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# PCWERLD

SPECIAL PREVIEW

NOVEMBER 1991 \$3.95

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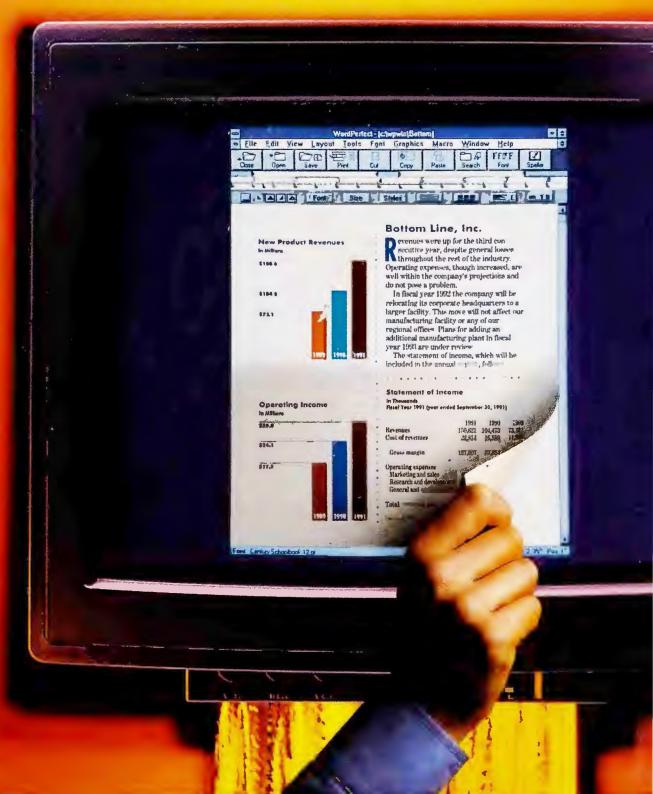
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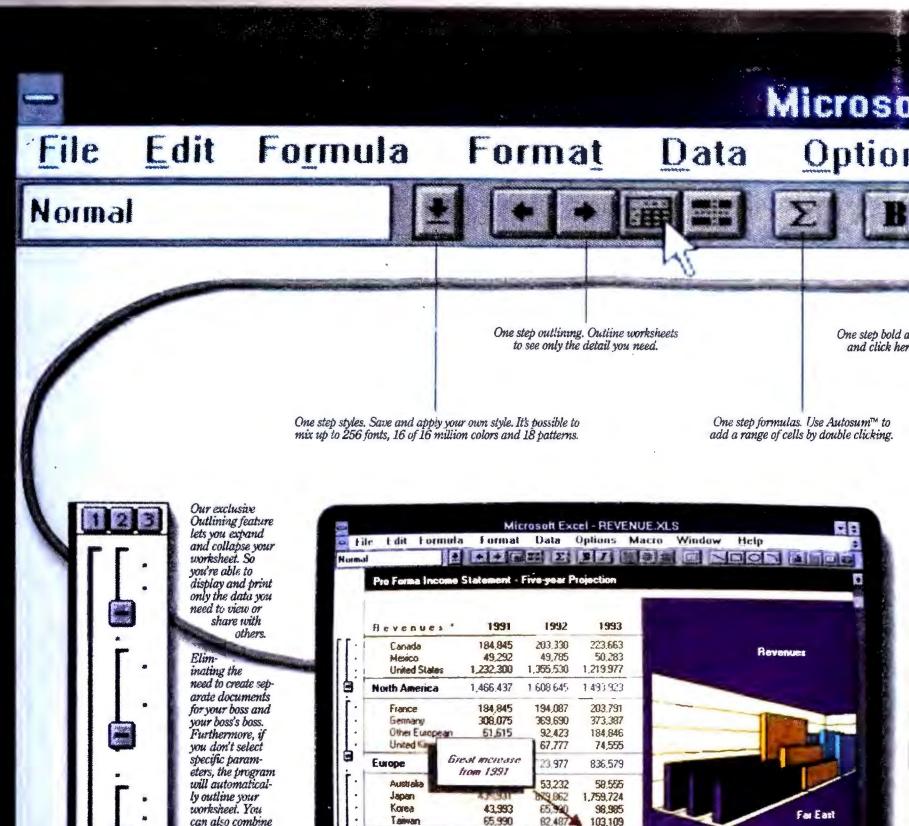
- 15 Top CD ROMs
- 22 Top Application Generators



# Ittookus thousands of steps to make this spreadsheet do what we wanted.

# 

# Fortunately it'll



Select a range of cells and transform them into a chart on a worksheet. With one simple click. Or why not create a 3-D chart. Then rotate it 360? How's that for a view? With Microsoft Excel, you can choose from 68 different chart types, 24 of which are 3-D. Or even create your own. And because this is a graphical program, it's easy to combine text, data and graphics on a single page. Of course, it's WYSIWYG too. Which means you can actually see what you're working on.

93

92

91

1.081.571

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Far East

**Total Revenue** 

virtually hundreds

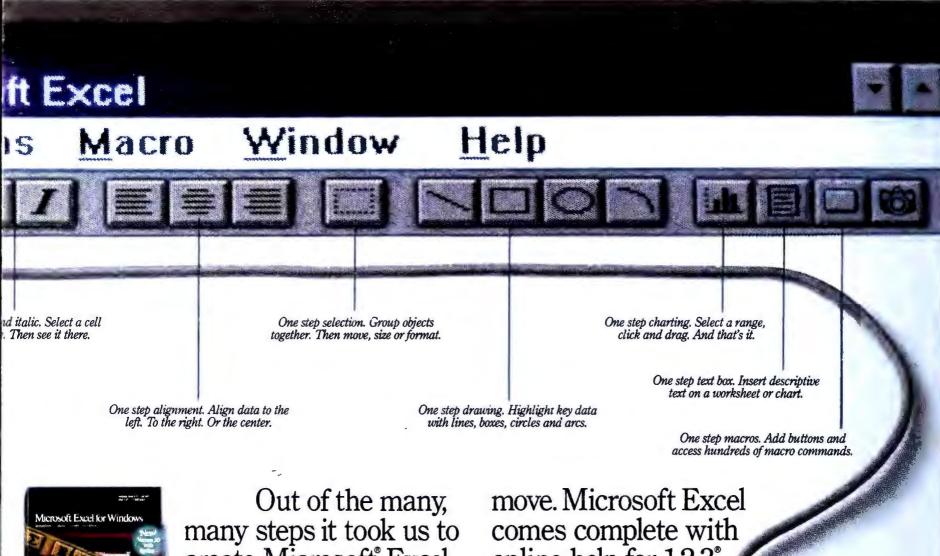
of worksheets

through the consolidation feature.

Regardless of for-

mut or structure.

# only take you one.





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Microsoft<sup>\*</sup>

## PCW\\RID



Buyers' Guide: Hand Scanners

### **COVER STORIES**

### **PREVIEW**

### Windows Gives WordPerfect a Shiny New Look

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20-MHz Notebooks: SX Road Runners Power on the road has never looked so good—or been so reasonable. Check out these 15 sizzling lightweights, and put an office in your briefcase. Michael Goodwin and TJ Byers.

### WINDOWS SPECIAL REPORT: MULTIMEDIA

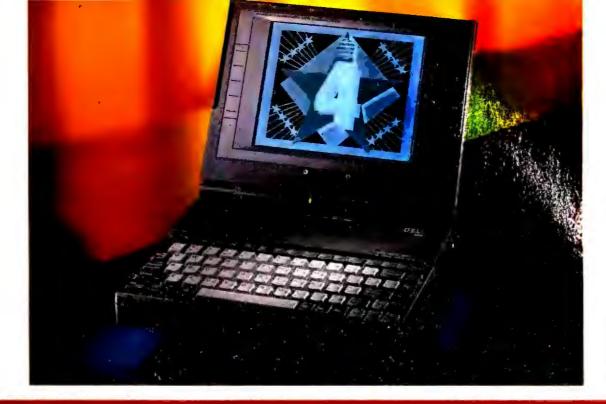


Caver phatagraph by Rabert Cardin Digital phata camposition by Varitel Select

Buyers' Guide: CD ROM Software Pow! Beep!
Wham! These 15 CD ROM titles for Windows may not beef
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row's business software. William Rodgrmor

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20-Miliz Notebooks: SX Road Runners 138

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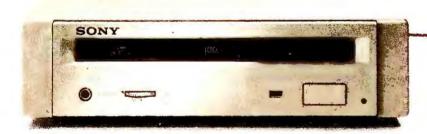
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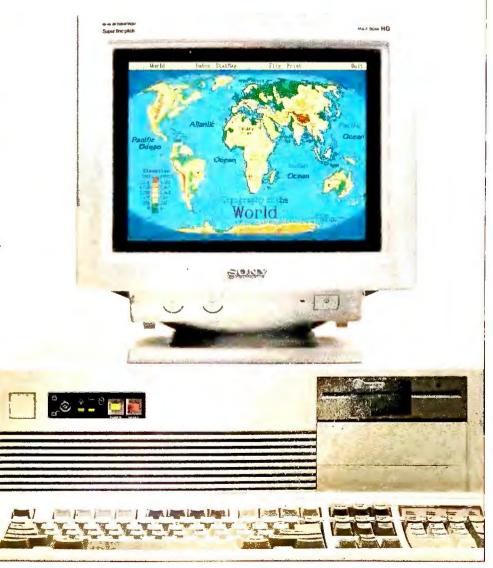
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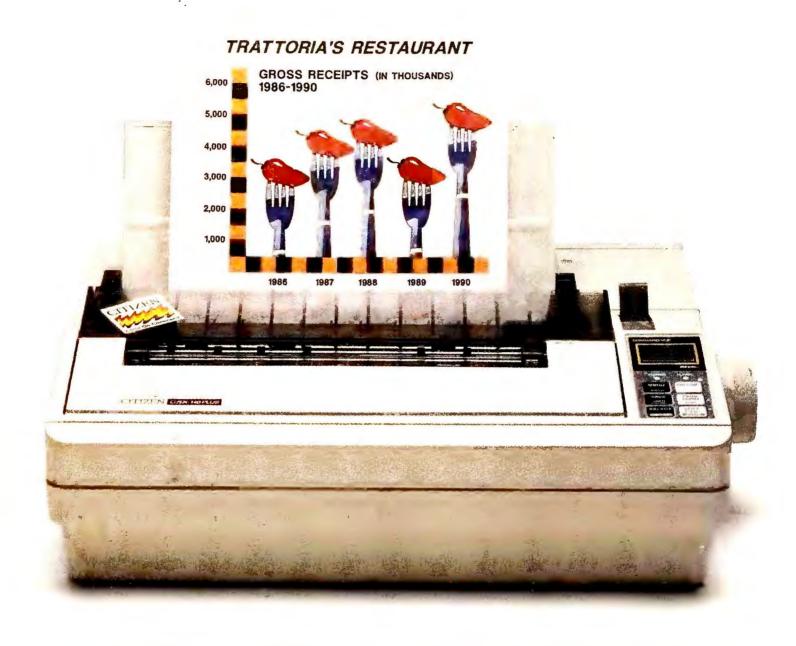




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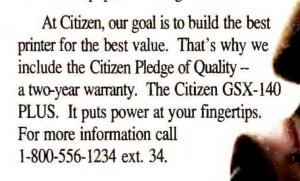
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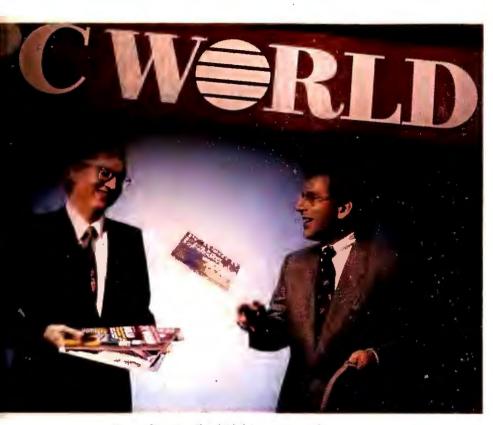
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New Editor in Chief Phil Lemmons takes the handoff from Richard Landry.

From his halcyon days on the high school track team to more recent 50-yard dashes down the halls of *PC World*, Richard Landry has always had a faster clock speed than most of us. If you feel a slight breeze, it's because Landry's on the move again, leaving *PC World* to start a sister IDG publication—and passing the baton to our new editor in chief, Phil Lemmons.

Five years ago when I met Landry, then managing editor, I knew right away he was a man with a mission. How could he be in so many places at once? One day he was streamlining work flow, the next he was plotting to make *PC World* the most timely publication in the field. In his spare time, he was punching up articles, adding exciting new graphics, and pushing for more and better product testing.

To no one's surprise Landry quickly moved up to become editor in chief. Under his guidance, *PC World*'s reviews became tough and consumer oriented. He launched a full-service *How To* section and initiated comprehensive coverage for product and industry news. In short, Landry remade *PC World* into an indispensable resource for every business person who buys and uses PCs.

The unstoppable Landry's new magazine, *MPC*, will zero in on one of the hottest areas of computing: multimedia. In Landry's place, Phil Lemmons—former editor in chief of both *Byte* and *MIPS* magazines—will take over the reins of *PC World*.

With 15 years' experience in high-tech publishing, the shrewd but soft-spoken Lemmons has a natural affinity

## Passing the Baton

for *PC World* subscribers. "As a manager and as a PC user, I'm a typical *PC World* reader," says Lemmons. "My background helps me look at my job from the reader's point of view."

A robust understanding of reader needs has aided Lemmons throughout his career. In his five years at *Byte*, he made vast improvements in editorial quality and operations. He also developed and managed the Byte Information Exchange, affectionately known as BIX, one of the most successful on-line services in the country. These and other accomplishments earned him the McGraw-Hill President's Award for managerial excellence, the parent company's highest distinction.

Lemmons is keenly aware of what makes *PC World* tick—delivering the right information candidly, without technobabble. Of course Lemmons has some dynamic new ideas of his own. "Expect new types of features for the busy management reader," says Lemmons. "Our challenge is to address the immediate problems faced by management users, and provide specific product solutions for those who want to make the most of their PC investment." Phil will be aided in his mission to support the management reader by *PC World*'s new art director, Mitch Shostak—formerly of *Business Week* and the *New York Times Business Supplement*. So in addition to a vigorous new editorial vision, you can expect to see an exciting new graphics approach.

With these two key additions—along with the many veterans who've brought you the magazine for years—the *PC World* team is ready to take on the challenges that face you every day. We recognize that American business is a race—fast paced and uncompromising. Under Phil Lemmons' able direction, you will get the edge you need. 

■

Eric Knorr Editor



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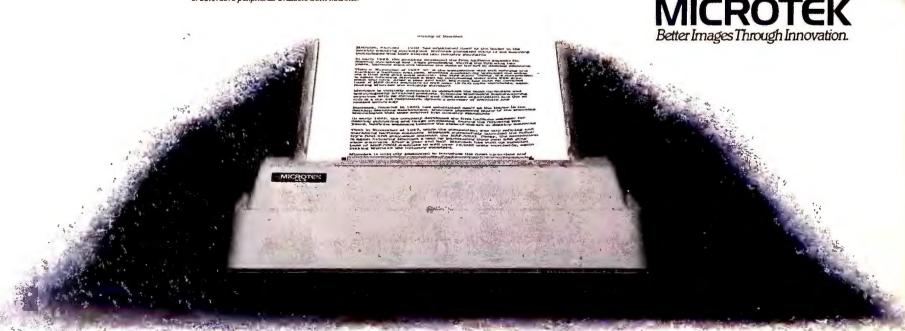
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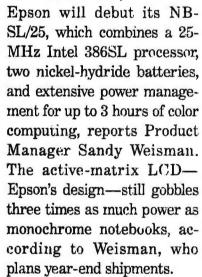
MIKE HOGAN

### **Notebooks Get Color**

Epson, Toshiba, AST Show the Way

Mobile managers will get a look at a new category in October when vendors plan to show the first battery-powered color notebooks.

Although many details are not yet finalized, Epson America seems furthest along. At COMDEX Fall,



Meanwhile, Toshiba America is getting a notebook version of its T3200SXC laptop ready for COMDEX. The largest-selling active-matrix color portable to date, the T3200SXC is AC powered and has been in limited supply because of a shortage of activematrix screens, reports Toshiba product manager Jeffrey Greenberg. Production yields are low and prices high because vendors have just one pass in the manufacturing process to bond almost a million transistors to each activematrix display. Pixels on passive-matrix screens share transistors placed along the screen edge.

The likely continued scarcity is prompting AST to opt for an improved passive-ma-



Color laptops are just the tip of total U.S. shipments despite new notebook versions.

Manager Bret Berg. AST plans a low-priced notebook identical in appearance to its Premium Exec 386SX/25. Buyers currently pay about \$3000 more for active-matrix color and \$1500 for passive-matrix. AST will use a 25-MHz AMD static processor, its own power-management software, and an improved battery to push the color premium below \$1000, says Berg.

### Personal Lasers: More for Less

Lower prices and more features greet laser printer shoppers this month as Hewlett-Packard and its challengers get down to some serious competition for entry-level buyers. HP, which owns more than 60 percent of the personal (6-ppm and below) laser printer market, is introducing a successor to its standard-setting IIP. Dubbed the IIP Plus, HP's new laser has a 16-MHz processor instead of 10 MHz, a faster parallel port, and better paper handling. With a \$1249 list price, the 4-ppm IIP Plus should sell on the street for around \$800.

That's low, but not low enough to scare off Epson America: The \$999 list price on its 6-ppm Action Laser II should translate into a street price below \$750. With more than 6 million Epson dot matrix customers out there, Product Manager Carolyn Perrier figures that the Action Laser's price and added fea-

tures give her company a good shot at raising the company's sub-5 percent market share into double digits.

Now's the time to push for more market share, says Marc Boer, senior analyst with MIS Strategic Decisions. Personal laser sales are expected to jump almost 50 percent between 1990 and 1992 to 950,000 units. Whoever captures the hearts and pocketbooks of entry-level buyers stands to keep them as this brand-conscious audience makes its work group laser-buying decisions, reasons Boer.

Hoping to improve on that, IBM's spun-off printer unit, now known as "Lexmark, an IBM alliance company," is introducing its Model 4029 series of four PCL 4-based lasers. Although they start at a somewhat pricey \$1595 for a 5-ppm model, the units include fast ports, scalable fonts, and print-dot enhancements comparable to HP's III series.

### Multimedia PC Tries to Lift Off

The Multimedia PC (MPC)—a midrange desktop that adds audio card, CD ROM player, and Windows multimedia software—debuts in October, with a dozen hardware manufacturers and 60 software vendors showing products. But while the MPC standard promises to make computers more powerful and accessible, even proponents expect relatively slow acceptance.

First out is Tandy, which has a line of Multimedia PCs that start at \$2799 for a 16-MHz 386SX, about \$800 more than for a similar non-multimedia Tandy PC. A CD ROM drive/single-board up-

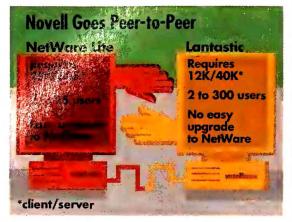
grade will be available for about \$800 by December but still well in advance of many software titles. "We decided to put some hardware out there so we can get some good software," explains Radio Shack vice president Howard Elias, who notes that the cost premium makes MPC "really a business and education product initially."

But most business software developers "aren't too excited about MPC; it shoots kind of low for business applications," reports analyst Nick Arnett with Multimedia Computing. "We are not on the MPC bandwagon," agrees Rob Lippincott, director of Lotus's multimedia group, who points to technical limitations and questions about Microsoft's control over the technology. Microsoft allies disagree, one insisting that "Microsoft's interest is simply establishing a platform for its own content-publishing titles."

Lippincott feels consumers won't pay the hardware premium for access to early MPC software: "The stuff has to be outrageously good." It is, counters MPC Marketing Council manager Glenn Ochsenreiter, who insists MPC brings striking capabilities that "millions of PCs can use with a relatively simple upgrade. This marketplace can start now."

### Novell Has NetWare Lite

Novell, the premier supplier of client/server network software, is venturing into the peer-to-peer arena with NetWare Lite, an inexpensive offering aimed at small businesses just starting to hook PCs together.



Novell is challenging peer-to-peer king Artisoft with \$99-per-node net software of its own.

Available by

November, the NetWare Lite operating system doesn't require a dedicated server, offers easier installation and administration than Novell's client/server NOS's, and provides an easy upgrade path to more advanced NetWare. At \$99 per node, NetWare Lite

also represents a dramatic drop in the entry point of that family (NetWare 2.2 pricing starts at \$895 for five users).

NetWare Lite comes on a single floppy disk and installs in minutes, Novell claims. During an introductory period, it will be bundled with Digital Research's DOS-compatible operating system, DR DOS 6.0, which adds task-switching and disk-caching capabilities. Lite works on all NetWarecertified hardware and makes it easy for customers to move over to full-blown NetWare by running both NOS's simultaneously on the same PC.

NetWare Lite's prime competition is Artisoft's Lantastic, "which has seized leadership of the peer-to-peer market," notes Jamie Lewis, editor in chief of the Clarke Burton Report. Easy to install, use, and administer and with minimal memory requirements, Lantastic has elbowed aside offerings like Novell's discontinued NetWare ELS on its way to building an installed

base of more than 300,000. It boasts features that Netware Lite lacks, such as disk caching and simple electronic mail facilities.

"The key question is, how good a product Novell can build?" says Lewis. He thinks Novell has enough to do providing directory services and network management on its client/server OS, not to mention smoothing the upgrade path from NetWare 2.2 (with most of the installed base) to NetWare 3.11. The peer-topeer market offers new opportunities but also challenges, he adds: "NetWare dealers won't carry it; NetWare Lite has to sell in Egghead and Soft Warehouse, because that's where Lantastic is."

### Ethernet, Token Ring Protocols Merged

Network administrators trying to maintain both token ring and ethernet LANs or trying to decide which standard to go with for new hardware purchases may have an easier time after the first of the year. Chips and Technologies (C&T) has introduced a new chip set that supports both protocols, letting its OEMs offer users a single adapter, network server, or other LAN hardware that can be easily installed and maintained on both types of nets.

LAN hardware standards show no signs of settling down, reports the Gartner Group. Users are buying ethernet and token ring LAN adapters in about the same proportion; and, even as those sales double to 8 million by 1995, they will still be split about 42 percent to 41 percent in ethernet's favor. With C&T's ChipsLAN, managers supporting mixed net environments don't have to choose.

ChipsLAN supports busmastering on 16-bit or 32-bit ISA, EISA, and Micro Channel buses. It doubles current token ring data transfer rates to 20,000 64-byte frames per second and offers a 15,000 frames-per-second rate via its 10BaseT ethernet protocol, reports Strategic Development Manager Farzin Firoozmand. It supports both 4- and 16-mbps token ring, coaxial cable, and thick or thin twisted pair.

ChipsLAN will deliver both leading protocols for the price of token ring alone. But users who plan to stick with 10BaseT networks, which are cheaper than token ring nets, may not be interested in a combination product, observes Steve Magidson, vice president of marketing for laptop LAN adapter maker Xircom. Scheduled to ship to Chips and Technologies OEMs by the end of the year, the two-chip set could appear in retail products during the first quarter.

### Pen Hardware, Software Emerge

Momenta Corporation's pen notebook and Slate Corporation's announcement of software that moves PostScript documents onto pen PCs brought pen computing into sharper focus in October, but two major operating environments remain in beta.

Momenta took the wraps off a \$4995 20-MHz 386SX, unique because it also includes software that lets a mobile executive start pen computing immediately. It will run both Microsoft's Windows for Pen Computing and Go Corporation's PenPoint when those operating systems become available by year's end. However, its own object-oriented environment already offers a full suite of desktop utilities and major applications such as a spreadsheet and word processor. Although available only in limited quantities until early next year, the Momenta covers every other point on the mobile manager's wish list-light weight, decent battery life, even an optional keyboard.

Meanwhile, Slate plans a

spring 1992 release of Pen-Book, a two-part authoring tool that translates and compresses PC and Mac Post-Script documents for use with Windows for Pen Computing and PenPoint. PenBook converts desktop-created documents-manuals, catalogs, price lists, and other materials —into "electronic books." Like a book, the documents can have a table of contents, tabs, and bookmarks and be marked up with a pen. The \$695 PenBook Author translates PostScript documents for use by the \$99 PenBook Reader, which will run under Windows for Pen Computing and PenPoint.

Analysts see slow growth despite such innovations. Although Grid Computer has sold more than 10,000 systems and NCR is now shipping its clipboard-type entry, analysts at a Technologic Partners conference on pen computers expect U.S. shipments of 100,000 to 300,000 units in 1992, rising to about 1 million shipments a year in 1995. ■

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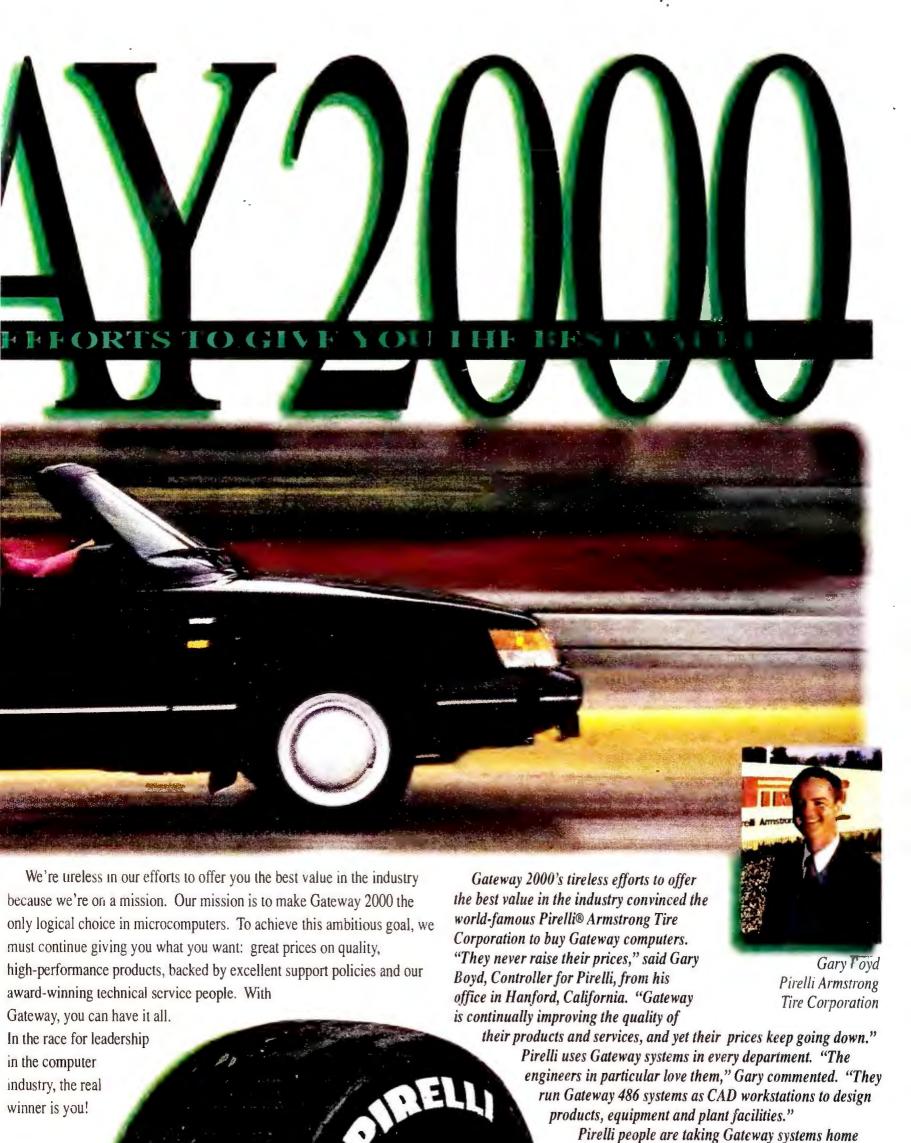
On all SX and DX systems, a Microsoft@ mouse and Windows™ 3.0 are standard. MS DOS® 5.0 comes standard will all systems. With Gateway, you don't pay extra for the tools you need to get the most out of your computer.

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with them, too. Last year the company hosted a computer fair to give employees a chance to compare various computer brands on the market. "Our factory manager bought a Gateway for home, as did the manufacturing manager, four of the engineers and myself, just to name a few," said Gary. "Even with all the competition at the fair, Gateway 2000

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- 1 PS/2 Mouse Port
- 124-Key AnyKey<sup>TM</sup> Keyboard
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-PC Magazine 5/28/91

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But we've just released FoxPro 2.0. And it's more innovative, more powerful, and far, far faster.

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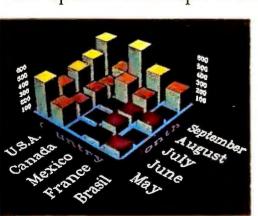
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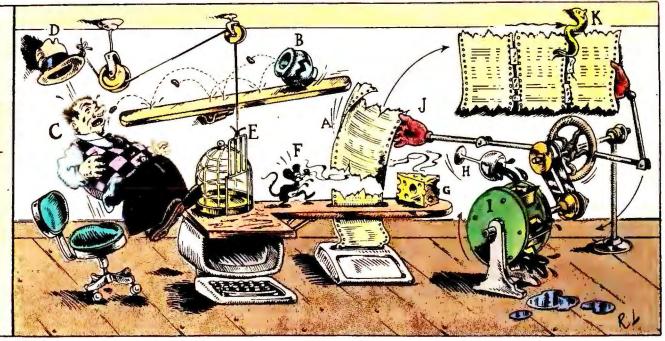
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MOUTH OF NEUROTIC MAN(C) WHO
IS SO DISCOMBOBULATED THAT HIS
HAIR STANDS ON END, DISCOPPING
HAT(D) WHICH OPENS CAGE (E)
AND RELEASES EPICLIREAN MOUSE
(F)

MOUSE, INSPIRED BY SCENT OF PERFECTLY AGED CAMEMBERT CHEESE, GNAWS THROUGH SPREADSHEET, ONLY TO DISCOVER HE HAG BEEN FOOLED BY AROMA OF OVER-RIPE GORGONZOLA (6)

IN A FITOF PIQUE HE SPILLS
VINTAGE WINE (H) INTO WATERWHEEL (I) WHICH TURNS PULLEY
THAT CAUSES GLOVE (J) TO
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Sideways version 3.3 works with all releases of 1-2-3 as well as other software. Add-in capability requires 1-2-3 Release 2, Release 3, or Symphony.

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### LETTERS

Reactions and responses from the PC World community



### The E-Mail User Group Connection

Hello, PC World! Many thanks for the listing of user group addresses in August's Consumer Watch column. I'm responsible for all software development and support in a U.S.-Soviet joint stock company. Last summer we started the first Nantucket-certified Clipper user group in St. Petersburg. Then we set up a BBS, joined FIDO, and got an Internet account. We would like as many user groups as possible to contact us by sending Internet E-mail to agh@jvd.spb.su; FIDO to Arcady Khotin 2:5030/8; or letters to 12-36 Dmitrovsky per. St. Petersburg 191025 Russia. But we really need an E-mail connection with other user groups. Can you help us out?

Arcady Khotin
St. Petersburg, Russia

The Association of PC User Groups (APCUG) is an E-mail communications hub for more than 200 user groups around the world. For a \$25 annual membership fee, a group gets a free Tymnet account for group officers so you can exchange free E-mail almost anywhere in the world through the association's BBS. Contact APCUG at 1730 M St. NW #700, Washington, DC 20036, or dial up their BBS at 408/439-9367 or 408/439-9371 (settings N-8-1) for more information. —Ed.

### **Charity Comes Home**

In August Letters you mentioned that you were unable to find a national domestic institution to match IDG's East-West Education Development Foundation, which provides cast-off computer equipment to Eastern European students. Let me introduce you to Educational Assistance Limited (EAL). In seven years EAL has generated \$9.1 million in tuition credits by helping to broker used and unwanted equipment from business donors. Corporations receive up to twice the book value of their donations as tax credits, and to date we've helped 987 students graduate from U.S. colleges. Contact Mark Brumbach, EAL National Coordinator, 10228 Conser Ave., Overland Park, KS 66212 for more information.

Donald D. Taylor Topeka, Kansas

### **CompuServe Password Bandits**

Recently I received a phone call from CompuServe (or so they claimed) requesting my password because of a mistakenly deleted file. Trustingly, I gave it. But fortunately I called CompuServe to check and found out I'd been hoodwinked. CompuServe closed my old ac-

count and refunded what these bandits had spent. The moral: Never give your password to *anybody*.

Alex Lefort Montreal, Quebec, Canada

### Thanks for the Utility

Thanks for MF.COM, the utility program in August *Star-Dot-Star* that shows how much space is left on a hard disk and how much memory is free. The utility is much quicker than CHKDSK and needs a lot less memory to work. Also, its output is dead-on running under DOS 5.0.

Richard Jehn Edmonton, Alberta, Canada

### Norton Utilities 5.0: A Useless, Expensive Utility?

July PC World strongly recommends both DOS 5.0 and Best Buy Norton Utilities 5.0 ["DOS Does It Right" and "Hard Disk Defenders"]. I followed your suggestions and bought both programs right away. I've been very pleased with DOS 5.0, but I think Norton Utilities 5.0 is a useless, expensive program. Why? Because it's not compatible with DOS 5.0 or with Windows 3.0. Two weeks after I bought version 5.0, I saw Norton Utilities 6.0 (compatible with DOS 5.0 and Windows) on sale. Why didn't you outline these severe deficiencies in version 5.0 and let us know that version 6.0 would remedy them? Now I'm stuck with an unusable product on your recommendation.

David M. McInerney Monroe, New York

It is our policy to evaluate only products being sold at time of review, and neither DOS 5.0 (previewed in July) (continues)

### **An Apology**

In September's "Thumbs Up for Lightweight Laptops" article, a significantly misleading percentage was stated regarding a reader survey on notebook customer loyalty. The survey was based on a total of 100 PC World readers. Of those, only five were AST customers, and two said they would not buy another AST unit. The writer inferred from two buyers that 40 percent of AST's installed base would not be loyal customers. This is not a statistically representative or significant sample to make such a generalization, especially because the survey was taken in May, after AST's product had shipped for only a few months.

AST is gaining in notebook market share and is ranked second by Scoreboard with 18.3 percent of 386SX notebooks sold through dealers. This is because of the great demand and popularity of AST's Premium Exec and its excellent customer service and support, which includes six-day-a-week, toll-free phone support and 24-hour support via fax or

electronic bulletin board.

In a recent J.D. Powers survey of the computer industry, which is a statistically representative sample of 1784 small and medium-sized businesses, AST ranked third, ahead of Compaq, IBM, and all the other companies included in your survey. AST ranked highest in customer satisfaction for ISA-based computers sold through the reseller channel.

AST cares about its customers and would like the record corrected to assure future buyers of the quality and satisfaction they look for when buying from AST. AST has shipped over 30,000 notebooks, so 40 percent would mean more than 12,000 users—not two.

Genelle Trader
Director of Marketing for
Portable Systems
AST Research

Editor's response: Regrettably, Ms. Trader's criticism of September's "Thumbs Up for Lightweight Laptops" is entirely deserved. While the percentages mentioned correctly reflected the data, they were without significance because of the small size of the sample. Data about laptops from Everex, IBM, Texas Instruments, and Zeos was also based on samples too small to support meaningful projections. Somehow during the passage of information from an outside research firm to PC World's former research director and then to PC World's editorial department, any warnings made about the small sample sizes were lost.

We at PC World take this lapse in fairness and accuracy very seriously. In addition to revamping our survey process, we have commissioned another laptop survey with much larger samples, and we will publish those results as soon as possible. We apologize to our readers and to the vendors affected by our survey for allowing the original projections to appear in print.

Philip Lemmons Editor in Chief

nor Norton Utilities 6.0 shipped until well past press time for our July issue. In fact, even the announcement of Symantec's Norton Utilities upgrade came too late for mention in July. Best Buy Norton Utilities 5.0, however, still stands out among the utilities reviewed in July, and it is compatible with Windows 3.0 and DOS versions 2.01 to 4.01. It's true that some components of Norton Utilities 5.0 are incompatible with DOS 5.0, so Symantec recommends that DOS 5.0 users upgrade to Norton Utilities 6.01.

If you bought Norton Utilities 5.0 after April 10, contact Symantec for free upgrade information. Otherwise, an upgrade costs \$49. —Ed.

### Super-VGA Board Q&A

Your August review of super-VGA boards ["Screen Gems: Super-VGA Boards"] brings up a question: You say the Boca Super-VGA delivers flicker-free 72-Hz screen refresh at all resolutions except 1024 by 768. That makes the board a match for 14-inch multiscan monitors, such as Seiko's CM 1440, that can run at 72 Hz at 800 by 600. I have the Boca/Seiko setup, but it won't refresh at 72 Hz in 800-by-600 mode. What's wrong?

Brian Goodwin Holyoke, Massachusetts

Thanks for the "Make Your Monitor Flicker Free" sidebar to your superVGA boards review. I now understand what makes a monitor flicker free, but what kind of display should I use with one of the three Best Buy boards [ATI VGA Wonder XL, Boca SuperVGA, STB PowerGraph Ergo-VGA]? And what justifies the extra expense of a noninterlaced monitor?

Marcelo Nogueira Santa Cruz, California

Mr. Goodwin has an older Boca Super-VGA with a different BIOS than the model we reviewed. Boca SuperVGA owners who bought their units before May 1991 can contact Boca Research to obtain upgrade information. Mr. (continues)



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Nogueira will find that any multiscan monitor, including the popular Multi-Sync 3D, can display flicker free at standard 640-by-480 VGA resolution. But he'll need a newer multiscan, like the 15-inch NEC 4FG (\$899) or Dell's GDP-16C (\$999), to achieve flicker-free performance at either 800-by-600 or 1024-by-768 resolutions. Finally, a

noninterlaced monitor costs more, but because it has faster electronics, it paints the screen in a smoother fashion that's much easier on the eyes.

-TJ Byers

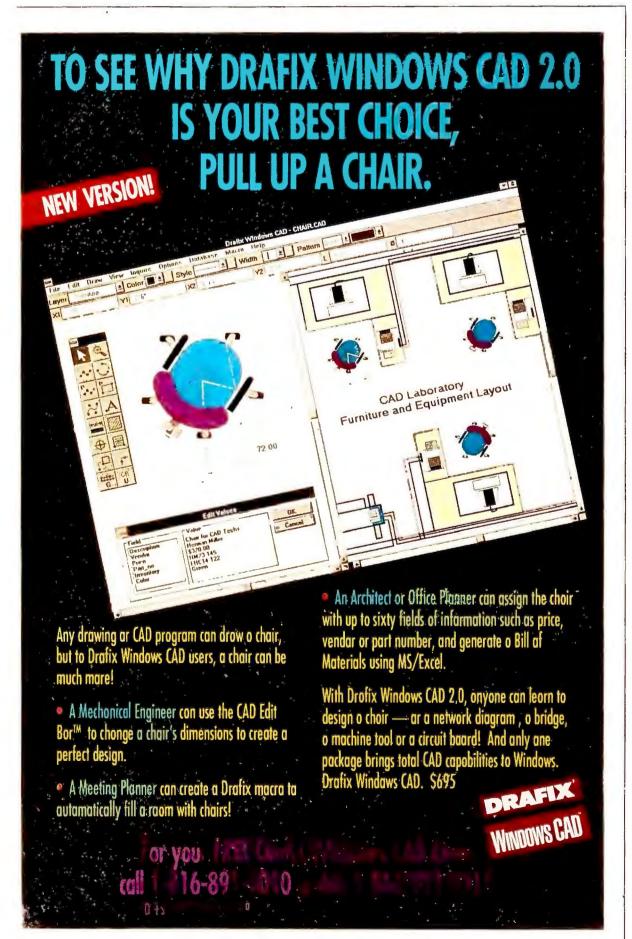
### A New Crop of Notebooks

I'm on the staff at Texas A&M University's Agricultural Experiment Station.

We're in the market for a 386SX note-book computer, and we've been following your reviews avidly. In a sidebar to your May review "386SX Notebooks: Portable Powerhouses," you listed a bunch of notebooks that had shipped too late to be included. Are you going to be reviewing more SX notebooks? It would be great to see a comparison of the latest machines before we make our purchase.

Kathy Young Vernon, Texas

Turn to "20-MHz Notebooks: SX Roadrunners" in this issue to get our recommendations on the latest crop of fast featherweights. And as the choice of SX notebooks increases, you'll be able to (continues)



Circle 153 on reader service card

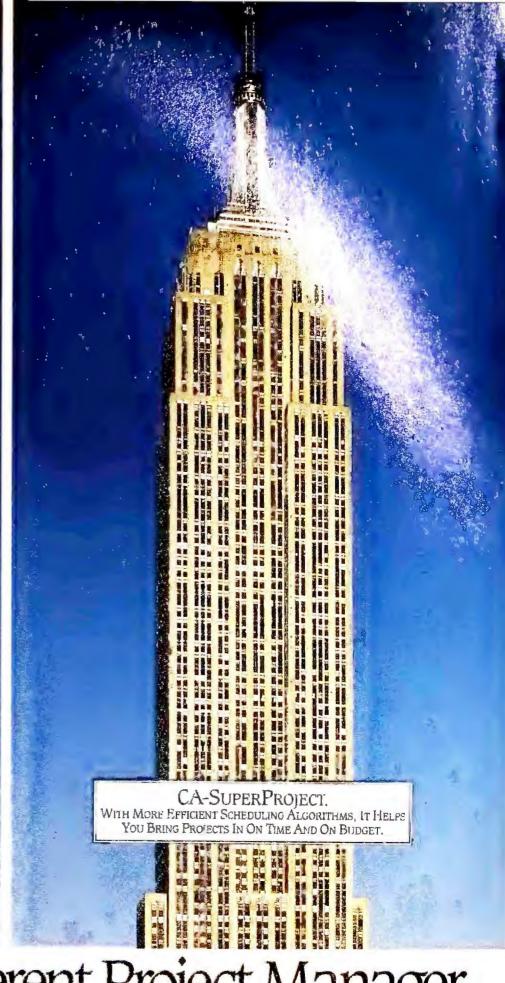
### **POWER TIP NO. 219**

### Keeping Your Values With 1-2-3 Worksheets

If you regularly have to update growing worksheets containing large, complicated formulas, use the Range Value command to speed recalculation and conserve memory and disk space. Press /rv, highlight any spreadsheet area where you want to keep the calculated values but no longer need the formulas, and press <Enter> twice. This sequence converts memory-hungry formulas into simple values. You can also convert formulas a cell at a time by pressing <F2><F9><Enter>. Or place a formula in a cell and press <F9><Enter> for an instant conversion from formula to value.

> Chris Antley West Columbia, South Carolina





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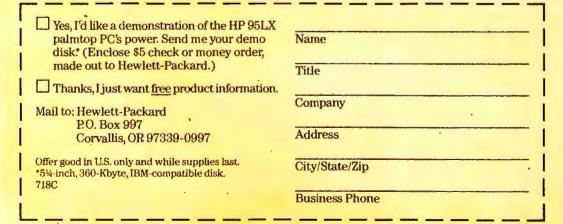
information services such as CompuServe, Dow Jones News/Retrieval and electronic mail.

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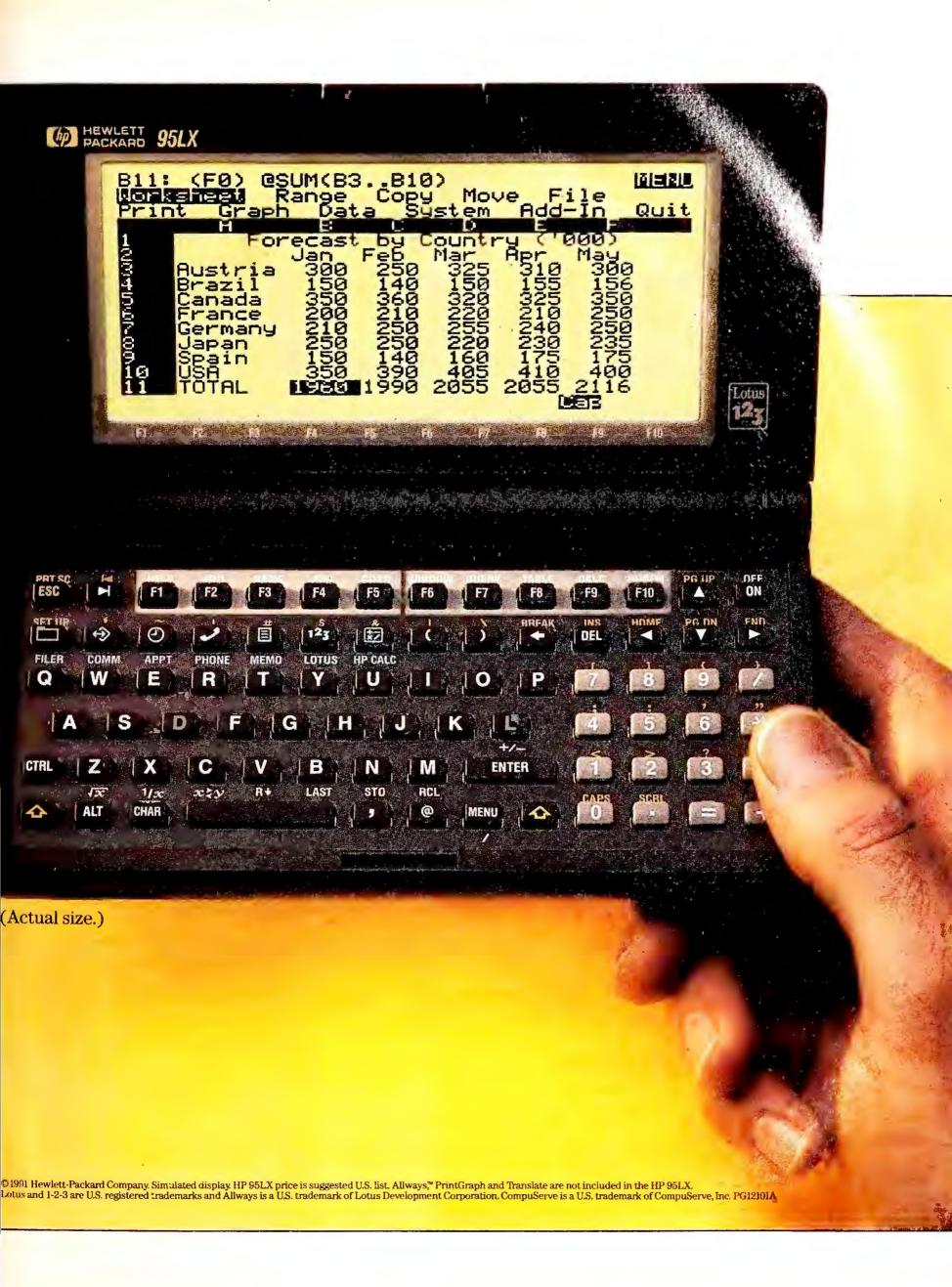
How did we get so much into so little? For one thing, we put all the applications in the 1-Mbyte ROM. Leaving most of the 512K built-in RAM for your files. A plug-in slot takes optional RAM and application software cards. And the two AA batteries give you 1 to 2 months of typical use.

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cultivate your awareness further with reviews in issues to come. -Ed.

### **Windows Road Test**

"Road Test: Windows 3.0" in August was refreshing in that it contained some negative comments about Windows. Your past coverage of this operating environment has been so positive that I was starting to wonder if PC World was owned by Microsoft. I've had more than ten years' experience with DOS-based computing, and I consider Windows to be one of the worst purchases I ever made. After trying it on several machines, I threw it out.

J. C. Randolph Bloomington, Indiana

Your August Top of the News report "NCR, Grid Offer Notepad Blueprint" omits relevant information. The item doesn't mention, for instance, that Grid's two new units have the first backlit display on a pen-based computer. And while you point out the NCR 3125's 6-hour battery life, you don't note Grid-Pads' battery life of up to 8 hours. You also state that the NCR's 386SL processor is more representative of the power needed for notepads, but Grid doesn't believe you need a 386 to get tremen-(continues)

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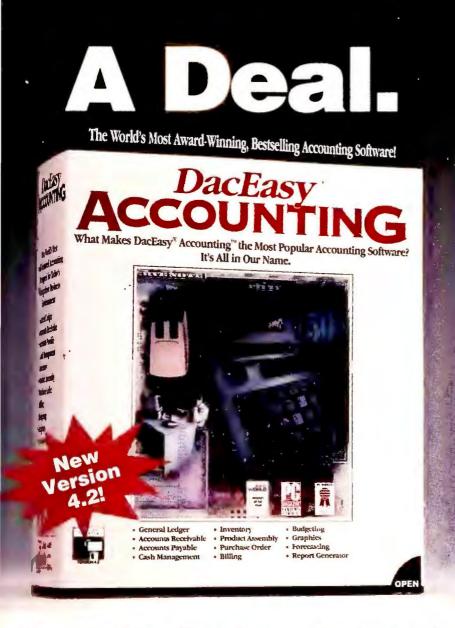
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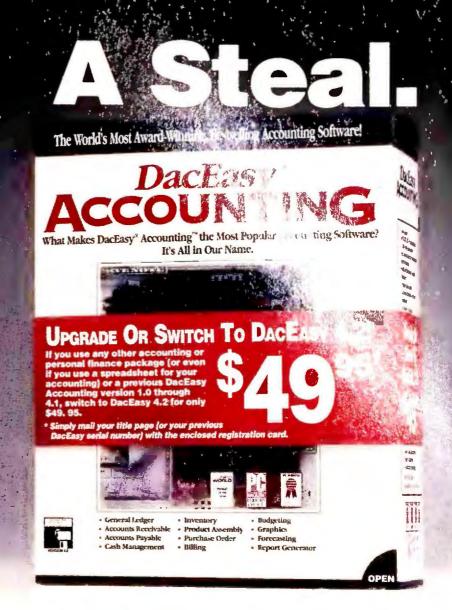
### **POWER TIP NO. 220**

### Copy 1-2-3 Formulas Quickly

When you copy a spreadsheet formula, the cell references shift to reflect the new position of the copy. But sometimes you don't want the formula to adjust its cell references—when you want to duplicate an important result in another area of the worksheet, for instance. You could use absolute cell addresses, but if you just want a simple copy, there's a quicker way: In 1-2-3 or Quattro, position the cell pointer on the form⊎la, and press <F2>. Press < Home > to move the cursor to the beginning of the formula. Type an apostrophe, and press <Enter>. The apostrophe converts the formula into a label, which you can copy freely without adjusting cell references. After copying, remove the apostrophe from both the original and the copy by pressing <F2> <Home> <Delete> <Enter> at each cell.

Richard Scoville Contributing Editor





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dous value out of pen software applications. Our many Fortune 1000 customers agree.

Bob Goligoski Grid Systems Fremont, California

Thank you for pointing out the Grid-Pads' additional features. Top of the

News items are not reviews, however, nor do they claim to be comprehensive. Given our space limitations, we highlight only the features we deem most important. —Ed.

#### **Corrections and Clarifications**

After our September preview "A New Plain in Color Printing" went to press,









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#### Circle 173 on reader service card

#### **POWER TIP NO. 221**

#### Getting Sidekick Plus to Give Back Some RAM

The Sidekick Plus Phonebook module has a Background Communications option that can eat up almost 25K of conventional RAM. If Sidekick Plus is consuming more than 75K of conventional RAM, chances are the Background Communications mode is turned on.

To shut it off, remove Sidekick Plus from memory and run the Install program. Select Design New Skplus Continue Skplus Design. Press < Enter>Y to accept the default name for the program file, SKPLUS.EXE, or type another name. Select Phonebook, answer n to the 'Background communications' question, and select your modem. Press <F2> to create a new EXE file and <Esc> to exit the program. The next time you load Sidekick Plus, it will take considerably less conventional RAM.

> Borland Technical Support Scotts Valley, California

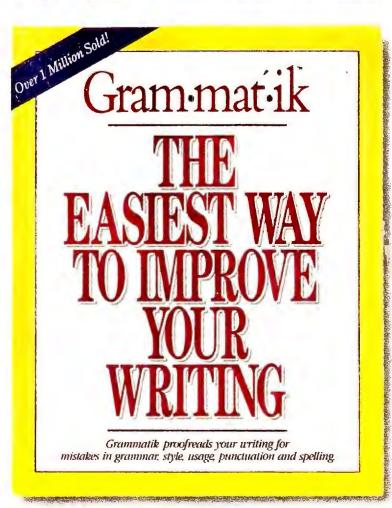
Tektronix changed the name of its printer to Phaser III PXi. For information contact Tektronix at 800/835-6100.

We misspelled Munir Mandviwalla's name in August's Road Test. He is a part-time lecturer at California State Polytechnic University, Pomona.

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Co-Processor	Optional 803875X	Weitek 4167 socket i486DX upgrade	Weitek 4167 socket	Weitek 4167 socket	Optional 803875X
Memory (Std./Board Max.)	2MB/16MB	4MB/32MB	4MB/64ME	8MB/64MB	IMB/8MB
Expansion Slots	4 open 16-bit ISA	3 open 32 bit EISA	3 open 32-bit EISA	8 open 32-bit EISA	2 open 16-bit ISA
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The Z-486/33ET has been tested for compatibility with Novell NetWare® and Microsoft LAN Manager™ The Z-486/33ET has been submitted for testing and compatibility with Banyan® VINES™ and SCO™ and ISC™ UNIX®

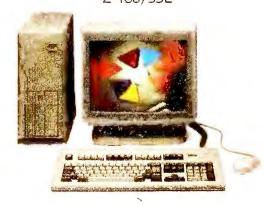
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#### **1MB Versus 4MB SIMMs**

Q. I own a 16-MHz 386SX and want to upgrade its memory. The manual says the system can address up to 16MB of memory, but the system's maximum fast RAM capacity is four 1MB SIMMs [single in-line memory modules]. Since 4MB SIMMs fit in the same sockets, couldn't my system actually handle 16MB of fast RAM?

Bob La Pierre Great Bend, Kansas

A. Though 1MB and 4MB SIMMs use the same sockets, they're not interchangeable-which SIMMs you can install depends on the system's design. Your system, like many 386SXs, has four SIMM sockets that can hold either two or four 1MB SIMMs. Because it can't use 2MB or 4MB SIMMs, you must plug a memory board into an expansion slot to expand memory past 4MB. Access to expansion slot memory is slower than access to memory on the motherboard or on a card in a dedicated memory slot. Faster 386DX and 486 systems often accept 2MB, 4MB, and even 8MB SIMMs and may have eight or more SIMM sockets to hold the large amounts of memory needed when they're used as network servers.

#### From Mac to PC and Back

Q.My company recently purchased several Macintoshes. All our other computers here are PCs running DOS, and we don't have a network. On the Macs, we run Microsoft Word and Excel. What hardware and software do we need in order to take files from these apps, modify them on our DOS machines, and return them to the Macs?

James C. Carlson
Portsmouth, Virginia

A. Macs manufactured in the last couple of years can read and write 1.44MB 3½-inch DOS disks. This isn't obvious because DOS floppies don't pop up on the screen as icons the way Mac floppies do. Instead, you have to use the Apple File Exchange utility included with the Mac system software to copy files from the Mac's disk to your DOS floppy and back.

Word on the Mac can export and import DOS Word files. Most other popular PC word processors can also read and write Word files, either directly or by running a separate conversion utility, such as WordPerfect's CON-VERT.EXE. All Mac and PC spreadsheet programs can read and write 1-2-3 format (WK1) files. Note, however, that Mac and PC versions of Excel can't read each other's files directly-you must save them as SYLK or SLK (an option in the Save As dialog box) to move them from one platform to the other. Also, the PC and Mac versions of Excel use different date systems, beginning with January 1, 1900 and January 1, 1904, respectively. When viewing a Mac-generated worksheet on the PC,

select Options Calculation, and week the 1904 Date System box listed under Sheet Options.

#### Install an IDE Adapter Board

Q. The 65MB RLL hard drive in my computer recently failed. I'm considering replacing it with an IDE drive. Would the new IDE controller work with my existing floppies? Can I keep my old RLL controller and use it to run a second hard drive?

Robert Spiridgliozzi APO, San Francisco

A. A combination IDE adapter/floppy controller board should work fine with any standard floppy drive. (The IDE board is called an adapter because the controller electronics are built into the drive itself.) You can install only one IDE adapter in a system, and it won't coexist with an RLL or MFM controller. However, you can run two IDE drives off one adapter. Also, many SCSI adapters and ESDI controllers can coexist peacefully with IDE drives.

#### No Extended Memory in an XT

Q. I have an XT turbo clone with 640K RAM. Some of the software I want to use requires more than 640K of memory. I have asked the local computer outlets about extra memory, but no one can tell me if it is possible to add extended memory to an XT. Can it be done and, if so, how?

Tom Cantrell via CompuServe

**A.** The XT and its clones are built around an 8088 processor, and that chip's 20-bit address path limits the amount of memory XTs can directly ad(continues)

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dress to 1MB. (IBM's design reserves 384K of that memory space for system use, so only 640K is available for use by your software.) Because extended memory is directly addressed RAM *above* 1MB, an XT's processor can't use it.

You can install an *expanded* memory board in an XT, but only certain programs can use expanded memory. Your XT can't run software that requires extended memory (such as 1-2-3 3.x or *AutoCAD*) or software that requires a 286, 386, or 486 (such as *DesqView 386* or OS/2). If you want to use such software, you'll have to upgrade to a new system.

#### **Catproof Your Computer**

**Q.** I have a PC in my home that my wife and I share with two cats. What precautions should I take to protect my equipment from our curious family felines?

James G. Finley Gresham, Oregon **A.** First, set up your system so that your pets can't accidentally knock anything over—to cats, a warm monitor or CPU may seem like a perfect spot for a snooze. If either cat likes to chew on things it shouldn't, keep the cables out of reach. Otherwise, the biggest pet threat to your PC is the cats' fur, which can accumulate in floppy drives and jam them. Cats or no cats, it's always a good idea to cover your computer and printer when not in use. Doing so keeps out not only fur, but also dust, which is also bad news for your system. A small piece of cloth hung in front of the drive bays should stop most of the incoming hair. If you notice hair accumulating in your keyboard, blow it out (avoid vacuuming, so you won't have to dig through dust to find a key cap).

#### **Displaying Underlined Text**

Q.I've been told that on a monochrome monitor, underlined text in word processing documents should appear underlined on screen. On my PS/2 Model 25, it doesn't. Why? George W. Crumley, Jr. Merrick, New York

A. The terminology used to describe monitors is confusing. IBM's original text monitor is called the Monochrome Display. Today, many systems have single-color graphics monitors. The Monochrome Display and its clones display underlined text but not graphics. Single-color graphics monitors display graphics in various shades but not underlined text. To compensate, most word processors let graphics monitors display underlined text in reverse video.

#### **Buying Mail-Order PCs Overseas**

**Q.** As you can see from my return address, I live far from the States. Can I can buy a computer by mail?

Yudy Yunardy Jakarta, Indonesia (continues)



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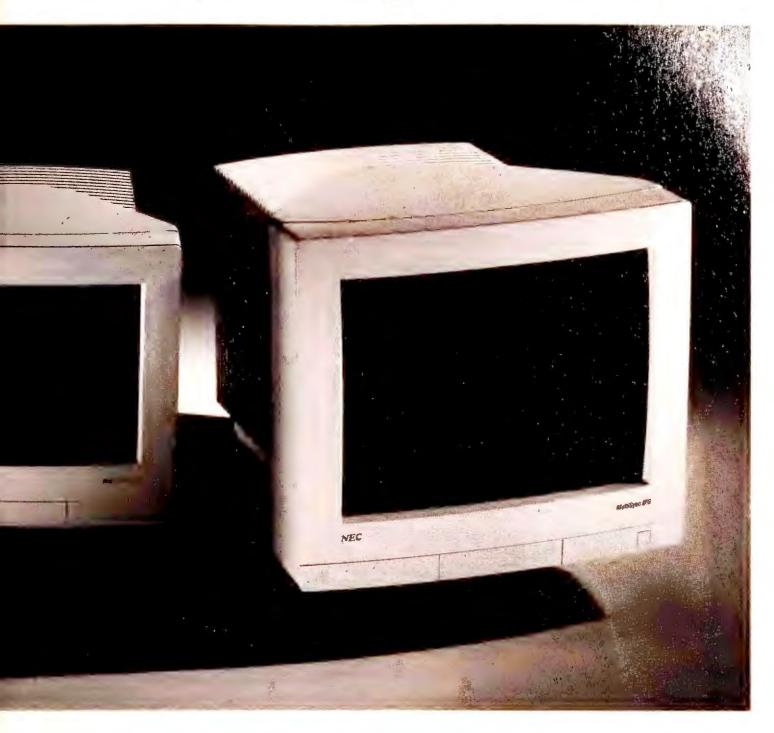
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monitors. Higher refresh rates enable stable, flicker-free images. While the highcontrast screens eliminate blurring, display colors more vibrantly and deliver exceptionally sharp text and crisp graphics.

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#### POWER TIP NO. 222

#### A Macro That Beeps When It's Done

For lengthy WordPerfect 5.1 macros, you can add an audio prompt at the end that lets you know when the macro's finished. To try this on an existing macro, press <Ctrl>-<F10>, type the macro's name, and press < Enter > E. Place the cursor at the end of the macro, and press < Ctrl>-< Page Up. Hit B (for {BELL}) and press < Enter>. Press <F7> to exit. The next time you execute the macro, it'll beep when it's done. Suzanne Corber New York,

A. All five mail-order companies that won *PC World* Best Buy awards for their products in the past year will ship computers overseas. However, they won't ship to countries where they sell through a subsidiary or distributor, and you can't reach their toll-free numbers from outside the United States—instead, use the direct numbers listed below.

There are several differences between domestic and international mail order. You pay the shipping charges: to Jakarta, around \$300 per system. You also pay any import tax: The Indonesian consulate in San Francisco says the rate might be 100 to 200 percent (check with your local customs office for the current rate). It could be worse—a few countries don't allow individuals to import computers at all. Also, if anything goes wrong with the system, you'll have to ship it back to the United States for repair at your own expense. Finally, systems containing state-of-the-art

chips, such as the 50-MHz 486, may require a special export license from the U.S. government.

#### INTERNATIONAL MAIL-ORDER CONTACTS

#### CompuAdd Corp.

512/258-5575, 512/335-6236 (fax) Direct numbers in Canada, the United Kingdom, France, Germany, and Mexico Reader service no. 672

#### **Dell Computer Corp.**

512/338-4400, 512/343-3772 (fax) Sells through subsidiaries or distributors in 30 countries, including Belgium, Canada, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Sweden, Spain, and the United Kingdom.

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#### Gateway 2000

605/232-2000, 605/232-2023 (fax) **Reader service no. 674** 

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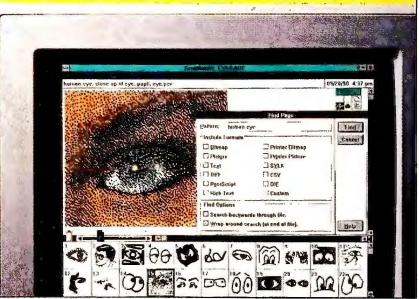
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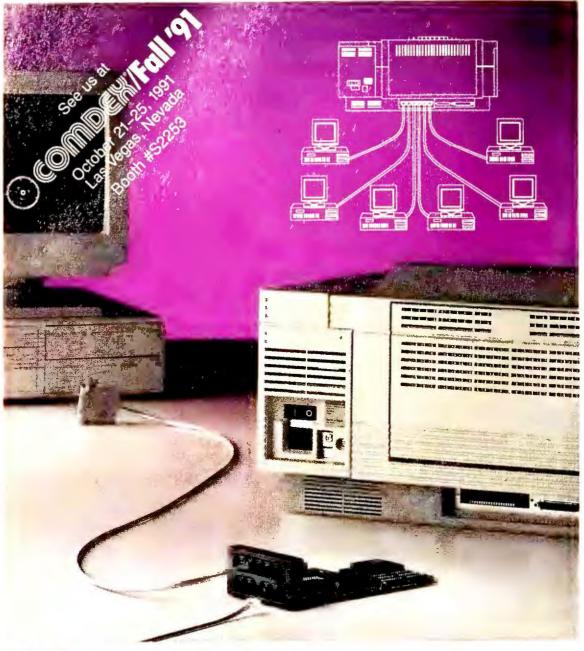
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#### THE HELP SCREEN

**Zeos Int'l Ltd.** 612/633-6131, 612/633-9503 (fax) **Reader service no. 676** 

#### **COBOL 6.0 Problems**

Readers who ordered the shareware compiler *COBOL 6.0* as recommended in the March *Help Screen* but who have not received it should see the item "Bargain COBOL Redux" in this month's *Consumer Watch*.

Send your questions to Robert Lauriston, CompuServe 73707,1731; MCI
Mail 381-7106; Internet duck@well.sf.ca.us; or 415/442-1891 (fax); or
mail them to The Help Screen, PC
World, 501 Second St. #600, San
Francisco, CA 94107. PC World will
pay \$50 for published questions. Sorry, we cannot acknowledge submitted
materials. 

■

Karl Koessel is the technical editor and Robert Lauriston a contributing editor for PC World.

#### **POWER TIP NO. 223**

#### Printing to a Different Drummer

Does this sound familiar? You want to print your WordPerfect 5.x file on someone else's printer, but that person doesn't use WordPerfect. The best solution is simply to use your PC to print the file to a floppy disk, take it to the WordPerfect-less machine, and copy the print file to the printer using copy a: printfilename port. In most cases port is LPT1. The file should print with all formatting intact.

Lisa Hopkins
WordPerfect Technical
Support
Orem, Utah

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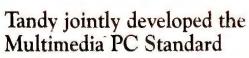


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VEMI	Back-UPS 600	Heavily con	ed systems, CAD/CAM workstations	\$449
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#### NETWORK Q&A

#### How to Use CD ROMs With Novell's NetWare Networks

#### David Rhodes

**Q.** We are considering a number of CD ROM-based applications for use in our company. What are the options for making these applications available to users on our NetWare network?

Tristan Eckersberg Lubbock, Texas

**A.** There are three different ways to share CD ROM drives on a network. Which is best for you depends on your company's specific needs.

The least expensive method is to install the CD ROM on a workstation (the "CD server") and access it via a remotecontrol utility such as NETremote + or LANSight. A memory-resident program (TSR) installed on the CD server sends the screen image to your workstation and routes your keyboard input back. Except for occasionally slowed response or jerky screen redraws, the CD ROM application feels like you're running it at your own workstation. The major limitation to this approach is that only one workstation at a time can control the CD server. Also, if you copy a piece of clip art from the CD ROM to drive C:, it goes to the CD server's hard disk, not yours. The workaround is to copy the file to a shared network directory, exit the remote control program, then copy the file to your local drive.

For multiuser access to CD ROM data, consider *CD Connection*. Again, a dedicated PC acts as the CD server, but the CD ROM browsing software runs on the workstations. When two or more users access the CD server, *CD Connection* juggles their requests for data, though response will be much slower. You may also encounter RAM cram—on top of the usual CD ROM drivers, each workstation must load a 30K redirector TSR and on non-NetWare LANs, NETBIOS.

For faster performance, you can use third-party software to install CD ROMs directly in a NetWare file server and take advantage of NetWare's superior disk caching. The best we've found is SCSI Express, which also eases RAM cram by eliminating the need for the CD ROM drivers and redirector TSR required by CD Connection. This approach saves at least 45K of workstation RAM. Servers running SCSI Express must be upgraded to NetWare 3.11, though other servers on the LAN can continue to run NetWare 2.x.

Finally, for top performance you can simply copy an entire CD ROM to a file server. One of our clients recently needed to set up several gigabytes of automotive technical data for constant reference by a 30-person department. When even the fastest CD ROM drives proved too slow, the company negotiated with the software vendor for a license to copy the disks to a large NetWare volume. Because NetWare server hard disks are six to ten times faster than the speediest CD ROM, this provided a major speed boost and solved the problem.

Be aware that many CD ROM software vendors are still grappling with the issue of multiuser licenses. As with other applications without network licensing schemes, network installation is generally permissible so long as you purchase a copy for each user.

David Rhodes is a consultant with Business Systems Group, a national systems integration firm based in Houston, Texas.

#### WHERE TO BUY

#### NETremote + 4.11

Reader service no. 677

Brightwork Development, Inc. 766 Shrewsbury Ave. Tinton Falis, NJ 07724 800/552-9876, 908/530-0622 (fax) LIST PRICE: \$350 per server

#### LANSight 2.0

Intel Corp. 300 Park Ave. S, 15th fl. New York, NY 10010

800/458-5267, 212/995-8604 (fax)

LIST PRICE: \$395 per server Reader service no. 678

#### **CD** Connection

CBIS, Inc. 5875 Peachtree Industrial Blvd. #170 Norcross, GA 30092 404/446-1332, 404/446-9164 (fax) LIST PRICE: \$695 for 8 users

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#### **SCSI Express for NetWare 386**

Micro Design Int'l 6985 University Blvd. Winter Park, FL 32792 407/677-8333, 407/677-8365 (fax) LIST PRICE: \$1985 with SCSI adapter

Reader service no. 680

#### **POWER TIP NO. 224**

#### An Undelete for 1-2-3 Version 2.01

You're making changes in a 1-2-3 version 2.01 worksheet and accidentally overwrite some important data—but you want to keep the other alterations you've made since your last save. Although 2.01 lacks an undelete function, there's an easy work-around: Select File Combine Copy Named/ specified-range, enter the address of the cells you've overwritten, and select the name of the file you're working on. 1-2-3 will retrieve the original information from the previous version of the file and insert it into your current worksheet.

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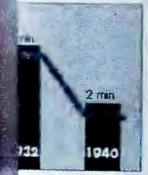
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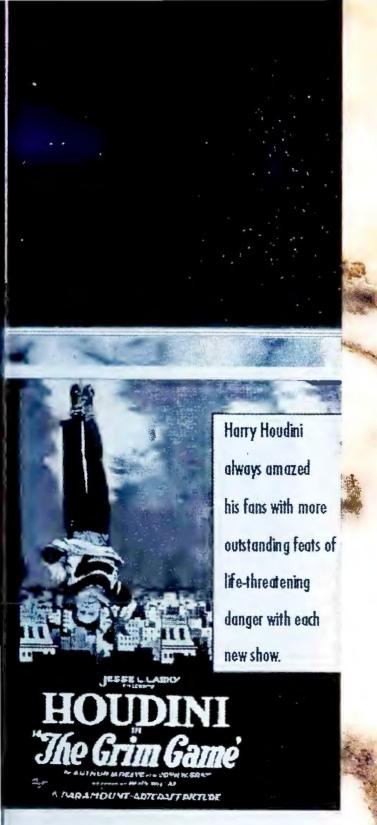
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#### CONSUMER WATCH

Advice and information for the computer consumer

Christine Whyte

#### Can Wrist Supports Prevent Carpal Tunnel Syndrome?

Carpal tunnel syndrome (CTS)—three words that strike fear into the heart of anyone who spends a good part of the day typing on a keyboard or using a mouse, especially if a job depends on it. Chances are you know someone who suffers from this painful and potentially disabling wrist injury. Reported cases of repetitive strain injury, the category to which CTS belongs, have increased dramatically in the last decade, and many cases probably go unreported by people who are afraid they'll be labeled as a complainer or lose their jobs.

The good news is that you can take steps to help prevent CTS and other painful conditions that result from swelling and inflammation of the tendons or their linings in the hands, wrists, and arms. It's important to be aware of the causes, symptoms, and safeguards.

You're particularly at risk if you type nonstop for long hours or if you constantly bend your wrists or lean on them to reach the keyboard or hold the mouse. (The goal is always to keep your wrist in a "neutral," or straight, posi-

tion.) Some experts say you're worse off the faster you type.

In the early stages of CTS, you may wake up with a tingling sensation or numbness in your hand, as if it's asleep, or experience the same symptoms when turning the pages of a newspaper or brushing your teeth. Other early warning signs (they can occur while you're typing or not): pain or soreness in your wrist or forearm; discomfort in the thumb web or where your thumb joins your hand; or a decrease in grip strength (a coffee cup may fall out of your hand). In the later stages of CTS, you may feel severe wrist pain or be unable to use your wrists. The rule is: If pain or numbness persists, even intermittently, see a doctor. The earlier you receive treatment, the better your chances of a fast, full recovery.

According to the experts, the best safeguards against CTS are overall good health and regular breaks from work. You need to stay fit (strong stomach and back muscles improve your posture, reducing the muscle fatigue that can cause you to lean on your wrists). You should maintain a healthy weight. And you should avoid smoking, which constricts the blood flow. At work, make a practice of getting up and stretching at least once an hour (a 10-minute break is recommended): Flex your wrists and fingers, shake or massage your hands (continues)



Wrist support products come in a variety of designs. Shown here are the WR-2 extended wrist rest from Lifestar Advanced Environmental Systems (lower left, under keyboard), the Kinecto Puzzle Pad with interlocking keyboard and mouse wrist pads from Silicon Sports (middle), and two products from MicroComputer Accessories: the Wrist Trolley (upper right), which clamps onto your desk, and the Wrist Reminder, worn by the green glove (lower right).

and arms, roll your head, and generally loosen up. The idea is to get your blood flowing, especially to your hands, and give your tendons and muscles a chance to rest.

Controversy persists over the effectiveness of wrist supports in preventing typing-related wrist injuries. Approximately 30 vendors sell such products, which vary in design and range in price from \$12 to \$50. Dr. Linda Morse, medical director of the Repetitive Motion Institute in San Jose, California, sees hundreds of patients to whom she prescribes wrist rests, and reports that most people like them. Similarly, Dr. Charles Resnick, a hand surgeon based in Los Angeles, also recommends wrist rests if they keep the wrist straight and are comfortable to use. According to Dr. Morse, a good wrist support should be 3 inches deep; as wide as the keyboard; thick enough (typically 1½ inches) that your wrist is never bent up or down; have no sharp edges; be made of firm

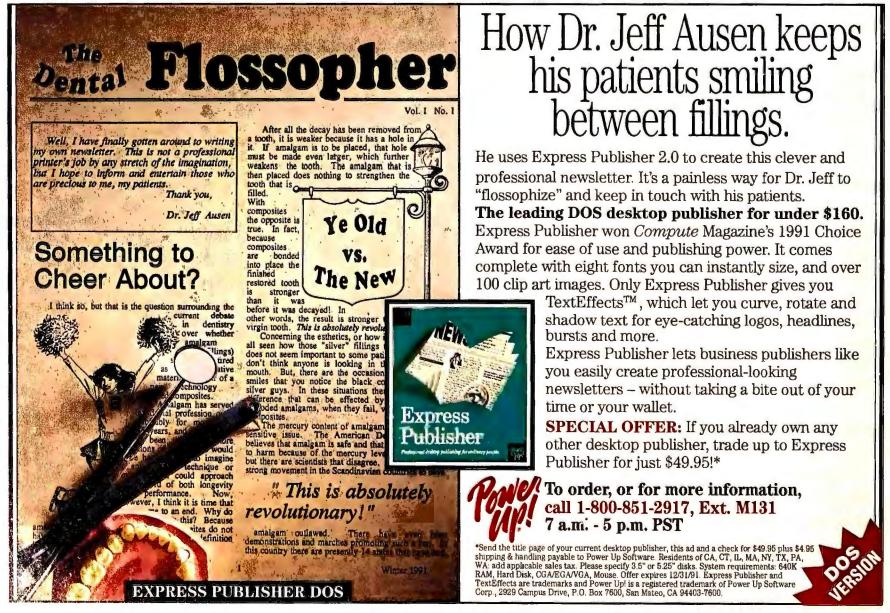
foam (never hard plastic or metal) covered in material that allows you to move your hands smoothly across the keyboard; and be anchored so it doesn't move when your hand does. Dr. Morse also suggests that you collapse the legs of your keyboard to make it flat. Like keyboard wrist supports, a mouse wrist rest should also keep your wrist in a neutral position.

