisecond access is barely noticeable in most cases. You can, however, notice the difference between 300 ms and 1500 ms. You should weigh a variety of features which are important to you. Think about how much time you are going to spend accessing a CD-ROM in real life. In our case, we use our CD-ROM only infrequently to access clip-art libraries. If, however, you are using it all the time, disk access speed becomes more of an issue.

Other factors to consider are support software, such as CD audio playing software; bundled CD-ROM discs, if any; cost of SCSI board to install CD-ROM unit into your computer; volume control; headphone output; internal speaker; fan; indicator lights; construction (plastic or metal?). Last but not least there is the price.

For further reference, see the April 1991 issue of *PC World Magazine* or the June 1991 issue of *MacUser*, which contain comparison tables of a large number of available units.

**Product:** ALDE Shareware Carousel  
**Publisher:** ALDE Publishing Inc., 6520 Edenvale Blvd. Suite 118, Eden Prairie, MN 55346  
**Price:** US \$225.

As mentioned above, this disc contains over 500 MB of shareware for DOS, Macintosh, and Commodore/Amiga machines. As well, many files are compressed using PKZIP. To move around the 30 subdirectories on the disc, one can use regular DOS commands or use the shell/user interface provided. There are many "quality" GIF, PIC, MAC graphic files on this disc, although the quality part may be questionable. Many of the graphics are a little dated and most are black/white or 16 colors. In general though, this disc has many useful programs/files, and could keep anyone busy for months. For BBS sysops, this disc would be a good accompaniment to their system, although because of the slightly dated nature of the files, maybe not the only source. System requirements for all three ALDE discs mentioned here are; IBM PC/XT/AT/PS/2 or compatibles, CD-ROM drive with support for MS-DOS CD-ROM extensions.

**Product:** ALDE Shareware Grab-bag  
**Publisher:** ALDE Publishing Inc. 6520 Edenvale Blvd. Suite 118 Eden Prairie, MN 55346  
**Price:** US \$99.00

This is the third update to ALDE's shareware discs. This one would be of particular interest to programmers, as it has lots of source code, compilers, utilities, templates, etc.. Also, BBS utilities, networking software, lotus 123, word processing, games and other shareware. As well as direct access, one can use "PICK", another user interface, to do searches based on key words and then unzip then to your hard drive or floppies.

### Summary

Of the discs mentioned here, the only one which was a bit disappointing is the Compton's Encyclopedia - and only because of the appearance of the screens and text. If they had done as good a job on the interface as they did on the packaging (which is very impressive), they would have a dynamite product. Bookshelf and ALDE discs all contained a wealth of information, and functioned well. If you plan to buy shareware collections, seek out the most current one available, and decide if you want archived, or unarchived formats (unarchived is better for personal use, archived files would be preferable for BBS operators).

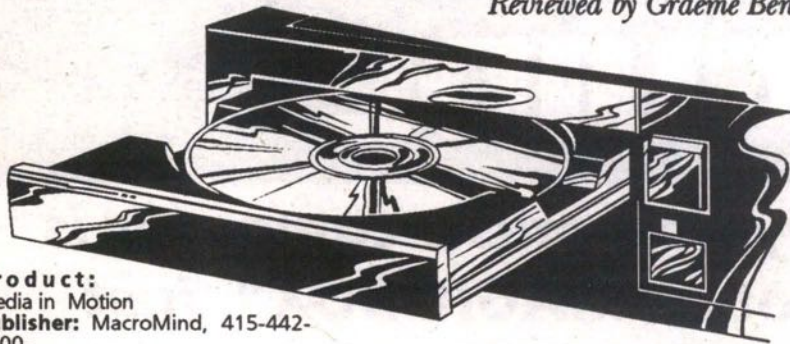
Daniel Werger offers color image scanning services in Vancouver (604) 736-9624.



## CD-ROM

# More CD-ROMS

Reviewed by Graeme Bennett



**Product:** Media in Motion  
**Publisher:** MacroMind, 415-442-0200.  
**Data on disc:** 187,297K  
**Price:** US \$124  
**Mac Only**

Media in Motion, the CD-ROM, while purporting to provide a showcase for multimedia computing, is little more than a promo piece for the MacroMind product line.

Nevertheless, the disc does include enough animation, sound and snazzy color graphics to successfully communicate the benefits of multimedia computing and illustrate how different companies and industries are using multimedia (and MacroMind's products) to communicate, educate, train and present. Additionally, Macintosh dealers would be able to make good use of this disk to show off the platform's graphical prowess.

Despite the relentless marketeering, there are some tasty examples included, especially those from Apple Computer, but be warned: many of the examples require a full 8 MB of RAM. (I could not run them on a 5MB Mac II, even while using "virtual memory" to simulate more RAM.)

Several of the tastiest bits are found in the MacroMind Three-D and Apple System 7.0 examples, but a wide variety of other samples show off such diversity as higher education classroom courseware developed at the Medical College of Georgia, in-house corporate training used by Hughes Aircraft, city planning, rainforest ecology and a proposed NASA development, plus many others.

**Product:** The World Factbook 1990  
**Publisher:** Quanta Press, 2550 University Avenue West, Suite 245N, St. Paul, MN 55114; (612) 641-0714; distributed by Wayzata Technology Inc., (800) 735-7321 or (612) 447-7321  
**Data on disc:** 664,032K  
**Price:** US \$99  
**Mac and MS-DOS**

Subtitled "The Government's own World Almanac produced annually by the U.S. Central Intelligence Agency," this collection of unclassified data runs the gamut from maps to economic data for virtually every country in the world.

Belying its MS-DOS orientation, the disc is filled with file names like "TWSRUN.OVL," but luckily for Mac owners, a floppy disk included with the package provides a Mac-compatible graphical front end. When run, it opens up two windows: one containing a black-and-white map, the other with the textual data of the country shown. A panel of

buttons resembling a VCR handheld controller allows browsing or searching the displays. Various menu options duplicate the browsing controls and add options for copying, pasting and printing the data.

Topics covered include: geography (land boundaries, claims and disputes), climate, terrain, natural resources, land use, environment, population, birth, death, migration and infant mortality rates, life expectancies, fertility rate, nationality, ethnic divisions, religion, language, literacy and labor force.

Extensive political information is given, including brief histories of the formation of each country, its type, capital, legal system, holidays, leaders, elections and political parties.

Addresses are given for diplomatic contacts, plus descriptions of the country's flag, economy, currency, communications system, marine, air and defensive forces. The text and images can easily be transferred to other applications.

Overall, I was impressed with this product. For students interested in political science, geography, contemporary history or other social studies, this is a valuable, if somewhat dry, resource.

**Product:** Spectrum Clip Art  
**Publisher:** ALDE Publishing, 6520 Edenvale Blvd., Suite 118, Eden Prairie, MN 55346; (612) 934-4239  
**Data on disc:** 639,648K  
**Price:** \$US 99  
**MS-DOS**

This is an MS-DOS clip-art collection that I have included here because it serves to illustrate one of the great things about CD-ROM. The files can be read and used on a computer other than the one it was intended for. Of course, programs for an IBM cannot be run on a standard Macintosh, but in the case of clip art, such as that found on this disc, all that is needed is a suitable conversion utility or program able to load the files.

The 6,420 copyright-free images on this disc are in PCX format; 4,763 of them are also stored as EPS files. To read the PCX files on a Macintosh, I used "PICTure This" by FGM Inc. (703-478-9881) to do the job. It can convert virtually any IBM or Amiga graphics format to Macintosh-compatible PICT files.

Once converted, I was impressed with the quality of these graphics, which tend to have an old-fashioned, pen-and-ink look to them. Some of the 300-dpi scans

continued on page 37

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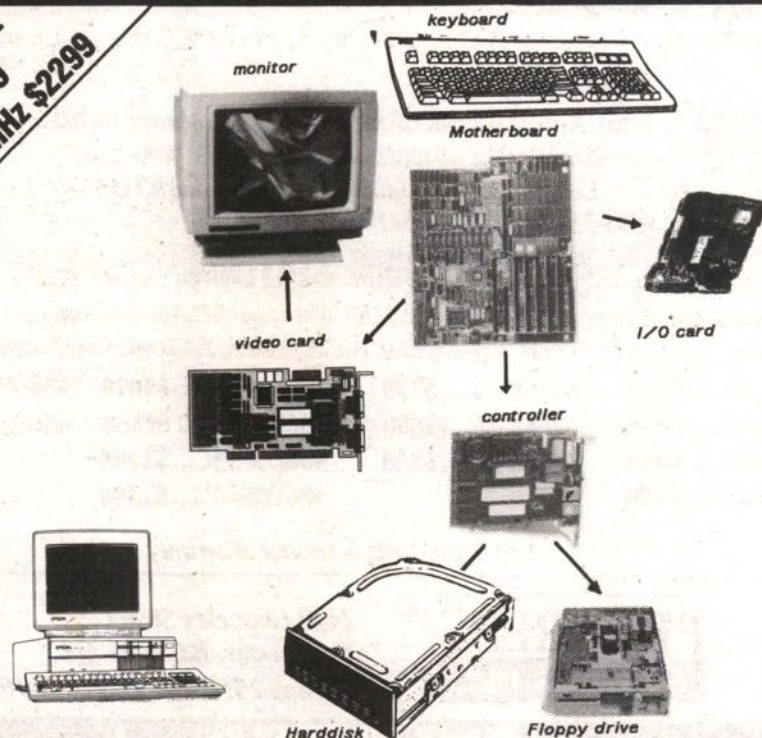
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## CD-ROM

continued from page 35

have a few rough edges, but overall, the images are useful and consistently well-drawn.

There is a fabulous selection of over 800 ornate decorative capital letters, such as those found in illuminated manuscripts (Figure 1), and plenty of borders in art nouveau and deco styles.



Figure 1. One of dozens of ornamental caps in various styles from Spectrum Clip Art's Calligraphy section.

The biggest problem with this collection is the fact that the images are not well indexed. The decorative caps mentioned above, for example, are simply stored in a directory called CALLIG02, and the file names have names like 0001.PCX and the like. The book included with the disc shows a small sampling of each directory, but does not illustrate or name each entry. There is a text file on the disc itself that does list the contents of these files, unfortunately this description merely states that file 0002 contains images of the letters "A and B" (etc.). Wouldn't it be better to call that file A\_AND\_B.PCX or something similarly descriptive?

It might take a long time to properly catalog this collection, but the user shouldn't have to do it.

**Product:** The International Graphics Library  
**Publisher:** Gazelle Technologies Inc., 7434 Trade St., San Diego, CA 92121; (619) 636-9999  
**Data on disc:** 536,028K  
**Price:** US \$299  
**Mac and MS-DOS**

While I am very impressed with the quality of graphics on this disc, I hesitate to recommend it to Canadian readers due to its absolutely relentless focus on all things American. Considering its name, this is most unfortunate, for while there are maps of each and every U.S. state included here, there is not even a single map of Canada among the 200+ images. The British Isles fare little better, seen only lumped in with the whole of Europe.

Meanwhile, we get seemingly innumerable images of U.S. flags, U.S. Presidential Seals, dollar bills, Capital Building, the Statue of Liberty and other images sure to stir American patriotic fervor. There are, however, some truly great images of the Earth, from realistic planet views to surreal globes that glow with the high-tech look of the evening news. This volume is sure to cause a sensation at your next presentation south of the border, but for Canadian productions, you will find it of little use.

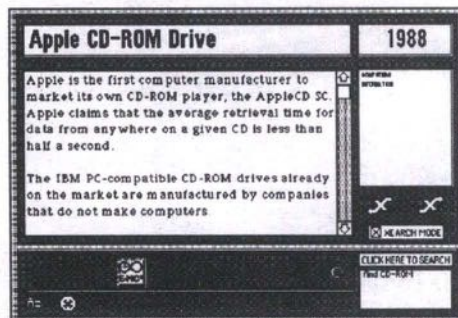
**Product:** Time Table of History, Science & Innovation, 1990 Edition  
**Publisher:** Xiphos, 8758 Venice Blvd., Los Angeles, CA 90034; (213) 841-2790  
**Data on disc:** 536,028K  
**Price:** US \$129  
**Mac and MS-DOS**

The promotional material for the Time Table of History claims, "This disc covers over 6000 key events in science and technology, from the 'Big Bang' to the Supercollider. Every word of every story is 'hot'—linked to other stories with the same word. Stories are linked to exciting multimedia effects, including over 1000 graphics and sounds."

Sounds great, huh? Unfortunately, the human interface of this HyperCard-based search engine is less than stellar. Large icons that look like buttons do nothing, while smaller ones are buttons, and Time Table was the only HyperCard-based system I tested that appeared to be incompatible with HyperCard 2.0.

Each time I tried to search for "MOON," the program aborted at a different point in the process. The first time, it failed during the search; the second time, it found a long list of references, but aborted as I clicked on a button labelled "Play." Each time it dumped me back to the desktop.

Once I dug out an old copy of HyperCard 1.2.5, things improved. I managed to get a grainy black-and-white animation of a moonwalk running with the "Play" command, but was disappointed that it was so slow. At about one second per frame, animation is too kind a term. Similarly, a sequence of a Saturn V's liftoff was not too spectacular. Other moon-related graphics were not animated, including a cutaway view of the innards of a Saturn V, Command Module, Lunar module, and that historic first step onto the moon's surface.



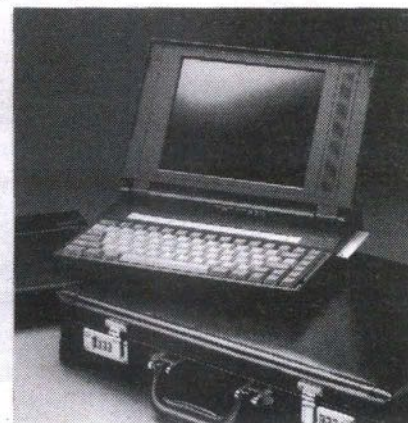
Although I could scarcely believe it, searching for the word CD-ROM produced no matches, despite the above entry I stumbled across by manually browsing.

Another complaint I have with the TimeTable is the all-too-brief explanations it gives for its entries. The microprocessor, for example, is given only one paragraph, while Marcius E. "Ted" Hoff, credited as its inventor, is given two paragraphs. (The U.S. Patent Office recently found that Californian Gilbert Hyatt had a legitimate claim to this title, although this information isn't mentioned.) There were a total of sixteen other links to the word, each distressingly brief.

Interestingly, some other entries were wrong or missing. 1986 was noted as the year of the release of the Atari 520ST, when it was, in fact, on the market in 1985. Neither the Commodore 64 nor the Amiga computers are mentioned at all.

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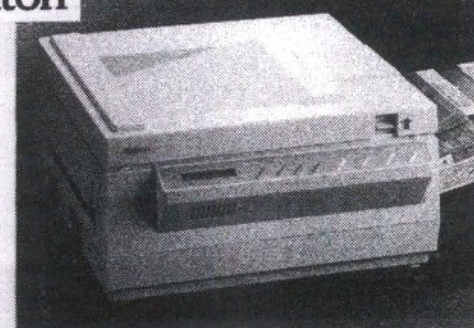
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## CD-ROM

I had other difficulties, too. Despite the claims on the package, I never found a single instance of an audio link, nor was every word of every story "hot." When I clicked on the word "Computer," for example, it merely brought up a generic search dialog. All in all, this product was an extreme disappointment.

**Product:** Ocean Imagery CD-ROM  
**Publisher:** Gazelle Technologies Inc., 619-636-9999  
**Distributed by:** EduCorp, 7434 Trade St., San Diego, CA 92126; 800-843-9497 or 619-536-9999  
**Data on disc:** 404,482K  
**Price:** US \$99  
 Mac and MS-DOS

The Ocean Imagery CD-ROM contains over 100 scanned photographs stored in 24-bit color TIFF, 24-bit PICT, 8-bit color TIFF, and 8-bit grayscale TIFF formats. This collection includes subjects such as water sports, scenic ocean

views, landscape panoramas, boats, piers, bridges and fish—virtually anything and everything associated with the briny deep.

The images are copyrighted by professional photographer Rick Doyle, but by purchasing the Ocean Imagery CD-ROM you are entitled to unlimited reproduction and manipulation rights with photographer's credit, provided that the images are not reproduced for commercial resale.

The images on the disc are neatly organized into sensibly named folders,

and files have already been saved as Photoshop TIFFs. The disc comes with a demonstration version of Aldus Photoshop that will let you view the images, but will not save any changes you make.

The CD also comes with the obligatory HyperCard search engine, and includes a copy of HyperCard 2.0v2. The HyperCard interface provides an easy method to browse through the pictures. It also lets you copy files, search for specific keywords, add comments, and

Continued on page 40

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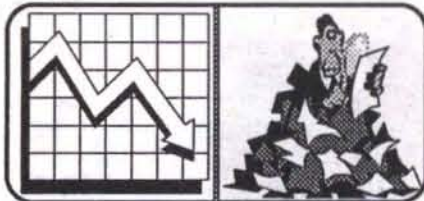
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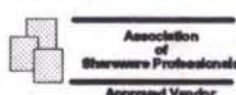
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view the images (viewing only works with a Mac II or greater with at least 4 megs of RAM.)

According to the company, the disc is also compatible with MS-DOS systems. The images are in 24-bit TIFF format. These files will have the naming convention of FILENAME.TIF and are compatible with a variety of programs that accept PC-format TIFFs, such as Aldus PageMaker, Ventura, or Corel Draw.

I found the images to be of excellent quality, artfully photographed and cleanly digitized. This disc is like candy for the eyes. I'm not sure who would want such a collection (travel bureaus, yacht brokerages and Southern California software companies, maybe?), but as digital photography collections go, this is a good one.

**Product:** Electronic Designer's Club CD ROM Volume 2  
**Publisher:** Dynamite Graphics, Inc., 6000 N. Forest Park Dr., Peoria, IL 61614-3592  
**Price:** US \$297  
**Mac and MS-DOS**

The Designer's Club CD contains an extensive selection of business, fashion, sports, medical and seasonal images, each rendered in an elegant commercial art style.

There are over 500 black and white EPS images, in Adobe Illustrator 88 encapsulated PostScript format, of consistently excellent quality in one of the best graphics collections for the Macintosh. A selection of images of senior citizens and ethnic subjects are a pleasant departure from the usual clip-art fare. There is also less than the usual amount of "rah-rah U.S.A." flag-waving imagery.