On the other side of the controversy, Dr. Robert E. Markison, a hand surgeon in San Francisco, doesn't think wrist rests necessarily help. The dangers are that if you lean on a wrist rest, you may immobilize your wrists for long periods of time and put extra pressure on them, possibly causing injury. "Wrist rests are the quick fix of 1991," says Markison. "In the near future, voice recognition technology and keyboards such as the split-and-tilt Tony keyboard will be the answer." The Tony is a patented keyboard currently in preproduction at the Tony Corporation in San Francisco. Its

unique design allows your hands to be in an anatomically neutral position while you type. For information, call the company at 415/969-8669.

Terri Hansford, a physical therapist in San Francisco who specializes in hand injuries, also recommends that the buyer beware until the completion of long-term studies, currently in progress, that test the amount of force applied to the wrist when you use a wrist rest. In Hansford's opinion, arm rests, which have been available in this country for only about a year, are better than wrist rests. An arm rest is a trough in which you rest your forearm; it's suspended from an articulated arm (similar to that on some desk lamps) that clamps onto your desk, and lets you move your arm freely in every direction as well as adjust the arm rest to your height. Prices for arm rests range from about \$280 to \$600 per pair.

Before you buy a wrist rest, arm rest, or keyboard that the manufacturer says



is "ergonomically designed," find out exactly what the company means by that claim. Duffy Elleby, president of Minneapolis-based Ergosource, which sells ergonomic industrial and office products, points out that specific ergonomic standards for product manufacturers don't exist. Without an industry seal of approval or the results of long-term studies to guide you, you take a leap of faith when you purchase any of these products. Laura Stock, associate director of the Labor and Occupational Health Program at UC Berkeley, feels that comfort is the bottom line: If wrist supports are designed properly and people like using them, they should be available from employers on request.

#### **Selected Wrist Support Vendors**

The following list is a random sample of manufacturers who sell wrist support products. Inclusion in this list does not represent an endorsement by PC World or anyone mentioned in this article.

#### WHERE TO BUY

#### Accu-Back, Inc.

1475 E. Del Amo Blvd. Carson, CA 90746 800/272-8888, 213/639-1080 (fax) Reader service no. 712

#### The Ability Center of Greater Toledo

5605 Monroe St. Sylvania, OH 43560 419/885-5733, 419/882-4813 (fax) Reader service no. 713

#### AliMed, Inc.

297 High St. Dedham, MA 02026 800/225-2610, 617/329-8392 (fgx) Reader service no. 714

#### Computer Coverup, Inc.

2230 S. Calumet Chicago, IL 60616 800/282-2541 Reader service no. 715

#### Curtis Manufacturing Company, Inc.

30 Fitzgerald Dr. Jaffrey, NH 03452 800/548-4900 (outside NH),

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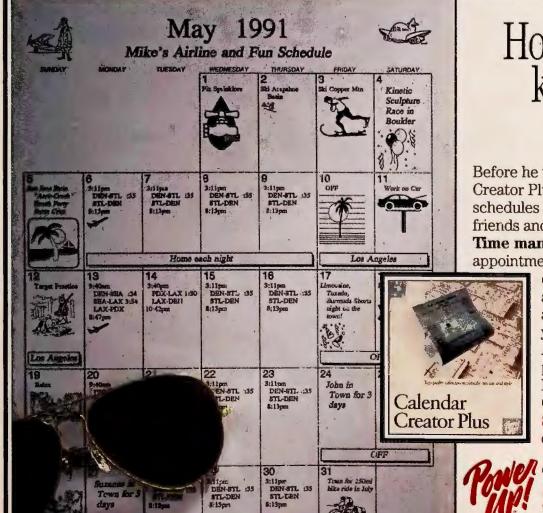
#### Fastback Plus 3.0

Fastback Plus 3.0's installation program checks the integrity of data transfers controlled by the DMA (direct memory access) chip. Fifth Generation has learned that with certain controllers this test erroneously finds something wrong with the DMA chip and prevents installation. Fifth Generation has a fix disk, Fastback Plus version 3.03, which the company will send upon request to registered users at no charge.

Fifth Generation Systems, Inc. 800/873-4384, 504/295-3268 (fax)

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Reader service no. 720

#### **Lifestar Advanced Environmental Systems**

301 Vermont St. San Francisco, CA 94103 415/626-6678, 415/626-0206 (fax) Reader service no. 721

#### Marty's Computer Workshop

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#### MicroComputer Accessories, Inc.

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2789 Northpoint Pkwy. Santa Rosa, CA 95407-7397 800/545-6254

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#### PC Compatibles, Inc.

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#### Precision Line, Inc.

14505 21st Ave. N #206 Plymouth, MN 55447 800/328-0077, 612/475-3577 (fax) Reader service no. 726

#### Santiman Enterprises

P.O. Box 903433 Palmdale, CA 935 800/835-8688, 80 47 1:40 (fax) Reader service no. 147

#### Silicon Sports

1180 Sherman Ave. Menlo Park, CA 94025 800/243-2972, 415/854-7 65 (ax) Reader service no. 728

#### Visible Computer Supply Corp.

1750 Wallace Ave. St. Charles, IL 60174-3404 800/323-0628

Reader service no. 729

#### **Wrist Pro**

16100 N. Outer Forty #250 Chesterfield, MO 63017 800/348-8633, 314/532-7430 (fax) Reader service no. 730

#### **Wrist Relief**

P.O. Box 421 Eldorado Springs, CO 80025 303/444-0372 Reader service no. 731

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Samantha Greenberg, Computer Injury Network: 213/207-1653

Caroline Rose, publisher of a newsletter about repetitive strain injuries: 415/424-9100

#### **SHOP TALK**

#### **Caveat Emptor**

Since the beginning of this year, *Consumer Watch* has received five letters from dissatisfied purchasers of Seagate hard disks. In one case, Seagate satisfied the customer with a working replacement for a defective hard disk. The company contacted a second customer but didn't provide the requested solu-

tion. And according to a Seagate spokesperson, the company does not wish to respond to the other three customers, or to *Consumer Watch* on their behalf. Should you decide to purchase a Seagate drive, be aware of the problems encountered by these people:

R. Scholten of Zeeland, Michigan, had a Seagate ST4114R 120MB RLL drive that quit working nine months after purchase. As a replacement, Seagate gave him a refurbished unit of the same model, which failed within five months. Seagate offered him another refurbished unit as a replacement, but Mr. Scholten declined because he didn't want to risk more downtime. Instead, he purchased a Seagate ST1289A IDE drive and asked Seagate to credit the price of the RLL drive toward his new purchase. Seagate didn't respond to his letter or to Consumer Watch.

Kenneth Au of Foster City, California, purchased a Seagate 20MB drive that had to be repaired twice within three months of purchase and then broke down two years after the purchase date. Again, Seagate failed to respond to his letter or to *Consumer Watch* 

David Marcus of El Centro, California, had his first Seagate ST251 hard drive fail within three months. Seagate sent him a second ST251 drive that didn't work when he received it, and a third replacement unit that stopped working 18 months later. Two more replacement units didn't work upon receipt, and a third failed within six months. After numerous phone calls and a letter to Seagate, Mr. Marcus received a new working drive in July of this year.

Dave Ritter of Lewisberry, Pennsylvania, tried to install four defective Seagate hard drives; a fifth drive worked. He requested that Seagate reimburse him for the money he spent hiring an outside repair person to help him with (continues)

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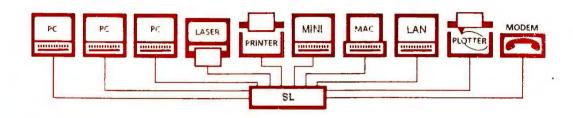


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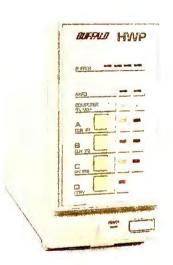
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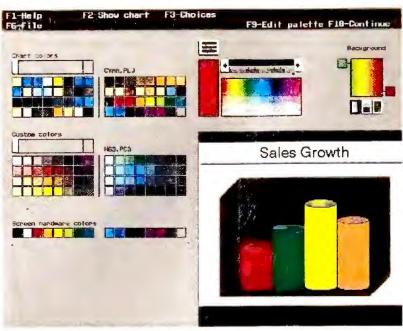
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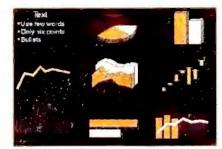




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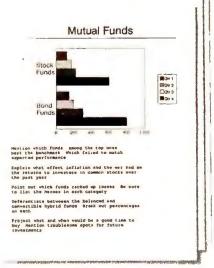
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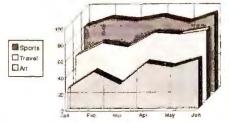


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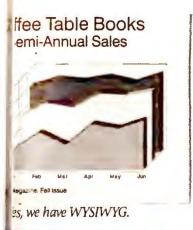


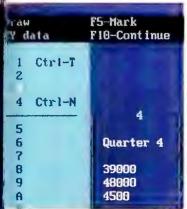
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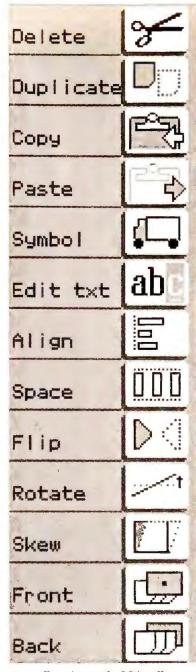




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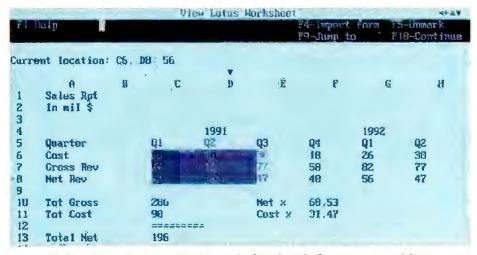
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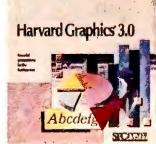


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own demo disk. And view the evidence yourself.





the four defective drives. A Seagate spokesperson told *Consumer Watch* that the company contacted Mr. Ritter but said, "We have a policy of not providing monetary compensation in cases like this."

Abraham Thomas of Singapore reported that the Seagate ST4096 hard disk he purchased had an advertised specification of 80.2 formatted megabytes. When formatted by a Seagate supplier, the hard disk's available disk space was 79.9MB. Although he contacted Seagate technical support both by phone and in writing, Thomas received no adequate explanation for the discrepancy in formatted capacity. Consumer Watch also requested a response from Seagate but didn't receive one.

#### **Bargain COBOL Redux**

PST-160

In our March 1991 Help Screen column, we told readers that COBOL 6.0, a shareware compiler, could be ordered directly by sending \$25 to the author,

Robert Noweck. Three readers contacted us after they sent checks to Mr. Noweck but didn't receive the software. After *Consumer Watch* called Mr. Noweck, he fulfilled these three orders but explained that he was discontinuing development of the compiler and would no longer be able to take orders. Instead, AV-Sync Online Services of Atlanta will distribute the final version. The source code is also available to qualified developers by request to the AV-Sync system manager but, at the request of the author, may not be redistributed.

To obtain COBOL 6.0 from AV-Sync Online Services, you can pay the subscription rate of \$25 for three months or \$40 per year. Besides the COBOL compiler, you will receive access to utilities, communications, programming, data base, spreadsheet, business/finance/time-management, education, and graphics software.

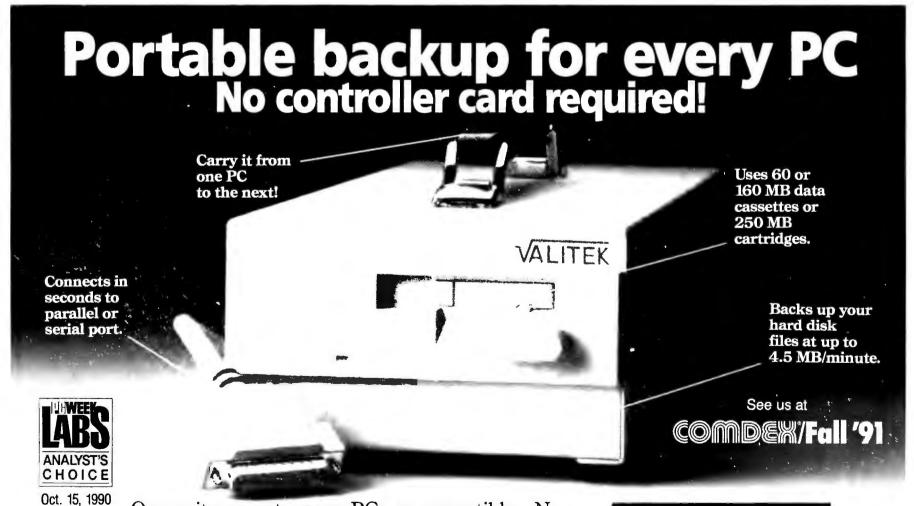
You can contact AV-Sync through the PC Pursuit and AccuLink services, or

you can dial it directly at 404/320-6202. A 24-hour answering service is available at 404/325-0665. All 25 nodes support 9600-baud HST. Connections with v.32 and v.42 modems are also available on other lines. Settings for connection should be **N-8-1**.

#### **Apologies Accepted**

Editor's note: We received two letters about SoftLogic Solutions, which manufactures the Software Carousel context switcher utility. The lesson is that a company can make mistakes, but if they're graciously remedied, customers will be happy. Following are excerpts from the letters:

In late 1990 when I received the *Software Carousel* version 4.0 upgrade, the reference manual wasn't included and I couldn't install the program. I called SoftLogic Solutions, and a customer representative told me a manual would cost \$10.00. When I objected, the repre(continues)

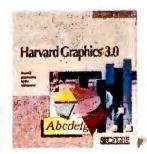


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sentative said the company would investigate the matter and get back to me. Six months later I hadn't heard from the company and wrote a detailed follow-up letter. Shortly thereafter the company's vice president of product support called to say the company would send me the latest version (5.0) at no cost. Since the company could have merely sent me the 4.0 manual, I appreciate their extra effort.

Rodney Drake Yonkers, New York

I purchased Software Carousel in February 1991 and discovered in June that a newer version had been available since the beginning of the year; I had never received notice from the company about this upgrade. At first I wasn't concerned because I was satisfied with my version of the software, but when I upgraded to MS DOS 5.0, my version of Software Carousel wouldn't work. I learned that the upgrade I needed would have cost only \$5 within 60 days of purchase, but since I received no notice, I was stuck with a version that was incompatible with my new operating system. When I called SoftLogic Solutions about my problem, they agreed to send me an upgrade for \$5 even though the 60-day upgrade period had expired. I was also impressed that I wasn't put on hold or transferred to 20 people when I called the company; my long distance call took 5 minutes—a small price to pay for great service.

Brian P. Cooper Dayton, Ohio

Think you've gotten a raw deal—or a great one? Send the details to Consumer Watch, PC World, 501 Second St. #600, San Francisco, CA 94107; MCI Mail PC World Editorial: CompuServe 74055,412; or 415/442-1891 (fax). We'll investigate complaints and publish letters with 

Christine Whyte is a freelance writer living in San Francisco.



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V.21/BELL 103 at 300 bps	A	<b>A</b>	<b>A</b>
V.33 at 14.4, 12.0 Kbps	•		
V.29 at 9.6, 7.2, 4.8 Kbps	•		
V.27ter at 4.8, 2.4 Kbps	•		
G3 FAX	•	•	•
EIA Class 2 FAX Standard	<b>A</b>	<b>A</b>	<b>A</b>
Dynamic Online Fall back/forward	•	•	•
Other Features			
V.42bis/V.42; MNP5/MNP4	•	•	•
Max. Throughput Possible(K); DTE	76.8	57.6	57.6
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4-Wire Leased and Dial Backup	•		
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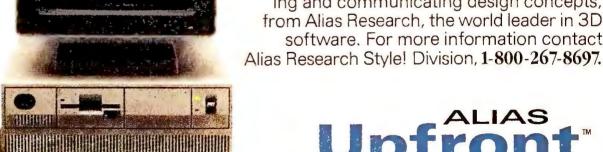
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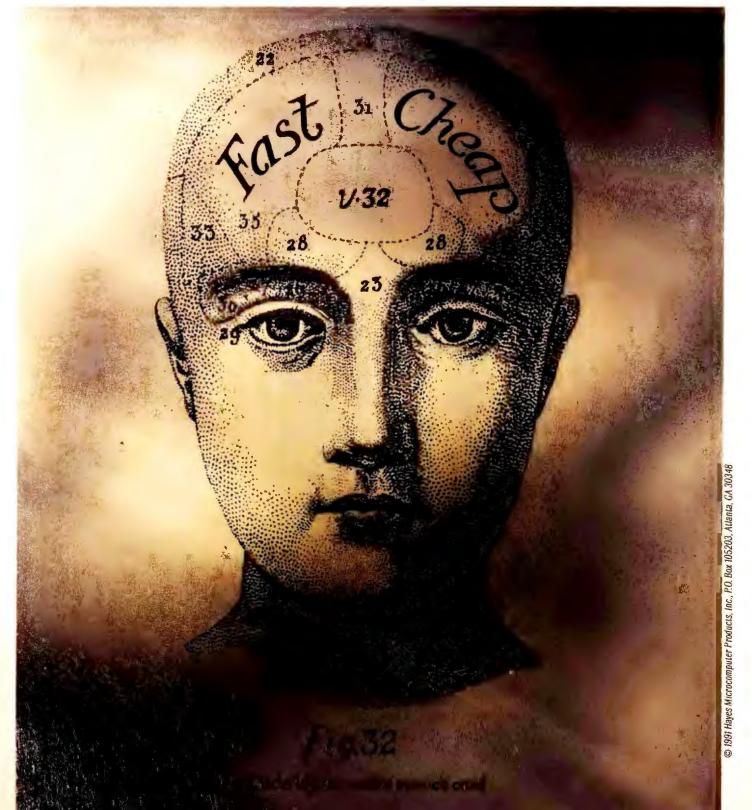
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#### **MANAGER'S FILE #7**

#### **Leaving MIS Standards Behind**

#### Alice LaPlante

Standards are the mainstay of most MIS departments, but if the PC users in your department are confined to particular programs, they may feel limited—not to mention irritated—when more attractive alternatives beckon.

All too often software standards can be out-of-date, inadequate, or just plain unfit for the employees in your particular department. Because standards are generally set by systems staff rather than by end users, the standards may be technically competent yet entirely inappropriate for employees' business needs. And when state-of-the-art technology such as multimedia, graphics, or desktop publishing is involved, with exciting new packages appearing on the market almost every month, a corporatewide software standard can become obsolete even before the ink is dry on the official memo.

Fortunately, in most organizations today, the end users are no longer forced to employ only a single company-blessed package in any particular category of software. As a manager, the advantage of going your own way is clear: You get to choose the software that is most suitable for your employees' day-to-day work.

In these days of increasingly decentralized PC buying decisions, many MIS departments now provide an "out" for individual managers: They are allowed to stray from the software standards list, but often with the understanding that they're on their own if they run into difficulties using an unapproved product.

The hazards of such independence can be substantial: no training, no support, no calls to the MIS help desk. Another major problem in this era of increasing connectivity results from possible incompatibilities with file formats if your department's users need to exchange files with users from other areas of the company. By establishing your independence, you also forfeit the benefit of MIS methodically testing software for such incompatibilities as well as for bugs and crashes.

Moreover, if a companywide standard has been set, the MIS department often has a solid relationship with the vendor, which ensures rapid upgrades, quick bug fixes, and special access to technical personnel. Your lone end-user department won't necessarily have that kind of buying clout. Because of these hazards, the best action for a manager who is unhappy with a company software stan-

dard is to negotiate for some to an of MIS cooperation.

Many MIS departments are corrected that forcing people to use packages they dislike causes more problems than it solves. They may be unaware, however, that a certain product no longer meets employee needs. In such cases, input from managers is not only heeded, it's welcomed.

Alice LaPlante is a freelance writer in Palo Alto, California.

#### Minimizing the Risks of Breaking With MIS Standards

If your department chooses to stray from the MIS path, these tips will help you avoid pitfalls.

- Assign at least one departmental "super user" per package to act as resident expert. This person's job is to test the software for bugs and file incompatibilities and to help co-workers handle technical difficulties.
- ✓ Arrange for informal support and training from an MIS staff member.
- Make sure your employees keep vendor telephone support numbers handy. Investigate the possibility of getting special corporate support privileges from the vendor.
- ✓ Look into outside training/support organizations that provide hot line help on a contract basis.
- Form a departmental user group that meets regularly to promote grass roots support among employees.
- Organize an MIS user committee to get input on future MIS standards decisions and to coordinate upgrode paths and data compatibility with other departments.
- Check computer publications for the latest information on product upgrades, bug fixes, and upcoming software releases.
- ✓ Maintain a central library of independent software reference books.





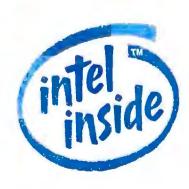
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Edited by ERIC BENDER

**Users Remain Wary of First Release of Products** 

#### As Software Advances, Bugs Still Remain

Complex Products, Diverse Environments Confound Tests



Like most users, Harvard's Randy Grenier wants to make sure software is thoroughly debugged before trusting data to it.

**S** o you bought the latest copy of Central Point's *PC Tools*, brought it home, loaded it on top of your new DOS 5.0, and the screen turned blank. Or the mouse pointer went berserk. Maybe you lost data.

This is a major vendor's flagship package. What happened?

Central Point employed an incompatible compression scheme and missed a few products it should have tested, responds Tim Pettibone, vice president of product development. "That's the biggest challenge—to make sure you have all major hardware and software in house," he comments.

Central Point has since beefed up both its in-house stock of equipment and its beta testing program. But similar problems continue to afflict users and vendors across the software market. As PC applications grow steadily more complex—fueled by advanced features, more sophisticated operating systems, and an increasing array of products to run on—are they getting any less buggy?

#### Beta but Still Buggy

Vendors typically prioritize bugs by severity and by likelihood of occurrence. A dataloss bug is high priority, as is a function that doesn't work as advertised. Crashing is considered plenty serious (unless it occurs once in a blue moon or in an oddball configuration).

The many in-house testing and quality assurance processes are followed by beta tests, which vendors say simply provide a sanity check on features and interface, expand configuration testing, and help prioritize bugs.

But users feel betas can do more. Mike Finefrock, chair of the IBM PC Users Group of the Charleston Computer Club in South Carolina, divides developers into "those that let users debug products and those that spend considerable money sending out betas."

#### Pushing the Art, and the Cost

To release increasingly complex products in stable form the first time out, Microsoft has become more efficient in the lab, says Word for Windows product manager Monica Harrington. That means automated test processes, and risk analysis on bugs.

Other vendors agree the state of the art is rising. "A lot of aspects of software development cause fear and trepidation, but software development is really getting better," says Rod Turner, Symantec executive vice president. Powerful techniques such as object-oriented programming and modular design help developers focus more on building quality in rather than testing bugs out.

Users say, however, that a vendor's commitment and resources remain just as important. "Software is better debugged today from most major players, but it is debatable if small companies do enough testing," says Timothy Carmichael, program chairman for the Dallas-based North Texas PC Users Group. Size helps, agrees Randy Grenier, systems coordinator at Harvard University's Office of

Budgets: "I know that Microsoft will continue to work on a product." Greater remains wary of buying the first release of any package. He's anxious to get the Windows version of Borland's Paradox—"[but] I have huge data tables I can't afford to screw up."

Vendors hear these concerns loud and clear—one reason Central Point is mailing a free maintenance release to all registered users of *PC Tools* 7.0. —Kathleen A. Gow



#### The Challenge in Stamping Out Bugs

Key problems in writing bugfree

"With more and more kinds of equipment [on the market], making sure we are covering all bases for compatibility."

—Tim Pettibone, vice president of product development, Central Point

"Not to spend as much money testing a product as you did developing it."

—Eileen Rudden, general manager for DOS spreadsheets, Lotus

"Infusing predictable quality and delivery times."

—Hamid Mirza, vice president for data base development, Borland

Vendors aim for bugfree software but must settle for something less, due to the complexity of today's PC environment and constraints on development costs and schedules.

# People can't say enough about MS-DOS 5.

#### Microsoft<sup>\*</sup>

"...the one you and everyone else you know should finally upgrade to."

> Paul Somerson PC Computing July 1991 MS-DOS 5 Review

**Microsoft** 

## Users Turn—Slowly—to Windows Word Processors

Holdup: Slow Windows Adoption



Millipore's shift to Word for Windows will be paced by "an incredible investment in 286s and XTs," says Linda Ead.

The *Windows* word processor race is heating up: WordPerfect for Windows is finally about to take its place alongside major upgrades of Microsoft Word for Windows and Lotus's Ami Pro (see "Windows Gives WordPerfect a Shiny New Look"), while Symantec's JustWrite and Software Publishing's Professional Write duke it out in the executive word processor arena. Splashy ad campaigns are de rigueur, and dirt-cheap promotional copies await users willing to trade one product for another.

Will customers bite on a Windows line? Many have—among them Millipore Corporation, a Bedford, Massachusetts, laboratory equipment manufacturer that adopted Word for Windows as part of a shift to the environment.

"At first, keyboard-intensive secretaries didn't want to use WinWord," reports systems manager Linda Ead. "But those forced into the program like it, especially the WYSIWYG." It's much easier

to integrate images with text for attractive reports than it is with DOS word processors, she explains.

#### **Users Adopt Windows First**

Mary Conti Loffredo, analyst at International Data Corporation in Framingham, Massachusetts, foresees a respectable but undramatic shift to Windows word processors. Their sales should triple this year to 1.5 million out of a total of 5.75 million word processing packages. That's about the pace of Windows adoption in general, says Conti Loffredo.

Users—especially those in large corporations—typically pick their environment before their word processor, she notes. Most switch to Windows word processors because they want Windows' multitasking, ease of use, and links between applications—not because they need specific Ami Pro or Word for Windows features.

And right now only about 10 percent of the user population has *Windows*. What's more,

corporate users' projections for *Windows* are dropping. Robertson, Stephens & Co., a San Francisco market analysis firm, reports that corporations expect only 11 percent of their machines to be running *Windows* by year-end—down from the 28 percent they projected a year ago.

#### Hardware Still a Barrier

Many corporations committing to *Windows* say the transition will be slowed by the cost of upgrading the installed base of PCs. "We have an incredible investment in 286s and XTs," says Millipore's Ead, who estimates that only about 20 percent of the company's PCs are powerful 386 or 486 machines.

"Most of the new machines that companies are buying are very capable of running Windows," points out Monica Harrington, Microsoft's product manager for Word for Windows. But Robertson, Stephens's study also shows PC purchases running about 19 percent lower than in 1990, which means fewer purchases of high-powered new models.

Compatibility with older applications continues to be a significant hurdle. Steve Fogarty, a systems manager for the House of Representatives in Washington, D.C., says it will probably be "a long time" before many offices on the Hill are writing their letters in Windows. "The letter you get from your congressman was written in WordPerfect and tracked in our own data base that was written with Advanced Revelation, which works intimately with Word-Perfect," explains Fogarty. At least for now, he says, moving the data base toward Windows would involve too much trouble.

But other firms are plunging ahead. "We're definitely moving into Windows, and we're currently evaluating which word processor to select," says Lisa Veldeam, a systems manager for Siemens Automotive in Auburn Hills, Michigan. The move should be fairly easy from a hardware perspective, says Veldeam, since about 70 percent of the division's computers are 386s.

The advantages? "We do a lot of presentations," says Veldeam, "so we need to keep multiple programs open, to cut and paste, and to move into electronic mail." Another benefit, she emphasizes, is that "Windows provides a consistent environment, which makes training easier."

-Patrick Marshall



Extras like Ami Pro 2.0's charts impress customers but don't necessarily justify purchases of Windows-ready PCs.

"There's a first the for everything, even the PC industry: Micros ft Corp's MS-DOS 5 actually lives up to its advanced billing."

David P. Chernicoff PC Week June 10, 1991

#### Microsoft<sup>\*</sup>

"With a Windows-like file manager, on-line help, more memory for applications, and the ability to load multiple applications, MS-DOS 5 is unquestionably the best DOS ever."

Scott Spanbauer PC World July 1991

Microsoft

"...if you're like most
Windows users, you
work with a mixture of
Windows and DOS
applications. In that
case run, don't walk, to
your software dealer
and buy the MS-DOS 5
upgrade kit immediately."

Paul Bonner PC Computing July 1991

#### Microsoft<sup>\*</sup>

"Transition to MS-DOS 5 is proving to be as painless as promised."

Stuart J. Johnston InfoWorld July 29, 1991

#### **Microsoft**

#### **PCs Sift News Avalanche**

Users Get Timely Tailored News

More than the dollar, the deutsche mark, or the yen, timely information is the international currency of the 1990s. But with tens of thousands of news stories breaking every day, how do you find just the nugget you need when you need it? Three firms combine on-line news services with desktop computing power to offer three very different solutions.

NewsEdge from Desktop Data in Waltham, Massachusetts, takes leads from more than 30 wire services; users sign up for as many services as they want. The audience, says chief executive Don McLagen, is the growing number of financial, corporate, and marketing executives who need the news right now: "If they read it in tomorrow's Wall Street Journal, or if it appears on tonight's news, it's too late."

NewsEdge "really helps you stay on top of what's going on," agrees Sheldon Laube, national director of information and technology at Price Waterhouse in New York City. The accounting/consulting firm, which is testing NewsEdge on about 100 desktops, finds that it can access more news more

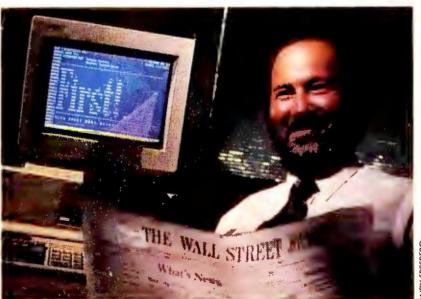
quickly than through newspapers. "It's really important to be able to watch for news about our clients and our industries," and get much broader coverage than any newspaper provides, notes Laube.

Users filter the news for just the articles they want by creating personal profiles with their own keywords; they're alerted whenever an incoming story matches any of those keywords. Because NewsEdge can work as a *Windows* application, "we can have it running all the time watching for news articles on companies we're interested in," says Carla Elbert, manager of Microsoft's treasury department.

Neither NewsEdge nor its peers come cheap. While a stand-alone version is available, most NewsEdge installations are networked. McLagen estimates that a customer willing to enroll 5000 to 10,000 employees pays between \$85,000 and \$100,000 annually, depending on the number of wire services selected.

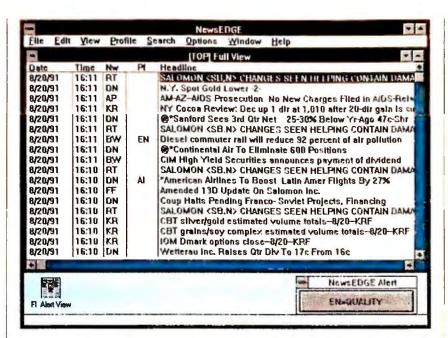
#### **Further Fine-Tuning**

First!, a service from Individual Inc. in Cambridge, Massachusetts, goes still further in



Individual's First! is like a Wall Street Journal tailored to his needs, comments Hewlett-Packard's Ken Sobel-Feldman.

ANDY FREEBERG



Desktop Data's NewsEdge can continually filter news from dozens of services and feed it into other Windows packages.

tailoring its reports to the user's needs, using Al-based software to weight different keywords in a user's profile. Each night the five or ten most relevant stories are sent to the customer via fax or E-mail. "It's like picking up a Wall Street Journal every morning that's particular to your needs," says Ken Sobel-Feldman, strategic marketing manager with Hewlett-Packard's Network Systems Group in Cupertino, California.

Individual Inc. sends out regular report cards asking customers to grade the stories they've received as relevant or irrelevant. With this feedback, the relevance rate climbs above 75 percent. First! is priced by the number of stories in the report and whether it is delivered by E-mail or fax. A company receiving eight to ten stories a day distributed by E-mail to 100 users can expect to pay \$14,000 a year.

Verity in Mountain View, California, has augmented its Topic document-retrieval technology with Topic Real-Time. The Real-Time software acts as a "knowledge agent," scanning documents based on content as they arrive from on-line services. Verity claims hit rates two to three times that of a simple keyword profiler.

"We appeal to those who are willing to put in a network with 50 to 100 users and who want to store the information and do data searches on it," explains chief executive Michael Pliner. "Our customers really buy a data base as opposed to just a news service." With 95 employees, Verity is roughly triple the size of Desktop Data and Individual.

All three services emphasize the need to integrate well into user environments. "We're trying to assimilate a rich collection of external sources with a variety of customer-installed data highways," says Desktop Data's McLagen. Accessing this information "can't be something else the executive has to do—it has to fit into his [current] system."

Ultimately, adds Individual president Yosi Amram, "the issue today is not how you get one person better informed, but how you get the organization better informed."

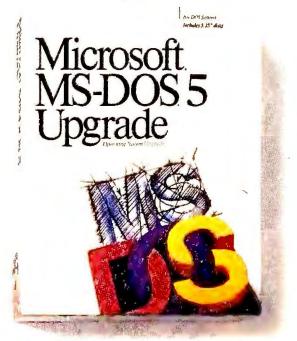
Kathleen A. Gow is a writer in Medford, Massachusetts; Patrick Marshall is a freelance writer in Silver Spring, Maryland; and John H. Mayer writes about technology in Belmont, Massachusetts.

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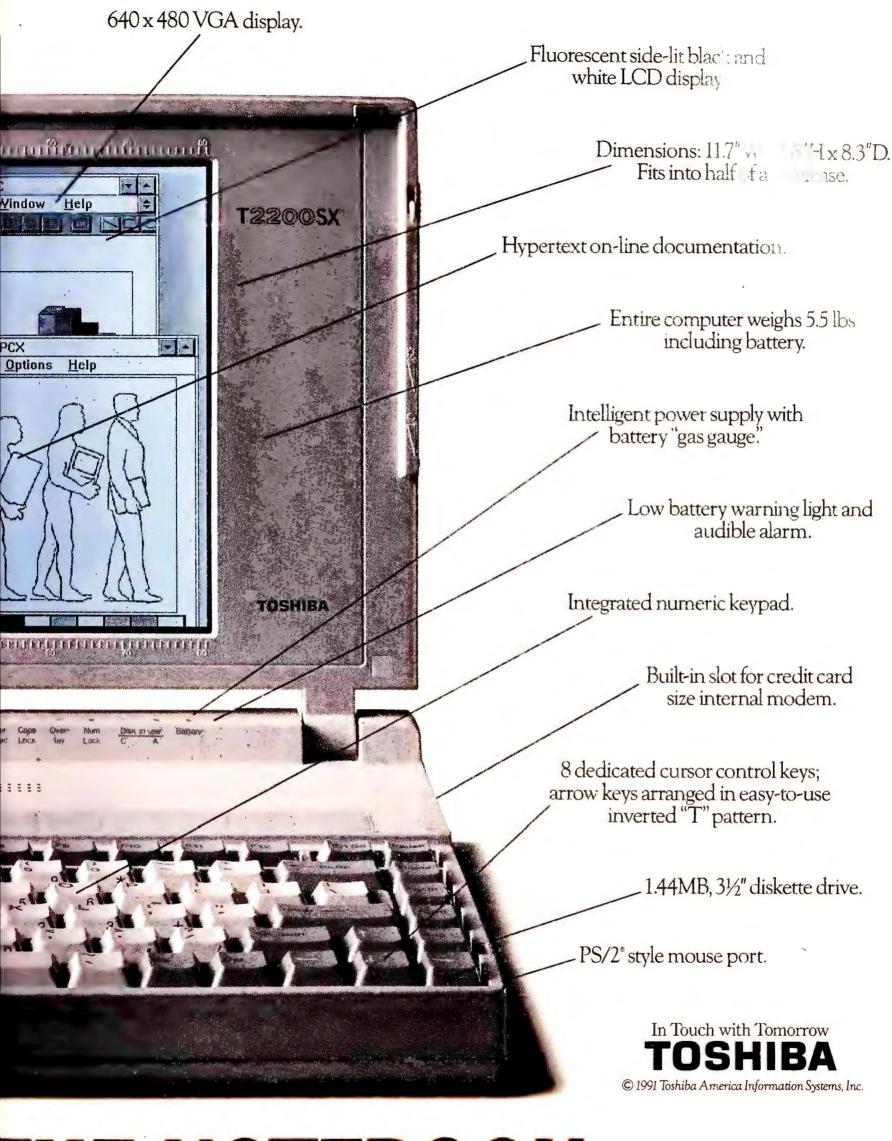
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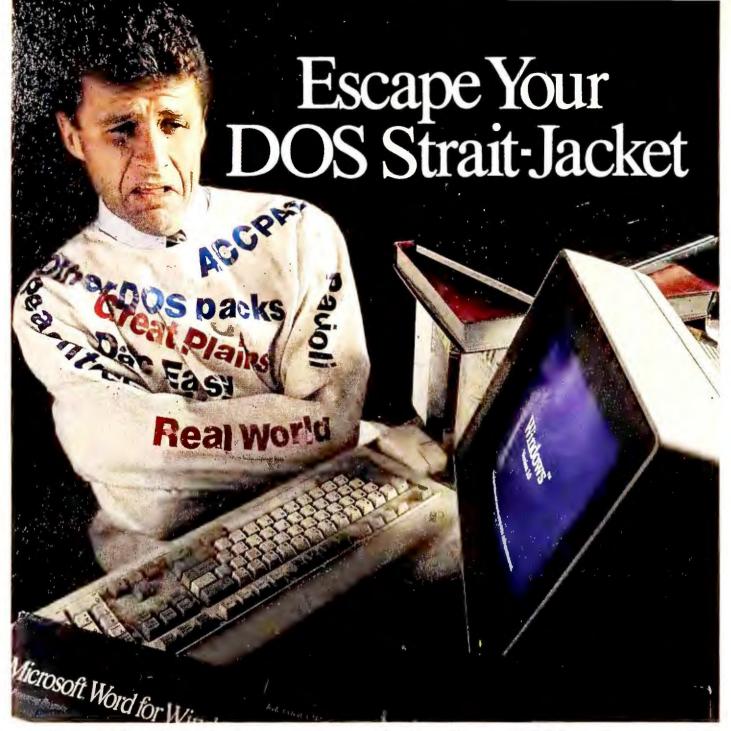
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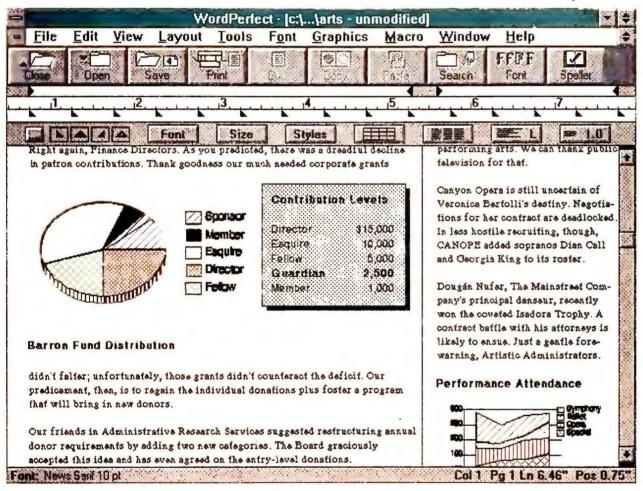
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PC WORLD OFFERS FIRST IMPRESSIONS OF FRERELEASE HARDWARE AND SOFTWARE

#### Windows Gives WordPerfect A Shiny New Look

The world's most popular word processor picks up a dazzling new interface, customizable buttons, and a bagful of formatting and editing tools.



A configurable button bar, flexible document formatting tools, a familiar 5.1 keyboard option, and a clean Windows interface make WordPerfect 5.1 for Windows well worth waiting for.

#### Bronwyn Fryer



We've all gotten a bit impatient waiting for the folks in Orem, Utah, to bring WordPer-

fect 5.1 for Windows into the light. Once you get a good look at it, though, you may never want to go back to DOS-based WordPerfect. This long-awaited product is infinitely more flexible and fun to work with than previous DOS ver-

sions. The price you may pay to upgrade to *Windows* will be worthwhile, because *WordPerfect 5.1 for Windows* alone will cut innumerable clumsy steps from your word processing tasks.

Windows programs such as Word for Windows and Ami Pro are already ahead on the Windows road, and WordPerfect 5.1 for Windows lacks some features those competitors provide. But WordPerfect 5.1 for Windows excels in ease

of use. It incorporates all the familiar and powerful features of *WordPerfect 5.1*—and, for many users, makes them accessible for the first time.

Transported to the Windows world, WordPerfect's interface is well designed and flexible. You can do all the standard Windows tricks, such as opening as many as nine documents at a time and switching back and forth between tasks or programs. And the program has a few big ad-

vantages over other Windows word processors—like a classy configurable butten bar, a flexible PageMaker-like ruler for quick formatting, the ability to accept almost all your familiar WordPerfect 5.1 keystrokes with an optional keyboard driver, and transparent importing of WordPerfect DOS files.

#### Well, Bust My Buttons

The most innovative feature of WordPerfect 5.1 for Windows

#### SNAPSHOT

#### WordPerfect 5.1 for Windows

dows version of the most popular word processor offers a hot new interface with many convenient graphics and formatting features.

#### KEY FEATURES

- Customizable button bar for point-and-click commands
- Ruler for easy formatting
- Figure, Draft, and Graphic editing modes
- Preretrieval views of text and graphics files
- File Manager aids
- Optional WordPerfect 5.1 keyboard driver

#### AVAILABILITY

**Immediate** 

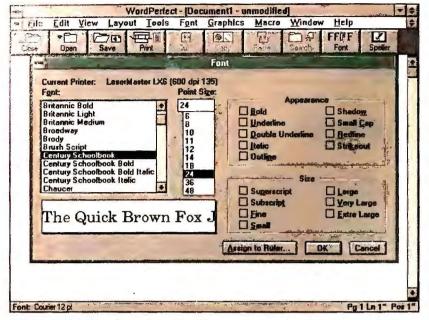
#### PRICING

\$495; upgrade from DOS WordPerfect 4.2, 5.0 or 5.1 \$125 (contact vendor for trade-up offers from other word processors)

#### WordPerfect Corp.

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Reader service no. 711



With WordPerfect 5.1 for Windows, you don't have to switch to Preview mode to see the results of your formatting choices. A dialog box shows what font selections look like before you apply them to your document.

is its button bar-a configurable set of the most frequently used command icons, which you can place along the top or sides of the WordPerfect 5.1 for Windows screen. Unlike other Windows word processors such as Ami Pro or Word, WordPerfect 5.1 for Windows doesn't make it difficult to figure out the meaning of an icon, because you can see the name of the function and the associated icon simultaneously. You can also customize the 3-D buttons to include only the function name or icon. The button bar makes tasks that are labyrinthine or even impossible in WordPerfect 5.1 as simple as clicking on a button, giving you much faster access to features and functions.

One click invokes the commands, styles, or macros you've placed on the bar. You can see ten buttons at a time and place them in any order you'd like; when a command is active, the button stays pressed. When you want to see more buttons, you simply scroll along the bar. You can also create as many buttons and button bars as you want, each including the different features you use for different tasks—say, writing a letter or producing a newsletter.

Those who like to cast a little macro magic can create all sorts of new buttons, including a macro button to select other button bars. But although a pulldown menu makes it easy to record a macro, the macro language isn't as muscular as those in *Ami Pro* and *Word for* 

Formatting in WordPerfect 5.1 can be a big headache; you may have to keep switching back and forth from preview mode because you can't judge the effect of your changes. But WordPerfect 5.1 for Windows makes it easy to see what you'll get. A powerful ruler gives you immediate access to those formatting tasks you use most frequently. You can set up margins and tabs just by clicking and dragging with a mouse. A Columns button lets you select up to 5 columns with a click, or up to 24 from the dialog box. You can adjust gutter space between columns by clicking on the ruler marker and dragging the column edge where you want it. If you want to get rid of your tabs, gutter spaces, or tables, just highlight them with the mouse and drag them down into the screen area, where they disappear.

A Benevolent Ruler

If you've ever tried to create tables in WordPerfect 5.1,

WordPartect File Manager Linked to WordPartect

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Sales Up by Two Million

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A File Manager in WordPerfect 5.1 for Windows shows attributes of all your documents, helps you navigate your hard disk, and gives you a sneak preview of a file before you access it.

Windows, so you can't create dialog boxes or add commands to menus. And although Word-Perfect will ship a macro conversion utility for simple commands, the more advanced macros you wrote for 5.1 won't work in the Windows product.

you're in for a real treat. A Table button on the ruler lets you click and drag to create any size grid, and you can use the ruler to adjust cell width. Unlike with *Ami Pro*, however, you can't grab a handle on the table itself to resize the table

horizontally; you have to put up with the inconvenience of resizing through a dialog box.

The ruler also lets you choose line spacing, justification, font, and font size by clicking on a button. You can assign or delete fonts from the ruler to list only those you use most often, and style-by-example settings let you automatically assign a style or font to the ruler for easy access.

#### Go for the Graphics

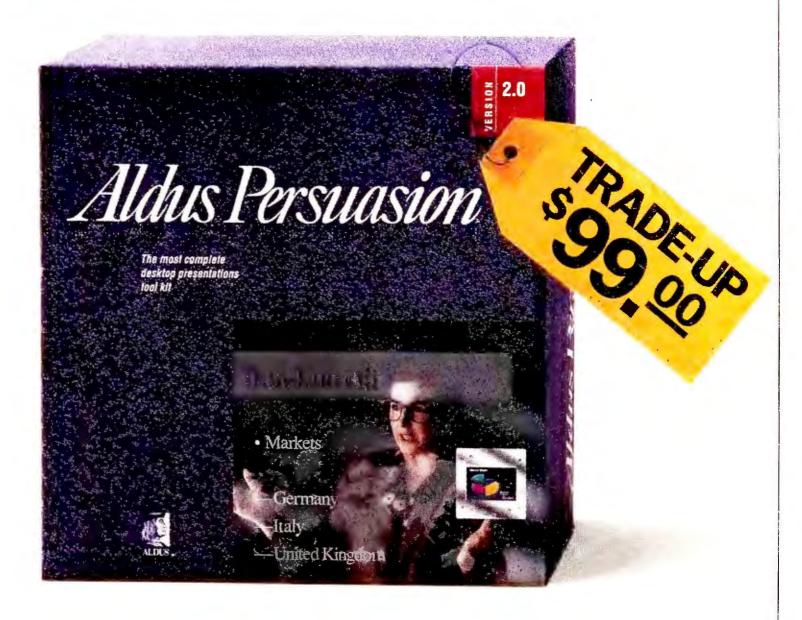
Most Windows applications make you experiment to see how a font will look on paper, or retrieve a file before you can see what's in it. WordPerfect 5.1 for Windows avoids that inconvenience with an Ami Prolike Viewer that lets you see what a font will look like in the font dialog box, or view graphics or text files before you retrieve them.

In graphics editing mode, the screen fonts are crisp and clear; besides the standard Windows system fonts, Word-Perfect 5.1 for Windows supports all Adobe Type Manager, SuperPrint, and FaceLift fonts. Desktop publishing purists can adjust kerning and pick from a spectrum of thousands of colors with a single click. To find a particular graphic, the Viewer lets you browse through files in 16 formats (including PCX, TIFF, GEM, EPS, and BMP).

A double-click on the image puts you into the figure editor, where you can use the mouse to reverse, crop, rotate, scale, outline, or stretch the image. You can zoom in to magnify a particular area in 25 percent increments, with up to a 200 percent enlargement.

Another feature lets you place horizontal or vertical lines of any width in your document, so you can set off headers or sidebars. Unlike with *Ami Pro*, however, which lets you draw ovals, circles, and other shapes, you can

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extensive features." (PC Week, Presentation Graphics Shootout, June 17, 1991)

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"Most business users can be productive almost immediately..." (PCMagazine, September 10, 1991)

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The Creative Edge in Business

draw only box shapes with WordPerfect.

If you are the mathematical type, the equation editor lets you edit and format equation symbols automatically, saving them as graphics. An onscreen display also lets you pick from 1500 mathematical, scientific, foreign language, and other characters.

#### There's No Place Like Home

Here's a crucial point for veteran *WordPerfect* users who find their fingers stumbling a bit in *Windows*: If you want to get back to familiar territory fast, you can switch to an optional *WordPerfect* keyboard driver that uses almost all the familiar *WordPerfect* 5.1 keystroke commands from within the *Windows* interface.

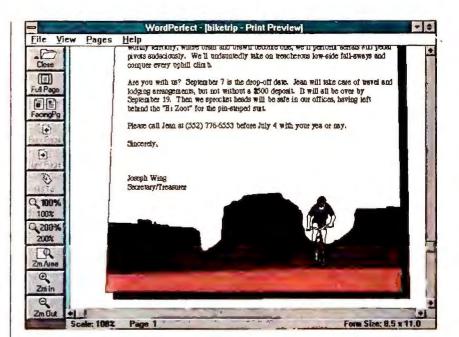
You can also retrieve your WordPerfect document in WordPerfect 5.1 for Windows transparently, without having.

to stop for a conversation with a dialog box. Translations from other non-WordPerfect formats are done through a dialog box.

A Draft editing mode lets busy people get their work done fast. The uniform font in Draft mode makes characters easy to read, and you can switch back to the regular mode for formatting. Word-Perfect's familiar redlining and group editing features are easily available from the Tools menu. And if you like to know exactly where every command is placed, a click above the scroll bar activates that crusty old standby, Reveal Codes.

#### **Perfect Road Maps**

If you tend to get lost in forests of files, WordPerfect 5.1 for Windows's File Manager is a great guide. It automatically searches your entire disk for the file you need, or even for



Using the Print Preview feature in WordPerfect 5.1 for Windows, you can zoom in for a closer look at any portion of your document with up to a 200 percent enlargement.

the keyword in a file. If you want to do a manual search, a friendly Navigator marks your path as you go. You can assign a nickname to a directory or a group of files and then put them on a Quick List for quick retrieval. The Viewer feature

is here too, letting you preview graphics and text files.

You can also use the File Manager to easily launch other Windows applications or set up DDE hot links to any other DDE-supported application; a dialog box asks you







#### Great View, Clear Choice.

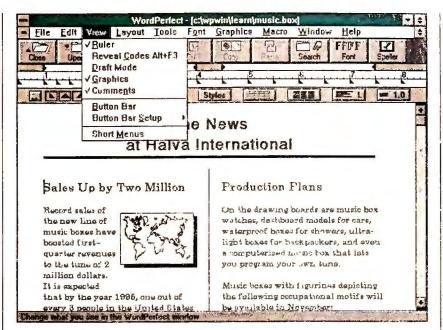
End to end, nobody offers you a clearer choice of 14-inch color monitors than the AcerView™ series – from VGA to SuperVGA to UltraVGA. Including models that meet low emission, VESA™ and European standards...that incorporate an advanced 72Hz refresh rate technology for a flicker-free display...that use the highly acclaimed Sony Trinitron® tube for vivid color sharpness. These quality monitors all come with front-mounted user controls and tilt/swivel base. All are backed by Acer® engineering – for reliability you can count on. Take the wide view – AcerView – and you'll find the right monitor at the right price.

which file you want to link to.

For beginners, WordPerfect 5.1 for Windows provides friendly, context-sensitive, Windows-style help-an infinite improvement over DOSbased help. An easy to-use What Is? selection tells you what things mean or how to perform a function, although the command doesn't include the full tutorials found in Ami Pro. A status line at the bottom of the screen also prompts you through pulldown menus, though it's not quite as thorough or as easy to read as Ami Pro's built-in coach.

#### **A Couple of Potholes**

Unfortunately, the road through WordPerfect 5.1 for Windows isn't all smooth. You can't edit in Print Preview as you can in Ami Pro. And, again unlike Ami Pro, this release includes neither integrated drawing nor charting



No more digging six command layers deep to create the special effects you want. With WordPerfect 5.1 for Windows' pulldown menus, tailoring commands and creating documents with your own special touch is a simple matter.

modules. So to create drawings or charts, you have to go through the hassle of launching another *Windows* application and pulling it in through the *Windows* Clipboard.

More serious is the lack of a

collapsible outliner; the outliner is the same as in Word-Perfect 5.1. WordPerfect plans to provide a collapsible outliner in the next release of the Windows product.

Another warning: Word-

Perfect 5.1 for Windows, like most Windows applications, requires a sturdy 4MB 386SX to run smoothly. Even so, you can expect it to be a mite slower than the DOS product. Finally, the prospect of a shift to Windows might be daunting for DOS users who have grown comfortable with the labyrinthine commands of Word-Perfect 5.1.

But if you've been waiting for a good reason to make the move to Windows, you just ran out of excuses. This package should justify that move all by itself. Once you're comfortable with Windows, you'll find that WordPerfect 5.1 for Windows is a good-looking, albeit incomplete, Windows word processor that makes all the powerful features of WordPerfect 5.1 much more accessible. 

■

Bronwyn Fryer is an associate editor for PC World.







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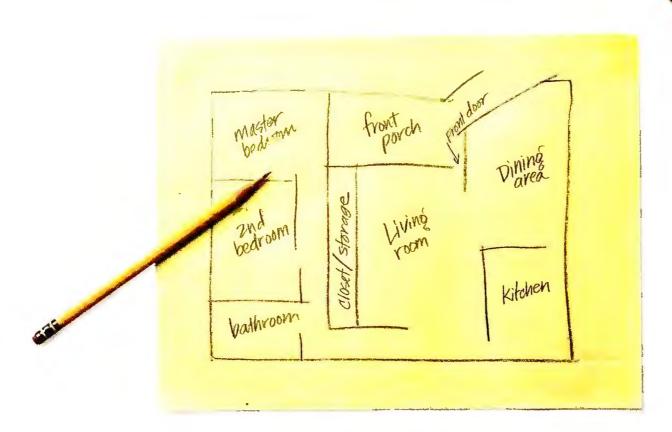


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#### NEC's Twin Peaks: Hot PCs, Hot Monitors

When NEC's engineers went to the drawing board, they dreamed up some great monitors—and new desktop systems with the fastest VGA yet.



NEC's PowerMate 386/33i works with the 4FG—a new, 15-inch, high-performance monitor—to provide a better than 200 percent boost in VGA performance.

#### Robert Lauriston

A box is a box is a box, right? No way, at least not when you're talking about the new line of Image PCs from NEC. From a souped-up video system to snap-in drives and automatic monitor detection, these systems are aggressively different. To go with them, NEC has unveiled a line of MultiSync monitors that add special color controls and flicker-free performance and reduce possibly harmful electromagnetic emissions.

#### Pushing VGA to the Max

The most distinctive feature of the two fastest and most expensive Image PCs, the PowerMate SX/20i and 386/33i, is blazing VGA performance. Normally video data moves from a PC's CPU to its display board via the relatively slow 8-MHz system bus. NEC has developed a patented video bus (Image Video) that moves screen data at full CPU speed. NEC claims a boost of up to 200 percent with its 20-MHz system, and the 33-MHz should be even faster. This

rapid performance will be most noticeable with video-intensive programs such as *Windows*.

If you use one of NEC's MultiSync monitors, the PowerMate SX/20i and 386/33i can detect the monitor's bandwidth and automatically crank up the video output to the highest compatible frequency, minimizing flicker and maximizing resolution.

The third entry in the Image series is the PowerMate SX/16i. The Image label is a bit misleading here, because

while this 16-MHz 386SX uses the same case as the SX/20i and the 386/33i, it doesn't have the high-speed Image Video or monitor-detection feature.

All three Image PCs are appealingly easy to upgrade; most user-installable options require no tools. You open the case simply by turning a knob, and you don't need even a screwdriver to install a floppy drive—it just snaps into place. In most systems, upgrading the BIOS means a ROM swap; with the new NECs, rewriting the BIOS is as easy as slipping a floppy disk into the drive and

#### SNAPSHOT

#### PowerMate SX/20i, 386/33i

Unique high-speed video systems promise to give Windows users a major speed boost.

#### KEY FEATURES

- High-speed VGA graphics installed on motherboard
- Easy-open case, no tools required for adding drives
- Up to 26MB of CPUspeed RAM in SX/20i, 64MB in 386/33i
- CPU upgrade by motherboard swap
- Upgrade BIOS from disk

#### AVAILABILITY

Immediate

#### PRICING

SX/20i with 4MB RAM, 120MB hard disk, keyboard, DOS 5.0, Windaws, and PFS:WindowWorks \$2457 (mause nat included); 1MB videa RAM expansian (required far 256-calor or 1024 by 768 display) \$49; 386/33i in same canfiguration \$3649 (includes 1MB videa RAM); multimedia upgrade kit (CD ROM player and sound board) to be announced in January

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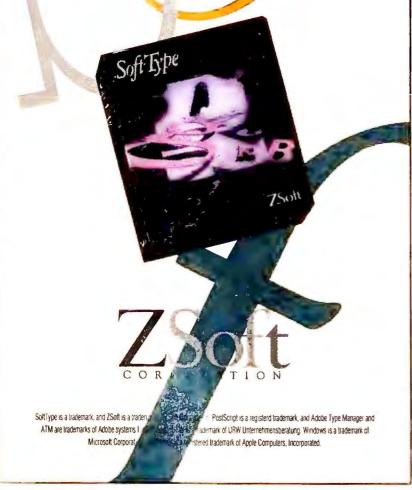
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The SX/20i and low-cost 3FGx provide similar VGA benefits.

running a setup program. Because all disk and video controllers are built onto the motherboard, all four slots remain free. There's room for four drives, and although only two bays are externally accessible, an innovative two-in-one drive lets you fit a 31/2- and a 51/4-inch floppy in a single bay, so you can use the other for a tape backup or CD ROM drive. Plugs in the front of the case pop out to let you install the speaker and microphone jacks for NEC's multimedia upgrade kit.

NEC is joining the trend toward bundling and installing productivity software. The company is preloading its hard disks not only with DOS 5.0 and Windows but also with PFS:WindowWorks. That means plug-and-play convenience-with considerably more power than from Windows alone. Unlike most vendors, NEC installs its super-VGA drivers directly into Windows, so there's no confusing secondary installation before you can take advantage of high-resolution graphics.

Each system comes with a 45MB, 60MB, or 120MB IDE hard drive, and all three will eventually be upgradable to the latest 486 CPU via a

motherboard swap. A modular design means the swap will take just 10 to 15 minutes, and NEC is planning a motherboard buy-back program to make the upgrade more affordable.

#### **Color-Matching Monitors**

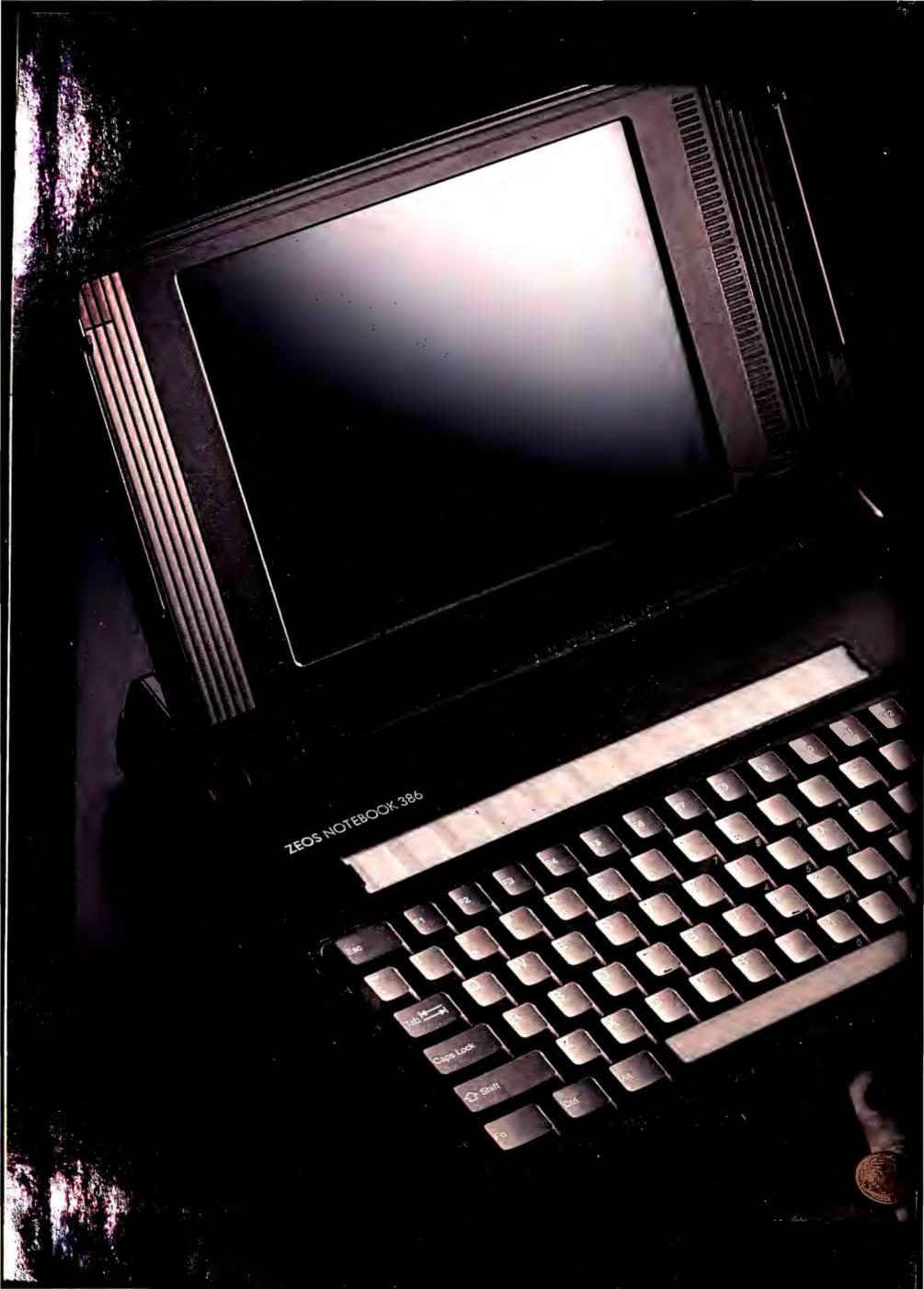
NEC's four new MultiSync FG monitors replace its popular 2A, 3D, 4D, and 5D standbys. The 3FGx offers a 15-inch screen and resolution of up to 1024 by 768; the 4FG, also 15 inches, adds special color controls and runs at 1024 by 768 without noticeable flicker. The 17-inch 5FG and the 21-inch 6FG—pricier units likely to end up on CAD users' desktops—were not available for preview at press time.

For all their innovative new features, the 3FGx's and 4FG's good looks make the biggest impression. The screens are much brighter and sharper than previous Multi-Syncs', and along with slightly bigger tubes, the FGs paint images so they fill the entire screen without distortion.

Assuming your super-VGA board can put out the signals, the 3FGx and 4FG can run at a stable 640 by 480 (standard VGA) or 800 by 600 at 72 Hz—(continues on page 102)

# ZEOS. Simply the best notebook you can buy.

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you'll love it too. At only \$1995 for our '386SX-16MHz version and \$2295 for our new 386SX-20, you

simply can't find a better notebook anywhere!

As PC Magazine said, the ZEOS Notebook "offers a top notch combination of power, weight, features and price..." And you can pick your power! Choose our '386SX-16MHz version or go for the incredible new ZEOS '386SX-20MHz. Combine either with our high speed hard disk, built in 1.44MB floppy drive, VGA and more—you've got the greatest notebook going at any price!

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In fact, it's really like owning a full featured desktop that you can take with you anywhere! Look closely at the details. Like our crisp 10" VGA display. The ultimate in sparkling clarity, it features advanced fluorescent backlighting for vivid VGA graphics. Then, the drives.

Two drives are better than one! First, your notebook will include our whisper quiet high speed, high capacity hard disk. It will read and write your data so fast chances are you'll hardly know it's there. Then we're building in an industry standard 1.44 Megabyte 3.5 inch floppy as well.

While most notebooks don't include a floppy drive at all, you're really going to appreciate your ZEOS notebook's industry standard 3.5" floppy. It makes loading software and transferring files a breeze. Simply toss in your 1.44 and it's done. Anyway, can you imagine a desktop system without a floppy? We couldn't either. That's why your ZEOS notebook has one. It's great!

But the features of your incredible new ZEOS Notebook don't just stop there. Detail after detail we're giving you more than anyone else. Much more, for much less. Take a closer look.

#### **DETAILS MAKE THE DIFFERENCE!**

For instance, the battery system of your new notebook is the most advanced on the market. You can quick charge, or trickle charge, any time your system is plugged in. You can also take the battery out and use the optional charging stand if you wish.



Now, you ca computing po The incredible





#### OR 20MHz

Either way, you're sure to appreciate our light weight snap-in, snap-out battery packs. They're so light and easy to use, you can easily take an extra one with you on those really long trips. You can get even more life out of a single charge by using our programmable power management system. Hour upon hour of Notebook computing power!

#### **CONNECTIVITY TOO!**

Your new ZEOS notebook is a great connectivity tool. Utilizing our optional built-in 2400 baud MNP Class 5 modem,

connectivity buffs will find themselves logging on at every turn. And speaking of connectivity, we've kept the I/O easy to use too. Because unlike many of the others, your new ZEOS notebook has the same industry standard port connectors you'll find on your larger desktop system. Completely compatible! Serial and Parallel ports; even an external VGA connector. All industry standard and ready to go the minute you receive your system.

It's attention to detail that makes the difference. Tens of thousands of hours of development time have been invested. We've been thinking and re-thinking exactly what you want in a notebook, and now we're building it for you. We think you'll agree, it's an incredible product. Plus, your new notebook is backed by the best support in the industry, 24 Hours a Day.

#### **ZEOS 24 HOUR A DAY SUPPORT.**

After all, it was ZEOS that invented 24 Hour a Day Toll Free Sales and Technical Support. We're always here to help. Any time you need us your telephone is a Toll Free Hotlinedirect to your own personal Technician. 24 Hours a Day, 365 Days a Year.

Now that's ZEOS value. But we don't stop

there either.

Your new notebook is also backed by our 30 Day Absolute Satisfaction Money Back Guarantee and One Full Year Limited Warranty. You're going to be very satisfied. We don't just say it. We Guarantee It.

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You can order your new ZEOS notebook right now. Simply pick up the phone and give us a call at 800-423-5891. And don't forget the extra goodies. Like larger hard drives, carrying cases, and extra batteries. All these are available now in money saving packages. You're going to love your ZEOS notebook. That's a guarantee!

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- Quick charge or trickle charge using included AC power adapter.
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- VGA port for external VGA color display. Great for demos!
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## The ZEOS Guide to the Perfect Notebook:

**PROCESSOR:** PC Magazine recommends a '386SX processor pointing out that, "Finally, we've got portable PCs capable enough to be your only PC." That's why ZEOS offers you a 16MHz or a 20MHz '386SX! More power for you. After all it's just like a take-anywhere desktop!

**SYSTEMS STATUS AT A GLANCE:** Yes, monitor eight key system components at a glance! We've equipped your new notebook with eight LED indicators which monitor disk access, keyboard functions and power status. There is even an audible alarm

which may be programmed to inform you of a low battery condition and to let you know if the cover is closed with the power on. Now that's one smart

CHECK IT OUT!

Now, you can take desktop computing power anywhere! Your ZEOS notebook has many features of obvious importance. Also, there are a number of features that are subtle yet critical to your ultimate satisfaction. We'll go over them here one by one. We think you'll agree your new ZEOS Notebook is the one for you!

notebook!

**DESKTOP KEY-BOARD FEATURES:** 

We're talking 82 full size keys with full 101-key emulation. And the keyboard isn't squeezed either. The distance between the "Q" key and the "[" (left bracket) key measures 7.5 inches, just as PC Magazine suggests. The keys are of standard size, plus touch typists will love our full 3.5mm keystroke. Type for hours and love it!

**VIDEO:** ZEOS raises the ante to VGA! We're talking about bright and crisp VGA displayed on one of the largest notebook screens in the industry. The display also features advanced fluorescent backlighting, 32 grey scales and 640 x 480 reso-

DRIVES: Two drives,

built in! A whisper

quiet high speed 20 Mega-

byte or larger hard disk

inch floppy. Remember,

plus a 1.44 Megabyte 3.5

with a built in floppy drive

you don't need to fool around

with strange interfaces to load and transfer files.

lution. Plus, it can be adjusted to any position over a 135° angle and features easily adjustable brightness and contrast controls. Easy viewing under virtually any lighting conditions. You can connect to an external VGA color monitor too!

**GREAT BATTERY FEATURES:** Every battery feature you want. You can plug your note-book in and "quick charge" the battery in less than one hour or you can "trickle charge" while in use. Plus, your battery easily snaps out allowing the quick installation of an optional replacement battery. It's great to be able to carry a light weight spare for those especially long trips. An optional battery charger stand is available as well.

**INTELLIGENT POWER MANAGEMENT: Your** new ZEOS notebook features an intelligent programmable power management system if you wish to use it. Based on the length of time since your last keystroke, you may reduce CPU speed, display screen backlighting etc. Full power is immediately restored at the stroke of any key. The system even knows not to use the power management system when you are operating on AC power!

CONNECTIVITY AND I/O: Keeping in touch is easy when you order our internal 2400 baud MNP Class 5 modem. Simply plug in the phone line and dial away. How about I/O ports? Many notebooks don't have them and if they do they're often non-standard. But your ZEOS notebook has industry standard I/Oserial, parallel and VGA. Just like your desktop!

FCC & UL APPROVALS: Your new ZEOS notebook features both FCC Class B and UL approvals. We've also met CSA and VDE requirements too, just for good measure. Quality and reliability.

WATCH THE DETAILS TOO: Like memory expandability. One Meg comes standard, you can also order a total of 3 or 5MB as a factory option. And lots of other details. Like a recessed power-on reset button, a soft carrying handle, built in speaker and more. You're going to love it! And there's no reason to wait.

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16MHz'386SX Only \$1995! 20MHz'386SX Only \$2295!

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Unbelieveable. Believe It!

## 10 Good Reasons To Buy From ZEOS

#### Reason #1

"Overall Excellence."

As *PC Magazine* said "Price is always a consideration. So are benchmark test results. But both factors can be deceiving, which is why we consider them in the context of other aspects that will make the difference months and years down the road."

These are the attributes which *PC Magazine* used in awarding ZEOS the coveted Editor's Choice, not once but *eight* times. And "Overall Excellence" are the very words *PC Magazine* used in describing ZEOS systems comparing them to all others.

#### Reason #2 Dazzling Performance.

In one recent '386 review, *PC Magazine* awarded ZEOS Editor's Choice. "The ZEOS '386 blows away every other computer... a smart choice" is what they said. And in another recent review, *Government Computer News* said the ZEOS 33MHz '386 is "arguably the fastest MS-DOS and OS/2 micro in the world."

Dazzling Performance is built into every ZEOS system. It's a key component of ZEOS Overall Excellence.

#### Reason #3 Exceptional Quality.

PC Resource Magazine put it this way, "ZEOS... provides quality comparable with IBM or Compaq and does so for about 70% of the price." ZEOS uses only the very best components. And every system is fully tested and burned-in right in our own labs.

#### Reason #4

Value.

*InfoWorld* says, "We find the ZEOS '386 an excellent value. Speed:

24 HOURS!

ZEOS is Open
24 Hours a Day,
24 Hours a Year!
365 Days a Year!
Toll Free!

Excellent. Compatibility: Excellent. Value: Excellent. Personal Computing said, "ZEOS...is the best value we've come across...its performance is right up to with the slickest.

there with the slickest, most expensive PCs you can buy."

#### Reason #5

Warranties and Guarantees.

ZEOS believes in its products. That's why we offer each and every customer our 30 Day Absolute Satisfaction Money Back Guarantee, no questions asked. Plus, our One Full Year Limited Warranty and Express Parts Replacement Policy. Optional On Site Service is available too. Call for details.

#### Reason #6

24 Hour Toll Free Technical and Sales Support.

At ZEOS, the customer is #1. That's why we invented 24 Hour a Day Tech Support. For *your* convenience. If you buy a product from us we feel we should be there to help, any time of the day or night. Give us a call Toll Free! 800-423-5891. Anytime!

#### Reason #7

Experience.

Almost unique in the mail order computer industry, ZEOS maintains its own chip level Research and Development staff. In addition to Systems Manufacturing, we also operate our own Board Level Manufacturing facility.

ZEOS has been involved in Research and Development since our incorporation back in 1981. Our strong and experienced Research, Manufacturing and Technical Staff translates into superior factory direct computer systems for you.

#### Reason #8

A Sterling Reputation.

In magazine after magazine and review after review ZEOS systems are cited for Overall Excellence, for Excellent Value, as the Right Choice and so on. All of this is flattering but the most important thing is this: What do our customers think? Frankly, they love us. The systems and the support. That means more to us than anything.

#### Reason #9

Easy to Buy.

ZEOS systems are easy to buy. You can pick up the phone any time of the day or night and order your new ZEOS computer. And we accept MasterCard, Visa, Discover, American Express, and Corporate Purchase Orders from Fortune 1000 Companies, Colleges, Universities and Governments. Complete Leasing Programs are available as well.

And now the Z•CARD! It's your very own ZEOS Credit Card and you can apply today. With the Z•CARD you can charge your ZEOS purchases and pay in easy monthly installments. It's just like a Bank Card. Why not apply for your Z•CARD now!

#### Reason #10

You're Going to be Very Satisfied.

When it comes right down to it, you're going to be very satisfied with your new ZEOS system. Our goal is your complete satisfaction. And that's our commitment to you. To quality. To performance. To reliability and support. To *Value*. We don't just say it, we Guarantee it!

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Please complete all appropriate sections, providing at least two years residence and employment history. THIS IS NOT A CREDIT AGREE-MENT! One will be sent to you upon authorization of an account. (This Form Must Be Signed To Process Your Order.) All Financed Purchases Are Subject To Credit Approval. If You Have Any Credit Questions, Please Call 800-421-8942 For Assistance. Thank You!

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A married person may apply for individual credit. I am applying for (please check appropriate box):

- ☐ **JOINT CREDIT** with another person. Complete entire application.
- ☐ INDIVIDUAL CREDIT but rely on income or assets of another person as a basis for repaying the credit requested. Complete entire application.
- ☐ INDIVIDUAL CREDIT.

  Do not complete Section C.\*\*
- \*\*If you are a married Wisconsin applicant, you must provide your spouse's information as indicated, even though your spouse may not be signing the contract.

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Name	PLEASE TELL US IF YOU HAVE: Checking Account					
Since? (Mo./Yr.) Buy Rent Other	MasterCard Other Major Charge Cards					
Previous Address	Finance Company Loan					
CityStateZip	C. JOINT APPLICANT INFORMATION					
Employer Since? (Mo./Yr.)						
Monthly Gross Salary \$ Bus. Phone ()	Joint Applicant's Name					
Previous EmployerFrom - To	Soc. Sec. No Date of Birth//					
Occupation	Address Apt					
Income from alimony, child support or separate maintenance payments need not be disclosed if you do not wish to have it considered as basis for repaying this obligation.	CityStateZip					
Additional Monthly Income \$ Source:	Home Phone () Date of Residence (Mo./Yr.)					
Name & Address of Nearest Relative Not Living With You	Joint Applicant's Since? (Mo./Yr.)					
	Bus. Phone () Monthly Gross Salary \$					
Relationship	bus, thone (					
CUSTOMER AUTHORIZATION						

I authorize ZEOS International, Ltd. or its assignees to investigate credit records and to report my performance hereunder to credit agencies. I hereby certify that the following information is furnished to you for the purpose of obtaining credit and is true and correct to the best of my knowledge and belief.

Applicant's Signature\_

Joint Applicant's Signature\_\_\_

Date\_\_\_\_\_

FOR MARRIED WISCONSIN APPLICANTS:

I acknowledge that the obligation described herein is being incurred in the interest of my marriage or family.

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There are costs associated with the use of this credit card. To obtain more information about these costs, call us at 800-421-8942 or 612-635-0613 or write to ZEOS, Z•Card Processing Center, 530 5th Avenue N.W., St. Paul, MN 55112.

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(continues from page 92)

a frequency that eliminates flicker under most circumstances. The higher priced 4FG can also handle 1024 by 768 at 70-Hz refresh—fast enough to ease eyestrain. In addition, you might want to take a look at NEC's optional glare-absorbing filter, which eliminates 99 percent of the reflection from overhead lights and bright windows.

Both the 3FGx and 4FG are "low emission" monitors. Much fuss has been made about the possibility of very low frequency (VLF) and extremely low frequency (ELF) electromagnetic radiation from monitors causing nervous disorders, miscarriages, and even cancer. Although no

and no "safe" VLF or ELF levels have been established, Sweden has taken the lead in this area and established the strictest emission guidelines in the world. The 3FGx and 4FG are among the first mainstream color monitors to adhere to these guidelines.

conclusive evidence exists yet,

The 4FG is the first mainstream PC monitor to offer adjustable color-much finer control than you'd get on a color TV. The most practical use for this feature is improving the match between your screen's image and color hard copy or slides. You just print your image, hold it next to the screen, and adjust the monitor's controls until the screen image matches the printout. Because color printouts can be expensive, especially when produced by a service bureau, this feature could save you a lotof money.

Color adjustments can also improve contrast under different lighting conditions and compensate for an aging picture tube. You can program two color settings and toggle between them, which can be handy if you have two color printers, different day and evening lighting, or two people sharing a monitor.

#### SNAPSHOT

#### MultiSync 3FGx, 4FG

NEC's new monitors combine high resolution and a bright, crisp image with reosonoble prices.

#### KEY FEATURES

- Brighter, sharper image with higher contrast
- Flicker-free performance in standard-VGA and 800 by 600 resolutions; 4FG also runs flicker-free at 1024 by 768
- Programmable color adjustment on 4FG
- Reduced electromagnetic emissions

#### AVAILABILITY

Immediate

#### PRICING

MultiSync 3FGx \$749, 4FG \$899; glare filter \$79; prices for custom configurations not yet available.

#### **NEC Technologies, Inc.**

1414 Massachusetts Ave. Boxborough, MA 01719-2298 800/632-4636

Reader service no. 748

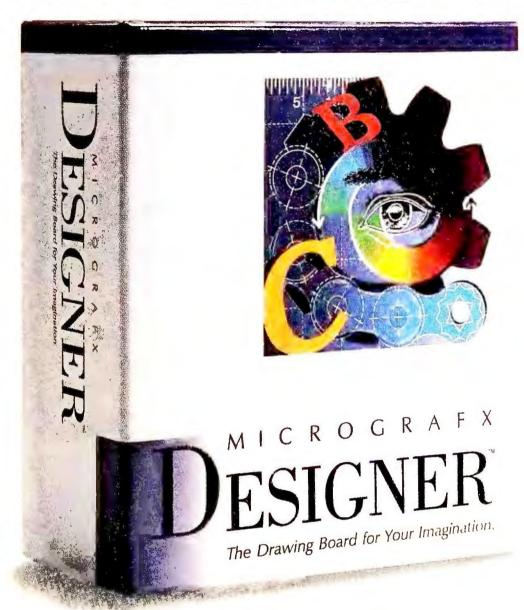
#### Setting a Good Example

It's great to see a manufacturer, especially an established one, break out of the rut and try something new. NEC's high-speed video, programmable BIOS, and motherboard upgrade/buy-back program are all welcome innovations in the systems department—and adjustable color is an attractive monitor enhancement. Other manufacturers would do well to follow NEC's lead and show more imagination in their designs. 

■

Robert Lauriston is a contributing editor for PC World.

# HEFTY HEFTY HIS



# WIMPY WIMPY WIMPY



ant to play around? Get Corel Draw. But if your work depends on precision drawing, you should realize just how much more you can accomplish with Micrografx Designer.\*\*

Important things. Like putting up to 64 layers in your drawings. "Snapping" objects to align them perfectly. And editing drawings on the full screen, in color, instead of a wimpy black-and-white box.

"Designer is the power user's choice."

PC Magazine
"Editor's Choice"

Then there's Designer's poster-size 132" by 132" drawing area. Corel's is a mere 17" by 17" – leaving you to strip pieces together for larger drawings.

And don't forget clip art. Designer is

packed with over 1,700 ready-made illustrations. Corel, only 750.

If you have questions about using Designer, you can turn to help screens or our 24-hour telephone support. But you won't find any help screens in Corel Draw. And don't bother to call them after hours.

Features	Designer	Corel Draw  1  No  No		
Drawing layers	64			
Dimensioning	Yes			
Object snap	Yes			
Mazimum drawing size	132"×132"	17"×17"		
Edit in full color	Yes	No		
Clip art images	Over 1,700	750		
Named symbols	Yes	No		
PageMaker 4.0 filter	Yes	No -		
On line help screens	Yes	No		
24 hour support	Yes	No		

The experts' verdict: "No contest."

Software Digest gave Designer five stars to Corel's three, concluding: "Designer provides the best overall free-form graphics package. It offers state-of-the-art features, good performance, and unmatched ease of learning and use in a sophisticated package."

Why waste your time with a wimpy product when you can really flex your muscles with Designer? Call for the location of the dealer nearest you.

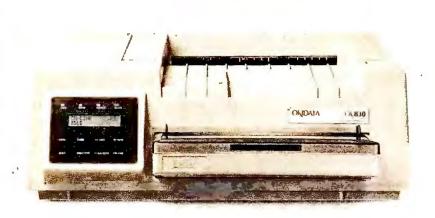
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Designer system requirements: 286 (386 recommended) IBM PC or compatible, or PS/2. 1 MB RAM (2 MB RAM recommended). 20 MB (or larger) hard disk. Windows 3.0. DOS 3.1 (or higher).

Mouse or digitizing pad. Windows-compatible monitor.

# The new OL830 had to be smarter than the LaserJet III to earn the Okidata OK!



# Smart.

• Smart price: \$1999<sup>00</sup>\*

• Gives you the best font scaling and graphic output from over 5000 different software applications.

• Offers 17 scalable plus 26 bitmapped

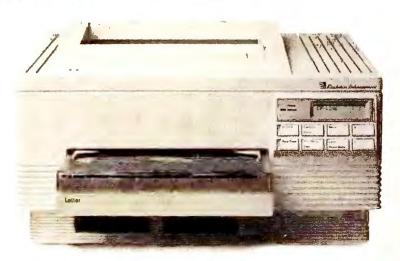
fonts, standard.

• 2 megabytes of memory for full-page graphics.

• Optional second paper tray for second

sheets, alternate letterhead.

• 5-year printhead warranty. (Plus 1 year parts/labor on entire printer.)



# Not So Smart.

• Not-so-smart price: \$239500\*

 Only supports font scaling and graphics from a few hundred software application without expensive brain surgery.

 The best it can manage without costly addons is 8 scalable and 14 bitmapped fonts.

• 1 meg is all you get, standard. Can't even remember one full page of graphics.

 No place to add a second tray. You're stuck with only one kind of paper at a time.

• Standard 1-year warranty. Not so smart.

If you think buying the smartest 8 page-per-minute business printer is a smart business move, we think you'll agree Okidata's new OL830 is a stroke of pure genius.

# It Takes Brains To Make A Smart Printer.

Okidata's newest printer takes just about every important feature of the LaserJet III and adds an IQ boost all its own. The OL830 offers more typefaces and fonts for better-looking documents, and more standard memory for full-page graphics. An optional second paper tray fits underneath to switch between letter-head and second sheet, or plain paper and envelopes, without reloading. And the OL830's 5-year printhead warranty is the longest in the industry. All for a suggested retail price that's hundreds of dollars less than the LaserJet III.

# So Smart, It Already Knows Your Software.

To give our smart printer even more smarts, we include Printer Control Panel™ autoswitching software from LaserTools®—a \$149 value. By switching automatically between *both* major printer emulations (Adobe's® PostScript® *and* HP® LaserJet), the OL830 will deliver superb output and

dazzling graphics with WordPerfect,® Lotus® 1-2-3,® Harvard Graphics,® or just about any software package, present or future, DOS or Windows." Since it's also fully Novell® network-compatible, users on a LAN can send output from different applications at any time without printer headaches.

# Our Smartest Feature: The Okidata OK!

Most important, the OL830 comes with the Okidata OK!—our personal pledge that your new Okidata printer will provide not just adequate performance,

but exceptional performance—not merely good value, but outstanding value.

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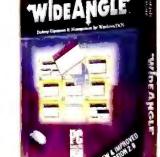


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Attitash Software, Inc., 20 Trafalgar Square, Nashua, NH 03063 WideAngle<sup>TM</sup>, Power Ike<sup>TM</sup>, WideAngle Companion<sup>TM</sup>, XRAY View<sup>TM</sup> and Attitash Software<sup>TM</sup> are trademarks of Attitash Software, Inc.

# **Compaq Goes Modular**

Finally, Compaq quality and an upgrade path too.



Compaq's new line of computers, the Deskpro/M family, offers a CPU upgrade path—and a money-back upgrade policy when you install a faster CPU.

# Michael Goodwin

s faster and more powerful A processors emerge monthly from the chip vendors, many users are refusing to buy a PC unless it's upgradable. Who wants to spend thousands of dollars on a system with last year's CPU that may be unable to run next year's hot software? More and more PC manufacturers are responding with systems that let you pull out your old processor and replace it with the latest speed demon-for much less than it would cost to replace the entire system.

Until now, the legions of loyal Compaq customers have been denied this option—but with the arrival of the Deskpro/M family, all that has changed.

The family comprises four midsized machines: a 25-MHz 386DX (the 386/25M), two sys-

terns based on the new 486SX chip (the 16-MHz 486s/16M and the 25-MHz 486s/25M). and at the high end a 33-MHz 486DX (the 486/33M). All four systems come with the CPU and 4MB of RAM on a removable processor board. That means if the low-cost 16-MHz 486SX meets your business needs today, you can buy it knowing that if your needs change, you can pull out the CPU board and drop in another one with a powerhouse 33-MHz 486. Compaq will even buy back the old board.

The 386-based box incorporates Compaq's four way set associative memory caching to provide the high performance for which Compaq is famous. For the 486-based systems, Compaq engineers chose to rely on the chip's built-in 8K cache. Additionally, all the Deskpro/M systems provide two other special pullout

boards: a CPU-speed-memory board that holds up to 60MB of industry-standard RAM chips, and a board that holds the ROM and BIOS chips, the I/O ports, and the clock/battery. Anyone who's ever had to pull out five expansion boards, two drive cages, and the power supply to reach and replace the BIOS or the battery will instantly appreciate the convenience of this latter pullout. All three plug-andplay system boards-CPU, memory, BIOS-go in dedicated slots.

After several years during which most vendors have been placing a VGA graphics chip on the motherboard, users are finding that to keep up with changing standards, a plug-in video expansion board is actually preferable. Compaq follows this line of thinking by putting its Advanced VGA on an EISA expansion board that

takes up one of the five EISA slots—leaving four free. Advanced VGA delivers 16 colors at 800 by 600 resolution, as well as 256 colors at 640 by 480, and includes a proprietary graphics accelerator chip designed to speed up applications such as *Windows* by as much as 25 percent. There are three externally accessible drive bays, with room inside for a hard drive as well.

All the systems are available in a variety of configurations, with hard drives ranging in size from 60MB to 340MB. While the units won't set the world on fire, they are hot news for loyal Compaq shoppers who no longer need to go to strangers to go modular. Compaq's new systems also give a wider choice to those who think the time of the disposable computer is past. 

■

Michael Goodwin is an associate editor for PC World.

# SNAPSHOT

# Deskpro/M Family

Now it's everyone's prerogative to change his or her mind. Compaq lets you buy now, upgrade later.

#### KEY FEATURES

- CPU upgrade via processor board exchange
- Money-back upgrade policy
- 4MB RAM standard

# AVAILABILITY

Immediate

#### PRICING

386/25M Model 60 \$3599, 486s/16M Model 60 \$3699, 486s/25M Model 60 \$4199, 486/33M Model 120 \$5699

# Compaq Computer Corp.

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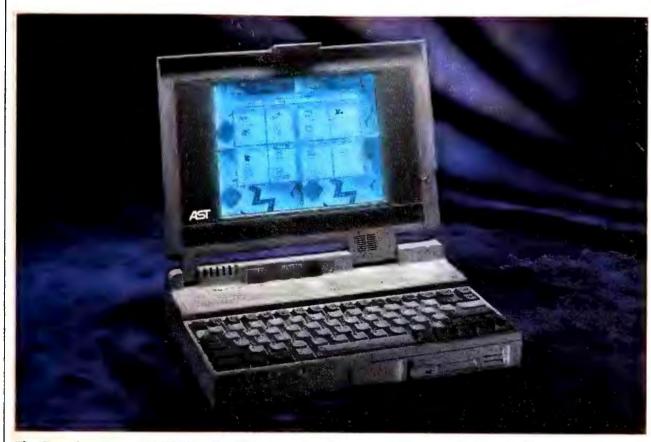
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# **AST Notebook Breaks the Rules**

The Premium Exec 386SX/25 shatters the speed barrier with AMD's hot new 25-MHz chip—at a killer price.



The Premium Exec 386SX/25's 25-MHz speed and power savings put it ahead of its class.

# Mike Hogan

Sometimes you have to break with convention to create something better. Unlike other large PC vendors, which stick with Intel chips for fear of losing a regular supply, AST has boldly incorporated a 386-compatible CPU from AMD in its latest notebook PC. The result? The fastest and most power-stingy notebook you can buy from a major supplier.

AST's Premium Exec 386SX/25 signals a new era of competition among chip makers that's sure to bring users more choice and lower prices. The Exec's price was still in flux at press time, but you should be able to buy the 60MB model for under \$3800.

This is pure power in an 8½by-11-inch box. The AMD chip gives the Exec a 25 percent advantage over the 20-MHz choices that dominate the bench-press class. You get 4MB of memory (expandable to 8MB) and an 80MB hard drive option.

If you need to pack a big spreadsheet, data base, CAD program, or *Windows* presentation, the Exec 386SX/25 is your machine. If you just want to do word processing and an occasional spreadsheet, the 20-MHz 40MB-equipped Exec 386SX/20 is being repriced to \$3000.

# No Battery Life Trade-Off

The Exec 386SX/25 should give you as much battery life as its slower predecessor because the AMD Am386-SXL-25 CPU is a static processor that can shut down completely—to 0 MHz—between keystrokes. It doesn't even use the small amount of power the Intel 386SL needs.

How much life you get from the Exec's nickel-cadmium battery depends on your application's use of the hard drive and your use of display backlighting. During normal word processing with a bright backlight but little hard drive activity, the Exec ran more than  $4\frac{1}{2}$  hours. Even during tests that visited the hard drive every minute, it ran more than  $3\frac{1}{2}$  hours. Such stamina is far beyond what's delivered by the current crop of similarly configured 20-MHz 386SXs.

The Exec 386SX/25 incorporates AST's auto-resume technology to let you stretch battery life over longer periods of intermittent use. Just close the lid to take a break; you can return instantly to where you left off without rebooting. Assuming normal interruptions, you can easily manage a full day of usage.

Additionally, the Exec 386SX/25 features a 1.44MB floppy and a paper-white VGA

display with a respectable 32 shades of gray on an averagesized 8.5-inch diagonal screen. You also get a very nice 82-key AT-style keyboard.

This is not the be-all-end-all notebook. At 2.25 inches, it's a little tall and, at 7 pounds, a little heavy. AST still clings to its 1-pound AC adapter. The Exec suffers by comparison to a next-generation design like Toshiba's T2200SX, which is 1.6 inches high and weighs 5.5 pounds. But the slower Toshiba is \$4495.

Instead, the Exec 386-SX/25 delivers notebook convenience and desktop punch at a killer price. Compaq and Toshiba will have to produce similarly striking machines or be run over by this hard-charging competitor. 

■

Mike Hogan is PC World's news editor.

# SNAPSHOT

# Premium Exec 386SX/25

#### KEY FEATURES

- 25 percent faster CPU than 20-MHz notebooks
- **4MB RAM standard**
- Choice of 60MB or 80MB hard drive
- 32 shades of gray on paper-white VGA display

# AVAILABILITY

**Immediate** 

#### PRICING

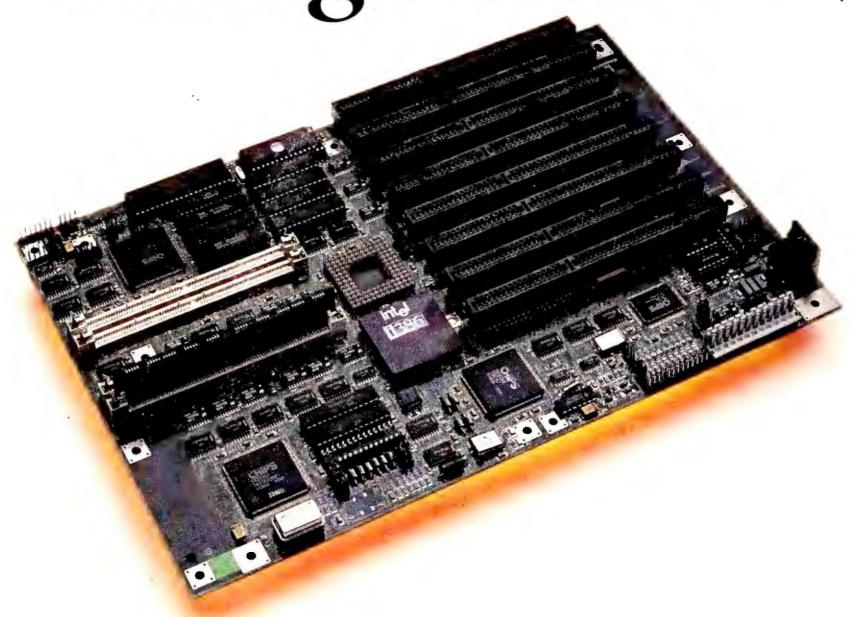
Model 63V with 4MB RAM and 60MB hard drive under \$3800; Model 83V with 4MB RAM and 80MB hard drive under \$4100; 4MB RAM \$995

#### AST Research, Inc.

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# PRODUCT



# 0 U T L O O K

Edited by MIKE HOGAN

HP DeskJet 500C

# A Color Printer for the Masses—Under \$1000 on the Street



The DeskJet 500C ink jet delivers volume monochrome printing and occasional color printing on plain paper at 300-dpi resolution.

Okay, let's see a show of hands: How many of you still use a monochrome monitor? I see. Then why are you still printing out your documents in plain old black-and-white?

For years, color printers have been so pricey that only graphic artists or presentation-oriented work groups used them. Users with an occasional need for color printing could only dream of producing the vivid colors and laser-quality text that art departments achieved. But Hewlett-Packard has broken the \$1000 price barrier with a color ink jet workhorse that could make those printing dreams come true.

The DeskJet 500C gives you millions of colors, plain-paper capability, and 300-dpi resolution at a \$1095 list price that's certain to come in under \$900 on the street. It's the first practical way to add color charts, illustrations, and scanned images to everyday reports, newsletters, and pre-

sentations. Unlike HP's 180dpi PaintJet, the DJ 500C also offers the higher resolution that business users need.

The DJ 500C uses separate print cartridges for monochrome and color (cyan, magenta, and yellow). Plug in the monochrome cartridge to print text-only documents, then replace it with the CMY when you need color graphics. Because research has shown that users typically print color pages only about 20 percent of the time, interchangeable cartridges bring big dollar savings in supplies.

The downside comes when you want to print color graphics and text on the same page. The CMY cartridge mixes blue and red to create a composite black. This process results in not-quite-black lines that can disappear against dark blue backgrounds. Text on a color page suffers, but not too badly. The unit chugs along at a respectable 3 pages per minute in monochrome,

but color pages dribble out at about 4 minutes apiece.

The printer comes with three dot matrix-like type-faces and will accept existing DeskJet font cartridges. A special driver gives Windows users access to four more scalable fonts—Courier, Univers, Symbol, and CG Times. Drivers for Windows and major DOS applications like Harvard Graphics, 1-2-3, and Quattro Pro will ship with the printer.

Ink cartridges cost \$31.95 for high-capacity black and \$34.95 for CMY—about 4 cents per page for monochrome and 12 cents for color. The compact, 14-pound box offers the same 8-by-15-by-17-inch footprint as the DeskJet 500, with a 100-sheet cut-paper feeder for letter, legal, and envelopes.

DeskJet 500 owners who hunger for color can upgrade to the 500C for \$450 (if you own an earlier DeskJet model, the upgrade will cost you \$550). HP will continue to sell the monochrome DeskJet 500 for \$729 and the PaintJet at a reduced price of \$995.

-Daniel Tynan

# IN BRIEF

#### **HP DeskJet 500C**

Finally, a 300-dpi color printer you can afford. The DeskJet 500C offers sharp text and vivid color on plain paper for only \$1095.

### **Hewlett-Packard**

19310 Pruneridge Ave. Cupertino, CA 95014 800/752-0900

Reader service no. 681

# INC DE PREDUCT OUTLOOK

# 113 HP DeskJet 500C

An affordable 300-dpi printer that offers sharp text and vivid color on plain paper.

### 114 Access to Platinum

DOS or *Windows* accounting with easy upgrade path.

# 116 Microsoft Publisher

Aggressively priced desktop publisher targets beginners but includes many advanced features.

# 116 Microsoft Money for

**Windows** Single-entry accounting system helps organize personal finances graphically.

# 126 TypeAlign, AllType Typeface Converter

Revives existing font libraries with on-the-fly font scaling and sophisticated text effects.

## 126 HeadStart SX-20 CD

Windows-capable personal workstation provides easy upgrade path to multimedia through CD ROM player.

# 128 Iomega Bernoulli 90s, SyQuest SyDOS 88s

Large-capacity removable disks give you up to 180MB of storage space.

# 128 Works for Windows

An intuitive software suite gives *Windows* users the works—for only \$199.

# 130 AVR 3000/CL Plus, Microtek ScanMaker 600Z, Umax UC630

Today's flatbed scanners combine color with high resolution at reduced prices. T2200SX, T2000SXe

# **New Toshiba Notebooks Slim Down**

Toshiba has kept up with the portable PC powers by consistently offering the broadest selections. Now it's moving ahead with two new notebook models, one of which weighs a scant 5½ pounds—6½ pounds with AC adapter.

Unlike some recently debuted sub-6-pound notebooks, Toshiba's T2200SX doesn't force you to sacrifice its 1.44MB floppy or a quality keyboard or top-end display to get down to 5½ pounds. At 9½ inches diagonally, the T2200SX's 16-shade VGA display is even larger than the 8½-inch display on its 6.9pound cousin, the T2000SXe. It's thinner too, so the T2200SX not only has an 8½by-11-inch footprint, but also a very slim profile of 1.6 inches.

Both Toshibas have fullsized, full-travel keyboards. The 12.2-by-10-by-1.9-inch T2000SXe has 86 keys, including a full complement of nonaliased function keys, page keys, and inverted-T cursor keys. Toshiba is able to comfortably fit a near-identical 82key keyboard into the T2200SX by shaving a little unnecessary plastic from the sides of a tough carbon-fiber case, paring a bit off the side control keys, and losing a few duplicate keys. Your fingers won't know the difference.

Both machines offer a 60MB hard drive and are powered by a 20-MHz 386SX processor backed up by 2MB of RAM expandable to 10MB via RAM cards. Toshiba's unique nickel-hydride battery lets both machines make weight and still get more than 3 hours of continuous battery life with hard disk and display running full out. Under more typical conditions—taking advantage of Toshiba's built-in power management—you can push it

toward 4 hours.

Both notebooks are equipped with an Auto-Resume feature that lets you power down to near zero for as long as 100 hours. When you come back, you can immediately return to the same spot in your application without rebooting. Also, power management is overridden by the 8-ounce AC adapter (which





Toshiba's T2200SX fits a  $9\frac{1}{2}$ -inch VGA display and a 60MB hard drive into a  $5\frac{1}{2}$ -pound notebook only 1.6 inches high.

takes 3 hours for a recharge) so you won't have your hard drive shutting down when powered from the wall socket.

Toshiba's new Desk Station IV lets you turn these notebooks into true desktops with its AC power, a 5½-inch drive bay for two external devices, two 16-bit slots, and parallel, serial, PS/2 mouse, keyboard, external floppy drive, and

RGB monitor ports. Either portable slides into the Desk Station IV's 150-pin connector and you can snap on a full-size monitor stand.

The T2200SX retails for \$4799 with a 60MB hard drive and \$4499 with 40MB; a comparably configured T2000SXe is \$4499 and \$4199, respectively. Desk Station IV sells for \$999. —*Mike Hogan* 

Access to Platinum

# Access to High-End Accounting from DOS or Windows

Are you unhappy with your current accounting program? Have you been thinking of moving up to one of the highend packages? Advanced Business MicroSystems (ABM), developers of the high-end Platinum accounting series (marketed exclusively by IBM), has an enticing trial proposition. Through yearend, users of any other accounting package can buy for \$79 the DOS or Windows version of ABM's Access to Platinum, a \$249 small-business accounting package with ties to its more robust sibling.

As the name implies, either version offers an easy upgrade

path to the company's highend accounting series. A conversion utility transfers all accounting data to the *Platinum Series*, eliminating the need to rekey data should your company's accounting needs change.

The Windows and DOS versions of Access to Platinum have virtually identical feature sets, including general ledger, checkbook, accounts payable and receivable, inventory, job costing and time billing, and payroll modules. Access to Platinum goes one step beyond most (but not all) Windows 3.0 accounting packages by offering a true Multiple Document Interface (MDI).

which lets you open several forms and move easily among them. —*Roberta Furger* 

# IN BRIEF

Access to Platinum

WINDOWS Entry-level

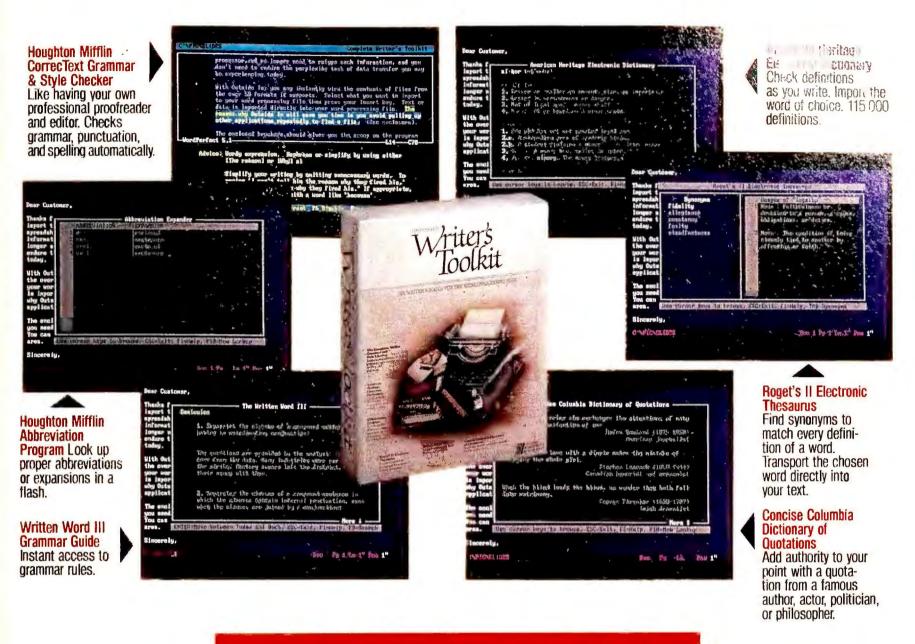
Windows and DOS accounting packages can put small businesses on a smooth upgrade path.

> Platinum Desktop Software

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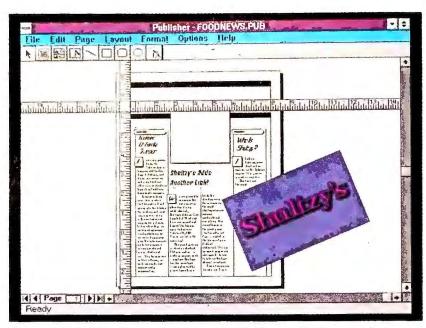
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Microsoft Publisher

# Minimizing the Learning Curve, Maximizing the Fun



Microsoft Publisher brings innovations to desktop publishing, such as templates that lead you through the process of page layout.

Coming in on the tail end of the desktop publishing revolution, Microsoft is delivering a beginner's publisher that is both aggressively priced and sports many advanced features. Better yet, it provides templates and routines to help busy novices get up and running fast.

Publisher's slickest feature is its layout templates. When creating a new document, you can either select "blank page" and start from scratch or you can choose from any of five routines-Newsletter, Business forms, Calendar, Table form, and Invitation—that step you through the creation of a semi-customized page. Click on Newsletter, and you'll be asked whether you want a "classic," "modern," or "jazzy" design. Next you'll be asked to select the number of columns for the layout (63 is the maximum.) Whatever choices you make are immediately displayed on a dummy page, so you're able to get an idea of what you're selecting. Other routines help you create tables, calendars, letters, coupons, and titles-and developers can write their own.

Like Aldus' PageMaker,

Microsoft Publisher provides a pasteboard for storing text and graphics before placing them in Ventura-like frames. You can link text between frames, automatically wrap text around objects, and create new pages. There's even a spelling checker, multiple levels of zoom, and the ability to adjust letter and line spacing. For good measure, *Publisher* includes Bitstream's *Facelift* scalable soft font manager and a clip-art library of more than 100 images. *Publisher* also makes it easy to generate a variety of borders for images and lets you rotate and otherwise modify text.

There are a few things missing from *Publisher*. Although the program provides 20 layout templates, it doesn't offer style sheets for text formatting. Although you can select from several levels of zoom, *Publisher* won't let you view two facing pages at the same time. *Publisher* also lacks popular high-end features like kerning tables, frame anchoring, automatic

numbering of illustrations, table of contents, and index generation, and the high-powered publishing tools you'll find in products such as *Ventura Publisher* and *PageMaker*.

At \$199, Microsoft Publisher isn't aimed at power users but rather at those who have small-scale publishing projects who want expenses and learning time kept to a minimum.

-Patrick Marshall

# IN BRIEF

# Microsoft Publisher ■WINDOWS An easy-

to-use and surprisingly powerful low-end Windows desktop publisher with many advanced core features.

#### Microsoft Corp.

One Microsoft Way Redmond, WA 98052-6399 800/426-9400 Reader service no. 686

Microsoft Money for Windows

# **Cash in on Money**

If you've already bought into the concept of *Windows* Nirvana, Microsoft wants to help bring a little balance to another aspect of your life—finances. Like Intuit's DOS-based *Quicken*, *Money for Windows* is a one-write ("checkbook") accounting system for individuals and small businesses.

Money takes a graphical approach to tracking your income and expenditures. You write a check or make a deposit by filling in a familiar, onscreen representation. Data entry is made easy by Money's search skills, which bring up a register of previous entries (and amounts) as you begin typing the first letters in

an account's name.

Like *Quicken*, *Money* has a pop-up reminder to let you know the due date for recurring monthly bills. You also get a modifiable list of income and expense categories. You can apportion the appropriate percentage of a single transaction to different accounts—the

N BRIEF

**Money for Windows** 

can balance your checkbook and reconcile different accounts from within the comfort of Windows.

Microsoft Corp.

One Microsoft Way Redmond, WA 98052-6399, 800/426-9400

Reader service no. 688

portion of a deposit from rental income or the deductible portion of your home mortgage payment.

Balancing your checkbook is easier—if an error exists, *Money* helps you find it by displaying likely discrepancies. If you want to double-check your numbers, you can pop up a calculator.

This \$69.95 program lets you keep as many types of accounts as you want—with an asset account, you can track investments like stocks, bonds, and rental property. Or you can add your personal property in order to determine your net worth for insurance purposes. You'll also be able to generate reports—budgets, summaries, income and expenses, taxes, and more—and customize them for a variety of views. —Steve Bass

# LaserScript Fax

# PostScript Printing and Legible Fax—Why Settle for Less?

Considering how cheap and popular laser printers and fax boards have become, why are we still receiving curly, low-resolution faxes over fax machines when the near-identical laser technology provides crisp documents on plain paper?

Abaton offers an economical answer. Its \$32.5 LaserScript Fax is a 6-ppm laser/fax combo that provides Post-Script printing with 35 scalable Bitstream and 24 bitmapped fonts plus fax from within *Windows*.

When receiving a fax, you'll get nice, 300-dpi output because the LaserScript Fax rasterizes the usual 200-dpi Group III faxes at 300 dpi. Conversely, it does a good job of translating your 300-dpi PostScript originals into 200-dpi fax format. Either way, documents look clearer.

Everex's fax control software runs as a Windows program, letting you send faxes from within Windows or DOS applications running under Windows. Whenever you select the print option from your application, the fax software will pop up a dialog box that also gives you the option of faxing the document—it simply redirects your PostScript output to fax. If you need to dash off a fax while inside a spreadsheet, and you don't want to open your word processor to do it, just summon the fax memo form, create your note, and fax it. You can include a custom cover page with your corporate logo and build, edit, sort, and search a custom data base of fax numbers.

The LaserScript can receive faxes without being hooked up to a PC. Because it lacks a built-in scanner, you'll need to buy a scanner to send non-computer-generated



The low-priced LaserScript Fax from Everex combines a 6-ppm PostScript laser printer with a plain-paper fax device.

faxes. Unlike with a fax card, you can't save faxes as files for later printing. Still, you can use 3MB of the standard 4MB of printer memory (expandable to 6MB) as a fax buffer—enough to print approximately 30 pages.

As a PostScript printer, the

LaserScript Fax is more than adequate. The 25-MHz National Semiconductor processor has a floating point accelerator and ample RAM lets it move through PostScript or HP PCL 4 jobs quickly. It has two standard HP font cartridge slots and automatically

switches between PostScript and PCL 4 emulations without needing escape codes or other intervention. It also automatically senses which of three I/O ports is receiving data and switches to serial, parallel, or RJ-11 modular phone jack as needed. There's a single paper tray that holds 150 sheets of letter, legal, or Europeansize pages or ten envelopes.

- Mark Henricks

# IN BRIEF

# LaserScript Fax

Script printing and plain-paper faxing from the same

> Everex Systems, Inc. 48431 Milmont Dr. Fremont, CA 94538 800-628-3837

Reader service no. 691

# RightWriter for Windows

# **Getting It Write**

**G**rammar checkers are like high school English teachers: You either love 'em or hate 'em. Windows users who rely on grammar checkers may develop a crush on a new teacher, RightWriter for Windows. It works with more than 40 Windows and DOS-based word processing programs.

The program doesn't just tap your shoulder when you make an error; nor does it puzzle you with complicated definitions of grammatical terms. Instead, Right Writer for Windows marks your document with clear, easy-to-grasp messages and revisions. Want to know if your writing is too lofty? A Summary feature tells you the grade level required to read it, and lets you know if your sentences are too long. Sentence diagram enthusiasts will even find a parser that divides a sentence into its constituent parts.

RightWriter for Windows is very flexible. You can choose your own help level, so instead of having to pore over a long description of a dangling modifier, you can get the quick and dirty version. Can't stand being nudged for using passive voice? Just click on a button

# IN BRIEF

# RightWriter for Windows

dows-based grammar checker proofreads documents for punctuation errors, wrong words, grammatical problems, and

Que Software

11711 N. College Ave. Carmel, IN 46032 800/428-5331, 317/573-2655 (fax)

Reader service no. 695

from the Style menu to turn off the rule. Frustrated when the check starts all over again if you exit in mid-document? A Bookmark feature lets you start where you left off. If you don't like being bothered with niggling comments throughout the document, you can simply skip the details.

RightWriter also checks any changes you make so you don't enter new errors into the text. If you want to check a file from another Windows application at the same time, just paste the file to the clipboard, and RightWriter will inspect that, too.

RightWriter for Windows has five predefined writing styles that you can customize further by toggling rules in the Style menu. It also lets you accept or reject changes on a case-by-case or whole-document basis. At \$99.95, Right-Writer for Windows packs plenty of smarts.

-Bronwyn Fryer

# TypeAlign, AllType Typeface Converter

# Stretching Your Font Dollars

If ideas are the soul of your document, the fonts you use determine its personality and sometimes how well the document is received. Adobe Systems and Atech Software have devised some utilities that put more life into your existing fonts and get more life out of them.

Adobe's \$99 TypeAlign helps stretch your fonts to the limit—literally—to create logos, headlines, and other text effects. Atech's \$79.95 All-Type Typeface Converter lets you join the on-the-fly fontscaling revolution without having to ditch your existing soft font libraries.

Designed to work with Adobe Type Manager (ATM), the Windows-based Type-Align lets you stretch, curl,



Stretch your fonts with Adobe's TypeAlign to create logos, headlines, and other text effects for your documents and presentations.

and twist fonts, bend them along a curve, and create other effects. Simply type in text and attach Bézier control handles. You can manipulate text via the handles or specify a path for it to follow, assign colors or gray shades, and adjust letter spacing (kerning). Text remains editable on screen until you export it as an EPS, AI, or WMF document.

Atech's AllType helps convert font outlines for use with on-the-fly font scalers such as ATM and other applications. You can convert between such formats as Adobe Type 1 and Type 3, Bitstream FontWare and Speedo, and URW and Agfa Intellifont.

This menu-driven package helps you identify similarly named fonts and rename them to avoid confusion. You can customize font weight (boldness) and create condensed, expanded, and hollow versions of each font. AllType will convert the font's original "hints" (information that enhances the appearance of smaller fonts at low resolutions,) and add hints but quality will vary. For example, outlines that are con-

# IN BRIEF

# TypeAlign, AllType **Typeface Converter**

TypeAlign lets you manipulate text without a sophisticated graphics package, while AllType Typeface Converter breathes life into aging font libraries.

Adobe Systems, Inc.

1585 Charleston Rd. P.O. Box 7900 Mountain View, CA 94039 800/833-6687, 415/961-3769 (fax) Reader service no. 689

**Atech Software** 5964 La Place Ct., #125 Carlsbad, CA 92008 800/786-3668, 619/438-6883, 619/438-6898 (fax) Reader service no. 690

verted to Type 1 won't necessarily look as good as handtuned Type 1 fonts.

TypeAlign requires ATM 1.0, Windows 3.0, and 2MB RAM. All Type Typeface Converter requires DOS 3.0 or later, 640K RAM, and a hard disk. —Daniel Tynan

# HeadStart SX-20 CD

# Fit 'N Finish

Packaged-goods manufacturers learned long ago that consumers have little enthusiasm for reading manuals or assembling hardware. They just want to take the TV or VCR home, plug it in, and get instant gratification.

Setting up the CD ROMequipped Magnavox Head-Start SX-20 CD takes just a minute or two longer. Plug the cords into their slots, turn on the machine, and you'll find yourself mousing around the jazzy Geoworks Ensemble environment. You can crunch numbers in a free copy of 1-2-3

version 2.2 just by inserting the licensing disk into Head-Start's 1.44MB floppy. It's even simpler than previous HeadStart models that automatically installed the software from a CD ROM disk.

But multimedia is the HeadStart's main mission, and at \$2099, it commands only a \$400 price premium over the CD ROM-less Head-Start SX-20. Philips tosses in most of the good CD ROM software—Microsoft's Bookshelf, Stat Pack, and Small Business Consultant, as well as Grolier's Electronic Encyclopedia, PC Globe, some games, and a pair of stereo headphones.

Beyond that, this is a well-

dressed Windows-capable workstation with a 20-MHz 386SX processor, 2MB of RAM expandable to 8MB on the motherboard, an 80MB drive in one of five drive bays, three available 16-bit slots, and a built-in Super VGA adapter. A serial mouse, two serial ports, one parallel port, and one Super VGA port are part of the deal, although a copy of Windows 3.0 isn't. You also choose your own monitor.

You can buy the similarly configured HeadStart 286 CD for only \$1399 or the 16-MHz HeadStart SX CD for \$1699 and move up when you're ready by adding the 20-MHz CPU via a daughtercard. Price notwithstanding, the HeadStarts are well designed, and they look good too. -Mike Hogan

# IN BRIEF

#### HeadStart SX-20 CD

Philips makes it easy for you to get into this Windowscapable personal workstation—and eventually into multimedia, thanks to its CD ROM player.

# **Philips Consumer Electronics Co.**

One Philips Dr. P.O. Box 14810 Knoxville, TN 37914-1810 615/521-4316

Reader service no. 687

OLE

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PC World, June 1991

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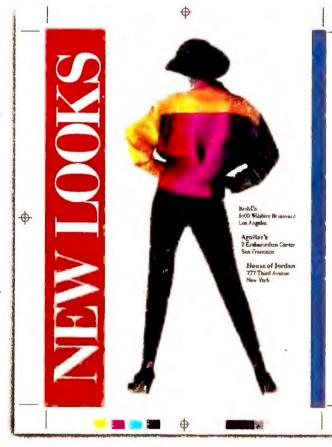
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SPELL CHECK

**AUTOMATIC TABLE OF CONTENTS** 

WORD FOR WINDOWS FILTER

INTEGRATED TABLE

**AUTOMATIC FOOTNOTES** 

Works for Windows

# **Application Variety Pack for Windows**

Whether you need a full toolkit for your laptop's crowded hard disk, or you just want a taste of *Windows* without investing the dollars and time required by full-fledged applications, *Works for Windows* will get you going. The graphical version of Microsoft's DOS-based integrated package, *Works for Windows* includes a word processor, spreadsheet, and data base for just \$199.

The easy integration between modules and consistent commands of the character-based DOS version has made *Works* popular with computer novices, executives, and laptop users. *Windows* is simply a better environment—giving you more file import/export options and a way to bring other DOS or *Windows* favorites into the mix.

To import information from another module, you can go through the *Windows* clipboard or just click on Insert and select a chart, spreadsheet, drawing, or a listing. Change your data as you will; *Works* will update it in your charts, spreadsheets, or wherever it is found in *Works*.

Beyond the usual *Windows* conventions, the word processor gives you the same menu as *Word for Windows*. You get access to all the fonts available under *Windows* plus basics like a spelling checker and a thesaurus.

The drawing module gives you all the tools you need to create your own drawings or edit imported ones in PCX, TIFF, BMP, and other popular formats.

Crunch the numbers in a scaled-down version of Microsoft's *Excel* spreadsheet, which even offers some *Excel* extras such as a convenient range summation key. In the

chart editor, you can manipulate a chart's color, shape, and background or choose another format from the six chart styles simply by clicking on the gallery option. You can save your files in the most widely used non-*Windows* format, Lotus's 1-2-3.

In the data base module, you can save up to 32,000 records with as many as 256 fields

per record and work on your documents via form, list, and query views. You'll also find routines that step you quite handily through the creation of mailing labels, form letters, and address books using the data base.

Performance is acceptable even on a 286, but make sure you have at least 5MB of hard disk for installation. Whether you're using a laptop or a desktop, this integrated package could be the ultimate tool for you. —Susan Lusty

# IN BRIEF

Works for Windows

□WINDOWS □ An intuitive
software suite for anyone
who wants to ease into Windows 3.0 cheaply and without learning several standalone packages.

#### Microsoft Corp.

One Microsoft Way Redmond, WA 98052-6399 800/426-9400

Reader service no. 682

lomega Bernoulli 90s, SyQuest SyDOS 88s

# Storage-To-Go Enters the '90s



Both the Bernoulli 90s (shown here) and SyDOS 88s give you quick access to 90MB or more of on-line storage using their removable disks.

f you're getting cornered by a crowded hard disk, you may want to break out by adding one of the new jumbo removable disks from Iomega or the SyDOS division of SyQuest. Disk capacities are a generous 90MB with the Iomega Bernoulli 90s and 88MB with the SyDOS 88s. And when space runs out on one cartridge, just slide in a new one. Buy a dual drive from either company and you can boost your on-line access to about 180MB.

Compared to early removables, these drives really cook: SyDOS's fixed disk produces a snappy 20-milliseconds average seek time, while the flexible-disk Bernoulli posts a respectable 27 milliseconds. You

can also use different disks to run space-hungry programs, or store really big jobs on separate cartridges. These drives also provide read compatibility with their 44MB media.

You can't beat a removable for security. Just pull out the disk and lock it safely away. If your fixed disk fails, you can boot off the removable while you're having your hard disk repaired or replaced.

Each company offers three configurations of their 5½-inch drives. Iomega features a \$1099 half-height internal with a \$999 second-drive option, a \$1149 single transportable, and a \$2249 dual external drive. Unless you already have a SCSI II adapter, you'll need

one of Iomega's \$265 interface kits, both of which include *Central Point Backup 7.0* and *Super PC-Kwik*.

SyDOS lists its half-height internal kit at \$1498, with \$1598 for a single external, and \$2898 for a dual external. All of SyDOS's prices include the SCSI host adapters and Super PC-Kwik. Both vendors include a cartridge with each drive—Iomega charges \$687 for a package of three extras; SyDOS packs one with each drive and charges \$278 for extra disks. —Rex Farrance

# IN BRIEF

### Iomega Bernoulli 90s, SyQuest SyDOS 88s

These removable disk drives put up to 180MB of storage on line, and if you run short, you can just put in a new disk.

lomega Corp.

1821 W. 4000 S Roy, UT 84067 800/456-5522, 801/778-3450 (fax)

Reader service no. 696

#### SyDOS

6501 Park of Commerce Blvd., #110 Boca Raton, FL 33487 407/998-5400, 407/998-5414 (fax) Reader service no. 697

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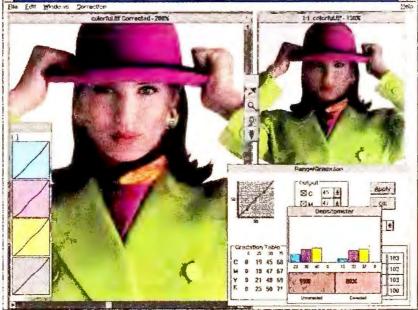
Ventura PhotoTouch are compatible with software that supports EPS, DCS or TIFF files, including DTP, paint, draw and

word processing programs.

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Frecom Fox96 with Modem, PM2400FX96, The Complete Modem

# Fax Plus Modem, on the Cheap

rick up a fax board these days and it's likely to include a 2400-baud Hayes-compatible modem. Buy a 2400-baud modem and you may well find it atop a 9600-baud send/receive fax board. Manufacturing costs and prices on both technologies are dropping so quickly that you can now get both for the price you used to pay for a fax or modem alone. Frecom, Practical Peripherals, The Complete PC, and Computer Peripherals have all pitched in

with fax/modem combinations that sell for budget-coddling prices of \$200 to \$250.

Frecom has added a 2400baud modem to its popular Fax96 board to create the \$249 Fax96 with Modem. The half-sized board is the only one of this group to include MNP 5 error correction/data compression. This capability could boost throughput to 4800-baud under ideal circumstances (but because it's a software implementation, expect it to run slower than hardware-based MNP 5). The board ships with Tradewind's Comit modem software and Frecom's own Faxography-LQ fax software.

The PM2400FX96 from low-cost modem maker Practical Peripherals is cheaper still. Costing only \$209, this board ships with Smith Micro's Quicklink II software, which handles both modem and fax communications and boasts a fax viewer and numerous file conversion options. The PM2400FX96 also comes with a generous five-year warranty. However, the PM2400FX96 and Fax96 make you leave your application to initiate fax transmissions, although you can quickly return while they transmit.

The Complete Modem from leading fax board vendor The Complete PC and ViVa 2496if from Computer Peripherals both have the software to let you send and receive faxes in the background. At \$199, The Complete Modem is the most aggressively priced offering of all, while ViVa 2496if is a reasonable \$229.

The Complete Modem ships with *Bitcom* communications software and a bundle of full-featured fax software, including Alien's *FAXit* software that allows you to set up a communications window from

within Windows. The ViVa 2496if comes with Smith Micro's DOS-based Quick Link II Fax that lets you send and receive faxes in the background or schedule automatic transmission—even of multiple faxes—to take place at a

predetermined later time.

There's no longer any reason to clutter your desk or expansion slots with separate fax and modem devices. With a single low-cost board you're ready for anything your phone line can deliver. —*Eric Brown* 

# IN BRIEF

### Frecom Fax96 with Modem, PM2400FX96, The Complete Modem, ViVa 2496if

These boards give you a 9600-baud send/receive fax and a 2400-baud Hayes-compatible modem for the price of a fax or modem alone.

# Fremont Communications Co. (Frecom)

46309 Warm Springs Blvd. Fremont, CA 94539 415/438-5000,

415/490-2315 (fax) Reader service no. 698

#### **Practical Peripherals**

31245 La Baya Dr. Westlake Village, CA 91362 800/442-4774, 818/706-2474 (fax) Reader service no. 699

# The Complete PC

1983 Concourse Dr. San Jose, CA 95131 408/434-0145, 408/434-1048 (fax) Reader service no. 700

# Computer Peripherals, Inc.

667 Rancho Conejo Blvd. Newbury Park, CA 91320 800/854-7600, 805/498-8848 (fax) Reader service no. 701

# AVR 3000/CL Plus, Microtek ScanMaker 600Z, and Umax UC630

# **Color Scanners You Can Afford**

With flatbed scanner prices falling and functionality rising, desktop publications and presentations can look better than ever. Flatbeds are still mostly relegated to graphic artists, but AVR, Microtek, and Umax are trying to increase their appeal to the general business market with low prices on very similar 600-dpi color scanners—the AVR 3000/CL Plus, Microtek Scan-Maker 600Z, and Umax UC630.

All can scan 24-bit color via the three-pass method scanning a whole image through red, blue, then green filters. The AVR is the least expensive at \$1860; the Microtek and Umax will cost \$1995.

The scanners differ primarily in how they increase effective resolution. AVR boosts the 3000/CL Plus to an effective 600 dpi by linear interpolation. This is a form of software manipulation that scans your image at 300 dpi, then finds places where an image needs to be enhanced and replaces every 4 dots there with 6 dots. Microtek and Umax scan images at 600 dpi vertically and 300 dpi horizontally, and then increase horizontal dpi to 600.

All three contain Windows 3.0 scan control/image editors. AVR and Umax chose Micrografx's Picture Publisher and Picture Publisher Plus respectively. Microtek bundles the ScanMaker 600Z with

PhotoStyler from U-Lead Systems.

AVR, Microtek, and Umax provide top-of-the-line scanning at a reasonable price. But keep in mind that scanning 24-bit color images will require a huge amount of disk storage and that, ultimately, image quality depends on the quality of your output device.

-Susan Lusty

# IN BRIEF

# 3000/CL Plus, Microtek ScanMaker 600Z, Umax UC630

With effective resolution of 600 dpi, these color scanners can improve your line art and halftone images.

# Advanced Vision Research, Inc.

2201 Qume Dr. San Jose, CA 95131 408/434-1115, 408/434-0968 (fax)

# Reader service no. 692

Microtek Lab Inc. 680 Knox St. Torrance, CA 90502 800/654-4160 (outside California), 213/321-2121, 213/538-1193 (fax)

#### Reader service no. 693

Umax Technologies, Inc. 2352 Walsh Ave.

Santa Clara, CA 95051 800/562-0311, 408/982-0776 (fax)

Reader service no. 694

# CIVINGO (from Borland)



Borland's new ObjectVision™ lets you create Windows applications that directly access dBASE files. Now it's easy to get the graphical Windows environment you want and access to your dBASE files. And developing ObjectVision applications is fast because there is no programming required.

ObjectVision transparently connects to all of your corporate data including Paradox, Btrieve and ASCII files, as well as to other Windows applications via DDE. You can even access Paradox and dBASE files in the same multiuser environment making it the ideal Windows front end for all your data.

# ObjectVision. The power of visual programming.

Creating an attractive forms user interface is easy using ObjectVision's visual programming. You simply draw the elements of your application on the screen using ObjectVision's WYSIWYG graphical tool. Add the program's underlying logic by drawing intuitive decision trees. Then, as simple as a mouse click, create data links to connect the fields in your

CODE: MV61

application with the fields in your database. It's that simple. And that powerful.

All of ObjectVision's applications are developed incrementally, like a spreadsheet. So when you add new logic, or modify an object, you see results *instantly*. There's no waiting through an edit/compile/test cycle.

# No extra royalty fees with ObjectVision Runtime!

For a one-time price of \$495 you can take advantage of ObjectVision Runtime (sold separately). Runtime allows you to develop and distribute ObjectVision Windows applications to an unlimited number of users. All without extra royalties!

# dOFFER!

Now, for a limited time\* you can buy ObjectVision for ONLY \$99<sup>95</sup> (a tremendous savings off the \$495 list). And it comes with our standard 60-day, money-back guarantee. You risk nothing. **See your dealer** or call **1-800-331-0877** today.

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# Test Drive Aldus® Persuasion® Version 2.0, the Business Graphics Presentation Package for Windows

# What's on the Test Drive disks?

You'll receive a working model of Aldus Corporation's *Persuasion* version 2.0, the business presentation graphics application that creates persuasive presentations. Start with *Persuasion*'s outliner to organize your ideas. Then use *Persuasion*'s AutoTemplate technology to transform your ideas into professional-quality visuals. With *Persuasion* you don't have to be a professional graphic artist or designer. *Persuasion*'s easy-to-use drawing and charting tools help you diagram concepts and add graphics. Powerful import features give you direct access to your spreadsheet, data base, and graphics data. *Persuasion* automatically formats your text and graphics into overheads or 35mm slides—it even shows slides on your computer. And you can make changes right up to the last minute. That's the art of *Persuasion*.

Your *PC World* Test Drive also comes loaded with valuable additional features you won't find elsewhere, such as a unique product guide, sample files that put *Persuasion* to work for you, and a special toll-free technical support number. So hurry: Supply is limited, and demand is high.

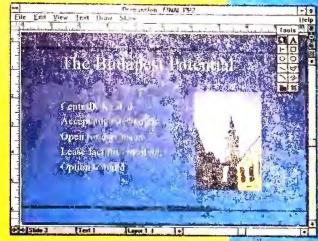
# How do I get my disks?

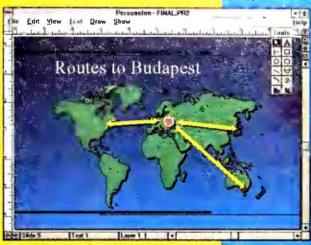
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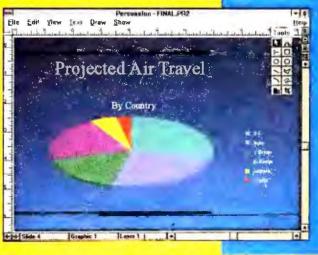
# What are the system requirements?

- Windows 3.0
- 286-based PC with 2MB of RAM (386 recommended)
- Hard disk
- 5<sup>1</sup>/<sub>4</sub> -inch 1.2MB high-density disk drive or 3<sup>1</sup>/<sub>2</sub>-inch 1.44MB high-density disk drive
- EGA or higher-resolution color monitor
- Mouse

# TRIAL DISKS!







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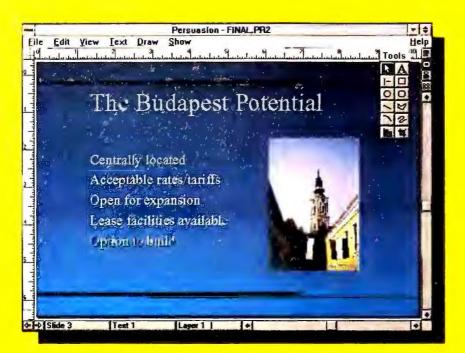
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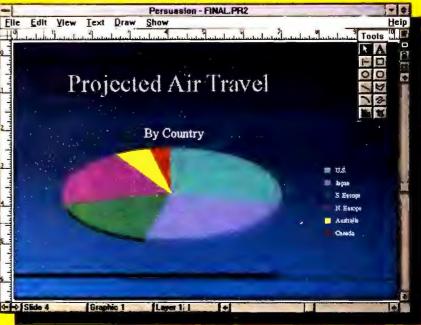


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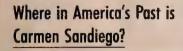
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UNITED STATES



See Other Side for Details

# UPDATE

# **New Versions of Your Favorite Products**





Ms. Sandiego isn't just jetting around the world anymore; now she travels back through time as well.

Ms. Sandiego gets bigger (starwise), better, and trickier to catch with this new release, which tests your knowledge of America's past rather than geography. Instead of flying you to different states or countries as in prior versions, Where in America's Past is Carmen Sandiego? launches you through time using a "chronoskimmer." It costs time to travel, so

use your allotted hours wisely. But even if you run out of time before you catch your criminal, don't worry—you can play again. The clever graphics all by themselves are worth the \$60 price tag. Broderbund Software, Inc., P.O. Box 6121, Novato, CA 94948-6121; 800/521-6263, 415/492-3154 (fax).

Reader service no. 707

# **Adobe Type Sets**

rked by the cost of adding fonts to your system? Adobe now offers its new Type Sets with eight to ten scalable font outlines in every \$149 package—a more than 50 percent savings over Adobe's usual cost. The four sets are arranged by theme; no-nonsense fonts for business correspondence, space-saving faces for spreadsheets and graphs, plus more dramatic typefaces for presentations and invitations. Each set comes with Adobe Type Manager, which lets you select typefaces from inside *Windows* applications and print them on virtually any kind of printer. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039-7900; 800/833-6687, 415/961-3769 (fax).

Reader service no. 704

# PC-Write Standard Level 2.0

Those who like their word processors with just a dash of salt will enjoy this latest version of Quicksoft's inexpensive *PC-Write*. Now you can add and

remove features according to taste, so if you don't do much beyond type and print, you can create a short menu to match. Create a longer menu by adding more editing tools such as Select, Move, Copy, and Insert File. You also get new graphic user interface goodies like multiple windows, pulldown menus, and integrated mouse support. At \$129 with various upgrade prices, PC-Write Standard Level 2.0 is simple yet filling. Quicksoft, 219 First Ave. N #224, Seattle, WA 98106; 800/888-8088, 206/ 286-8802 (fax).

Reader service no. 705

# Texas Instruments microLasers

Texas Instruments has slashed its microLaser printer prices by as much as 33 percent. The microLaser personal printer has been reduced \$450 or 31 percent to \$999, while the PostScript-capable microLaser PS17 and PS35 have been chopped \$600 and \$750 to \$1399 and \$1749, respectively. In the XL line, the 16-ppm microLaser XL falls \$1100 to \$2399, while the XL PS17 and XL PS35 PostScript printers drop \$1200 and \$1350 to \$2799 and \$3149, respectively. Texas Instruments, Inc., Information Technology Group, P.O. Box 202230, Austin, TX 78720; 800/527-3500.

Reader service no. 708

# PackRat 4.0

PackRat, the Windowsbased personal information manager (PIM), gains seven Action Buttons to let you directly access most common PackRat commands such as Add, Search, Delete, or Place (for telephone calls). Another Action Button lets you launch any Windows application from within PackRat, and eight new macrolike Smart Buttons let you combine strings of commands—for example switch to your phone book, search for a name, and place a call all from one button. You also get new Things-To-Do and Contact lists accessible anywhere and an improved calendar function. PackRat 4.0 is \$395 for new users and \$49.95 for upgrades. Polaris Software, 1820 S. Escondido Blvd., #102, Escondido, CA 92025; 800/ 722-5728, 619/743-9964 (fax).

Reader service no. 706

# Freedom of Press for Windows 3.0

Windows 3.0 users don't have to buy a \$2000 printer to get top-notch PostScript output. Freedom of Press lets you build pages with the same 35 scalable fonts and PostScript graphics prowess within Windows for only \$495. It processes pages inside your CPU, then sends them to a printing device from the background, while you move on to other Windows applications (be prepared for a performance hit). You'll need at least 1MB of extended memory and 4MB of hard disk space. A math coprocessor is strongly recommended. Custom Applications, 900 Technology Park Dr., Billerica, MA 01821; 800/ 873-4367, 508/667-8821 (fax). Reader service no. 703

For more information about any product, contact the manufacturer or circle the number on the reader service card.

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Unlike two-dimensional spreadsheets, CA-Compete! lets you model up to 12 different dimensions and navigate MICROSOFT WINDOWS between them instantly with the click of a mouse. And



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English too, so you can use recognizable names you define, like Sales, Units, Costs and Profit

instead of cryptic column and row references. For smarter decision-

	Goal Seek			
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Current Value:	(\$509)	Audit		
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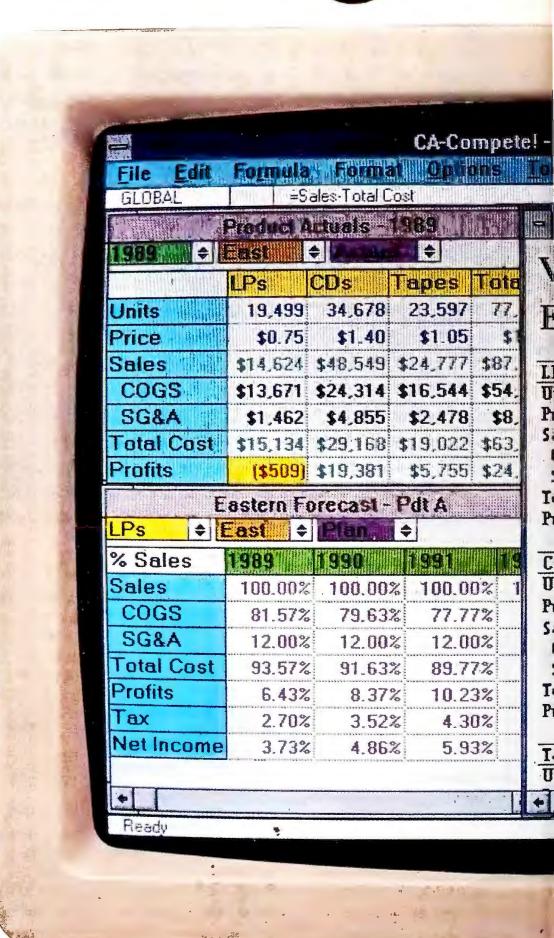
making there's a broad range of powerful tools like Goal Seek, Allocate,

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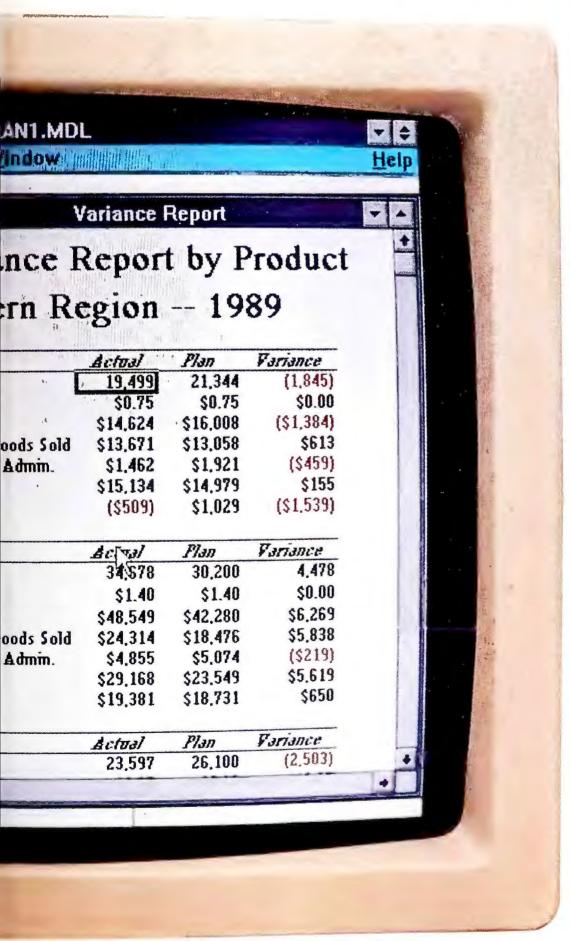
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You can also trace the origin of any value with a quick,

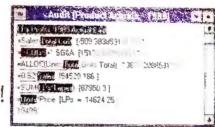
analyses.



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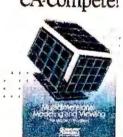
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work with all of your current files.

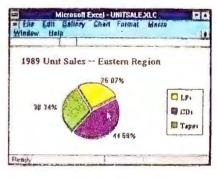
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Chosen "Best of 1990" by PC Magazine."

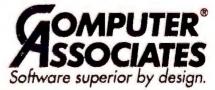


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Choose your favoril SX not some to the same of the sam

Michael Goodwin and TJ Byers

he 386 revolution is a done deal. More than the World readers have 386 or 386SX units and the And since the desktop PCs in your office speed on the every application in the book, it's no wonder you nervous when you think about hitting the road will anything less. Sure, an 8088 notebook is cheap and will do a decent job of monofont word processing, and a fast 16-MHz 286 can even run Windows—but how about graphics, presentations, and serious spreadsheets?

If you and your road-running staff are speed addicts accustomed to switching among demanding Windows



presentation packages and jumbo spreadsheets, and you don't have time to waste, you're a prime candidate for one of the new 20-MHz 386SX notebooks. These powerhouses come in the same small packages as their 8088 and 286 cousins but pack a lot more power.

With a few exceptions, the notebooks reviewed here represent the best crop we've seen—faster, lighter, with longer battery life, sharper screens, and easier-to-use keyboards. Unless you need expansion slots on the road (which will force you to pack a bigger, heavier luggable), a 20-MHz SX notebook isn't a luxury anymore, it's a necessity.

It's not easy to score a *PC World* Best Buy rating, but Dell's System 320N earns the honor with an outstanding balance of portability (7.7 pounds), battery life (3¼ hours), and strong performance. An excellent keyboard and an outstanding service-and-support package add extra value. Its \$3486 price is good—especially considering that it includes 5MB of RAM and a fax-modem.

# Purchase in Haste, Repent at Leisure

But even though the marketplace is full of notebook winners, you still need to choose carefully. Take battery life: A portable PC may be as capable as a desktop, but that won't help if the battery conks out in less than 2 hours. For some time, canny SX merchants have been promising 3 hours of battery life. Only recently has fantasy become reality: Three of these notebooks, AT&T, Dell, and Toshiba, deliver 3 or more hours of battery life without resorting to power-saving features that spin down the hard disk or slow the CPU to a crawl. And if you choose a unit that lets you swap drained batteries for fresh ones without having to power down (three in this roundup do), it's easy to keep computing from coast to coast.

Is there anything to *stop* you from buying one of these 386SXs? Well, good things don't come cheap. These units are \$500 to \$1000 more than a 286 with comparable RAM and hard disk. But if you choose the system that meets your particular needs, you'll end up with all the performance, battery life, and disk capacity you need for a high-powered portable office.

We also discovered that some note-books—particularly those made by Chicony and sold under the imprint of several vendors—were unable to complete our test suite without fatal hardware failures or software incompatibilities. The rush to market doesn't always allow time for sufficient testing or quality control, so we suggest that if you're considering a system we haven't re-

viewed, you ask around to make sure the product has satisfied users.

#### **Hot Hot Hot**

This roundup matches 15 of the newest, fastest 386SX notebooks in a contest for top value. We set up and priced all the notebooks in the same standard configuration and then obtained *street prices* for each. The weights we list are *traveling weights* with modem, batteries, and AC charger included. We test service and support with blind calls, so you'll know what to expect if you need help after your purchase. See the sidebar "Buying Smart" for further details.

With all the new notebooks and recent advances in disk, display, and battery technology, your choices are confusing. This is a volatile market. At press time, some vendors had made big price cuts and configuration changes, so call around before purchasing. Choose carefully, and you can walk away withreal value in your briefcase—and money left in your bank account.

Michael Goodwin is an associate editor, and TJ Byers and Brett Glass are contributing editors for PC World.

For more information about all products in this article, circle reader service no. 905.

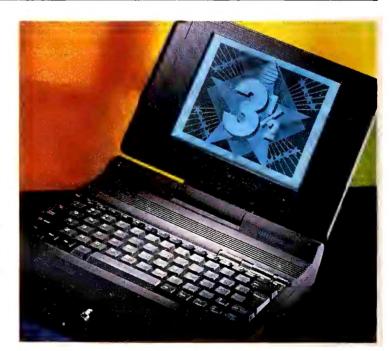
# Altima LSX

PROS: Fast, inexpensive, excellent service and support

CONS: Poor battery life, small screen

Every PC buyer shares the same dream: high performance at a low price. Happily, the middleweight Altima LSX turns the dream into reality. It earned the second-fastest score in our performance test lab, and its \$3129 street price is one of the lowest in the roundup. Its only serious failing is a brief 2-hour battery life, but recharge time is a respectable 13/4 hours. The keyboard has a nice, full-travel feel, though its emulated page keys will confuse your fingers until you get used to them. And while the screen ties for the smallest in the review, the display is quite sharp and graphics show up well.

Altima's service and support are absolutely tops, with a guaranteed 48-hour turnaround time. So if you need fleet performance, don't want to empty your wallet, and can live with short battery life, look no further than the LSX.



The Altima is a budget-priced traveler with performance rivaling the fastest notebooks.

# **AST Premium Exec 386SX/20**

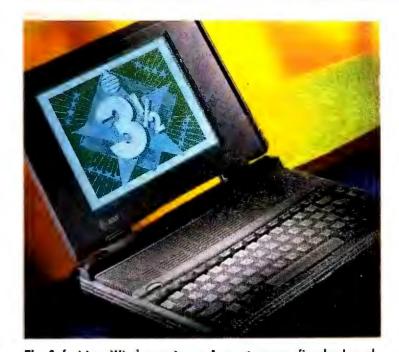
**PROS:** Fine keyboard, good service and support **CONS:** Small screen, touchy contrast control

AST's Premium Exec 386SX/20 doesn't boast any flashy features, but its solid construction, good speed, fine keyboard, and reasonable cost (\$3462) make it a sound product at a fair price. Portability, or lack thereof, is its Achilles' heel: A bulky case and an 8.9-pound traveling weight will keep it from winning many compliments on size or weight. While its girth allows for an excellent keyboard, with full key travel and dedicated page keys, it does not get you a large screen. The display ties for smallest in the roundup, and the contrast control is hard to adjust. Battery life is average:  $2\frac{1}{2}$  hours.

Tech support is available 11 hours on weekdays plus half a day Saturday, but California residents will have to pay for the call. While the Premium Exec's only standout feature is its keyboard, it's still one of the best systems overall.



You'll find nothing flashy here, but a solid balance of features makes the AST a strong overall value.



The Safari is a Windows winner. A great screen, fine keyboard, and super battery make you forget its hefty price.

# AT&T Safari NSX/20

PROS: Great display, fine keyboard, long battery life, preinstalled Windows

CONS: Expensive, slow recharge

At first glance, AT&T's \$4181 Safari NSX/20 looks a little expensive, but if you're a *Windows* devotee, you get a lot for your money—including the best battery life in the roundup (3½ hours), a huge screen, a mouse, and a preinstalled copy of *Windows*. You can even swap batteries on the fly. And while the 8½-pound Safari is no featherweight, its 10-inch screen delivers the best gray-tone rendition of *Windows* we've seen. The keyboard is excellent, too. Is there anything wrong with this machine? Well, its RAM capacity tops out at 6MB, and you'll need the optional quick charger (\$229) if you want to cut down its long 4½-hour recharge time.

Technical support is quite good. While its price and weight keep it out of the winner's circle, *Windows*-hounds might find this machine their smartest buy.

# Compaq LTE 386s/20

PROS: Fast, small, 10MB RAM capacity, quick recharge

CONS: Expensive, awkward keyboard

Compaq's LTE 386s/20 is another dandy *Windows* machine. For starters, it's the fastest notebook you can buy. You can install 10MB of RAM, and there's a mouse port, a 60MB drive option, and a connector for Compaq's docking station. But neither its speed nor its pedigree comes cheap: You'll have to plunk down a hefty \$4851 in our standard configuration with a 60MB hard disk.

The screen is on the small side, but text is crisp, and graphics look good. The worst problem with the LTE is its keyboard, with its emulated page keys and nonstandard cursor key layout. Fortunately, Compaq provides a port to let you plug in an external keyboard. And Compaq's toll-free tech support is speedy and accurate. Still, when all is said and done, speed is the LTE's raison d'être. For top-gun performance, it has no equal.



The speed king LTE is small and expandable—but its price makes you dig deep, and the keyboard is frustrating.

# FEATURES EVALUATION

# Plenty of Choices for the Movable Office

You're likely to find the balance of size, battery life, performance, price, and service you need from Best Buy Dell System 320N. But if you need outstanding battery life, check out AT&T's Safari NSX/20.