The purchaser is granted a non-exclusive license to use content as illustrative or decorative material that is included as part of a total graphic design or print communication produced for purchaser, employer of client. The collection is easily viewable with an included HyperCard-based utility called Image Quest, which allows searching by keywords or simply browsing. For example, searching for "Money" produced 16 matches, including one that contained the keyword description "cash, coins in stack, money, banking." Another click and the image is displayed. This utility was the best one on all the discs I tested for actually finding images. When dealing with vast amounts of data, keyword-based search and retrieval systems are vital.

Additional Image Quest options allow copying or deleting images. The images may be loaded into Adobe Illustrator (versions 88 through 3.0.1) or FreeHand 3.0 for editing.

**Product:** Down to Earth  
**Publisher:** Wayzata Technology Inc. 16221 Main Avenue, P.O. Box 87, Prior Lake, Minnesota 55372  
(612) 447-7321 or 800-735-7321  
**Data on disc:** 146,416K  
**Price:** US \$249  
**MS-DOS and Mac**

Subtitled "Close-up views of our natural environment by Josepha Haveman," this disc is probably most useful to anyone who writes or publishes materials about nature or current environmental issues and needs digital graphics to accompany their texts.

Some of the supplied images are in the form of scanned photos (color and monochrome TIFFs); video-digitized imagery of clouds, leaves, fruits, vegetables and other flora, illustrator-rendered drawings of the same images, plus a hodgepodge of other files, including images in PICT, MacPaint, EPS and FreeHand formats.

The collection includes a HyperCard-based tutorial on how to make use of the files and a browsing utility. Because the entire disc consists of the digital drawings, paintings and photographs of one person, the material has a certain sameness that reflects the style and ecological sensibilities of the artist, including a certain predilection for images of dead animals.

Sad to say, I didn't like anything on this disc. The subjects are mostly photographed or drawn in an unimaginative fashion, and the material includes some appallingly bad entries (see Figure 2).

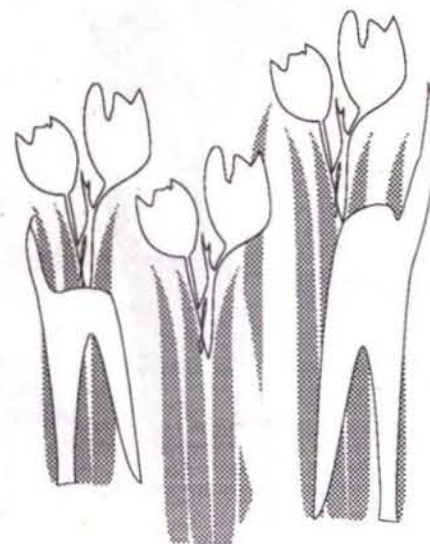


Figure 2. "Tulip Garden," a typically amateurish drawing from the Down to Earth collection. This one appears to have been badly auto-traced.

Even when examined from a purely technical standpoint, the quality of the drawings and video-digitized images is awful. For die-hard nature-lovers only.

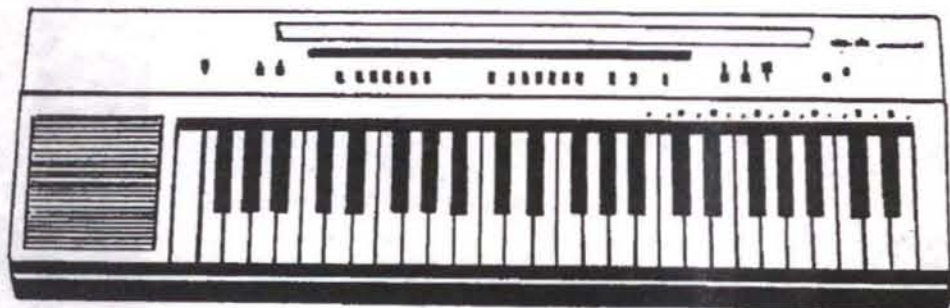


Figure 3. Note the poor quality of this sloppily-digitized 92K black-and-white image from the Wheeler Quick-Art collection.



## CD-ROM

**Product:** Wheeler Quick Art  
**Publisher:** Wayzata Technology Inc., 16221 Main Avenue, P.O. Box 87, Prior Lake, Minnesota 55372; (612) 447-7321 or (800) 735-7321  
**Data on disc:** 390,624K  
**Price:** US \$179  
**MS-DOS and Mac**

I have three major complaints with this collection of over 2,200 images: first, the files are named generically, "001.TIF, 002.TIF" etc. Second, the files as stored on the disc have the wrong file type: "TEXT" instead of "TIFF." Lastly (and, in my thinking, most seriously), the files are stored in a tremendously inefficient format. I loaded one 320K file into Adobe Photoshop and saved it back out as an LZH-compressed TIFF. The resulting file was 35K, or a whopping 90% reduction in size, with no loss of image data.

The supplied HyperCard viewer stack allows the viewing and saving of files, which does correctly change the file-type to TIFF, but does not compress the file. The viewer also forces you to re-select a file after viewing before it can save it. Ho-hum.

I could forgive all of these annoyances if the artwork was of decent quality, but as you can see from Figure 3, this is not the case.

Even worse, the TIFF file the viewer program created could not be read by DeskPaint, which normally loads such uncompressed files without problems. I cannot recommend this collection to anyone.

**Product:** The EduCorp Shareware CD-ROM  
**Publisher:** EduCorp, 619-536-9999  
**Data on disc:** 598,605K (disc 1); 174,601K (disc 2)  
**Price:** US \$199  
**Mac Only**

Disc 1 is a potpourri of product demos, utilities, pictures, fonts and other miscellany; Disc 2 is comprised entirely of HyperCard stacks.

Billed as "The premier library of public domain and shareware software for Macintosh computers," this two-disc set bulges with more freely-distributable software and HyperCard stacks than even the most avid Hyper-maniac could amass in a lifetime. Well, maybe.

The only trouble is, many of these programs and stacks are a couple of years old and contain obsolete or outdated information. Take, for example the Adobe Type Stack from disc number two. This reference lists Adobe fonts 1 to 50, available at the time it was created, back in 1988. Of course, Adobe has released dozens—if not hundreds—of new fonts since that time. A collection of Mac II-specific files (a great selection of color-only memorabilia, incidentally) similarly heralds from this time period.

A quick browse with the included utility (again, HyperCard-based) shows that the file-creation dates of most of the stacks on this disc are from this time period (lending credence to the theory that people actually used to create stuff with HyperCard). Hence, 1987's Mac Tips stack contains plenty of good System software tips that may be largely irrelevant to the Mac users of 1991 and beyond.

Another example, this time from Disc 1, is the demo version of Adobe Illustrator 88. As the name implies, this version is at least three years old. In all fairness, there

are files in the collection with creation dates as late as December, 1990.

I also noticed many duplicated files (for example, ResEdit IPS, ResEdit Help and Icon files) put in more than one appearance in the utilities folder.) The disc also contains at least three identical versions of a screen saver called Mõire cdev and no less than twenty copies of SoundMaster! But, really, so what! There are so many thousands of files on these discs, that a small amount of redundancy is not unacceptable—or surprising. I was, however, mildly amused to see that the beta version of ResEdit 2.1 on the disc is labelled "Apple confidential—do NOT distribute."

The operative word seems to be quantity, not quality. Virtually every PD utility I've ever seen is in this library, including a large helping of the kind of banal utilities that amateur Mac programmers are so inclined to write. (A classic example is one called "I'm Batman" that plays Michael Keaton's digitized voice uttering those famed words whenever you type your name. *Real* useful!)

Much of the most interesting and appropriate-for-the-medium content is bitmapped clip-art (including some great NASA images of space and the shuttle) and digitized sound files. These files don't age badly, and are probably most appropriate for "near-line" storage such as that afforded by CD-ROM. Because the files on these discs are not compressed or otherwise archived, some BBS operators may find them inappropriate as a "download section," but this same fact makes the files very convenient for running the occasional utility directly from the disc. EduCorp is correct: this truly is the premier library of its genre. If it exists, it's probably here—some gold, some gravel. There is no better collection.

**Product:** EduCorp Clip Art 2.1  
**Publisher:** EduCorp, 619-536-9999  
**Data on disc:** 89,640K  
**Price:** US \$59.95  
**Mac Only**

The EduCorp clip art library is a decent collection of clip art that makes up for what it lacks in consistency with value and variety. The images are of erratic quality, but tend to be fairly good (see Figure 4).

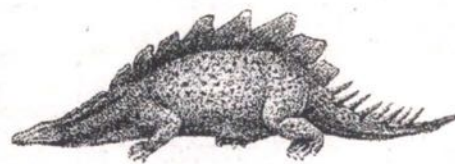


Figure 4. One of a collection of dinosaur pictures on the EduCorp Clip Art disc, this 9K image is clean and compact.

This collection, culled entirely from public domain and shareware sources, includes black-and-white, grayscale and color images in a variety of formats: EPS, Draw, PICT, TIFF, MacPaint, Scrapbook files, CompuServe GIF format, PixelPaint and Startup Screen.

Generally, the files are stored in efficient formats, and the files can be browsed and used without the supplied browser program, provided that you have an application that can read the wide range of file types (Photoshop can handle



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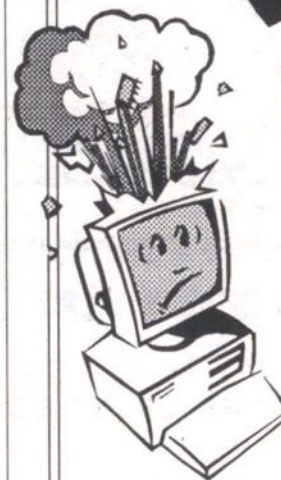
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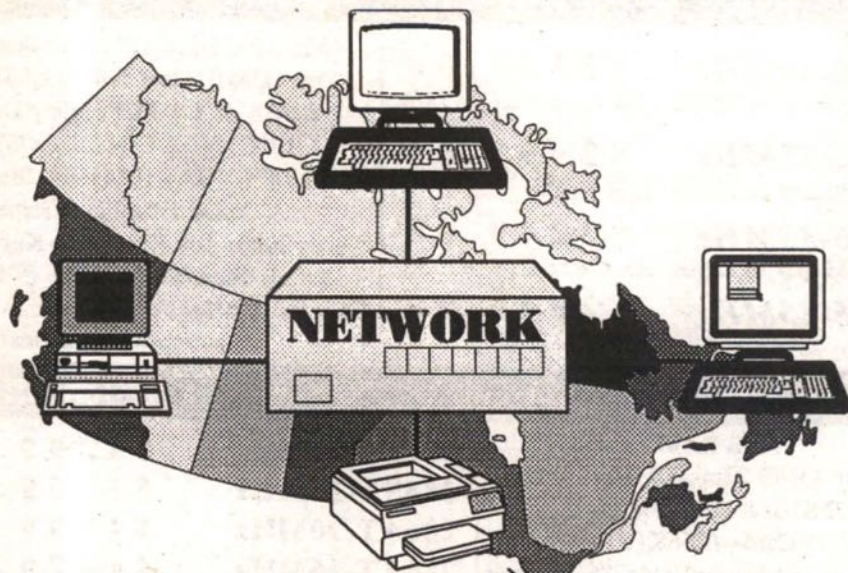


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### CD-ROM

virtually all of them). One of the worst things about this collection is the inadequate browser that is included. While it does have FIND, MARK and COPY options, it can only display MacPaint files. A handful of other picture viewer utilities are also included on the disc, but none are integrated into the browser stack.

Like most CD-ROM collections, and particularly those by this publisher, the biggest complaint I have is that there appears to be little or no discretion as to what constitutes suitable content. This lack of quality control shows up in the myriad of amateurish inclusions mixed in with a few real gems...just like most public domain software. Nevertheless, there are a few, if any, hopelessly poor images, and lots of great ones here, especially in the area of turn-of-the-century woodcuts and other antique-looking clip-art.

**Product:** ProArt Trilogy 1  
**Publisher:** Multi-Ad Services Inc., 1720 W. Detweiller Drive, Peoria, IL 61615  
**Price:** US\$299  
**Data on disc:** 13,198K  
**MS-DOS and Mac**

The ProArt Trilogy derives its name from the three categories of EPS art found on the disc: Business, Holidays and Sports. These subjects are represented by a total of over 350 images, each saved in Adobe Illustrator 1.1 EPS format. This gives them compatibility with all incarnations of Illustrator and Free-Hand as well as virtually all major DTP and presentation graphics packages.

Unfortunately, I found the images to

have some flaws that may present problems for quality-conscious users. For example, in Figure 5, notice how the center of the letters "O", "A" and "D" are a different color than the background? Splitting the shapes so that they are hollow is easy enough to do (the letter "P" is constructed this way, which explains why it does not share this problem), but should not have to be done by the user. (The problem also shows up when the EPS file is output to a PostScript printer.) Also, I found the images to be sloppily drawn, as seen by the erratic curves of the large letter "S."

In an illustration of a computer, shapes that did not display when printed were imbedded "behind" other opaque objects and corners were misaligned, leaving gaps in solid shapes. In an image of a credit card, lines that should have been parallel were not and rounded corners were poorly shaped.

**COMPACT  
disc  
DIGITAL DATA**

Figure 5. This screen image from the collection's Business folder has several flaws. Note the incorrect fill of the centers of some letters. Less obvious are the lopsided shapes of the letters "O", "A" and "T."

Overall, I was not impressed by this collection.

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## CD-ROM

**Product:** FM Waves CD ROM  
**Publisher:** FM Waves, 70 Derby Alley, San Francisco, CA 94102 (415) 474-7464  
**Data on disc:** 203,136K  
**Price:** \$US 544  
**MS-DOS and Mac**

The company calls it "clip art with an attitude," and I couldn't agree more.

In addition to 180 megabytes of artware, this collection (packaged in a 100% recycled cardboard sleeve) includes 20 MB or so of demonstration versions of software, including Photoshop, Studio/32, Illustrator 3.0 and a handful of others. With all these titles, you should have no problem examining these (or any other) images. There's over 5 MB of games demos on the disc, too, most of which are playable.

FM Artware comes with a booklet showing the images, which are consistently "uncomputerish" in their look. The collection tends to have a trendy, fashion-oriented look and, with the exception of 100 very normal, old-fashioned-looking animal images, appears to be the work of a small number of slightly demented contemporary artists.

The art is grouped into categories that include animals, borders, business cartoons, fantasy, fashion, glamour and one called "Agenda for the '90s," which features a mostly gloomy collection of drawings of drugs and violence, and environmental, sexual and political imagery.

Most of the images are stored in DeskPaint-compatible TIFF format at 400 dpi, although the collection includes a selection of EPS borders and so-called "bonus images" consisting of Macintosh-specific "Mactoons" (cartoon images) in EPS and Canvas formats. A TIFF-to-PICT conversion utility is also included. Overall, this is a very successful collection, in that it manages to go beyond the typical computer clip art look and subject matter. While FM Waves probably shouldn't be your *only* clip art collection, it may end up being your favorite one.

CroMACnon man—One of the images from FM Waves



**Product:** *The Paper Bag Princess* by Robert Munsch  
**Publisher:** Discis Books, 416-250-6537  
**Data on disc:** 334,410K  
**Price:** US \$74.95  
**CDTV and Mac**

As soon as I started up *The Paper Bag Princess*, I knew I was in for a treat. A window in the shape of an open book (neat!) appeared, and there was a full-color illustration of the diminutive heroine and a rather personable-looking dragon, in best storybook fashion.

Suddenly six years old again, I started clicking my mouse all over the page. Wherever I pressed, a little indent appeared and the word describing what I had clicked on was spoken and shown on-screen.

I soon discovered how to turn the page (a man's voice named Help told me to just click on the turned-up corner), and soon the story was unfolding before my very eyes, narrated by a pleasant woman's voice, complete with music and terrific sound effects. How could any youngster not adore this disc (or the story, which is quite hilarious)?

I was also impressed by Discis Books' "no questions asked" one-year warranty, which states that no matter how the disc is damaged, the company will replace it. Stepped on it? That's OK. Kids played baseball and used it as second base? No problem. This company obviously knows its audience.

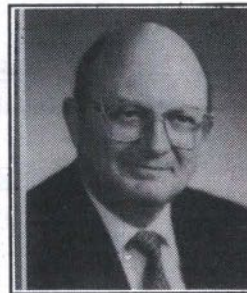
*The Paper Bag Princess* is just one of a series of children's books adapted and enhanced for CD-ROM by Discis Books. The disc also includes preview versions of nine other Discis titles (substantial previews, too—each contains close to 20MB of data.) These other titles include *Benjamin Bunny*, *Cinderella*, *Peter Rabbit* and an anti-classic with a great name—*Scary Poems for Rotten Kids*.

The only trouble with the whole concept is the US\$74.95 price tag of this high-tech storybook. If money is no object, though, it is a great product. I look forward to a time when CDs like this can be sold for a price comparable to the \$10 or so that their paper-bound equivalents sell for.

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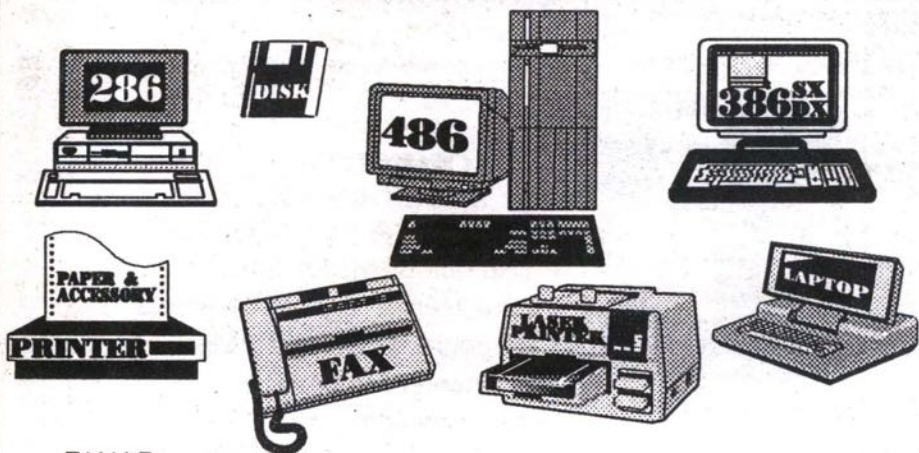
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CD-ROM



Figure 6. One of the excellent full-color illustrations from *The Paper Bag Princess*.

**Product:** Nautilus SPx  
**Publisher:** Nautilus, 7001 Discovery Blvd., Dublin, Ohio 43017-3219. Phone (614) 761-4111 or 1-800-365-1639  
**Data on disc:** 404,054K  
**Price:** US \$9.95/issue (based on 12 issues)  
**Mac Only**

Nautilus differs from all the other CDs mentioned here in that it aspires to be a regular monthly release; a sort of CD-based magazine containing software demonstrations and reviews, graphics/photo resources, games and entertainment, directories and databases and other trappings of Mac-based multimedia...all for only \$9.95 per monthly issue. (6-month subscribers pay

a little more—\$14.95 each.) No question about it, this is the best-looking disc of the bunch, with color graphics and lots of nifty stuff to try, like the CD+graphics demonstration that combines the player's audio CD-playing capacity with the ability to include graphics on the disc with the audio track—in this case, the lyrics of the song so that you can sing along.

A huge amount of material is present on this disc. You can listen to Bill Atkinson, author of HyperCard, tell in his own voice about the hypermedia revolution, why he created HyperCard, and what he hopes it means to the

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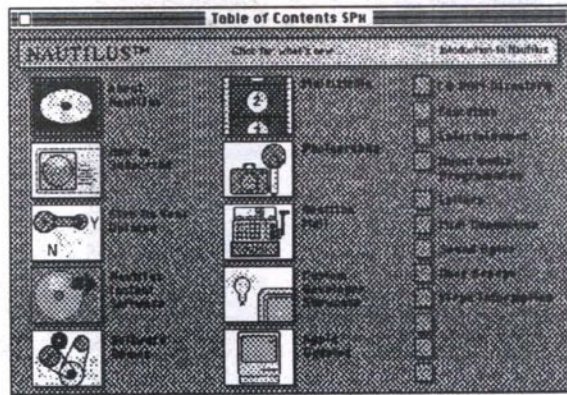
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## CD-ROM



future of computing. Another section is a multimedia explanation of the technology involved in creating CD-ROMs. You can listen to the narrated article, watch examples and read along with the text of the narration. In another section, there's a demo version of the famous Cosmic Osmo game; elsewhere you'll find literally dozens of foreign-language versions of Apple Macintosh System Software and HyperCard. (Reportedly, the latest Nautilus disc contains the full release version of the new System 7.0!)

How about a 5-minute demo of Warner New Media's CD-ROM version of Mozart's Magic Flute? Complete 5-, 15-, 30- and 60-second pieces of high-quality sampled music, freely usable in your own presentations? Maybe a gallery of digital photographers showing their works, or a selection of standard MIDI files of Bach pieces (complete versions of 24 preludes and fugues from *The Well Tempered Klavier*, complete with digitized sound "preview versions" for those who do not have a MIDI synthesizer) is more to your liking. There is a tremendous variety of creative and informational works here, from megabytes of clip art to what Nautilus calls "Instant Software"—complete versions of commercial programs on the CD that require only an access code "key" to unlock the data.

To demonstrate the potential, a full "Trivia Challenge" game is included on the disc, complete with its access code. In future issues, modem-equipped Mac users will simply click on a button to dial a toll-free telephone number, which will then access the appropriate access code, debit their credit card and unlock the software on their disc. It all sounds quite futuristic, but vastly more efficient and convenient than downloading entire software programs via modem.

Nautilus is SuperCard-based, and acts as a shell (perhaps the pun was intended?) from which other applications and presentations are launched, such as a demonstration version of PowerPoint that acts as the delivery vehicle for an Apple presentation of the benefits of System 7.0. Because of this swapping in-and-out of megabytes of data when nearly any selection is made or button pushed, Nautilus tends to be S-L-O-W. Switching from the Nautilus "shell" to HyperCard (which occurs frequently) takes almost a minute; the PowerPoint-based presentations are even slower.

This is more a problem inherent in the CD-ROM medium, than one that Nautilus can solve. Until CD-ROM drive manufacturers start equipping their units with large and efficient RAM caches and more intelligent drive electronics, the

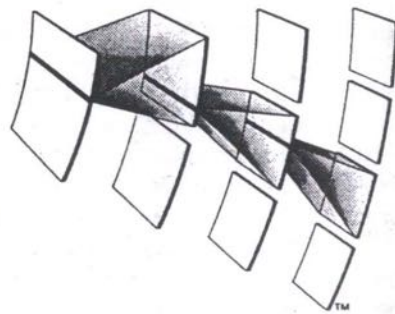
only thing you need to enjoy Nautilus is a little patience. Despite its sluggishness, I recommend this product most highly. (Nautilus is said to be planning a PC version of their disc subscription for the fall.)

The great thing about Nautilus, and CD-ROM technology in general, is that the vast amount of storage available makes it feasible to have materials with exceptional depth. Unlike TV, which tends to provide entertaining but shallow coverage of complex topics, CD-ROM has at least the potential to offer a rich environment for the information revolution to flourish.

*Graeme Bennett is still trying to estimate how many Gigabytes worth of CD-ROM data he looked at while researching this article.*

*Thanks to: David Bibby from Abaton Technology Inc., who was very helpful in assisting with initial problems with our EMAC Metro CD-ROM player.*

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## CD-ROM

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*by Peter Jones*

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**Price:** C\$1199

**Summary:** This is an exciting new consumer product which effectively puts a multimedia computer into the living room.

Commodore doesn't want you to think of its new Commodore Dynamic Total Vision (we prefer the much less contrived-sounding acronym) as a computer. By marketing the device as consumer electronics equipment to the masses, the company hopes to reach—or even create—a whole new market. CDTV just happens to have the heart and soul of an Amiga. Could this be the old trojan horse play?

CDTV is a piece of equipment designed to be added to a TV and/or a stereo hi-fi system. It consists of a standard audio CD player, a CD graphics player, and a CD-ROM based Amiga computer, housed in a box the size, shape, and look of a modern VCR.

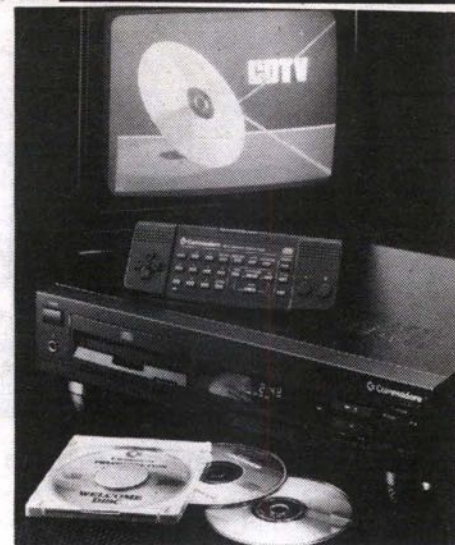
Commodore has packed a surprising amount into this product, which looks like a normal, matte-black piece of hi-fi equipment. At the back, a D-connector links it to a television set. Provision is also made for RF, RGB and S-VHS output. Also on the back are connections for a keyboard, an external disk drive, a mouse or a joystick, as well as serial and parallel and MIDI interfaces.

On the front left-hand side is a slot to receive a compact disc, which must first be inserted in a special caddy and then placed in the machine. The disc can then be played using the controls on the fascia or by using the remote control. This is a thin, oblong unit about six inches long, but differs from a normal remote control inasmuch as it is the long side which is pointed towards the CDTV. When playing an audio CD, the television screen displays a graphic control panel.

However, these features, nice though they are, are ancillary to the main purpose of the machine: to provide an interactive, multimedia machine in Joe Public's living room. To this end, Commodore has managed to cram in an Amiga computer, with a Motorola 68000 and one megabyte of RAM, which uses the CD unit as a CD-ROM. Since each CD can hold up to 640 megabytes of data, quick access to enormous amounts of information becomes available from the comfort of your armchair.

### Great Hardware, What about Software?

Parallel to the development of the CDTV, Commodore has ensured that selected software houses have been preparing the programs to go with the machine. Commodore has a number of discs available including reference works, such as encyclopedias; literature (the complete works of Shakespeare); and the Bible; and, of course, arcade-quality games. Such games are already one of the strengths of the Amiga, with its high quality graphics and animation and multi-voice stereo sound capability.



Dragon's Lair from Visionary Ltd., for instance, comes on five one megabyte floppy disks. One can only imagine the scope with 640MB on line!

The Welcome disk, delivered with the CDTV, starts by running a demo to show the graphic and sound possibilities of the machine, and then provides an interactive tutorial on how to use it. A digitized voice accompanies images of the machine and guides you through the various features. The remote control is used to guide the cursor about the screen to pick the various aspects you wish to see. This was quite well done.

Since not many compact disks were available, I hooked up an external 3.5-inch disk drive and tried out some of my Amiga software. This was great! My television has a 36-inch screen and with the CDTV connected via the SCART connector, the image was of a very good quality indeed. My nine-year-old son tried out various of his favorite games, most of which ran without problems. Those which required alphabetic input would not run, however, since the remote control provides only a numeric keypad, although it is possible to connect a keyboard directly to the CDTV. My son was also critical of the reaction times available from the direction indicators and the fire button on the remote control, which were much slower than with a joystick. But he was fascinated to be able to sit back in an armchair in the living room and play Amiga games on the big screen.

There is a certain amount of noise from the built-in fan of the CDTV. This was not obtrusive, although it could well become so in small rooms.

### The Competition

The CDTV has big potential. It is well in advance of the rival system CD-I (Compact Disk - Interactive) being developed by Philips and Sony, and is reasonably priced at \$999. (A man on the Philips stand at one of the European shows last fall was estimating the CD-I would list at more than three times that when it does come on the market). Sources at Commodore have indicated that negotiations are taking place with a large Japanese corporation on an agreement to manufacture the CDTV under license. If this happens, it should significantly increase the possibility of the CDTV becoming established as the standard for interactive multimedia in the consumer sector.

Especially if they don't think of it as a computer.



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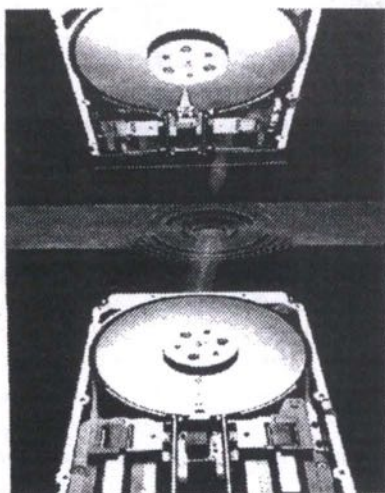
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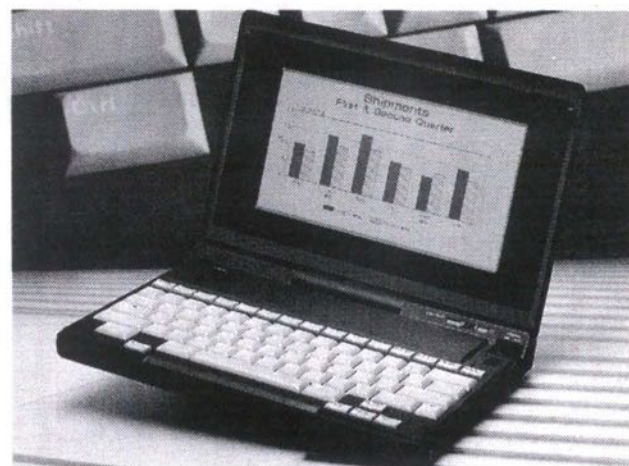
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## BUYER'S GUIDE

# Upgrading Your Computer

by Graeme Bennett

Most PC owners eventually get bitten by the Performance Bug. This insidious affliction soon manifests itself as a general state of depression when running graphical user interfaces or other computation-intensive programs, and is sometimes combined with a psychological state known as CPU envy. This malady most often strikes users of older computers, especially those with XT- and AT-type machines, but has been known to traumatize owners of relatively new 386SX and DX machines as well.

### The Doctor is In

The only known cure for this condition is to upgrade your computer. Luckily, this does not require the amputation of an arm and a leg.

### How to tell if you have The Performance Bug

Many patients don't realize that different problems require different treatments. Just look over this little questionnaire, and tell me where it hurts.

**Q: Do you use database-management applications?**

**YES—get a bigger, faster hard disk.**

**Q: Do you use 24-bit color applications?**

**YES—get a higher-performance video card with graphics acceleration.**

**Q: Do you use spreadsheets extensively, do statistical analysis or complex financial modeling?**

**YES—Get a math coprocessor.**

**Q: Do all of your applications run as fast as you'd like?**

**YES—You will live a life of quiet contentment.**

**NO—upgrade your computer.**

### Which CPU is for you?

Compared to owners of most other kinds of computers, owners of IBM compatibles are lucky when it comes to giving their computer a new lease on life by upgrading its CPU. Owners of PC, XT, 286 or 386 machines can easily upgrade to a 486, giving them all the benefits of a new computer at a reasonable cost.

Although it has the effect of a shot of steroids, this upgrade essentially involves giving your computer a heart transplant by replacing its motherboard. The operation itself is not particularly complicated, requires no soldering or wiring and can be done in about 30 minutes once the required components have been obtained. Truly, it is easy enough that anyone can do it.

### Take a Bus

One thing that you will have to decide on is which system architecture, or bus, your new-and-improved PC should have.

The classic AT-style system bus is known as ISA, for *industry standard architecture*. You can also get 386 and 486 machines that use this architecture.

Because IBM's original PC and XT design had an 8-bit bus, when the company was designing the 16-bit AT, it needed a way to improve upon the design while maintaining compatibility. Its clever solution was to add a second connector in front of the original one. This way, either 8-bit or 16-bit cards could be plugged into the system. Because this design was developed several years ago for the 16-bit AT, it limits the I/O (input/output) speeds of today's faster 32-bit CPUs.

Nevertheless, ISA-based machines are by far the dominant share of the market, and are adequate for the majority of applications.

### IBM Goes Incompatible

When IBM designed its PS/2 line of



## BUYER'S GUIDE

computers, they solved this problem by designing a new bus they called *micro channel architecture*, or MCA. This new design was (and still is) incompatible with virtually every other machine on the market, but was much faster than the old AT bus. As you may have guessed, you cannot use ISA boards in an MCA system, or vice versa.

Additionally, MCA has a great feature that allows plug-in cards to automatically configure themselves when plugged into the system. By comparison, many ISA cards have small switches (called DIP switches) or jumpers on them that must be fiddled with to get the computer to recognize the new addition.

A fair number of plug-in cards are available for MCA architecture, but far fewer than for ISA-type machines. Because IBM holds a number of patents on the design, companies that design boards for MCA machines must pay a license fee to IBM, which tends to add to their cost.

### The Clonemakers Gang Up

When IBM introduced the MCA, many saw it as an attempt to regain control of a market that had spiraled out of its control. By introducing a system with some very real advantages, it encouraged users to abandon the clones and jump on the PS/2 bandwagon.

In retaliation, a number of prominent manufacturers of IBM compatibles got together and developed their own enhanced design to address the same kind of issues that IBM was attempting to do with the PS/2's MCA architecture.

They called their alternative standard EISA, for *enhanced industry standard architecture*. The EISA design offers the bus speed, bus mastering, auto-configuring cards (called programmed option select) and other benefits of the MCA bus, with one important difference: EISA is downwardly compatible with older 8- and 16-bit boards.

The sockets on an EISA motherboard are positioned in the same place as those on an ISA system, but are twice as deep, with extra contacts below the ISA contacts. EISA cards have an extra-high edge connector so that when inserted into a slot, they extend further downward, making contact with the extra pins on the connector. Small tabs prevent older ISA-type boards from touching the EISA-only part of the socket.

As you may have guessed, EISA systems cost more than the ISA variety. In fact, you may end up paying nearly double what you would for an ISA motherboard, and unless you also purchase special EISA cards (also more expensive), you will not gain any significant benefits.

### 486

As regular readers of *The Computer Paper* will know, the central processing

unit (CPU) used in the latest, hottest IBM compatibles is Intel's 80486, often referred to as the 486.

The 486 contains about 1,200,000 transistors, and is considerably more complex and powerful a chip than the 386, which contains only 275,000 integrated transistors in its design. However, despite its increased complexity, the 486 maintains compatibility with earlier generations of Intel CPUs. You will still be able to use the software, disk drives, plug-in boards, printers and most other equipment from earlier PCs.

Although the current generation of 486 chips is rated at a clock speed of 25 megahertz (MHz, or millions of cycles per second), it still vastly outperforms a 386 chip rated at 33MHz. A 386 running at this speed is no slouch, mind you, running approximately 25 times faster than an original IBM-PC. Powered by a 486 chip, your computer will run a full 50 times faster than the original IBM-PC.

There are several reasons why the 486 can process data so much more effectively

than even the fastest 386. It has built-in on-chip functions that previously required separate coprocessor units, including an integrated memory management unit with paging (necessary for proper multitasking), a cache memory unit (with 8 kilobytes of built-in

on-chip cache memory), plus a high-performance floating point and integer unit which dramatically accelerates the math functions in software packages like Lotus 1-2-3, dBase, AutoCAD and other software designed to work with a math coprocessor. Because these functions are integral to the design of the 486 CPU, they are very fast. The 486 also has a special burst mode that can throughput data at an astonishing 80 megabytes per second.

The 486 can directly access a maximum of four gigabytes (4,000,000,000 bytes) of RAM memory. Even using the newer 4 megabyte RAM chips, it would take 9000 chips to equal that much memory. Suffice it to say that you're probably not going to outgrow this CPU anytime soon.

It is, however, safe to assume that faster versions of the 486 will appear, with speeds of 50 or even 100MHz. As with the first generations of many products, today's 25MHz 486 CPUs will eventually be superseded by faster models.

You can buy a 25MHz 486 motherboard for about \$1,650. A 33MHz version will cost a few hundred more.

### 486SX

Priced about the same as a 33MHz 386, a variation of the 486 dubbed the 486SX has recently been released by Intel. Costing about 40% of the price of a full-blown 486, the new chip does not include an on-board math coprocessor,

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AD #7





but otherwise is said to perform comparably to its more expensive sibling. An optional 486SX-compatible math coprocessor is available.