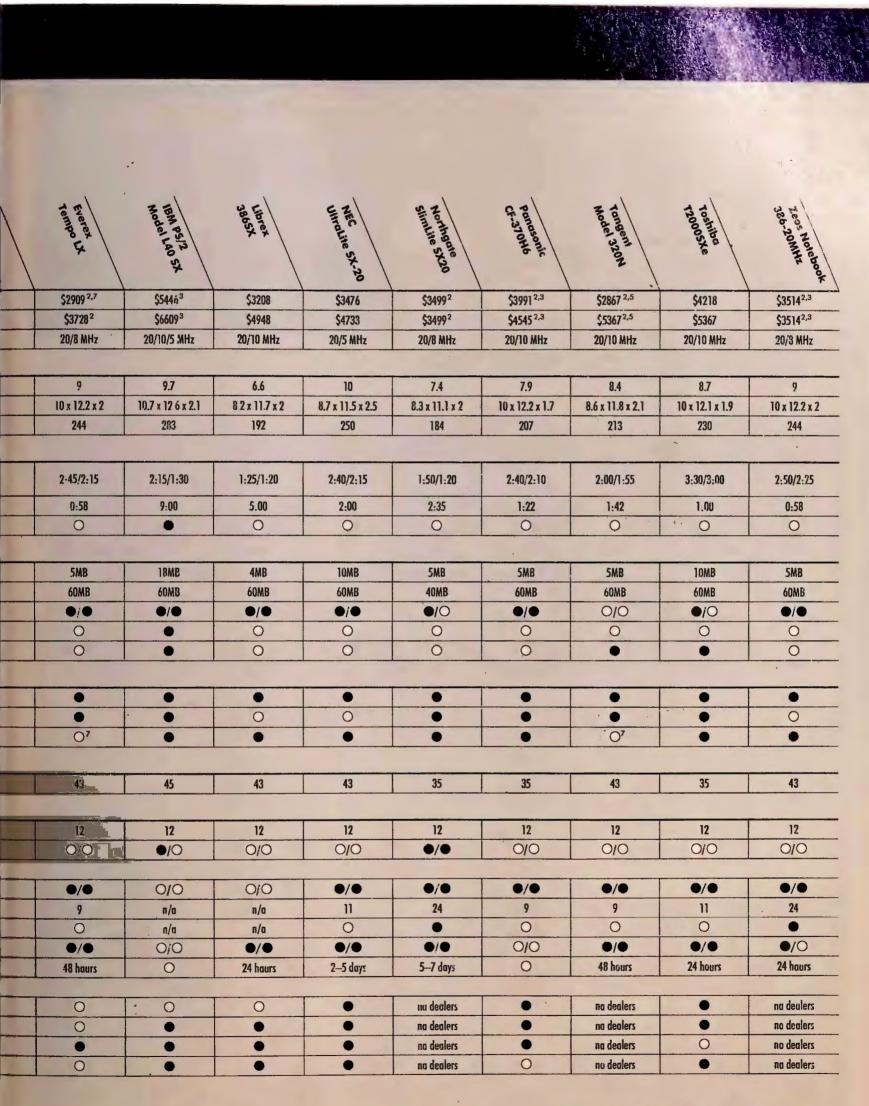
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n/a = not applicable		AST Premium Exec 3865X/20	AT&T NSX/20 Safari NSX/20	Compad 120	Companion SX	Dell 320N System 320N
andard features		F. W.	B /		S.	2
Street price1	\$31292	\$3462	\$4181	\$4851 <sup>3</sup>	\$3474	S3486 <sup>2</sup>
List price <sup>1</sup>	\$38482	\$4592	\$5228	\$59663	\$3474	\$3486 <sup>2</sup>
CPU speed	20/10 MHz	20/8 MHz	20/8/4 MHz	20/8 MHz	20/10/8 MHz	20/8 MHz
	1 Log to mitz	20/0 (11)2	20/0/1 11112		20/10/0 11112	
rtability Traveling weight (pounds) <sup>6</sup>	8.4	8.9	8.5~	8.7	7.4	7.7
Size (inches)	8.6 x 11.1 x 2.2	9 x 11.5 x 2.3	9.9 x 12 x 1.8	8.8 X 11.1 X 2	8.5 x 11 x 1.8	8.5 x 11 x 2
Volume (cubic inches)	210	238	214	195	168	187
	1. 210	. 200	1 217	1 1/3	100	107
ttery LL L			1	T		
Battery life (power-saving enabled/ disabled, hours:minutes)	2:30/1:55	2:30/2:30	4:20/3:30	3:30/2:30	2:40/1:55	3:15/3:15
Recharge time	1:45	2:30	4:30	1:26	5:00	2:30
Change batteries on the fly	. 0	0	. •	0	0	
pandability						
RAM capacity	5MB	8MB	6MB	10MB	6MB	5MB
Largest hard disk option	60MB	80MB	40M8	60MB	40MB	60MB
Internal modem/fax option	0/0	0/0	0/0	0/0	0/0	
Mouse port	0	0	•	•	•	
Expansion chassis available	0	0	•	•	•	•
yboard						, , , , , , , , , , , , , , , , , , , ,
Cursor keys in inverted T		•		0	•	
Dedicated page control keys	0	•	•	0	0	
Dedicated function keys	07	07	•	07	07	
reen						
Size (square inches)	35	35	45	38	45	35
	1 3	0.5	*	30	1	33
rvice and support	1					
Warranty (months)	12	12	12	12	12	12
On-site service available/less than \$100	0/0	0/0	0/0	0/0	0/0	
Vendor support	0/0	6 / 6 R	0/0	0.0	0/0	
Central support/toll free	0/0	●/● <sup>8</sup>	0/0	0/0	0/0	
Daily support (hours)  Weekend support	7	11	9	12	0	15
Electronic BBS/fax	0/0	0/09	0	010	0/0	
Turnaround policy	48 hours	3 days <sup>8</sup>	3-5 days?	0	48 hours	24 hours on-site
Vendar-to-dealer support	10 110013	Julys	g-5 days		70 110013	24 HOUR ON-SHE
Dedicated support staff required		•				no dealers
Support staff training required				•		no dealers
Dedicated support line for dealers						no dealers
Inventory and parts requirement				•		no dealers

<sup>&</sup>lt;sup>1</sup> Standard canfiguration includes 4MB RAM, 1.44MB flappy drive, 40MB hard disk, at least one parallel and one serial

port, 2400-baud internal madem, and DOS. <sup>2</sup> Includes 5MB RAM.

<sup>&</sup>lt;sup>3</sup> Includes 60MB hard disk.

<sup>&</sup>lt;sup>4</sup> Estimated street price.



<sup>&</sup>lt;sup>5</sup> Withaut madem.

<sup>&</sup>lt;sup>6</sup> Including PC, madem, battery, AC adapter.

<sup>&</sup>lt;sup>7</sup> <F11> and <F12> are emulated.

<sup>&</sup>lt;sup>8</sup> Tall call in California.

<sup>&</sup>lt;sup>9</sup> 24-haur turnaraund at extra cast.

# CompuAdd Companion SX

PROS: Fast, portable, great screen, fine service and support

CONS: Short battery life, slow recharge

If you're looking for a very fast, extremely portable notebook at a nice price, CompuAdd's \$3474 version of TI's TravelMate 3000 is probably the machine for you. This is one of the smallest notebooks in our roundup, but its screen ties for the largest. And if you use graphics programs, you'll appreciate the Companion's unusual ability to display 1024 by 768 super-VGA resolution on an external monitor. Unfortunately, as so often seems to be the case, light weight also translates into short battery life: You get less than 2 hours, and you need a full 5 hours to recharge. In addition, the emulated page keys and sliver-sized function keys mar the layout of the keyboard.

When you add it up, even if you need to pack a couple of extra batteries, the Companion's outstanding portability, hot performance, and fine service-and-support package make this notebook a solid buy.



You'll like the look of the CompuAdd's screen. While light and fast, the Companion is slow on the recharge.

# **Worn-Out Batteries: No Dumping Allowed!**

Chances are, the last thing you were thinking about when you bought a brand-new notebook was replacing its worn-out batteries, but the nickel-cadmium batteries that power these units do wear out after about 500 charges. In a couple of years, depending on how much you use them, you'll have to shell out for a new battery pack. That's no big deal, but what are you going to do about getting rid of the old battery?

No, you can't just pitch your used batteries into the nearest garbage can. Or you shouldn't, anyway. Cadmium, one of the battery's ingredients, is more toxic than lead or mercury. Most municipal disposal systems aren't set up to deal with hazardous wastes. What's more, federal laws prohibit dumping these batteries at sea or in landfills, where most garbage ends up.

At present, the new nickel-hydride batteries featured in the Toshiba T2000SXe are one good solution because they eliminate the cadmium altogether. (They also promise between 10 and 20 percent longer life for the same weight, but that's another story.) So far they're available only from Toshiba, and because they require a different type of charger, you can't use them unless your note-

book was designed to.

Finding a licensed nickel-cadmium recycler isn't easy, especially
one that accepts individual batteries.
To help you in your efforts to maintain a livable earth, we've turned up
a few—and to make this idea more
tempting we list only those that don't
charge a fee. Please remember to
call the recycler for shipping instructions. Here's the short list:

# WHERE TO BUY

Basalt Industries, Inc. Pecos, Texas

915/447-3272 Reader service no. **750** 

Dallas Environmental Services
Technology

Waxahachie, Texas 214/299-6954 **Reader service no. 751** 

**Environmental Pacific Corp.** 

Amity, Oregon 503/835-1313

Reader service no. 752

Inmetco

Ellwood City, Pennsylvania 412/758-5515

Reader service no. 753



# **Buying Smart: Desktops to Go**

The reason you spend extra bucks for a 20-MHz SX notebook is to run your favorite business applications, Windows included, at a decent clip. Whether you're putting together a PowerPoint presentation on a seat-back tray or lugging Excel projections to a sales meeting, you'll need a package that's easy to carry.



#### PORTABILITY

Don't even consider anything heavier than 10

pounds traveling weight—that's PC, modem, battery, and AC charger. If you're contemplating one of the units that edge toward that 10-pound limit, look for, say, a desktop-quality keyboard or longer battery life to make the freight worth its weight.

Best in class: Librex.



# BATTERY

Although faster CPUs burn more power, you

should still demand at least 3 hours of battery life—without using powersaving features such as hard disk timeout or slower CPU speed. (These options stave off the inevitable for a few minutes, but they slow you down, too.) Recharge time of 11/2 hours or less is key if you schedule meetings close together or forget to leave the charger plugged in overnight. Finally, you'll discover that the ability to swap drained batteries for fresh ones without exiting your applications is a godsend, especially if you multitask under Windows. Battery-life champ: AT&T.



#### PERFORMANCE

These 20-MHz systems are all hotter than their

16-MHz predecessor, but there's still quite a range of difference. Our top

speedster, the Compaq LTE, finished the dBASE benchmark almost 5 minutes faster than Everex's Tempo. If tip-top performance is a requirement, remember that adding more RAM often provides an impressive speed-up for Windows.



#### **EXPANDABILITY**

Many 386-specific applications, and some DOS

favorites such as 1-2-3, demand a lot of RAM. We consider 4MB the minimum RAM capacity for an SX notebook, but a machine like IBM's L40 SX, which supports 18MB, gives you room to grow. Unless you enjoy fumbling around with a pocket modem, look for an internal-modem option. Only Tangent lacks it. Finally, while a 40MB hard disk is adequate for most purposes, Windows users will probably want 60MB. Overall, IBM takes expandability honors.



#### KEYBOARD

The keyboard that comes closest to the standard

101-key model is best. Emulated keys (which, for example, force you to hold down a special key to turn a cursor key into <Page Down>) slow typing and increase errors. Look for dedicated cursor keys in the familiar inverted T and dedicated page keys. Standard layout for <Alt> and <Ctrl> make life easier too. And test the keyboard's touch before committing yourself. IBM's impeccable keyboard is an easy winner.



#### SCREEN

All these systems have bright backlit or sidelit

VGA displays. Naturally, the bigger the screen the better, but watch out for wide screens like Panasonic's that distort graphics and make text hard your notebook can display, the better color graphics appear. All the notebooks in this review display 16 shades of gray (in 640 by 480 resolution), a reasonable minimum.

AT&T, CompuAdd, and IBM tie for biggest screen.



### SERVICE AND SUPPORT

There's not much you can repair on a note-

book outside the factory, so on-site service is less important than for desktop PCs. Quick replacement is the key service issue, with the vendor making a reasonable effort to recover your data if you've got disk trouble. But an on-site visit that gets you up and running within 24 hours is still the most desirable support option for most users. If you need advice, not repair, you should expect fast, accurate answers. To compare tech support, we make three blind calls to each vendor, ask three questions of varying difficulty, and note the time it takes to get an answer. We also score on promptness, accuracy, and standard support policies. Altima and Dell tie for top ratings.



#### STREET PRICE

We base our cost comparisons on street price.

And to make sure everyone is competing on a level playing field, we price every system in the same standard configuration: 4MB to 5MB RAM, 40MB hard disk, built-in floppy drive, 2400-baud internal modem, and DOS. For every machine (except those whose manufacturers sell direct), our research staff calls at least three PC dealers in three major cities across the country for price quotes, then averages results for each notebook. The lowball winner: Tangent.

# **Dell System 320N**

PROS: Highly portable, great battery, fine keyboard, top service and support CONS: Small screen, mediocre screen contrast



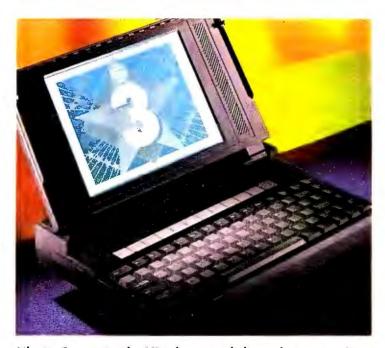
Dell touched all the bases when it put together this fast, small, 7.7-pound notebook. At \$3486 it isn't the cheapest you can buy, but the price includes 5MB of RAM and a fax-modem. The battery lasts over 3 hours, and a main-

tenance battery gives you 2 minutes to slap in a fresh one without quitting your application. Also, the System 320N has a full keyboard, albeit slightly miniaturized to fit the unit's small frame. The only downside is a small screen with lower contrast than most.

Dell delivers free on-site service, with a 24-hour turnaround policy for every notebook, and phone support is terrific. Automated fax service lets you dial in to order tech support documents sent to your fax machine. Add long battery life, an excellent keyboard, and outstanding portability, and you've got a road workers' Best Buy.



Dell's Best Buy has a winning combo of portability, great battery, fine keyboard, and top service and support.



Like its Zeos twin, the LX is heavy and slow—but you can't find a cheaper quick-charging machine.

# **Everex Tempo LX**

**PROS:** Low price, excellent screen, fast recharge, free Windows and mouse **CONS:** Large, heavy, slow

If price is paramount, you'll want to know that this system (a virtual twin to Zeos's Notebook 386, except for the keyboard and the selection of bundled goodies), costs only \$2909 and comes with 5MB of RAM, Windows, a mouse, and a carrying case. Other attractions include lightning recharge and a full-travel keyboard that's a pleasure to use—although <Ctrl> is placed where your fingers expect to find the <Caps Lock> key. The big, sidelit screen is a plus as well, with a wide viewing angle and excellent contrast. On the downside, this big, 9-pound unit is one of the heaviest and slowest in our roundup.

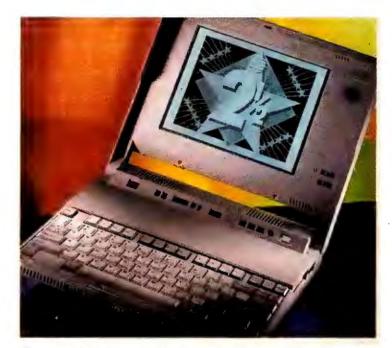
Service and support are good, with a 48-hour turnaround. The Tempo's big screen, generous software bundle, quick recharge, and swell price make it a decent choice if you're on a budget—but you'll have to sacrifice some performance and portability.

# IBM PS/2 Model L40 SX

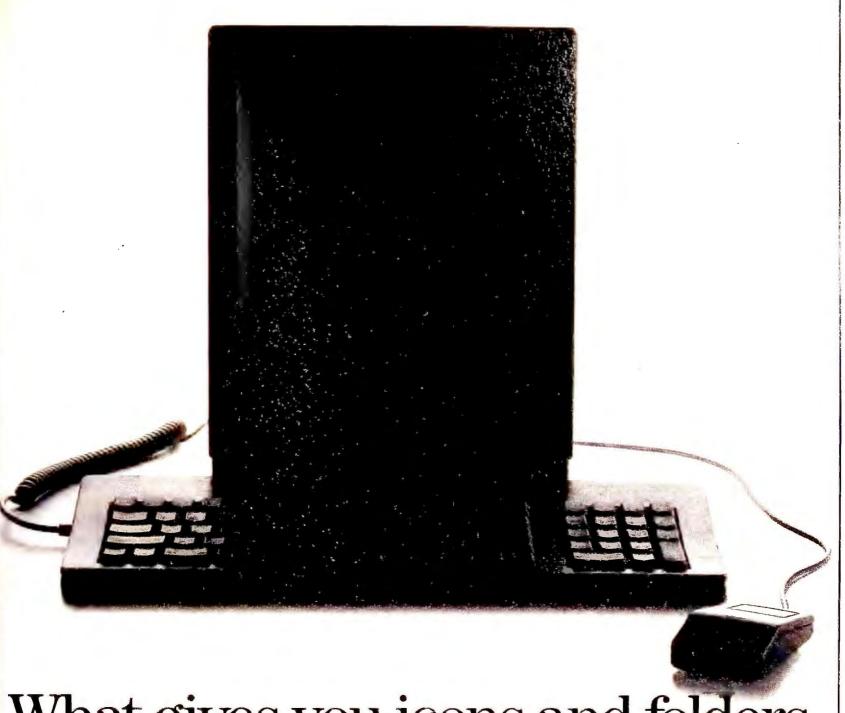
**PROS:** Great keyboard and screen, 18MB RAM capacity, 60MB drive standard **CONS:** Large, heavy, slow, expensive, short battery life, long recharge

The bad news first: IBM's PS/2 Model L40 SX barely slips in under our 10-pound traveling weight limit, and it's also the most expensive system in the roundup (\$5446 with a 60MB hard disk). Battery life is extremely short at  $1\frac{1}{2}$  hours, and the L40 suffers from an unbelievable 9-hour recharge time. It's not even particularly speedy.

So what is there to recommend this machine? Try out the impeccable PS/2 keyboard, and you'll know. The sculptured, full-travel keys will make you swear you're working on your desktop PC. Nor can you beat IBM's 18MB RAM capacity or its big, clear 10-inch screen. Top-notch service and support comes through IBM authorized dealers. So if you want a plug-in portable with the best keyboard in town—and price is no object—you'll like this IBM. But if true portable computing is what you need, you can do much better.



If you want an expandable plug-and-play portable with a great keyboard and screen, check out the pricey IBM.



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Box 59058, Minneapolis, MN 55459-0058. Must be postmarked by 1/10/92\* Suggested Retail Price \$195. Actual price may vary.

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Company

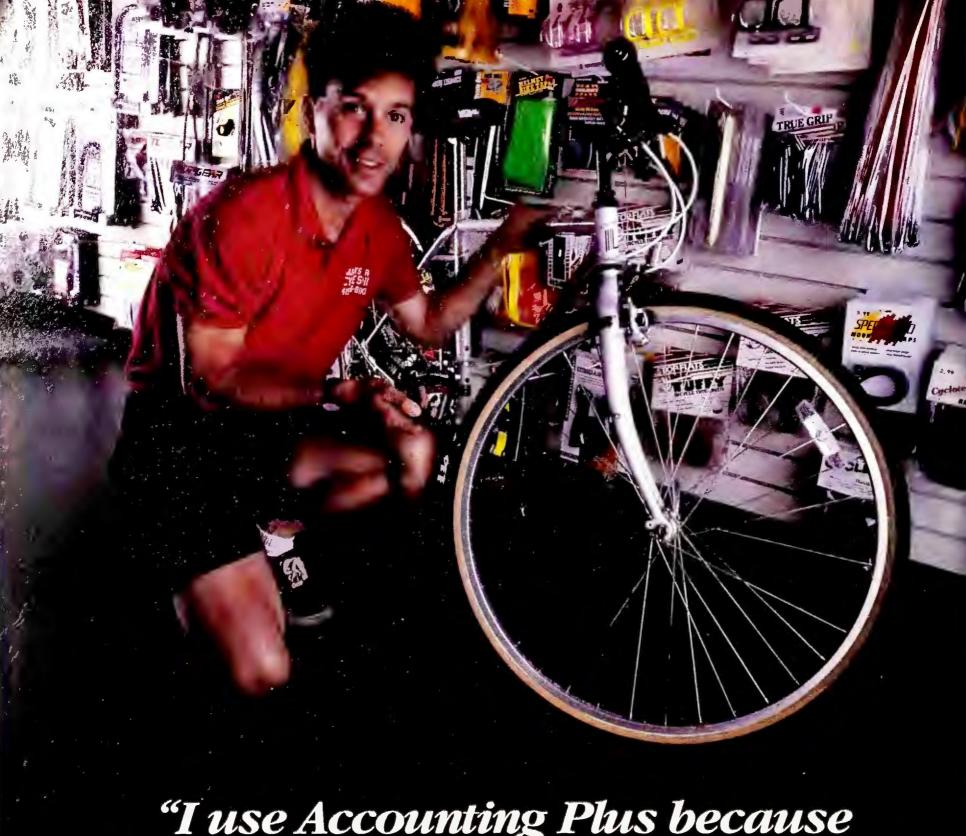
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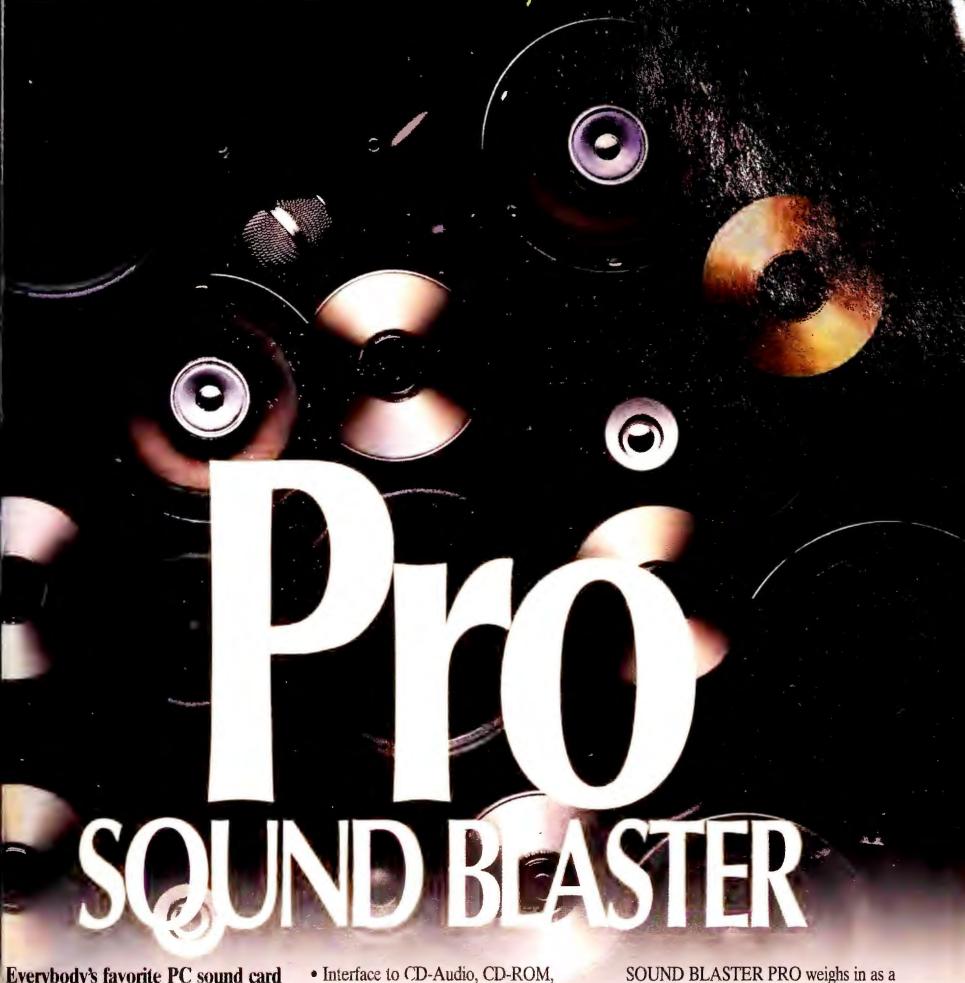
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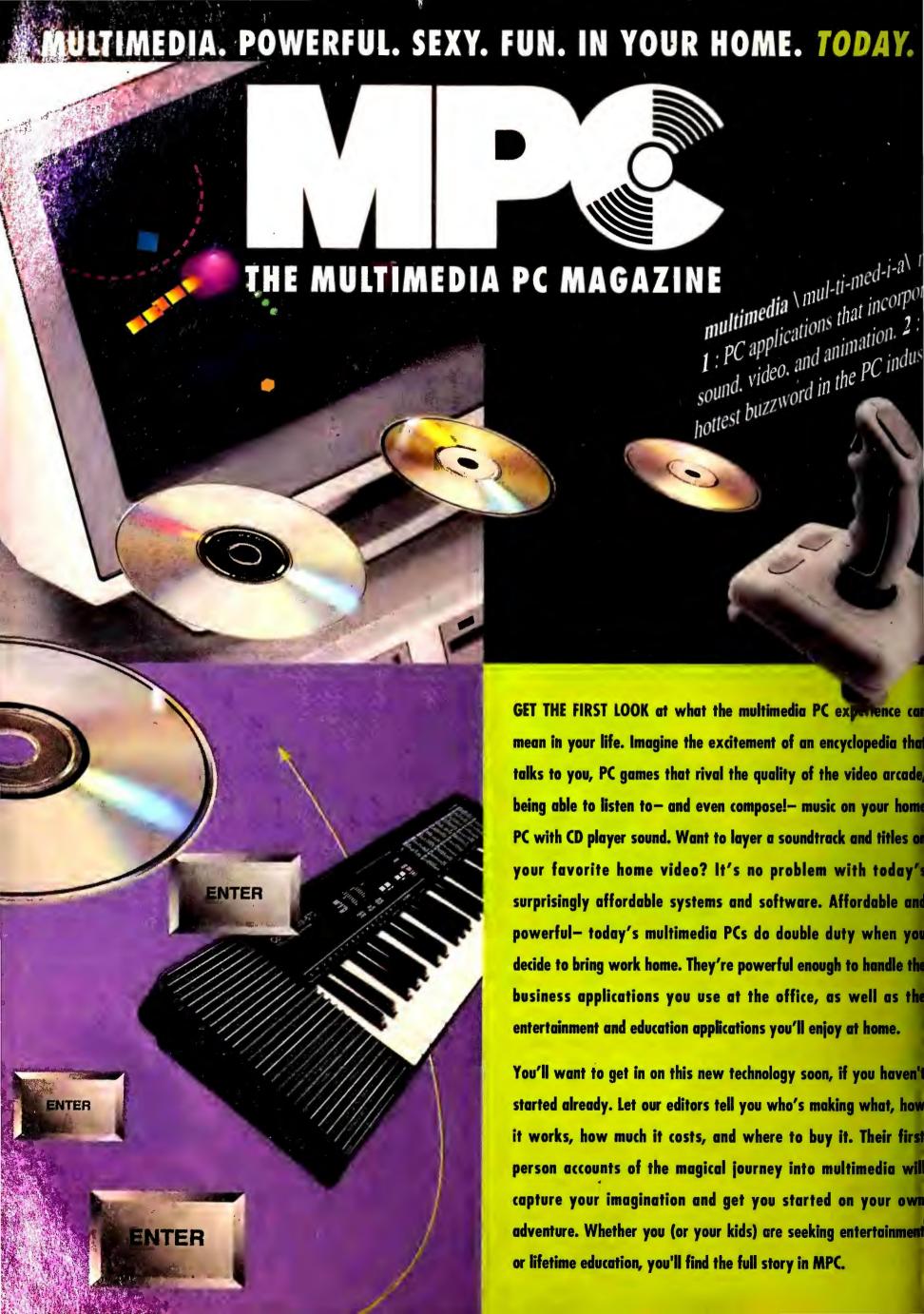
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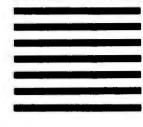
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# PC WORLD TEST REPORT

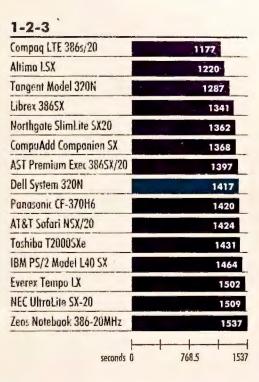
# 20-MHz 386SX Notebooks Give a Scorching Performance

These 20-MHz 386SX notebooks are every bit as hot as their desktop counterparts. The Compaq LTE 386s/20 with its special memory caching is the fastest of the fast. But it's a real surprise to see the low-priced Altima LSX running neck and neck with its pricey competitor.

# Best Buy

# WordPerfect Compaq LTE 386s/20 Altimu LSX CompuAdd Companion SX Tangent Madel 320N Toshiba T2000SXe Librex 386SX Dell System 320N 101 AST Premium Exec 386SX/20 AT&T Safari NSX/20 IBM PS/2 Model L40 SX Panasonic CF-370H6 Northgate SlimLite SX20 Zeas Notebook 386-20MHz 114 **Everex Tempo LX** 115 **NEC UltraLite SX-20**

dBASE IV	
Campaq LTE 386s/20	818
Altima LSX	865
Toshiba T2000SXe	906
Librex 386SX	914
Dell System 320N	931
Tangent Model 320N	941
AST Premium Exer 386SX/20	953
IBM PS/2 Model L40 SX	955
CompuAdd Companion SX	961
Northgate SlimLite SX20	979
AT&T Safari NSX/20	990
Panasonic CF-370H6	1035
NEC UltraLite SX-20	1041
Zeos Notebook 386-20MHz	1052
Everex Tempo LX	1117
seconds 0	558.5 1111



## Methodology

We tested all the computers with 4MB RAM except Altima. Dell, Everex, Northgate, Panasonic, Tangent, and Zeos, which we tested with 5MB RAM. We used the vendor's version of DOS

# WordPerfect

We refarmat three WordPerfect 5.1 documents that vary in size from 5K to 55K. The tiles are text with some boldface and underlining; one document includes a TIFF image.

# dBASE IV 1.1

With the caching feature enabled, we complete an unindexed search for a single record in a 100,000-record parts table. Then we index the table, run the transaction processing module, and post 600 records.

### 1-2-3

We load the application, followed by three separate worksheets (arithmetic, financial, and scientific). We perform various changes and run recalcs on each. Finally we use the MAPS add-in from Monagement Advisory Services of Seattle to run a number of financial farecasts.

### Windows 3.0

Timing begins and ends at the DOS prampt. We launch Windows along with a macro that laads Microsoft Excel with a financial worksheet and initiates a recalc. Then the macro loads Latus's Ami Pro along with a 50K document that contains a 500K TIFF image. Finally, the macra launches Micrografx Designer, opens a drawing, displays it on screen, and exits to DOS.

### Windows 3.0

	and the same of th
Altima LSX	150
Compaq LTE 386s/20	152
Tangent Model 320N	155
Dell System 320N	163
CompuAdd Companion SX	167
Northgate SlimLite SX20	168
Librex 386SX	169
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AST Premium Exec 386SX/20	175
AT&T Safari NSX/20	178
Zeos Natebook 386-20MHz	178
IBM PS/2 Model L40 SX	183
Everex Tempa LX	184
NEC UltraLite SX-20	196
seconds 0	98 19

### Paradox

Starting with an arders table, we campare each recard with an available stock table. The application finds the current price for the items and inserts the resulting recard into an invoice table.

### Paradox

I GI GGA	
Altima LSX	723
Compaq LTE 386s/20	725
CompuAdd Companion SX	761
Tashiba T2000SXe	772
Tangent Model 320N	780
Librex 386SX	787
Dell System 320N	790
AST Premium Exec 386SX/20	797
IBM PS/2 Model L40 SX	803
Panasonic CF-370H6	818
AT&T Safari NSX/20	836
Zeos Nateboak 386-20MHz	855
Everex Tempa LX	868
Northgate SlimLite SX20	868
NEC UltraLite SX-20	913
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# Librex 386SX

**PROS:** Extremely small and light, fine price, excellent screen **CONS:** Slow recharge, very short battery life, 4MB RAM limit

If you're looking for prime portability at a great price, you can stop here. At a mere 6.6 pounds traveling weight, the fast, low-priced (\$3208) Librex 386SX is the featherweight champ of the roundup. And despite its trim size and weight, the Librex's screen is nice and large. The keyboard has a comfortable feel, although the page keys are emulated.

The only serious trade-offs are battery life and recharge time: a short 1½ hours and a long 5 hours, respectively. Dealers provide tech support, but Librex offers an unusual 24-hour faxback service that faxes you technical documents you choose from a BBS menu. So if you don't need much battery longevity and can live with 4MB of RAM, this light, low-priced, fast-performing system with its good screen and keyboard is well worth considering. [At press time, Librex announced that it was dropping its already excellent price even further. —Ed.]



The quick, tiny 6.6-pound Librex is the portability king. But battery life is short and recharge time is long.

# **Networking Notebooks: Portable LAN Adapters**

**Brett Glass** 

Notebooks don't come with the expansion slots you need for standard LAN cards, so how do you hook up to the LAN back in the office?

AT&T, Compaq, CompuAdd, IBM, and Toshiba offer expansion units that include at least one slot. You put a network card in the docking station, connect it to the LAN, and slide your notebook into the docking station. That's an easy, albeit expensive, solution, as these units may cost as much as \$1000.

Fortunately, there's an alternative—one of a new breed of LAN adapters (some no bigger than a pack of cigarettes) from Accton, D-Link, IQ Technologies, Solectek, and Xircom. These units (some as little as \$295) attach to your notebook's parallel port. But there's a trade-off: They're noticeably slower than standard LAN boards.

Suppose you need the parallel port for a printer? IQ Technologies' and Xircom's parallel port LAN

adapters provide pass-through capability that allows you to use a local printer and the LAN at the same time. Xircom requires an extra-cost option to do this trick.

We're also seeing LAN adapters that hook to the notebook's expansion bus, assuming it has one. These units perform more like standard adapters but cost more than parallel port products. Megahertz's token ring and ethernet adapters (\$999 and \$599) take this approach, connecting to proprietary bus ports on some Compags and Toshibas.

Of course, a LAN adapter must have drivers for your network operating system. The Megahertz ethernet adapter is compatible with the popular Western Digital 8003 EB card, which allows you to use any compatible driver. All the other adapters require their own drivers; Xircom has the widest selection. Consult the manufacturer to find out whether your LAN is supported.

### WHERE TO BUY

**EtherPocket** 

Accton Technology 800/926-9288 Reader service no. 754

ARCnet Pocket LAN Adapter, Ethernet Pocket LAN Adapter

D-Link Systems 714/455-1688, 714/455-2521 (fax) Reader service no. **755** 

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IQ Technologies 800/227-2817, 206/485-8949 (fax) Reader service no. **756** 

Megahertz External Ethernet Adapter, Megahertz External Token Ring Adapter

Megahertz 800/527-8677, 801/272-6077 (fax) **Reader service no. 757** 

LAN-ARC, LAN-CX, LAN-10BT, LAN-TR

Solectek 800/437-1518, 619/457-2681 (fax) Reader service no. **758** 

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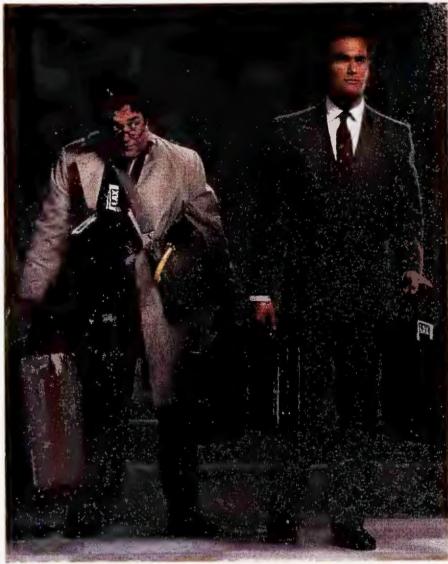
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# **NEC UltraLite SX-20**

PROS: Fine screen, 10MB RAM capacity, SCSI support

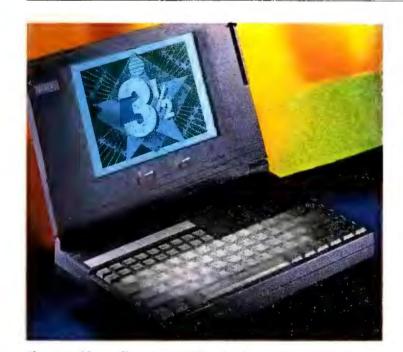
CONS: Large, heavy, slow

If you're trying to build up your biceps, the UltraLite SX-20 could save you some time at the gym. At 10 pounds, this sturdy, midpriced (\$3476) system is the heaviest in our roundup. It's also the slowest, and battery life is only 2¼ hours. The keyboard isn't much compensation—page keys are emulated, and it's got a mushy feel. But there is *some* good news: It has an excellent screen, and this is the only notebook around that has a SCSI port, so if you're running a multimedia demo on the road, you can hook up to a SCSI CD ROM player.

Oddly enough, the charger NEC sent us caused radio interference, but we're told the current version not only solves the problem but also is much lighter. In any case, this highly expandable machine may be a smart choice for users who need a SCSI interface, but most people will find its weight and sluggish performance reason to look elsewhere.



The NEC has a fine screen and terrific SCSI expandability. Unfortunately, it's also heavy and slow.



The portable, well-supported SlimLite has an innovative keyboard and is attractive despite its short battery life.

# Northgate SlimLite SX20

PROS: Light, small, fine keyboard, outstanding service and support

CONS: Very short battery life, small screen

Extreme portability is the big benefit with this Northgate system, and brief battery life is its big failing. The \$3499 SlimLite SX20 weighs in at a mere 7.4 pounds, and as its name implies, it will slip easily into a crammed briefcase. Best of all, the SlimLite packs a full keyboard in the bargain—one that uses an unusual but surprisingly effective layout, with the function keys grouped in two rows next to the <Esc> key. The screen is small but clear and bright. Unfortunately, the SlimLite's 1½-hour battery life is painfully short, and a recharge takes slightly longer than 2½ hours.

Northgate's 24-hour-a-day, 365-day-a-year, toll-free technical support is first-rate. And although its backward battery life and somewhat poky performance hold it back, this highly portable notebook still gives you a lot to like.

# Panasonic CF-370H6

PROS: Good keyboard, quick recharge, 60MB drive standard

CONS: Poor tech support, small wide screen

The Panasonic CF-370H6 is a decent machine shot down by terrible technical support and marginal performance. It's a shame, because this unit starts you out with a generous supply of RAM (5MB) and a 60MB hard disk for a reasonable \$3991. Another nice touch is a hinged screen that's easy to work with on an airplane seat-back tray; and the three-position brightness switch never slips out of adjustment the way knurled wheels often do.

Unfortunately, 2¼ hours of battery life is shorter than ideal. Worse yet, Panasonic's service isn't nearly as good as the machine it represents: There's no turnaround guarantee, and tech support callbacks are slow and unreliable. Moreover, when we finally managed to get answers, they were almost useless. Under the circumstances, we can't recommend the CF-370H6.



This Panasonic is a decent machine, designed to shoehorn into a tight work space. But technical support is a disappointment.

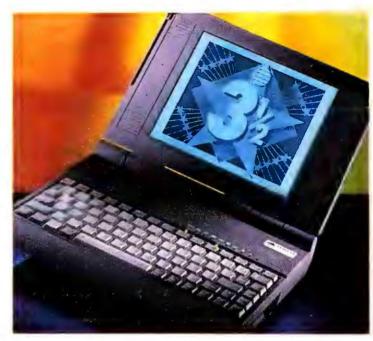
# **Tangent Model 320N**

PROS: Excellent screen, fine price, fast

CONS: Short battery life, no internal modem, poor quality control

Tangent's Model 320N (made by Chicony) is the cheapest system here, as well as one of the fastest, and its \$2867 price includes 5MB of RAM. However, that price does not include an internal modem because the system doesn't support one. Battery life is hardly impressive—under 2 hours—but both screen and keyboard are fine.

Unfortunately, we've seen far too many hardware problems with the Tangent and other Chicony-built units from vendors such as Micro Express—all three of whose notebooks failed our test suite. We finally managed to get one of Tangent's Model 320Ns through our entire gauntlet of benchmarks, but this sort of trouble makes us nervous. If you're considering a Tangent, you'll be glad to know that the support staff was knowledgeable and helpful, but we can't recommend this system until quality control improves.



Inexpensive and small, the fast Chicony-built Tangent suffers from questionable quality control.



The big Toshiba gets good marks for its long-lasting and environmentally safe nickel-hydride batteries.

# Toshiba T2000SXe

PROS: Outstanding battery life, 10MB RAM capacity, good keyboard

CONS: Pricey, large, small screen

Toshiba's \$4218 T2000SXe is one of the first notebooks to use the new power-packed nickel-hydride batteries, so you get 3 solid hours of portable power and a 1-hour recharge. What's more, nickel-hydrides don't suffer from the nickel-cadmium "memory effect": You don't have to drain them every couple of months to keep them at full rechargeability. The keyboard is well designed too, with fully dedicated page controls and function keys. And while the screen is small, it's also nice and sharp.

Sad to say, the T2000SXe's 8.7-pound traveling weight brings down its portability rating, and we had to spend quite a bit of time cutting through busy signals on the tech support line. Still, if you don't mind paying a premium price or lugging a few extra pounds, the T2000SXe is a solid choice from a solid company.

# Zeos Notebook 386-20MHz

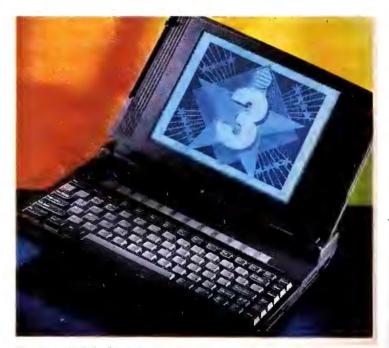
PROS: Excellent screen, extra battery and charger

CONS: Large, heavy, slow

The large, heavy Zeos Notebook 386-20MHz is a virtual twin of Everex's Tempo LX. However, this Zeos costs \$3514—over \$600 more than Everex's street price. But while Everex gives you *Windows* and a mouse, this Zeos comes with a 60MB hard disk, an extra battery, and an external charger, so you can top up one battery while you work from the other. Like its twin, the Zeos is fairly slow. The keyboard features standard placement of <Ctrl> and 12 dedicated function keys, but page keys are emulated.

Zeos's technical support is quite good, with its toll-free, 24-hour phone support 365 days a year. And the fact is, this is a good machine —that second battery boosts effective life to more than 5 hours. But because of the large price difference, we think the Everex version is more attractive. 

意



Varying slightly from its heavy, slow Everex twin, the Zeos also has a great screen and excellent support.

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# **Best of the Rest**

20-MHz SX notebooks are taking over, and new machines are showing up fast. Here are 25 more to consider.

Model	Price <sup>1</sup>	Size (inches)	RAM capacity (MB)	Hard disk (MB)	Warranty (months)
Acer AnyWare 1120NX	\$4120 <sup>2</sup>	8.5 x 11 x 2	5	60	12 -
AmRel MLT386SX-20	\$27952, 3	8.7 x 11.6 x 2.3	5	60	12
Austin 386/SX20 Notebook	\$2695 <sup>2</sup>	8.7 x 11 x 2.1	5	60	12
Blackship 386SX-20 Notebook	\$24954	8.5 x 11.7 x 2	5	60	12
Chaplet NBA 386SX-20	\$29275	8.5 x 11.7 x 2	6	40	12
Core Pacific LP386SX-20	\$22954	9.3 x 11 x 1.8	16	60	12
Dataworld NB 320SX	\$2995	8.5 x 11 x 2	16	40	12
Dauphin 1000 Lapbook	\$3240	11.3 x 12.5 x 2.3	8	60	12
Dauphin 500-SX	\$3240	8.3 x 11.7 x 1.9	8	60	12
Goldstar GS620	* \$33204	8.5 x 11 x 2	4	40	12
Grid 1750	\$56442,6	10 x 12.2 x 1.7	5	60	12
Hyundai Super-NB386Sc	\$39942, 4	8.2 x 11.7 x 1.8	5	40	12
Kris Master	\$1899	8.5 x 12 x 2	16	60	12
Micro Express NB5620	\$38202, 4	8.6 x 11.8 x 2	5	60	15
MiTAC 3026E	\$3199 <sup>3</sup>	9.2 x 11.2 x 2	6	80	12
Mitsuba Ninja Notebook 386SX-20MHz	\$35957	8.5 × 11 × 2	16	40	12
Olivetti Notebook S20	\$55954,6	8.3 x 11.8 x 2	6	60	12
Sharp PC-6641	\$4797	8.5 x 11 x 1.8	6	40	12
Tandon NB/386sx	\$3495	8.5 x 11 x 2	16	60	12
Tandy 3810HD	\$44992,6	10 x 12.2 x 1.7	5	60	12
TI TravelMate 3000	\$4496	8.5 x 11 x 1.8	6	60	12
TOPPCs NB5620	\$2800 <sup>2</sup>	8.3 x 11.8 x 2	5	60	12
Twinhead Supernote 20C <sup>8</sup>	\$4498	8.5 x 11 x 2	8	60	12
ZDS MastersPort 386SL <sup>8</sup>	\$57476	8.3 x 12.4 x 1.8	8	60	12
ZDS MastersPort 386SX	\$46476	8.5 x 11 x 2	4	60	12

<sup>&</sup>lt;sup>1</sup> With 4MB RAM, 1.44MB flappy drive, 40MB hard disk, internal 2400-baud modern, DOS.

### WHERE TO BUY

Acer America 800/733-2237, 408/922-0176

Reader service no. 760

AmRei Technologies, inc. 818/575-5110, 818/575-0801 (fax) Reader service no. 761

Austin Computer Systems 800/833-3657, 512/454-1357 (fax) Reader service no. 762

Biackship Computer Systems 800/877-6249, 510/770-8674 (fax) Reader service no. 763 Chaplet Systems USA, Inc. 408/732-7950, 408/732-6050 (fax) Reader service no. 764

Core Pacific Electronics 800/352-3748 Reader service no. 765

**Dataworid, Inc.** 800/736-3282, 213/695-7016 (fax) **Reader service no. 766** 

Dauphin Technology, Inc. 708/627-4004, 708/627-7618 Reader service no. 767

Goidstar Technology 408/432-1331, 408/954-1143 (fax) Reader service no. 768 Grid Systems 800/222-4743 Reader service no. 769

Hyundai Electronics America 800/727-6972 Reader service no. 770

Kris Technologies 800/282-5747, 415/887-8048 (fax) Reader service no. 771

Micro Express 800/989-9900, 714/852-1225 Reader service no. 772

American MITAC Corp. 800/648-2287, 408/432-0866 (fax) Reader service no. 773 Mitsuba Corp. 800/648-7822, 714/392-2000, 714/392-2021 (fax) Reader service no. 774

Olivetti Office USA 800/527-2960, 908/526-8405 (fax) Reader service no. 775

Sharp Electronics 800/237-4277 Reader service no. 776

Tandon 800/800-8850, 805/529-8408 (fax) Reader service no. 777 Tandy Corp. 817/390-3011 Reader service no. 778

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TOPPCs Int'i, inc. 714/939-1416, 714/939-0103 (fax) Reader service no. 780

Twinhead Corp. 800/545-8946, 408/945-1080 Reader service no. 781

Zenith Data Systems 800/553-0331 Reader service no. 782

<sup>2</sup> With 5MB of RAM.

<sup>4</sup> Without internal madem. 5 With 6MB af RAM.

<sup>6</sup> With 60MB hard disk.
7 Includes mause.

<sup>&</sup>lt;sup>8</sup> Uses 386SL low-pawer processor chip.



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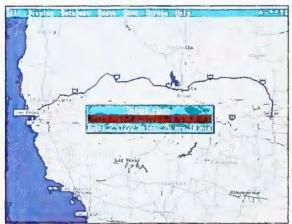
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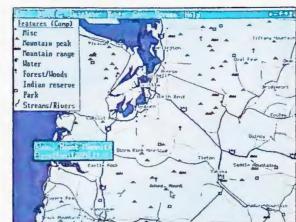
Clear, detailed maps that can get you anywhere in the United States that you want to go. Just tell AUTOMAP where you're going, when and where you'll be starting from, what areas you'd like to avoid, what areas you'd like to visit on the way and how you like to drive. It's fast, fun and informative.



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best there is to see and do. Business travellers won't have to worry about being unfamiliar with new territories — just a quick session with AUTOMAP and you'll know exactly where you're going.

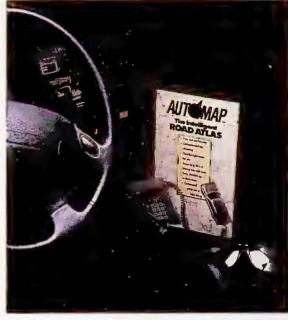


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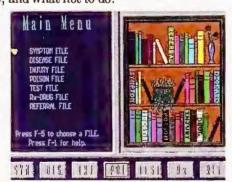
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answer your medical questions (for both emergencies and non-emergencies) in a number of important categories. Created by a team of Board Certified Emergency Physicians in collaboration with graphics professionals and technicians, The Home Medical Advisor covers all age groups. It is colorful, informative and fast, putting volumes of medical and health information in a fast-access format. All information is easy to understand and emergency instructions are clear and concise.

The Symptom File. From The Home Medical Advisor's Main Menu select Symptom File and view a list of the most common symptom complaints by patients. This file will quickly formulate up to 400 potential diagnosis, employing over 1400 questions and 600 color VGA illustrations (the graphics are incredible!). The Symptom File in-

cludes a listing of 70 of the most common chief complaints, often the worst, or most bothersome symptom. Home Medical Advisor will ask key questions and arrive at possible diagnosis from its vast knowledge base.

The Disease File. The Disease File provides extensive information on over 450 diseases with along with discussions of their causes, common symptoms, physical evaluation and treatments. There are also special sections on pediatrics and problems unique to women.

The Injury File. A listing of over 200 common injuries and treatments. Everything from gunshot wounds, burns, cuts and bruises to acute mountain sickness and broken bones is indexed by body part for fast reference.

The Test File. Diagnostics have advanced by leaps and bounds over the past several years. The Home Medical Advisor's Test File provides a listing of over 140 of the most widely used medical tests. Each section explains exactly how each test is performed, why it is used, its limitations, risks and benefits. Includes section on "What to expect."

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# How Can It Be Possible?

You're probably wondering exactly how this technology works. How can software have such a shattering impact on my computer? Although the authors are keeping the secret to themselves, they have shared information about where the slow-downs are within your system, where the speed is trapped and what has to be done to harness it.

They do tell us specifically, that the biggest system slowdown for your system is waiting for disk reads. When you use an application, you use it in "chunks" of various sizes, depending on the functions you are performing. Sure, you load it all at once, but it's used in bits and pieces. Your system must read back and forth, searching for these chunks of programs as they are needed by the application. Switch to another function, and the system must scramble again to find the required chunks.

### A Perfectly Logical Solution...

One of the keys to the FAST! design is the addition of "intuitive logic" to the technique of caching, so your system actually anticipates what your CPU will be seeking and reads the information directly

from the hard disk (or floppy) into a special buffer created within your RAM. This information is, in reality, retrieved before the system asks for it!

As a result, your CPU spends no time waiting for disk reads, so processing can be done as fast as the system is capable — faster than you've ever seen it! The more disk-intensive the application is, the more dramatic the increase in speed can be achieved using FAST! Database, spreadsheet and complex CAD systems, word processing, data transfer and more will achieve maximum response with FAST!

FAST! is also good for your system. By reducing the chaotic searches for data on your hard disk, it actually extends its life, reducing the damaging effects of constant wear. It's good for your software applications because they'll run leaner and faster, so you'll be more productive.

On a standard data transfer performance test, FAST!is 18 times faster than a standard AT—and 5 times faster than the leading competitor. In fact, an IBM XT with FAST! is faster than a Compaq DeskPro 386!

# **Don't Buy More Equipment!**

You could spend thousands trying to achieve the speed required for truly efficient computing. Items like high-speed drives, turbo boards — even complete system upgrades try to overcome your system's inherent slowdown — waiting for disk reads.

### What FAST! Can Do for a 386...

FAST! will deliver spectacular results on your IBM PC, XT, AT and PS/2, but imagine how much faster the "new generation" of ultra high-speed processing technology like the Compaq 386 or Intel's 386 Above Board will run using FAST! — they instantly leap into a new computing class!

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Charles Bermant, author of The Windows 3.0 Comparison, wrote "One solution (to the speed problem) is to replace Windows' disk cache, SMARTDRV.SYS, with another cache. One such program, FAST!, has made my recent Windows life a lot easier. FAST! makes everything appear faster."

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Loads of Special Features... The list of features that Fax96 gives you goes on and on. Automatic transmittal cover-sheet generation with enough "comments" lines to be a short fax all by itself. Automatic redial in case the called number is busy. An automatic log of sent and received faxes. Printing compatibility with lasers and dotmatrix printers. And perhaps best of all, familiar "push button" fax machine look and feel. You'll know instinctively how to operate Fax96.

Free! Faxography. Fax it fancy with big fonts, little fonts, picturesque graphics and more. Faxography will convert anything that can be printed on an Epson LQ printer to a

fax. Simply set up your word processor, or any application, to use the Epson LQ printer, then print to a disk file (you don't need a printer at all). Faxography will do the rest. (Other boards emulate a 9-pin Epson. Faxography emulates the hi-end Epson 24-pin for better quality images.)

Fax76 With Powerful Modem. Add a high-powered, 2400 bps modem to Fax96 for a dynamite PC communications combo. If you're short on slots or COM ports, this is a must. Both fax and modem fit on one half-size board. The Fax96 with Modem also supports full background send and receive.

And Frecom is proud to include Comit software to run this modem. Frecom tested all the modem software around and found Comit to be the tightest, fastest, easiest to use, and the only one with MNP 2, 4, 5 and 7 built in — the best transmission protocols around. You don't have to pay extra for MNP hardware.

Fax96 With 1-Liner. This is the same product as Fax96 with two extra high value features – 1-Liner and FarFetchFax. The 1-Liner is a built-in voice/fax



up your faxes as easily as retrieving answering machine messages. Listen to your messages, then enter your FarFetchFax and tell Fax96 where to send your faxes via touch tone telephone. You can also run programs while receiving faxes.

New! The Fax Window. Now you can fax from Windows as easily as you print! Create fantastic faxes in Word for Windows, Ami Pro, even Corel Draw — then print to the Fax Window instead of your usual printer. Fax Window runs totally in the background, taking full

advantage of Windows' multi-tasking capabilities. After you select "Print...", a dialog box appears prompting you for a destination fax number, a scheduled time to send, and comments for the cover letter.

FRECOM

Fax96

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# The First Piano That Teaches You How to Play!

# ...as Easily as Playing Super Mario Brothers!)

The Miracle Piano Teaching System Uses Nintendo or a PC to Teach Anyone to Play!

as a kid. The repetition, the drills took all the fun out of it — I eventually quit and have regretted it ever since. Now it's my turn to decide on piano lessons for my own kids. I introduced my nine-year-old, a self-proclaimed Nintendo master and junior PC hacker, to the Miracle Piano Teaching System about four months ago. His first question was "How do I fire the weapons?" Wise guy.

I left him alone with the Miracle and waited to

I left him alone with the Miracle and waited to hear something. Ten minutes later I heard Mary Had A Little Lamb, then Chopsticks and then the theme song from The Jetsons. I rushed back to his room and found him with that look on his face — the same look he gets when he reaches a new level in Zelda.

# The Only Self-Teaching Piano.

The Miracle Piano Teaching System can teach anyone — child or adult — to play the piano with a series of progressive, customized lessons. The Miracle quickly connects to a Nintendo or PC and includes a Nintendo cartridge that combines an advanced MIDI keyboard with full-stereo sound and brilliant on-screen graphics. In no time at all, students of all ages will learn and perform left and right handed melodies — while having a lot of fun!

There are exercises, musical pieces and drills (cleverly disguised as games), that teach hand positions, notes, fingering, rhythm, scales and more. The Miracle can be quickly set up for any age or expertise, and customizes itself to move the user along at a comfortable pace.

Unlike conventional piano lessons, The Miracle

eliminates boring, repetitive routines. The super-creative, artificially intelligent software quickly teaches the basics and builds on them in very entertaining ways. And that makes all the difference.

# The Keyboard.

Dazzling music! Spectacular effects! Booming orchestras — all created by you — the Miracle keyboard — and a NES. As a stand alone instrument, The Miracle rivals the music industry's most sophisticated MIDI consoles. The 49 full-size keys are velocity sensitive, so you can learn to play utilizing true piano expression. You also get a

foot pedal, which controls the length of time each note is sustained, and stereo earphones.

The Miracle can produce sounds from its library of over 100 instruments, sounds and effects programmed by a leading motion picture sound designer. To produce its superior acoustics, The Miracle uses sampled (digitized) sounds, and it can be connected to a home stereo system.

The Miracle is not a toy (but don't tell your kids!). It's so ingenious, it can teach anyone — at any age — how to play piano. The Nintendo cartridge and PC software contain exercises specifically designed for adults, too. You don't have to know anything about the piano, you don't have to read music, and you can have a lot of fun! Normally, adults have a tough time learning something like the piano, but with The Miracle, it's easier because it moves at whatever pace you're comfortable with.

# The Miracle Software for Nintendo.

Finger Numbers/Note Names - Used in the



early lessions, this Activity allows you to play without knowing how to read music.

*Pitch Practice* – This Activity teaches the notes and fingering of a piece of music and familiarizes you with the hand position changes.

The Shooting Gallery – This Activity is an arcade-style game that helps you associate keys on the keyboard with notes on the staff.

**Rhythm Practice** – In this Activity, you tap out rhythms using only one key, concentrating on *when* and for *how long* you press that key.



Miracle	
BD3776 Miracle for PC 5¼ " & 3½	″ \$399.00
BD3778 Miracle for Nintendo	\$349.00
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# The World at Your Fingertips.

This innovative program brings the entire globe to your computer screen, combining a complete atlas, almanac and world fact book into one exciting, informative package. You'll have instant access to over 200 fully-detailed VGA maps, ocean maps and useful international information on 270 topics in 11 categories. You'll explore the geography, people, government and economy of any nation on Earth, including such details as climates, population, language, labor force, military strength, industry, highways and more.

# Indispensible Guide and Reference Tool.

World Atlas is an ideal reference tool for travelers, educators, business people, librarians and students. With just a couple of keystrokes maps and data are on your screen.

You don't need to learn lengthy commands. Just point to a country on any index map, click — the desired map appears instantly. From there, simply select specific information and statistical maps for individual countries from sleek, drop-down menus. Easily print customized reports mixing maps and text — even export maps to desktop publishing programs.

# NEW! U.S. ATLAS

U.S. Atlas brings the entire North American continent to your computer screen! Simply click on a state or city



to explore such information as: population, average temperatures, and local time.

# INTRODUCING ATLAS PACK

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These Titles Now Available for Windows 3.0.



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in all. It's interesting just browsing through topics at random.

More than an almanac, The Desk Reference is a compilation of the most frequently sought facts at the world's busiest public library. This incredibly handy software resource allows you to explore multiple entries simultaneously for fast cross reference and perform easy cut-and-paste directly into your document. It's equipped with a streamlined table of contents and indexing system so you'll spend no time at all finding what you need. And all of this information requires just 20K.



### **Desk Reference**

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and span decades from Kitty Hawk to the incredible Stealth bomber. Click on Leisure and travel through the careers of Elvis, the Beatles and Buddy Holly. Click on Buddy Holly and learn about the fateful night when the music died in a tragic plane crash over a Kansas cornfield. Click on Government and discover how George Washington was paid for his services as our first president.

### Inside Information

This new Desk Accessory is a comprehensive reference tool which organizes the English language into logical Categories of defined words. Far more than a dictionary or thesaurus, INSIDE INFORMA-TION lets you quickly and easily explore any of seven general Classes: Nature, Science & Technology, Domestic Life, Institutions, Arts & Entertainment, Language, and The Human Condition. These

> Classes contain 20 Subclasses, Categories, and 700 Subcategories.

> Categories are defined by subject matter, such as Chemistry, Law or Music - or by a common property, such as Colors, Tools, Verbs of Motion - or even a specific usage, like Insults, Slurs & Epithets.

> Dig deeper into each Class in three different ways: out

line view, graphic view or tree view. The reverse dictionary lets you type a few descriptive words then see a listing of appropriate terms and definitions.

> Strunk & White's Elements of Style

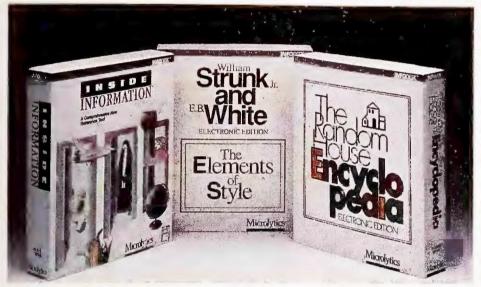
Reviewer's have called it "...the best of its kind" and raved, "The work remains unparalleled, direct, correct and delightful." Now The Elements of Style is available for your Apple Macintosh or IBM PC compatible computer.

Based on an original work by William Strunk, Jr., a Professor of English at Cornell University, this update third edition, prepared by noted writer and grammarian E.B. White, has become a classic of conciseness. It's the ideal tool to make your writing crisp, succinct and powerfully effective.

Anyone who needs to communicate effectively in writing will find The Elements of Style packed with specific, pertinent examples to improve writing style and structure. It's and easy-to-access educational reference work for the rules and principles of correct English usage. Includes seven rules of usage, eleven principles of composition, several matters of form, a list of often misused words and a style guide.



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# Learn to Type with the Finest Typing Program in the World!

**Customized Lessons Increase** Speed and Accuracy.

**S** o fast and easy — you'll be touch typing with speed and accuracy in just a few short lessons! Mavis Beacon Teaches Typing! is the premiere touch-typing self-help program that uses carefully planned lessons and drills - perfect for beginners, or typists who want to improve their speed and accuracy.

### **NEW!** Version 2.0.

Mavis Beacon Teaches Typing! has been the world's leading computer typing instruction program for several years. With new graphics support, a 10-Key Teaching Mode, improved lessons and numerous other new features, the world's premiere typing instruction program just got better. And, Mavis Beacon is now available in a new Microsoft Windows version.

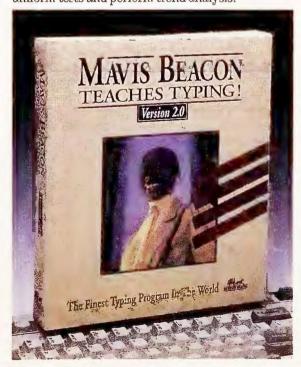
In addition to supporting CGA, Hercules and text modes, Mavis V2.0 now features EGA/VGA 16color, 320×200 graphics plus Custom Color Palette. And the new 10-Key Teaching Mode will help users master the numeric keypad.

Type Faster and More Accurately.
Four different "learning centers" provide an entertaining, informative experience. The new Frustration Sensor helps Mavis Beacon to pace beginning typists, avoiding early discouragement.

First, Mavis Beacon Teaches Typing! outlines the lesson plan and evaluates your typing for speed, accuracy or particular problems. Then, a chalkboard appears on the screen displaying Mavis Beacon's comments. From there, each lesson is custom designed to work on these problems. If your speed is poor, Mavis Beacon will prescribe drills for increasing speed. If accuracy is your weakness, Mavis will help you work on the problem keystrokes.

### Ideal for Classrooms...

A new Teaching Mode & Classroom Network Feature makes it easier to teach and to link students together. Plus, Mavis Beacon Teaches Typing! allows teachers to track students progress, administer uniform tests and perform trend analysis.



# Mavis Beacon vs. the Competition Mavis Typing

Features	V2.0	Dvorak	Tutor
Graphics			
EGA/VGA 16-color	YES	Yes	Yes
Graphs & Stars	YES	No	Yes
Guide Hands	YES	No	No
Body/Hand/Computer			
Positioning	YES	No	No
Stress Reduction Mode			
Posture Analysis	YES	No	No
Visual/Sound Control	YES	No	No
10-Key Teaching Mode			
Numeric Keypad Lessions	YES	Yes	No
Error Analysis: Keys to Learni	ng		
No. of Error Measures	16	0	0
Typing Text: Fun Interesting Te Guinness World Records, quotes, music lyries, common words, riddles & jokes, "Amazing Facts," Dictionary	YES YES	No Yes	No No
Sounds	2 220	100	
Error & Custom Beeps	YES	No	No
Music	YES	Yes	No
Master Teacher Mode	3 120	100	110
Tracks Multiple Students	YES	No	No
Uiform Tests	YES	No	No
Trend Analysis	YES	No	No
Password Security	YES	No	No
Networking	YES	No	No
Input/Output	8.440	*10	
Dvorak & Standard			
QWERTY Keyboards	YES	Yes	No
Lessons			
HOSOMO	YES	No	No

## **NOW AVAILABLE FOR WINDOWS!**

# **Mavis Beacon Teaches Typing!**

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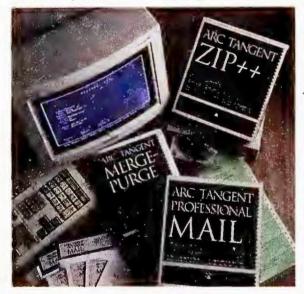
# From 29 Cents to 7.4 Cents For A One-Ounce Letter!

Certified by the U.S. Post Office

rofessional Mailing to the masses — that's the theory behind Arc Tangent's decision to lower their price from thousands (and requiring special hardware) to hundreds (and run on any PC)

The Cadillac of mailing list software, this is the most advanced, professional-level package available on any PC. Certified by the U.S. Postal Service, you get a highly compressed version of the 3.2 gigabyte .S. Post Office file on a single CD!

Eradicate bad addresses by checking your list against every valid address in the United States. Put advanced, professional-level features on your desktop that before were only available to huge mailing houses. Slash costs to the bone and get increased response from your mailings.



The Arc Tangent system is engineered for substantial mailing lists and saves you thousands of dollars. It could pay for itself on the first mailing!

# **Professional Mail**

The heart of the system, Professional Mail generates and manages your entire mailing - including these advanced features:

- Database fully customizable; unlimited number of names and addresses
- Eradicate duplicates even complex "soundalike" dupes on up to 6 lists at once
- Presorting of 1st, 2nd, and 3rd Class Mail
  Supports 5-digit, Zip+4, Zip+4 Barcode, Basic Bulk, and Carrier Route
- Prints required Post Office reports
- · Samples new lists (Test a list by mailing to every 10th address.)
- · Highly personalized form letters
- Print any mailing label, including Zip + 4 Barcodes
- Convert valuable lists from dBase and others
- Novell network version available

### ZIP++

With a CD containing every valid address in the U.S, ZIP++ cleans your lists for the highest accuracy you can possibly get. Give it an address and ZIP++ will tell you what postman will deliver it! (And print the Carrier Route with the address.) Save money on postage and printing, improve the quality of your mailings, and get the best results possible.

- Correct bad addresses
- Missing City? ZIP++ can still find it.
- Insert Zip+4 codes
- Insert Carrier Route codes
- Compare each address against the USPS database of all mailing addresses in the US
- Highly accurate issued 4 times a year

- Slash rates with Zip+4 codes
- · Slash rates even more with Carrier Route codes
- · Bare-bone rates with Barcodes printed on dotmatrix, laser, or direct-impression printers
- Certified by the U.S. Post Office for accuracy
- NEW Version 2.1 lets you correct and print a single piece "on the fly."

Merge-Purge

Rid your lists of bad and undeliverable addresses and get real savings. Merge-Purge has the same professional-level features of Professional Mail, but is sold separately for those who want the power of Professional Mail's merge-purge capabilities while managing their lists with dBase, R:Base, ASCII and other general-purpose database files.

- · Detect dupes, near-dupes, or "sound-alike" dupes on up to 6 lists at once.
- Merge dupes from 6 files into one file
- Handles any size list

Arc Tangent, the leader in the mailing-list industry, offers the most powerful package available on any PC, you'll save thousands — both on postage rates and printing costs. And this industrialstrength system is easy enough for any PC-user to understand.



# **Arc Tangent**

BD8600 ZIP++51/2" & 31/2" \$195.00 BD4065 Merge Purge 51/2" & 31/2" ...... \$149.00 BD4060 Professional Mail 51/2" & 31/2" ..... \$695.00

Professional Mail and Merge Purge require a hard disk. ZIP++ requires a CD-ROM reader.

# Stunning Fonts For Your Printed Page.

Scalable Fonts from within WordPerfect, LetterPerfect, Microsoft Word and Works.

on't just print plain text — fashion creative works of art that bond themselves to the reader. Impress upon the printed page aesthetic, stunning communications that magnetically draw readers to them. This is what professional "Desktop Publishing" is all about. This is what Publisher's Powerpak can do for your word processor.

If you use WordPerfect, LetterPerfect, Microsoft Word, or Works - you absolutely must have Freedom of Font Choice. Whether you print on a dotmatrix, inkjet or laser printer, Powerpak delivers the finest-quality fonts your money can buy.

Why Scalable?

There are two different types of font software: scalable fonts and bit-mapped fonts. Powerpak uses the newer, advanced scalable-font technology. A



scalable font is basically mathematical formulas that describe the shape of the font, with no reference to the size. When you need that font, you pick a size, and the needed letters are created instantly from the mathematical formulas. The letters are created "on the fly" — as you need

them. Scalable fonts use virtually no hard disk space - only 50K for an entire typeface family, which includes every size you'll ever want.

Bit-mapped fonts on the other hand, gobble megabytes of hard disk space right from the start. Bitmapped means each "bit", or visible dot that makes up a letter, is "mapped" to a specific location. You need a separate file for each bit-mapped font — that means one file for each font size!

I used to use bit-mapped fonts (before the new scalable fonts came out). I had only 7 different typefaces. Each typeface had five sizes: 12, 14, 18, 24 and 36 point. My limited selection of fonts took up 10 megabytes of hard disk space!

Now I use Powerpak. I have over 114 different typefaces to choose from. In any size I want, from 6 to 1,000 points (Word and Works limits point size to 127). With this seemingly unlimited selection of font choices, I actually use 25% less disk space than before. If I wanted this selection with my bitmapped fonts, I'd have to buy a 200Mb hard disk!

**Quality Fonts** 

Not all fonts are created equal. There are cheapies out there that print jagged letters and have strange character-spacing. That's why you want to stay with the choice of the pros. PC World recently declared Publisher's Powerpak the "Best Buy" of font software, and gave Powerpak's printer and screen fonts the highest quality rating — Excellent.

· Picking point sizes has never been easier, 6 point





point Easy to install; no new commands to learn

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# **Add-on Font Packs**

Powerpak includes 30 typefaces for an outstand-

With PPFONTS J.WT fonting Powerpak Fonts value. (Other font-Oakland Eureka Palomar makers Linden Santee Alpine charge \$100 Memo Hemet Marina to \$200 per Mettler StocktonAurora 9 erced Baxter Indio typeface!) Quincy Hancock Springer But that's Freedom Calico Silicon just the be-到中父生 EL M Dá ※/五分米 ginning. There's an

entire library of over 800 typefaces available for you to choose from. Nine foreign languages from Greek to Hebrew to Korean. Atech Font Packs: 117 different volumes - each filled with beautiful assortments of typefaces - and only \$29.95 per package.

**Super Font Pack** FREE with Publisher's Powerpak!

\$150.00 value — FREE! 114 typefaces, each in normal, bold, italic, bold italic, thin, condensed, wide, expanded, and hollow.





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magine an instrument that you can quickly pass over a graphic image, logo, design, drawing, chart, photograph — and instantly capture it to your computer screen. Brilliant colors and unmatched resolution can be yours with the Marstek family of scanners.

The new M-6000CG Super Color scanner absorbs an astonishing 262,144 different colors from any printed page or photo! Scan in your photo albums, your wedding picture, or your graduation photo and display it onscreen with lifelike realism. Produce high-impact documents and presentations with the power of graphic images. The possibilities are limitless. The M-6000CG also scans in true 64 gray scales with 400 dpi. In color mode, the M-6000CG scans in 200 dpi. (200 dpi is just right for photos and artwork. Picture this: If you have a standard VGA monitor and scan in a 3" wide photo — it fills your entire screen with a perfectly duplicated image.)

For precise scanning, you need the M800G/256 (true 256 grayscale scanner) — delivering an incredible, unmatched 800 dots per inch. 800 dpi means crisper, cleaner, more highly detailed images for use in desktop published documents, reports, proposals, newsletters, flyers, and brochures. Scan in a postage stamp and it fills the screen with stunning detail.

And with a host of special effects and patterns built right in, controlling the look of the image is simple — and fun! The images you scan will reproduce as if they were originals, and they can be stored in TIF, PIX, PCX, CUT, IMG and MSP formats.

Or imagine simply scanning text from printed pages, magazines and books — no more re-keying! The Marstek hand scanners deliver unmatched reso-



lution for precise character recognition regardless of the type style or size and even include free optical character recognition (OCR) software to turn the scanned text into ASCII — ready to use in word processing or desktop publishing applications.

And the whole system is ready to run right out of the box. The installation is fast and easy, the technology is simply amazing.

# The Marstek Family Of Mice.

The Marstek Mice are designed for higher performance. They're 100% Microsoft compatible and impeccably accurate — but they come with a surprisingly modest price tag. We tested the Marstek Mice (E22 and P93 models) for accuracy and speed against other leading nameplates, and it equalled or outperformed the Microsoft Mouse, Logitech's

Series 9, and several others. The secret is in the outer shell design and durable construction. You'll notice a silkier movement and an increased feeling of control the very first time you use it. The Marstek E22 and P93 also feature buttons with firm, clean clicks. A far cry from the "mushy" buttons you find on other mice, great for fast, rapid-fire computing.

# E VUS!

# Free When You Buy A Marstek Hand Scanner.

Marstek Perceive Personal/DOS OCR Software — These packages allow fast, easy optical character reading (OCR) for text pages. Imagine having the ability to simply SCAN text — instead of re-keying it! You'll improve efficiency for a variety of office tasks.

**PC Paintbrush Plus or Rainbow Paint** — the industry's most respected and capable paint programs — put the most extensive electronic palette at your fingertips — colors, image blending and more.

# Marstek

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BD6140	Marstek Mouse E22\$49.00
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BD6170	Mac 800 Scanner (for Macintosh)
	w/FREE Enhance Software \$399.00

# **HOT UPGRADES FROM LOTUS!**

Great Prices on Live, Complete Upgrades!

**S** tep up to the world's best-selling spreadsheet — Lotus 1-2-3. This is a very hot special offer. One you simply can't afford to miss. If you use a spreadsheet, any spreadsheet, you can soon do wonders on one of these hot all-new versions of Lotus 1-2-3.

When you talk spreadsheets, there's one name that always comes first. Lotus 1-2-3. For the past 8 years, 70% of all spreadsheets sold were Lotus 1-2-3. Over 10 million users daily rely on Lotus 1-2-3 for their spreadsheet needs. And why not? 1-2-3 was a superb piece of software when it was first introduced. It's only gotten better, faster and more refined over the years. Together with friendly Lotus Support 24 hours a day, 7 days a week -- is it any wonder 1-2-3 is number 1?

### Lotus 1-2-3 Release 2.3

Every PC user should at least upgrade to Release 2.3, the latest release of the original 1.2-3 program. It's still fast on the smallest XT with only 512K of memory, but you should see it take off and fly on the latest 486. It offers hot new features like a graphical interface where you format and use desktop publishing techniques "live" on screen, while you edit.

And Release 2.3 includes advanced new features such as 3D charting, drawing tools, and the "Viewer" (based on Lotus Magellan technology), which allows you to quickly view other files before retrieving them. Also, be prepared for any possibility with the new Solver, which allows for advanced goal-seeking and intricate "what-if" problems.

# Lotus 1-2-3 Release 3.1+

For those who work with multiple spreadsheets at a time, here's Release 3.1+. The Lotus "3D" approach allows you to work with 3 spreadsheets at once while you copy, cut, paste and manipulate data

between them. And you get the same graphical in terface as Release 2.3 with all it's advantages, including: live formatting and 3D charting; fast and easy file viewing; Solver, for advanced goal-seeking and "what-ifs"; and Auditor, for documenting and analyzing worksheet logic.

# Lotus 1-2-3 for Windows

At last! The world's best-selling spreadsheet comes to Windows. 1-2-3 for Windows is everything a Windows spreadsheet was meant to be. Besides all the standard benefits of being a Windows application (like common menus and keystrokes, cut & paste between any programs, PostScript printer support and much more), 1-2-3 for Windows announces some innovations of its own.

Announcing SmartIcons — one-click shortcuts for your most frequently used tasks. SmartIcons are little symbols that replace keystrokes, menu selections and more. Size and place them anywhere onscreen. Choose from a library of icons, or create new icons that represent your own commands.

Are you a longtime 1-2-3 user? Perhaps you like 1-2-3 for Windows, but don't want to lose those valuable 1-2-3 commands you have memorized. No problem. 1-2-3 for Windows has two menu systems. "Classic" menus are the same 1-2-3 menus 10 million users have come to know and love. The Windows menu works the same as all Windows menus.

And of course, 1-2-3 for Windows has all the latest advances, like Solver — the goal-seeking technology for when you need the optimum solution.