Industry analysts predict that within the coming year, machines based on the 486SX will be available at a price comparable to that of current 386s, and, because of their greater speed, will become more popular than computers powered by the 386.

(For more details on the 486SX, see the May 1991 edition of *The Computer Paper*, page 9.)

### 386 (DX)

As mentioned earlier, the 486 is the newest and most expensive chip in Intel's product lineup. Because of this, your budget (or significant other) may dictate that you restrain yourself to a less ultimate solution.

Since the 486 is basically a fast 386 with built-in math coprocessor, your next best bet is to upgrade to an 80386 motherboard. This CPU also includes the built-in paged memory management unit (PMMU) that allows Microsoft Windows 3.0 to operate in its so-called Enhanced Mode. Essentially, the PMMU can treat different areas of the RAM as completely separate "virtual machines," whose memory partitions cannot interfere with one another.

A PMMU, as mentioned earlier, is essential for true "protected mode" multitasking, virtual memory (where space on your hard disk can substitute for real RAM memory) and other so-

phisticated software magic. For example, with a 386 or 486 CPU, you can run a program like WordPerfect in a window under Windows 3.0, but this is not possible on an 8088, 8086 or 80286-based machine.

Some of the features of the 386 and 486 have not been fully exploited by the current generation of software, but don't expect that situation to last long.

A 25MHz 386 motherboard will cost you about \$650; a 33MHz one about \$850.

### 386SX

The 486 and 386DX are termed "32-bit" microprocessors. Without getting into

gory details, this means that they can process a full 32 bits of information in one operation. By comparison, a 16-bit microprocessor can only handle 16 bits. The 386SX is, in a manner of speaking, a 16-bit CPU that behaves like a 32-bit model. When asked to perform a 32-bit process, it performs two internal operations, and passes the result on as if the two had been done all at once.

This makes it slower for certain computations, but because it is effectively simulating a "real" 32-bit microprocessor, all programs that require a 32-bit CPU (with PMMU) work properly.

386SX motherboards are available in 16 and 20MHz versions, costing about

\$375 and \$450 respectively.

Because some features of programs like Windows 3.0 do not work on CPUs earlier than the 386SX and DX, I do not recommend bothering to upgrade a PC or XT to a 286-based AT, although these motherboards can be purchased for less than \$100 these days.

### Other Components

Once you have decided which type of motherboard to get, there are a few other basic components you will need. Here is a list with approximate prices. As with motherboards, prices vary greatly among the various vendors. Remember that you may be able to use many of the components from your existing PC. The notes after the list will describe some of the components that might need to upgrade.

Component	Price
case	\$120
200W power supply	\$80
keyboard	\$50
color monitor	\$400
VGA monitor adapter	\$70
floppy drive, 1.2MB	\$70
floppy drive, 1.44MB	\$70
IDE hard drive	\$250 (40MB)
IDE host adapter	\$40
RAM	\$70/meg=\$140
Total	\$1290
Remember to add in the motherboard!	

### Cases and Power Supplies

Owners of original 5-slot IBM-PCs will need to get a new desktop or tower case and a beefier power supply (I recommend a CSA-approved power supply of 200W or greater), but AT, 386SX and 386DX owners can simply pull out their existing motherboards and substitute a new 486 motherboard, which will slide right into their old 8-slot case. 8-slot XT owners need what is called a baby 386 or 486 motherboard if they want to keep their existing case.

One problem with using an XT case is that standard 16-bit AT boards are about one inch higher than the old 8-bit XT variety. Although many of today's boards are known as half or three-quarter height, you might find some boards that don't fit in XT cases.

### Keyboard

Most owners of older PC or XT computers will have to replace their keyboard when upgrading to a 286, 386 or 486. Although the connectors are the same, the older keyboard doesn't work due to a difference in what is called the scanning frequency. A few keyboards have a switch on the back side that changes this frequency, and some newer units can detect what system they are connected to and switch accordingly.

### Monitor and Video

This is a complex topic, with many different standards, but in today's market, the de facto standard is VGA, which can display 256 colors or shades of gray



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Fujitsu 90 MB Hard Disk (VC IDE 20 ms 64K Cache)	\$175
Fujitsu 135 MB Hard Disk (VC IDE 20 ms 64K Cache)	\$275
Fujitsu 180 MB Hard Disk (VC IDE 20 ms 64K Cache)	\$335
Maxtor 200 MB Hard Disk (VC IDE 15 ms 64K Cache)	\$610
MiniMicro 14" VGA Monitor (640X480) w/Oak 256K Card	\$225
Samtron 14" Super VGA Monitor (1024X768) w/Trident 1MB card (1024x768, 256 colours)	\$365
Amazing 14" Super VGA Monitor (1024X768) w/Trident 1MB card (1024x768, 256 colours)	\$365
TVM 3A 14" Super VGA Monitor (1024X768) w/Trident 1MB card (1024x768, 256 colours)	\$475
Seiko 1440 14" SVGA Monitor (1024X768 0.26 dp.) w/Trident 1MB card (1024x768, 256 colours)	\$660
TVM 4A NInter. VGA Monitor (1024X768 0.26 dp.) w/Trident 1MB card (1024x768, 256 colours)	\$515
NBC Multisync 3D (1024X768 0.28 d.p.) w/Trident 1MB card	\$785
Upgrade Trident 1MB Card to TSENG Lab 1MB Card	\$30

#### Math Co-Processors

	Intel	Cyrix
80287-10	245	N/A
80387SX-16	365	285
80387DX-25	575	445
80387DX-33	675	535

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CPI 2400B Int. Modem	\$75
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ZOOM 4800/2400 Send Fax Modem	\$95
PPI Pocket 2400B Modem	\$135
US Robotics 2400 Int. Modem	\$155

US Robotics 2400 Ext. Modem	\$165
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Microsoft Mouse w/ Windows 3.0	\$179
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3M 40 MB Tape Cartridge	\$28
3M 60/125 MB Tape Cartridge	\$32

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Oak 16-bit VGA Card (256K 800X600)	\$68
Oak 16-bit VGA Card (512K 1024x768)	\$95
ATI VGA Wonder Card (512K 1024X768) w/mouse	\$265
Tseng Lab ET4000AX 1MB VGA Card (1024x768, 256 colours)	\$155
Tricon Mega 1MB VGA card (Tseng Lab ET4000AX chipset) 1024x768, 256 colours	\$165
Trident TVGA 1 MB VGA Card (1024x768, 256 colours)	\$130
Samtron 14" VGA Color Monitor (640X480)	\$290
Samtron 14" Super VGA Monitor (1024X768 0.31 d.p.)	\$365
Amazing 14" Super VGA Monitor (1024X768 0.28 d.p.)	\$365
Seiko 14" Super VGA Monitor (1024X768 0.26 d.p.)	\$645
NBC Multisync 3D Monitor (1024X768 0.28 d.p.)	\$785
TVM 3A 14" VGA Monitor (1024x768 0.28 d.p.)	\$465
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## BUYER'S GUIDE

on your screen. You can predetermine the approximate quality of an RGB (red-green-blue) monitor by finding out what its "dot pitch" is. The smaller the number, the clearer the screen in most cases, although several other factors such as image geometry, misconvergence, and brightness play an important role, too. My monitor has a Trinitron tube with a .25 dot pitch (referred to as "point-two-five") and is one of the best I've seen. Try to get a monitor with a .28 dot pitch or better, but base your purchase on how the display actually looks, not what its specifications say. Remember, you are going to be spending a lot of time looking at it.

When it comes to PC video cards, there is a definite trend towards graphics acceleration and higher-performance video. While many home users are overjoyed just to have color, most soon discover that a few hundred dollars more buys substantial performance improvements, especially in graphical environments like Windows.

Amiga and Atari owners have had graphics accelerators built into their computers as standard equipment for years, improving the performance of their graphical user interfaces. While not standard equipment, there are many accelerated graphics cards for the Macintosh, too.

Your PC will benefit significantly from high-performance graphics, with visibly faster screen redraw, and smoother animations and scrolling. Users in the fields of CAD, DTP and graphics will especially notice the improvement, but as mentioned earlier, this last category includes virtually any program running under a graphical user interface like Windows.

Aside from acceleration, the trend in video cards is towards more colors on-screen and higher-resolution displays. Make sure that the video card you select supports your favorite software applications.

### Floppy Drives

Old PC and XT machines also had lower-capacity disk drives than the newer models. While these could still be used with the new motherboard, you should get a high-density floppy drive—5.25-inch drives have a capacity of 1.2MB, while 3.5-inch models hold 1.44MB per disk. Many people get one of each for maximum flexibility.

### Hard Disk

When you upgrade the CPU of your computer, the speed at which it can read data from the hard disk also changes. The speed at which the data can be read is dependent on what is known as the interleave factor, which has to do with the way that the sectors of the disk are set up so that the data can be read with maximum efficiency.

In a nutshell, it works a bit like this: the hard drive's platter is spinning at 3600 rpm, and has standard tracks organized into 17 sectors each. The system, after it reads a sector of the hard disk (say, track one, sector one), must process that data. Unless the computer is very fast, the disk will have spun past sector two before it is ready to read its data. The system must wait for sector two

to come around again on the next revolution of the platter. Once sector two is read, the same problem occurs with sector three, and so on.

An improved system is to have the sectors skewed in such a way that by the time the system has read and transmitted sector one, the next sector's data is positioned for immediate reading. For example, say that by the time it takes the system to read one sector, the disk rotates to where the read/write head is over sector four. By putting sector two in this location, it can be read as soon as possible. With this arrangement, you could read six sectors in one revolution. This is a considerable improvement over the previous example, which saw the system reading only one sector per revolution.

The interleave factor is set during an operation called a low-level format. This can be performed using the DOS DEBUG command or by using a hard disk utility package. Because this operation will destroy any existing data on your hard drive, I'm not going to gloss over the subject here. The book mentioned at the end of this article tells you how to do it. Or use a program like SpinRite II, which can determine the optimum interleave value for your system and even change the value without losing all the data on your disk.

### RAM

Those upgrading from a 386 may be able to utilize their existing RAM (usually in the form of single in-line memory modules called SIMMs), but the RAM in older machines was not in the form of SIMM chips, and would probably be too slow even if it was. You need 70ns (nanosecond) RAM for a 486.

As you can see, by assembling your own computer from the motherboard of your choice and the above components, you can save a considerable sum over store-built models. You might save a thousand dollars or more by upgrading your existing computer to a 386 or 486. If you are not feeling up to the challenge, you can get a dealer to do the work for you, supplying and installing the motherboard and necessary components into your existing PC. (Megatronics, for example, will install a 33MHz 386 motherboard in your PC for only \$50 over the cost of the board, including testing.) With the improved performance, you'll be feeling better in no time!

For beginner-friendly details on how to build your own PC, check out Aubrey Pilgrim's *Build Your Own 80486 PC and Save a Bundle* (\$20.50), published by Windcrest Books (ISBN 0-8306-7628-7).



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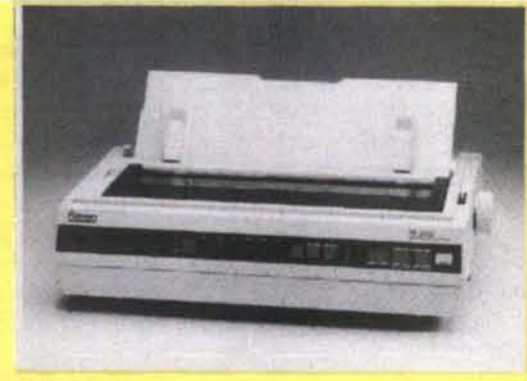
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# Dear Robert,

## Part II of a three-part series on 'how to buy a computer' for novices

To help you the best I can, I have been looking around some of the stores to check out the deals and talk a little shop. Almost everybody is so nice and knowledgeable it gives one comfort.

An experience in one store leads me to pass on this advice: if you don't like the assistant in the store then don't buy your stuff there. If you don't hit it off when you are buying then how's it going to be when you take it back broken? On this vein, check out the guarantee you get with the machine. The best one I found was for five years of parts and labor, anywhere in the world!

Anyway, to business. Last time, I told you what software can do for you and that your hardware does not work without software. The reverse is also true. Today we'll look at hardware components and how you measure their power. We will look at the CPU, disk drives, screens, printers and the different shapes of computers.

### The Components

A computer is made up of many components. I am not talking about wires and things like that but the larger items

like the monitor, the central processing unit (CPU), the printer and the like.

For each of these there is a decision to be made. Just like with a stereo system—if you know enough about it then you can put together a system to suit you. If you don't, then you buy one ready-made-up.

The most important classification of a computer is the microchip used as the CPU (the computer's brain). Just like Big Ben is the bell inside the tower, so the CPU is the chip inside the box. Although some people call the box that contains the chips a CPU, it really should be referred to as the "case." (More on that subject later.) First I'll describe the history of the chips.

### Potted History

The IBM PC (later to be improved and called the XT) hit the market in '81.

Boy, did they think it was fast then. One day in '84 the AT (advanced technology) machine was introduced and everybody said WOW!

The main difference between the two machines is the microchip that they use for their CPU; the XT is based on the 8088, the AT is based on the 286. The price of both these machines has been dropping rapidly, especially since they have been out-WOWed by the newer 386, 386SX and most recently, the 486. (Note: The names of all these chips start with 80 and they are referred to as the 80x86 family. So 286 is the abbreviation for 80286 and so on.) The 80x86 family of chips are all manufactured

by a company called Intel, however they too have been cloned by various companies, notably NEC (three initials, not "neck"), which calls its version of the 8086 a V30.

PCs go up in power from the 8088, through the 286, 386SX, 386 and finally the 486. The relative power of these being approximately 1, 10, 16, 20 and I am not sure about the 486. Of course the price increases with the power. You can easily justify buying a 286 but then, for not much more, the 386SX or a 386 could be yours.

I recommend that you buy a 386SX

based machine, dropping to a 286 or rising to a 386 depending on your financial situation. Get used to buying by numbers; it's good training for those Porsches and BMWs that we so richly deserve.

### What You Get For Your Money

#### 1. Future Programs

The 386 and 386SX machines are identical as far as software compatibility goes. If a program can run on a 386 then it can run on an SX. The focus of the newest generation of programs is on the 386 series and its unique capabilities.

#### 2. Data Bus Size

Oops, sorry, chum; it gets a bit technical here but all it means is how much information the CPU moves at a time. The 386 moves 32 bits at a time, 386SX and 286 move 16 bits. The trick of the SX is that it moves two 16-bit chunks of data when the software tells it to do 32. It, therefore, is doing two operations when the "true 386" need only do one. This explains why, for some operations, the 386 will outpace the SX. There are a load of other capabilities built into the 386 CPU, notably a memory management feature that allows a special "protected mode" that isn't possible on the 286.

#### 3. MHz—Megahertz

This is the clock speed for the CPU. The faster the better. A CPU chip has to do things by the clock, just like in rowing

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## YOUR FIRST COMPUTER

you have the cox to tell you when to pull. For a 286, 12MHz is considered ordinary; the 386SX comes in 16 and 20MHz; and 386s run at 20, 25 and up to 33MHz.

## Big Blue and the Clones

IBM is often referred to as "Big Blue," I suppose because the company is very big and its corporate logo is blue, although I've also heard that its large mainframe computers used to be painted blue. Or perhaps it's the blue suits they wear. Anyway, copies of IBM personal computers are called "IBM compatibles" or "clones." I suppose you could call a machine with IBM written on the front "an IBM original," but people tend to refer to them by their exact model names, as in "IBM PC/AT."

An IBM original has always been more expensive and arguably more reliable than the clone equivalent and this is by and large still true. There are a few companies that are as expensive either because they are as good or better or just because they are expensive.

Today there are two true-blue lines, the PS/1 and the PS/2. You may have seen the adverts for the PS/1 shown as a computer for the whole family: "Mommy, my computer has the answer to the National Debt." These PS/1s have a 286 CPU and are cute but slow. Don't buy one; you can get a clone cheaper. The other IBMs are called PS/2 and you don't want one of these either, unless you get a good deal. PS/2 is the name of a range of computers with 286, 386SX and 386 CPUs. They use new technology called Micro Channel Architecture (MCA) that you don't need and it will cost you extra cash. I'll tell you about all this in the next letter.

Clones or compatibles are where the deals are at. They are copies of the old IBM design and pretty well all the bits are interchangeable so parts abound and prices are low.

## Hard Disk and Floppy Disk

You need to keep your work even while you and your computer are switched off. To do this we use the circular equivalent of a cassette tape: the disk. As we have a player for a cassette tape we use a disk drive to access the information on a disk.

A floppy disk drive is a slot, usually in the front of the computer's case. Into this slot you push (gently!) a floppy disk. Floppy disks today are used mainly for

taking data from one machine to another and for making backup of the hard disk. You can run a computer on nothing but floppy disks but it is awkward. To start the computer you would need one disk with MS-DOS on it (called a boot disk), and when you wanted to run a program, you would have to change disks between programs and sometimes while you are in the middle of a program.

## Floppy Disks—3.5" or 5.25"

It is popular today to refer to floppy disks and floppy disk drives by their capacity. Hence you may equally well describe a disk as "3 point 5 inch high density" or "1 point four four mega-byte."

Floppy disks come in two sizes. The old industry standard is 5.25", the new is 3.5". If you have a 5.25" disk drive then a 3.5" disk will not fit and vice versa. For this reason you should check with your friends and office which size they use and get the same. To solve this problem, many machines come with two floppy disk drives (FDD), one of each size.

If you do not care about sharing your files with another person then I suggest a 3.5"; they are compact, durable and hold more data. I always feel that I am about to wreck 5.25" floppies. Incidentally, 3.5" are not so floppy, in fact they are positively stiff. They are not, however hard. Hard disks are something else entirely. Ridiculous, isn't it?

Each size of floppy disk comes in two sorts, High Density (HD) and Double Density (DD). A HD floppy drive can work with both sorts of disk but a DD drive can work only with DD disks. With two sizes and two densities of floppy disk we get four different memory capacities: 5.25" HD 1.2MB (Megabytes = million characters or thereabouts); 5.25" DD 360KB; 3.5" HD 1.44MB; 3.5" DD 720KB. (KB = Kilobyte, roughly one thousand characters. Precisely 1024, if you must know.)

The hard disk (just to confuse you, they're also abbreviated as HD sometimes) is a disk that you can't remove and it holds lots more information. To start a computer with a hard disk you simply switch it on and work, no hassle. I strongly recommend a hard disk because of the ease of operation once the thing is set up.

I am assuming that you are not going



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AD #9



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The speed of a hard disk is typically measured by the average time taken for the disk to find information when asked

for it. 65 ms (milliseconds= thousandths of a second) is slow and 17 ms is very fast, 28 ms is a good compromise between speed and cost.

## RAM—Random Access Memory

RAM has become the word for the microchip memory used by the CPU. DOS limits us to 640KB of useable memory so traditionally computers come with 640KB or less. Having spare RAM is good; some software can use more than 640KB and if not then you can make it

act like a very fast hard disk called a RAM disk. Today, many computers come with 1MB.

## Monitors

Think of the monitor as consisting of two parts: the television bit and a part that sits inside the computer case. The former can be called the screen or Visual Display Unit (VDU); the latter is called the graphics adapter. The two have to match.

The screen can be monochrome or color. Monochrome comes in black and

white, black and green, and black and amber. If you are getting monochrome try for white. I have worked with all three and find white most relaxing for a long session.

Many of today's applications use color extensively and, of course, games look better in color. It's really your choice. You can make a color screen work in black and white; I do.

The most important thing about the screen is not what color it is but how it works. In other words, what is its graphics standard?

Ask what video standard the screen supports. There are several standards including monochrome TTL (transistor/transistor logic) monitors, grayscale and RGB (red/green/blue) monitors, which are probably what you'll enjoy the most. RGB screens come in two major types, the older being digital, the newer ones analog (that's a switch, eh?). In a nutshell, analog monitors have a nearly unlimited palette of colors, while digital ones are limited to 16 or less.

There are also some rather obsolete TV-type composite video monitors, but these were mostly used with older computers like Apple IIs and Commodore 64s. I doubt you'd even find any for sale in the shops these days.

No matter what kind of monitors you look at, be sure to have a fiddle with the contrast and brilliance knobs. These things are just like televisions and one person's setting may not be for you. In any case, have a look at the screen and decide how clear it looks. Not all software use all screens to best advantage so, if you can, check out the software you will be using on the screen.

By the way, the screen from your computer will not work as a television nor will your television work with most computers.

## The Graphics Adapter

This part plugs into one of the slots inside the main box and handles all the drawing that goes on while you look at any graphics on the screen. If you didn't have one, you could only work with alpha-numeric characters. Many programs these days don't work without a graphics adapter.

I strongly recommend buying a graphics adapter of some sort. The trick is that not all graphics adapters do the same job. Try and get VGA; it is the best for your budget. It's versatile and can have 256 colors on-screen at the same time. You won't outgrow it for a long while.

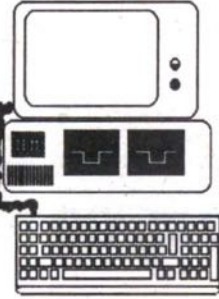
## Graphics Standards

**MDA—Monochrome Display Adapter** (80 columns by 25 rows). Does characters (text) only. Need more than the alphabet to fly a CF-18.


**CGA**—Color Graphics Adapter (640 by 200; 4 colors). This was the first standard for graphics so almost all the games written work on this. Laptops often come with this. CGA is characterised by large, clumsy-looking letters and poor-quality graphics. I'd avoid it.

EGA—Enhanced Graphics Adapter (640 by 480; 16 colors). Much better


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## YOUR FIRST COMPUTER

resolution than CGA; most games work with it.

VGA—Video Graphics Array (640 by 480; 256 colors). The latest thing, all the rage. Costs a bit more, worth the money. The visuals you can get are almost like photographs.

The thing that I really like about this standard that none of the others have is that it will support all of the above so you get EGA, CGA and MDA all on one graphics adapter. When you need good resolution you have EGA; when you want to play dumb games you have CGA.

Hercules—(720 by 350; Green, amber or paper white on black). Better resolution than EGA but I don't know of any games that run with this. It is cheap and fine if you don't want to play games, it is way better than CGA. I'd avoid it.

There are some other types of video adapters, including so-called "Super VGA" adapters (like VGA, only higher 800x600 resolution), and a standard called 8514, that can produce displays up to 1024 by 768, but they tend to be a trifle on the pricy side. Maybe next year, eh?

## Printer

Arguably, the most important part of the machine. This decides how your output looks. As always, you get what you pay for.

For me, the power of having my own PC is to become more productive; part of that productivity is to write the letter, print it and post it—just like that.

There is a lot of talk about letter-quality (LQ) printers. Judge for yourself. Get a printout at the printer's highest quality. Listen while it prints—some printers are noisy. There are a lot of machines that are called "LQ" but really are not. I suggest a new standard: RQ, or resumé quality. This standard asks the question: "Would you send your resumé to a prospective employer in this quality of printout?". If the answer is "Yes" then you, at least, are happy.

Look for a printer with paper park and some way of putting a single sheet of paper in without taking the regular paper out. If you have this "single sheet" facility, then you can use the cheaper fanfold paper (see text box) most of the time, and put in a sheet of the good stuff when you are ready to print the final copy.

My printer, the Raven PR-2417, emulates (imitates) other printers so I get

jolly nice features like fancy characters and graphics. You will not have much problem if your printer emulates an Epson LQ or an IBM ProPrinter.

Ask for a demonstration of the quality of output and ask them to let you watch it get printed. Try to check if the printer works with your software. Get a narrow-carriage printer unless you need the wide one; the narrow one will print standard 8.5" x 11" and will be cheaper.

## Printer Buzz Words

**Fanfold Paper**—the stuff that has holes down the sides and looks like computer paper. If you buy a good weight of paper with easy-to-tear-off holes (sometimes called clean cut) then it looks pretty good.

**Cut Sheet Paper**—regular sheets of paper. For the cheaper printers you will have to spend an extra \$100 for a "cut sheet feeder," if there is one available for your printer. For the more expensive printers such as laser printers you can only use cut sheet paper.

Fanfold paper works out at less than 1 cent per sheet and laser printer cut sheet at 5 cents per page. You should consider this when you buy your printer.

**Paper park**—allows one to move the fanfold temporarily out of the way while you put a single sheet of the good stuff in at the front; very useful for the occasional business letter.

**Dot matrix**—a way of printing. The characters are made up of dots rather like those on a color magazine. Common pin numbers are 9 and 24; the more pins, the better the quality of output. Typical prices are 9-pin: \$250; 24-pin: \$400.

**Laser printer**—the best quality output available. Expensive but becoming more affordable every year. Acts like a photocopier using light to make black powder stick to a sheet of paper. Prices start at \$1100 and go a lot higher; the cost per sheet can be 5 cents but then you are getting great printouts.

**DPI**—dots per inch. Used as a measure of the quality of the finished printout—the more dots per inch the better the printout. A 24-pin dot matrix probably produces 180-dpi, a laser printer 300- to 400-dpi.

**Ink Jet or Bubble Jet**—uses a different method to the laser printer but produces similar results in terms of DPI. These printers are quiet and produce good quality output (even better than



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24-pin dot matrix units). This is the print method for most portable printers. Prices start at \$500 but do note the cost per sheet can be as high as 5 cents.

### Different Shapes Available

The size and shape of the right computer for you depends on how you want to use it. Read this section and think about it. Have a look around your apartment and see where a computer might fit. Remember to leave space for papers and stuff so that you can spread out around the computer when you work.

Computers come in several sizes: notebook, laptop, desktop, mini-tower and tower. A notebook is the size of an A4 folder and would be nice but costs quite a bit. A type of upright case called a tower or mini-tower often comes as an option for more powerful machines; as we are on a low budget I shall not recommend paying extra for one of these unless you really need to keep your computer down on the floor beside your desk.

### Laptop

A laptop can be small enough to fit in a

briefcase. They cost more money so you may not even be able to afford a 286-based CPU and will have to go with an 8088. If you want to use the computer when you travel then you may have to buy a laptop; short of the bath you can use them anywhere.

They are at their best used from mains as the batteries do not last very long without charging. Many people buy extra battery packs if they want to use one of these on a plane, for example.

There are several disadvantages to laptops: they are typically unable to uti-

lize the wide variety of plug-in PC cards, their keyboards are small and their displays sometimes difficult to read in low or bright light. I doubt that you would be satisfied using a laptop as your only computer, even if you could plug a regular monitor screen into it (with many, you can't). There is a chap I know who uses his laptop a lot and has no problems; I guess it's whatever you are used to but it would drive me crazy. See what you think when you see one in a store. The screens used with desktop and tower units are larger and easier to read.

### Desktop

To fit on the desk there are two sizes, the regular and the more modern small-footprint. With a small footprint you can typically add three extra items; with the larger box, five. I'll describe the extra items in the next letter. I don't think that you will need more than one or two, so get whichever size appeals to you most.

In any case you might want to put the CPU on its side on the floor. This is a space saver on a small desk. I personally do not like the CPU on the desk with me. If you are going to do this, check that the warranty will still be valid, as some computers don't like to be on their side.

### Tower and Mini-tower

These are units that are designed to be free-standing. The tower sits on the floor and has pots of room for extras. The mini-tower is half the height and has less room for extras. You will usually be asked for more money for one of these. For the vast majority of home users there is too much room in one of these machines, so why pay for it?

### Power

Power is a combination of CPU type, amount of RAM, and size and speed of hard disk. The combined result is the speed at which you can get your computer tasks done. It seems that computer users always want more power.

I would add the printer as a measure of power, as the quality of output is just as important as how fast you got it.

### Signing Off 2

Next time I will close this topic by telling you about all the extras you can buy, how to get started and get training, and I will deal with a few special topics that don't fit in anywhere else.

Till then get out your copy of *The Computer Paper* and price up the equipment as described below. Telephone your local suppliers, ask questions, get your feet wet.

#### Machine 1

286, 40MB Hard drive, 3.5" high-density floppy, Color VGA, Cheapest printer you can find, MS-DOS, Microsoft Works

#### Machine 2

386SX, 40MB Hard drive, 3.5" high-density floppy, 5.25" high-density floppy, monochrome VGA, 24-pin dot-matrix printer, MS-DOS, WordPerfect, Mavis Beacon Teaches Typing

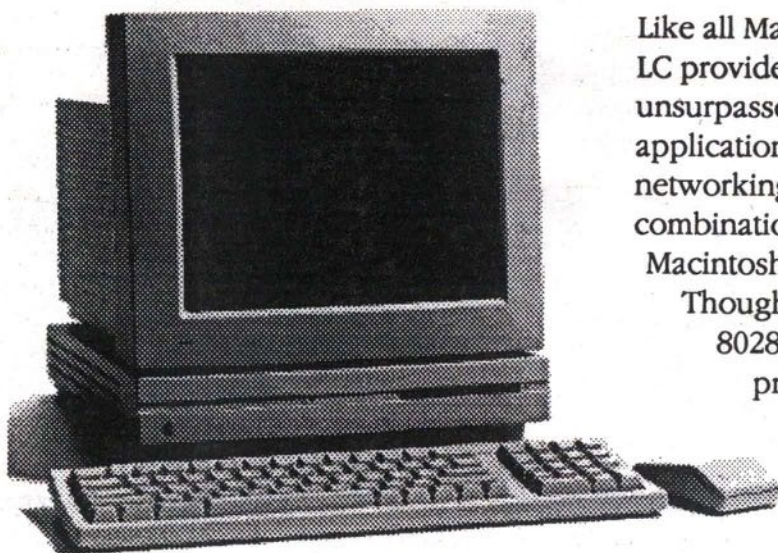
#### Additional Stuff

Box of fanfold paper, diskettes, diskette box, printer cable.

Yours till the disk drives,

*Mike*

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Like all Macintosh™ computers, the Macintosh LC provides users with the benefits of unsurpassed ease of use, thousands of graphical applications that work well together, built-in networking, and an easy growth path. This combination significantly differentiates the Macintosh LC from the competition.

Though priced similarly to many leading 80286-based systems, the Macintosh LC provides performance comparable to that of 80386sx machines (source: Ingram Laboratories Benchmark Report, July 1990). Moreover, the Macintosh LC provides all the advantages of Macintosh.

The Macintosh LC can support an Apple //e ® card which enables you to use nearly all Apple //e software. While in the Apple //e mode, the card supports not only 5.25" and 3.5" drives, but also printing to a LaserWriter ® over LocalTalk™.

This solution enables customers to use thousands of existing Apple //e applications and protects customers' investments in existing Apple //e software and hardware.

The Macintosh LC computer's ability to take advantage of a wide variety of general productivity applications, support for LocalTalk™, EtherTalk™ and other network environments, and optional ability to run Apple IIe software, make it a strong solution for a variety of markets, including Education, Business, Government, and Home.

For the home, the Macintosh LC provides an affordable, color capable computer for general productivity, education, or entertainment. In addition to general productivity applications, you can use the Macintosh LC for office work performed at home, management of personal finances, management of personal databases, instructional programs or games for home education, creative interests using music, graphics, and programming.

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# System 7.0

## New Operating System for Macintoshes

CUPERTINO, CALIFORNIA, MAY 13 (NB)—Apple Computer has announced that it is now shipping the System 7.0 upgrade to the Macintosh operating system, a product that it calls "the most significant enhancement to Macintosh since its introduction in 1984."

Among the features contained in the new operating system are improved handling of fonts and desk accessories, "virtual memory" which allows the automatic expansion of memory available for applications, "InterApplication Communications" (IAC) which allows disparate programs to dynamically work together, and "Data Access Manager" (DAT) which allows access to mainframe and mini-computer-based SQL (structured query language) databases.

Contact: Apple Computer Inc., 408-974-3019

### Mac System 7 Features Range from Subtle to Significant

BOSTON, MASSACHUSETTS, MAY 10 (NB)—System 7.0, the new version of the Macintosh operating system, includes a handful of quite significant new features. But some of the most interesting changes in the system are small refinements.

In briefings before the official announcement, reporters and industry analysts learned about a range of System 7 features from virtual memory and multitasking to a change in the way clicking the mouse selects a folder.

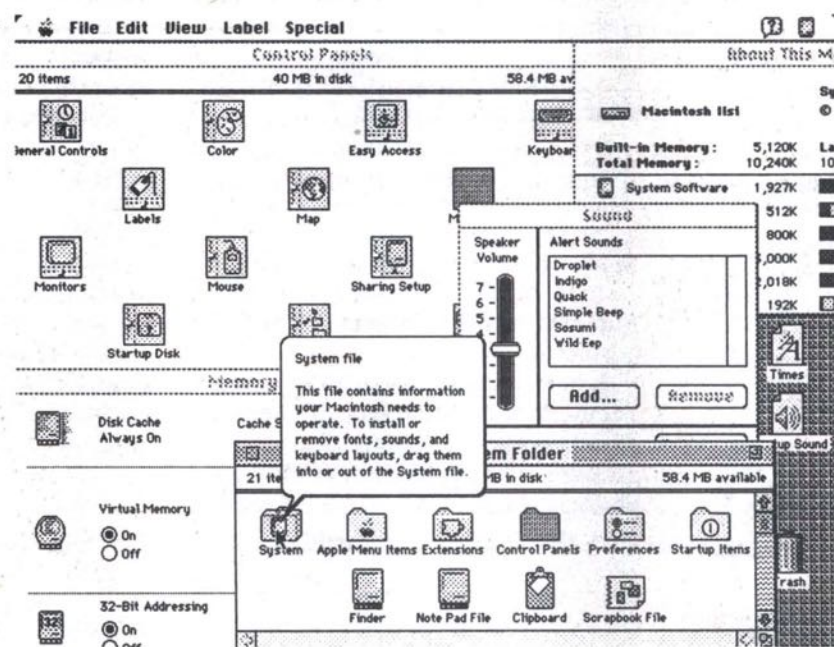
The most visible changes are virtual memory, multitasking, aliases, balloon help, and "publish and subscribe" links between files.

System 7 will allow any Macintosh that has a Motorola 68020 (with PMMU) or 68030 processor to use available hard disk space as virtual memory, making it appear to applications programs that there is more memory than the machine actually contains. A trick long used on mainframe computers, virtual memory is a relatively new feature in personal computing.

Virtual memory will be useful to those who take advantage of System 7's multitasking ability. Up to now, Macintosh users could run more than one program at a time and switch quickly between them by using the Multifinder, an extension of the system software. System 7 makes multitasking part of the basic system.

Aliases let users give a file more than one name and place it in different folders, for convenient access. An alias looks like an original file, but is actually just a

pointer telling the system where to find the original. Aliases can keep track of their originals even when the original is



This screen indicates many of the visible enhancements in System 7.0. Note the dialog box in the upper-right corner showing "virtual memory" being twice the actual amount of built-in memory. The Balloon Help function can be left on as you work—ideal for beginners.

moved, said Steve Goldberg, whose Apple business card proclaims him a "System 7 Guy." Aliases can also operate across network links between Macintoshes.

File sharing, another addition to System 7, makes it easier for Mac users to give colleagues access to their files without using a network file server.

Balloon help is an addition to the Mac user interface. When the feature is turned on, pointing to any object on the screen will cause a "balloon," like the speech balloons used in comic books, to appear next to the object. In the balloon is an explanation of what the object is and how it is used. Apple has attached balloons to almost every visible object in the operating system itself, Goldberg said, and hopes that application developers will also take advantage of the feature.

Files created by different Mac applications can now be hot-linked using publish and subscribe. Data created in one application can be "published" to make it accessible to other applications. Once another application "subscribes" to the data, any change in the original will appear in the subscriber's copy as well. Thus, changing numbers in a spreadsheet would change the corresponding numbers in a chart copied from the spreadsheet file into a word processor document.

There are many more subtle changes in System 7. For instance, the Trash is no longer emptied whenever a user starts a new application or reboots the system. Instead, it is only emptied when the user so orders. A new Find command can locate files anywhere on the system whose names contain a specified string of text. Users can now assign a text label as well as a name to each icon, and view the contents of a window by label.

Desktop accessories are now icons that can be opened by double-clicking on them like other programs, rather than

selections on a menu. Users can also see what a font looks like by double-clicking on the icon for the font file to bring up a passage of sample text in the chosen font. The Font/DA Mover utility is no longer needed to install fonts and desktop accessories; all one has to do is drag the icons into the System folder.