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This powerful software streamlines data entry with a host of on-screen guides and error-checking features. These features not only speed the process, but virtually eliminate errors as well — errors that can be very costly. Along with FormFiller 3.0's extensive data validation features there's plenty of context-sensitive help available for any function.

With FormFiller 3.0, you can decide the order in which the blanks should be filled in, give certain areas color codes for fast visual recognition, include non-printable notes to instruct data entry, "lock" certain information into the form so it won't have to be manually entered each time the form is filled out. You can also quickly set up FormFiller 3.0 to import and automatically fill-in forms directly from your database, and "batch print" your forms.

The system doesn't stop there. It contains a complete set of financial and mathematical functions that you can easily assign to particular blanks to perform a specific calculation whenever value is entered. Or you can automatically perform a series of calculations on a series of numbers. For example, you could quickly instruct FormFiller 3.0 to calculate the extended prices of all items listed on an invoice, total them, deduct a discount, figure and deduct taxes and calculate the final total. There are over 40 math functions in all, including amortization, interest, present and future values, depreciation, percentages - dozens of others!

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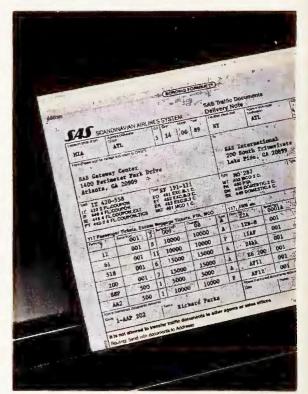
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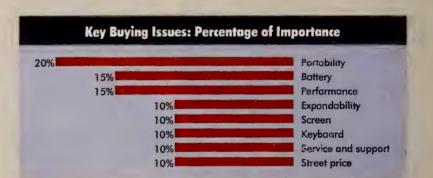
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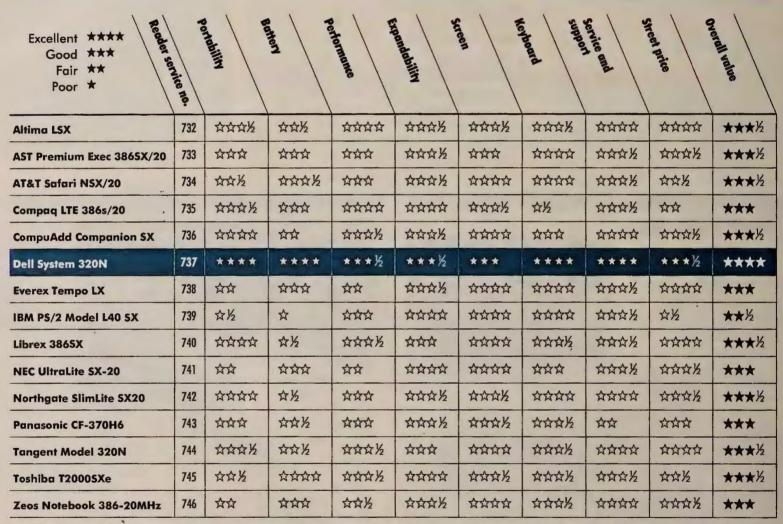
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Thanks to a new crop of friendly graphics software, most of it *Windows*-based, you've just run out of excuses not to look your best. Even if you give only one presentation a month, it's worth mastering one of these powerful, easy-to-learn packages. See the dramatic effects you can get with a little clip art and a blended color background, and you'll never look back.

In last November's graphics roundup, *Microsoft PowerPoint for Windows* ran away with the only Best Buy, thanks to its emphasis on guiding novices through every step of a presentation, from brainstorming to the actual show. By letting users create presentations based on a master slide and apply formatting changes globally, the program cut production time dramatically.

But *PowerPoint* was just the tip of the iceberg. This year, several programs—including old favorites *Harvard Graphics* and *Freelance*—add similar organizational features. Two *Windows*.

Windows' palette of 16 million colors gives you a better preview of what your images will look like as slides.

newcomers—Aldus's Persuasion for Windows and IBM's Hollywood— surpass PowerPoint on this score, providing tools to plan and revise a presentation easily and deliver a consistent message. In addition, this roundup's sole Best Buy—IBM's Hollywood—serves up tricks that PowerPoint can't touch: advanced charting and enhancement tools that can give you just the edge your presentation needs to stand out from the crowd.

### The Windows Edge

Clearly, Windows delivers some advantages. Unlike the four DOS programs in this roundup, which require you to shuttle between character-based forms, screens, and static graphical views, the Windows packages offer all-graphical interfaces so you can manipulate full images directly.

Most of the *Windows* programs provide visual slide sorters, which display a

series of slides in miniature so you can drag them into a different order or double-click on a slide to open and edit it. A sorter makes it a snap to reorganize your presentation or merge slides (or transparencies) from last month's showand-tell.

Another plus: Your color options are

richer with *Windows*. With its built-in palette of more than 16 million colors, you get a better preview of what your images will look like as 35mm slides. This color bonanza also gives you better looking graphics for on-screen slide shows and more colorful transparencies and handouts. Generally, the *Windows* 

# **Buying Smart: Presentation Priorities**

Business graphics packages used to focus on numeric charting, but today the emphasis is on coordinating an entire presentation. Here are some shopping tips.



### EASE OF USE

You may produce only one or two slide shows a

month, often on short notice, so a package should be both easy to learn and to use. Menus should be logically organized so it's easy to find the next step in the process. Good documentation and context-sensitive help are other pluses, but more important are features such as the ability to preview each element or template before integrating it into your document.



# **ORGANIZATION**

To plan a presentation, you'll want an outliner

that helps you first develop the main points and then coordinate the creation of images to support them. Your best bet is a program that uses the outliner text to automatically generate slide titles, text charts, and speaker notes. A built-in spelling checker and search-and-replace feature also come in handy.

The real time-savers in planning are master-slide and global-editing features. These let you assign the

same background, colors, fonts, and graphic elements to every slide in your show in one fell swoop. Another organizational coup is the slide sorter, an electronic light table that displays thumbnails (miniature versions) of the slides and lets you easily rearrange their order.



### CHARTING

Effective text and data charts are the bread and

butter of a winning presentation.
Equipped with built-in worksheets,
all these programs can import numerical data and generate bar, pie,
line, and area charts based on that
data. If you work with a variety of
data types, a broader assortment of
charts including scatterplots, combination graphs, and dual y-axis
charts will prove useful.

All the packages let you select chart types from a chart gallery, and most let you select from a number of templates that have color, legend font, and other formatting already coordinated. If you plan to use text charts, look for a program with templates that provide the same setup for text. The best templates include sample text and data for titles, bulleted lists, and data charts, which you can then replace with real data.

If you frequently update presentations with current data, look for a program that can maintain links with packages offer better color control, letting you blend several hues into a stunning background. *Hollywood* implements this feature exquisitely: You get a lot of choices, including a radial effect that spreads from the center outward. Unlike *PowerPoint*, which limits you to single-color shades, *Hollywood* lets you

use two- and three-color graduated shades. And *Hollywood* and some other programs let you apply graduated color to individual objects as well as backgrounds.

Finally, *Windows* applications tend to have tighter links with other applications—important if you create charts

from rapidly changing data. Most presentation programs let you set up links to update your charts with fresh spreadsheet data, but thanks to *Windows'* Object Linking and Embedding (OLE) technology, *Charisma* and *PowerPoint* go one step further. With both packages, you can launch *Excel* simply

underlying spreadsheets, so you can regenerate your charts quickly. The most sophisticated linking technology is found in Windows programs. Those that support Dynamic Data Exchange (DDE) will update your data from other applications automatically. In addition to supporting DDE links, Charisma and PowerPoint provide the newer subset of DDE called Object Linking and Embedding (OLE), which lets you call not only the data but the application itself. For example, double-clicking on a chart pops you directly into Excel, where you can update and recalculate a new range of data.



### ENHANCEMENT

Choosing a program with plenty of enhance-

ment features means you can produce the most professional-looking shows your talents allow. All the packages equip you with basic drawing tools, so you can add free-floating text or create diagrams using boxes and circles. More advanced tools include shadowed and rotated text and objects, plus the ability to join complex objects or separate them. An extensive library of quality clip art will keep your presentations fresh and lively.

Color controls are constantly improving. If you make color slides, look for a variety of color schemes to choose from—you can apply these predesigned sets of coordinated colors to backgrounds, chart elements, and text. Many packages let you add graduated (blended) color effects to backgrounds, and *Hollywood* even delivers a variety of blending options and lets you apply them to objects such as charts or clip art.



### **PRODUCTION**

Once you've applied the final touches, your job is

still not quite done. You'll need to output the images as 35mm slides or transparencies and print out visual aids. All the programs provide a communications link to a professional-quality slide service, so you can use a modem to quickly send your presentation to a slide-making facility. Output support is less of an issue, because all the packages support a host of printers, plotters, and slide cameras.

Look for programs that automatically generate speaker notes—
pages that contain reduced versions of each slide with accompanying comments for the speaker to refer to—and audience handouts, which contain reductions of one or more images per page. If your program automatically converts color slides into black-and-white printouts, you won't waste time selecting the right combination of hatch patterns. And if

you want to include your graphics in a desktop-published document, look for a program that exports images in the file format you need.

All the programs can produce onscreen slide shows, which are handy
for previewing and rehearsing your
presentation. If your audience is
small, or if you have a screen projector, you can even use your PC for the
final show. If so, you'll want a package that offers a variety of transitional effects between images. Only
a few provide run-time shows—
shows that run automatically and
can play on other systems—an excellent sales and marketing tool.



### SERVICE AND SUPPORT

Unless you're a graphics professional, it's likely

you'll need some help with these programs. To test technical support, we called each vendor three times, asking questions of varying complexity, and noted the timeliness and accuracy of the answers. We also factored in support policies, such as hours, toll-free lines, and BBS and fax support.



# PRICE

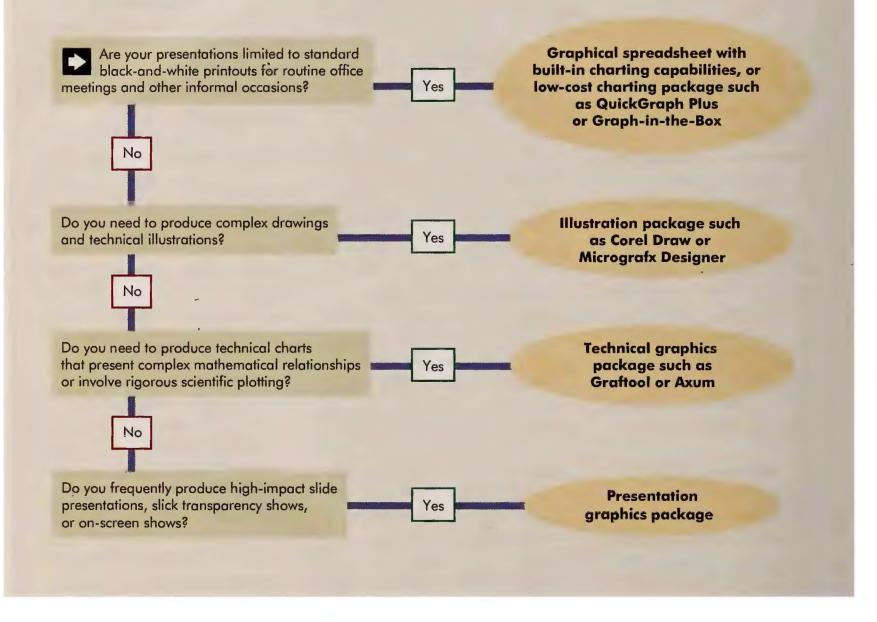
Most of these packages sell for \$495. This seems

a fair price, and you'll likely find them discounted to about \$300.

# KNOW YOUR OPTIONS

# Do You Need a Presentation Package?

Not all presentations require a dedicated presentation package. For in-house sales meetings, many people are content to use the charts they can produce with a spreadsheet package or even a word processor such as Ami Pro. But if the stakes are high or your reputation is on the line, you'll want drop-dead-gorgeous slides, overheads, or screen shows, accompanied by attractive audience handouts and handy speaker notes to prompt you with those one-line zingers. Use this chart to find out if you really need a full-blown presentation package.



by clicking on a chart that you've incorporated as an "embedded object."

### Put to the Task

To test the packages, we used each program to produce a typical presentation from start to finish—a sample slide show of a fictitious company's business plan. We divided the procedure into four main tasks: organization, charting, enhancement, and producing the final show. See "Once Upon a Presentation" for a closer look at each task, and check

Hollywood delivers
charting and drawing tools
the others can't touch.

out the reviews to see how the products fared.

Our Best Buy, *Hollywood*, performs almost all the tasks equally well. *Hollywood* borrows the best ease-of-use

characteristics from *PowerPoint* and then pours on the features. The result is a package that delivers winning presentations in no time.

PC World contributing editor Richard Jantz is author of Ventura Publisher 4.0 for Windows (John Wiley and Sons, New York, 1991).

For more information about all products in this article, circle reader service no. 903.

### **Applause II 1.5**

**PROS:** Superb enhancement tools, colorful special effects

CONS: Lacks outliner and slide sorter

Want to dazzle your audience with text spiraling across the screen and objects that evolve dynamically into other shapes? If flashy special effects appeal, *Applause II* will too.

Applause II's weakest link is organization—the lack of both an outliner and a slide sorter made it tough to get our sample application up and running. Each slide is saved separately, so you can't easily flip between slides or rearrange images from a bird's-eye view. But at least version 1.5 adds master backgrounds, which we used to place the same graduated colors, rules, and graphics behind each slide. And the program's first-rate chart templates made for fast work once we got charting.

Although easy to use, *Applause II*'s modular interface forced us to learn dif-

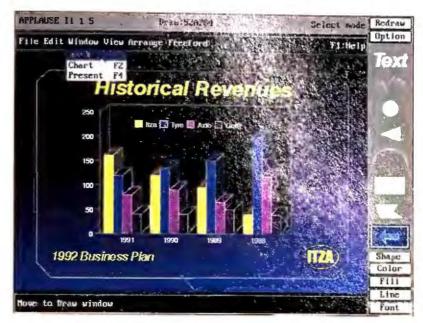
ferent menus for charting, enhancement, and production. This weakens data links—we created links to import a 1-2-3 file but lost them after using the drawing tools.

Applause II's range of charts, including customizable templates for text charts, provided all we needed. Another plus: Applause II has the

best color support of the DOS packages.

Once finished, we previewed the show with the excellent screen show feature and sent the images to a slide service via the easy communications module. In final production, the lack of a speakernotes generator bogged us down.

If you're not using Windows and you



Applause II's advanced color controls are the best of the non-Windows packages. You can apply graduated colors to any object.

want colorful effects for your slide or PC screen shows, consider *Applause II*. At press time, Borland was in the process of acquiring Ashton-Tate, and the program's future was up in the air. If Borland is smart, it will stick with *Applause II* and pump up its organizational features.

### CA-Cricket Presents 1.3

**PROS:** Strong organization tools, low price **CONS:** Limited charting and enhancement skills, too many layered dialog boxes

Associates' CA-Cricket Presents is a good option for bargain hunters whose

presentations are simple and contain mostly text. Its organization tools are tops, but weak charting and an awkward interface will deter some.

Presents breezed through the planning stage of our sample presentation—it kept all our slides in a single file, making them easy to scroll through. Using the slide and title sorters, we

could see the entire presentation at once. Rearranging slides in either view was a snap, and we could open multiple presentations at once and edit them simultaneously, quickly importing old slides.

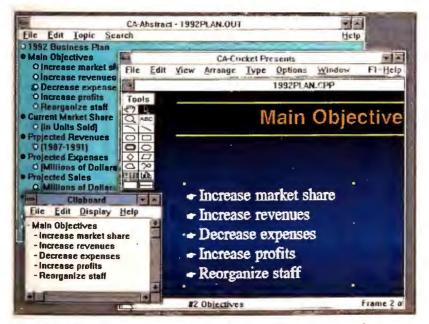
The new outliner bundled with *Presents—CA-Cricket Abstract 2.0*—is a mixed blessing: Although we used it to

organize everything from bulleted lists to speaker notes, we had to shuffle the text into our presentation via the Clipboard, which broke the link to the original outline.

Presents isn't your best choice if you use many data charts—you can choose from plenty of templates, but most of them are text charts and the quality is so-so. The program can't set up data links, the chart selection is slim, and chart editing features are limited.

The enhancement and production stages proceeded smoothly, but *Presents'* drawing options were limited, and there are no preset color schemes to aid the hurried novice. In general, we felt stymied by *Presents'* lack of scroll bars, awkward help menus, and excessive layers of dialog boxes. The inability to preview an enhancement before applying it was also frustrating.

If you want a modest, low-cost package for text charts, *Presents* makes sense. But all told, it's the least impressive *Windows* package in the roundup.



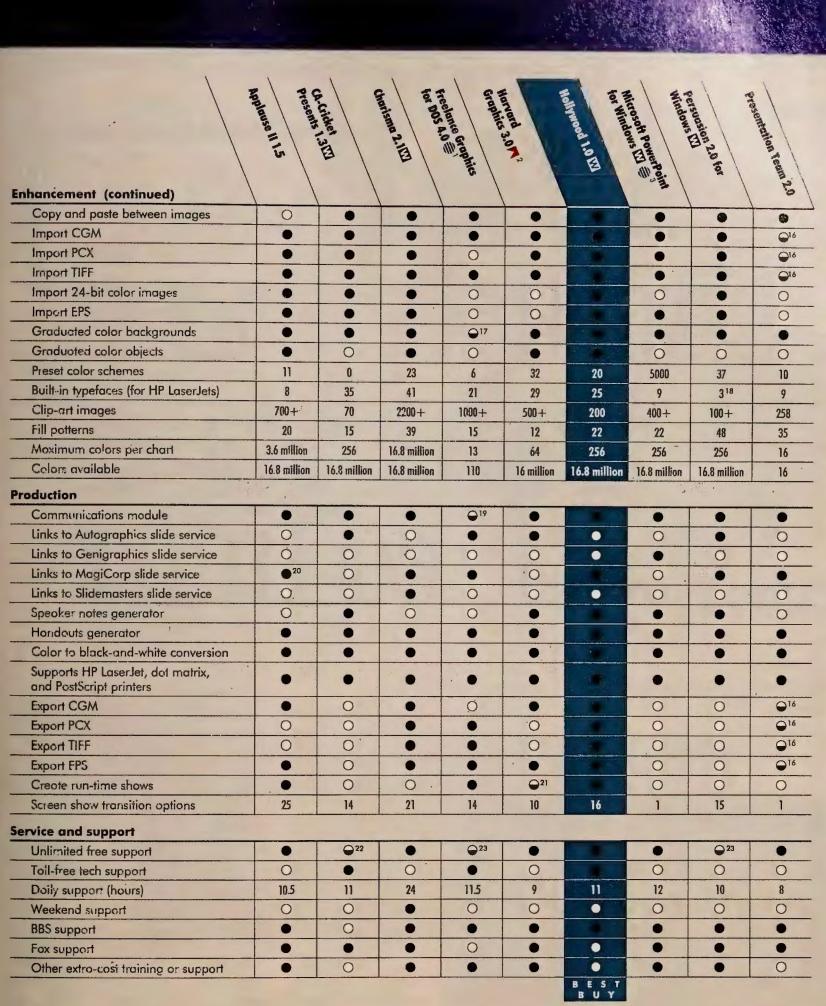
For CA-Cricket Presents, organization is everything. You can plan your shows with a handy built-in outliner.

### FEATURES EVALUATION

### **Hollywood: All-Around Great Graphics**

Organizational and production features are paramount for most users, but look too for flexible charting and enhancement extras to give your presentation that professional edge.

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Master slide	•	•	0	•			•	•	•
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Outliner	0	•	0	•	0		<b>O</b> <sup>4</sup>	•	0
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Combination area-line charts	•	0	•	0	•	•	O	•	0
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- <sup>1</sup> Freelance Plus 3.01 won a Best Buy in Navember 1989.
- <sup>2</sup> 1990,1991 Warld Class Award winner.
- <sup>3</sup> Best Buy in Navember 1990.
- <sup>4</sup> Na outliner but reads Microsoft Ward and ASCII autlines.
- <sup>5</sup> Character-based nates anly.
- 6 In autliner anly.
- 7 WKS files only.
- 8 SYLK files only.
- <sup>9</sup> Embedded charts only, via OLE.
- 10 3-D pie charts are shadawed, nat projected.

- 12 Each template cantains multiple farmats.
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- 14 Unda anly.
- 15 Undelete anly.
- 16 Via separate pragram bundled with package.
- 17 Available anly through slide service.
- <sup>18</sup> Package includes Adabe Type Manager.
  <sup>19</sup> Provided free by slide service.
- 20 Via Ashtan-Tate Graphics Service.
- 21 Extra-cast aption
- 22 Free for 6 manths.
- 23 Free for 90 days.

### Charisma 2.1

**PROS:** Robust charting and enhancement features, seamless data links

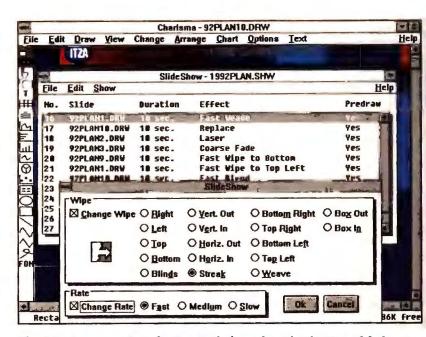
**CONS:** Lacks organization tools, not simple to use, no speaker notes

for complex graphs and fancy drawings, Micrografx's *Charisma* will respond loud and clear. It's no organizational wizard, but number crunchers and graphic artists will revel in *Charisma*'s overstuffed toy chest.

Managing the planning stage with *Charisma* was tedious—the program lacks an outliner, a slide sorter, and other planning tools. Instead of providing a master slide or background, *Charisma* places multiple slides side by side in a large window. Because each slide is a separate file, learning how to view individual slides or change their order required some time.

In the charting stage, *Charisma* turned up the heat. It not only used

DDE to set up hot links to our Excel spreadsheets, but also used OLE to embed an Excel chart in our presentation so we could launch Excel directly from Charisma and make changes on the spot. The program's broad range of charting styles and data manipulation options is the best of the Windows group.



Charisma's screen show feature includes a broad selection of fades, wipes, blends, and other transitional effects.

Charisma's superior drawing tools, flexible file import options, and immense clip-art library provided us with everything we needed to embellish our charts. Extras like curved and rotated text make text charts come alive, and support for 24-bit color images may entice you to invest in a color scanner.

Producing 35mm slides, handouts, and a screen show in the final stage also went well, except that creating speaker notes required a fair amount of manual labor.

Charisma isn't the ultimate solution for presentation management, but its charting and enhancement capabilities are second to none.

### Freelance Graphics for DOS 4.0

**PROS:** Versatile charting and drawing, runtime screen show

**CONS:** Lacks slide sorter and speakernotes generator

Lotus's Freelance Graphics for DOS 4.0 is a must-buy upgrade to last year's

Freelance Plus 3.01. The interface is much more graphical—click on a chart, and the linked data form pops up—and it offers better screen fonts. This mature, feature-rich package is a good overall value for DOS users.

Freelance's new organizational aids include an outliner, master background feature, and templates, but it still treats

each show as a series of files rather than a unit, making it more difficult to reorganize slides or merge old ones.

Freelance is a wizard at charting—it quickly churned out almost everything we needed. With its superb hot links to 1-2-3 worksheets, we had no problem regenerating charts based on fresh Lotus data.

Adding enhancements was a mixed bag: Drawing tools are excellent, but we were hamstrung by limitations on color—only 13 shades per chart and no graduated effects.

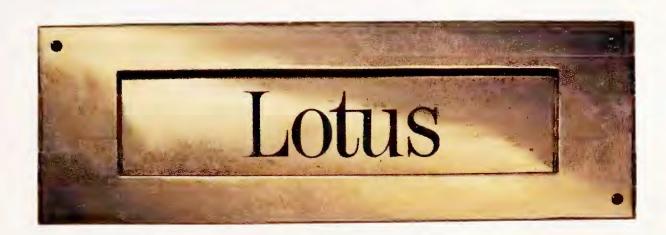
If you need to run out and buy a package so you can create a slide presentation for the next day, look elsewhere—Freelance doesn't bundle a communications module, so we had to send for it (free) from the slide service. We also had to generate speaker notes manually. Freelance's screen show features are top-notch and include a runtime capability.

Like Harvard and Applause II, Freelance is a good overall value—so how can a DOS user decide? Freelance can't touch Applause II at color controls, and it can't keep pace with Harvard at charting and enhancements. But Freelance is \$100 cheaper than Harvard, offers the most clip art of any of the DOS packages, and it's the only DOS program with an outliner. That said, you're on your own.



With Freelance Graphics for DOS, you can place a master background of colors, rules, and logo behind all the slides in your presentation.

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## Just look wh

cc:Mail is so easy to
install, learn and use,
you can have your
electronic mail
system up and
running in
almost no time.

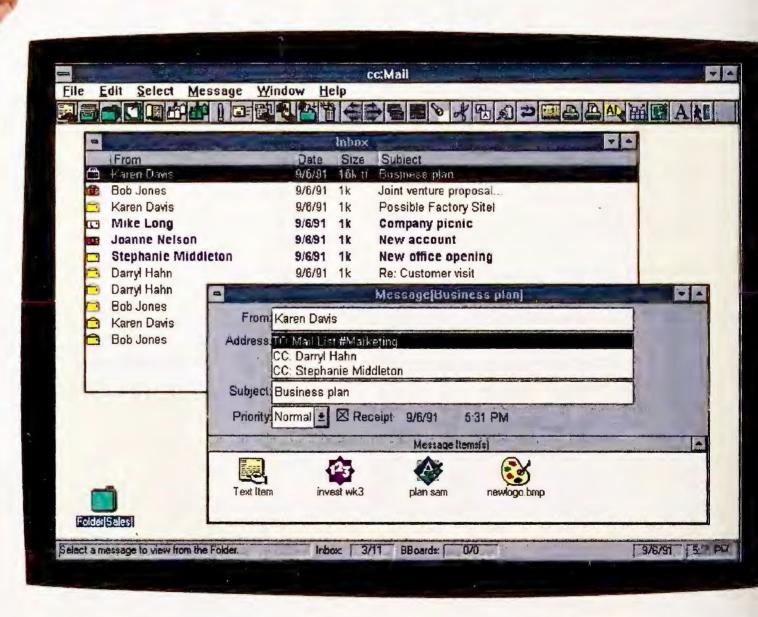








Only cc: Mail can send information across all of these computing platforms to reach everyone in your organization.



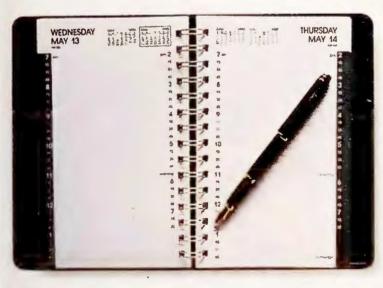
Over a million satisfied customers have already given cc:Mail a first-class rating. For example, Windows users love its easy-to-use interface, SmartIcons™ and dialog boxes. And PC World says ''Sending a cc:Mail message is easier than addressing an envelope and licking a stamp.'' 9/91

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LAN, without the need for gateways. Plus, with cc:Mail you can
access public mail and even main-

frame mail quickly and easily.

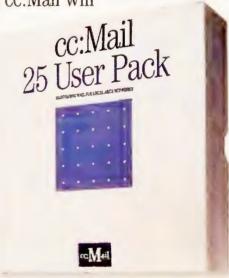
Our newly released cc:Mail for Windows takes full advantage of Windows 3.0. Support of Dynamic Data Exchange lets you easily send other mail-enabled Windows documents from within those applications. For example, you can send a report you've written with Ami Pro for Windows across the country while the application is still on your desktop.

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LAN TIMES

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"Lotus" cc:Mail for DOS
3.2 and its Windows
version 1.0 offer
everything you need in
messaging mail
management and
connectivity. Intelligent
menu organization
makes both DOS and
Windows versions
a breeze to learn and use.
It's clearly a best buy."
PC WORLD 9/91



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### Harvard Graphics 3.0

**PROS:** Strong charting and drawing tools **CONS:** Lacks outliner and slide sorter

If Windows doesn't belong in your office but presentation graphics do, your best bet is probably Software Publishing's Harvard Graphics. It's a close call when compared with Freelance and Applause II, but if we had to choose, we'd pick Harvard. It's slightly easier to use, and it offers superior charting features.

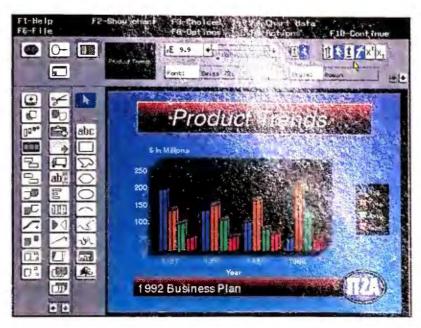
To plan our presentation, we used a character-based screen to set up global parameters. Unfortunately, *Harvard* lacks an outliner, but we successfully imported our bulleted lists directly into empty text chart forms and used the program's built-in spelling checker to snag errors.

Harvard's extensive charting gallery included all the chart styles we needed. One of Harvard's unique tricks is its auto-build feature, which we used to turn our five-bullet chart into five different slides, with each item added sequentially. The chart-linking options include more formats than in any other DOS package, and regenerating charts with new data was a snap.

In the enhancement stage, *Harvard*'s graphical drawing mode was a bonanza: Its icon-

rich tools and point-and-shoot simplicity are tops among DOS packages. After importing our scanned image and clip art, we added graduated color and used an "evolve" feature to change one object into another—impressive tricks on a par with *Applause II*.

Automatic speaker notes stream-



Harvard Graphics' point-and-click drawing mode makes it easy to enrich a presentation with scanned images and graduated color effects.

lined our screen show, which included such impressive features as animation and interactive branching—both useful for sales presentations.

There's a good reason why *Harvard Graphics* is so popular. It's the most versatile presentation graphics program available for DOS.

### Hollywood 1.0

**PROS:** Powerful organization, dynamic charting and linking, unique paint tools **CONS:** No area/line combo charts



have to choose between *PowerPoint's* presentation hand-holding and the

advanced graphics of a *Charisma?* Not any more. IBM's *Hollywood* combines a smooth interface, plenty of organizational tools, and a dazzling array of charting and drawing tricks. No wonder it wins the Best Buy.

To plan the show, we opened a new file, and *Hollywood* displayed multiple views for each slide; master, page, notes,

> and handout. After selecting a page format, we applied a template to the master page and then selected a color scheme. You can preview all your templates and schemes in handy pop-up dialog boxes. With Hollywood, you logically create slides in layers, and at any time you can view any combination of these lay

ers—helpful for creating a build series.

Next we used the outliner to import text and applied the first-rate spelling checker and search-and-replace feature. The slide sorter made it easy to reorganize and merge slides.

We had no trouble importing *Excel* spreadsheets, setting up DDE links, and constructing charts from the ample selection. It was easy to reduce the size of a chart or modify the master.

Hollywood scored big at enhancement—its text manipulation stunts are comparable to those of high-end drawing applications. We created flashy titles that we could rotate, shadow, mirror, curve, and add graduated colors to, and we could preview text before applying it. Hollywood's paint and spray-can tools are unique to this roundup.

Producing the show was a cakewalk. Hollywood provided everything we needed, including speaker notes, handouts, and superb screen shows. Power-Point paved the way, but now Hollywood is king of the presentation road.



Hollywood offers unique enhancement tricks, such as curved text and three-color graduated fills on any object.

### **Once Upon a Presentation**

t's 9 a.m. You're still brushing muffin crumbs off your lap, when your boss looms up behind you. He wants you to give a 10-minute presentation on the latest 1992 business plan, complete with slides and handouts, at tomorrow's lunchtime board meeting. It has to look really good, he says, and oh, by the way, he wants to preview it before you have the slides produced.

You call your slide production shop and ask how fast they can turn the job around. They say, get the slide material to them by noon, and you'll have the finished slides 24 hours later—in the nick of time.

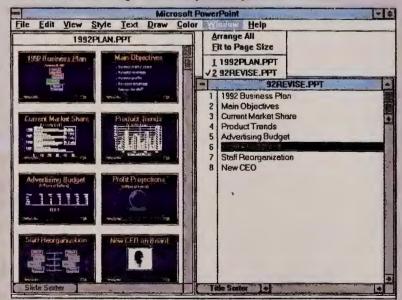
You've got 3 hours.

So what do you do? You could tear your hair out, maybe quit and start that bed-and-breakfast you've always dreamed about. *Or* you could sit down at your computer, call up your presentation graphics program, and get to work.



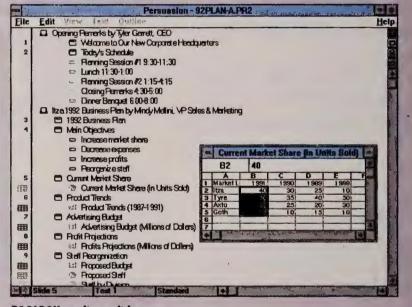


Greate a list of the slides you'll need. If you can use existing slides, merge them from previous presentations.



**TOOLBOX: outliner, slide merging utility** 

9:05am Collect your thoughts and organize the slide show sequence.



**TOOLBOX: outliner, slide sorter** 

9:45=111 Set up a master slide complete with color scheme, fonts, background, running title, rules, and borders.

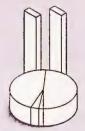


TOOLBOX: master slides, global controls, color templates

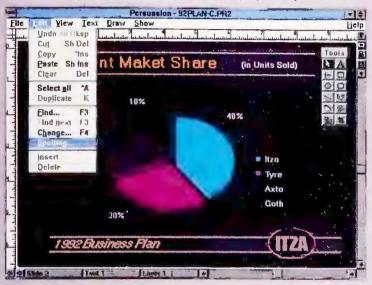
### **Stage Two: Charting**

10:05 am

Import text files, check spelling, and format the text for charts. TOOLBOX: text imports, spelling checker, font controls, shadows



Create data charts by selecting from a variety of chart types 10:20am and then defining links to the appropriate spreadsheets.



TOOLBOX: chart gallery, spreadsheet imports

Update the spreadsheets with the latest projections. **TOOLBOX: spreadsheet updates** 

### Stage Three: **Enhancement**

11:00 am

Place and size imported graphics TOOLBOX: graphics editor



Add clip art and symbols from the program's built-in collection.



TOOLBOX: clip art, graphics library

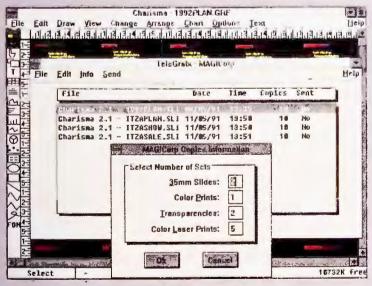
Edit the graphics and embellish the charts. 11:21 and TOOLBOX: drawing tools, color controls

### **Stage Four: Production**

Give your boss an on-screen preview of the presentation. **TOOLBOX:** screen show transition options

11:59 am

Send the approved presentation to a slide service for overnight production and delivery of the finished 35mm slides in time for tomorrow's meeting.



TOOLBOX: communications module, slide service links

12:15 pm

Generate and print speaker notes and audience handouts.

TOOLBOX: speaker notes generator, handout generator, automatic color-to-black-and-white conversion, printer and font support

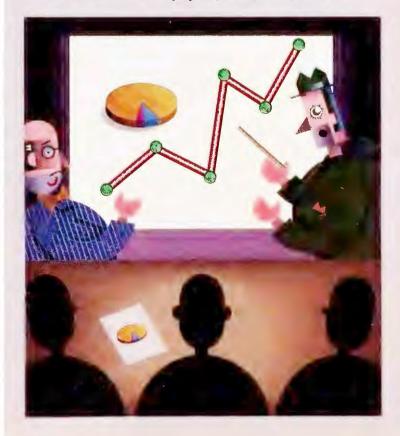
### Stage Five: D day

9:05 am

Calm down. TOOLBOX: antacid

Make the presentation.

TOOLBOX: slide projector, screen, coffee, sandwiches









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### Microsoft PowerPoint for Windows

**PROS:** Easy to use, top organization tools **CONS:** Limited charting and enhancement

EMINDOWS With its superb presentation aids and manageable feature set, Microsoft PowerPoint for Windows is a natural for the casual user who lacks the time to learn the software or relearn it every few weeks. It doesn't give you every arrow found in Hollywood's quiver, but it's a dream to learn and use.

Creating a presentation in *Power-Point* is a breeze. After setting up a master and selecting a color scheme from the collection of 5000, we imported our ASCII outline into the title sorter view. *PowerPoint* also provided notes and handout views for each slide, and let us open multiple presentations and merge old slides.

In the charting stage, we easily pasted templates from other presentations into our show and set up data links. Though *PowerPoint* doesn't provide dynamic links to spreadsheets, we could import an *Excel* chart via OLE as an embedded object. By double-clicking on it, we launched *Excel*, where we changed the data and regenerated the chart.

PowerPoint's charting repertoire is limited—the only way to create a com-

bination graph was to copy and paste one graph over another and then try to align the two. There aren't many drawing tools to play with, but *PowerPoint*'s supply of clip art filled in the gaps. The production stage took no time— *PowerPoint*'s single screen show transition didn't interfere with our preview



A master at organization, PowerPoint includes a wide variety of color schemes that you can view side by side in the slide sorter.

task, and the automatic speaker notes and handouts left us well prepared.

If you're an infrequent presenter and need to keep training time to a minimum, you can't get any more basic than *PowerPoint*. It's not much simpler than *Hollywood*, but that extra bit of ease could make the difference.

### Persuasion 2.0 for Windows

**PROS:** Powerful outliner, excellent predesigned templates

**CONS:** No context-sensitive help, lacks spreadsheet link

**WINDOWS** If your slide shows consist of one bulleted chart after another

and you're worried you might be starting to repeat yourself, Aldus's *Persuasion for Windows* holds the cure. With numerous text templates, powerful organizational features, and the best outliner in the roundup, *Persuasion* ties *PowerPoint* for second place.

Overall, *Persuasion* is easy to use, offering a sensible system of developing

slides in layers that's similar to *Hollywood*'s. But we encountered a few obstacles. For example, you can't open more than one presentation at a time.

Persuasion's hotshot outliner accelerated the planning stage. We selected one of the many master slide formats that offer placeholders for text or graphics. The

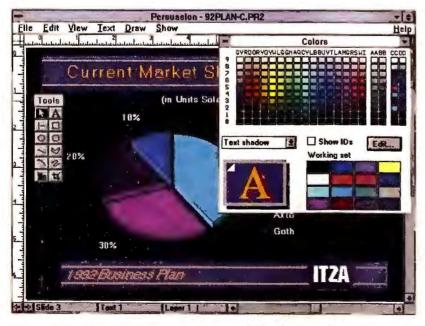
templates, master controls, and slide sorter were among the best reviewed.

Making text charts proved a lot easier than setting up data charts. *Persuasion* doesn't provide any linking feature, so for updates we had to specify named ranges and cells, reimport data, and regenerate each chart.

Persuasion delivers a full complement of enhancement tools. You get a convenient pasteboard and toolbox similar to PageMaker's, and importing and manipulating images is easy. But Persuasion can't perform some fancier drawing tricks, like curve smoothing.

In producing the show, *Persuasion* gave us excellent results. Thanks to the bundled *Adobe Type Manager*, *Persuasion* had no problem producing speaker notes and handouts.

Persuasion is not as easy to use as PowerPoint, and it can't match Hollywood's charting and enhancement prowess. But considering that most presentations consist primarily of text, Persuasion is a very good value. (continues)



Persuasion's strong enhancement tools include shadowed text, versatile templates, and excellent color controls.

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### To Illustrate The Northgate



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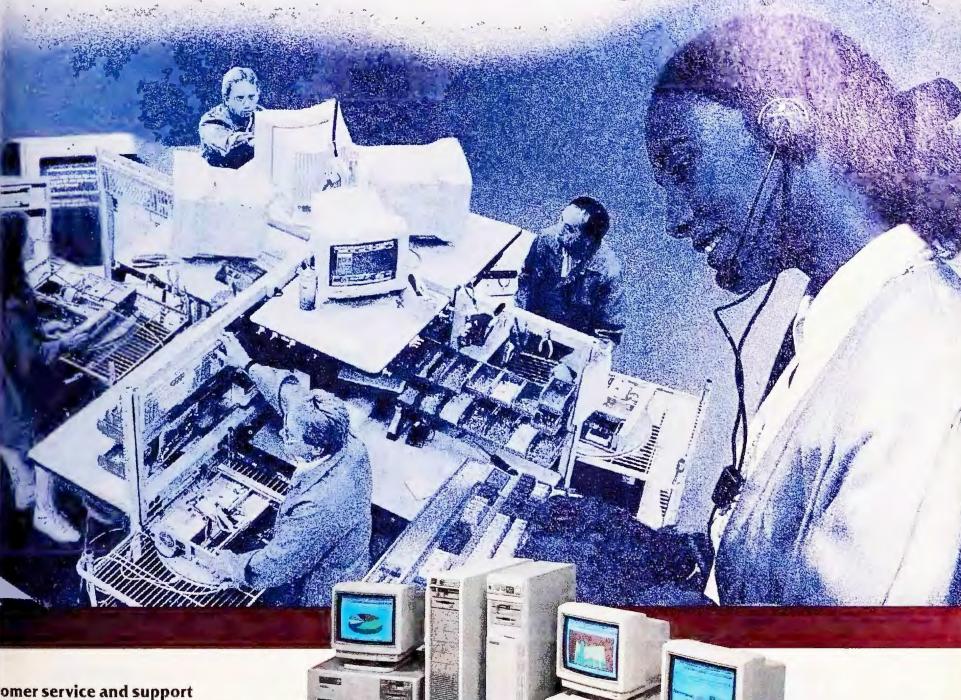
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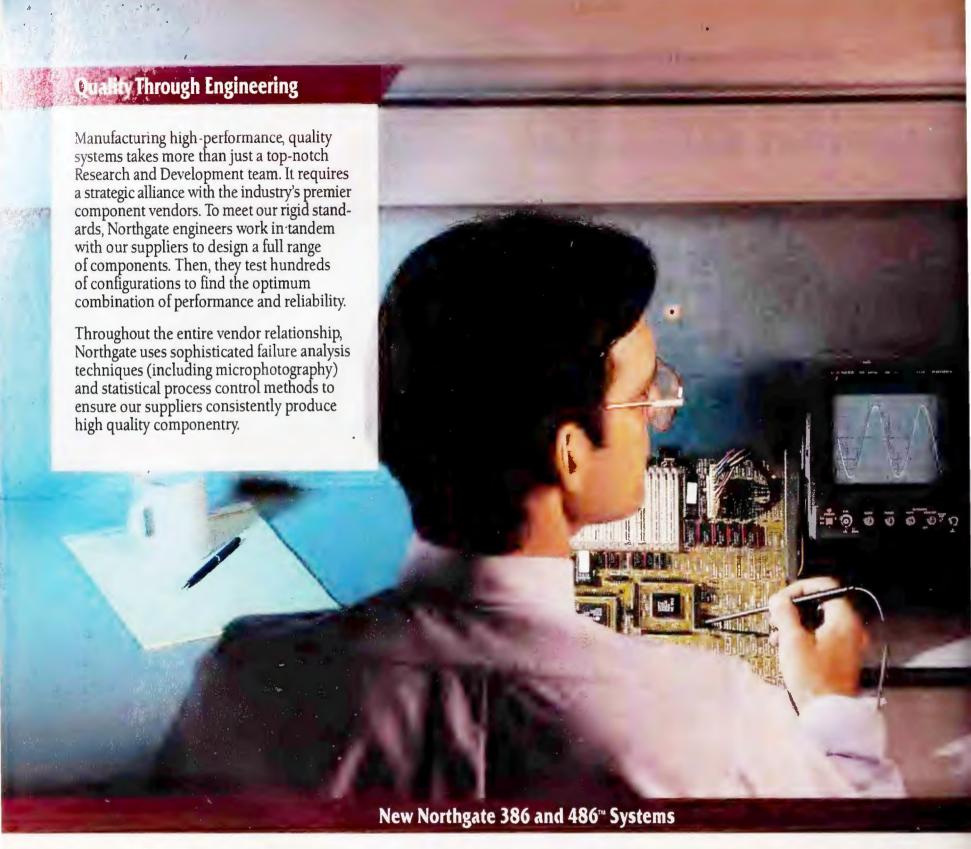
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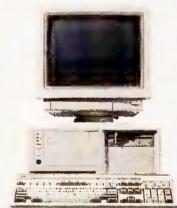


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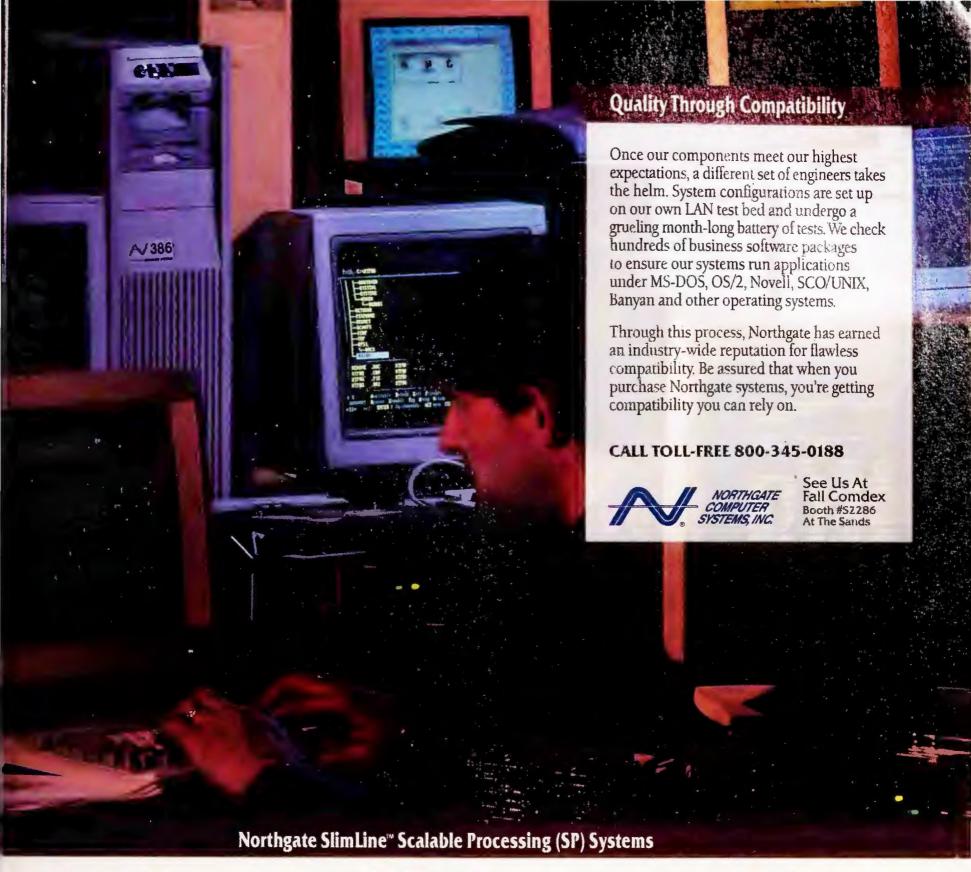


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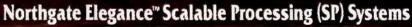
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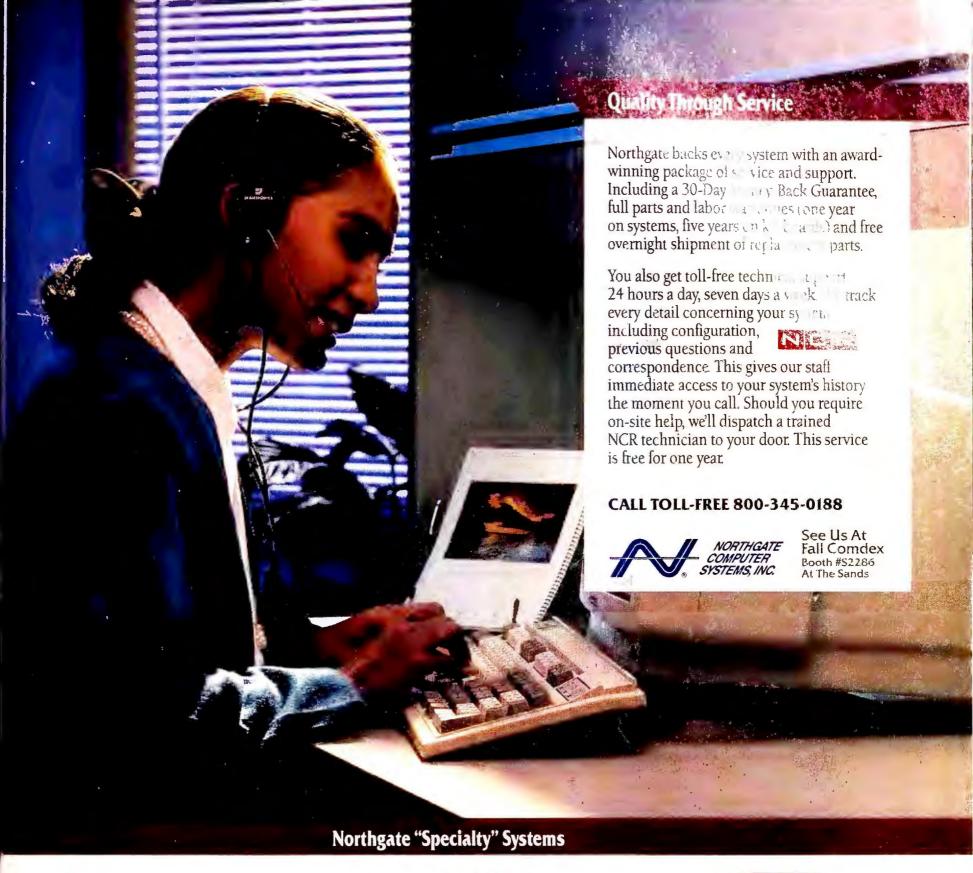
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### Presentation Team 2.0

PROS: Easy to use

**CONS:** Lacks organizational tools, limited charting and enhancement features

Digital Research's *Presentation Team* is fine for basic presentations—its *GEM*-based graphical interface is easy to use and doesn't require the horse-power *Windows* demands. But *Presentation Team* is clearly underpowered for charting and enhancements.

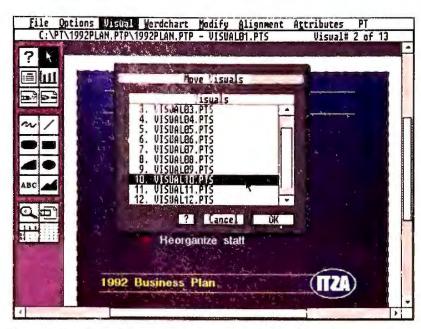
Although Presentation Team has no outliner or graphical slide sorter, we could work with a single presentation file and shared master background rather than load a series of images. We couldn't import our outline, so we had to enter the text for each slide. The rudimentary title sorter helped us get an overview of each slide file.

In the charting stage we found *Presentation Team*'s template-driven word charts easy to use, but were disap-

pointed with the program's weak data charting options. We couldn't set up dynamic links to our imported spreadsheets, and the program's chart gallery was limited. For example, there were no preset choices to help us create combination charts or organization charts, and pie charts were limited to a shadow effect

rather than a true 3-D perspective.

In the enhancement stage, we had to use a separate bundled utility (a customized version of *HiJaak*) to convert our scanned image into a *GEM* file format. Although a good amount of clip art is available, the quality is somewhat below par. Enhancement tools are also



Presentation Team lets you create a master list of slides, but you can display only one slide at a time.

fairly limited. For example, we couldn't create shadowed text or add graduated colors to individual objects.

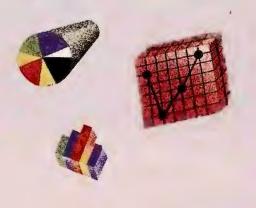
### If You Can't Beat 'Em

Relative newcomers to business graphics like Aldus, IBM, and Microsoft will soon be in for some formidable competition as Windows versions of industry leaders Harvard and Freelance hit the streets. Lotus's Freelance Graphics for Windows (\$495) is due by year's end, and Software Publishing's Harvard Graphics for Windows (\$595) is expected by February.

Both packages will include the organizational and production aids found in the best Windows packages, including outliners, slide sorters, and automatic speaker notes and audience handouts. Both will support Windows' Dynamic Data Exchange (DDE) protocol for automatically updating data, and Freelance will also have its own version of Windows'
Object Linking and Embedding (OLE)
technology that will let you launch
other Windows applications from
within Freelance.

borrows powerful features from its elder, Freelance Graphics for OS/2, including the ability to display multiple views of the same presentation. Its customizable floating icon palette will be the same as that used in Ami Pro and 1-2-3 for Windows. You'll be able to choose from a variety of templates that retain formatting information separate from the actual data that you fill in, and new drawing tools will be included.

Key features in the Windows version of Harvard Graphics include a



broader chart gallery and more presentation styles and templates. Its new screen show feature will include hypertext links to other applications for interactive demonstrations, à la Quattro Pro.

Today, Hollywood reigns as the state-of-the-art presentation package. But loyal Harvard and Freelance users may want to wait and see whether the new Windows versions of their favorites can go one step further. If so, a huge migration may be heading for Windows graphics.

### EXECUTIVE SUMMARY

### **Hooray for Hollywood!**

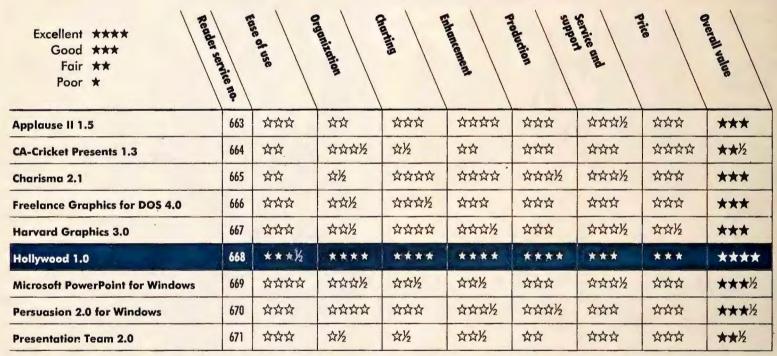
IBM makes a big splash with its marquee-value graphics contender.



Most business users occasionally need a presentation package—ideally, one that lets you put together a complete show without having to jump through hoops. Best Buy **Hollywood** fits that bill and more,

providing sophisticated charts and drawing enhancements. PowerPoint, Persuasion, and Harvard Graphics follow closely behind, nipping at Hollywood's heels.





Overall value is calculated by multiplying each category rating by the category's weight percentage, summing thase results, and raunding to the nearest half number.

### WHERE TO BUY

### Applause II 1.5

Ashton-Tate Corp. 20101 Hamilton Ave. Torrance, CA 90509-2833 800/437-4329, 213/329-9989 LIST PRICE: \$495 Reader service no. 663

### CA-Cricket Presents

Computer Associates 711 Stewart Ave. Garden City, NY 11530 800/645-3003 Reader service no. 664

### Charisma 2.1 Micrografx Inc.

1303 Arapaho Richardson, TX 75081 800/733-3729, 214/234-1769 LIST PRICE: \$495 **Reader service no. 665** 

### Freelance Graphics for DOS 4.0

Lotus Development Corp. 55 Cambridge Pkwy. Cambridge, MA 02142 800/343-5414, 617/577-8500 LIST PRICE: \$495 Reader service no. 666

### Harvard Graphics 3.0

Software Publishing Corp. 3165 Kifer Rd. P.O. Box 54983 Santa Clara, CA 95056-0983 408/986-8000 LIST PRICE: \$595 Reader service no. 667

### Hollywood 1.0

IBM Desktop Software 472 Wheelers Farms Rd. Milford, CT 06460 800/426-7699 LIST PRICE: \$495

Reader service no. 668

### Microsoft PowerPoint for Windows

Microsoft Corp.

1 Microsoft Way
Redmond, WA 98052
800/426-9400,
206/882-8080
LIST PRICE: \$495
Reader service no. 669

Persuasion 2.0 for Windows

Aldus Corp. 411 First Ave. Seattle, WA 98104-2871 206/622-5500 LIST PRICE: \$495 Reader service no. 670

### Presentation Team 2.0

Digital Research Inc.
Box DRI
70 Garden Ct.
Monterey, CA 93942
408/649-3896
LIST PRICE: \$495
Reader service no. 671



If there were a printer that could give you this kind of color, would you still make your presentations in black and white?

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The Colormate™ PS 40 can easily and affordably give them the impact they deserve, enhancing your work with truly amazing color.

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output is sharp and clear, whether paper or transparencies. And with its small footprint, the Colormate PS 40 won't fill up your desk.

After all, the world isn't black and white, why should your presentations be?





## In-House Presentations PAY 6 FF

When you work in a big company, meetings are your life.

Here's how financial giant Norwest uses PC-based presentation and communications tools to make meetings more effective.

### **Bronwyn Fryer**

You're a division vice president in a 24,000-employee company. You have 20 minutes to explain, illustrate, justify, and answer questions about a sophisticated \$20 million project to the board of directors. Ready? Go.

That was the challenge faced a few months ago by John Blakeney, vice president of distributed technologies for Norwest, the 17th-largest financial services company in the United States. Giving presentations to top management is like having an audience with the king, says Blakeney. "They want to know what your proposal is, what it does, what it costs, and why the company needs it. You need to grab 'em and get the mes-

sage across clearly and quickly."

That presentation went off without a hitch, and the board approved the giant project. Blakeney's recipe for success? Blend one part savvy planning with one part bottom-up sell for several months. A few days before the presentation, mix in data from a variety of *Windows*-based applications. Flavor with last-minute changes and sprinkle with clip art; bake in color and serve *hot*.

### **Communication Challenges**

Based in Minneapolis, Norwest is a financial management octopus, with tentacles in ten divisions, dozens of operating units, and 1525 national and international offices. In this highly diversified and entrepreneurial company, teamwork rather than top-down dictatorship is the basis for decisions. "This is a business of people and ideas, and we have to have meetings to get anything done," notes Blakeney. A typical Norwest manager, Blakeney spends a third of his working life in meetings. The more effectively he communicates, the better for him and for Norwest—and the shorter the meeting.

In the days before PCs, communication and presentation methods at Norwest were almost medieval. Fat, laborintensive paper memoranda and proposals were circulated but read only under duress. Presenters would glue Croy lettering onto transparencies by hand; if a number changed, the transparency would have to be redone. But by 1987 PCs had been installed on half of the company's desktops, and financiers became 1-2-3 addicts. "The Lotus print graph was still pretty crude because all you'd see was plain numbers, but people were excited anyway because they had never before had access to current information," explains systems manager Jon Laberee.

With today's powerful PC presentation packages, such as Harvard Graphics and PowerPoint, highly graphical slide presentations have become a way of life in almost every Norwest department. For example, while the ink dries on one of Norwest's frequent acquisition agreements, the department staff generates a color map using Harvard Geographics on a PC to show employees the location of the acquired company. When federal regulations change, the investor relations department delivers a slide presentation to company staff and outside investors. And John Blakeney uses his presentations to "sell" his division's technology solutions to Norwest's board of directors—as well as to the managers of Norwest's 340 branch banks.

### The Bottom-Up Sell

In 1990 Blakeney's division, Norwest Technical Services, developed a prototype of a Windows-based system that allows bankers in the company's 337 banking locations to serve customers faster. Blakeney hit the road to generate interest in funding the proposed project, taking along a slide presentation developed in PowerPoint and a demonstration of the application. The presentation helped him communicate complex technical concepts to his audience of financiers. "Automation is not something most bankers want to deal with," says Blakeney. "With graphics, you can help them connect with technical concepts at the visual level, and that's the quickest way for anyone to understand."

During the question and answer por-

tion of the presentation, Blakeney's audience expressed apprehension about the acceptance of the new system within the banks. To allay their fears, Blakeney demonstrated the proposed system directly from an IBM P/70 portable minicomputer on a 30-inch Sony projection device. The demonstration showed them how friendly the *Windows* interface could be. "I showed them how easy it is to point and click," he recalls. "It was extraordinarily effective." By the time he was ready to take the idea to the board, the pilot system was up and running at five branches.

### **Perfect Pitch**

Blakeney's next challenge was convincing senior management to finance installation of the system in the remainder of Norwest's banks. He prepared for the meeting by asking senior business funding staff to brief him on the board's hot buttons—what the system would do,



### PROBLEM:

- Communication difficulties in large, diversified company
- Need for frequent meetings
- Need to get messages across quickly and effectively

### **SOLUTION:**

- · Bottom-up sell
- Graphical PC presentation software
- Well-planned presentations
- Video conferencing center

### BENEFITS:

- Easy for nontechnical staff to understand
- Fast, effective communication
- Video conferencing center saves on airfare

what it would cost, and what the benefits would be. Based on this information, he developed an outline of the presentation in *PowerPoint*, using the Notes function to provide the verbiage. Then he printed the presentation and circulated it among his contacts for feedback.

Once comments were in, he streamlined the presentation to make it easy for people who are long on pressure and short on time to visualize the benefits of the branch automation project. Project manager Michael Levine, a presentation whiz, flavored the slides with relevant numbers pulled from Excel spreadsheets, Gantt charts created by Project, and text generated in Word for Windows. He tied it all together with PowerPoint on his IBM PS/2. Because pictures are more effective than text, Levine used clip art instead of nouns wherever possible. For example, instead of spelling out the names of states where the banks were located, he showed a map of the United States highlighting the states with color. "We kept refining it, changing concepts, ideas, and numbers right up until a few hours before the presentation," notes Levine.

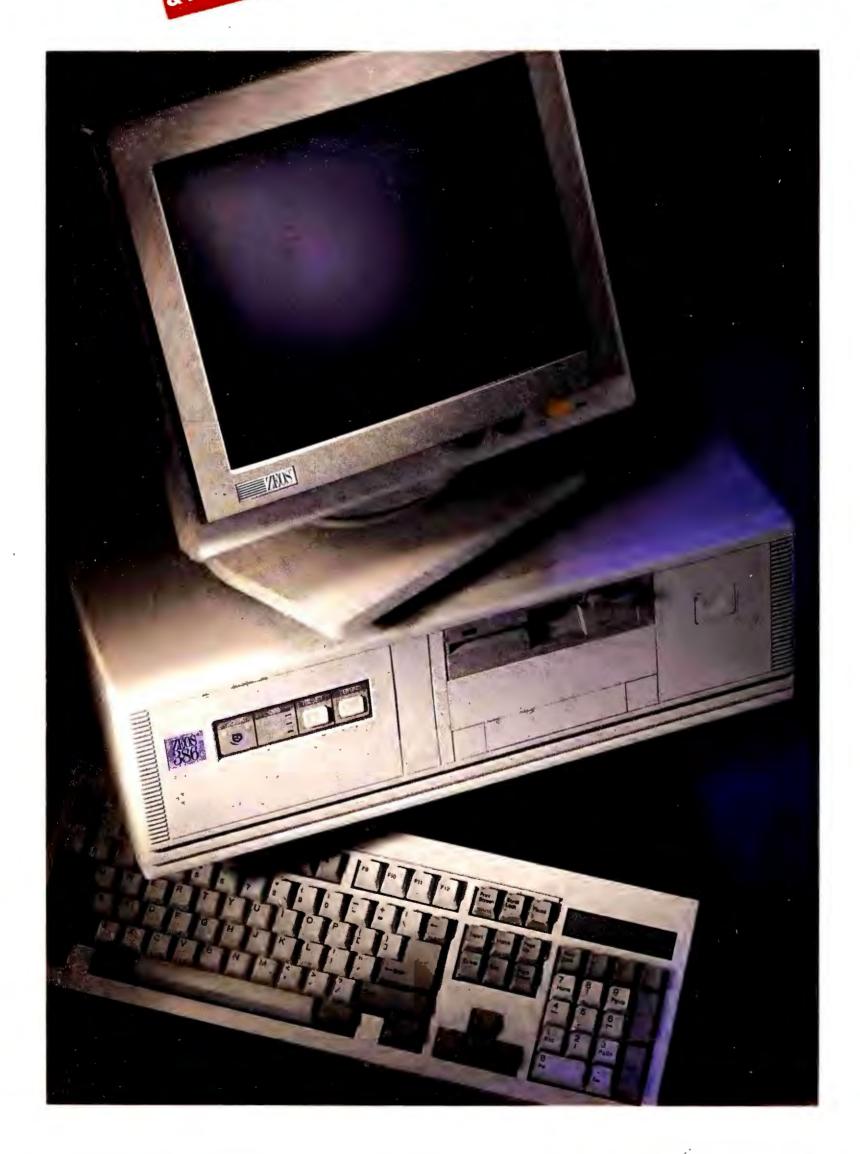
For technical audiences, Blakeney likes to run his *PowerPoint* presentation directly on a PC connected to a large-screen monitor. But he feels that even the highest-resolution big screens are still "too grainy" for an executive audience. For most high-level presentations, he prefers the smoothness and polish of slides.

In the case of this presentation, Blakeney needed to incorporate last-minute information, which ruled out slides. Instead, he used color transparencies. "Board members like the immediacy and the spontaneity of overheads, as well as the color and consistency of a slide presentation. Color overheads give both."

During the presentation, notes Blakeney, "you could have heard a pin drop." Blakeney's \$20 million project got the green light. He credits the success of his pitch to a carefully orchestrated message "designed to give the (continues on page 212)

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### PC WORLD MARKETPLACE PRICE INFORMATION





The Gateway 2000 33-MHz 386VGA and AST Premium Exec 386SX/20 were the most aggressively priced desktop and portable PCs in the latest survey by International Data Corporation.

### BARGAINS OF THE MONTH

### **Best-Sellers**

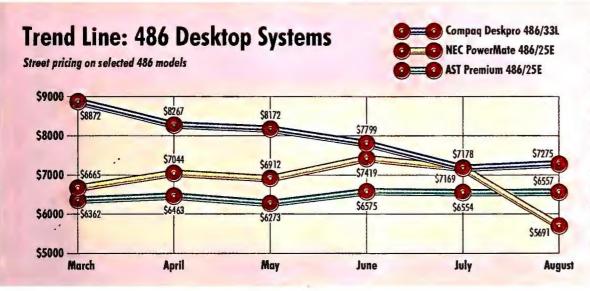
Leading PCs sold through traditional computer channels

0	IBM PS/2 Model 55 SX	6	Compaq Deskpro 386s/20
0	IBM PS/2 Model 70 (20-MHz)	0	Compaq Deskpro 386/20e
0	Compaq LTE 386s/20	8	Compaq Deskpro 386n
0	NEC PowerMate SX, SX/20	0	Compaq Deskpro 386s
6	IBM PS/2 Model 30-286	0	IBM PS/2 Model 50 Z

IBM and Compaq continue to lead sales through the dealer channel, but NEC's SX line jumped to fourth place, according to Storeboard/Computer Intelligence's latest survey.

Over the Counter		Configuration			— National —				7,-
Nhat you pay at retail stores for popular PCs	Speed (MHz)	RAM (MB)	Hard disk	Video adapter	ET.	Merage	Boston	Chicago	Dallasi Fr. Worth
80386SX-based desktop PCs		\	(MB)						
AST Brovo 386SX/20	20	2	40 -	VGA	\$2395	\$1871	\$1879	\$1802	\$1830
Compaq Deskpro 386s	16	2	40	VGA	\$2299	\$1858	\$1747	\$1884	\$1865
Compoq Deskpro 386s/20	20	2	60	VGA	\$2599	\$2115	\$1975	\$2153	\$2109
Dell System 320 SX	20	2	40	VGA	\$1700	\$1700	\$1700	\$1700	\$1700
Epson Equity 386SX/20 Plus	16	2	40	VGA	\$3099	\$2345	\$2131	\$2372	\$2324
IBM PS/2 Model 35 SX-043	20	2	40	VGA	\$2525	\$1911	\$1879	\$1857	\$1800
NEC PowerMote SX/20	20	2	42	none	\$2199	\$1687	\$1715	\$1697	\$1569
0386DX-based desktop PCs									7
AST Premium 386/25	25	2	110	VGA	\$5595	\$4312	\$4532	\$4210	\$4275
Compaq Deskpro 386/33L	33	4	120	VGA	\$6199	\$5004	\$4891	\$5031	\$4982
Dell System 333P	33	4	100	VGA	\$3000	\$3000	\$3000	\$3000	\$3000
Epson Equity 386/25 Plus	25	2	100	VGA	\$3879	\$2950	\$2920	\$3016	\$2909
Goteway 2000 33-MHz 386VGA	33	4	200	VGA	\$2320	\$2320	\$2320	\$2320	\$2320
IBM PS/2 Model 70-A16	25	4	160	VGA	\$6445	\$4804	\$4800	\$4635	\$4593
Tondy 4033 LX	33	2	105	VGA	\$4398	\$4398	\$4398	\$4398	\$4398
80486SX-based desktop PCs									
ALR BusinessVEISA	20	5	120	none	\$4295	\$3346	n/a¹	\$3343	\$3410
AST Premium II 486SX/20	20	4	80	VGA	\$3495	\$2742	\$2893	\$2630	\$2656
IBM PS/2 Model 90XP-OG5	20	4	80	XGA	\$8345	\$6243	\$6202	\$6010	\$5946
0486DX-based desktop PCs						*			
AST Premium 486/25E	25	4	110	VGA	\$8595	\$6557	\$6523	\$6468	\$6567
Compaq Deskpro 486/33L	33	4	120	VGA	\$8999	\$7275	\$7074	\$7348	\$7233
IBM PS/2 Model 95 XP	33	4	320	XGA	\$16,445	\$12,298	\$12,188	\$11,999	\$11,71
NEC PowerMote 486/25E	25	4	140	none	\$7399	\$5691	\$5756	\$5710	\$5364
Portables/laptops									
AST Premium Exec 386SX/20	20	2	40	VGA-LCD	\$3395	\$2658	\$2771	\$2555	\$2594
Compoq LTE/286	12	640K	20	CGA-LCD	\$1949	\$1599	\$1536	\$1623	\$1566
Compoq LTE 386s/20	20	2	30	VGA-LCD	\$4399	\$3826	\$3919	\$3858	\$3853
Dell System 320LT	20	2	40	VGA-LCD	\$2999	\$2999	\$2999	\$2999	\$2999
IBM PS/2 Model L40 SX	20	2	60	VGA-LCD	\$5245	\$3976	\$3885	\$3941	\$3738
NEC UltraLite 286F	12	1	20	CGA-LCD	\$2199	\$1705	\$1667	\$1697	\$1594
Toshibo T1200XE	12	1	20	CGA-LCD	\$2299	\$1851	\$1852	\$1931	\$1911
Toshibo T2000SX	16	1	40	VGA-LCD	\$3749	\$3026	\$3093	\$3149	\$3141
Zeos Notebook 386SX-20MHz	20	1	60	VGA-LCD	\$2995	\$2995	\$2995	\$2995	\$2995

From an IDC survey of more than 180 computer deolers in eight metropolitan areas. Figures based on at least four price quotes for each machine. Prices are bosed on monufacturer's standard configuration without monitor. IDC was unable to collect enough price quotes for this model in this metropolitan area due to limited dealer coverage.



Pricing on 486 systems this year has been a mixed bag that primarily reflects the way products are positioned by each vendor. Like other Compaq systems, the 486/33L has undergone big cuts in both list and street prices in recent months. AST has held the line with its aggressively positioned 486/25E. The cost of NEC's PowerMate 486/25E wavered and then fell in late summer when the manufacturer chopped prices.

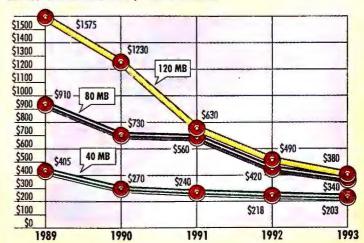
an —			- 4:	
Los Angeles	Miamil Miamil	NewYork	San Francisco	Washington, D.C.
\$1918	\$1796	\$2072	\$1742	\$1772
\$1908	\$1779	\$1897	\$1818	\$1893
\$2160	\$2002	\$2229	\$2085	\$2136
\$1700	\$1700	\$1700	\$1700	\$1700
\$2293	\$2529	\$2510	\$2256	\$2333
\$1894	\$1987	\$2057	\$1839	\$1924
\$1649	\$1781	\$1660	\$1605	\$1700
\$4200	\$4196	\$4401	\$4197	\$4186
\$5250	\$4747	\$5156	\$4749	\$5113
\$3000	\$3000	\$3000	\$3000	\$3000
\$2870	\$2961	\$3142	\$2806	\$2917
\$2320	\$2320	\$2320	\$2320	\$2320
\$4834	\$4692	\$5125	\$4834	\$4970
\$4398	\$4398	\$4398	\$4398	\$4398
\$3221	\$3374	\$3548	\$3222	\$3153
\$2803	\$2621	\$2890	\$2621	\$2699
\$6259	\$6166	\$6675	\$6259	\$6474
\$6459	\$6446	\$6515	\$6554	\$6360
\$7648	\$6892	\$7455	\$6855	\$7396
\$12,334	\$12,281	\$13,055	\$12,334	\$12,686
\$5549	\$5993	\$5975	\$5401	\$5359
				******
\$2626	\$2546	\$2805	\$2614	\$2598
\$1659	\$1547	\$1733	\$1514	\$1613
\$3923	\$3768	\$3866	\$3498	\$3801
\$2999	\$2999	\$2999	\$2999	\$2999
\$3934	\$4130	\$4243	\$3945	\$3997
\$1656	\$1765	\$1777	\$1613	\$1696
\$1789	\$1919	\$1789	\$1857	\$1778
\$2816	\$3036	\$3088	\$3001	\$2947
\$2995	\$2995	\$2995	\$2995	\$2995

### PC Futures: Down in the Fall

Gateway 2000's 33-MHz 386VGA is the desktop Bargain of the Month,<sup>2</sup> while AST scores another win—this time with the Premium Exec 386SX/20, the portable Bargain of the Month. The veteran PS/2 55 SX remains the best-seller champ despite new 386SX alternatives from IBM. Overall, PC suppliers still face unusually strong pricing pressure; some market researchers expect total U.S. unit sales to drop this year for the first time since the mid-1980s. Over the long haul, cost pressures will be further heightened by new CPUs from both Intel and AMD (whose 386-compatible family is now showing up in products from major vendors—see "AST Notebook Breaks the Rules"). Systems incorporating these CPUs should begin showing up in force early next year. And as disk drive manufacturers reach very high volumes of production on 3½-inch hard disks, costs on those are plunging as well.

### Hard Drives Get Easier Pricetags

End user cost estimates for 31/2-inch hard drives



While prices on 40MB drives are close to bottoming out, the costs of other standard drives continue to fall substantially. International Data Corporation projections show costs of 120MB drives plummeting so rapidly that next year these models will carry only a \$70 premium over 80MB drives, whose costs will average \$420.

<sup>&</sup>lt;sup>2</sup>Bargains of the Month ore determined by adjusting prices an PCs af o given class for standard memory and storage, then finding which PC compores best.