Several TrueType fonts are included with System 7, and Apple hopes there will be more in future. The TrueType fonts will be available to all applications, the company said.

In one of the most subtle changes, a window is now selected when the mouse button is released rather than when it is pressed. This was done to solve a problem that occurred when users tried to drag an icon from one window into another that overlapped the first one. Dragging the icon would select the window where it originated, sometimes obscuring

the window to which the user wanted to move.

Changes like this, and others making more objects respond to double-clicking are aimed at making the system more

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intuitive, Goldberg said.

Apple hopes software developers will take advantage of the new features quickly. Jim Davis, System 7 marketing manager, said more than 100 applications that take advantage of the new system will be available at introduction.

Contact: Apple Computer, 408-974-5549/408-974-3019.

## Most Existing Applications Will Run on System 7.0

SAN JOSE, CALIFORNIA, MAY 14 (NB)—Most of the existing 4,000 applications will run on the new System 7.0 software, according to the company. Apple engineers claim they tested 777 existing Macintosh programs and the "top 500" ran on System 7.0 with no problems.

A new, separate application which is essentially a compatibility checker is included with the System 7.0 software package. It not only analyzes all applications on a Macintosh's hard disk to see if they are System 7.0-compatible before the System 7.0 upgrade takes place, but provides the information needed to upgrade, including the phone numbers of the companies making the software.

The System 7.0 personal upgrade kit is US\$99 from dealers, and a group upgrade kit designed for system administrators, which includes a CD-ROM containing the software and online reference manuals, is \$349. Apple spokeswoman Brooke Cohan told Newsbytes that System 7.0 will also be available on bulletin boards and major online systems, such as GENie, CompuServe, and America Online. "This was the traditional way of doing it (distributing system software) so Apple decided to do it again," she said.

Bart Barton, host of the Macintosh area on GENie, however, suggests that those people wishing to download the System 7.0 software prepare themselves for a wait—even at high speed, the 3 megabyte-sized file will take hours to download. Then, users will still need to buy a manual from an authorized Apple dealer and may not be eligible for the free technical support Apple is offering

buyers of the complete software package.

## System 7.0: Free Tech Support

SAN JOSE, CALIFORNIA, MAY 14 (NB)—Of the 3.5 million Macintoshes in the U.S., 2 million have the necessary random access memory (RAM) on hand to run the memory-hungry System 7.0 software, predicts Apple USA President Bob Puette.

A minimum of 2 megabytes of RAM are needed to run applications under System 7, but Apple officials say most computers now are being shipped with 2 megabytes of RAM, even the Macintosh Classics. Puette revealed that most Macintosh Classics are being sold in 2/40 combinations—2 megabytes of RAM and a 40-megabyte hard disk—which brings their price up to about \$1,500.

System 7.0 will be bundled with all Macintoshes within the next few months, and those which contain System 6 software will include a special card for a free software upgrade. However, what about the memory-short Macintosh Classics, which have become Apple's volume product, but which come standard only with one megabyte of RAM? Apple says that even these will come with System 7.0 software—but won't be able to run it without a RAM upgrade. This means the dealer will have the responsibility to inform buyers that their machines will not be able to run System 7.0 software, and will have the incentive to sell buyers of the lowest-priced Macs more memory at the time of purchase.

Internationally, Apple will roll out System 7.0 software in other Roman languages this summer, and a Kanji version is due in early 1992, the company said.

Perhaps the most surprising aspect of the System 7.0 roll-out was Apple's free technical support for buyers of the package. Those buying the PUK—Personal Upgrade Kit—get 90 days of direct, toll-free telephone support, and those buying the GUK—Group Upgrade Kit—get 180 days of free technical support. This is the first time Apple has had a direct support hotline for its products, not depending on dealers to answer buyer's

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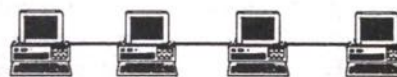
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## MACINTOSH

questions.

On a side note, Bill Gates, Microsoft chairman and co-founder, took the stage at the System 7.0 intro at the San Jose Convention Center to introduce new Microsoft Excel features, and to announce a new version of the venerable Flight Simulator. Despite their friction in court, where Apple is suing Microsoft over its Windows product in a celebrated "look and feel" case, the two firms continue to work closely on product development and collaborated closely on development of the TrueType technology.

Gates told the audience that he was wearing the same blue polo shirt Steve Jobs, Apple co-founder, gave him in 1984 at the introduction of the original Macintosh. Gates got a laugh when he said, "At that time there were 15 developers and we all went out to dinner afterwards." At this roll-out there were 2,000 developers. He concluded his address by saying that Microsoft will have 8 major applications which take advantage of System 7.

### System 7 On Nautilus Subscription CD-ROM

DUBLIN, OHIO, MAY 16 (NB)—Nautilus, the CD-ROM-based subscription service, will carry the new operating system version for the Macintosh on its May 27th issue. Although the software comes on a CD-ROM from Apple itself, this marks the first third-party CD-ROM publishing of the System 7 software package, which up until now has been sold only through dealers, distributed

through user's groups, or found online on bulletin board and major information services.

"Our next issue will include a fully functional version of Apple's new operating software, System 7.0. We are obviously delighted with Apple's decision to aid us in providing this valuable service to our subscribers," stated Jeff Wilkins, chairman and CEO of Metatec, publishers of the CD-ROM. "Since we launched Nautilus last September we have made it a priority to provide our subscribers with the latest information available for the Macintosh. This is just one more example of our commitment to our subscribers, and to the advancement of CD-ROM technology."

In addition to the System 7.0 software, the May 27th issue of Nautilus contains an extended audio interview with Steve Goldberg, Apple's System 7.0 product manager. The interview, divided into subject areas, can be accessed directly from the disk, using Macintosh audio capability.

Nautilus is a multimedia CD-ROM-based information service published every four weeks (at a cost of \$9.95 per disc for a twelve-issue subscription). Single issues are also available to non-subscribers at a price of \$19.95 per issue. Currently available only for the Macintosh, Nautilus in a PC compatible version is slated to be released in September.

Newsbytes News Network reports are also found on the Nautilus CD-ROM.

Contact: Metatec, 614/761-2000.

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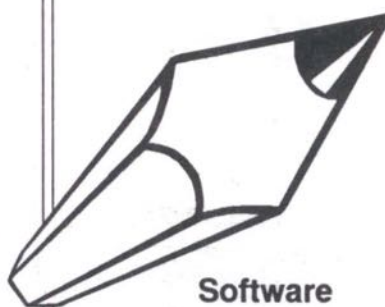


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## WINDOWS

# Windows Desktop Presentation 3-D Charts To Go!

By Steve McIlwain

Product: 3-D chart program for Windows 3.0

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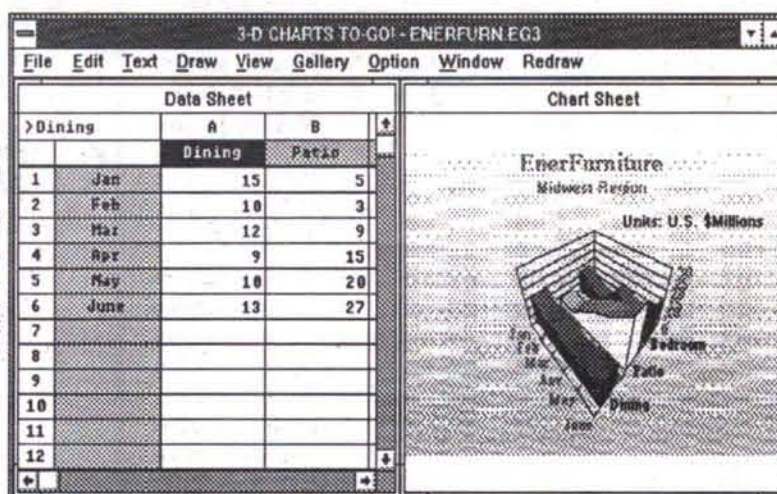
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## Key Features

Full range of text options, self-running on-screen slide shows, up to 2250 individual points, data or chart exchange with Excel or PageMaker, interfacing with EnerGraphics 2.2 or higher, split screen for displaying data and charts side by side, import clip-art (PCX, .BMP and .WMF formats), multiple charts in one printout, import from Excel or Lotus, screen backgrounds and shadows, color options for all chart features.

## Of Interest To

Windows users who need 3-D charts or more visually attractive charts.



## Operation

3-D Charts To Go is a very simple program to use. I could produce charts on this program faster than any other chart-drawing program I have used. What I appreciate most about this program is the split screen option that allows you to view your data and your chart simultaneously. There is no moving back and forth between your data screen and your chart screen.

## Overview

Chart data is entered into the 3-D Charts To Go simple spreadsheet or imported from other programs. Five chart types are provided: Bar, Pie, Area, Line and Text. You can rotate your charts on three axes (X, Y and Z). Three different views, Perspective, Isometric and Oblique, allow you to further enhance your presentations. Titles, subtitles, footnotes, legends and data point labels in different fonts and sizes can be added using the text options.

Simply by clicking the redraw feature you can see what you have so far. You also can select parts of your chart that you wish to view. Data is entered in cells that are flexible and easy to use. Text is also easily entered and can be moved around on the chart.

## Error Handling & Limitations

The program traps errors effectively and did not crash in any of the tests. Performance is fine even on a 10 MHz 286-based machine and there are no unreasonable delays while charts are redrawn.

The on-screen slide show is limited. Scripts must be created with a text editor and there are few transitions between screens and no special effects. It is also not stand-alone.

3-D Charts To Go allows up to 15 data groups and 150 points per group, totaling 2250 data points per chart.

Compared to the \$500 packages that are billed as "complete presentation packages," 3-D Charts To Go has limitations. This is not a full-featured graphics and presentation program, yet it is not passed off as one. All it does is make high-quality 3-D charts. As for the program's limitations in producing 3-D charts: if you cannot effectively communicate your ideas with the features of 3-D Charts To Go, chances are you should not be using a chart.

## Conclusion

When describing 3-D Charts To Go, emphasis should be put on the "To Go." This package could be considered the "take-out" program of presentation packages. Yet, while some take-out joints sacrifice speed for quality, 3-D Charts To Go does not. It successfully specializes in producing high-quality 3-D charts fast. Considering its price, even if you already have a full-featured presentation package, 3-D Charts To Go can be a 3-D complement to your existing package.

Steve McIlwain is a senior partner in ISR Software Review Corporation, a company specializing in independent testing, evaluation and review of DOS-based products. For further information phone (604) 538-0517.

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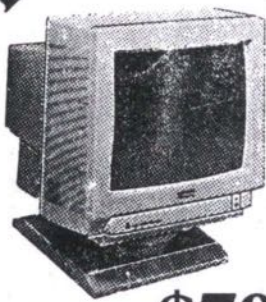


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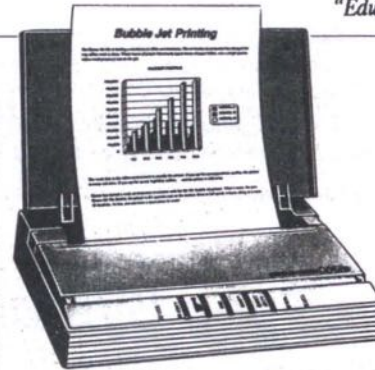
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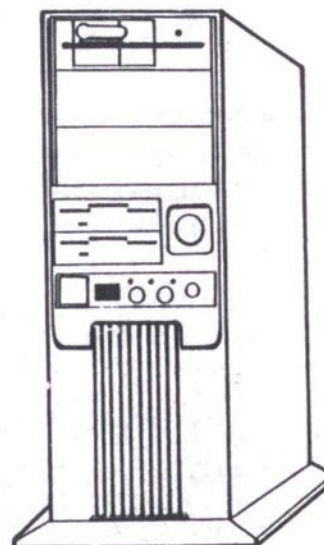


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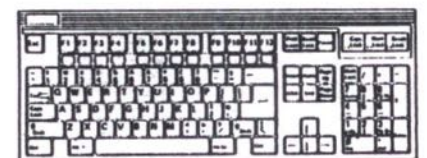
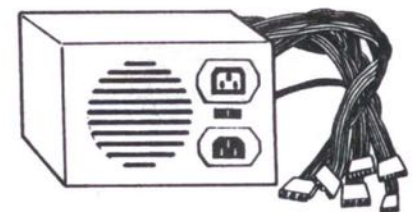
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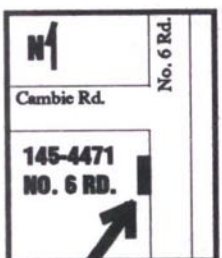
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# First Look **MS-DOS 5.0**

by George Slade

**Product:** MS DOS 5.0 Operating System  
**Publisher:** Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399  
**System Requirements:** IBM PC or compatible: 8088, 286 or 386-based  
**Price:** Cdn \$125

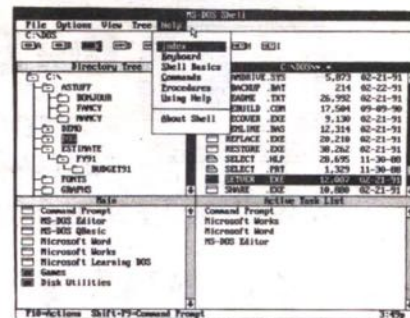
For those of us who have avoided DOS 4.x because of its obvious weaknesses, there is hope on the horizon. Microsoft is in the final testing stages of DOS 5.0. The new operating system is scheduled

for an early June release, with product in the stores by June 11. Like all new DOS versions, DOS 5.0 is bound to have a few undesirable features (i.e., programs that don't work). But I am quite pleased with what I see so far in DOS 5.0.

## Massive Beta Test

Microsoft claims to have tested this program at over 7,000 beta test sights in the hopes of avoiding some of the problems they encountered with DOS 4.x. In comparison, they only beta tested Win-

dows 3.0 at 1,000 sites. (Notably, they only tested it at 125 Canadian sites. We hope the system can handle both wildcard searches with "eh" at the end and 11:30 in Newfoundland—Ed.) According to material supplied by Microsoft, DOS 4.x never achieved much market success, only being installed on something like 20% of PCs. Most of the 60-million-plus PC users stuck to, or went back to, DOS 3.3 or lower. With the new version, according to their surveys of beta test sites, 90% of the people said they would be willing to



pay for the new features offered and 96% said that they would specifically request DOS 5.0 on any new computers that they purchased. 96% said that they would recommend it to a friend. Granted, beta testers are a biased survey group, but it does seem to indicate a more positive reception than for DOS 4.x.

## New Text Editor

Probably the most exciting addition is a new text editor (Edlin is still included). Now you have a useful editor to modify your batch files, etc.

## QBasic Thrown In

Also included is an interpreter version of QBasic. This is similar to the full version of QBasic but it does not compile programs. Many people joke about BASIC but if you have small custom functions in your business, QBasic can be a very useful tool. I suspect if people try the free version they get with DOS 5.0, they will soon purchase the full version to compile their programs.

## Online Help

Microsoft has added Help for each command. This is a welcome addition. How many times have you had to fish out your DOS manual because you forgot the syntax to a rarely used DOS command? This one feature alone is worth the upgrade to DOS 5.0.

## Memory Management and Windows 3.0 Optimization

Memory cram is also eliminated with DOS 5.0. I have almost 600K available when I am logged onto a Novell network. I never considered using DOS 4.0 because of the problems with memory. DOS 5.0 also utilizes High Memory Area to run MS-DOS, occupying only 18K of base memory on most systems.

I did note, however, that I could not install Novell utilities under DOS 5.0. I was able to run them without problem, but not install them. This could cause problems for system administrators until Novell upgrades their install software.

Microsoft claims that DOS 5.0 will be the best system to run Windows on top of because of the new memory management leaving more memory available to MS-DOS applications, increased performance and new and improved utilities (DIR, ATTRIB, UNDELETE, EDIT).

Microsoft has made DOS 5.0 fully ROM-executable, so we can expect to see it show up built-in to ROM of many of the new notebook and laptop computers.

After you get past the typical Microsoft installation and clean up the unnecessary commands added to your autoexec.bat and config.sys, DOS 5.0 is a very nice upgrade from DOS 3.3 and heaven compared to DOS 4.0.



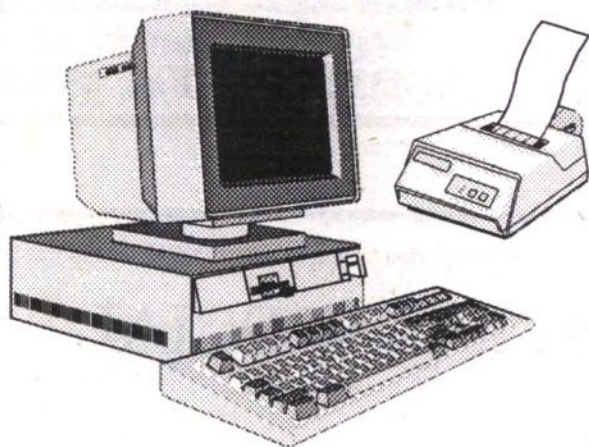
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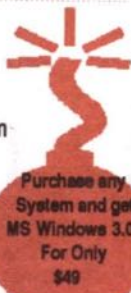
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## Macintosh Printer Drivers

# JetLink Express

## A Good Thing Gets Better

*by Joe Wheeler***Product:** JetLink 2.0.1**Publisher:** GDT Softworks, Inc., 188-4664 Lougheed Highway, Burnaby, B.C. V5C 6B7 (604) 291-9121**System requirements:** Mac Plus or better (also Lisa with MacWorks, 512e with 1 MB memory upgrade), Atari ST with 128K emulators, Amiga with Amax emulator; System 6.0.2 or higher.**Price:** C\$179

### Just add Adobe Type Manager...

When used in conjunction with scalable outline fonts, particularly Type 1 PostScript fonts and Adobe Type Manager or GDT's own Expressive Fonts

outline fonts package (of which 13 typefaces are included in the drivers package), the text is at least equal to that of the higher-priced PostScript™ laser

printers, and in the case of the Canon 360 dpi BubbleJets or Hewlett-Packard's LaserJet III with its enhanced resolution technology, sometimes superior.

JetLink Express		Canon BJ-10e v2.0	Print
Print Mode:	<input checked="" type="radio"/> Graphics <b>360x360</b>	<input type="radio"/> Draft	Cancel
Copies:	<input type="text" value="1"/>	Pages: <input checked="" type="radio"/> All <input type="radio"/> From: <input type="text"/> To: <input type="text"/>	Help
Print Order:	<input checked="" type="radio"/> Front To Back	<input type="radio"/> Back To Front	
Cover Page:	<input checked="" type="radio"/> No <input type="radio"/> First Page <input type="radio"/> Last Page		
Paper Source:	<input checked="" type="radio"/> Automatic	<input type="radio"/> Manual Feed	

### Opening Up the Options

In the beginning, Macintosh users had their choice of printers: the ImageWriter, and, um..., the ImageWriter.

Macintoshes are equipped with two serial ports which use an 8- or 9-pin connector, while practically all other personal computers sport a parallel port and one or more 25-pin serial ports. This meant that Macs could only connect and print to ImageWriters (and later Apple LaserWriters). The Apple line of printers are solid performers but relatively expensive, especially in comparison to the variety of printers and features available to DOS users. Mac users soon began to look for alternatives to the Apple printing monopoly.

Numerous companies responded with printer-driver software and hardware to connect and print from Macs to the huge variety of printers commonly available to the DOS world. One of the oldest and most experienced of these companies is GDT Softworks, Inc., of Burnaby, B.C. From humble beginnings in producing a driver for printing from Macs to Epson 9-pin dot matrix, daisy-wheel printers and typewriters, by 1988 GDT had introduced JetLink Express, a collection of drivers for Hewlett-Packard and compatible laser printers as well as the HP line of inkjet printers.

### New Release supports Lasers, BubbleJets

The latest JetLink release, version 2.0.1, not only represents a major upgrade of the HP drivers, but adds driver support for four Canon Laser Beam printers and three Canon BubbleJet (360 dpi ink type) printers, for a total of 17 separate drivers. The package contains four 800K disks, one with the HP drivers, one with the Canon drivers, a fonts disk and one with Apple's Communications Toolbox.

When one considers the vast number of laser printers that include as one of their "languages" a Hewlett-Packard laser emulation, JetLink Express can provide Mac users printing capability to over 120 different laser printers!

How well do the JetLink Express drivers perform? Firstly, they are not PostScript compatible, but rather take advantage of the QuickDraw scaling language built into every Macintosh. In this respect, GDT has achieved state of the art for third-party QuickDraw printer drivers.



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Graphics?—Mac applications like MacDraw have always made use of QuickDraw to produce graphics to the maximum resolution of the printer used, and JetLink handles these flawlessly; most heavyweight applications like Illustrator, Quark Xpress, Freehand and PageMaker, while intended for PostScript™ output do support Quickdraw versions of their graphics, and respectable results can be obtained from JetLink Express. In fact, due to the 1% scaling capabilities of JetLink drivers, some desktop publishers have found that in applications like Illustrator, by "blowing up" a graphic to 400%, then setting the JetLink driver for 25% scaling, the printed result in many cases is very close to a PostScript version.

### Manuals Much Improved

Early editions of the JetLink Express manual were panned by critics for various omissions and irrelevant information; GDT evidently took these criticisms to heart, as the present 254-page spiral-bound manual is a well-organized, fully indexed and clearly written compendium of information covering practically any procedure and potential problem with any of the printers supported and applications used, including spoolers, Apple's new Communications Toolbox, the old Mac XL/Lisa, networking set-ups and switchboxes.

GDT even goes so far as to help the user with products that compete with GDT's own products, as in the case of Adobe's Type Manager, or third-party serial-to-parallel port adaptors (GDT markets their own high-speed electronic

serial-to-parallel port converter, the ParaLink). The manual also includes a discussion of the history and usage of typefaces and a delightfully quirky discussion of the aesthetics of desktop publishing.

### Technical Support

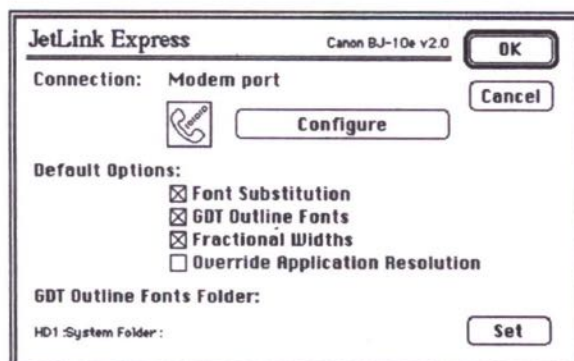
GDT's technical support is one of the best in the industry (if you can get through—the line is often busy), but most questions are thoroughly and clearly covered in the manual.

### Cartridge Fonts Tricky

If there is a weak area for JetLink Express, it lies in an area which is optional to most Mac users: printer font cartridges produced for Hewlett-Packard lasers and inkjets for use with IBM programs (the advantage for Mac users is very fast printing). These cartridges are of two types: typefaces in a few styles and sizes embedded as bitmaps in ROM, and scalable fonts, similar to those included in the GDT Expressive Fonts package or Adobe's Type Manager and Plus Pack.

The ROM-based bitmap typefaces often have similar names to Mac or Adobe fonts, but do not share the same "font metrics" so that using Macintosh screen

fonts departs from WYSIWYG (What You See Is What You Get), due to the differences. GDT has created an ingenious "cartridge mapping" option that allows the user to configure Mac screen fonts with whatever cartridge is being used, but sometimes the combination is awkward, as in mapping a Mac Times 13 to an HP Tms Rmn 12; even then, the results, both inter-character and end-of-line spacing, are unpredictable.



For Canon Laser Beam users, the internal and cartridge scalable fonts are industry standard font metrics so that the laser's fonts (clones of the standard 35 LaserWriter set) match

the Mac screen fonts exactly and the printed output is WYSIWYG (and very fast) from 3 to 255 points.

GDT indicates that they are actively looking into ways to improve their cartridge support. A company spokesman let slip that GDT is also looking into a major new area of innovation for upcoming releases (my lips are sealed on particulars). The company conscientiously informs registered users of upgrades and charges only a nominal fee for them.

### Newer Drivers More Demanding of Memory

A drawback for some users is that the JetLink drivers have become so sophisticated that, in common with most new Mac programs, more memory is required for the software to work, and users may find that they have to close desk accessories and increase application memory allocation.

As well, the JetLink drivers for the Hewlett-Packard IIP and III have special compression routines for increased speed, requiring these printers to have a minimum of 1.5 MB of memory. Atari ST Spectre Mac emulator users will find the DeskJet driver in this set may not be fully compatible.

### Solid Product

For Mac users who want to use one of the inexpensive 300+ dpi non-PostScript laser or inkjet printers widely available to IBM users, GDT Softworks has produced in JetLink Express a set of printer drivers chock-full of features and solid accuracy in this well-documented and supported product to make it probably the top contender in its field. At \$169, this driver set is somewhat high-priced compared to its competition, but given the thorough and thoughtful work that has gone into this product and range of uses, in this writer's opinion, it is well worth the investment.

*Joe Wheeler is a paralegal, desktop publisher and computer consultant living in Victoria, B.C.*

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With an elaborate and extensive promotional campaign fueled by the promise of a burgeoning market for shrink-wrapped UNIX, a Kodak-owned company called Interactive is sponsoring the First Annual Interactive Developer Conference, which it calls "Unix System V.4—The Next Generation."

Sporting one of the best posters ever (apparently licensed from Paramount Pictures), the brochure ad copy and artwork play up the Star Trek connection to the hilt with lines like: "Then beam aboard UNIX SVR4: The Next Generation today—You'll be transported where no developer has gone before." Could they have discovered that UNIX users are a bunch of Trekkies?

The conference will be held at the

Universal City Hilton, Universal City, California June 2-5, 1991.

Key events include sessions with industry experts, exhibits, demonstrations, tips and discounts on UNIX SVR4, and the really big news: a Star Trek cocktail reception and Star Trek party at Universal Studios.

Contact: Travel Incentives, Inc., 805-495-7800.

### Building Corporate Internets

A half-day seminar called "Building Corporate Internets" will explore multiprotocol routing/bridging, network management and security solutions. Also discussed will be new developments in token ring, frame relay, 802.6, FDDI and IBM environments. If you know what all this stuff means, you'll probably want to be there, Monday, June 3, in Vancouver at the Hotel Vancouver or Wednesday, June 5 in Calgary, Alberta at the Delta Bow Valley. Registration is at 8:30 A.M.; the seminar runs from 9 a.m. to noon.

Contact: cisco Systems, 1-800-387-1942.

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Software B.C./CADAPSO (The Canadian Association of Data, Professional Services and Software Organizations) and ISTC (Industry, Science and Technology Canada) are jointly sponsoring a one-day seminar on how to conduct business in the Pacific Rim.

The seminar will be held June 19, 1991 from 9:00 a.m. to 4:30 p.m. at the Coast Plaza (at Denman and Comox). The cost of the seminar is \$100.

Contact: Shirley Friesen-Nicol, Software B.C., 604-682-2034.

### Northwest Netware Users Conference set for July in Seattle

The Puget Sound Novell Users Group (PSNUG) and NetWare Users International are sponsoring the first annual Northwest NetWare Users Conference on July 23, 1991. NetWare users, system managers, resellers and developers from Washington, Oregon, Idaho and British

Columbia will be there to share information, attend workshops on networking, and get the scoop on the latest solutions for Novell NetWare. Seminar topics include networking with Windows on Novell, interconnecting NetWare with Macs and Unix, and using Novell networks for accounting applications; plus many technical seminars. Cost is US\$135 and includes entrance to the Exhibit Hall, seminars, hands-on NetLabs demo room and developers' sessions. A US\$25 Exhibits-only pass is also available. The date of the event is July 23, 1991 from 7:00 AM to 8:00 PM at the Washington State Convention and Trade Center in Seattle, Washington. To register, contact Miller Freeman Expositions at (800) 873-3976. For more information, call Barrett Knudsen of PSNUG at (206) 524-8000.

### Windows To Success

Microsoft chairman Bill Gates heads up an all-star line-up of speakers at the 14th annual National Conference of the



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As part of the sales team you will provide knowledge to microcomputer resellers. This position requires an individual with three to five years experience in the PC market. Strong technical and interpersonal skills are essential. Network Specialists will provide training in installation and administration of Novell and other LAN products.

#### Network Trainer

As a member of the sales team you will provide training to microcomputer resellers and their clients. This position requires an individual with training experience but not necessarily in the networking industry. Interpersonal skills and the ability to communicate are essential. Network Specialists will provide Novell and LAN product training.

### In Vancouver

#### Sales/Marketing assistant

As the first contact with microcomputer resellers you will provide product knowledge and service on Network Specialists' quality products and services. Excellent communication skills are required and microcomputer background preferred. Product, sales and service training will be provided.

Send resume to: Network Specialists Inc.  
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**NETWORK**  
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## CALENDAR

Independent Computer Consultants Association. Gates will deliver the keynote address to open the conference, which will be held June 27-29 at the Westin Hotel in Seattle. Also scheduled to speak are Howard Shenson, a renowned management consultant, Sam Albert, chairman of FirstGroup, and Steven A. Epner, founder of ICCA.

The conference will cover all aspects of the computer industry and feature seminars and workshops covering business practices, technical skills and personal growth issues. Representatives from Microsoft, Aldus, Novell, IBM and Hewlett-Packard will also be displaying products.

For information on how to register, call 206-869-1199.

CANADIAN COMPUTER SHOW, Toronto, Oct. 21,22,23,24  
CBTA, Edmonton, Sept. 18,19,20  
FALL COMDEX, Las Vegas, Oct. 21,22,23,24,25  
INFO, New York, Oct. 1,2,3  
MONTREAL COMPUTER SHOW (SIIM '91), June 5,6,7  
NETCON, Sept. 26,27  
PC EXPO, June 25,26,27  
PUBLIC LEGAL EDUCATION SOCIETY. Free class on computers and the law for sellers, buyers and users. 438-4041.  
3X, Toronto, Sept. 5,6  
VARDEX/Toronto, June 12,13  
SOFTWARE WORLD CONFERENCE & EXPOSITION, July 23-25, Metro Toronto Convention Center. Call (508) 470-3880 for more details.  
CANADIAN COMPUTER SHOW AND CONFERENCE, October 21st to 24th, 1991. Telephone (416) 252-7791. Industrial Trade & Consumer Shows Inc.

### USER GROUPS

AMIGA USER GROUP (PaNorAmA), BCIT, Rm 129-1A. Gen. Meeting 2nd Wed 7:30; Programmers 4th Wed 7:30. Bill Wagstaff, 597-1746.  
APPLES B.C. COMPUTER SOCIETY. Computer User Group for all Apple users, call 275-4983 information line; for mem-



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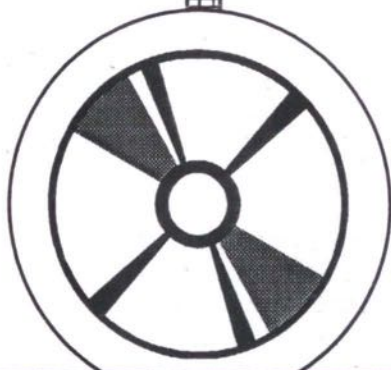
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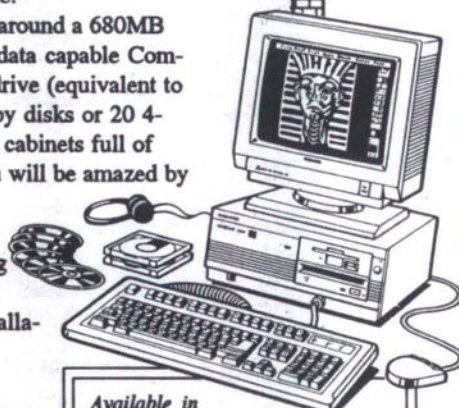
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ANOVATION

The ANOVATION Newsletter from ANO Office Automation will resume publication in August. You can look forward to some very exciting announcements from AST, Novell, and Phillips, as well as our continuing focus on the network scene.

See you in August!

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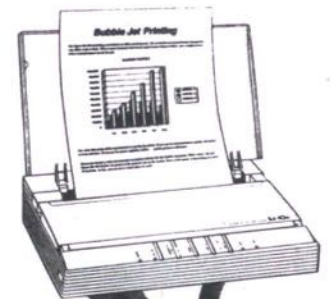
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Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4 Lotus 1-2-3 (I) Lotus 1-2-3 (II) dBase IV (III)	5 PageMaker WordPerfect (III) Ventura	6 WordPerfect (II) Lotus 1-2-3 (III)	7	8	9
10 ACCPAC A/P	11	12 Ventura	13 Lotus 1-2-3 (II)	14	15 Intro. to DOS	16
17	18	19 Excel for Win3	20 Quattro Pro (I)	21	22 Intro. to WP 5.1	23
24	25 The Maximizer	26 Bedford	27 MS Word 5.0	28	29	30

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## CALENDAR

bership info: Kiyo Masuda, 437-9935. Apple/ABCCS Meetings location: Burnaby Lake Clubhouse, Burnaby Sports Centre, Sprott St. & Sperling Ave. Macintosh Owners-ABCCS contact: John Miller 433-1795.

**ARCHITECT USER GROUP (Macintosh).** Call Glen Schiller or Kal Gill, Byte Computers, 738-2181.

**ASTUTE—ATARI ST.** Meets 1st Tues, 7:30 Hastings Comm. Ctr. Dennis 420-8710.

**ATARI USERS! Vantari,** P.O. Box 3614 Main Post Office, Van., B.C. V6B3Y6. Bill Sutherland 988-1450, Don Hatch 433-8055. Meets 2nd Wed., 7:30, Hastings Comm. Ctr., 3096 E. Hastings.

**BEAVER VALLEY COMMODORE CLUB,** 1st Tues., Montrose School Library. Call John Vink 367-6426.

**B.C. REGIONAL USERS GROUP SOCIETY** of Hewlett-Packard Users.

**B.C. UNIX USERS GROUP** Dinner Meetings. 681-4473.

**CHILLIWACK COMMODORE COMPUTER CLUB (C.C.C.C.)** -976, Supporting Commodore Amiga, P.O. Box 413, Sardis, B.C. V2R 1A7.

**DATA PROCESSING MANAGEMENT ASSOCIATION, DPMA** dinner meetings 4th Tuesday every month, Stanley Park Pavilion. Next meeting June 27th @ 5:30 pm. PETER LADNER, Editor and Publisher of *Business in Vancouver* magazine discussing how business is changing in Vancouver and what the trends seem to be. Contact Frances Dickson or Suzanne Havens—660-8668 to register or Gail Nicols—660-9533 for information.

**DESKTOP PUBLISHING USER GROUP**—bi-monthly meetings. For information, call Karole Doner, 929-4916.

**FORTH-BC** meets 7:30, 1st Thurs/month, Rm 1A-324, BCIT main bldg. Discussions, demonstrations and information for programming/applying FORTH (hardware and software).

**GREAT VICTORIA PERSONAL COMPUTER USERS' ASSOC.,** PO Box 5309, Station B, Victoria V8R 6S4. General meeting last Wed. Also, special interest group meetings 382-3934.

**INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION,** Box 820, Station A, Van., B.C. 682-2747. Fax 925-1336.

**KAYPRO USER GROUP/VANCOUVER PORTABLE COMPUTER CLUB,** 3rd Mon., at Kwantlen College Richmond (DOS & CP/M) 271-1519.

**LABORATORY PC USER GROUP,** Rm 2J38, BC Children's Hospital, Vancouver. 7:00 pm, every 2nd Wed. - \$10/year 737-1305.

**MACWEST COMPUTER SOCIETY,** 2 monthly meetings for members, plus PD copy session. General Meetings - 2nd Wed., 7:30 pm. MacWest New User Meeting - 3rd Wed., 8 pm, Guildford Pub. Lib., Surrey. PD Copy sessions & meet Ridge Computer User Group, 2nd Tues. of every month, M.R. Sr. Secondary 7:30.