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## INCREDIBLE 20 MHz ZERO-WAIT PERFORMANCE A ONLY \$1195

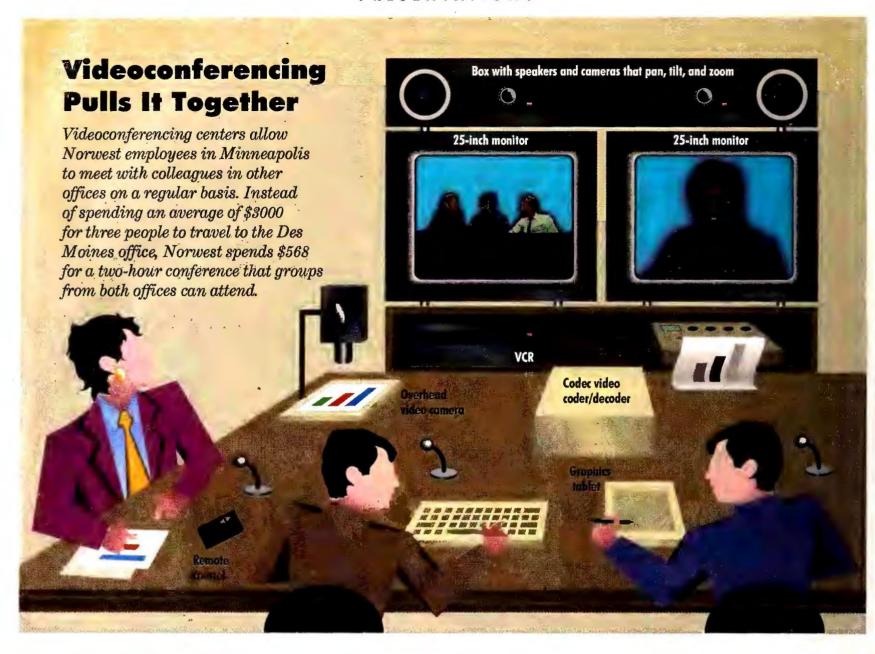
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board the presentation they wanted, the way they wanted it. And it paid off for the whole company."

#### **No More Airports**

Blakeney's fundraising junket didn't come cheap: With round-trip airfare, meals, hotel rooms, and other expenses, even a simple one-day jog from Minneapolis to the Des Moines office adds up to about \$1000 per employee.

Fortunately, Norwest has found a way to lower the price of travel while increasing the effectiveness of meetings. Instead of catching a plane, Blakeney and the NTS staff now meet with colleagues in Des Moines or Denver in the company's videoconferencing centers. A two-hour videoconference, in which any number of staffers at both sites can participate, costs \$568—making it both more convenient and more cost-effective. "We don't need to book flights anymore; we just flick some switches," says Blakeney.

Norwest's videoconference rooms

are outfitted with System CS425, a digital compression "black box" from VideoTelecom of Austin, Texas. The system incorporates an AT-compatible 386SX with 40MB hard drive, proprietary communications software, and an acoustic echo cancellation device. Attached are two 25-inch Sony PVM monitors, three video cameras, six microphones, a PC keyboard, and a point-and-click input tablet called Pen Pal.

Pen Pal lets users control communications with the remote site, including the operation of the remote cameras and computers. When a presenter in Minneapolis places materials on Pen Pal and zooms in on them with a video camera, staffers in Des Moines can see them as clearly as if they had them in their own hands. And when a manager in Denver wants to show spreadsheet data to a colleague in Des Moines, she runs a floppy disk from the PC or accesses data stored on a LAN. The colleague views the application on the conference room monitor.

#### Faster, Better Meetings

Aside from saving Norwest thousands of dollars a month in airfare, videoconferences have vastly improved intercompany communication, says Greg Lown, who manages the videoconference center. Because anybody can take part in a videoconference, "people now see the information firsthand instead of getting a report after the meeting," he notes.

As financial management companies go, says Blakeney, Norwest is unusual in its aggressive use of PC technology to improve communication. Recently, Blakeney's boss asked him to form a presentation task force. "We've had so much success in improving our communications through presentations that we're setting up a task force to develop a presentation standard for the corporation," he notes. "We want to show how selling internally using PC technology lets us create a better company." \(\begin{align\*}
\text{ some properties of the company."}
\end{align\*}

Bronwyn Fryer is an associate editor for PC World.



Smartcom Exec,™ the newest communications software from Hayes, is remarkably easy to operate. In fact, Computer Shopper said "Many people...will be able to install and use the program without

touching a book, because the interface is quite self-explanatory and help is just a function key away."

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operation and automatic log-ons.

What's more, PC Week said it has the best LAN support of any software they've tested

All of which is why Smartcom Exec received PC Magazine's prestigious





Editors' Choice Award, Micro Decision's Gold Award, and was named a Buyer's Choice by Computer Reseller News.

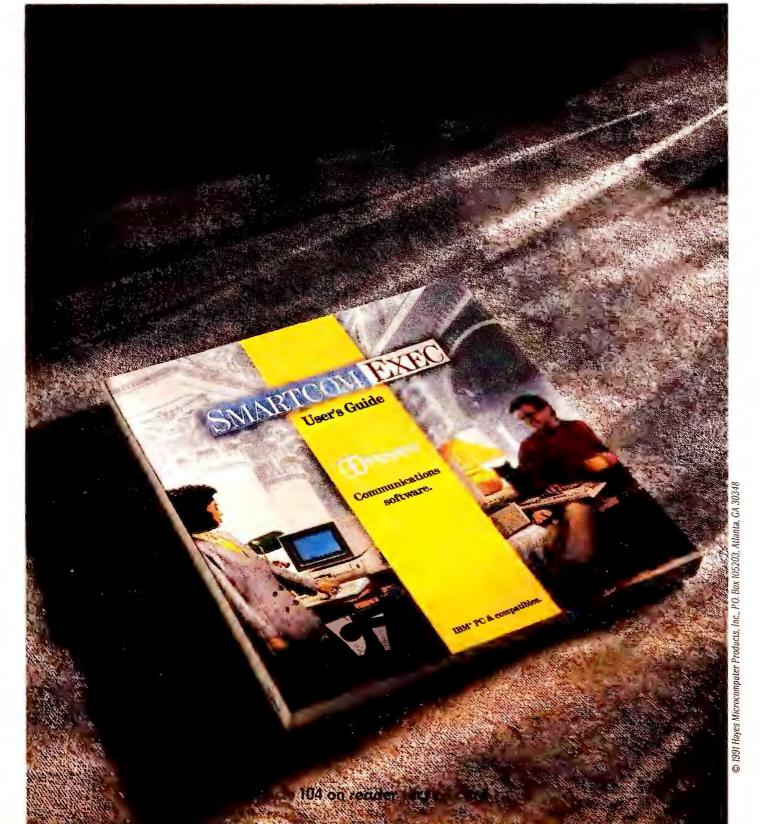
At \$129, Smartcom Exec costs much less than you'd expect. And it's even more affordable when purchased in Hayes' unique Multi-Copy software packs.

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HAVE BECOME TODAY'S
TOOLS OF CHOICE FOR
THE DESKTOP PUBLISHER

# SCAMMERS

#### PATRICK MARSHALL

hanks to higher resolutions, more gray shades, and wider color ranges, hand scanners are now being used effectively not only for newsletters but for spot art in newspapers, corporate reports, and magazines. Handheld scanners fall short of desktop scanners: They have neither the resolution nor the tonal range needed to produce magazine-quality photo images. But all are well suited to the limited capabilities of desktop laser printers.

While only the Niscan Spectra claims to reproduce the 16.8 million colors common with desktop scanners, most are now very competitive in gray-scale capabilities and image resolution. Hand scanners are also cheaper than desktop models, more easily stored, and better able to scan books.

Which is not to say that hand scanners can go head-to-head with desktop models. The hand-held models' most obvious weakness is that, unlike flat-bed scanners, where you simply place the image on the scanner and go, they must be drawn across the image carefully and steadily. The inevitable result is that you must often retake scans.

A related problem is that the narrower coverage of hand scanners means that to scan a page-size image, you have to make at least two scans and combine the images. That can be tricky, especially for line art. So if you expect to do many large scans, you're probably better off paying more for a desktop scanner.

#### PLANNING FOR THE SCANNING

MAXIMUM SCAN SIZE The majority of hand scanners can handle an image 4 inches wide in a single pass, but you should also note the maximum length that can be scanned. Scan lengths range from 6 to 20 inches, depending on resolution and amount of computer memory. At 200 dpi, a 4-inchwide scanner requires more than 3.2MB to scan 20 inches down. Models that scan directly to disk allow a virtually unlimited length, but you'll still need a lot of system memory to load a long image into your editor.

#### RESOLUTION

Scanner makers play up their products' high resolutions; units here reach a level of 400 dpi, with one model at 800 dpi. But the fact is, resolutions be-

yond 300 dpi are rarely used and can even be detrimental. Scanning at resolutions higher than your printer can handle simply wastes disk space and adds to printing time.

All the hand scanners listed here-with the exception of the Marstek ColorArtistoffer resolutions of at least 300 dpi, which is the maximum resolution of a laser printer and of most color printers. In fact, you're not likely to notice much difference between images scanned at 200 dpi and 300 dpi on a laser printer. Hand scanners are generally unsatisfactory for the higher resolutions that enlargements, color slides, and commercial laser typesetters require.

Other things being equal, you should lean toward scanners that let you adjust resolution in small increments. If you're willing to experiment, you'll be able to maximize



print quality while minimizing the print time and disk space eaten by image files.

#### MAXIMUM GRAY SHADES

If you've decided you don't need a color scanner, you still have to decide between the two kinds of black-and-white scanners: monochrome and true gray scale. Monochrome scanners use only one bit of information to describe each pixel in a scan, so they are actually scanning in black-and-white. Such scanners achieve half-tone effects through software dithering—using patterns that adjust the proportion of black dots to white space.

Dithering is inferior to gray scale for halftone imaging, and most single-bit scanners can simulate only 32 shades of gray through dithering. True gray-scale scanners can reproduce as many as 256 shades of gray by using 8 bits to describe each pixel. Though most laser printers and VGA boards can display only 64 shades of gray-one-quarter the 256 shades available from 8-bit scanners—true-shade images on a laser printer nearly always look better than dithered images. Of course, if vou're using the scans for slides or printing on a higher resolution printer, you'll be able to take full advantage of the better shading capabilities of a true gray-scale scanner.

#### MAXIMUM COLOR

Because most color hand scanners use the same internal hardware, there's not a lot of difference in actual scanning quality. What you will find are trade-offs between number of colors, resolution, and scan length. For example, if being able to scan 16 million colors is your top priority, you'll have to settle for the relatively short 6-inch scan of the Niscan Spectra. Other than that, your choice of color scanner will de-

pend on the software it comes with and how the unit feels.

Color scanners have the ability to also produce true gray shades. For most applications, 64 shades at 200 dpi is satisfactory, and most color scanners can reach 256 shades of gray at 200 dpi. If you expect your applications to include a mix of color and gray-scale images and to require higher resolutions than 200 dpi, you'll need a dedicated gray-scale scanner as well.

#### EASE-OF-USE FEATURES

Speed indicators, scan locks, and real-time displays can tip the scales for some users. A speed indicator is a light on the scanner that flickers when you're scrolling too fast. A scan-lock button makes it easier to scan smoothly, and a real-time display lets you check quality as you scan.

#### FILE FORMAT COMPATIBILITY

All the hand scanners here, and most editing packages, support TIF and PCX file formats. If you expect to use other file formats, such as Encapsulated PostScript, you'll need a scanner package that supports them, or file conversion software.

#### IMAGE EDITOR

The software bundled with your scanner is designed for the scanner's range of resolutions and colors but is otherwise interchangeable. For example, if you buy Logitech's ScanMan 256, you can forgo the Ansel image editor that comes with it and buy Astral Development's *Picture Publisher* for its special masking technique, or just because you prefer the way it's designed.

Now that the two most popular desktop publishing programs, *Ventura Publisher* and *PageMaker*, are available in *Windows* versions, an impor-

#### HAND-HELD SCANNERS

anufacturer	Praduct	Price	Max. scan size, width/length
MONOCHROME			
Caere	Typist	\$595	5" x disk space.
The Complete PC	Half-Page Scanner/400	\$299	4.1" x 14"
New Dest	Personal Scan	\$995	8.5" x 14"
DFI	Handy Scanner 3000 Plus	\$359	4.2" x 20"
KYE Int'l	GS-4500	\$239	4" x 10"
Logitech	ScanMan Model 32	\$299	4.1" x disk space
Marstek	M-800	\$399	4.13"×11"
Mouse Systems	PageBrush/32	\$239	4.13" x 11.5"
GRAY SCALE			
A4Tech	A4Gray	\$349	4"×14"
The Complete PC	Half-Page Scanner/GS	\$349	4.1" x 14"
KYE Int'l	GS-B105G	\$399	4" x 10"
Logitech	ScanMan Model 256	\$449	4.1" x 20"
Nisca	Niscan/GS for Windows	\$399	4.2" x 11"
	Niscan/GS for DOS	\$369	4.2" x 11"
COLOR			
A4Tech	A4Color Scanner	\$599	2.75" x 9"
DFI	CHS-4000	\$695	4.13" × 20"
KYE Int'l	GS-C105 Plus -	\$799	4" x 10"
Marstek	ColorArtist	\$695	4.13" x 11"
Migraph	CS-4096	\$895	4"×14"
Mouse Systems	PageBrush/Color	\$849	4.1" x disk space
NCL America	ClearScan Color	\$695	4" x 11"
Nisca	Niscan Spectra	\$995	4" x 6"

Omnitont software Extra-cost option.

Resolution (dpi)	Real-time display of scan	Shades of gray	Colors	Speed indicator light	Scan- lock button	File formats	Image editor	Merge/	OCR software	Warranty (years)	Reader service number
300	N	0	n/a	N	N	PCX, TIFF	N	Υ	OmniPage <sup>1</sup>	1	642
200-400	Y	16	n/a	N	Y	CUT, TIFF, PCX, IMG, MSP	SmartScan (DOS)	Υ	ReadRight <sup>2</sup>	2	643
100-400	Y	64	n/a	Y	Y	IMG, MSP, PCX, BMP, EPS, TIFF, MacPaint	lmage-In (Windows)	· Y	Recognize <sup>1</sup>	1	644
100-400	Y	32	n/a	Y	N	PCX, TIFF, MSP, IMG, CUT	PC Paintbrush Plus (DOS)	Υ	CAT Reader Pro <sup>2</sup>	1	645
100-400	Y	32	n/a	Y	N	TIFF, PCX, CUT, IMG, MSP, OCR	ScanEdit II (DOS)	Y	CAT Reader <sup>2</sup>	3	646
100-400	Y	32	n/a	Y	N	IMG, TIFF, PCX	GrayTouch (DOS)	Υ	CatchWord <sup>2</sup>	1	647
100-800	Y	64	n/a	Y	N	PCX , CUT, IMG, TIFF, MSP, PIX for DOS	Image-In (Windows) PC Paintbrush Plus (DOS)	Υ	DOS-CAT Reader, Windows Perceive	1	648
100-400	Y	32	n/a	Y	N	PCX, CUT, EPS, TIFF	ScanEdit (DOS)	Y	Prodigy OCR	2 .	649
100-400	Y	256	n/a	Y	Y	TIFF, PCX, IMG, MSP, CUT, VMG, GIF, SCF, PMC	Image 256, Image 72 Plus (DOS)	Y	AIOCR	1	650
00-400	¥ . Ę,	256	n/a	N	Y	TIFF, PCX, EPS, IMG, MSP, BMP	, Image-In (Windows)	Y	none	2	651
100-400	Y	256	n/a	Υ .	N	TIFF, CUT, IMG, MSP, PCX	Color Maestro (DOS), iPhoto for Windows (optional)	Y	CAT Reader <sup>2</sup>	3	652
100-400	Υ .	256	n/a	Υ	Y	PCX, BMP, EPS, TIFF	Ansel (Windows)	Υ	CatchWord <sup>2</sup>	lifetime	653
25400	Y	256	n/a	N	Υ 🕬	IMG, PCX, TIFF, MSP, MacPaint, EyeStar	Image-In Plus (Win- dows), Scan & Paint (DOS and Windows)	Y	Perceive Personal	1	654
25-400	Υ	256	n/a	N	Υ	IMG, PCX,TIFF	ScanXpress (DOS)	Υ	CAT Reader <sup>2</sup>	1	655
			,								
300	Y	256 at 200 dpi	262,144	N	N	VMG, TIFF, PCX, SCF, GIF, PMC, CPL	Image 256 (DOS)	Y	none	.1	656
100-400	Y	256 at	256 at 200 dpi	Y 200 dpi	N	TIFF, PCX	PC Paintbrush IV Plus (DOS)	Y	under development	1	749
100400	N	256 at	256 at 200 dpi 16 at 400 dpi	Y 200 dpi,	N	TIFF, PCX	Color Maestro (DOS), iP.hoto for Windows <sup>2</sup>	Y	CAT Reader <sup>2</sup>	3	657
50-200	Y	64	262,144	N	Y	PCX, TIFF, TGA, CUT, IMG, MSP	Rainbow Paint (DOS) ScanKit Color (DOS)	Υ	Perceive Personal	1	658
100-400	N	256 at 200 dpi	4096 at 200 dpi	Y	N	TIFF, TGA, PCX, GIF, CPI, BMP, EPS	Picture Publisher Plus, ImagePrep (Windows)	Y	under development	6 mos. or hardware 30 days on software	
100-400	N	64	4096 at 200 dpi, 16 at 400 dpi	Y	N	GIF, PCX, TIFF, EPS, TGA, BMP, CPI	ImageQuest, ImagePrep	Y	none	2	660
100-400	N	256 at 200 dpi	4096 at 200 dpi	Υ	N	TIFF, PCX	PC Paintbrush IV Plus (DOS)	Y	none	1	661
50-400	Y	256	16 million	N	N	TIFF, CPI, BMP, GIF, EPS, PCX, TGA (Windows), PCX, TGA, VMG (DOS)	Color Lab (Windows), ScanRIX and ColoRIX VGA (DOS)	Y	none	1	662

For more information about all products in this table, circle reader service no. 904.

tant scanner consideration is whether the bundled software is *Windows* compatible. And if you're considering buying an image editor separately, be sure to choose one that matches your scanner's capabilities. That is, don't go the cheap route and select a 256-color editor if you've got a 4096-color scanner or spend a bundle on an image editor that exceeds the capabilities of your scanner.

#### MERGE CAPABILITY

Image editors vary in their ability to stitch scans together. There's generally more room for mistakes when merging halftone images than when merging line art. Of course, if you think you'll need a lot of stitching, you need a full-page scanning unit.

#### OPTICAL CHARACTER RECOGNITION (OCR)

Some of the hand scanners listed here come bundled with OCR software. Unfortunately, hand scanning text requires an even steadier touch than scanning images, and stitching together text scans is more difficult.

There are two types of OCR software: font recognition and omnifont. The former must be "taught" by repeatedly scanning and correcting individual characters in each new font. Omnifont is more flexible but is available only









SCANNER IMAGES illustrate quality of capture. The two black-and-white portraits, both scanned at 400 dpi, compare an image dithered to simulate 32 shades (left) with a 256-gray-scale image. The images were captured using Logitech ScanMan 32 and Scan-Man 256 hand scanners, producing files of 21K and 1.7MB, respectively. The line art wrench, also scanned at 400 dpi, required 77K. The 256-color portrait scanned at 200 dpi took 100K.

with New Dest's Personal Scan and Caere's Typist, both designed primarily for scanning text. The New Dest Personal Scan is actually a fullpage scanner with a scan head that can be removed to scan books. Caere's Typist is a more traditional hand-held unit but has a roller and a wider, 5-inch head that does a good job of keeping the unit straight during a scan. The Typist is bundled with a version of Caere's highly regarded OmniPage omnifont software.

With the exception of the New Dest and Caere products, OCR packages that work with hand scanners are, like image-editing software, largely interchangeable. So unless you want a specialized text hand scanner, it makes little sense to base your hand scanner selection on whether it includes OCR software.

#### PUTTING IT TOGETHER

The secret to selecting a hand scanner is compromise. If you're considering a hand scanner rather than a desktop scanner, you've already compromised by giving up a large, steady scanning surface in favor of the affordability and portability of a hand unit. You may have to make similar compromises in selecting among hand scanners, because there's no single product that does it all.

Patrick Marshall is managing editor of National Security Syndicate, an articles service for newspapers in Washington, D.C.

#### WHERE TO BUY

#### A4Tech, Inc.

232 Boulevard #3 Hasbrouck Heights, NJ 07604 201/288-3060

#### Caere Corp.

100 Cooper Ct. Los Gatos, CA 95030 800/535-7226

#### The Complete PC 1983 Concourse Dr.

San Jose, CA 95131 800/229-1753

#### DFI Inc.

135 Main Ave. Sacramento, CA 95838 916/568-1234

#### KYE Int'l Corp.

2605 E. Cedar St. Ontario, CA 91761 800/456-7593

#### Logitech Inc.

6505 Kaiser Dr. Fremont, CA 94555 800/231-7717 510/792-8901

#### Marstek Inc.

17795 Skypark Cir., Ste. F Irvine, CA 92714 800/366-4620

#### Migraph

200 S. 333 St. #220 Federal Way, WA 98003 800/223-3729

#### Mouse Systems Corp.

47505 Seabridge Dr. Fremont, CA 94538 510/656-1117

#### NCL America 1753 S. Main St.

Milpitas, CA 95035 800/521-0121

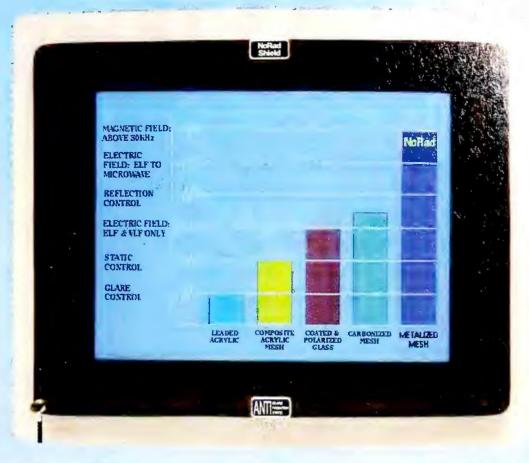
#### New Dest Corp.

1015 E. Brokaw Rd. San Jose, CA 95131 408/436-2700

#### Nisca Inc.

1919 Old Denton Rd. #104 Carrollton, TX 75006 800/245-7226

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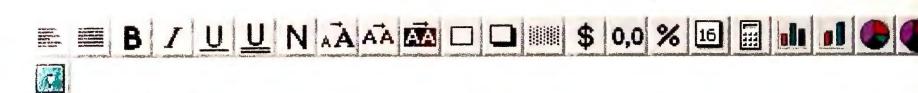
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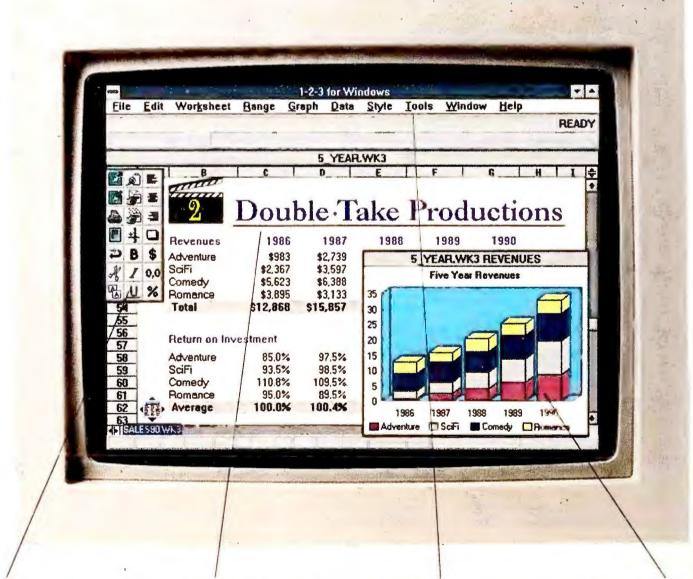
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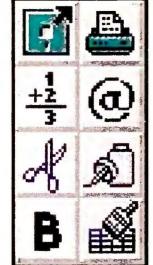
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And yes, 1-2-3 for Windows takes full advantage of the Windows environment, with pull-down menus, dialogue boxes, sizable windows, full DDE support and everything else you'd expect

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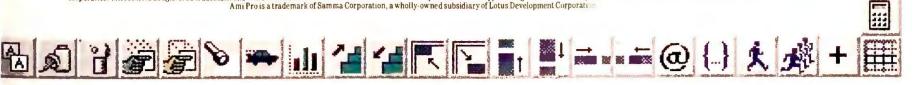
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# Presentation Graphics

PC World road testers report that charting flexibility and organizational tools are the key features in a top-notch business graphics program.

Alice LaPlante

Spicing up dull reports and lackluster presentations is the mission of the eight users we talked to this month. Their secret? The latest versions of four top business graphics packages: Lotus's Freelance Plus, Software Publishing's Harvard Graphics, and two Windows applications—Microsoft's PowerPoint for Windows and Micrografx's Charisma.

Because presentation graphics are central to their jobs, our road testers want it all when it comes to features—and they're willing to shop around to get it. Five of them tried out many of the major packages before settling on a favorite; three who use *Windows* employ the best features of two programs.

We asked the road testers to talk frankly about what helps and what hinders them in using their program of choice, and to grade the products on six evaluation criteria. The features they value most highly are organizational tools, such as an outliner for planning presentations; a good selection of attractive graphs; and a simple, well-organized interface that saves time.

Given these expert insights, you can judge which graphics programs best suit your working style—you may even decide that using a combination of products is the most effective way to get what you need.

#### **CHARISMA 2.0**

#### **Bob Gaines**

Bob uses Charisma with Aldus's Persuasion to create client business plans and internal presentations for his computer training firm.

Charisma is the most powerful charting package on the market for the Windows environment. PowerPoint is a good package, but it doesn't give you all of Charisma's terrific drawing and charting capabilities.

I do a lot of organizational charts, however, and I wish that type of chart weren't so structured and stringent. Sometimes I have to do hand drawing in Micrografx's *Designer* to get what I want. As far as clip art goes, *Charisma* 

gives you more options than any other package. Still, I use *Charisma* with *Persuasion* because of *Persuasion*'s outliner, which makes it easier to plan and implement an overall presentation.

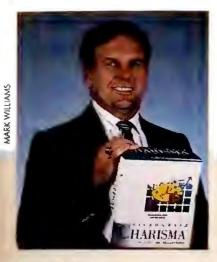
One inconvenience with *Charisma* is that, although you can bring over data from a spreadsheet program such as *Excel*, you can't bring over the formulas. Also, I wish that *Charisma* had a spelling checker, because I create a large number of text charts.

#### **Ed Lenfestey**

Ed is manager of purchasing for an international commercial airline. He works on a 25-MHz 386 with 8MB RAM and a 160MB hard drive. Ed has used Charisma for three years to create charts and graphics for executive briefings and to produce position papers on purchasing.

I've used most of the major packages, and I've been tremendously happy with *Charisma*. I was critical of the early versions because the program was so slow, but the speed has improved in the latest release. *Charisma* still takes a lot of memory and hard disk space, but not as much as before.

*Charisma*'s strength is that it's business oriented yet gives you the drawing

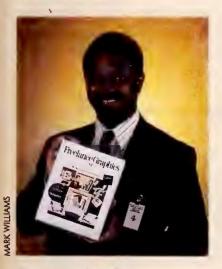


Name: Bob Gaines

Position: Vice president

Company: Amris Training Systems and
Solutions, Fort Worth, Texas

Hardware: 20-MHz 386, 4MB RAM,
120MB hard drive



Name: Henry Draughon
Position: President
Company: HW Draughon & Associates,
Dallas, Texas
Hardware: 25-MHz 386, 8MB RAM,
120MB hard drive



Name: Bob Martin
Position: Manager of executive
support systems
Company: Eaton Corporation, Cleveland
Hardware: 20-MHz 386, 6MB RAM,
100MB hard drive

capabilities of *Designer*. I love the WY-SIWYG capabilities, and we'd be lost without the program's excellent clip art. I'd like more tools for manipulating the clip art, though.

I'd also like Charisma to be more intuitive. For example, making a bullet chart requires a lot of little intricacies in placing bullets and making the graph that are simply not straightforward. I wish Charisma made it easier to plan a presentation: Rather than having to go back and change the color and style of individual components, I'd like to be able to work with an outliner that has master controls of all the components in a presentation. The printer drivers could be improved, too. Sometimes we'll get what we want on screen, but then we can't produce output. The technical competence of the people at Micrografx is fantastic, and the support is excellent.

#### **FREELANCE PLUS 4.0**

#### **Henry Draughon**

Henry uses Freelance Plus to help his consulting firm's clients graph data for financial and management reports.

I use a number of graphics packages in my work—whatever my clients use—but I prefer *Freelance Plus* because it can import 1-2-3 data, and it enables me to see the spreadsheet on the screen as I create a chart.

The Autocharts function is probably the most important feature for what we do. If you've created 50 charts from a particular spreadsheet and the data in that spreadsheet changes, then the charts linked to that spreadsheet change too. *Freelance Plus* can update 100 charts at the same time.

I wish *Freelance Plus* had a macro capability so I could create my own menus, make the screen look the way I want, and create hot buttons.

#### **Bob Martin**

Bob uses Freelance Plus to create presentations about systems planning and management training.

One big advantage of *Freelance Plus* is that we know it will continue to work well with 1-2-8, in which our company is heavily invested.

I'm beginning to appreciate the outliner, Symantee's GrandView, that's been included in the most recent release of Freelance Plus. When you're under pressure before a presentation, it's nice to have a tool that helps you think about overall content. No matter how well you plan, creating graphics always seems to come at the tail end of making a report, so any time wasted feels like a long time. I'd like to be able to turn off the redraw feature on occasion. I'll often move back and forth between page 1 and page 2, using page 2 as a scratch pad, and the screen takes too long to refresh.

#### **HARVARD GRAPHICS 3.0**

#### **Richard Johnson**

Richard works in an Air Force technical evaluation center. He uses a 20-MHz 386 with 24MB of RAM and a 300MB hard drive. Richard has been using Harvard Graphics for more than five years for such tasks as illustrating Air Force reports on new products and technologies.

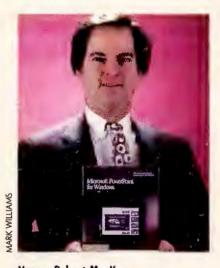
Harvard Graphics is my number one choice for a graphics package because you can be productive in a short time without having to crack the books. But frankly, I expected a little more out of Software Publishing than this version that's only half of what the program will be under Windows. Windows 3.0 has been out for over a year, and we still don't have a Windows version.

Still, there's no doubt this version is much improved. I like the gallery, although the program could support more kinds of charts and give you a little more flexibility with the charts you have. I wish the program had an option for stacked and filled area charts.

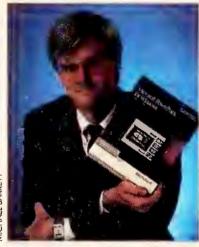
Clip art is definitely not the product's forte. We import clip art from *Arts & Letters*. But *Harvard* is easy to use—one of its main strengths.



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Position: Consultant
Company: The New England, Boston
Hardware: 20-MHz 386, 4MB RAM,
120MB hard drive



Name: Robert MacKay
Position: Finance supervisor
Company: E-Systems, The Garland
Division, Dallas, Texas
Hardware: 33-MHz 486, 8MB RAM,
320MB hard drive



Name: Bill Warden
Position: Vice president
Company: Weber Management,
Huntington, New York

Hardware: 16-MHz 386, 10MB RAM,

140MB hard drive

#### **Laurel Winwright**

Laurel employs Harvard Graphics to illustrate technical manuals used by her company's insurance agents.

Harvard Graphics' latest version is much more flexible. I just did an organizational chart I never would have tried before; now you can easily redraw this kind of chart, size it, and move it around. I don't like that the program redraws whenever you revise, which can take a long time. An option to turn off the redraw feature would be helpful.

A huge improvement is that when you are importing data from a spreadsheet, you can view the spreadsheet within *Harvard Graphics* rather than having to remember the column headings. AutoBuild is also a terrific time-saver; it lets you create a single chart and show

components of it in different slides, so you don't have to create a separate chart for each slide.

The new version lets you print PCX files—handy if you use them for slide shows. Also, you can continue working on charts while printing, which you couldn't do before. Generally, printing was slow until I figured out how to get the software to recognize the additional memory I'd installed in both my PC and the printer. Of course, if I did only slower draft-quality printing, I might not need that extra memory.

If you've used previous versions of *Harvard Graphics*, it can be difficult to get used to this new icon-based version. In many ways, it's like learning a brandnew program. The \$125 upgrade is expensive, but I feel it's worth it.

40433	REPORT CARD					
(A)	Charis	sma 2.0	Freelance Plus 4.0			
Cision .	Bob Gaines	Ed Lenfestey	Henry Draughon	Bob Martin		
Ease of use	A	B	B	B-		
Planning/organization	B-	0	*	B		
Charting	$\mathcal{B}_{+}$	$\mathcal{B}_{+}$	A-	B+		
Enhancement tools	A	B	B	A		
Output	A	B	A-	A		
Service & support	A	A	A-	A		
Overall	A-	B	B+	A-		

	Harvard G	iraphics 3.0	PowerPoint for Windows 1.0		
	Richard Johnson	Laurel Winwright	Robert MacKay	Bill Warden	
Ease of use	B	B	A	A	
Planning/organization	B	A-	B	B+	
Charting	C	A-	0	B-	
Enhancement tools	C	A-	C	B-	
Output	C	B+	B	A	
Service & support	A-	A	B	B	
Overall	B-	A-	B	A-	

\*User did not use feature or test it fully.

#### POWERPOINT FOR WINDOWS 1.0

#### **Robert MacKay**

Robert uses PowerPoint for Windows together with Charisma to create accounting presentations.

PowerPoint is a good product, but I can't use it without Charisma, and vice versa. Charisma is best when I want to generate detailed flowcharts and fancy graphs; PowerPoint's weakness is charting. I use PowerPoint to put the text together; copy in the Charisma graphs; and take advantage of its Master Slides feature.

PowerPoint's biggest strength is its ease of use. I really like the Notes feature for slide shows: You can put notes on a page along with a small rendition of each slide, which really helps when you give a presentation.

#### **Bill Warden**

Bill uses PowerPoint for Windows to create presentations in his management consulting practice.

I've been very happy using *Power-Point* for the last year, although after I'd done a couple of presentations, I went out and bought *Excel* for the graphs. But this didn't bother me once I realized that *PowerPoint* wasn't meant to be a sophisticated charting package. For creating presentations, it's good.

I like that *PowerPoint* lets me work directly on a presentation rather than having to take the fill-in-the-blank approach of other graphics packages. I'll just start with an idea and build from there, which speeds up the process. I also like being able to make every aspect of a presentation consistent while I'm creating it.

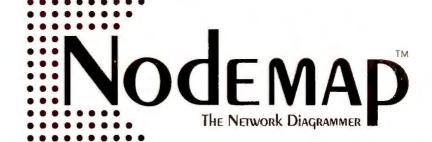
The program's ease of use is great. I'd been using *PowerPoint* for three months before I opened the manual. In my opinion, having to read the instructions for a piece of software should be against the rules. 

意

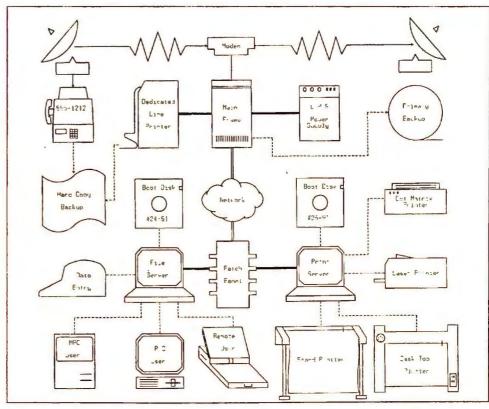
Alice LaPlante is a freelance writer in Palo Alto, California.

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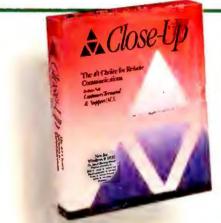
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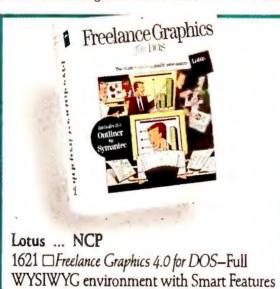
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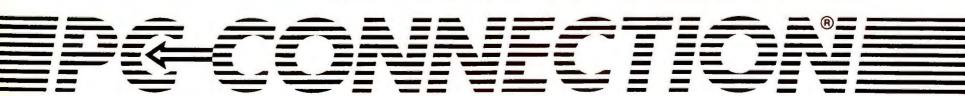
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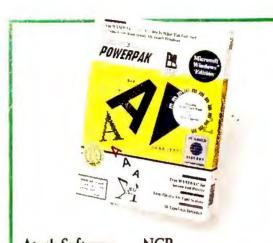


Lotus ... NCP 5799 Ami Pro 2.0-Powerful & visual word processing for Windows made easy! Includes customizable SmartIcons for one click access to often used features, outlining, tables, drawing, a full macro language, & much more \$309.

	Quarterdeck NCP
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4586	□DESQView 2.3
4500	QUE Software NCP
4155	■ RightWriter 4.0
1857	RightWriter 4.0 Network
1007	Reality Technologies NCP
7891	•WealthStarter 1.0
6572	WealthBuilder 1.1
0372	Reference Software NCP
4396	■Grammatik IV 2.0 59.
7483	Grammatik for Windows 2.0
7400	Roykore NCP
2473	■Instant ORG Charting! 1.0 125.
8162	ABC Flowcharter 1.1 189.
0102	Sitka NCP
6675	□TOPS Network Bundle 3.0 159.
3720	Flashcard 2.1 (Apple Talk network card) . 155.
3/20	Softlogic Solutions NCP
3542	Software Carousel 5.0
3342	Software Publishing NCP
3496	□ Professional Write 2.2
9638	□ Professional Write Plus 1.0 169.
3482	
6600	☐ Harvard Graphics 3.0
0000	Software Toolworks NCP
9859	Word for Word/Windows 4 2 47.
9859	
7977	Solution Systems NCP  Brief 3.1 (Programmer's Editor) 189.
1911	
1415	Spinnaker NCP  PFS: WindowWorks 1.0 129.
7604	
7004	©PLUS for Windows 2.0
1400	• Stacker 1.1
1409 1408	Stacker 1.1 w/8-bit coprocessor card . 159.
1408	Symantec NCP
6397	☐ The Norton Backup 1.2 (Windows/DOS) 89.
3146	The Norton Utilities 6.0
3425	□ Q&A 4.0
	Norton Anti-Virus 1.0
7999	The Norton Desktop for Windows 105.
2359 8378	□PC Anywhere IV 4.03 125.
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9046	□Complete Writer's Toolkit 1.1
6564	Software Bridge 5.0
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9847	■M.Y.O.B. for Windows
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2987	Timeslips III 4.0
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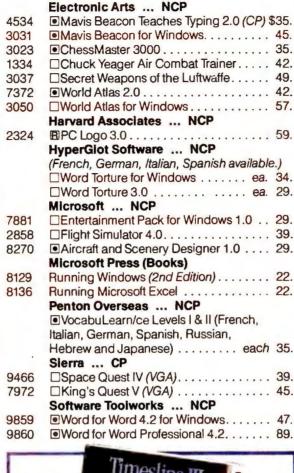
	Timeworks NCP
6253	Publish-It! 2.0
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1051	□Color Graphics Presentation 1.0 95.
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3804	□WordPerfect 5.1
6685	DrawPerfect 1.1
	WordStar International NCP
1482	Correct Grammar 1.0 for Windows 65.
6791	□WordStar Professional 6.0 199.
. *	XTREE NCP
1202	■XTree Easy 1.0 45.
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0.0.	Z-Soft NCP
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	El Civil War (vol. 1, 2, or 3) ea.	27.
	Toyogo NCP	
2702	Go Junior for Windows	24.
2701	■Go Master for Windows	39.
2703	Nemesis Deluxe Toolkit 5.0	
2704	Nemesis Deluxe Toolkit 5.0 for Windows.	
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2629	■Mickey's 123's	
2624	■ Mickey's ABC's	35.
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	706	VGA Wonder XL (w/1 MB) 299.
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98	322	Graphics Ultra (w/1 MB)
18	338	Graphics Ultra w/VGA (512K) 479.
20	012	Graphics Ultra w/VGA (w/1 MB) 619.
	325	2400etc/i Modem (w/9600 SendFax) 139.
	620	9600etc/e Modem
0	OL.	Boca Research 5 years
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	139	(4 MB) 329. 7138 (8 MB) 539.
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	999	I/O Board for Microchannel (S/S/P) 109.
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83	381	SuperVGA (1 MB, 1024 x 768) 145.
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0.	700	Cardinai 1 year
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O.	901	Switchboard (modular keyboard) 159.
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5	184	1 X-810 /80 col 180 cos 9 nin) 185

LX-810 (80 col., 180 cps, 9 pin). . . . . . . 185.



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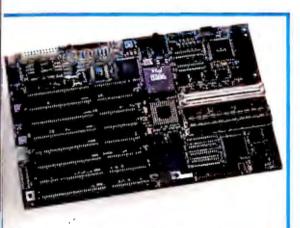
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7391	Ultra 96 Modem
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6754	LaserJet III (with toner) 1679.
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	Hitachi 2 years
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	(with low radiation screen) 489.
	Intel 5 years
6421	2400B MNP Internal Modem 199.
5119	2400 Baud External Modem 179.
6420	2400EX MNP Modem 229.
7880	9600EX Modem 529.
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5342	Above Board Plus 8 I/O 2 MB 479.
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8903	Matched Memory 4 MB (PS/2)
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2897	Mouse with Paintbrush (bus or serial) 105.
2898	Mouse with Windows 3.0 (bus or serial) . 149.
1956	Mouse with Works (bus or serial) 155.
1896	Ballpoint Mouse (serial only) 119.
	MicroSpeed 1 year
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8994	2400 Baud External Modem (V.42 bis) 209.
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5828	TheComplete Communicator 319.
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9893	T2000SX Notebook (40 MB) 2999.
3359	T2000SX Notebook (60 MB) 3299.
3360	T2000SXE Notebook (40 MB) 3399.
3361	T2000SXE Notebook (60 MB) 3649.
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1779	T3100SX Laptop (80 MB) 3199.
1773	T3200SX Laptop (120 MB) 3499.
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1528	PS6.0 (600VA on-line UPS) 559.
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1170	2400 Baud w/4800 Baud sendfax 69.
1181	2400 Baud V.42bis Modem (2 year) 159.
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# POINTERS FOR PUBLIC

IT TAKES A LOT MORE THAN A PC AND A GRAPHICS PACKAGE TO MAKE A PRESENTATION SIZZLE. HERE'S WHAT YOU NEED TO KNOW BEFORE YOU FACE YOUR NEXT AUDIENCE.

#### **BRONWYN FRYER**

herese Myers, CEO of Quarterdeck Office Systems, packed more than pretty slides when she visited prospective investors prior to her company's initial public offering in June 1991: She was armed with a hard-nitting pitch that resulted in dramatic profits. The demand for Quarterdeck shares far surpassed the 3.4 million offered. Less than a month after the company went public at \$10 a share, the stock had soared to \$17. "Terry's ability to give a great talk made all the difference," says John Siegler of Montgomery Securities, Quarterdeck's leading underwriter. "She's enthusiastic, she's sincere, and she's able to articulate her story very well."

In today's business world, effective presentation skills are a requirement of management. Executives are expected to give polished, coherent, and exciting presentations to attract prospects and investors, keep customers loyal, inform the press, and train employees. "People who can express a message effectively are put in the forefront of their companies," says speaking coach Jerry Weissman, head of Power Presentations in

Santa Clara, California.

Outstanding speakers have learned from experience that there's more to a presentation than a pie chart. Here we've gathered ten commonsense presentation tips from the pros—guaranteed to help you get your message across to the toughest audience.

#### TIP 1

#### **GET YOUR STORY STRAIGHT**

The biggest pitfall for most presenters is a failure to give a focus to their material, says Weissman, who coaches high-tech heavies such as Myers and Microsoft CEO Bill Gates in the fine art of The Talk. Those who drown listeners in information "turn off the audience."

The most important ingredient of a good presentation is a coherent story, according to Paul Davoust, group product manager for Borland International's spreadsheet business unit. With Weissman's help, Davoust learned to focus on the message he wants to communicate, then select three or four key points that prove his argument. He whittles down an outline, cutting away extraneous details, then emphasizes ideas that strengthen the overall story.

By keeping his argument straightforward, Davoust says, "I'm able to hold the attention of the audience and get my message across."

#### TIP 2

#### SEE YOURSELF AS OTHERS SEE YOU

An initial videotape session with Weissman was "worse than shock therapy," recalls Bernie Vonderschmitt, president of semiconductor company Xilinx. "You find out how incredibly stupid you look and sound."

But rather than hold open season on a client's mannerisms, speech coaches use the camera to encourage clients in the things they do right. "When we viewed the tape," recalls Davoust, "we made a list of some good speaking habits I already had, like looking at individuals in the audience or gesturing with my hands. Then we built on them."

#### TIP 3

#### PRACTICE MAKES PERFECT

Davoust recalls a nightmare experience of several years ago when he had to fill in for someone else at the last minute. "I knew nothing about the au-

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### The Right Typeface

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### BAD NEWS

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We offer the example at left as a simple demonstration of the power of type. Why, if a typeface can make a letter from the IRS appear inviting, think

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dience, and I'd never seen the slides. It was a recipe for disaster."

Such quandaries can be avoided by ferreting out as many details as possible beforehand about the audience; other speakers; the size, decor, and lighting of the room; the audiovisual setup; the position of the podium; and so on. Then practice, practice, practice. Weissman advocates going through several rehearsals with your slides; loading them into the carousel yourself; and knowing your presentation cold. "If you can't remember your presentation, nobody else will." Myers practiced her dog and pony show through more than half a dozen sessions with Weissman and many more hours without him. "I've learned that slapping together a presentation during an hour on the plane the day before doesn't cut it," she notes. "Now I take at least two weeks to prepare a talk. I let it cool off for a day after I sketch out my ideas, and then come back later to refine it."

#### TIP 4

#### CONNECT WITH YOUR AUDIENCE

Podiums, pointers, slides, and notes "create barriers between you and your listeners," points out Weissman. The best speakers don't rely on external tools, but keep the audience's focus on themselves with expressive hand and facial gestures.

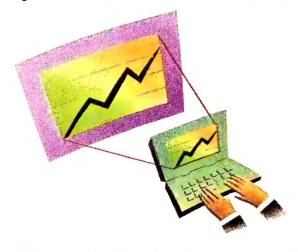
Jargon is another barrier, says Davoust. During his nightmare experience, instead of explaining how to build an effective graph in terms that his business audience could have understood, he waxed theoretical about rasters and vectors. "I saw all the eyes in the audience glaze over," says Davoust. Presenters fall into technobabble, explains Weissman, because "they assume everyone else knows as much as they do."

On the other hand, using listeners' business vocabulary will make them prick up their ears, says Weissman. Investors, for example, respond to phrases like "barriers to entry," "installed base," "market share," and "strategic relationships." Likewise, it's important to make the presentation relevant to the audience, even if it means saying something as simple as 'It's great to be in St. Louis.' Tone is also a consideration. Says Davoust: "I don't use 'I' or 'you'; I say 'we."

#### TIP 5

#### ENTER THE COMFORT ZONE

Even experienced speakers occasionally have to cross the Sahara of stage fright. To loosen your stranglehold on the podium, Myers suggests an effective trick: "Instead of addressing the room, talk for a few seconds to one person, then another, then another,



then another. This helps you feel more at ease because it's like having a oneon-one conversation."

Davoust adds that most presenters get nervous because they're not familiar enough with their material. The flat-out petrified should try to identify the source of fear: "Once you know what's making you uncomfortable, you can gain some control over it."

#### TIP 6

#### EASY ON THE GRAPHICS

When presenters haul out the heavy artillery—say, a 100MB 386 laptop and a snazzy graphical presentation replete with slide show—they create a false sense of security for themselves. "It's easy to go crazy with sophisticated technology," says Weissman, "It's like putting a Ferrari Testarossa in the hands of a 12-year-old."

Speakers get into the most trouble

when grappling with graphics. Too many colors, bullets, fonts, and data charts can create a murky slide-show stew. "I discovered a long time ago that you should put only a few bullets on a slide," says Davoust. Most presentation trainers recommend having no more than six lines per slide and ten words per line. Use colors conservatively and for emphasis only, with an eye to the lighting and color of the room. The single most important graphics rule? "Don't overdo it," emphasizes Davoust.

Weissman recommends "building" slides. If you're using three or four slides to explain a concept, reveal the title slide first; on the next slide, show the title along with the first supporting point. On the following slide, display the first and second points, highlighting the latter, and so on. Building the concept makes it easy for the audience to absorb.

#### TIP 7

#### GO FOR IT—BUT REMEMBER MURPHY'S LAW

While most presenters send their graphics out of house for conversion into 35mm slides, many are choosing the more cost-effective, flexible, and efficient option of electronic presentations, which can be run directly from a laptop on a large-screen VGA monitor.

Myers uses IBM's Storyboard Plus to create her screens: "With this kind of program, you can add a slide at the last minute—even on a plane." She sets up templates that she uses over and over again, "so it's very simple to put in new text for every slide set; I know exactly what will fit on each slide." She also arranges for a large-screen monitor or a rear-projection unit to be installed at the presentation site, and then runs the slide show on her Compaq LTE 386 laptop, which she usually stows inside the podium.

What's the hitch? "Murphy's Law," says Weissman. "Anything that can go wrong will." The more technology involved, the more potential problems. For this reason, trainers recommend

packing extras of everything as far as possible, including hardware, software, floppies, monitor, cables, and audio components.

#### TIP 8

#### Q AND A THE REAGAN WAY

The question and answer session can be the toughest part of any presentation, particularly if the audience is inquisitive or hostile. Good presenters begin by announcing the length of time they will devote to answering questions. They repeat or rephrase questions for the rest of the audience to hear, and they select questioners by starting at one side of the room and moving across to the other.

Regardless of their political stripe, speaking pros like to point to Ronald Reagan as the master of the Q and A. Whenever Reagan answered a question, notes speaking trainer Bill Koefoed, president of San Franciscobased William A. Koefoed Associates, "he ended with a PR statement, like 'One of the most important things we have to do is understand the needs of the taxpayers." A commanding speaker will rephrase an antagonistic question in a neutral way and end with a PR statement. For example, if you are asked why your product is so expensive, respond with "The question is about our pricing strategies." Then present the facts neutrally, summing up with a statement such as, "We want to give our customers the best possible value for their money."

But pulling off a PR statement doesn't mean trying to put one over on the audience. "People always know whether a speaker's genuine or not," cautions Vonderschmitt. "Credibility is everything."

#### TIP 9

#### LEAVE THE WHOOPEE CUSHION AT HOME

Poor presenters often rely on canned humor. "Presentation gimmicks have become a cottage industry," says Weissman, with obvious distaste.



#### DO ...

understand your audience. make your story clear. practice often.

be sincere.

address individual audience members.

be animated.

bring extras of everything just in case.

keep the audience's attention on you.

allow time for points to sink in. focus your material.



#### DON'T ...

assume the audience understands your business.

digress.

use jargon.

put too many words or colors on a slide.

tell jokes or use gimmicks.

depend on the podium.

rely on notes or pointers.

talk to the ceiling, walls, or floor.

glue your hands in one place. speak in a monotone.

"They're insincere."

Koefoed mildly disagrees. "I like graphics and cartoons because they can make a point fast," he notes. "Humor used tastefully can be effective."

Both Weissman and Koefoed agree that people who are neither funny nor natural storytellers should steer clear of attempts at humor. But, adds Koefoed, "Just about anybody can tell a one-liner in spontaneous situations."

#### **TIP 10**

#### TEMPO ADAGIO

Like symphony conductors, good speakers have a well-developed sense of timing and tempo. "Some speakers are afraid of silence, but it's a powerful tool," says Weissman. Even hyperactive speakers, he insists, can learn to wait for a point to sink in and then move on. "You don't want to slow down. You should speak at a natural speed, but keep the hesitations in between."

#### THE SEARCH FOR PERFECTION

Becoming a master communicator is like learning to play a stinging game of tennis—it demands self-discipline, time, patience, and commitment. It also helps if you have a good coach. Cypress Semiconductor CEO T. J. Rodgers, says of Weissman: "I'm like a high-school star, and he coaches the Celtics."

With enough time, practice, and coaching, even nervous tics can be turned into audience warmers. Bill Gates, for example, learned to convert a habit of pushing his glasses back on his nose into a trademark. By the time he took the podium at last year's COMDEX Fall, the world's largest trade show, Gates had shed his nerd image. Instead, wrote *USA Today*, he was a "polished, elegant, black-suited orator." Gates's comment? "Well, we're a little more elaborate now."

Bronwyn Fryer is an associate editor for PC World.

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Geneva Bold
Geneva Bold Oblique

Tiempo Tiempo Italic Tiempo Bold Tiempo Bold Italic

#### Showtime Burlesque

Pageant Opera

#### Poster

Financial
Financial Oblique
Financial Bold
Financial Bold Oblique

Journal
Journal Oblique
Journal Bold
Journal Bold Obliqu

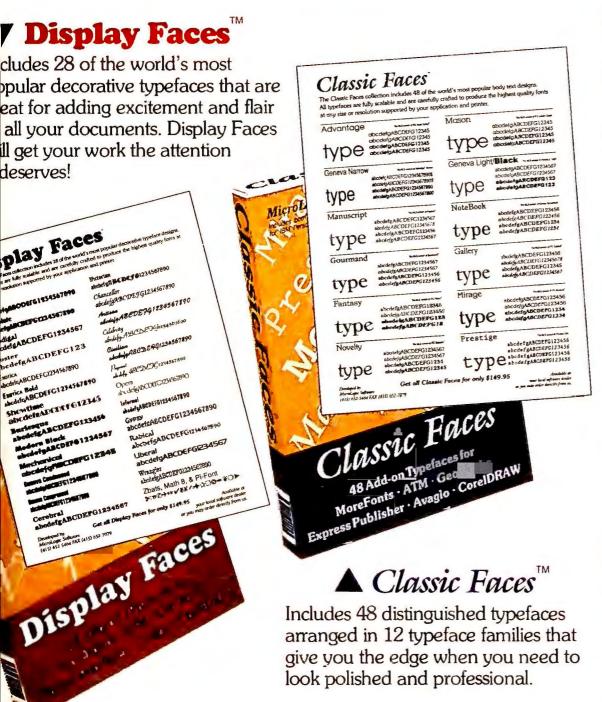
Gourmand Italic
Gourmand Bold
Gourmand Bold Italic

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## High quality add-on type that works with all your applications

ormal, casual, conservative, or wild—each typeface you use creates a different impression. ow you can project the appropriate image for each occasion by selecting the "right type" from MicroLogic's aciting collection of Display and Classic typefaces. Whether you need flashy headlines or clean, crisp body text, will find it here. Either way, add-on type from MicroLogic Software is the best deal because it looks great and lests less than add-on type from other vendors. Each typeface is fully scalable and mechanically hinted to usure the highest quality at all sizes and resolutions. **Plus**—only add-on type from MicroLogic comes with a conversion utility so every classic and display typeface works with all of the applications listed below:



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Use Display and Classic faces with MoreFonts and any MoreFonts supported application. Enjoy the highest quality type, exciting special effects, and world record speed!

#### PostScript Type 1

- Adobe Type Manager (ATM)
- Adobe Illustrator
- CorelDRAW!
- Micrografx Designer
- Zenographics SuperPrint

and any other type-scaling programs supporting the PostScript Type 1 format.

#### GeoWorks

- GeoWrite
- GeoDraw
- Banner

and any other type-scaling programs supporting the URW or Nimbus-Q formats.

#### Agfa/Intellifont

- Type Director 2.0
- Calendar Creator Plus
- Express Publisher 2.0
- Labels Unlimited 3.0

and any other type-scaling programs supporting the Agfa/Intellifont format.

#### Atech

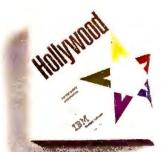
- Avagio Publishing System
- Powerpak for Windows
- Powerpak for WordPerfect/Word
- Powerpak for Ventura or First Publisher
- Avery LabelPro

and any other type-scaling programs supporting the Atech typeface format.

#### Get the MoreFonts advantage today!

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are pretty good it won't be exactly where you want to go.

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can produce your award-winning output in any combination of slides, overheads or hard copy. Or for some real show biz, present it in a lively screen-show format.

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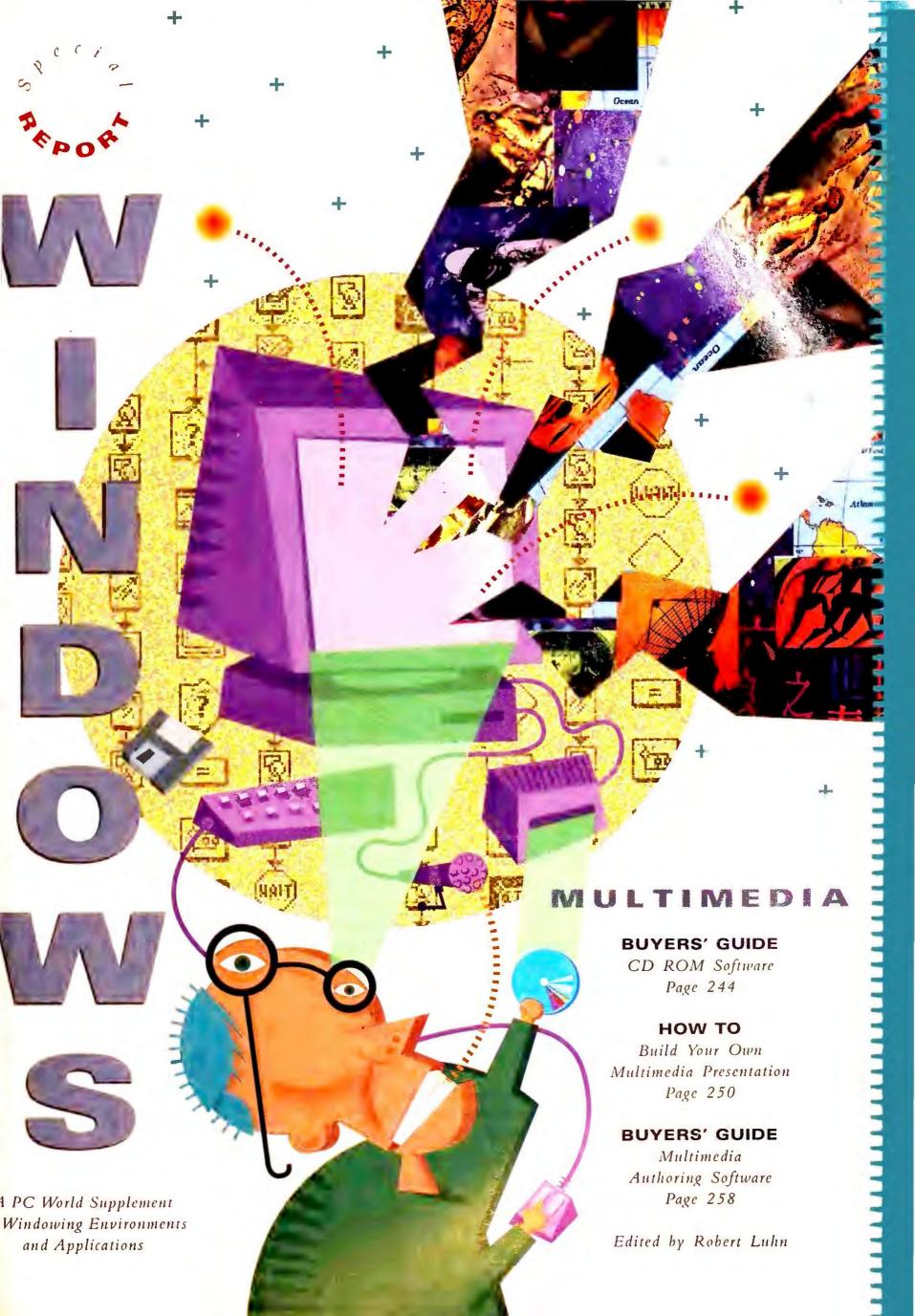
Take the first step. Try Hollywood and give your ideas the big break they deserve.



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#### Buyers' Guide

# Software

Multimedia may not have arrived at your office yet, but these 15 entertainment, reference, and education CDs hint at what's to come in tomorrow's powerful business applications.

#### William Rodarmor

ver watch kids play arcade games at the mall? The rapt concentration, the total involvement those games elicit, comes from the way they fully engage the senses—vision, hearing, and touch. Players interact with the game instead of just being passively receptive. That kind of active engagement is what multimedia promises for the future of computing—even, unlikely as it may seem, for business software.

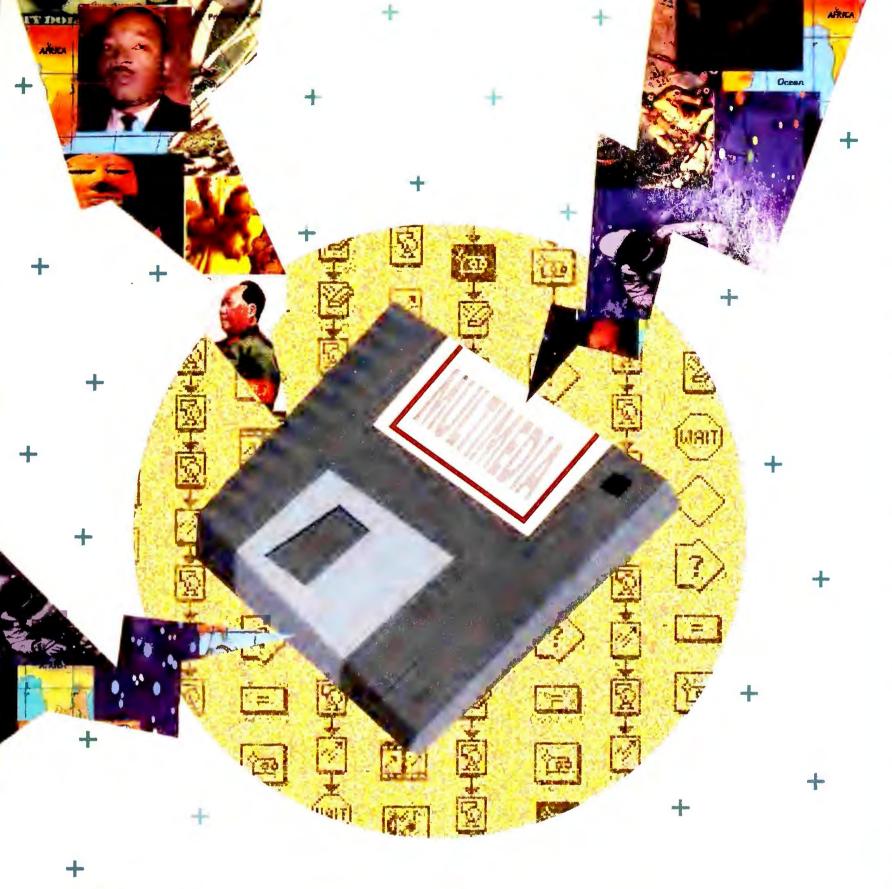
However, the first off-the-shelf multimedia applications have little to do with business. Instead, expect to exercise your hand-eye coordination playing arcade-style games such as *Stellar 7* and enrich your knowledge of music history with *Composer Quest*.

To run these amusements, you'll need a PC with a CD ROM drive, a sound board, speakers, and decent graphics. We ran the software in this guide on an early entry in the multimedia PC (MPC) race—the Tandy 4025 LX Multimedia (the company also offers upgrade kits for its other systems). Shipping in October, the LX is the first multimedia machine on the market, but it certainly won't be the last. Besides Tandy, such major players as Fujitsu, CompuAdd, Philips, and IBM are also working on MPCs. Soon a range of boxes will play those shimmering CD ROM disks, but for now, Tandy's LX is your spaceship to ride.

Many of the multimedia programs listed in this Buyers' Guide—several of

which weren't shipping at press time—are still fairly primitive, and some don't run under *Windows. Compton's Multi-Media Encyclopedia*, for example, lets you watch Martin Luther King, Jr. deliver his "I have a dream" speech, but King appears only in a black-and-white photo, and the speech is a 20-second sound bite.

Still, lots of tantalizing programs are on tap, whether you have an interest in the Civil War, a passion for Beethoven, or you simply want your kids to spend a few hours with Sierra On-Line's surprisingly engaging *Mixed-Up Mother Goose*. We've assembled the following gallery to show you the variety of multimedia programs out there and to whet your appetite for those to come.



#### Education

#### **COMPOSER QUEST**

This *Windows*-based program tests and expands your knowledge of the great composers from the year 1600 to the present. It plays segments of music while displaying newspaper headlines and notes on major social and political



events of the time. Choose '1900', for example, and you'll see the headline 'Boxer Rebellion in China', hear a few bars of "Maple Leaf Rag," and see pictures of three composers to choose from. You picked Scott Joplin, right? Dr. T's Music Software, 100 Crescent Rd., Needham, MA 02194; 617/455-1454, 617/455-1460 (fax). List price: \$99. Reader service no. 621

#### **LEARN TO SPEAK SPANISH**

Games, music, and cultural information accompany 30 lessons in pronunciation and vocabulary taught by native speakers. In the prerelease *Windows* version, punching an on-screen "play" button caused the machine to enunciate such phrases as *Buenos dias*. As you hear

the phrase, a small oscilloscope-type device shows the pronunciation graphically. The idea is to listen to the machine say the phrase, try to say it yourself, and then repeat the process until you sound like your computer. English and French versions are planned. HyperGlot Software, P.O. Box 10746, Knoxville, TN 37939-0746; 800/726-5087, 615/688-6569 (fax). List price: \$99. Reader service no. 622

#### MAMMALS: A MULTIMEDIA ENCYCLOPEDIA

While this "encyclopedia" includes more than 700 pictures, movie clips, animal calls, range maps, and vital statistics, *Mammals* is really a teaching tool. Ac-



companied by roars, howls, and charging tigers, the program offers kids ages 8 through 12 a wealth of information. A playful game lets them identify and search for animals around the world. National Geographic Society, 1145 17th and M Sts. NW, Washington, DC 20036; 800/368-2728, 301/921-1575 (fax). List price: \$149.95 (\$99 to educators). Reader service no. 623

#### Entertainment

#### JONES IN THE FAST LANE

Poor Jones! He struggles to get an education and get ahead in a world where "Astro Chicken" costs \$117. Jangling music plays as you send Jones to the bank, employment office, or the "Socket City" appliance store. In the prerelease version, animated talking heads, ranging from bearded professors to female factory owners, offer Jones jobs and advice. Sierra On-Line, Inc., P.O. Box 485, Coarsegold, CA 93614; 209/683-4468, 209/683-3633 (fax). List price: \$39.95. Reader service no. 624

#### **LEISURE SUIT LARRY**

Perennial antihero Leisure Suit Larry is the ultimate womanizing creep in this interactive game (the CD ROM version ships in January). Leading Larry through his barhopping misadventures regularly brings him messy death as he seeks love and romance. (Well, maybe just love.) In the version we saw, Larry gets flattened outside the bar, drowns when its toilet overflows, and more. There is no sound other than what's on the bar's Wurlitzer, but text speech balloons let you know why Larry is striking out. Larry is a treat for the truly insensitive. Sierra On-Line. List price: \$59.95. Reader service no. 625

#### **MIXED-UP MOTHER GOOSE**

Kids ages 6 through 10 will be engrossed as they wander around Mother

Goose land retrieving items lost by its nursery rhyme characters (Peter P. Eater misplaces his wife, for example). The program sports good graphics, annoying music (you can turn it down or off), funny accents, zany choral singing, and a solid lesson in map reading. A multilingual version requires a special sound board. Sierra On-Line. List price: \$59.95. Reader service no. 626



#### STELLAR 7

At last a chance to match wits with evil Gir Draxon, master of the Arcturan Empire. During a shootout at the Terran corral, this fast-action game brings loud and explosive humiliation to the slow of trigger. Missiles whiz and thump, weapons crackle, and the warp-speed transitions to other solar systems are gorgeous. The preview version that we played left us breathless. Dynamix, 99 W. 10th St. #224, Eugene, OR 97401; 800/326-6654, 209/683-3633 (fax). List price: \$34.95. Reader service no. 627

#### Reference

#### COMPTON'S MULTIMEDIA ENCYCLOPEDIA

This slickly produced *Windows* program gives quick access to articles, photos, and recordings on topics that include history, science, and the human body. Clicking on camera or headphone icons produces high-quality color photos or stereo sound bites such as a 20-second excerpt from Martin Luther King, Jr.'s "I have a dream" speech. Britannica Software, 345 Fourth St., San



Francisco, CA 94107; 800/533-0130. List price: \$895. *Reader service no. 628* 

#### COUNTRIES OF THE WORLD

This reference disk draws on government files—the U.S. Army's 106 Country Series Handbooks—for text on the politics, history, culture, and statistics of nearly every nation on earth. Color and black-and-white maps and photos enliven the text and tables. Bureau of Electronic Publishing, 141 New Rd., Parsippany, NJ 07054; 800/828-4766, 201/808-2676 (fax). List price: \$495. Reader service no. 629

#### GREAT CITIES OF THE WORLD (VOL. 1)

This Windows travel guide offers sounds and photos of Los Angeles, New York, London, Paris, Bombay, Cairo, Moscow, Sydney, Tokyo, and Rio de Janeiro, plus tips on hotels, restaurants, sightseeing, and more. A good travel book supplies the same data, but the disk can also play local music and speak useful phrases. The prerelease version has attractive slide shows of Sydney and Rio. InterOptica Publishing, Ltd., 1213-1218 Shui On Centre, 6-8 Harbour Rd., Hong Kong; 852/824-2868, 852/824-2508 (fax). List price: \$149. Reader service no. 630

#### THE GUINNESS MULTIMEDIA DISC OF RECORDS 1991

This Windows collection can reveal the world's longest beard, the most-mar-

### Tandy's All-Terrain Multimedia Machine

he 4025 LX Multimedia is a souped-up 25-MHz 386 loaded with goodies such as Tandy's CDR-1000 CD ROM drive and a 16-bit super-VGA card that delivers all the action and power of multimedia.

System: 25-MHz 386 with 4MB RAM. Drives: 3½-inch 1.44MB floppy drive, 105MB hard drive, and Tandy's CDR-1000 internal CD ROM drive. Video: 512K video DRAM and 16-bit super-VGA; supports 256 colors in 320 by 200 and 640 by 480 resolutions and 16 colors in 800 by 600 and 1024 by 768 resolutions. Software: MS-DOS 5.0, Windows with Multimedia. Avail-



ability: October 1991.

WHERE TO BUY Tandy 4025 LX Multimedia, Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102; 817/390-3011. List price: \$4999 (without monitor) Reader service no. 619

ried monarch, and nearly 7000 other fascinating factoids. However, the disk's text search program is clumsy, and its 300 photos (most in grainy color) never seem to illustrate the juicier items. Britannica Software. List price: \$149.95. Reader service no. 631



### MULTI-MEDIA BIRDS OF AMERICA

Can't tell a plover from a pileated woodpecker? This disk covers all the North American birds in John James Audubon's seven-volume 1848 edition of *Birds*  of America. You get the full text, 500 color plates, plus many stereo recordings of bird calls. Also from CMC, at \$79, Multi-Media Audubon's Mammals. CMC ReSearch, 7150 S.W. Hampton #C-120, Portland, OR 97223; 800/262-7668, 503/639-1796 (fax). List price: \$99. Reader service no. 632

### **USA WARS: CIVIL WAR**

A history buff's delight, this disk uses text and still photos to tell tales such as why Confederate major general "Maverick Danny" Hill, who fought valiantly



at Antietam, failed to make lieutenant general. (He rashly criticized Generals Lee and Bragg). Two tracks of the CD play Civil War-era songs performed on period instruments by Alabama musician Bobby Horton. Quanta Press. List price: \$129. Reader service no. 633

### **USA WARS: KOREA**

This complete history of what Quanta quaintly calls "the Korean police action" includes extensive text, dramatic black-and-white still photos of the fighting, and recorded interviews with Korean War veterans (some profanity, parental discretion advised). Quanta Press, Inc., 2550 University Ave. W #245 N, St. Paul, MN 55114; 612/641-0714, 612/644-8811 (fax). List price: \$129. Reader service no. 634



### **WORLD FACT BOOK**

This compendium on the politics, geography, and culture of the countries of the world is compiled annually by the spookmasters at the CIA. It includes flags, national anthems, and somewhat hohum maps. Hear "The Marseillaise," see a color photo of the Paris City Hall at night. Vive la France? Bureau of Electronic Publishing. List price: \$99. Reader service no. 635 ■

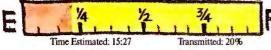
William Rodarmor is the managing editor of California Monthly, the UC Berkeley alumni magazine, and a former PC World associate editor.

For more information about all products in this article, circle reader service no. 902.

# How To Get Into PC Communications Without Jumping Out Of Windows

You forget how wonderful Windows™ is until you have to exit it to transfer a file.

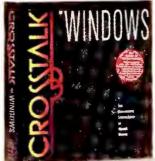
Since most communications software won't work in Windows, you're left sitting on your hands watching a "gas gauge" as your file transfer crawls from start to finish. If your comm program would let you take



advantage of Windows multi-tasking, then you could minimize it to a simple icon while you carried on with something else (like the spreadsheet you promised your boss an hour ago).

Well, with Crosstalk® for Windows

you can.



# It's All In The Background.

Not only does it keep you in the point-and-click world of Windows, but more importantly, it lets you establish connections, and send and receive files-all in the background. In fact, while you're busy on another project, Crosstalk for Windows can be answering calls, dialing a queue of numbers, transferring data or keeping a VAX\* link open. Think about it.

You can prepare "The Big Presentation" on your Windows word processor while Crosstalk for

Windows is calling Dow Jones News/Retrieval\* and capturing stock information. Then, you can cut and paste the appropriate Dow Jones data right into your presentation. Or import it transparently through DDE. You can even automate repetitious jobs (like that daily call to collect data from branch offices) by writing scripts or using the Learn feature.

Nobody Does
Windows Like
Crosstalk.
Compare the "stars" from
Software Digest.

Software Digest.

Crosstalk for Windows

Crosstalk for Wind
Smartcom III
Procomm Plus

Windows

DynaComm
Asynchronous Edition
Relay Gold
MicroPhone II for

is a sure bet."

Take A Free
Test Drive.

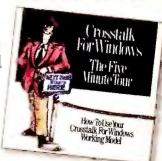
The Ultimate Comm Package For Windows Shoppers.

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### How To

# Multimedia Presentation

You don't need a Star Wars budget or a computer science degree to hop on the multimedia bandwagon. Here's a step-by-step guide to creating a multimedia presentation.

Erik Holsinger

big step in making PCs truly personal. Instead of dully responding to commands, a multimedia application can interact with users by giving them random access to any part of the presentation they desire. Such an application can also integrate animation, stereo sound, full-motion video, and cinematic effects (such as wipes and dissolves) to make its point tellingly. Multimedia can teach, entertain, sell new products, or simply make business presentations sizzle.

In the future, every business application—from spreadsheets to electronic mail—will reap the benefits of multimedia on PCs that come with CD ROM drives, advanced graphics displays, and sound boards. But here and now, interactive training and presentation applications are at the vanguard of multimedia's foray into business.

Multimedia has its roots in traditional presentation programs such as *Harvard Graphics*. However, creating an interactive multimedia application incorporating sound, motion, and all the trimmings is a much more complicated process than producing a typical self-running, monitor-based slide show and requires a much more powerful tool: authoring software. Use authoring software to create, say, a training application for your sales staff, and you'll find yourself up against a task as complex as programming.

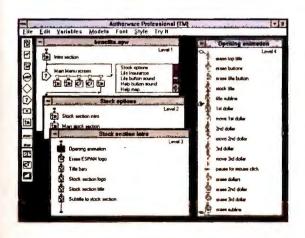
Chances are, however, you won't be

creating a multimedia application yourself-using authoring software and getting all the necessary (and sometimes cranky) software and hardware to cooperate isn't for the fainthearted. But your in-house developers or outside consultants probably will face this task, and chances are they'll be working with one of the new icon-oriented, Windows-based authoring programs. To give you a good idea of what's possible, follow along as we create an interactive employee benefits presentation using Authorware Professional, a breakthrough authoring program (in this genre). Although we used a prerelease version, the shipping program, due out by the time you read this, should offer all the functions shown here and more.



### **PLAN YOUR PROJECT**

Presentation programs don't rely on storyboards and outliners for nothing these are perfect tools for planning a



show's overall execution. *Authorware* takes a similar tack by adopting a top-to-bottom flowchart that uses icons to represent graphics, sounds, animation,

and video. You can map out the structure of a multimedia presentation, then go back and add animation sequences, program branches, and so on.

Like a slide show, each icon executes in sequence. You can reorder and copy icons and other elements; to simplify, you can pull related icons into groups or levels. In the screen shown at left, you can see how the opening animation sequence (which moves dollar bills across the screen) is stored in level 4 below the main flowchart.

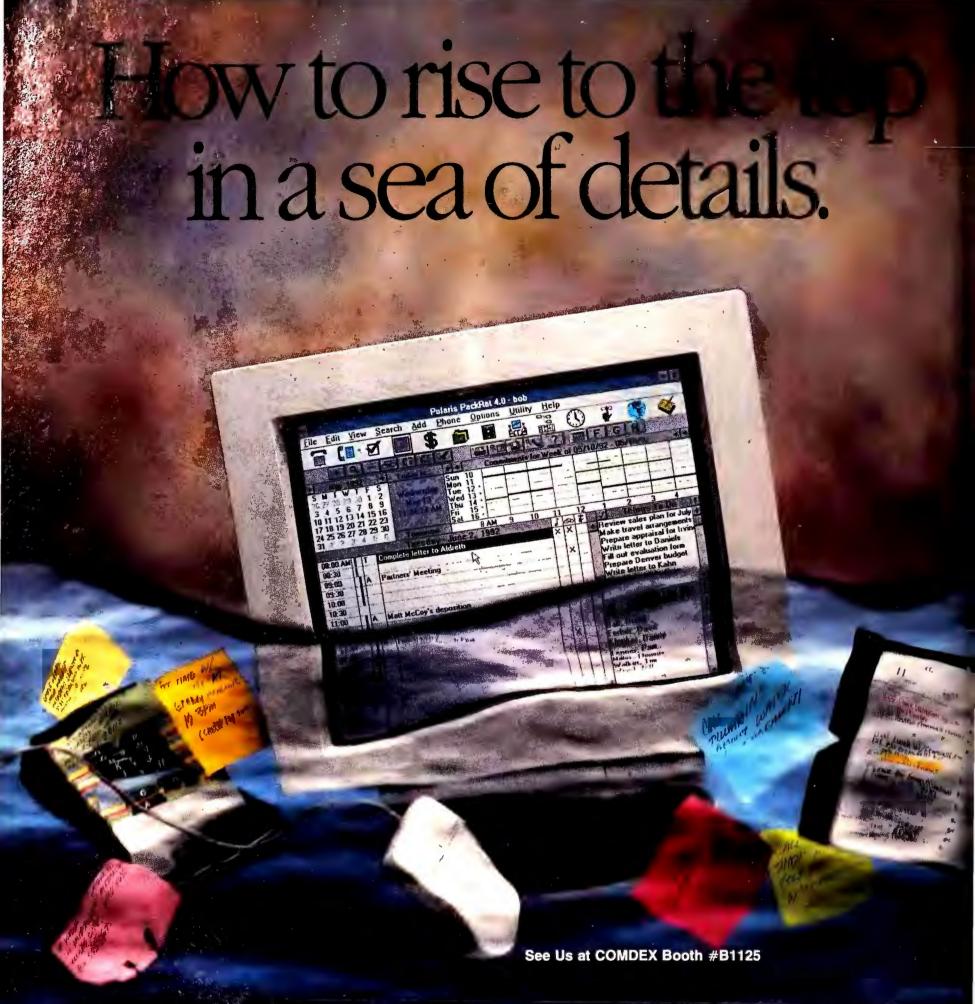
If you want the application to interact with users—say, asking for input that changes the direction of the presentation—you simply drag the appropriate interactivity icon from the toolbox and plug it into the flowchart. Creating dif-

ferent forks in the road, known as *branches*, at any point in the program is done in a similar fashion.

### CREATE THE OPENING SCREEN

Our employee benefits presentation consists of three major sections: Medical, Life Insurance, and Stock Options. On





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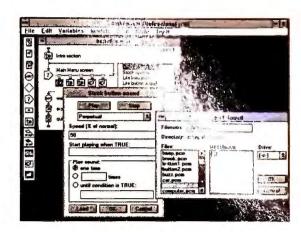
the opening screen, shown at the right on the preceding page, an employee can click on a button to view the desired section, and the presentation will branch off to that portion. To create this screen, you must import all the graphics and text that will appear on it—a task that can be nearly as time-consuming as creating the application itself.

Authorware has limited drawing and font features, so you'll have to import complex graphics and some of your text from other sources. Authorware, for example, can scale text to only 24

points, so you must import text from a paint or draw program or use a font manager to create larger type sizes. We created this screen's text in *Authorware* using *Adobe Type Manager*; as a decorative touch, we added the jubilant employees from a clip-art collection.

### ADD SOUND FOR INSTANT FEEDBACK

Sound is a key element in making a multimedia presentation interactive and convincing. In our presentation, an employee will hear a beep after clicking

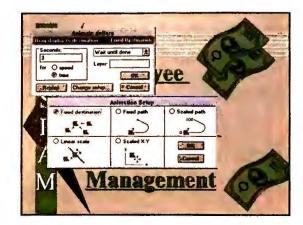


on one of the buttons in the presentation's opening screen, making the experience more realistic. For entertainment's sake, a musical theme sounds when the opening screen appears.

You can pull sound into an application by using stock sound files supplied by *Authorware*, playing it off a laser disk or VCR player, or *sampling* (recording) it with a microphone attached to a sound board. *Authorware* represents a captured sound as an icon that you can place anywhere in the flowchart; like most elements, sound can be triggered by a clicked button, the appearance of a specific image, or other events. Double-click on a sound icon, and you can specify playback speed, duration, and other options from pop-up dialog boxes (see the screen shown above).

### ENTERTAIN WITH ANIMATION

If an employee selects the Stock Options section of the presentation, the screen shown below (minus the dialog boxes) will appear to introduce the viewer to that section. It includes the title—ESPAM (Employee Stock Participation Annual Management)—of the compa-



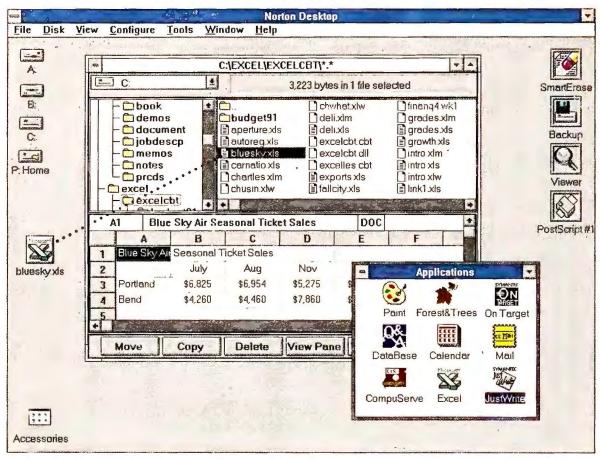
### Getting Started

hanks to falling hardware prices, setting up a dedicated multimedia workstation with *Authorware* or similar authoring programs is almost economical. A typical system might run \$16,000 or more, including the \$8000 *Authorware* software. The minimum computer hardware necessary is a *Windows*-ready PC: a 386 with 4MB of RAM, a 40MB or larger hard disk, and a super-VGA display. You'll also need a sound board, such as the \$299 Sound Blaster from Brown-Wagh Publishing, and a set of speakers. For full-motion video, you'll need a laser disk player and a video overlay card. The laser disk player is where video is stored, and the overlay card converts video images into a format that can be displayed on a VGA monitor.

You must also take into account the type of system you'll use to play back the multimedia application. At the very least, the development and play-back systems should have the same video setup—you can't create a super-VGA application and run it on a CGA system. And although the MPC Marketing Council's proposed minimum standard for running multimedia is a 10-MHz 80286 PC with 2MB of RAM, a 30MB hard disk, and a VGA display (an approximate system cost of \$3000), this setup is painfully slow for most multimedia applications. If you want sound and video in the presentation, the playback system should have the same laser disk player, video overlay board, and sound board as the development system. If the overlay boards (\$695 to \$2495) bust your budget, you can use a TV monitor to display video separately.

Multimedia may seem like an expensive proposition, but consider how much your company spent last year on meetings, manuals, and so on in order to explain company benefits to employees or to train sales representatives. Consider, too, that producing a 30-minute training video can easily cost \$60,000. If a picture is worth a thousand words, an interactive multimedia application is worth volumes.

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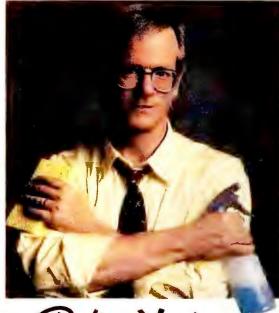
-PC Computing, August '91

the more than 150 icons provided, while The Norton Viewer enables you to instantly view files from over 30 Windows and DOS applications.

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ny's stock options program and simple animation to hold the viewer's interest. *Authorware*, however, hasn't quite achieved state-of-the-art animation. As this screen shows, you can take static images and have *Authorware* move them around the screen in limited ways. In this case, the dollars drop from the sky and land in a pile; then the image dissolves and is replaced by a screen showing employee stock options.

Unfortunately, the first release of *Authorware* won't directly import animation files generated by powerful PC programs such as Autodesk's *Animator* and *Animator Pro*. That means you may have to create sophisticated animation on a Mac and port it over.

# MAKE YOUR PRESENTATION COME ALIVE WITH VIDEO

After the Stock Options introductory screen, the viewer will automatically see

the screen shown at right, which provides three branching options. We've incorporated video into the first option as an effective, entertaining way to present dry yet important information. After an employee clicks on 'How the system works', a video window appears showing a friendly CEO explaining the company's employee stock program.

But adding video to an application—even using *Authorware*—involves hassle and expense. The video has to be stored on either a laser disk or a videotape (see "The Multimedia VCR," below), and you'll need a video overlay board to display images on a PC.

A laser disk player is the best video source because its access time is far faster than a VCR's and it can hold up to 30 minutes of video per side. Laser disks can also store still images and CD-quality audio that can be accessed by *Authorware* applications.

Once you've linked with a video



source, click *Authorware*'s video icon and you'll get a VCR-like panel that controls how video, sound, and individual frames are used by the application. You can dictate playback speed, what triggers the video playback, and start and end frames.

In theory, it works great. Unfortunately, the prerelease *Authorware* has problems displaying video—something that *should* be fixed by the release date. The lesson here? Don't assume that a multimedia authoring program can incorporate video or animation. Capabilities vary and will naturally increase as *Windows* gains multimedia muscle.

Even so, the new breed of *Windows* multimedia programs lets you do a lot. Traditional authoring programs, while powerful, aren't particularly intuitive. In comparison, *Authorware* is relatively simple yet capable. If you want a quantum leap beyond *Harvard Graphics*—or for that matter, most *Windows* programs—the time is almost ripe. *■* 

Erik Holsinger is a former senior editor for NewMedia Age and a freelance video and multimedia producer in San Francisco.

### The Multimedia VCR

Ithough laser disks are the preferred video source for multimedia developers and users, they're not the best tool when you're pulling together a last-minute multimedia presentation. An industrial laser disk recorder is far too expensive for infrequent use, and pressing a master laser disk can cost \$1800 and take two weeks.

The answer might be units such as NEC's PC-VCR. Attach this VCR to your PC's serial port, and you can embed a computer-readable timing code on videotapes without erasing existing pictures or sound. That means your multimedia program can find and play anything on the tape. Like most tape units, the PC-VCR is much slower than a laser disk player—it can take over 2 minutes to spool to the far end of a tape—and video and audio quality will inevitably degrade over time.

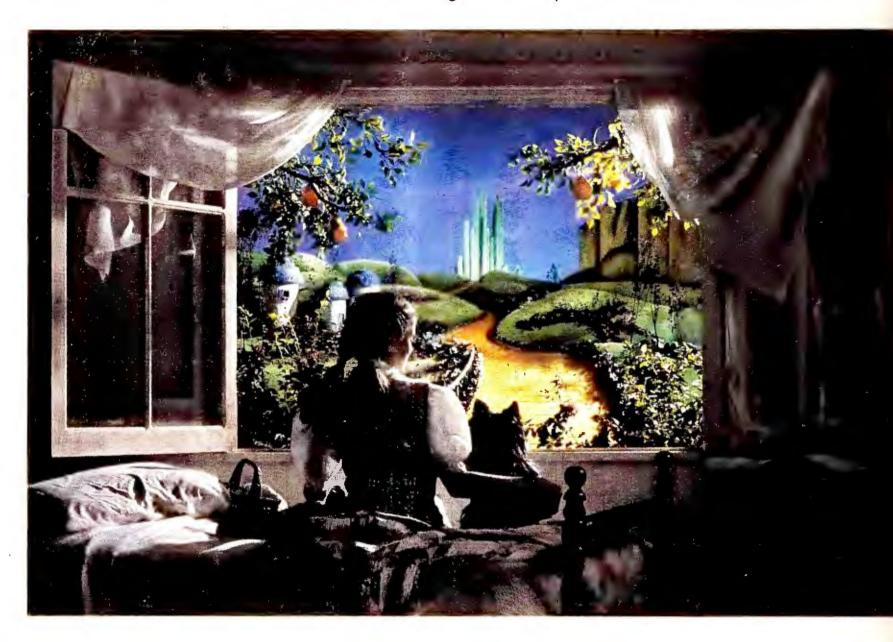
The PC-VCR comes with DOS and *Windows* video editing software, and the makers of *Authorware* have announced their support for the drive. What's still unclear is how seamless the integration between software and machine will be.

WHERE TO BUY PC-VCR, \$2100, serial cable \$55, Scene Master editing software \$299; NEC Technologies, Inc., 1255 Michael Dr., Wood Dale, IL 60191; 800/366-3632, 708/860-5812 (fax). Reader service no. 639

### WHERE TO BUY

Authorware Professional for Windows 1.0 \$8000 (training included); Authorware Inc., 275 Shoreline Dr. #535, Redwood City, CA 94065; 800/288-4797, 415/595-3077 (fax) Reader service no. 638

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### Buyers' Guide

### MULTIMEDIA AUTHORING

# Software



Want to add sound and video to your next business presentation? Check out the new breed of multimedia development tools.

### Dan Miller

ike making a movie, creating a multimedia application with an authoring program is a specialized job, yet it requires a variety of skills and resources. But if you're in the business of making presentations, training personnel, or putting together audiovisual productions, the impact and unlimited variety of custom interactive applications are worth the effort—even if you have to hire a professional developer to produce them.

Though many of the packages listed below claim to be jacks-of-all-trades, most of them fall into one of two areas of expertise. If you'd like to add sound and video to business presentations, then ACT III, Action, Ask Me, Audio Visual Connection, IconAuthor, and Storyboard Live are worth a closer look. If you want interactivity for such applications as training manuals, consider Authology, Instant Replay Professional, InterFlex, Quest, SAM V, or one of the

TenCORE packages.

Other packages address more specific needs. SantaFe Media Manager creates multimedia data bases. Guide and Publisher's Toolkit translate existing documents into an interactive, multimedia form. The new version of Asymetrix's ToolBook specializes in Windows programming. PLUS applications run on both PCs and Macs. GRASP emphasizes high-end animation programming.

These packages start at \$300, so it's possible for anyone with the appropriate graphics and sound hardware to get in on the action. Even the high-end packages, which can cost nearly \$5000, are a bargain compared with the cost of creating a videotape out of house.

**ACT III** is positioned as an all-purpose package that lets nonprogrammers create a variety of interactive presentations. It combines a word processor, animator and paint modules, a music and sound editor, and programming utilities. The program supports MIDI sound files and CD ROM audio. Informatics Group, Inc., 100 Shield St., West Hartford, CT 06110; 800/348-1377, 203/953-7407 (fax). List price: \$495. Reader service no. 602

sentation tool from the creators of *Director*, one of the premier presentation/animation tools for the Mac. You begin the *Action* process by defining objects such as graphics and text. Using built-in animation and sequencing tools, you choreograph the way these objects will appear on screen, attach sound and video effects, and create buttons. Click on the buttons to make the presentation branch to other sequences. MacroMind, Inc., 410 Townsend St. #408, San Francisco, CA 94107; 415/442-0200. List price: \$495. *Reader service no. 603* 

**ASK ME 2000 AND ASK ME PROFESSIONAL** are general-purpose presentation programs that coordinate input from a variety of sources, including Autodesk's *Animator*, sound boards, laser disks, and video boards. Both packages use Stratos, an English-like programming language, to define menus, touch-activated screens, and other screen elements. The professional version adds full-motion video capabilities and data base functions. *Ask Me 2000*, Brown-Wagh Publishing, 130-D

Knowles Dr., Los Gatos, CA 95030; 800/451-0900, 408/378-3838, 408/378-3577 (fax). List price: \$495. Ask Me Professional, Innovative Communication Systems, 112 Roberts St. #14, Fargo, ND 58102; 701/293-1004, 701/293-0431 (fax). List price: \$1795. Reader service no. 604

### AUDIO VISUAL CONNEC-TION 1.0 AND STORYBOARD

users, who can take advantage of IBM's line of PS/2-compatible multimedia hardware add-ons. *Storyboard* is for the casual user who can put together a presentation by pointing and clicking with a mouse. *AVC* is targeted toward professional developers. Its Audio Visual Authoring language lets you integrate MIDI sound files and incorporate more interactivity than is possible with *Storyboard*. IBM; 800/426-7699. List price: *Audio Visual Connection* \$544; *Storyboard Live* \$495. *Reader service no. 605* 

### AUTHOLOGY AND AU-THOLOGY: MULTIMEDIA

specialize in computer-based training applications. Authology works with digital and analog sources, including VHS tapes, laser disks, CD ROM, and CD audio. Authology: MultiMedia is all digital, supporting Intel's DVI (digital video interface) standard. CEIT, 4800 Great America Pkwy. #200, Santa Clara, CA 95054; 408/986-1101, 408/986-1107 (fax). List price: Authology \$2500; Authology: MultiMedia \$4500. Reader service no. 606

GRASP 4.0 is a souped-up animator aimed primarily at programmers. *GRASP* includes its own programming language, paint utility, and special effects generator. Its Graphics Link Plus module combines image capture, file conversion, and printer utilities. *GRASP* also handles input from *Ani*-

mator, Sound Blaster boards, and video hardware. Paul Mace Software, 400 Williamson Way, Asthud, OR 97520; 800/523-0258, 503/488-1019 (fax). List price: \$349. Reader service no. 607

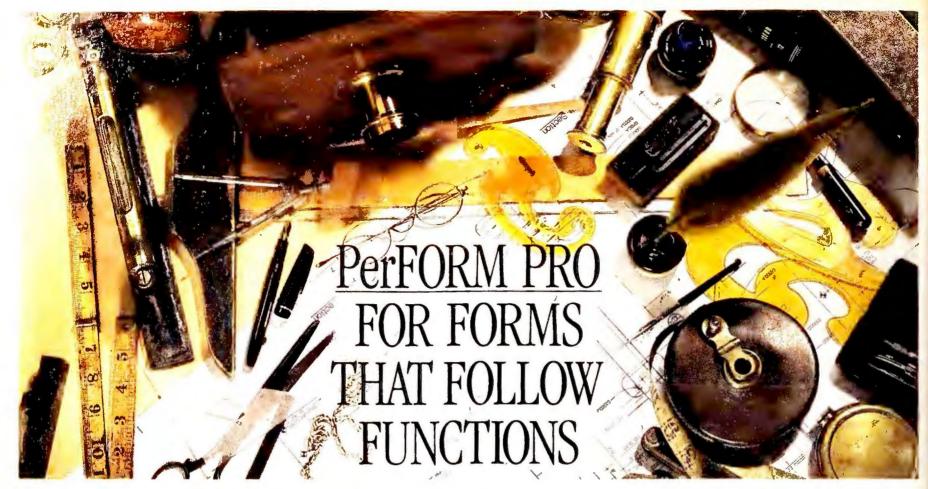
you assemble interactive reference materials from existing documents. A hypermedia package, *Guide* lets you define links between, say, a schematic diagram of a widget, a list of widget specifications, and a video clip of the widget assembly process. *Guide* users can point and click on menus or use Logiix, the program's Pascal-like programming language. OWL Int'l, 2800 156th Ave. SE, Bellevue, WA 98007; 800/344-9737, 206/641-9367 (fax). List price: \$495. *Reader service no.* 608

### -WINDOWS ICONAUTHOR 4.0

is a high-end authoring system that uses icons to represent either screen elements, such as text and graphics, or presentation processes, such as displaying, looping, and clearing the screen. Using a mouse, you place the icons along a flowchart to set their sequence. *Icon-Author* can use CD audio, MIDI sound files, and input from off-board video players. It also has a built-in animator. AimTech, 20 Trafalgar Sq., Nashua, NH 03063-1973; 800/289-2884, 603/883-5582 (fax). List price: \$4995. *Reader service no. 609* 

**INSTANT REPLAY PROFES-**

puter users to work with new applications. With *Instant Replay* activated, you can record keystrokes and screens in other programs; you can then edit and enhance them with menus, imported graphics, and video from laser disk players and VCRs. Instant Replay Corp., 4525 S. Wasatch Blvd. #335, Salt Lake City, UT 84124; 800/388-8086, 801/272-0675 (fax). List price: \$595. *Reader service no. 610* 



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educators, who can use the program's templates to create menus, pronunciation guides, and tests. *InterFlex* can parse and grade student input and repeat a lesson or go to the next, depending on the results. It offers an audio recording program (which requires additional hardware) and can control off-board laser disk players. Catharon Productions, Inc., Rt. 1, Box 8, Konig Rd., Ghent, NY 12075; 518/392-9003, 518/392-6444 (fax). List price: \$2000. *Reader service no. 611* 

### -WINDOWS - MULTIMEDIA

multimedia *Windows* applications. Beginners can cut and paste predefined programming units, while more advanced authors can write program using C or any of Microsoft's *Windows* development kits. The program imports *Director* and *Animator* images and has a VCR-like control panel that can run an off-board video source. Asymetrix, 110 110th Ave. NE #717, Bellevue, WA 98004; 206/462-0501, 206/455-3071 (fax). List price: \$300. *Reader service no. 612* 

PLUS 2.5 specializes in hypermedia applications that can run on Macs as well as on PCs. Using its plain English, object-oriented PPL language, you can define links between text and graphics and also import *HyperCard* 



With authoring packages such as Spinnaker's PLUS 2.5, you can create interactive presentations combining text, graphics, video, and sound.

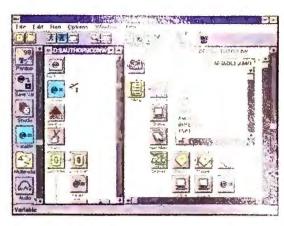
stacks. Spinnaker Software, 201 Broadway, Cambridge, MA 02139; 617/494-1200. List price: \$495. Reader service no. 613

### -WINDOWS PUBLISHER'S

roolkit, the software used to create Compton's MultiMedia Encyclopedia, is for publishers who want to translate existing information into an interactive, multimedia form. The package includes SmartTrieve Plus, a search and retrieval program, and SmartAPI, a programming interface. Britannica Software, 722 Genevieve, Ste. M, Solana Beach, CA 92075; 619/259-0444, 619/259-0449 (fax). List price: Licensing fees and royalties vary. Reader service no. 614

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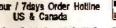
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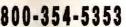
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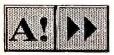
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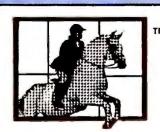


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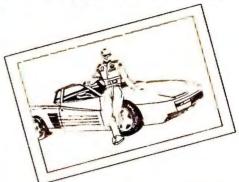
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### SPREADSHEETS (A..Z)

Practical tips for building better worksheets

### Richard Scoville

There are two basic types of macros: those that automate repetitive operations within a particular worksheet, such as printing a report; and those that ease routine tasks common to all worksheets, like summing a column of numbers, aiding data entry, and copying. While the first type is best stored in the pertinent worksheet, it's smart to make the second group accessible from all worksheets by setting up a macro library. This column will show you how to create macro libraries in 1-2-3 releases 2.2, 2.3, and 3.x and in Quattro Pro.

### A Utility Macro Potpourri

FIGURE 1 shows two simple utility macros. (As shown, they will work in 1-2-3 release 2.2 and 2.3, and in *Quattro Pro*; later, you'll learn how to modify a couple of lines for 1-2-3 release 3.) To create the macros, start with a blank worksheet and type in the macro statements (type an apostrophe before each backslash in column A). Next, put the cell pointer on cell A2, select /Range Name Labels Right (in Quattro, that's /Edit Names Labels Right), paint the range A2..A6, and press <Enter>. Then save the file: Select/File Save (in Quattro, /File Save

as), enter the name MACLIB, and press <Enter>.

The first macro, \N (cell B2), is a classic: It lets you easily enter a series of numbers into a column using the numeric keypad. Make sure NumLock is on, then start the macro by pressing < Alt>-N. The pause command  $(\{?\})$  pauses the macro to let you type data, then resumes when you press < Enter >. Type a number and press < Enter > again; the macro moves the cell pointer down one row and enters the number you just typed. The {branch} statement restarts the macro, so you're ready to enter the next number. When you're through entering data, halt the macro: Press < Ctrl>-< Break>, then < Esc>.

The second macro is more involved. It lets you copy a formula from one cell to another without changing its cell references and without using absolute cell addresses. To run it, put the cell pointer on a formula and press <a href="#">Alt>-C</a>, move the cell pointer to another cell, and press <a href="#">Enter></a>. Here's how it works:

B6: Places a label prefix (the apostro-

phe) at the beginning of the dominala, converting it to a label.

B7: Stores a copy of the label in the variable cell \XV\_C\_1 (B4).

B8: Restores the original formula by deleting the apostrophe.

B9: Displays a message in the mode indicator asking you where the copy should go.

B10: Pauses while you move the cell pointer to the destination cell. Since you are free to begin cell entries or commands during the pause, a {break} command clears the command line before the macro continues; {indicate} clears the message from the mode indicator.

B11: Copies the formula/label from \XV\_C\_1 to the current cell.

B12: Converts the new cell entry back into a formula.

### **Creating the Library**

In *Quattro Pro*, select /*Tools Macro Library Yes* before you save your library worksheet. Once you've identified a file as a macro library, its macros can be executed from any open worksheet. The

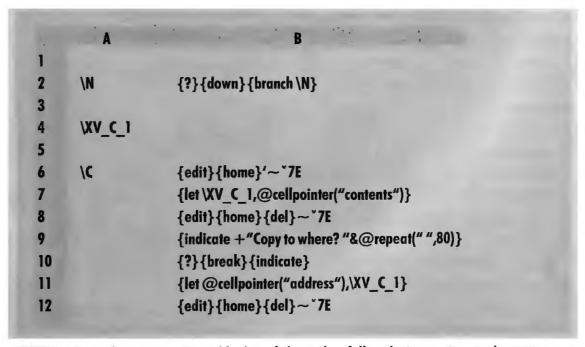


FIGURE 1: Enter these macros into a blank worksheet, then follow the instructions in the text to turn them into a macro library.

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the list in the dialog box. In the text box, edit the format to read \$?,???,??0.00\_);(\$?,???,??0.00) and choose OK. The form of your column should now resemble the following, with left parentheses and dollars signs lined up neatly on the left:

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(\$ 68,765.52)

only complication comes when a macro refers to a range name (or a cell address, though for reasons too involved to discuss here, macros should almost never refer to cell addresses). Unless told otherwise, the macro assumes that a range name refers to the macro worksheet, not to the current one. So in \C, the statement in cell B7 correctly assumes that \XV\_C\_1 is in the macro worksheet. If your macro needs to refer to a range name in the current sheet, precede the range name with [].

In 1-2-3 release 3, a macro worksheet requires no special designation; you can execute a macro located in any open file. The rules governing range names are a bit more complex than in Quattro: A range name reference is assumed to be in the current (cell pointer) file, unless the reference is to a {branch} or subroutine location, in which case the range is assumed to be in the macro worksheet. We need to modify our \C macro to trick 1-2-3 into looking for the range \XV C 1 in the macro sheet instead of in the current sheet. The fix is to precede the range name with a question mark wild-card file notation. For instance, B7 would read {let <<?>>  $XV_C_1$ ,@cellpointer("contents")}.

Since the macro will search all open files to find the range name, it's important to give your macro library ranges distinctive names. I use the \X prefix: \XV\_C\_1 denotes the first variable for the library macro \C.

In 1-2-3 release 2.2 and 2.3, you need to use the macro manager add-in. First, attach it: Select /Add-in Attach and choose MACROMGR.ADN. Then assign the add-in to a function key (I use <F10>), and Quit back to Ready mode.

Once you've created your macro worksheet, as shown in FIGURE 1, put the cell pointer in A1 and press <Alt>-<F10>. Select Save, enter a file name for your macro library, paint a range that covers all your macro statements and documentation (in the figure, A1..B12), and press < Enter >. Select No to forgo password protection, and your macros disappear into the macro library. Your library macros are ready to run. (Next time you start 1-2-3, attach the macro manager: Press < Alt>-< F10>, select Load, and choose your macro library file.) The rules governing range names in 2.2 and 2.3 are simple: 1-2-3 looks first in the worksheet, then in the library. Just take care not to use the same range names in worksheets as in your library, and you won't run into any trouble.

### Questionable Spreadsheets Department

**Q.** Every week I log several budget figures by filling out another row in a template. Can I write a formula that will automatically display the total for the most recent weekly entries?

Bill Simmons Orangeburg, South Carolina

**A.** Here's a solution that works in 1-2-3, Quattro, and Excel. On page 269

### **Spreadsheet Toolbox**

The Art of the 1-2-3 Macro

If you're not sure exactly what to put into your macro library, pick up a copy of Michael Lunsford's Macros, Menus, and Miracles for Lotus 1-2-3, a treasure trove of inspiration for macro maniacs.

The book starts with "What Is a Macro" and works in simple steps up to sophisticated examples for printer control, data bases, a

checkbook register application, even a macro to turn 1-2-3 into a primitive word processor. Along the way, you'll get sound advice on range names and macro variables and lots of other useful tips.

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is a simplified version of the spreadsheet you submitted. The weekly data is shown in columns B, C, and D; the sums in column E. For instance, cell E4 contains the formula @SUM(B4..D4).

The @index() function in E1 extracts a value from a table, given its row and

column position. In this case, the table is the column of sums E4..E13. The column position is 0 (the first column or row in the table is number 0). The row position is calculated with an @count() function that counts the number of values in the data range B4..D13. When

divided by 3, that value is the number of filled rows in the data range. The @int() function trims the decimals, and subtracting 1 yields the correct row number.

Note that the formula requires an entire row of values to be filled in before it considers that row to be current. Unlike other common solutions to this problem, this approach doesn't require a column of intermediate formulas and works even when one of the sums is zero.

Send your spreadsheet questions to Richard Scoville, CompuServe 72341,2727; MCI Mail 357-4517; 415/442-1891 (fax); or mail them to Spreadsheets (A..Z), PC World, 501 Second St. #600, San Francisco, CA 94107. PC World pays \$50 for published questions. Sorry, we cannot acknowledge submitted materials. 

■

Richard Scoville is a contributing editor for PC World.

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6	3	90	28	96	214
7	4	8	25	34	67
8	5	11	76	46	133
9	6	18	21	24	63
10	7	70	13	24	107
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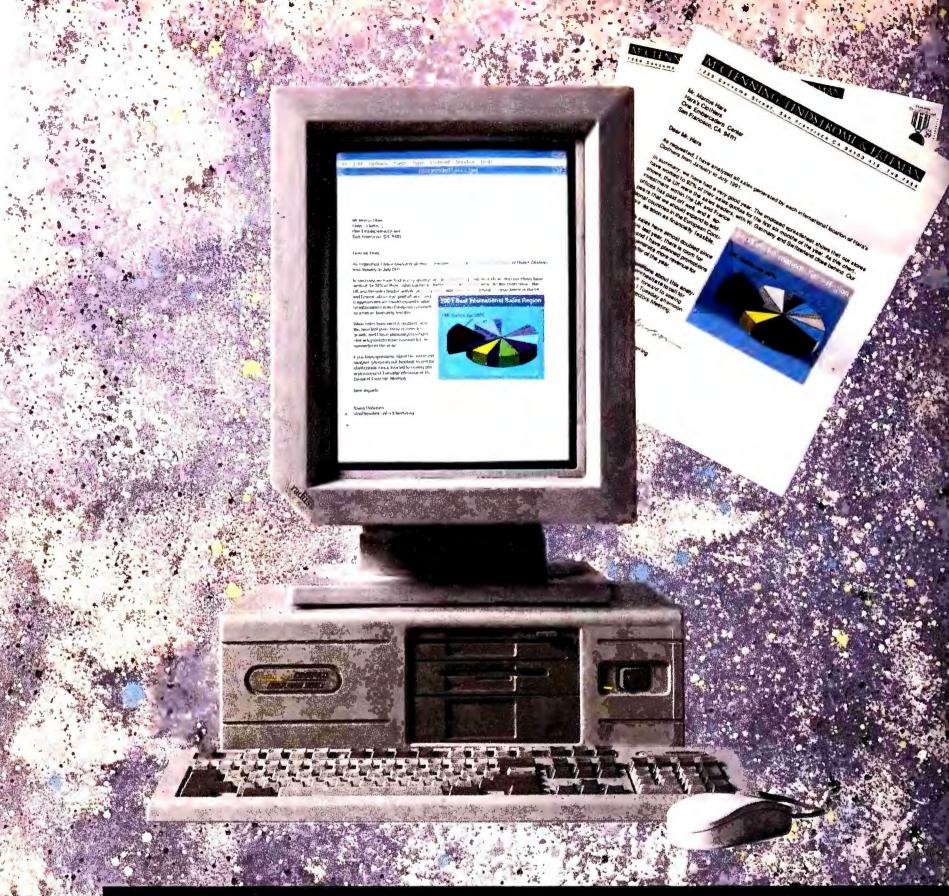
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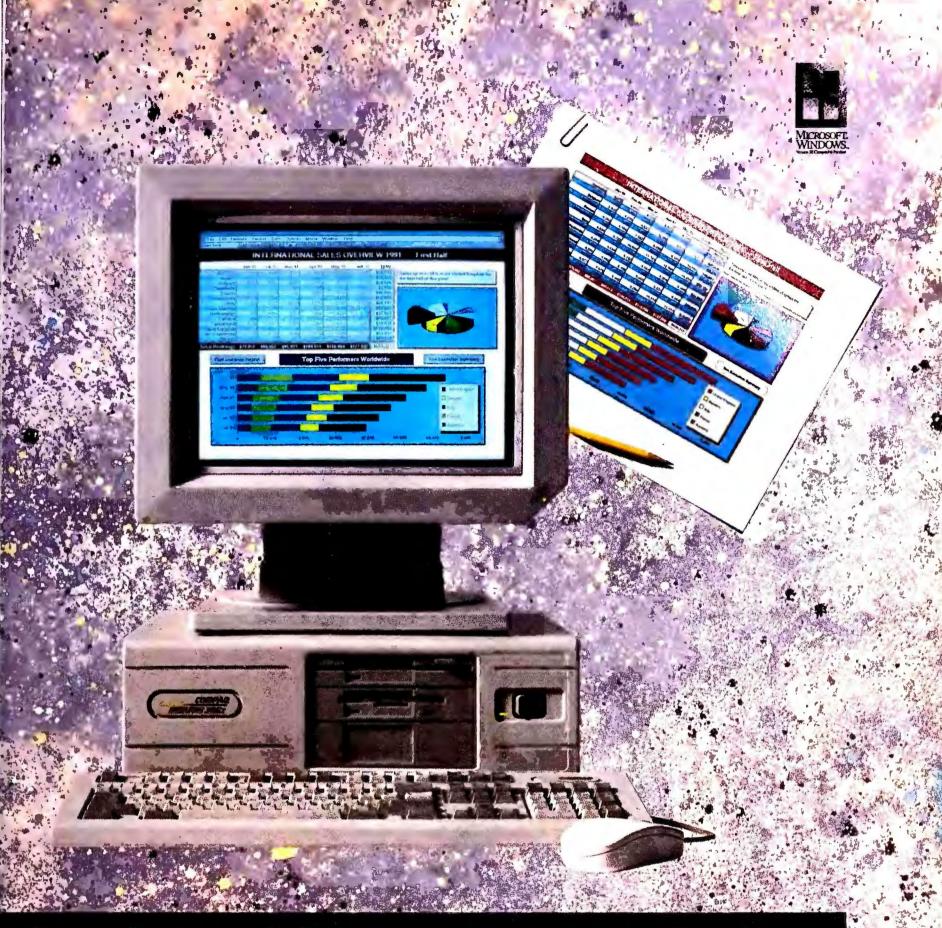
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offers high resolution full-page drivers for Windows 3.0, WordPerfect, Lotus 1-2-3, AutoCAD and others, displays up to 32,768 colors and meets the Swedish standards for low ELF/VLF magnetic emissions. We might also

SVGA card you can buy today-works with a variety of multi-frequency displays, sells for \$449 and comes with a seven-year warranty. • If the combination of Full Page Pivot and SVGA MultiView sounds like the perfect display system for all your applications, it's probably because it is. Pivot and MultiView are available from Radius, the leading manufacturer of high resolution graphics systems for

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### WORD PROCESSING CLINIC

Tips for getting the most out of your word processor

George Campbell

- Q. I liked the way WordPerfect 4.2 showed me my line number at the bottom of the screen. But now I use version 5.1, and I'm seeing a measurement in inches instead. How do I get my line numbers back? —Kirsten Yetter, Bakersfield, California
- A. I agree; WordPerfect should have left well enough alone. To see line numbers instead of WordPerfect 5.1's default measurement, just press <\$hift>-</br>

  <F1>EUSU<<F7>. As you'll see when you issue these commands, you have other measurement choices, including inches, centimeters, and points. Version 5.0 users can switch over to a line number display simply by pressing <\$hift>-</ti>
  <F1>USU<<F7>.
- Q. My printer can print the fractions % and %, but I can't figure out how to get those characters into my WordPerfect 5.1 documents. Any hints? —Alan Johnson, Boston, Massachusetts
- A. WordPerfect's little-known Compose command is the solution to your fraction problem. To insert the fraction ½ at your cursor location, press < Ctrl>-

V/2. For ¼ press < Ctrl>-V/4, and so on. That's all there is to it.

You can use the Compose command to generate foreign, mathematical, or scientific characters, as well as digraphs, or combinations of letters. For example, to produce the character c, press < Ctrl>-VC,. (You'll find a complete list of marks in the Compose section of your manual.)

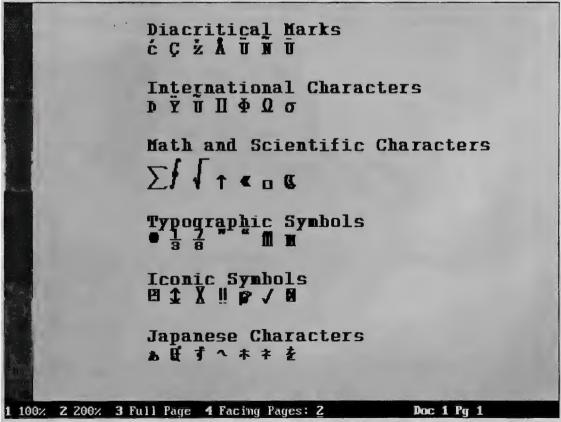
If your printer can handle graphics, WordPerfect provides up to 1500 special characters, including a myriad of foreign-language, box drawing, typographic, icon, math, and scientific symbols. (You'll find a complete list in Appendix P of your manual.) To insert any of these characters, press < Ctrl>-V, type the number of the character set, a comma, the number of the character you want, then press < Enter>.

If you insert a special character that's not available in the IBM character set,

you'll see a solid box on the screen. To view your characters as they will print, press <\$hift>-<F7>V for a page preview. You can also view some additional characters on EGA, Hercules, and VGA screens by selecting a 512-character display with this command: <\$hift>-<F1>DC5<F7>.

A couple of caveats: Your printer must be capable of printing graphics for Compose to work. Also, if you choose a character that isn't in an internal printer font, *WordPerfect* prints the character in its own font, so what you see may not be what you get. Finally, the <Ctrl>-V command, which prompts you for the characters, works only in the normal editing screen. If you're working with tables or other special editing screens, use the promptless <Ctrl>-2 Compose command instead.

By the way, WordPerfect 5.0 users have many of the same capabilities. See



Using a flexible, yet little-known WordPerfect command called Compose, you can include foreign, scientific, and other special characters in your documents.

the Compose section of your manual and the listing of characters in the Appendix.

- Q. I like using Word for Windows, but I think its default 10-point Times Roman font is far too small. I know I can change the font in each new document, but is there a way that I can change the default font? —George Williams, Salem, Oregon
- **A.** No problem. Word for Windows uses templates to control the defaults for documents. Change the template, and: you change the defaults. When you start Winword, it loads the template NOR-MAL.DOT. Here's how to change the start-up font:
- 1. Start *Winword*, then load the NORMAL.DOT template using the *File Open* command.
  - 2. Select Format Define Styles.
- 3. In the dialog box that appears, click the *Character* button, select your new

default font and size in the list boxes, and click the *OK* button.

4. To make the changes permanent, select *File Save*. From now on, *Word for Windows* will start with the default font you selected.

As you're looking at the Define Styles dialog box, notice that you can alter many other document characteristics. By changing features such as margins, tabs, columns, and other items in NOR-MAL.DOT, you can customize your start-up document.

- Q. I often need to save a block of text to a new file. Is there a way to do that in Word 5.0? —Eric Samuels, Oakland, California
- **A.** While no version of *Word* includes this function, you're not left out in the cold. The installed MACRO.GLY glossary file lets you save the text block to a new file, but first you must merge the glossary into the default glossary file.

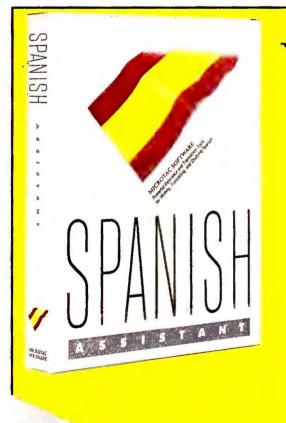
To do this in Word 5.0, press < Esc>TGM, type your Word directory's drive and path, followed by \MACRO.GLY, then press < Enter>. You can make the macro permanent just by pressing < Esc>TGS < Enter>. To save a highlighted block of text, press < Ctrl>-SS, type a file name, and press < Enter>.

Macro glossaries provide other useful macros. You'll find a complete description of them in the macro section of your *Word* manual.

Send your word processing questions to George Campbell, CompuServe 71571,222; MCI Mail GCAMPBELL; 415/442-1891 (fax); or mail them to Word Processing Clinic, PC World 501 Second St. #600, San Francisco, CA 94107. PC World pays \$50 for published questions. Sorry, we cannot acknowledge submitted materials. 

■

George Campbell is a contributing editor for PC World.



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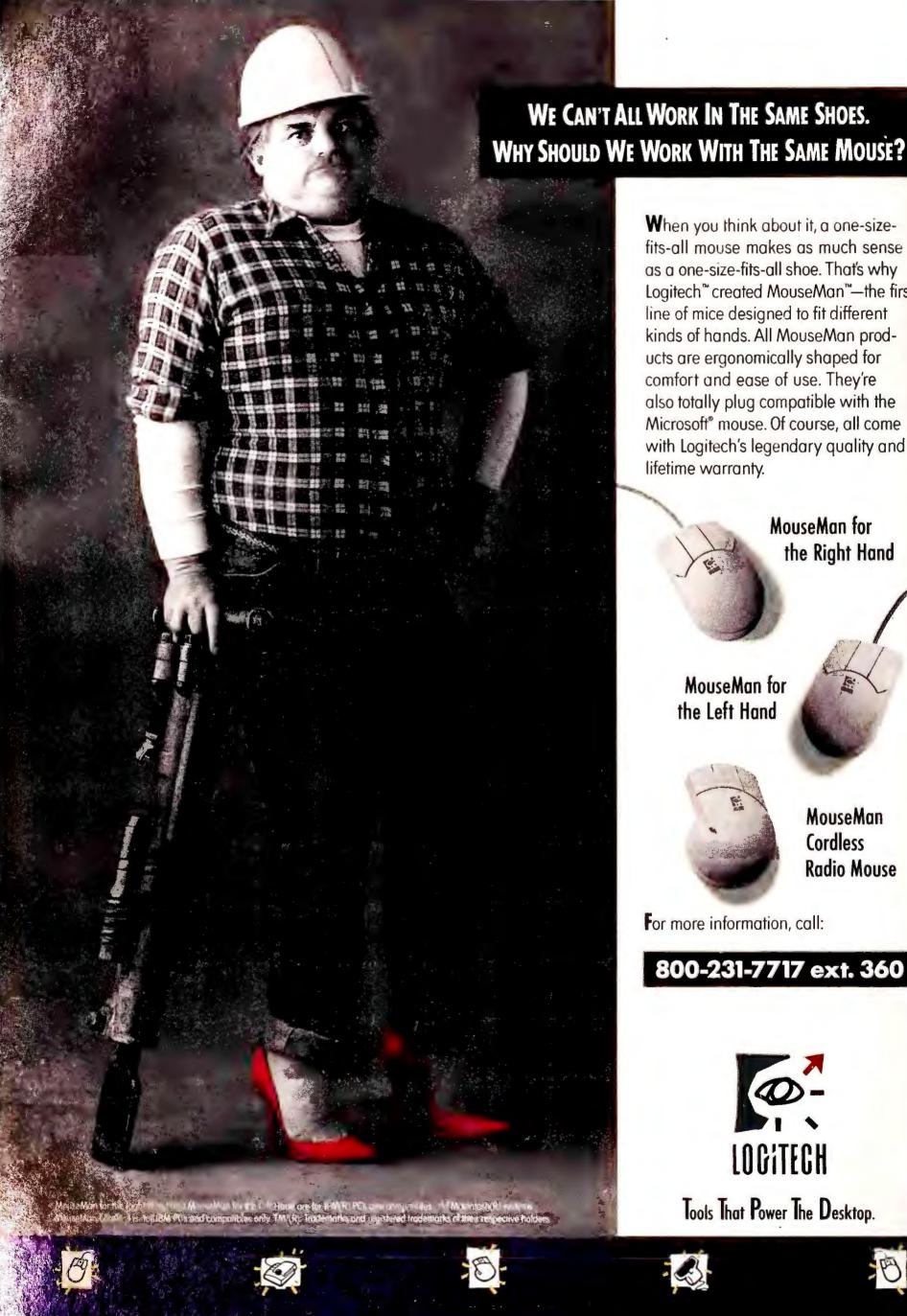
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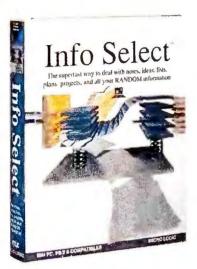
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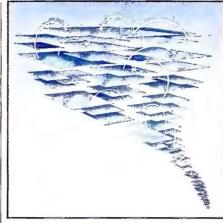
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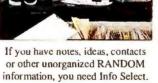


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### DATA BASICS

Tips and techniques for managing your data

Steve Cummings

Q. Can I change the way dBASE IV displays currency values? I'm gathering data on our overseas operations and want to print reports showing expenses in pounds sterling with European currency formatting, like this: 2.325,43£.

Seymour Plantagenet Salt Lake City, Utah

A. You can globally change the way currency is displayed with the DBSET-UP program, which was placed on your hard disk when you installed dBASE. First, at the DOS prompt, type COPY CONFIG.DB CONFIGDB.BAK and press <Enter> to save a backup copy of your CONFIG.DB file before changing it. Then run DBSETUP.

From the opening menu, select Config.db Modify existing config.db. At the next set of menus, select General Currency. To switch from the dollar sign to the pound symbol, choose Symbol, then press <Space>. Now hold down the <Alt> key while you type 156 on the numeric keypad. When you release <Alt>, you'll see the pound symbol. Press <Enter> to save the symbol. To move the pound symbol to the right of

the numerals, select *Justification* Right, then press < Ctrl>-< End> to return to the General menu.

Now it's time to switch the decimal point and the thousands-separating comma. As with the currency format, you make these changes from the General menu. This menu is much longer than what appears on the screen at first, and you get to its lower options by scrolling or by pressing the first letter of your option. To change the decimal character, select *Point* by pressing **P<Cursor** Down> < Enter>, then type in a comma and press < Enter>. To change the separator, select Separator, type a period, and press < Enter >. When you've adjusted the currency format to your liking, select Exit Save and exit to create a new CONFIG.DB file.

When you next enter dBASE, the

program will have an old-world flavor. If, when you design a report, you set the numeric field template as 999,999.99 and turn the Financial Picture function on (don't worry about the dollar sign on screen), the report will print in the European style.

**Q.** Our firm is using DataEase to assemble a master data base of past and prospective customers. With the names coming from several sources, there's bound to be some overlap. How can we ensure that we don't enter a customer name more than once?

Ned Langely San Mateo, California

**A.** What you need is a way for *DataEase* to warn you if two customers have identical last names. You may be

```
UPDATE MATCHING 31 ADD OR UPDATE 41 DO NOT MATCH
  ADD NON-MATCHING
                                                  FACILITY
                                    IMPORT
      DATAEASE - DATA
lease select the destination form name :
        Customers/Contacts
 lease enter the source data file name
        CUSTBAAB.DBM
hat is the data file format ? :
                                                           DATAEASE
is the source form same as the destination form ?
rocessing can be based on MATCH between existing and new records.
   DataEase can match the records being imported to the existing records
   in the destination form by matching the Unique fields.
Select 1. ADD NON-MATCHING if importing only new records.
          2. UPDATE MATCHING if updating existing records.
          3. ADD OR UPDATE if importing new and updating existing records.
             DO NOT MATCH saves time if you are importing only new records,
                             and you are sure that the import file does not
                            contain duplicate records.
   Alt-F1 Exit = F1 More Help = Ctrl-F1 On Auto Help=
F4 CMDHELP ESC EXIT J:\DEASE\
                                           Customers.
                                                                11/29/91 7 32 am
```

To ensure that you import only records with unique last names, choose the Add Non-Matching option at the last prompt on the import screen. DataEase's pop-up help window can guide you through the process.

### **Reader Tips**

**Pulling Statistics From dBASE IV** 

Need a quick breakdown of the number of purchases made by individual customers, the number of customers in various cities, or the number of people in your marketing survey who preferred particular fragrances? To group and count the records in your data base, use a dBASE IV query with two summary functions:

Group By and Count.

With the data base open, select Queries create. In the file skeleton, type group by in the field that interests you. For instance, if you just completed that marketing survey, you'd enter group by in the Fragrance field.

You'll probably want to see
the query results in order of size
with the largest group first. With
the cursor still in your "group by"
field, press <F10> and select
Fields Sort on this field
Descending.

The Count function needs a specific field to count. Type the word count in another field in the file skeleton; it doesn't matter which field you choose, as long as it's one that's never empty.

Once you've done this, simply press <F2> to execute the query.

Mitchell Johns
Denver, Colorado

tempted to validate the Last Name field as *Unique*, which will prevent you from entering a last name that's identical to the field's contents in another record. But that's not really a good idea. Because you can't override this validation criterion, you'd be stuck if Alice and Betty Chi are both customers.

Here's a work-around: Using the Define a Form command, make a second form with the same structure as your Customer form, but with no data. Call this second form **Custchek**. You can press < F5 > and select the Form option to copy the structure of the Customer form to the Custchek form.

Next, set the new form's Last Name field to *Unique*:

- 1. Select View or modify a form.
- 2. Move the cursor to the correct field and press <**F10**> to display the Field Definition Screen.
- 3. Move the cursor to the Unique field and select *Yes*.

Finally, import your data from the Customer form to the Custohek one:

- 1. Move to the *Utilities* menu and select *Import*.
- 2. Choose the *Define an import* option.
- 3. Type Customer and press < Enter>.
- 4. When you're asked if the two forms have the same structure, select *Yes*.
- 5. You will be prompted to tell *DataEase* how matching records should be processed. Select *Add non-matching*.
- 6. Press <**F2**> to save your new import definition.
- 7. To run the import, pick *Run Defined Import* from the Import menu and choose your import definition from the list displayed.

DataEase won't import a record with a last name that matches an earlier one, but such records aren't ignored. They're listed in a special Exception file, which we've named CUSTCHEK.E01 in this example. With a copy of this list in hand, you can easily go back to the original data file and examine the records with matching last names, deciding which ones are duplicates and which are just similar ones.

Q. I keep an inventory data base in Paradox, and I need to see several fields in Table View. To squeeze as many fields on screen as possible, I've allotted only a three-space column to the Qty field. That's usually sufficient, but when there are 1000 units or more of an item in stock, Paradox displays a series of asterisks instead of the number. Is there a way I can quickly see the actual values in these fields without resizing the column?

Frank James Salem, Oregon

A. When you've narrowed a Table View column so much that all the data doesn't fit, use Field View to see the entire field. Place the cursor on the field in the record you wish to examine and press <Alt>-<F5>. The cursor will become a white rectangle, and you'll be able to scroll left and right to see the contents of the entire field.

This trick is a side benefit of Field View's, by the way, not the primary purpose for which it was designed. Field View is built for the job of editing a single field at a time, and it's very easy to use for this. In Field View, the <Home>, <End>, <Cursor Left>, and <Cursor Right> keys move the cursor within the field, instead of from record to record or field to field, and the <Delete > key deletes individual characters, rather than entire records. If you're not already using Field View for editing data, whether it fits in its column or not, it might be a good idea to start now.

Send your questions to Data Basics, PC World, 501 Second St. #600, San Francisco, CA 94107; CompuServe 74055,412; MCI Mail 179-3813; 415/442-1891 (fax). PC World pays \$50 for published questions. Sorry, we cannot acknowledge submitted materials. €

Steve Cummings is the author of Understanding Quicken (Sybex, Alameda, California, 1990) and a PC World contributing editor.

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PC Magazine, June 25, 1991

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PacificPage XL is fast. So fast, that PC Magazine has cited it for ex-

ceeding the speed limit of Hewlett-Packard's PostScript® Cartridge by more than six times.

If by chance the speed doesn't sell you, the low price

will. Because it's the one feature of PacificPage XL that doesn't exceed HP's cartridge.\*

How do we get it to work so fast? It's really quite simple. We've taken our award-winning PostScript language emulation cartridge called PacificPage P•E, and combined it with a high speed accelerator board that installs easily into your LaserJet IIP, III, IIID or IIIP printer memory

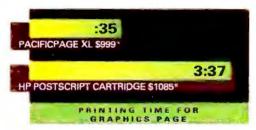
slot. LaserJet printing speeds are boosted by the fast Intel i960™ RISC processor that's mounted on the board alongside

"An Intel i960 RISC processor on the accelerator board helps the PacificPage XL print graphics more than six times as fast as the HP PostScript Cartridge."

Do you use a shared printer? If you do, you'll definitely want the speed of PacificPage XL. Because output is printed so fast, other users won't have to wait for their jobs to print.

> Make a quick price/performance comparison and

you'll see -PacificPage XL is the smart choice!



"PacificPage XL provides the fastest PostScript printing available on a desktop."

### 35 POSTSCRIPT COMPATIBLE FONTS

Acquiring stylish, professional looking output is easy with PacificPage XL. Because we've in-

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**SWISS NARROW** 

**DUTCH** 

ZAPF **CALLIGRAPHIC** 

**GEOMETRIC** 

**REVIVAL** 

CENTURY CHANCERY

Zapf Dingbats \*\*0%/**\***\*0\$

Symbol  $\leftrightarrow \Delta \bullet \Phi \Gamma \propto \Upsilon N X \neq$ 

Each typestyle comes in normal, bold, italic and bold italic treatments except for Chancery, Zapf Dingbats, and

"The native 35 PostScript compatible fonts in PacificPage XL are Bitstream designs, some of them superior to Adobe's version."

cluded 35 fully scalable Apple LaserWriter equivalent fonts. These high quality Bitstream designs provide you with the tools you need to create output that shines. For even greater versatility, PacificPage XL supports Bitstream's Speedo fonts and

Adobe Type 1 and

3 fonts.

### 100% POSTSCRIPT LANGUAGE COMPATIBILITY — GUARANTEED

Today, many HP LaserJet users are lead to believe that only true Adobe PostScript gives true PostScript capabilities. The truth is, PacificPage XL



"PacificPage XL swiftly and accurately renders some test EPS files that other interpreters distort and had no trouble with any of the large and complex images used for testing.

the same graphics capabilities for your LaserJet as Adobe PostScript. Exactly. So you can pay more for a name and get less for your money. Or you can pay less and, in addition to speed, get all of PostScript's powerful graphics functions. If you can create it, PacificPage XL can - SATISFACTION

print it. We're so sure of it that we give you our



money back guarantee of satisfaction.

For more information or a dealer near you, contact Pacific Data Products, 9125 Rehco Road, San Diego,

CA 92121, (619) 597-4672, Fax (619) 552-0889.



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2 MB of

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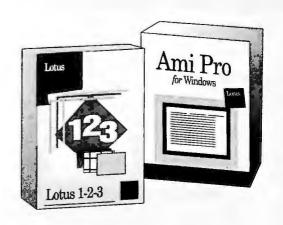
# Software Spectrum and Lotus Present a Fall Festival of Savings.



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Upgrade to 1-2-3 for Windows or Ami Pro v.2.0 for Windows and receive the Logitech Mouse and Windows 3.0 bundle.

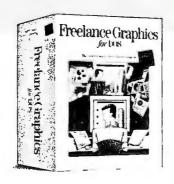
Offer good 9/10/91 through 10/31/91.



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Offer good through 12/31/91.

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Lotus Ami Pro 2.0 Competitive Upgrade	\$150	\$ 99
Lotus Ami Pro 2.0 Technology Guarantee	\$ 49	\$ 45
Lotus 1-2-3 for Windows	\$595	\$409
Lotus 1-2-3 for Windows Upgrade	\$150	\$ 99
Lotus 1-2-3 for Windows Quattro Pro or MicroSoft Excel Upgrade	\$150	\$ 99
Lotus 1-2-3 for Windows Technology Guarantee	\$ 49	\$ 45

Take advantage of Software Spectrum's Lotus Windows bundles. Our *Super Double Up* and *Double Up* promotions let you upgrade any version of a Lotus spreadsheet or word processor and receive both 1-2-3 for Windows and Ami Pro for Windows at these great prices. And, in our Super Double Up, get Windows 3.0 and a Logitech Mouse, too! Current owners of any Lotus spreadsheet may purchase Freelance DOS 4.0 for the special upgade price and enjoy great graphics.



Call today at 1-800-624-0503 from 7:30 am to 6:30 pm Central.

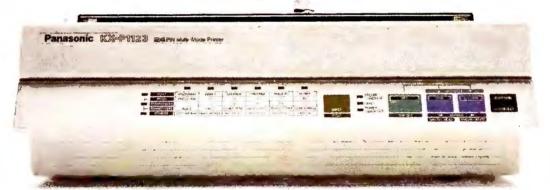
Circle 242 on reader service card

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# Evenings & weekends.



# Printers for people who want to look as good at home as they do in the office.

When you put your ideas on paper, they have to make a great impression. And that's a given, with either of these two new Panasonic\* printers. Because both offer the impressive value and performance you'd expect from the people who make the industry's best-selling 24-pin printer.\*

The KX-P1124i, the office model, gives you 11 built-in fonts, including Super Letter Quality for an exceptionally professional appearance. You also get the versatility of bottom, front and rear paper paths. 300 cps draft speed. And a new LCD display on the EZ™ Set control panel that takes "user friendly" to a new level. For the price, there isn't another printer on the market that even comes close.

The KX-P1123 brings home nearly the same capabilities, at a price that's even more affordable. It has 7 fonts, three paper paths, EZ Set front panel, and 240 cps draft speed. Plus a new automatic microline feed that makes paper loading a cinch.

The Panasonic KX-P1124i and KX-P1123. Two very good reasons to see your Panasonic dealer very soon. And see for yourself why our strongest impression is value. A phone call to 1-800-742-8086 will bring you more information.

\* The Panasonic KX-P1124. Based on US dollar share of competitive models for the 12 months ending December, 1990, as reported by InfoCorp. (1/91).

Printers, Computers, Peripherals, Copiers, Typewriters and Facsimiles





# PUBLISHING & PRESENTATIONS

Expert advice for creating highimpact documents and presentations

Richard Jantz

It's not enough anymore to get your documents done accurately and on time—they also have to look good. The challenge in designing a business document or presentation is to make the material visually appealing without undercutting the serious nature of its contents. To give you some ideas to work with, each month *Publishing & Presentations* will show a "make-over"—a redesign of an actual publication or presentation submitted by a reader.

This month's make-over is based on a quarterly report submitted by a busi-

ness research center. Because it publishes confidential information, we fictionalized the sample document's contents.

Spicing up the *Quarterly Report* demanded a mastery of understatement. Unlike image-building company newsletters filled with graphics, photos, and short articles, an all-business report such as this contains only text and data charts. Not much to work with, but we didn't let that stop us. We used *Ventura Publisher* for our document, but other desktop publishers and high-end word processors can also do the job.

# Before



# AN UPDATE ON CALIFORNIA'S RETAIL TRADE AND RETAIL SPACE

Throughout the United States, the pattern of retail space development has changed significantly over the past decade. Of the total dollare spent on commercial building, a smaller share is now spent on projects devoted solely to retail space. Space in shopping certers continues to increase, while other forms of commercial development, such as hotels

These factors reflect a combination of netions trends in the retail development business. First, employment in other sectors of the economy related to commercial building is growing faster then employment in the retail trede. Second, office buildings and notes are stating an increasing starse of commercia building dollers, and this often includes a mixed use of the retail space component. Third, a far less extensive approach to retail space construction is reflected by new building patterns, with a concentration on reviewel and expansion of existing space and on infill in

California's retail sector is one that strongly reflects these broad national trends. This report uses California as a model for looking at patterns of retail sales growth and investment in retail space from 1979 to 1980.

Retall Employment and Salas Trends
California's retail sector is responsible for approx
mately 16 percent of all wege and salary income i
the state. This share has remained reletively stabl
hroughout the pest decade. Today, 16 percent o
California workers are employed in the retail secto
which is only a percentage point lower then 1980
Over the same ten-year period, employment in finance, insurence, and real estate grew from 30 to 3
percent of the state's work force.

percent of the state's work force.

In the past decade, retail sales have been cyclical, while the share of retail trade in the economy hes changed liftle. Between 1979 end 1988, California's real (infallion ediusted) sales increased by over 30

percent, while population grew by 15 percent and ree-

During the remainder of the 1980s, population contuned to grow, but a high rate of unemployment are slower rote of income increase led to e decline in restall sales. While taxable retail sales reached over 180 billion dollers in 1986, a 30 percent real increase over 1980 sales, retail activity decreesed in 1989 ar 1990.

Changing Patterns of Sales

orgowth very by the type of retail good, which leads to changing petterns of retail spece investment. For example, specially stores are growing faster than retaioutlets, such as apparel and department stores, the legised emajor role in shopping center expansion in the past. The two fastest growing sectors in the

California Taxable Retail Salas



# After

The bar graph in the original nameplate is overbearing and gratuitous. A simplified version, using a bolder italic type face (Helvetica Black Italic instead of Helvetica) set agains a less imposing grid, is more congenial and easier to read

Part of the original headline becomes a kicker—a brie labe above the headline. We separated this one with a rule and set it in capital letters to contrast with the headline

To add graphic emphasis to the first paragraph of body text an initial cap (an enlarged capital letter) is set in a contrasting typeface, in this case Helvetica Bold Italic

Contrasting typefaces for headings and body text help cure
the original document's gray-page syndrome. Helvetica
(the original typeface) is a good choice for headlines
subheads, and figure titles, but we changed the body text to
Times Roman, which is more readable in smaller sizes.

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Like many business documents, the *Quarterly Report* suffers from the gray-page syndrome: too much information crammed into too little space, resulting in a dull, low-contrast "gray" tone. To correct the problem, we increased contrast by using different type styles for headings and body text. We added white space by changing from a two-column to a three-column format and by setting the body text ragged right instead of justified.

Finally, we redesigned the document's important *nameplate*, or banner,

which contains the publication name, logo, and issue date, and which sets the publication's tone and style. For the *Quarterly Report* nameplate, we took a less-is-more approach, simplifying for faster recognition. The heavier typeface also provides a better contrast against the larger grid background.

After turning the *Quarterly Report* around, we're ready for any make-over that comes our way. Next!

Send your publishing and presentations questions, as well as business document and presentation makeover candidates to Richard Jantz, MCI Mail RJANTZ; 415/442-1891 (fax); or mail them to Publishing & Presentations, PC World, 501 Second St. #600, San Francisco, CA 94107. PC World pays \$50 for published questions. Sorry, we cannot acknowledge submitted materials. 

■

Contributing editor Richard Jantz is author of Ventura Publisher 4.0 for Windows (John Wiley & Sons, New York, 1991)

# Quarterly Report File 1961 The Genter for Urban Economics Kavier Foundation

UPDATE:

# California's Retail Trade and Retail Space

hroughout the United States, the pattern of retail space development has changed significantly over the past decade. Of the total dollars spent on compercual building, a smaller share is now spent on projects devoted solely to retail space. Space in shopping centers continues to increase, while other forms of commercial development, such as hotels and office space, are attracting more builders.

These featons reflect a combination

These factors reflect a combination of national trends in the retail development business. First, employment in other sectors of the economy related to commercial building is growing faster than employment in the retail trade. Second, office buildings and hotels are taking an increasing share of commercial building dollars, and this often includes a mixed use of the retail space component. Third, a far less extensive approach to retail space construction is reflected by new building patterns, with a concentration on renewal and expansion of existing space and on infill in urban areas.

California's retail sector is one that strongly reflects these broad national trends. This report uses California as a model for looking at patients of retail sales growth and investment in retail space from 1979 to 1990.

Retall Employment and Sales Trends

California's retail sector is responsible for approximately 16 percent of all wage and salary income in the state. This share has remained relatively stable throughout the past decade. Today, 16 percent of California workers are employed in the retail sector, which is only a percentage point lower than 1980. Over the same ten-year period, employment in finance, insurance, and real estate grew from 30 to 35 percent of the state's work force.

In the past decade, retail sales have been cyclical, while the share of retail rade in the coonomy has changed little Between 1979 and 1988, California's real (inflation adjusted) sales increased by over 30 percent, while population grew by 15 percent and real personal During the remainder of the 1980s, population continued to grow, but a high rate of unemployment and slower rate of income increase led to a decline in real retail sales. While taxable retail sales reached over 180 billion dollars in 1988, a 30 percent real increase over 1980 sales, retail activity decreased in

Changing Patterns of Sales
As in the past, purchasing patterns
and the rate of growth vary by the type
of retail good, which leads to changing
patterns of retail space investment. For
example, specially stores are growing
faster than retail outlets, such as appare.
(continued on page 2



Using reversed type (white letters on a black background) for the date of the issue and name of the publisher make them pop out so they're easier to read and recognize.

Reducing the size of the nameplate and reworking the headline to fit on a single line creates more white space and makes the newsletter appear less crowded.

To help subheads stand out, we set them larger than the body text (14 points as compared with 10) in a contrasting type style. A thin rule also helps distinguish them.

A three-column format adds an alley of white space and makes it easier to enlarge the chart. With the extra space, we can afford to place the chart inside a gray screen (an area printed lighter than 100 percent black). A background shadow further separates it from the text.

# We refined the refinements, improved—and bettered the best-selling

Introducing two new Quickens. One adds over 50 new features for more power and convenience than ever. The other adds the advantages of Windows to the world's most popular financial software.

Why friends tell friends about Quicken. More people buy Quicken because of word-of-mouth recommendations than any other reason.

We think it's because we're obsessed with listening and responding to our customers. We never stop looking for ways to improve the improvements.

From watching PC rookies use Quicken, we developed our patented, automatic check alignment system. And we discovered ways to make our menus more accessible.



Follow-Me-Home research: Intuit engineers visit new buyers to study their first session with Quicken. As a result, we've introduced a new step-by-step guide for those who want help getting started.

Each year we survey 10,000 users to learn how they'd change Quicken. These surveys led to Quicken 5.0's advances in report flexibility and automatic budgeting.

With Quicken, you have the culmination of years of refinements...and a future of relentless improvements.

That's how Quicken has grown – from a simple checkbook

manager into a powerful financial tool that categorizes expenses as you pay bills, reports exactly where your money goes, furnishes tax reports, tracks your investments, and keeps the books for sands of small businesses—

thousands of small businesses all with the intuitive simplicity and speed of the original.

Mouse support was the top request in Customer Suggestion cards. It's in both new versions.

# Introducing new Quicken 5.0.

Name just about anything you like about Quicken, and we'll tell you how it's more powerful, more flexible, faster, and even easier now.

New reports and

New reports and flexible reporting features. Now you can collapse or expand reports "outline-style" to

see as much or as little detail

as you want.

A keystroke or a mouse click lets you "zoom in" on a number to see the details behind it, then zoom in even closer — to the transactions behind the detail.

You can even reformat a report while you look at it. So, for example, to see transactions by payee instead of by date, you just choose among formats on the new pull-down menus.

No need to leave the report — the transactions instantly re-sort.



New reports show interest and principal for each house loan... reveal missing checks at a glance ... provide tax schedules ready to submit with your returns, and more.

New budgeting power. We've made the hardest part — creating a budget — simple and fast. You can copy one month's budget to all other months or let Quicken automatically create a budget for you based on your actual spending, and tweak it from there.

We've made budgeting more precise, too, with subcategories. Under "Automobile" for example, you can allocate separate amounts for gas and maintenance. You can also budget a yearly amount for a category and let Quicken allocate it quarterly or monthly.



Ever question a number in a report? One keystroke, and a new QuickZoom screen pops up with the supporting details. Need more detail? Tap that key again to zoom in on any transaction.

New tax information. New Loan
Amortization calculates the interest and principal automatically each time you make a house payment and correctly categorizes each. And now Quicken automatically transfers data to the right lines in the right schedules of leading tax programs.

Plus much more! Edit memorized transactions ... make memorized % splits... find specific items by typing in just a few characters ... try user-defined QuickKeys ... get wallet-size laser checks ... and that's just a taste — in new Quicken 5.0 you'll discover one pleasant surprise after another.

the new pull-down menu and Quicken automatically fills in your budget based on last year's spending. Now play "what-if" until you see the results you want, and you've got a detailed plan to meet your financial goals.

ne improvements, advanced the advances nancial software in the world.

# And new Quicken for Windows.



Quicken is simply the most powerful financial software available in Windows. Only Quicken for Windows has all the familiar features that have made Quicken 4.0 the world's most popular financial software. And adds features you won't find anywhere else. Quicken is the only

Windows financial software that handles all your finances, including your stocks, bonds and mutual funds. So you can get Capital Gains reports for tax preparation, and see how your investments have performed over time.

Cash Flow Report

Decepton

Namo

Casegay

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The Proce Company

Grocome

1851

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Spit
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Sold

Suite

No other Windows financial software pays bills electronically via the CheckFree® payment service or memorizes your customized report settings, saving you time and hassle every month.

Only Quicken gives you the option of automatically memorizing every bill or letting you memorize only the most important ones. And only Quicken gives you QuickScroll<sup>TM</sup>, to move through your register lightning fast.

With Quicken you get features, ease, and power that no one else brings to Windows, as well as the flexibility to do what you want.

# 

Quicken's icon bar and customizable desktop put the most frequently used functions and accounts at your fingertips for quick "pushbutton" access.

Only Quicken lets you see multiple account and report windows on screen at once, so you can investigate the detail behind numbers and easily plan and forecast.











Create your own Quicken desktop, and keep your most frequently used accounts, lists and reports where you can always find them fast.

# Upgrade at your software dealer — and get \$15 back!

Quicken owners: Buy either new version of Quicken at your favorite store before December 31, 1991 and get \$15 back.

1) Buy either Quicken 5.0 or Quicken for Windows at your local dealer. (Some stores are providing the \$15 rebate at the time of purchase. These purchases do not qualify for another rebate by mail.)

2) Circle Quicken's purchase price and date on your store receipt.

3) Turn to the back of your old Quicken manual and tear out the Special Offer Coupon #2.

4) IMPORTANT: Fill out the information on the back of Special Coupon #2. On the "Additional Information" line, write in your disk size preference (3.5" or 5.25") and whether you bought: Quicken 5.0, Quicken for Windows, or the Quicken/TurboTax combo. (Combo available in stores about 11/11/91.)

5) Mail your original store receipt along with your completed Special Coupon #2 to: Quicken Rebate Offer, 5070 Santa Fe Street, San Diego, CA 92109

6) Receive your rebate check for \$15 within 6 weeks.



Important Information: Offer valid only for owners of Quicken versions 1-4. Rebate good on retail store purchases of Quicken 5.0 or Quicken for Windows only (rebate good on one or the other, not both). Mail-in rebate not valid for Quicken purchased at stores giving the rebate at the time of purchase. Your receipt must be dated by December 31, 1991, and your letter postmarked by January 15, 1992. Original store receipt and original Special Coupon #2 must accompany request. No mechanical reproductions, photocopies or faxes accepted. Void where prohibited by law.

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# COMMUNICATIONS Q&A

On-line resources for business and professional users

Judy Heim

- Q. I use the Official Airline Guides to find the best (and least expensive) flights for business trips. What's the cheapest way to access OAG? —Johnny Stewart, Ithaca, New York
- **A.** During the day, CompuServe is the best deal: \$40 an hour. At night, GEnie offers the cheapest rate: \$16 an hour. Both prices include all on-line charges.
- Q. Sometimes when my MNP modem calls another system, I see odd characters on screen when the modem connects. Then nothing. What's going on?

  —Denyse Roberts, Brooklyn, Kansas
- A. MNP modems feature hardware-based error correction. When your MNP modem tries to forge a link with a non-MNP unit, problems can occur. It could be your modem's fault, or it might be a defect in the answering modem. Only one thing is certain: Both modem vendors (and the on-line service, if one is involved) will blame it on you.

Before you get *really* mad, verify your modem's MNP connection setting. First look in the manual for the AT command that displays your modem's

default settings. Then load your communications software and enter that AT command at the terminal screen, followed by **Enter**>. You'll get a list of register values; the manual will tell you which one represents the MNP setting.

Three settings are possible: (1) If the MNP link fails, your modem will hang up; (2) if MNP fails, your modem will try to establish a non-MNP link; (3) MNP is disabled up front.