**NEWVIEWS USER GROUP,** 322-6198, POCO, 1379 Laurier, Hyle Creek Centre.

**NEXT USERS GROUP,** 275-5902 Lawrence Clark - last Wed. of every month.

**ORACLE USERS GROUP,** 1055 W. Hastings 222-1047 Lawrence

Clark - every 3rd Wed. of each alt. month

**PACIFIC INFORMATION EXCHANGE,** P.O. Box 67366, Station O, Vancouver, V5W 3T1.

**PORT COQ. COMPUTER CLUB**—Commodore, Amiga & IBM, 1st & 3rd Tues 7:30, Rm. 104, George Pearkes Jr. Sec. School, 1390 Laurier Ave., Port Coquitlam, Mike Evans 942-4286.

**SMART USER GROUP,** Brian Wiebe 588-8065.

**SOFTWARE B.C.,** #400-1190 Melville St., Van., B.C. 684-7432. Meetings at Benedict's Restaurant, 1177 W Pender St., Vancouver, 3rd Thurs, 5:30.

**T.I. 99/4A COMPUTER B.C. 99er Users Group,** Every Thurs 7-10 pm, Cameron Rec Ctr., Bby. Ron: 522-2598. 1st Thurs. Tutorials, 2nd Thurs. General, 3rd Thurs. Tutorials, 4th Thurs. Copying Prog.

**TRACE (Richmond Atari Club),** Thompson Comm. Ctr., 272-5789 1st & 3rd Mon. 7:30-9:30.

**VANCOUVERACM/SIGGRAPH Computer Graphics,** 1st Wed. Call Susan Mair, 228-3938.

**VANCOUVER AUTOCAD USERS SOCIETY, BCIT, Bldg. 3A,** Room 110, 1st Wed of the month, 7:30 pm. Contact Robert Cheek, 684-9311 or Dave Toews, 530-6426 for info.

**VANCOUVER CLIPPER DEVELOPERS ASSOC.,** 1st Tues., 7 pm, 800-1190 Hornby St., Van., 685-6645.

**VANCOUVER COLOR COMPUTER CLUB,** 3rd Tuesday, Discovery Park, 3700 Gilmore Way, Burnaby, Contacts: Jordan Dobrikin 420-6081; Steven La Favor 467-0923.

**VANCOUVER DBASE USERS GROUP,** 2nd Wed., 7 pm. 800-1190 Hornby St. Van., 685-6645.

**VANCOUVER ELECTRONIC PUBL. ASSOC.,** 1115 W. 11th, Vancouver, V6H 1K4 (mail). For info, call 733-9080 (leave msg).

**VANCOUVER NETWORK USERS GROUP,** Les Lebrant 275-8684. Meets 1st Mon.

**VANCOUVER PORTABLE COMPUTER CLUB (VPCC),** AMO 17, Jay Siegel, 4251 Lancelot Dr, Richmond, B.C., V7C 4S4, 271-1519.

**VANCOUVER PC USER SOCIETY,** Science World Auditorium, 6:30 pm, 2nd Thurs. \$30/yr. 734-0060.

**VAN. SINCLAIR USERS GROUP,** Timex-Sinclair, 2nd Fri, Killarney Comm. Ctr., Gerd Breunung 931-5509.

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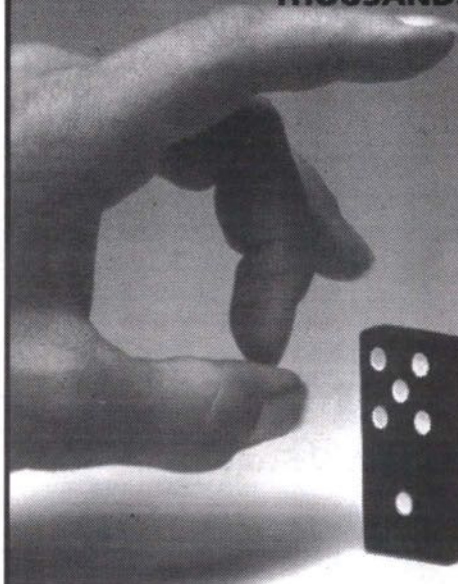
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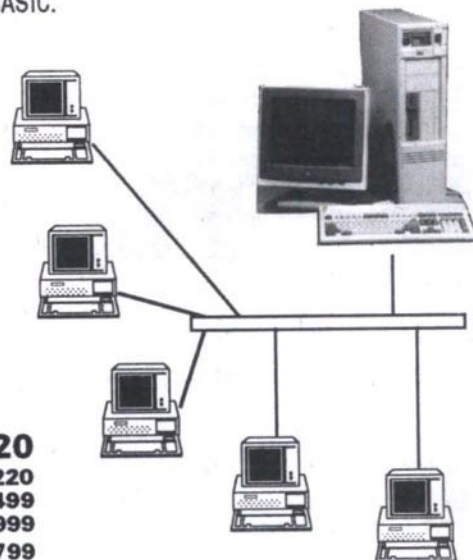
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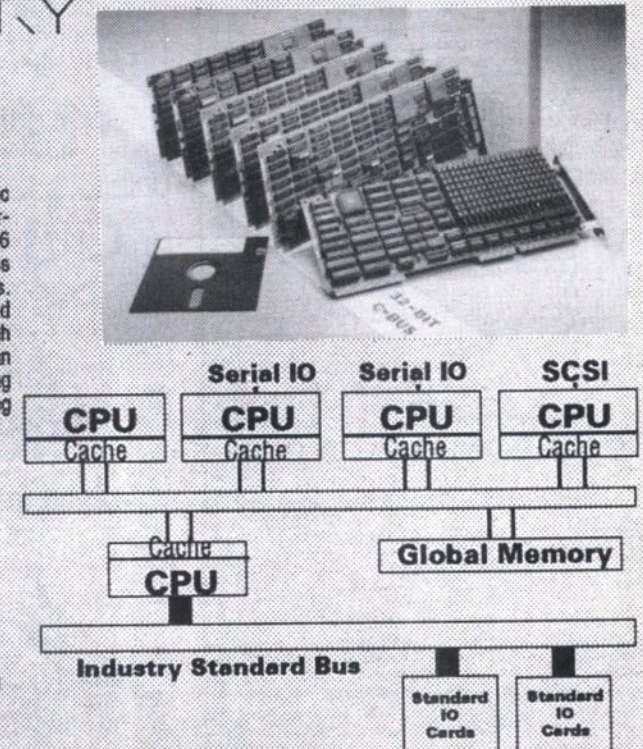
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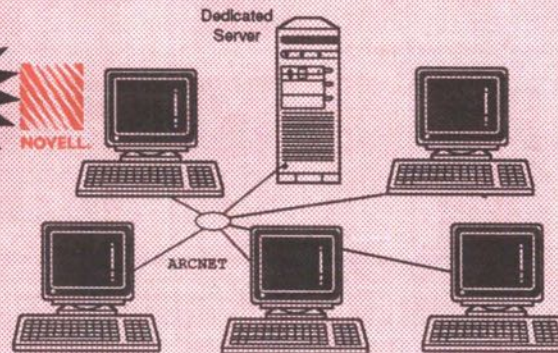
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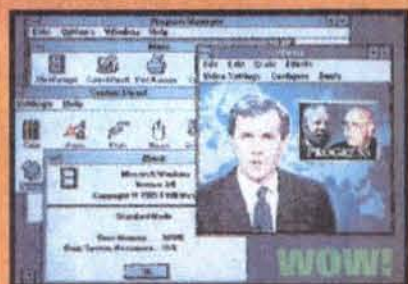
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EXPLORE YOUR HORIZONS

# MIND LINK!

B.C.'S WINDOW ON THE WORLD



# 20 reasons why you should join Mind Link!

## 1) DISCUSSION GROUPS

There are hundreds of interesting and informative local discussion groups.

**Entertaining** - Every topic you can imagine has probably been debated in one of our discussion groups and most are open to all members. Politics, sports, handyman tips, computer software programming, items wanted or for sale, chess, Soviet relations, comic collecting - choose the topic you are interested in and join as many as you wish. Read discussions quietly or jump in and add comments of your own. The choice is yours!

**Informative** - Aside from being entertaining, discussion groups are an invaluable source of information. Many new members are surprised how quickly their questions are answered by other members.

## 2) ELECTRONIC MAIL

Electronic mail works much like paper mail except that your message is typed on your computer and delivered promptly (in many cases instantly) into the addressee's electronic mailbox.

**Reliability** - Unlike conventional mail, it is extremely unlikely that an electronic letter will ever be "lost".

**Speed** - Local e-mail is delivered instantly. E-mail to other cities is usually delivered in less than 24 hours and often in only 2 or 3 hours.

**Convenience** - People with busy schedules find e-mail a convenient and efficient way to communicate. You can send e-mail any time of the day or night without leaving your office and the message will be waiting for the recipient whenever he or she calls in. Similarly, you can read the reply whenever it is convenient for you!

**Data Sharing** - Local e-mail may simply be messages or it may include files from your personal computer. Spreadsheets, word processing documents, and even complete programs can quickly and reliably be sent to any other member. No need to worry about losing those disks on the way home or forgetting to take that last disk back to the office!

## 3) FACSIMILE SERVICE

**Cost Effective** - No need to have your own fax machine! Using your computer and modem you can fax to any regular fax machine.

**Ease** - Using our fax service is as simple as typing FAX and a phone number, then answering the prompts.

## 4) INTERNET CONNECTION

Members are connected to the largest network in the world - the Internet. The Internet consists of many different networks, connecting people from all the developed nations of the world. Over 12,000,000 readers and over 35,000 different sites in the world!

**Discussion Groups** - Participate in public discussions that are read all over the world. If you have a question there should be someone in the world that has an answer!

**Electronic Mail** - Send private messages to anyone with connection to this network in a matter of hours.

Download files from FTP sites all over the world via a server. Software upgrades, patches, the latest virus protection and information, and much, much more.

## 5) CHAT OR TELECONFERENCING

**Unable to meet face-to-face?** - For those members who want to conduct business immediately or for the group who must discuss plans but are unable to meet physically due to distance factors - our CHAT or Teleconferencing is the answer. While in CHAT, your group will be able to exchange information which is displayed immediately on their screen.

## 6) ANONYMOUS MAIL

**Central Base** - Use MIND LINK! as your central message base. Non-members can send you mail without worrying that their message will be lost or you won't be available when they want to pass along their information.

## 7) NEWS SERVICES

Read about the latest events as they happen - before reading them anywhere else!

**UPI** - United Press International news stories in their entirety.

**ENS** - Environment News Service stories about the environment from all over the world.

**Newbytes** - The latest computer news from all over the world.

**Syndicated columnists** - Selected columnists including Miss Manners and Dave Barry.

## 8) PUBLIC DOMAIN FILES

Members have access to thousands and thousands of utilities, games, applications, word processors, sounds, graphics, and much, much more!

**Quality Control** - We maintain only the latest public domain and shareware programs available. Online Librarians check each file before approving it for members to download. Files are checked for viruses, workability, pirated programs and duplicate programs. Less time is wasted downloading a program that doesn't even work when you use MIND LINK!

**Availability** - Because there is no daily download limit (unlike many systems), members can download the program they need when they need it.

## 9) MENU SYSTEM AND COMMAND LINE INTERFACE

**Choice** - MIND LINK! gives you the choice of using a Menu Systems or a Command Line Interface. For those just beginning, the Menus are straightforward and have a HELP option describing the options available. As you gain more experience on MIND LINK! the Command Line allows you to type concise commands to accomplish the same functions.

## 10) GAMES

**Interactive** - Compete with other members answering trivia questions in our Pyramid game. Compete with other members or have a solitaire game of Guessit! - our "name that phrase" word game.

## 11) STOCK BROKER

Receive stock quotes 3 times every day from Carol Rethoret. All stocks you are interested in can be posted publicly (private arrangements can be made). Have a question regarding stocks? Ask an expert.

## 12) TRAVEL AGENCY

See the specials available from Lydija Lipohar - available only to MIND LINK! members. Have a question about travel? Ask an expert.

# The largest system



# Sign Up Today! Call 534-5663

(VOICE)



## 13) CUSTOMIZED SUB-SYSTEM

**Corporate Identification** - For companies who would like to participate with members online, exchanging ideas, receiving feedback about their products, etc. a special account can be created.

**Private Access** - For groups who would like to exchange ideas within their own group, private groups are available at no charge!

**Customized Menu System** - For groups or corporations who require a simple or complex access, complete with logo and sign-in screen. Your own private system!

## 14) ONLINE HELP

**Quick look-up** - Select the HELP option on any Menu for a summary of options available through that menu. Type any command (slash before command if using Menu System) for online help.

**Downloadable help** - Browse our TIPS and NOVICE forums for downloadable text files and beginner programs. The selection is up-to-date and designed to inform you quickly and clearly about MIND LINK! features.

## 15) CUSTOMER SUPPORT

**Help available** - When you need to talk to a real person about your account or general information about the system you can contact one of our Customer Support Representatives online, by facsimile or telephone. Full-time staff available Monday-Friday 9:00-4:00 at 534-5663.

## 16) TECHNICAL SUPPORT

**Help available** - When you need help with a technical feature on MIND LINK! or to configure your system to work with ours, there is someone available online, by facsimile or telephone Monday through Friday 9:00-4:00 at 534-5663.

## 17) 20 DATA LINES — AND GROWING!

**Availability** - We have 20 lines available for members to call - the largest system in Western Canada. Because we maintain a very close watch on how busy our lines get we know when to add more lines *before* members have trouble calling in. After all, what good is a system when you can't use it?

## 18) HARD-COPY HELP

**Beginner's Guide** - A step-by-step tutorial for beginner's to modeming in general. Detailed instructions!

**Reference Card** - A tree-diagram of the main level menus and a list of all main level commands (includes some sub-commands).

## 19) STARTUP KIT

**Quick & Easy** - For those members who want to get started right away - our Startup Kit offers a 4 month membership, a Beginner's Guide, Reference Card, a bonus 12 hours of connect time and a Regular or VIP membership.

**Instant Access** - To get online RIGHT NOW - call 534-5663 with your credit card info and an account will be activated for you immediately. Your Startup Kit will be mailed to you the next day!

## 20) OUR MEMBERS

**Friendly & Helpful** - MIND LINK! members tend to be friendly, always eager to help other members with things they are "experts" on. They take the

See the last page for the Registration form and instructions

## SPECIAL STARTUP KIT OFFER

Right now we are offering our Startup Kit. Here is what you receive:

- ▶ **4 month Regular or VIP membership**
  - the Regular membership includes 1 hour free connect each day
  - the VIP membership includes 2 hours, UPI news, international mail, and more!
- ▶ **1 Beginner's Guide**
  - 60 page manual with clearly written instructions
  - screen "clips" to show what you will see when online
  - everything you need to need to know to get started
- ▶ **1 Reference Card**
  - includes Menu Map and listing of Main Commands
- ▶ **12 hours bonus free online connect time**
- ▶ **Standard information kit**
  - (complete with suggestions for configuration for your computer type, description of fee structure, etc.)

Regular **\$59.95**

VIP **\$79.95**

# in Western Canada



# Answers About **MIND LINK!**

## **How big is MIND LINK!?**

BBSs are measured in different ways - most commonly by the number of phone lines, available storage space, or amount of use they get. MIND LINK! has 20 incoming phone lines, and more than two gigabytes of permanent storage.

People buy fast computers so that they don't have to wait for them and we don't think you should have to wait for a phone line either - with 20 lines we almost ALWAYS have a line free.

Storage space is important because it determines how many files can be offered for people to download. Two gigabytes is more than three times as much as a typical CD-ROM will hold - that's a LOT of space. Just last month MIND LINK! received more than 900 new files from its members - every month there are hundreds more.

MIND LINK! is very active. Last month our members spent more than 5000 hours online and read more than 400,000 public messages. In excess of 12,000 pieces of mail were sent or received (locally and internationally).

**MIND LINK! is B.C.'s largest bulletin board service.**

## **Is MIND LINK! growing?**

MIND LINK! is growing quickly as more and more people discover what we have to offer. Each year for several years we have added 50% more phone lines and doubled our storage capacity. There are signs that we are beginning to grow even more quickly than that.

## **How much do you charge per hour?**

MIND LINK! does not charge by the hour. There is a flat monthly or yearly fee (as low as \$4.50/month) which covers almost every service. A few special services (like our international fax service) have a low usage fee. We'll be happy to give you details.

## **Is MIND LINK! a local service?**

MIND LINK! is owned and operated by British Columbians but offers many of the advantages of the international services. MIND LINK!'s internet mail reaches more than 6 million people in every developed nation in the world. The Internet is the largest email network in the world.

## **Who sponsors MIND LINK!?**

Nobody sponsors MIND LINK!. We are an independent business free of the restrictions and biases imposed by a sponsor; we do not sell, nor are we affiliated with, software and hardware vendors. **We stick to our own knitting, which is online communications.** This makes MIND LINK! a dedicated communications service for individual and business users.

## **What if I need help?**

Our beginner's guide will answer most of your questions, but if need be we are happy to answer telephone or fax inquiries 9:00-4:00 Mon-Fri. **Friendly prompt service is part of the package.**

# What do I do to register and become a member?

- 1) Complete this registration form and send it along with your payment to the address below.
- 2) Call our data number (576-1214, 685-1214, 856-3231) and register online. Log into system as GUEST and choose option from Main Menu labelled "Register".

## **Instant Access!**

To have your account activated immediately, register online and then call our Customer Service number with your credit card information.

**Data: 576-1214, 685-1214, 856-3231    Voice: 534-5663    Fax: 534-7473**

## **MIND LINK! Registration Form**

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Address: \_\_\_\_\_ Home Phone: \_\_\_\_\_  
City/Town: \_\_\_\_\_ Work Phone: \_\_\_\_\_  
Postal Code: \_\_\_\_\_ Fax Phone: \_\_\_\_\_  
Your Computer Type? \_\_\_\_\_



\*Check the Startup Kit you would like

	GST	Shipping	PST	TOTAL
<input type="checkbox"/> Regular	\$59.95 +	\$4.44 +	\$3.50 +	\$0.95 = \$68.84
<input type="checkbox"/> VIP	\$79.95 +	\$5.85 +	\$3.50 +	\$0.95 = \$90.25

\$ \_\_\_\_\_ Additional funds to be put "on account."

Total enclosed \_\_\_\_\_

Mail to: **MIND LINK!**

P.O. Box 3203, Langley, B.C. V3A 4R5

\*Dealer inquiries welcome

If you would prefer to pay by credit card, please call our Customer Service number **534-5663** during regular business hours for your account to be activated immediately.