The best setting is the second, because your modem will fall back to a normal link if MNP fails. You'll find MNP settings listed alongside the appropriate AT commands in your manual, as well as instructions for writing the new settings to the modem's nonvolatile RAM. Or you can add the appropriate AT command to the modem initialization string in your communications software.

If the modem still has problems forging a link with one particular non-MNP modem, go for door number three, the one that deactivates MNP altogether. You shouldn't make this a permanent change, of course, so just type the appropriate AT command at the terminal screen, then **Enter**, before dialing.

If all else fails, try waiting 5 to 10 seconds after the remote modem answers, and then press **Enter>** a few times. Poorly engineered modems sometimes need extra time to interpret each other's smoke signals before they start to talk.

Q. I'm a new subscriber to CompuServe (CIS), and I'm planning to upload a mailing list program I wrote onto the PC SIG. CIS says that uploading software is free, but someone else mentioned there were hidden costs. What's the story? —Winston Armstrong, Miami, Florida

**A.** The concept of *sharing* (as in shareware) has been a deep-seated principle in the world of on-line telecommunications. Uploading shareable software is a popular form of tithing and is encouraged by BBS's and on-line services.

A big library of free software is a draw for potential subscribers, so many BBS's boost the size of their file collections by offering incentives for users to upload: extra time on-line, access to special features, even prizes. Some take a more Draconian tack and drop users who *don't* upload—the electronic equivalent of publish or perish.

CIS and GEnie advertise that uploading is free. Unfortunately, there ain't no such thing as a free upload. On GEnie, uploading one file will cost you an average of 40 cents, even at night. That's how much it costs to exit the no-charge area of the service, enter the premium-charge file area, and initiate the upload. The toll clock stops during the upload, but if it bombs, the clock begins again while you restart the file transfer. On CIS, if it takes you 3 minutes to maneuver into the proper file forum and begin the transfer, you'll pay 60 cents. The moral? It's better to receive than to give.

Send your communications questions to Judy Heim, CompuServe 71570,-3712; GEnie JUDY.HEIM; MCI Mail 312-7737; Internet 3127737@MCI-MAIL.COM; 415/442-1891 (fax); or mail them to Communications Q&A, PC World, 501 Second St. #600, San Francisco, CA 94107. PC World pays \$50 for published questions. Sorry, we cannot acknowledge submitted materials. 

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 $\label{eq:Judy Heim is a contributing editor for PC World.} \begin{picture}(200,0) \put(0,0){\line(1,0){100}} \put(0,0){\li$ 

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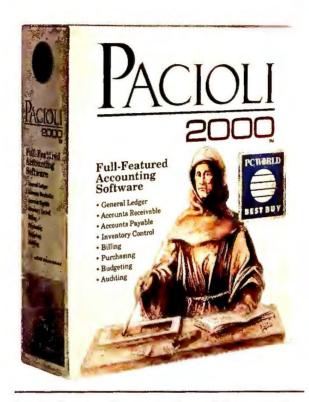
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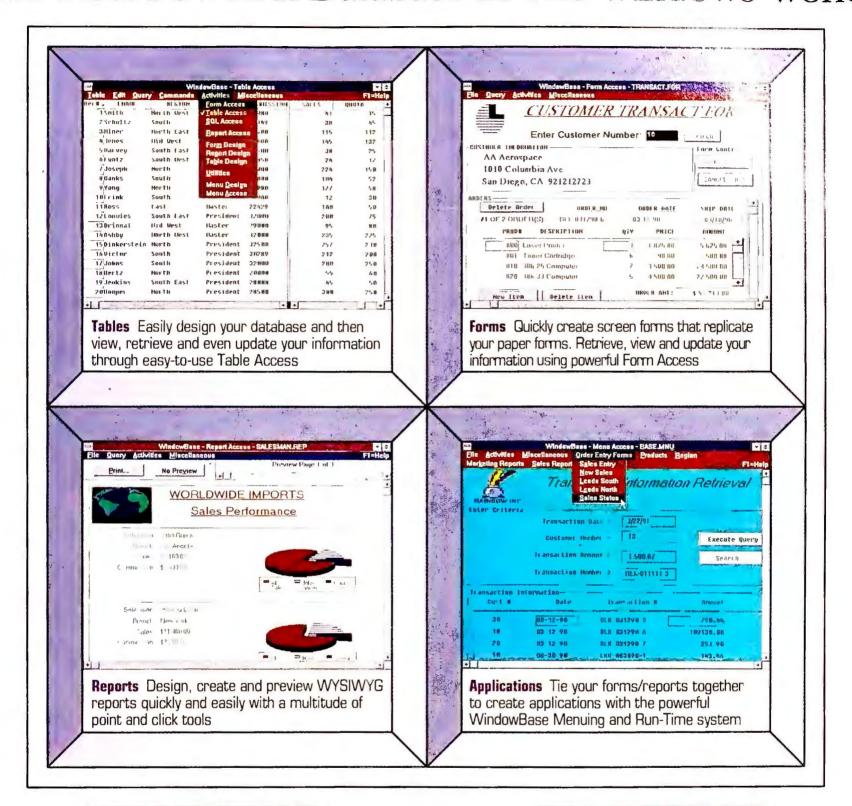
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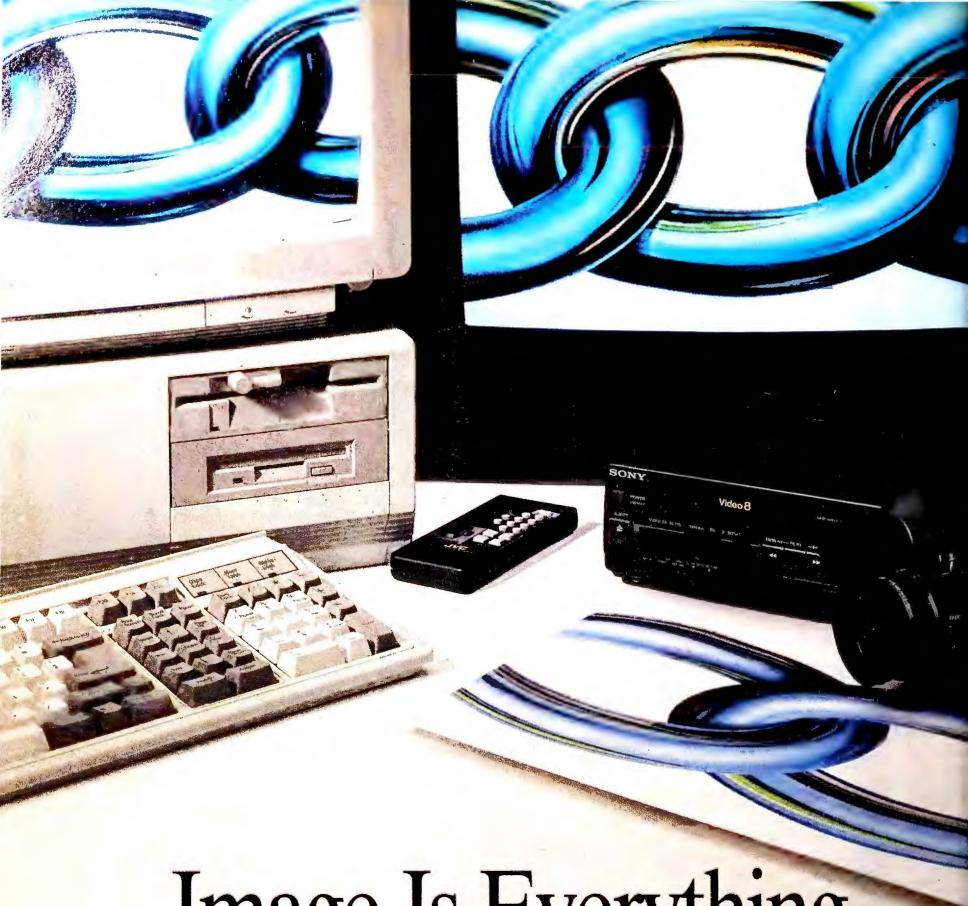
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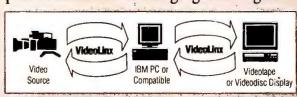
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# WINDOWS WORKSHOP

Practical answers to your questions about Windows

Jesse Berst and Scott Dunn

# Windows Meets DOS 5.0 and Stalls

Q. We recently upgraded the 386 PCs in our office to DOS 5.0 so we could take advantage of its DEVICEHIGH = command, which frees up conventional RAM by loading device drivers and TSRs into extended memory. Unfortunately, now some of our PCs won't run Windows in enhanced mode, and none will run it in standard mode. What's going on?

J. Kelly Dixon Gettysburg, Pennsylvania

A. Chances are the problem lies with DOS 5.0's EMM386.EXE memory manager, which is required when using the DEVICEHIGH = command. Although EMM386 frees up more conventional memory for DOS applications running under Windows, it's not compatible with Windows' standard mode. You must remove or disable the DEVICE = EMM-386.EXE line in CONFIG.SYS or run Windows in enhanced or real mode.

If Windows won't run in enhanced mode, chances are it's low on extended memory; Windows needs at least 1MB. You can free up extended memory by

disabling your system's ROM shadowing, removing unnecessary device drivers from extended memory, or disabling those that use extended memory. For example, reduce Smartdrive's minimum disk cache size (the second parameter) or even set it to zero.

If the message 'EMM386: Unable to start Enhanced Mode Windows due to invalid path specification for EMM386' appears, your PC simply can't locate EMM386.EXE. The solution? Tack on a special parameter (/Y=path\filename) that specifies which directory holds the memory manager, for example, DEVICE= EMM386.EXE /Y=C:\SYSTEM\EMM386.EXE.

Then again, a better solution might be to forget EMM386.EXE altogether and

use *QEMM* or 386Max--memory managers that do the job with fewer hassles.

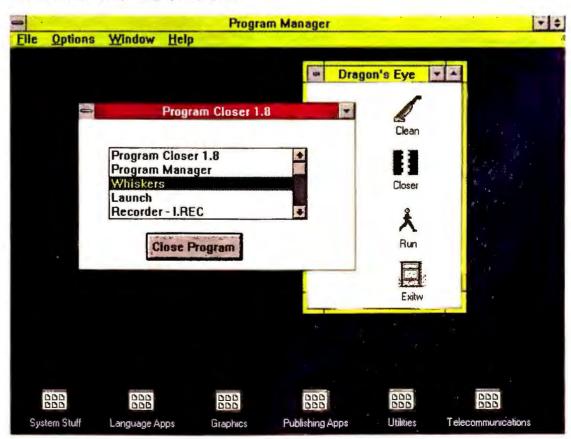
# Change Video Drivers on the Fly

Q. Sometimes I need to use a high-resolution 256-color video driver for graphics work in Windows. The rest of the time, I'd rather stick with Windows' standard (and faster) 16-color VGA driver. Is there any way I can easily switch between these drivers without exiting Windows?

Lee Kent Bakersfield, California

**A.** Yes and no. If the installed video drivers modify *Windows*' SETUP.INF file, they'll be available from *Windows*'

# **Windows Toolbox**



If you don't think \$10 buys much anymore, check out Dragon's Eye Utilities. This shareware collection (UTL107.ZIP) includes Clean, for recovering every available ounce of RAM; Closer (pictured here), for shutting down "hidden" Windows applications; Run, for launching multiple applications; and Exitw, for quickly escaping Windows. Dragons Eye Software, P.O. Box 200262, Arlington, TX 76006-0262; 817/265-5619. Reader service no. 601

Setup program. To switch drivers, click the *Windows* Setup icon, select *Options*, then *Change System Settings*; in the Display field, pick the desired driver, and click *OK*. Click the Restart Windows button, and you'll be up and running in a few seconds.

If the drivers didn't modify SETUP-. INF, you're going to have to exit *Windows*, but you can create batch files that change the video driver and start *Windows* in one swoop. The secret is creating multiple versions of SYSTEM.INI, the system file that contains the driver information.

First, save a backup copy of SYS-TEM.INI in another directory for safety's sake. Now, configure *Windows* with the 256-color driver, exit, and rename SYSTEM.INI as SYSINI.256. Then configure *Windows* with the standard 16-color VGA driver, and rename SYS-TEM.INI as SYSINI.16. Finally, create two batch files, 16.BAT and 256.BAT, that both copy the SYSINI file you want

over the original SYSTEM.INI and start *Windows*. For example, to switch to 256-color mode, 256.BAT would say:

### **CD\WINDOWS**

# **COPY SYSINI.256 SYSTEM.INI**

### WIN

You can also use this trick to change default system fonts or switch between mouse drivers.

Just remember that environmentwide changes may need to be reflected in all the versions of SYSTEM.INI. For instance, if you install *Adobe Type Manager* or replace the mouse, you'll need to edit all the SYSINI files.

### **Fix That PIF!**

Q. I multitask DOS applications in 386 enhanced mode, so I naturally use the PIF editor a lot. But when I try to change the Application Shortcut Key [in the Advanced Options PIF screen], I cannot remove the old shortcut. Backspacing in the text box seems to delete the shortcut assignment, but

when I reopen the PIF file, the old shortcut is still there. Help!

Glenn Miyagi Pearl City, Hawaii

A. Calm down. Simply press < Ctrl>- < Shift>- < Backspace> (instead of pressing < Backspace> alone), and the text box will read 'None.' Now change the shortcut key. Remember to click OK and save the PIF before exiting.

Send your questions to Windows
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Jesse Berst is a contributing editor for PC World. He and Scott Dunn are coauthors of 101 Windows Tips (Peachpit Press, Berkeley, California, 1991).

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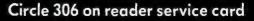
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# USER GROUP TIPS

Helpful hints from members of the nation's user groups



# **Breaking Excel Links**

If you use Excel regularly, you know you can link information in one worksheet to a dependent worksheet. Suppose you want to break the links yet keep the information in the dependent worksheet's cells, to create, say, a historical record of an account's status on a specific date. To break the links, you have to replace the cells' links with their data. But a standard Copy command just reestablishes the links, and rekeying is a time waster. To sever the links the easy way, select the cells in the dependent worksheet: Choose Edit Copy, then Edit Paste special. Select Values and OK. This sequence copies each cell's contents and pastes just the values back in. All external links are removed without tedious rekeying.

Jan Altman Silicon Valley Computer Society

# Don't Retry It!

Now and again while copying files to a floppy, you'll get the DOS error message 'Not ready error reading drive Abort, Retry, Fail' (or 'Abort, Retry, Ignore' in DOS 3.2 and prior versions). Perhaps you've inserted a bad, unformatted, or write-protected disk. You may be tempted to take out the floppy, insert another, and press R to retry your copy—well, don't! When DOS prepares to copy files, it first reads the directory from the target disk. If you switch disks, it will write the first floppy's directory onto the second disk, trashing all its files.

When copying, there's only one safe response to the 'Abort, Retry, Fail' prompt: Press A to abort, then start over with a new disk. Otherwise, you're oddson to wind up with a scrambled disk—a double disaster when you have important files on your target disks.

Bill Weil San Francisco PC Users Group

# A Neater Path Listing

The PATH command is a useful instruction. You issue it followed by the set of directories you want DOS to search should you issue a command whose file isn't in the default directory. That means you don't have to change directories to run programs. However, listing unnecessary directories slows down this extended search. Also, DOS recognizes only the first 127 characters of any command—the rest go unseen. To list the PATH statement on screen and determine if you need to add or delete directories, you can enter PATH at the DOS prompt. Unfortunately the resultant horizontal-style listing can be confusing. If your list of directories is less than 106 characters long, avoid eyestrain by using an ASCII editor (EDLIN or the ASCII mode of your word processor wild do) to create SHOWPATH.BAT, which dasts each directory on a separate line:

**@ECHO OFF** 

CLS

ECHO Directories in PATH command FOR %%A IN (%PATH%) DO ECHO %%A

Type SHOWPATH at the DOS prompt for a neat vertical listing.

Bob Kelley Tucson Computer Society

# WordStar's Quick File Search

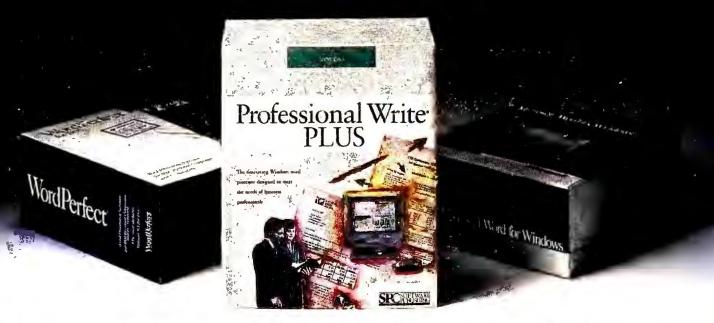
After you press a key to select a function (such as D to open a document or P to print a file) from the opening menu of WordStar 5.5 or later versions, press <Down> or <Ctrl>-X, and your blinking cursor will pop into the Directory: You can then use your cursor keys to highlight the file you want to select. But to save time once your cursor is in the Directory, just press the first character of the file you want. WordStar will highlight the first file beginning with that letter or number. Press the character again, and your cursor will jump to the second file that begins with it, and so on. When you have the file you want, press <Enter> to select it.

David Rafky WordStar Users' Group Miami, Florida

Are you a user group member with a tip to share? Send it to User Group Tips, PC World, 501 Second St. #600, San Francisco, CA 94107; CompuServe 74055,412; MCI Mail PC World Editorial; or 415/442-1891 (fax)—include your phone number and the name of your group. We pay \$50 and send a PC World T-shirt for each tip we use—and you get to see your name in PC World. 

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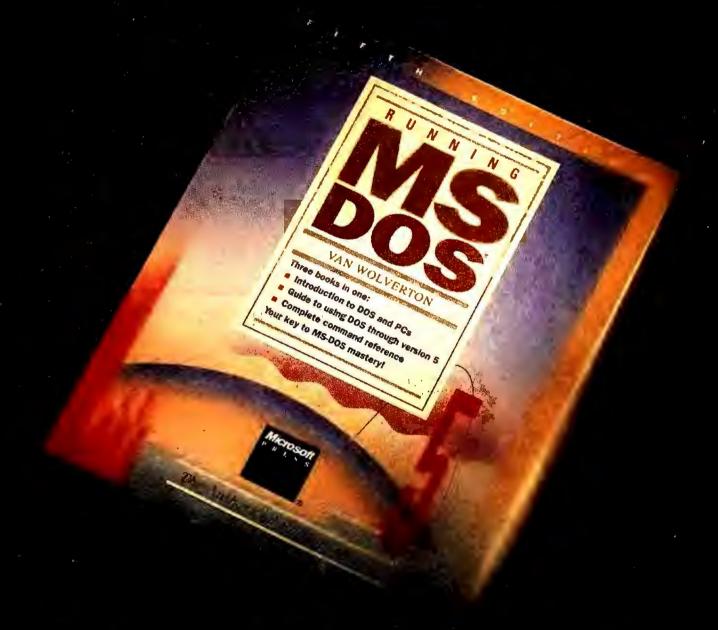
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# STAR-DOT-STAR \*.\*

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# **Keeping Your Secrets Secret**

If you want to control access to your PC, here's a program that may be just what you're looking for. It's not intended for material that demands maximum security, but it should keep anyone who's not technically sophisticated from tampering with your computer.

To create the program, SECRET..COM, copy SECRET.SCR [LISTING 1] to an ASCII text file, leaving a blank line just above the one that begins 'rcx'. Create an 8-character password in place of the word 'password'. Finally, run the script through DEBUG by typing DEBUG < SECRET.SCR at the DOS prompt.

To restrict access to your PC, place the new SECRET.COM at the beginning of your AUTOEXEC.BAT file. Anyone trying to boot your computer will have to know your password to get through.

Lee Carpenter Rabun Gap, Georgia

Editor's note: Lee Carpenter, the 17year-old author of this program, has created a very useful utility for PC World readers. I made a few changes to Carpenter's code so the password is easier to change. In addition, the program will now bypass DOS calls for character I/O, preventing someone from getting around the program by pressing <Ctrl>-<Break>.

Still, as the author points out, the protection isn't foolproof. Depending on your system, the program can be circumvented by booting from a floppy, or by hitting <Ctrl>-C between the time AUTOEXEC.BAT starts running and the time this program is invoked. However, SECRET.COM will shield your PC from users who aren't knowledgeable enough to try these tactics.

Finally, the password must be 8 characters long—no more, no less. Also, it's case sensitive; if you use capital letters in it, you'll have to do the same when you boot.

# Spread Out Your Spreadsheet Automatically

Typing '123 filename' at the DOS prompt, where filename is the name of a spreadsheet file, ought to cause 1-2-3 to bring up that spreadsheet automatically—but it doesn't. So, most users are forced to start 1-2-3 and then retrieve their files with the /FR command.

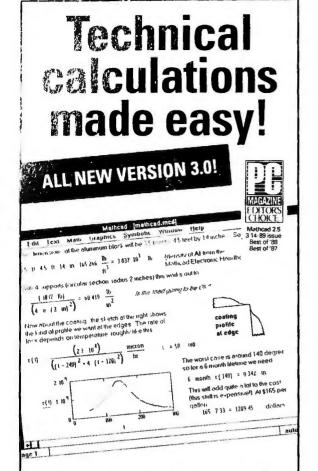
I use the batch file in LISTING 2, named L123.BAT, to start 1-2-3 and automatically load the file I want to work on. If I type L123 *filename* (without the assumed WK3 extension), the file is loaded at once. If I don't type a file name, I get a blank worksheet.

This batch file assumes that 1-2-3 is in the C:\LOTUS directory and that the data files are in a directory called C:\LOTUS\FILES. You should change the batch file to reflect your own choice of directories.

Mark Burgess St. Louis Editor's note: Mr. Burgess's original batch file was intended for 1-2-3 Release 3; I've changed it to run with the more popular 2.x releases. The principle is the same, only the file extension (continues)

```
nSECRET.COM
a100
MOV
         $1,0148
CALL
         0136
MOV
         BYTE PTR [0147],00
MOV
         DI,017C
MOV
         CX,0008
XOR
         AH, AH
INT
         16
CMP
         AL, [DI]
JZ
         011D
         BYTE PTR [0147]
INC
MOV
         SI,017A
CALL
         0136
INC
         DI
LOOP
         0111
MOV
         SI,016A
CMP
         BYTE PTR [0147],00
JNZ
         0131
RET
         0136
CALL
JMP
         0100
MOV
         AH, OF
         10
INT
CLD
LODSB
CMP
         AL,24
         0146
JZ
MOV
         AH, OE
INT
         10
         013A
JMP
RET
DB
DB
         D,A, 'Enter Access Code: $'
DB
         D,A,'Access denied$'
DB
         'password'
rcx
84
```

LISTING 1: Run this script through DEBUG to produce a password protection program.



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if "%1"=="" goto nofile cd c:\lotus\files ren %1.wk1 auto123.wk1 set filename=%1.wk1 cd c:\lotus cd c:\lotus\files ren auto123.wk1 %filename% goto end :nofile cd c:\lotus :end echo on

LISTING 2: With this file, you can load 1-2-3 and a worksheet from the command line.

changes. To use L123.BAT with Release 3, change every "WK1" to "WK3".

This batch file takes advantage of a very useful (and surpassingly obscure) feature of 1-2-3—the AUTO123 file. If there's a worksheet with this name in the default data directory, it's loaded automatically when 1-2-3 starts. By simply changing your file's name to AUTO123.WK1 before loading 1-2-3, and changing it back again after you exit, the batch file tricks the spreadsheet into loading your file.

# Checking Up on CHKDSK

Due to unruly applications, inexperienced users who share my PC, and a hard disk that's full to overflowing, I have to run CHKDSK frequently. However, I don't want to review the results of the check unless there's a problem. I therefore use a sequence of batch commands [see LISTING 3] to keep CHKDSK in the background-unless it finds something important.

The batch works because the DOS COPY command won't copy zero-length files-a quirk I've often found useful in conjunction with the FIND filter.

Jim White Fargo, North Dakota

Editor's note: Mr. White's batch routine uses some clever tricks to do its job. After writing the results of a CHKDSK to a file (instead of the screen), the batch uses the FIND command three times to search this file for warning phrases that CHKDSK might have written, sending the results to three new files. If FIND doesn't findanything-in other words, if CHKDSK found no problems—all three FIND-created files will be empty. Since COPY won't work on a zerolength file, CHK.\$\$5 won't be created, and a simple 'if not exist...go to' statement will direct your batch file elsewhere.

This technique can be used in any batch where you want to perform a specific action if the FIND command found something—or didn't. This lets (continues)

echo off		
echo Checking for disk	problems	
if exist c:\tmp\chk.\$*		
chkdsk > c:\tmp\chk.\$1		
find "non-contiguous"	c:\tmp\chk.\$1 > c:\tmp\chk.\$\$2	
find "lost clusters" <	c:\tmp\chk.\$1 > c:\tmp\chk.\$\$3	
find "cross-linked" < c	::\tmp\chk.\$1 > c:\tmp\chk.\$\$4	
copy c:\tmp\chk.\$\$? c:\	tmp\chk.\$5 > nul	
if not exist c:\tmp\chl	.\$5 goto continue	
echo CHKDSK reports pot	ential problems:	
more < chk.\$1		
pause		
:continue	:	
del c:\tmp\chk.\$*		

LISTING 3: This batch file reports the results of a CHKDSK only if the disk contains errors.



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Relocates to LIM 3.2 Frame	V		
Relocates to Expanded	V		
Relocates to Extended	V		
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you monitor the output of many DOS utilities, including CHKDSK, ATTRIB, and DIR, for lines that indicate your system requires attention. To run CHKDSK every day without being bothered with the results, put White's commands—or something like them—into your AUTOEXEC.BAT file. And if you have a RAM disk, you can speed up your batch by writing all those temporary files to it.

### <Alt> Alternates

If you use TSR (terminate and stay resident) programs such as *Sidekick*, you know that they can eat up precious memory. If you need that memory back—say, to load a big worksheet—you may have to reboot. And if the TSR is loaded by AUTOEXEC.BAT, rebooting isn't enough; you'll have to edit or rename AUTOEXEC.BAT first.

ALTKEY.COM is a 10-byte solution to this problem, allowing you to choose whether your TSRs are loaded at boot time. To create the program, enter LIST-ING 4 into an ASCII text file called ALT-KEY.SCR, making sure to keep the blank line before the 'rcx' line. Then, type DEBUG < ALTKEY.SCR at the DOS prompt. Finally, move ALTKEY.COM to a directory listed in your PATH command, and modify your AUTOEX-EC.BAT file to look something like:

# ALTKEY

# IF ERRORLEVEL 8 GOTO NO-TSRS

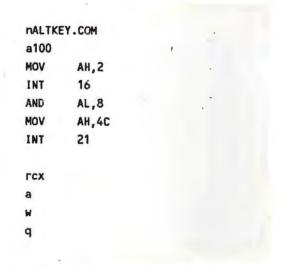
: [Commands to install TSRs]

:NO-TSRS

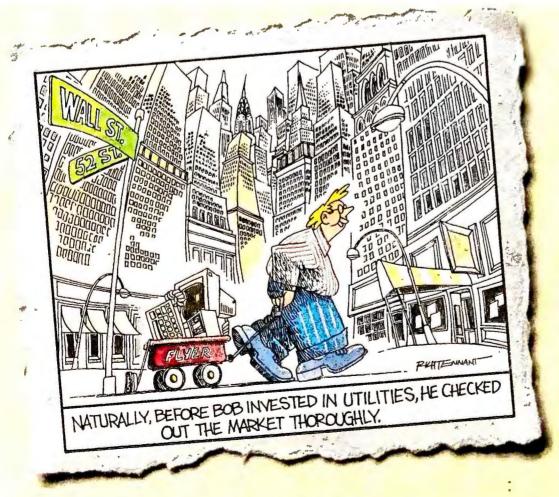
[Rest of AUTOEXEC.BAT]

Under a normal reboot, your TSRs will load. But if the <Alt> key is held down when ALTKEY.COM executes inside AUTOEXEC.BAT, it will return ERRORLEVEL 8, and the batch file will skip the TSRs.

If you prefer, you can use a key other than <Alt> by replacing the 8s in LIST-ING 4's AND AL,8 line and your AUTO-EXEC's IF ERRORLEVEL command with another key code [see TABLE 1 for codes]. You'll also want to change the name of the resulting COM file to something more appropriate. Be careful with <Num Lock>, however; in many PCs



LISTING 4: Run this script through DEBUG to create ALTKEY.COM, which lets a batch file respond to a user holding down the <Alt> key.



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AilSafe, the comprehensive secur product that includes virus protec access control and security report with extended keyboards, < Num Lock> is turned on automatically at boot time.

Brian Elwood Lincoln, Nebraska

Editor's note: ALTKEY.COM has many uses and will work wherever you want the state of a key to influence a batch file's execution. Using a key like <Num Lock> isn't necessarily a bad idea, since users don't have to worry about holding it down; they can set the key one way and think about something else while the batch runs. The same is true of <Scroll Lock>, <Caps Lock>, and < Insert>, all of which toggle their states when pushed.

# Many Ways to ERR

Several readers responded to Robert Siegel's 1-2-3 error checker in the August issue, "To ERR is Electronic," by pointing out that the formula @IF( C12,(B11-C12)/C12,"") works just as

# Codes for PC Shift Keys

Key	Code
Right Shift	1
Left Shift	2
Ctrl	4
Alt	8
Scroll Lock	16
Num Lock	32
Caps Lock	64
Insert	128

TABLE 1: These codes reflect the status of shift keys, like <Alt>, and toggle keys, like <Scroll Lock>, on the PC keyboard.

well as the more complicated one we printed. This is true—in the specific situation Siegel described.

However, Siegel's formula is much more versatile. Since the @IFERR function can catch any condition that generates an ERR, it will handle formulas involving logarithms, exponen-

tials, trigonometric functions, and date functions—in which errors, overflows, and underflows are harder to predict. Thus, unless it's easy to catch an error condition (as it is in this case), it's best to play safe and test for ERR instead.

In another tip from the August issue, Brian Mowers' "To Boldly Go Where CHKDSK Can't," we were the ones to err. According to the written tip and the caption, running the accompanying script through DEBUG would produce a file called FS.COM (for Free Space). In actuality, it produces a file called MF.COM. However, only the file name is different; the program itself remains the same.

Have a macro, batch file, short program, or general tip you're proud of? Star-Dot-Star pays \$25 to \$200 per tip used. Send your tips to Star-Dot-Star, PC World, 501 Second St. #600, (continues)

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■

Brett Glass is a contributing editor for PC World.

# **POWER TIP NO. 225**

One WordStar Macro for Multiple Document Formats

You can use one Shorthand macro to set up multiple Word-Star formats if you keep documents that need different. formats in separate subdirectories. In each directory, save a document holding the dot commands for the desired custom format. Make sure you place a hard return after every command, and give each file the same name, say GUIDE-.FRM. Press < Esc>?f to set up a macro you can call by pressing <Esc>f (if f is already in use, choose another letter). In the Description box, type Formatting Commands and press <Enter>. In the Definition box, press <Ctrl>-P<Ctrl>-KR, type guide.frm, and press <Ctrl>-P<Ctrl>-M<Ctrl>-P<Ctrl>-QC. Then press <Enter> twice followed by y to save the macro. Now you can log on to a subdirectory, open a new document, and press <Esc>f. WordStar will insert the formatting commands from that directory's GUIDE.FRM file and automatically move the cursor to line 1 of the document.

Thomas A. Lankard Sacramento, California

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# **BASICS: 1-2-3 FOR WINDOWS**

What to do: You can choose a 1-2-3 for Windows menu or menu option by clicking the left mouse button on its name or by pressing <Alt> or <F10> and typing the name's underlined letter (shown here in bold). To end most commands, press < Enter> or click OK. To exit a menu or dialog box, press < Esc> until the 'READY' indicator appears on the far right side of the control panel's format line.

Tip: You can use 1-2-3 release 3.1 Classic commands by pressing / or <.

### **GETTING STARTED**

Create new file Open existing file Save file Save file with new name Close file and window Print spreadsheet Undo last action Get context-sensitive help Get function help Get macro help Look at Help Index Look at a help topic Leave help Leave 1-2-3 for Windows

File New File Open, type or select name File Save File Save as, type name File Close Select area, File Print, select options <Alt>-<Backspace> or Edit Undo Choose command, <F1> {<F1> Help Index Click on one of the highlighted words File Exit; or <Aft>-<F4>

File Exit; or <Alt>-<F4>

Click on the cell; or <F5>, type

address or select range or file

<End><Home>

<Home>

# **GETTING AROUND**

Go to cell, range, or open file

Go to window Switch panes in current window

**Single Worksheet** 

Move left/right one screen

Move up/down one screen Go to first nonblank cell next to blank cell Go to last nonblank cell Go to cell A1

<Ctrl>-<Left> or <Shift>-<Tab>/ <Ctrl>-<Right> or <Tab> <Page Up>/<Page Down> <End><Up>/<End><Down>/ <End><Right>/<End><Left>

Click on window; or Window, 1/2/3/...

# **Multiple Worksheets**

When you move from one worksheet to another in the same file in fullscreen view, the cell pointer appears in the cell last highlighted in the destination worksheet. In perspective view, the cell pointer moves to the same row and column location in each worksheet.

<F6>

Go to next sheet Go to previous sheet Go to first nonblank cell next to blank cell Go to last nonblank cell Go to cell A:A1

<Ctrl>-<Page Up> <Ctrl>-<Page Down> <End><Ctrl>-<Page Up> or <End><Ctrl>-<Page Down> <End><Ctrl>-<Home> <Ctrl>-<Home>

# **Multiple Files**

Across files, in any view, the cursor moves to the cell last highlighted in the destination file.

Cycle through files Go to next file Go to previous file Go to last file Go to first file

<Ctrl>-<Tab> or <Ctrl>-<F6> <Ctrl>-<End><Ctrl>-<Page Up> <Ctrl>-<End><Ctrl>-<Page Down> <Ctrl>-<End><End> <Ctrl>-<End><Home>

### **ENTERING INFORMATION**

Anything you enter, unless it starts with a number or an arithmetic sign, is a label.

Align label left Align label right Center label Repeat label to fill cell

Begin with ^ Suppress printing row

Display range names Display @ functions Display macro commands

Enter a date

Enter a time

Make address absolute

Begin with \ Begin with | in first column of print

Begin with ' (apostrophe)

range Type formula or function, <F3>

Begin with "

@<F3> {<F3>

Type date in a 1-2-3 date format; or use @date(yy,mm,dd) and format it Type time in a 1-2-3 time format; or use

@time(hh,mm,ss) and format it Type address, <F4> (keep pressing <F4> for variations)

# **EDITING A CELL**

Start editing End editing End editing without change Delete character to right

<F2> or click on right half of edit bar <Enter> or click on check-mark button <Esc><Esc> or click on X-mark button <Delete>

> Fold Here

Delete character to left Erase edit area Go to left end of entry Go to right end of entry Move five characters left/right Toggle insert/overtype modes Find/replace characters

<Backspace> <Esc> <Home> <End> <Ctrl>-<Left>/<Ctrl>-<Right>

<Insert>

Select range, Edit Find, type characters, select Find/Replace with, type replacement characters, select Labels/ Formulas/Both, select Find next/Replace/ Replace all

# **WORKING WITH RANGES**

A range is a rectangular area that can be a single cell, a row, a column, or a block. You can select a range before or after choosing a command.

Select range with mouse Select range with keyboard Click corner cell, hold left mouse button down while dragging over range Move to starting cell, <F4> or hold down <Shift>, move to ending cell,

Copy/move range

Erase range Define range name Edit Quick copy/Move cells, select source range, select destination range Select range, < Delete > or Edit Clear Select range, Range Name Create, type

name

Using range names Change formulas to numbers Start formula, <F3>, select name Edit Quick copy, select source range, select destination range, select Convert

Fill range with series of values

Select range, Data Fill, type start, step, and stop values

# **WORKING WITH WINDOWS**

Cascade/tile windows Split window into two panes Split window into three-sheet perspective view Restore to full-window view

Windows Cascade/Tile Windows Split Horizontal/Vertical

Windows Split Perspective

Windows Split Clear

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# **ADVANCED: 1-2-3 FOR WINDOWS**

# **CHANGING THE WORKSHEET**

Delete row/column/sheet

Set width of columns

Set height of rows

Insert row(s)/column(s)

Insert sheet(s)

Freeze row(s)/column(s)

Unfreeze row(s)/column(s) Hide/display column(s)/sheet(s)

Combine/add/subtroct file

Import text/numbers/styles

Select range, Worksheet Delete, select Row/Column/Sheet

Drag column header's right edge left/ right; or select range, Worksheet Column width, type width in charocters Drag row header's bottom edge up/ down; or select range, Worksheet Row height, type height in points

Select range (one row/column for each to be inserted) below/to the right, Worksheet Insert Row/Column

Worksheet Insert Sheet Before/After, type number of sheets

Position cursor below/to the right of area to freeze, Worksheet Titles Horizontol/ Vertical/Both

Worksheet Titles Cleor

Select range, Worksheet Hide/Unhide

Column/Sheet Select destination, File Combine from, specify file, select Copy/Add/Subtract, select Entire file or type range name Select destination, File Import from Text/ Numbers/Styles, specify path and

file name (for styles, select type)

Add legend Add text Change text font Add object Change color(s) of object

Return to worksheet Add groph to worksheet

Print graph

Display graph from worksheet

Chart Legend, type range legend(s) Draw Text, type text, position text Select text, Style Font, select font Draw, select type, drow object Select object, Style Color, select color(s) Click on or cycle to worksheet

Select worksheet range, Graph Add to

sheet, select groph

Add graph to worksheet, select ronge, File Print

Graph View, select groph

## **WORKING WITH DATA BASE TABLES**

Sort data bose table or range

Select range, Data Sort, specify key(s)/

Find/delete/extract records in

data bose

Repeat last Data Query

order(s)

Data Query, select Input range, select Criteria range, select Output range,

Find/Delete/Extract

<F7>

Create a one-way what-if table

Type formulas to analyze in first row, type input values in first column, select ronge sponning formulos and values,

Data Whot-if table 1-way, specify input cell

Repeat last Data What-if table <F8>

### **FORMATTING**

Format numbers and formulas

Change font/style Align text in cell Align text over ronge

Change color of range

Add borders to cells

Add border around range

Add shading

Select range, Range Format, select type, enter number of decimal places Select range, Style Font, select font/style Select range, Style Alignment, select type Select ronge, Style Alignment, Align over range, select Left/Center/Right/Even Select range, Style Color, select color of cell contents/background Select range, Style Border, select edge(s), select line weight(s) Select range, Style Border, select Outline, select line weight Select ronge, Style Shading, select type

### PRINTING

Preview printed worksheet Change margins

Add a header/footer Add info in o header or footer

Compress worksheet to fit page

Print worksheet frame/grid

Select range, File Preview File Page setup, type margins' numbers (of choracters or add in for inches) File Page setup, type heoder/footer @ for dote, # for page, | for section, \cell oddress for cell contents File Page setup, select Automotically fit

to page File Page setup, select Show worksheet

frame/Show grid lines

# GRAPHING

Create new graph Change graph type

Change x-axis labels Change plotted ronge

Change color of range(s) Add title(s) Change font of title(s)

Select range, Graph New, type name Chart Type, select type, disploy, orientation

Chart Ranges, type range

Chart Ronges, highlight A-F entry, move Chort Ranges box to show worksheet, select new ronge in worksheet Chart Options Colors, select color(s)

Chart Headings, type title(s) Chart Options Fonts, select font(s) Create a frequency distribution

Type bin intervals, select range to analyze, Data Distribution, specify bin Fold

### LINKING EXTERNAL FILES

An external file is any file other than the one you are working on.

Link to external worksheet file

To reference range TAX in C:\BUD\QTR1.WK3 use

+<<C:\BUD\QTR1.WK3>>\$TAX

Link to external data base

Data Connect to external, type ID and password if necessary, select driver, type path, specify file name, type ronge name

Create DDE link to an application

Select source ronge, Edit Copy, start application, specify destination, choose command equivalent to Edit Paste link Edit Link options, select link, select

Delete

# **MACROS**

Delete DDE link

You con create a macro by typing commands and keystrokes or by recording commands, keystrokes, and mouse selections.

Record macro

Tools Macro Show transcript, select Transcript window, Edit Clear oll, select worksheet, perform task to be recorded, select Transcript window, select contents, Edit Copy, select worksheet, select range for macro, Edit Paste, close Tronscript

window

Name macro

Run ma'cro

Select starting cell of macro, Range Name Creote, type name, select Create <Alt>-<F3> or Tools Macro Run,

select macro name <Ctrl>-<Break><Esc>

Stop macro in progress Single step/trace macro

Select mocro, Tools Mocro Debug, Single step/Trace

Tip: A macro name beginning with \ (backslosh) followed by a single letter can be run by holding down <Ctrl> ond pressing the single letter.

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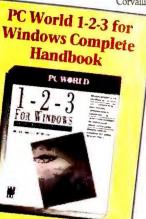
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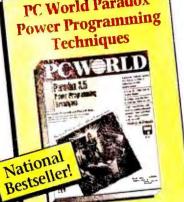
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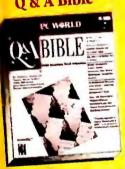
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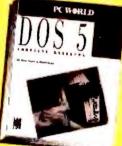
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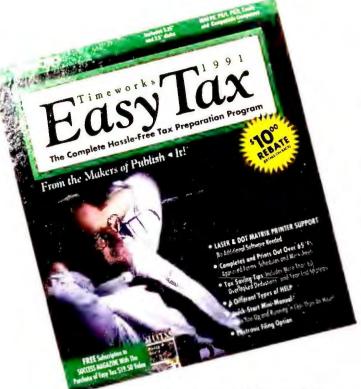
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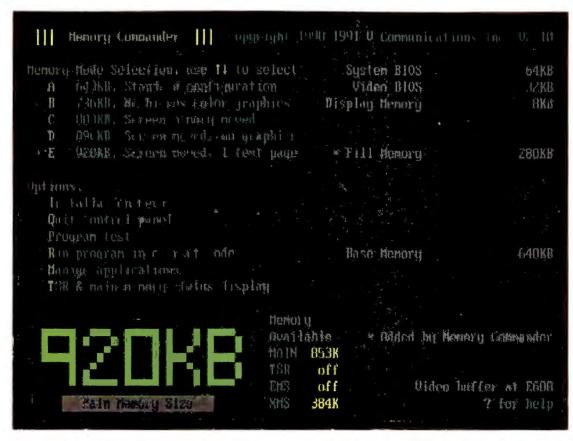
Few discoveries are more disheartening than finding that the program you're writing has outgrown your system's conventional RAM. You add a function, a procedure, a unit, or a module, and the compiler or linker abruptly fails with an 'out of memory' error.

If you're lucky enough to have a compiler or linker that can run in protected mode, this may not be an insurmountable problem: Your code will compile and link more slowly that way, but at least it will compile and link. Borland has been shipping protected-mode compilers for some time, and Microsoft C 6.00ax works in protected mode, but those are exceptions. If you're using a compiler that doesn't support protected mode, or if you want the fastest compiles possible, you may want to consider a little-known 386 memory manager called Memory Commander from V Communications.

Memory Commander is dwarfed by such giants in its product category as *QEMM* and 386MAX. But it has one heroic feature the others lack: Under the right conditions, Memory Commander can provide more than 900K of conventional, real-mode memory.

If you're familiar with PC architecture, you're probably wondering how any utility—no matter how clever—can manage that trick. If nothing else, wouldn't the PC's video adapter limit conventional RAM well before that? If an application is well behaved—that is, if it uses DOS and the BIOS for all its I/O—Memory Commander uses the 386's paging unit to remap the display to the highest possible area of RAM. And since most compilers are well behaved, programmers can take advantage of this extra room.

You get less real-mode memory with applications that use graphics or write



Seeing is believing; as Memory Commander's control panel shows, under the right conditions it can supply up to 920K of real-mode, contiguous, conventional memory.

directly to screen memory—but you still wind up with more than 640K. If you're not sure whether your application can run in one of the modes that provide more memory, have *Memory Commander* test the program as it runs.

And other nice touches abound. ANSI.SYS and a RAM disk driver (a necessity for compilers and linkers with temporary files) are built into *Memory Commander*, saving you yet more RAM because you don't have to load them separately. And unlike other memory managers, this one doesn't make you change AUTOEXEC.BAT or CONFIG.SYS to load TSRs and drivers high; *Memory Commander* intervenes at load time and directs those programs to the correct part of memory.

Memory Commander lacks a few useful features. Unlike QEMM, it can't allocate EMS and extended memory from a common pool or run Windows in Standard mode (it can run Windows in 386 Extended mode). Nor can the program compress the BIOS on a PS/2 the

way *BlueMax* can. Finally, because *Memory Commander* plays fast and loose with the video interface, it may conflict with some video cards or programs that do the same.

But still, no other memory manager can provide your programming tools anywhere near the same amount of RAM. While it's not the ultimate solution, *Memory Commander* is a great way to push DOS to its limit.

Have a favorite programming tool you'd like to see discussed here? Send suggestions to my Internet E-mail address, rogue@well.sf.ca.us, reachable from CompuServe, MCI Mail, Internet, and Usenet. 

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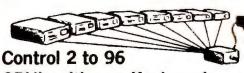
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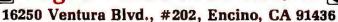
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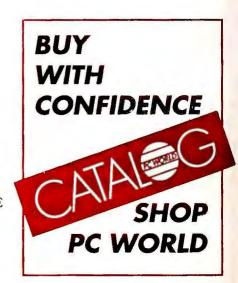
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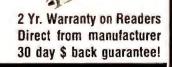
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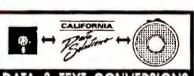
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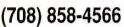
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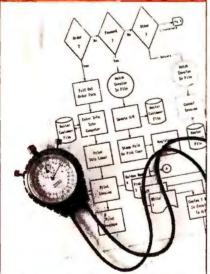
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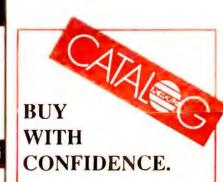
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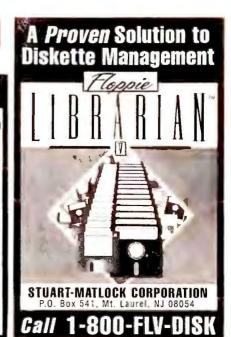
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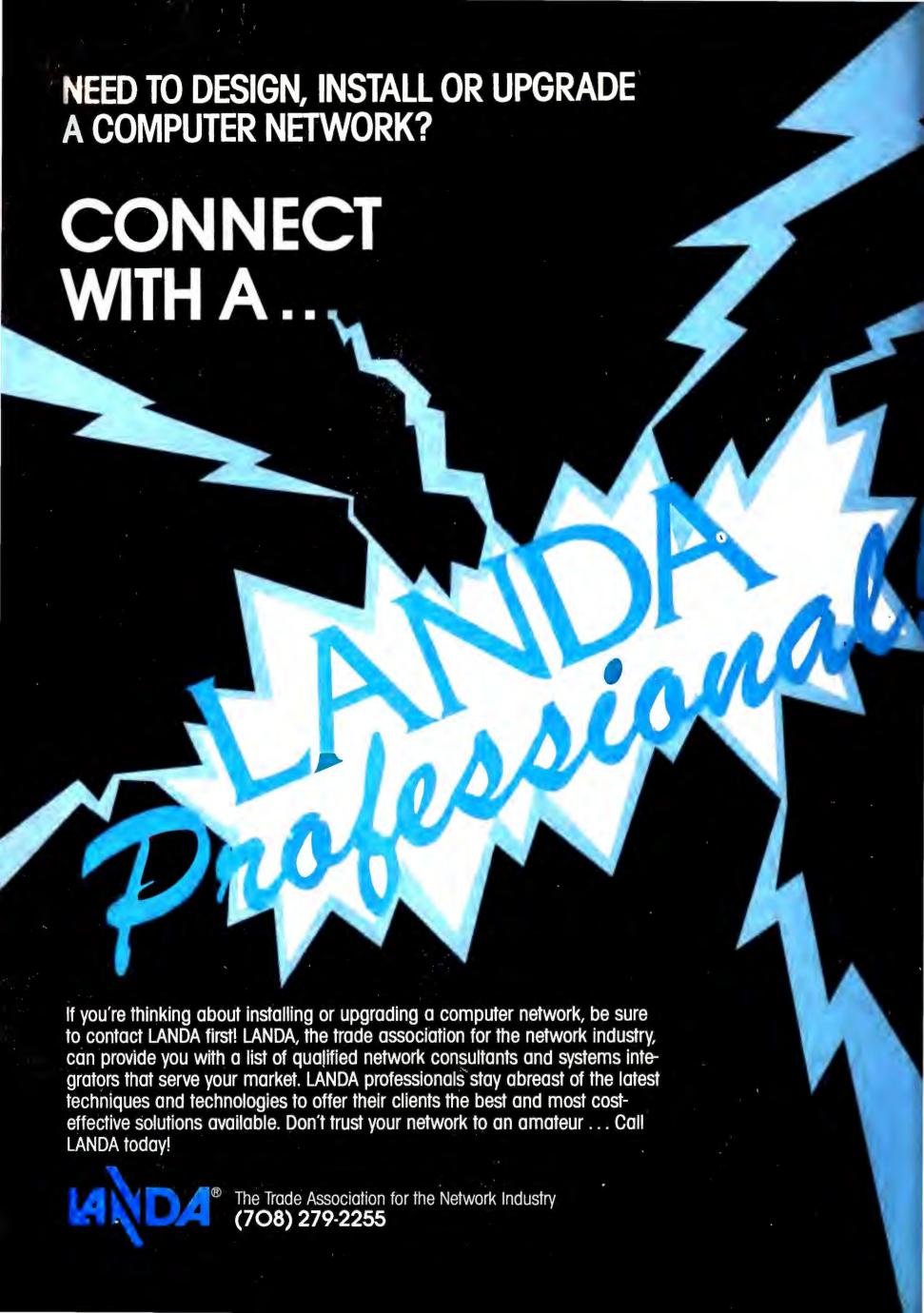
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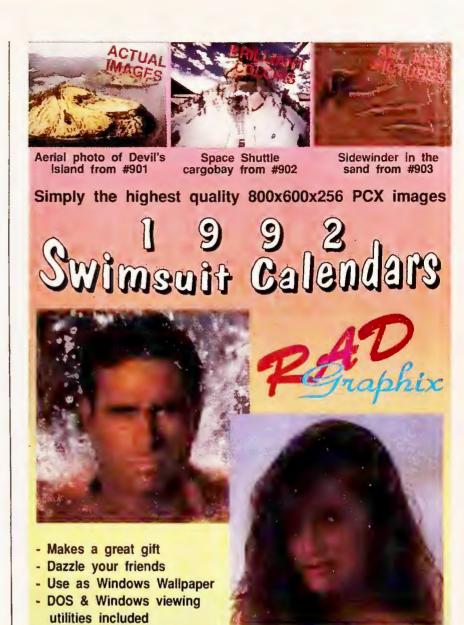
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# FastData 386 Systems





The fastest Intel™ 386 processor available combined with a 64K thirty nanosecond memory cache make the FastData 386/33 a power users dream! Included in the base price is a 80 megabyte 20 millisecond hard disk, 1024 by 768 VGA monitor and card, four megabytes of memory, and 5.25" & 3.5" high capacity floppy drives. Plus, should anything ever go wrong with your FastData computer, you are covered by a one-year warrantee with free on-site service or system replacement if we cannot correct the problem with our FastSHIP advance parts replacement program.

### Standard Features

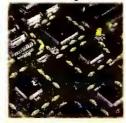
- √ 33mhz Intel 386-DX processor.
- ✓ 64K high-speed memory cache.
- ✓ 4 megabytes high speed RAM. 105 mb 17ms IDE hard disk, 1:1 interleave.
- 1.2mb 5.25" and 1.44mb 3.5" floppy drives.
- Standard chassis (shown) or mini-tower with speed, keylock and reset buttons
- 387-DX coprocessor socket.
- √ 200 watt power supply.
- √ 14" Super VGA color monitor, 1024x768 resolution, with 16 bit VGA card with 1mb Video Ram.
- Clock calendar, parallel port, game port and two serial ports. Key Tronic 101 key keyboard.
- 8 slots & 5 drive bays.
- Built-in advanced memory management features. MS-DOS 5.0.
- Windows & Mouse add \$69.
- FCC Class B approved.

386/DX33	80mb	100mb	200mb	660mb
Mono	\$1,529	\$1,599	\$1,849	\$3,199
Mono VGA	\$1,629	\$1,699	\$1,949	\$3,299
VGA 1024i	\$1,829	\$1,899	\$2,149	\$3,499
VGA 1024ni	\$1,929	\$1,999	\$2,249	\$3,599

#### **Superior Design**



**Better Components** 



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**Toll-Free Support** 





The optimum combination of features, expandability, and power make the FastData 386/25 an ideal choice for those whose applications demand high speed 32 bit processing and expandability. The value of the 386/25 goes far beyond its price; it comes configured with a full four megabytes of fast RAM, a quick 20 millisecond 80 megabyte hard disk, and maximum VGA displaying 1024 by 768 resolution powered by a high-output 16 bit 1mb VGA board. Also, the FastMicro team will configure your FastData 386 exactly the way you want, without sending you shopping elsewhere you shopping elsewhere.

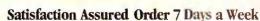
FastData 386/25 \$1699

### Standard Features

- 25mhz Intel 80386-DX.
- 4 megabytes of high speed
- 80 mb 18ms IDE hard disk, 1:1 interleave
- 1.2mb 5.25" and 1.44mb 3.5" floppy drives.
- Standard chassis or mini-tower (shown) with keylock, speed and reset buttons.
- 80387-DX coprocessor socket.
- 200 watt power supply
- ✓ 14" Super VGA color monitor, 1024x768 resolution, with 16 bit VGA card with 512K
- Clock calendar, parallel port, two serial ports, and game port. Key Tronic 101 key keyboard.
- 8 slots & 5 drive bays. Built-in advanced memory
- management features. MS-DOS 5.0.
- Windows & Mouse add \$69.
- ✓ FCC Class B approved.

386/DX25	80mb	100mb	200mb	660mb
Mono	\$1,399	\$1,469	\$1,719	\$3,069
Mono VGA	\$1,499	\$1,569	\$1,819	\$3,169
VGA 1024i	\$1,699	\$1,769	\$2,019	\$3,369
VGA 1024m	\$1,799	\$1,869	\$2,119	\$3,469

**On-Site Service** 







# FastData SX Systems



FastData SX/20

25% faster than a 16mhz SX, the FastData SX/20 adds even greater performance to its 386 multitasking capabilities. Just \$200 more than our SX/16, this machine also includes an 80mb hard drive in addition our SX/16, this machine also includes an 80mb hard drive in addition to the super VGA color monitor and 16 bit VGA adaptor, Keytronics keyboard, DOS 4.01 or 5.0, and two floppy drives. The system includes two megabytes of memory and is expandable to eight on the main system board. Remember, when you have questions, need to solve a problem, or want recommendations on products for your system, the FastMicro team is standing by toll-free to provide product support for as long as you own your FastData personal computer.

#### Standard Features

- 20mhz Intel™ 386-SX
- processor. 2 megabytes of high speed
- 80 mb 20ms IDE hard disk, 1:1
- 1.2mb 5.25" and 1.44mb 3.5" floppy drives.
- Standard chassis (shown) or mini-tower with keylock, speed and reset buttons.
- 200 watt power supply

- √ 14" Super VGA color monitor with 16 bit VGA card with 512K.
- Clock calendar, parallel port, two serial ports, and game port. Key Tronic 101 key keyboard.
- 8 expansion slots, 5 drive bays.
- 80387-SX coprocessor socket. Full Shadow RAM and LIM 4.0
- EMS support. Windows & Mouse add \$69.
- MS-DOS 5.0.
- FCC Class B approved.

386/SX20	40mb	80mb	100mb	200mb
Mono	\$1,019	\$1,149	\$1,219	\$1,469
Mono VGA	\$1,119	\$1,249	\$1,319	\$1,569
VGA Color	\$1,269	\$1,399	\$1,469	\$1,719
VGA 1024	\$1,319	\$1,449	\$1,519	\$1,769





FastData 386/SX

Combine the benefits of an advanced Intel 386 processor, the value of a 286 and the advantages of FastData and you've got the FastData 386/SX! This machine is the choice of those who want to run today's powerful 386 and multitasking software, like Windows, and also want to run their favorite DOS applications at surprising speeds. We've made our customers' favorite options standard: it comes with an ample two megabytes of memory, a high performance 40mb hard drive, and 16 bit super VGA. Compare performance, features, and service and you will find no better SX value. Interested further? Try the FastData 386/SX for 30 days; you have to be happy - if not, we'll take it back.

#### Standard Features

- √ 16mhz Intel<sup>™</sup> 386-SX processor.
- 2 megabytes of fast RAM. √ 40 mb 28ms IDE hard disk, 1:1
- interleave. 1.2mb 5.25" and 1.44mb 3.5"
- floppy drives.
- Standard, mini tower, or mini desktop (shown) chassis with keylock, speed and reset buttons.
- 200 watt power supply

- √ 14" Super VGA color monitor with 16 bit VGA card with 512K.
- Clock calendar, parallel port, two serial ports, and a game port. Key Tronic 101 key keyboard.
- ✓ 8 expansion slots, 5 drive bays.
- 80387-SX coprocessor socket. Full Shadow RAM and LIM 4.0
- EMS support. Windows & Mouse add \$69.
- ✓ MS-DOS 5.0.
- ✓ FCC Class B approved.

386/SX16	40mb	80mb	100mb	200mb
Mono	\$949	\$1,079	\$1,149	\$1,399
Mono VGA	\$1,049	\$1,179	\$1,249	\$1,499
VGA Color	\$1,199	\$1,329	\$1,399	\$1,649
VGA 1024i	\$1,249	\$1,379	\$1,449	\$1,699









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Upgrade your 286 or 386 to IDE technology and Toshiba quality at a FastMicro price. This kit comes with a fast 20ms 105mb drive and

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#### Seagate 89mb AT Kit \$319

IDE performance, big 89 megabyte capacity, 19ms access time and 5

mbps transfer rate make this a great buy. Controller, cables and rails are included to make installation fast and easy.

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Complete with mounting brackets and installation

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ATI delivers speed and accuracy with the 9600 Etc-E! It includes V.42, LAP-M, and MNP error correction combined with MNP/5 and V.42 bis data compression to provide put. It features automatic

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**FastData** 16 Bit VGA

\$69 \$89

The FastData 16 bit VGA card features 256K of video memory, does CGA, EGA, & VGA up to 1024x768 and comes with drivers for popular software including Windows 3.0. It's expandable to 512K and has a 30 day money-back guarantee.

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**FastData** 2400 Baud Modem

\$59 The FastData 2400 band in tern a l modem is fully Hayes compatible and can be configured to COM port 1-4. It has an internal speaker, is auto answer & auto dial, and comes with communications software.

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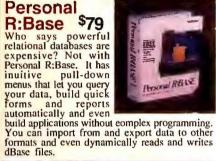
- 12mhz 80286 processor. 1 megabyte RAM. 40 mb 28ms IDE hard disk 1:1 interleave. 1.2mb 5.25" or 1.44mb 3.5" floppy drive (2nd drive add
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Model 1000SE/XE       1MB/2MB       \$ 225/275         Model T1200XE       1MB/2MB       175/225         Model T1600       2MB       CALL         Model T3100SX       2MB/4MB       155/390         Model T3200SX       2MB/4MB       150/390         Model T3200       3MB       270         Model T5200       2MB       160         Model T5200       2MB       180         FORTALL         Portable LTE 286       1MB/2MB       \$ 120/170         SLT-286       1MB/4MB       150/640         SLT-386       1MB       180         FNTH         SuperSport 288 & 288e       1MB       \$ 120         SuperSport SX & 286e       2MB       190         NEC         Prospeed 286/386SX-16       1MB/4MB       CALL         Prospeed 386       2/MB/4MB       CALL         All other memory prices       CALL	MATH CO-PROCESSORS  intel  8087-1	LaserJet IIIP	
Model 1000SE/XE       1MB/2MB       \$ 225/275         Model T1200XE       1MB/2MB       175/225         Model T1600       2MB       CALL         Model T3100SX       2MB/4MB       155/390         Model T3200SX       2MB/4MB       150/390         Model T3200       3MB       270         Model T5200       2MB       160         Model T5200       2MB       180         FORTALE         Portable LTE 286       1MB/2MB       \$ 120/170         SLT-286       1MB/4MB       150/640         SLT-386       1MB       180         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FINITH         SuperSport 288 & 286e       2MB       190         FINITH         SuperSport 288 & 286e       2MB       190         FINITH         SuperSport 288 & 286e       2MB       2MB       2MB      <	MATH CO-PROCESSORS	LaserJet IIIP	
Model 1000SE/XE       1MB/2MB       \$ 225/275         Model T1200XE       1MB/2MB       175/225         Model T1600       2MB       CALL         Model T3100SX       2MB/4MB       155/390         Model T3200SX       2MB/4MB       150/390         Model T3200       3MB       270         Model T5200       2MB       160         Model T5200       2MB       180         FORTALL         Portable LTE 286       1MB/2MB       \$ 120/170         SLT-286       1MB/4MB       150/640         SLT-386       1MB       180         FNTH         SuperSport 288 & 288e       1MB       \$ 120         SuperSport SX & 286e       2MB       190         NEC         Prospeed 286/386SX-16       1MB/4MB       CALL         Prospeed 386       2/MB/4MB       CALL         All other memory prices       CALL	MATH CO-PROCESSORS  intel  8087-1	LaserJet IIIP \$969  LaserJet IIISI CALL  LaserJet III 799  LaserJet IIID CALL  DeskJet 500 489  ScanJet CALL  ScanJet 1,380  PaintJet XL 1,575  LaserJet Toner 69  Lower Cassette Tray 230  1 MEG Upgrade 105  2 MEG Upgrade 105  2 MEG Upgrade 140  4 MEG Upgrade 230  PACIFIC  DATA PRODUCTS  Laser Accessories  Pacific Data 1Mb/2Mb CALL  Pacific Data 25-N-1 \$260  Pacific Bar Code 319  Pacific Outlines 185  Pacific Page PE CALL  Pacific Page XL 739  Pacific Type 250  Plotter in a Cartridge 239	
Model 1000SE/XE	MATH CO-PROCESSORS  intel  8087-1	LaserJet IIIP	
Model 1000SE/XE       1MB/2MB       \$ 225/275         Model T1200XE       1MB/2MB       175/225         Model T1600       2MB       CALL         Model T3100SX       2MB/4MB       155/390         Model T3200SX       2MB/4MB       150/390         Model T3200       3MB       270         Model T5200, T8500       2MB       160         Model T5200, T8500       2MB       180         Fortable LTE 286       1MB/2MB       \$ 120/170         SLT-286       1MB/4MB       150/640         SLT-386       1MB       180         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FORTAGE         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FINITH         SuperSport SX & 286e       2MB       190         FINITH         SuperSport SX & 286e       2MB       CALL         FINITH         MEMORY         MB       ALL         MB       ALL         MB       ALL <td co<="" td=""><td>MATH CO-PROCESSORS  intel  8087-1</td><td>LaserJet IIIP</td></td>	<td>MATH CO-PROCESSORS  intel  8087-1</td> <td>LaserJet IIIP</td>	MATH CO-PROCESSORS  intel  8087-1	LaserJet IIIP
Model 1000SE/XE	MATH CO-PROCESSORS	LaserJet IIIP	
Model 1000SE/XE       1MB/2MB       \$ 225/275         Model T1200XE       1MB/2MB       175/225         Model T1600       2MB       CALL         Model T3100SX       2MB/4MB       155/390         Model T3200SX       2MB/4MB       150/390         Model T3200       3MB       270         Model T5200       2MB       160         Model T5200       78500       2MB       180         Fortable LTE 286       1MB/2MB       \$ 120/170         SLT-286       1MB/4MB       150/640         SLT-386       1MB       180         FINITH         SuperSport 288 & 288e       1MB       \$ 120         FINITH         SuperSport SX & 286e       2MB       190         FINITH         SuperSport SX & 286e       2MB       190         FINITH         MEMORY         MEMORY         Premium 386 16/20C       1MB/4MB       \$ 50/230         Premium 386/20       1MB/4MB       80/240	MATH CO-PROCESSORS	LaserJet IIIP	
Model 1000SE/XE	MATH CO-PROCESSORS	LaserJet IIIP \$969  LaserJet IIISI CALL  LaserJet IIIP 799  LaserJet IIID 1,499  LaserJet IIID CALL  DeskJet 500 489  ScanJet CALL  ScanJet 1,575  LaserJet Toner 69  Lower Cassette Tray 230  1 MEG Upgrade 105  2 MEG Upgrade 140  4 MEG Upgrade 230  PACIFIC  DATA PRODUCTS  Laser Accessories  Pacific Data 1Mb/2Mb CALL  Pacific Data 25-N-1 \$260  Pacific Bar Code 319  Pacific Outlines 185  Pacific Page PE CALL  Pacific Type 250  Plotter in a Cartridge 239  Headlines in a Cartridge 239  Headlines in a Cartridge 210  Pacific Connect 256K 250  Complete Font Library 250	

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2550	400 0	cps, 1	80	nlq	***************	. 845
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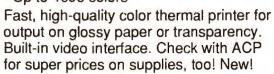
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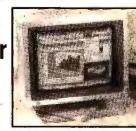
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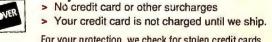
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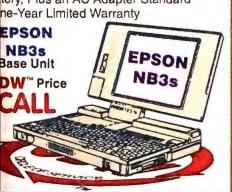
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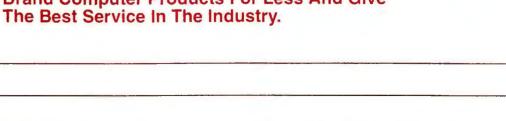
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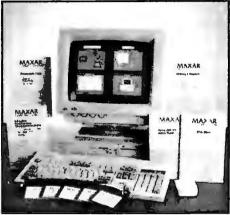
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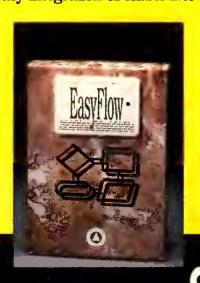
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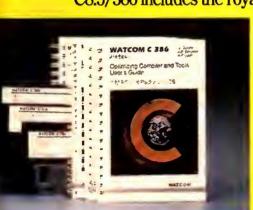
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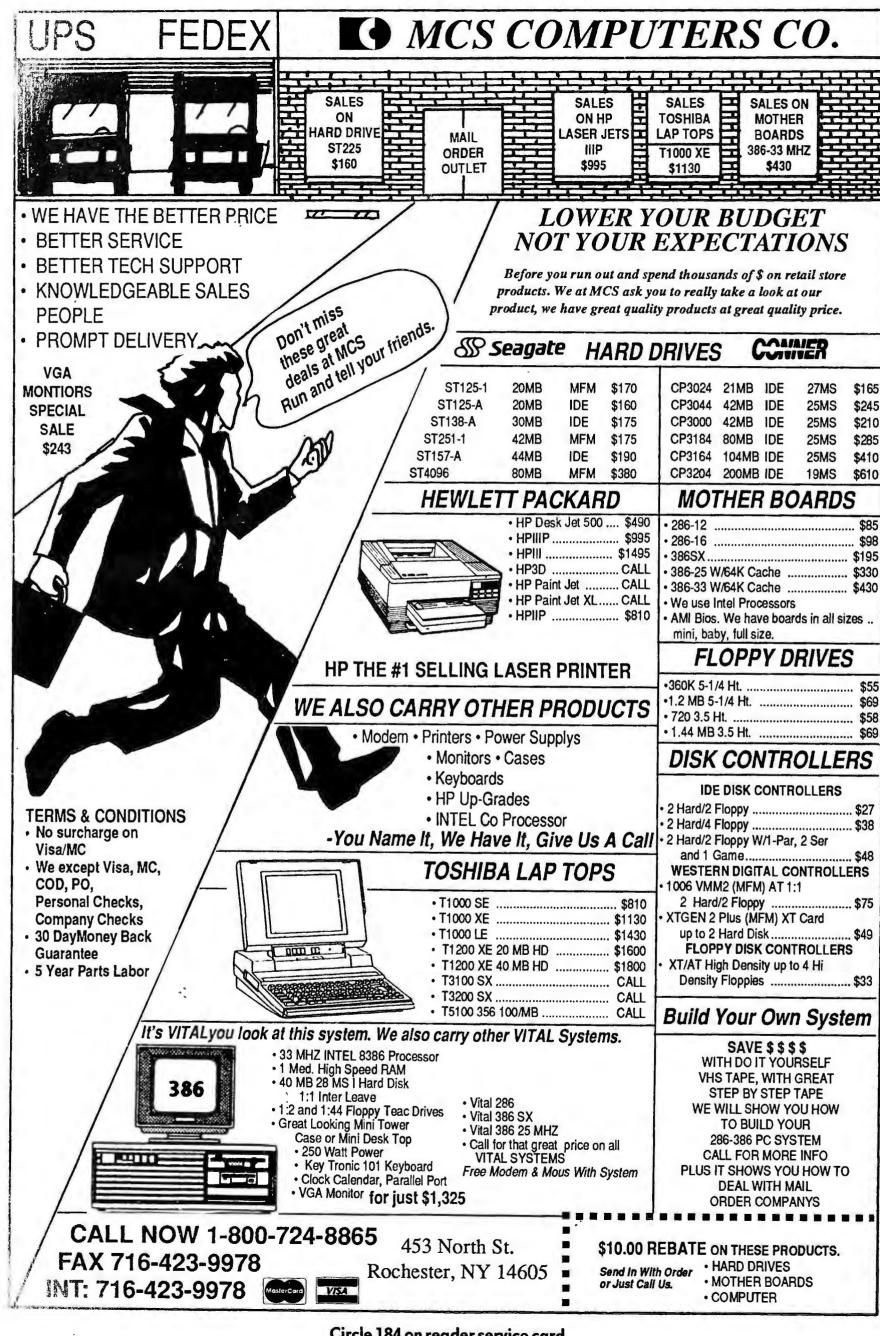
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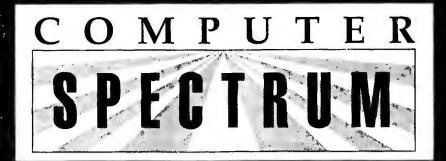


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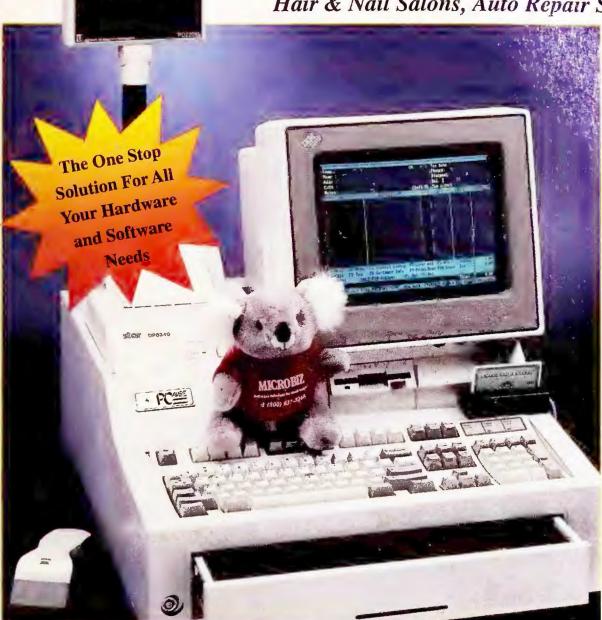
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Opening a window on personal finances

Steve Bass

My checkbook has always been a mess. The last time I balanced it was in 1963; and I've always found it nearly impossible to get my expense reports together in a timely fashion. My finances were beginning to look just a tad better than my local savings and loan's until I started using *Quicken*. Now, like every other program in the world, *Quicken* is going *Windows*—and it may just take me with it.

Until recently, personal finance was limited to DOS, which is okay by me. I'm not a *Windows* fan; I use mostly DOS applications. But after playing with *Quicken for Windows* and Microsoft's just-released copycat *Money for Windows*, I'm convinced that a lot of people will decide to go graphical just to take advantage of one of these. Maybe even me.

Both products take the drudgery out of entering data, more so than *Quicken*'s DOS version. You can work from a familiar on-screen check or check register. If you type in the first few letters of a payee's name, previous entries (and amounts) for that account are found and entered onto the register. And of course *Windows* lets you put multiple accounts on screen or use *CheckFree* to send your bill payments to the bank in the back-

ground while you continue working.

Another big advantage of any personal finance program is balancing your checkbook. Both products ask the right questions and walk through account reconciliation—but *Money*'s SmartReconcile does a better job. It looks for transposition of digits and mistyped numbers. If I'm 45 cents out of balance and it finds that I typed \$123.05 (and it should've been \$123.50,) a dialog box will ask me to examine that check amount. It also watches for a deposit accidentally entered as a payment or a decimal point stuck in the wrong place. It's a pretty slick feature.

Money has a few other new bells, and



if you're already committed to *Windows*, either financial program is a good choice. But if you're a committed *Quicken* user like me, you'll probably find the transition to *Quicken for Windows* easier. All the keyboard shortcuts are still intact (I don't move my fingers from the keyboard to a mouse unless it's absolutely essential), and with *Quicken for Windows*, I feel at home.

Quicken for Windows' new desktop work area is more customizable than Money's—with neat, user-definable icons for accounts. Let's say you like to have your checking and credit card accounts always up and ready to go. Once you set up the work area, that's how it comes up for your next session.

There's more: While creating a report, you can use the Quick-zoom feature to open a window that lets you refer to the check register, and Forecast Deposit Account helps you avoid cash flow surprises. The interactive budgeting tool works like a minispreadsheet and is powerful enough to let you perform simple "what-ifs" and switch from monthly to quarterly views.

Quicken for Windows' extensive reports are dynamically connected to the check register—changing one changes the other—and Dynamic Data Exchange (DDE) lets you transfer information directly into an *Excel* spreadsheet. *Money*, which lacks DDE, imports *Quicken* files but exports only to ASCII.

Whether or not you're using Windows, you'll be hard-pressed to find something better than Money or Quicken to keep your finances in line. I'm into my DOS-based Quicken so often that Windows multitasking may give me just the reason I've been looking for to convert to the graphical environment once and for all. All that I need to clinch it is an automated teller feature that'll drop \$20 out of the floppy drive.

Contributing Editor Steve Bass is a family therapist and president of Pasadena IBM Users Group.

Money for Windows \$69.95, Microsoft Corp.; 206/882-8080 Reader service no. 640

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2. Are you interested in computer products for:  □ Home □ Business □ Resale	<ol> <li>Are you interested in computer products for:</li> <li>☐ Home ☐ Business ☐ Resale</li> </ol>
3. If for resale, please identify your primary customers:  ☐ General Business ☐ Government ☐ Education ☐ Medical	3. If for resale, please identify your primary customers:  ☐ General Business ☐ Government ☐ Education ☐ Medical
4. How many PCs does your company plan to purchase in the next twelve months?	4. How many PCs does your company plan to purchase in the next twelve months?
QuantityTimeframeQuantityTimeframeLess than 1 month6-12 months1-3 monthsMore than 12 months3-6 months	Quantity         Timeframe         Quantity         Timeframe           Less than 1 month         6-12 months           1-3 months         More than 12 month           3-6 months         More than 12 month
5. What do you plan to use computer products for?	5. What do you plan to use computer products for?

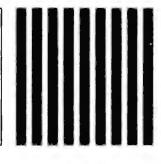
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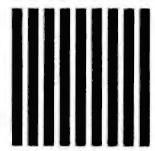
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